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THE

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*** The LANCET has the largest circulation of any Medical Journal in Can[illegible]

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THE CANADA LANCET.

VOL. XV. TORONTO. AUGUST, 1883. No. 12.

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— Mass. Hydrarg. 1 gr.; Pulv. Opii, ½ gr.; Pulv. Ipecac, ¾ gr.	
HYDRARG. IOD. ET OPII (Ricord's)	75
— Hydrarg. Iodid. 1 gr.; Pulv. Opii, ½ gr.	
IODOFORM ET FERRI	1 50
— Iodoform, 1 gr.; Ferri Redact, 1¼ gr.	
IODOFORM ET FERRI, ET NUC VOM	1 50
— Iodoform, 1 gr.; Ferri Redact. 1 gr.; Ext. Nuc. Vom. ¼ gr.	
IODOFORM, 1 gr.	1 00
POLASS. IODID, 2 grs.	85
ACID ARSENIOUS, 1-20, 1-30 and 1-50 grs.	40
MERCURY IODIDE, ¼ gr.	40
MERCURY IODIDE, ½ gr.	50
MERCURY IODIDE RED. 1-16 gr.	40

ANODYNES.

ANODYNE	75
— Pv. Camphoræ, 1 gr.; Morphiæ Acetat, 1-20 gr.; Ext. Hyoscyami, 1 gr.; Ol. Res. Capsici, 1-20 gr.	
IPECAC ET OPII. 3¾ grs. (Pulv. Doveri, U. S. P.)	50
CALOMEL ET OPII	85
— Calomel, 2 grs.; Opium, 1 gr.	
OPII, U. S. P., 1 gr.	60
OPII ET CAMPHORÆ, ET TANNIN.	80
— Pulv. Opii, ¼ gr.; Camphoræ, 1 gr.; Acid Tannic. 2 grs.	
CAMPHOR ET EXT. HYOSCYAMUS	50
— Camphor, 1 gr.; Ext. Hyoscy. Eng. 1 gr.	
OPII ET CAMPHORÆ	80
— Pulv. Opii, 1 gr.; Camphoræ, 2 grs.	
EXT. CANNABIS INDICA, ¼ gr.	60
MORPHIÆ ACET, ⅛ gr.	70
MORPAIÆ SULPHATE, ⅛ gr.	70
MORPHIÆ SULPHATE, ¼ gr.	1 00

ANTHELMINTICS.

ANTHELMINTIC — Santonin, Calomel, aa. 1 gr.	1 00
SANTONIN, 1 gr.	1 00

ANTISPASMODICS.

ALOES ET ASSAFŒTIDA, U. S. P.	40
ANTI-CHOROMANIA	75
— Zinci Valer, 2 grs.; Ferri Valer, ¼ gr.; Ext. Sumbul. ½ gr.	
ASSAFŒTIDÆ, U. S. P.	40
ASSAFŒTIDÆ, 2 grs.	40
FERRI VALER, 1 gr.	1 00
ZINCI VALERIAN, 1 gr.	1 00
ATROPIÆ, 1-60 gr.	75
ATROPIÆ, 1-100 gr.	75
EXT. BELLADONNA, (Eng.) ¼ gr	40

ANTIPERIODICS.

AGUE — Chinoidin, 2 grs.; Ext. Coloc. Co. ⅛ gr.; Ol. Pip. Nig. 1-6 gr.; Ferri Sul. ½ gr.	75

ANTIPERIODICS, Cont'd.

	Per 100
ANTI-CHILL — Chinoidin, 1 gr.; Ferri Ferrocyanid, 1 gr.; Ol. Piper. Nig. 1 gr.; Ac. Arsenious, 1-20 gr.	1 00
ANTI-MALARIAL — Quiniæ Sulph. 1 gr.; Cinchoniæ Sulph. ½ gr.; Ferri Sulph. Exs. ¼ gr.; Ac. Arsenious, 1-40 gr.	1 50
ANTI-MALARIAL (Philadelphia.) — Ferri Sulph. 1 gr.; Pv. Capsicum, ⅛ gr.; Cinchonid. Sulp 2 grs.; Strychniæ, 1-30 gr.	1 00
QUINIÆ CUM CAPSICUM — Quiniæ Sulph. 1 gr.; Capsici. ¼ gr.	1 50
ANTI-PERIODIC — Cinchonidiæ Sulph. 1 gr.; Res. Podophylli, 1-20 gr.; Strychniæ Sul. 1-33 gr.; Gelsemin, 1-20 gr.; Ferri Sulph. Exs. ½ gr.; Ol. Res. Capsici ⅕₀ gtt.	80
CHINOIDIN, 2 grs.	50
CHINOIDIN, COMP — Chinoidin. 2 grs.; Ferri Sulph. Exsic. 1 gr.; Piperina, ½ gr.	1 00
CINCHONIÆ SULPH. 2 grs.	75
CINCHONIDIÆ SALIC. 2½ grs.	1 75
CINCHONIDIÆ SULPH, 1 gr.	75
CINCHONIDIÆ SULPH, 2 grs.	1 35
CINCHONIDIÆ SULPH, 3 grs.	1 95
QUINIÆ SULPH. ½ gr.	90
QUINIÆ SULPH. 1 gr.	1 40
QUINIÆ SULPH. 2 grs.	2 75
QUINIÆ BI-SULPH. 1 gr.	1 40
QUINIÆ BI-SULPH. 2 grs.	2 75
QUINIÆ BI-SULPH. 3 grs.	4 00
QUINAMINE, 1 gr.	70
QUINAMINE, 2 grs.	1 35
QUINAMINE, 3 grs.	1 95

APERIENTS.

ALOES ET MASTICH	50
ALOES ET MYRRHÆ, U. S. P.	50
ANDERSON'S SCOTS — Pv. Aloes Socot., Pv. Saponis, Pv. Colocynth, Pv. Gambogiæ,	40
ANTI-CONSTIPATION — Podophyllin, ⅛₀ gr.; Ext. Nuc. Vom. ¼ gr.; Pv. Capsicum, ¼ gr.; Ext. Belladonnæ, ⅕₀ gr.; Ext. Hyoscyami, ¼ gr.	75
APERIENT — Ext. Nuc. Vom. ¼ gr.; Ext. Hyoscyami, ½ gr.; Ext. Coloc. Co. 2 grs.	85
CHAPMAN'S DINNER PILLS	60
COLOCYNTH ET HYOSCYAMUS — Ext. Coloc. Co. 2½ grs.; Ext. Hyoscyami, 1½ grs.	75
COOK'S, 3 grs.	50
LAXATIVE — Pulv. Aloes Soc. 1 gr.; Sulphur, 1-5 gr.; Res. Podophylli, 1-5 gr.; Res. Guaiac. ½ gr.; Syr. Rhamni, q. s.	60
LEPTANDRIN, 1 gr.	75
LEPTANDRIN COMP — Leptandrin, 1 gr.; Irisin, ¼ gr.; Podophyllin, ⅛ gr.	1 00
PODOPHYLLIN ET HYOSCYAMUS — Podophyllin, Ext. Hyoscyami. aa ½ gr.	60
PODOPHYL. COMP (Eclectic.) — Podophyllin, ⅛ gr.; Leptandrin, 1-16 gr.; Juglandin, 1-16 gr.; Macrotin, 1-32 gr.; Ol. Res. Capsici, q. s.	75
PODOPHYL. ET BELLAD — Podophyllin, ¼ gr.; Ext. Bellad. ⅛ gr.; Ol. Res. Capsici. ¼ gr.; Saccharum Lact. 1 gr.	75
TRIPLEX — Aloe Socot. 2 grs.; Mass. Hydrarg, 1 gr.; Podophyllin, ¼ gr.	75

ASTRINGENTS.

	Per 100
ASTRINGENT — Ext. Geranii 2 grs.; Pv. Opii, ¼ gr.; Ol. Menth. Pip. 1-20 gtt.; Ol. Res. Zing. 1-20 gtt.	60
OPII ET PLUMBI ACET — Pulv. Opii, ½ gr.; Plumbi Acet. 1½ gr.	60

CATHARTICS.

CATHARTIC COMP. U. S. P.	50
CATHARTIC COMP. IMPROVED — Ext. Coloc. Comp., Ext. Jalap, Podophyl. Leptandrin, Ext. Hyoscyami, Ext. Gentian, Ol. Menth. Pip.	50
CATHART. COMP. CHOLAGOGUE — Res. Podophylli, ½ gr.; Pil. Hydrarg, ¼ gr.; Ext. Hyoscyami, ⅛ gr.; Ext. Nuc. Vom. 1-16 gr.; Ol. Res. Capsici, ⅛ gtt.	60
GAMBOGIÆ COMP — Pulv. Gambogiæ, Pulv. Aloes Socot., Pv. Zingib. Jam., Pv. Saponis,	40
HEPATICA — Pil. Hydrarg. 3 grs.; Ext. Coloc. Co. 1 gr.; Ext. Hyoscyami, 1 gr.	80
PODOPHYLLIN, 1 gr.	75
RHEI ET HYDRARG — Pulv. Rhei, Mass. Hydrarg. aa 4 grs. Sodii Carb. Exs.	80
HYDRASTIN, ½ gr.	95
LEPTANDRIN, ¼ gr.	40
PODOPHYLLIN, ¼ gr.	40
PODOPHYLLIN, ½ gr.	50
RHEI COMP. U. S. P. — Pulv. Rhei, 2 grs.; Pulv. Aloes Socot. 1½ gr.; Myrrh, 1 gr.; Ol. Menth. Pip.	75

DIAPHORETICS.

ANALEPTIC — Pv. Antimonialis. ¾ gr.; Pv. Res. Guaiac. 1 gr.; Pv. Aloes. Socot. ¾ gr.; Pv. Myrrhæ, ½ gr.	60
DIAPHORETIC — Morphiæ Acetat, 1-25 gr.; Pv. Ipecac, ¼ gr.; Pv. Potass. Nitrat. 1 gr.; Pv. Camphoræ, ¼ gr.	75

EMMENAGOGUES.

EMMENAGOGUE — Ergotine, 1 gr.; Ext. Hellebore Nig. 1 gr.; Aloes, 1 gr.; Ferri Sul. Exs. 1 gr.; Ol. Sabinæ, ½ gr.	1 40
HOOPER, (Female Pills) 2½ grs.	40
PIL. PHOSPHORI CUM CANTHARIDE CO — Phosphori, 1-50 gr.; Pv. Nuc. Vom. 1 gr.; Sol. Canthar. Conc't 1 m.	1 50

SEDATIVES.

BISMUTH ET IGNATIA — Bismuth Sub. Carb. 4 grs.; Ext. Ignat Amara, ¼ gr.	1 50
BISMUTH ET EXT. NUC VOM — Bismuth Sub. Carb. 4 grs.; Ext. Nuc. Vomicæ, ¼ gr.	1 50
CAMPHOR MONO-BROMATED, 2 grs	1 50
SEDATIVE — Ext. Sumbul, ½ gr.; Ext. Valerianæ, ½ gr.; Ext. Hyoscyam, ½ gr.; Ext. Cannab. Ind. ⅕₀ gr.	75
ACONITIÆ, 1-60 gr.	75
EXTRACT IGNATIA AMARA, ¼ gr	50
GELSEMIN, ¼ gr.	75
PIL. PHOSPHORI CUM CANNABE INDICA — Phosphori, 1-50 gr.; Ext. Cannab. Ind. ¼ gr.	1 75

TONICS.

ALOES ET FERRI, U. S. P. — Pulv. Aloes, 1 gr.; Aromatic Powder, 1 gr.; Ferri Sulph. Exsic. 1 gr.; Confec. Rose, q. s.	40

TONIS, Continued.

	Per 100
ALOES ET NUC VOM — Pulv. Aloes Soc. 1½ gr.; Ext. Nuc. Vomicæ ½ gr.	50
ASSAFŒTIDÆ COMP — Assafœtidæ, 2 grs.; Ferri Sulph. Exsic. 1 gr.	40
DAMIANA CUM PHOSPH. ET NUC VOM — Ext. Damiana, 2 grs.; Phosphori, 1-100 gr.; Ext. Nuc. Vom. ⅛ gr.	1 50
FERRI, (Quevennes) 2 grs.	75
FERRI CARB. (Vallett's) U. S. P. 3 grs.	40
FERRI CITRAT, 2 grs.	50
FERRI IODID, 1 gr.	80
FERRI ET QUAS. ET NUC. VOM — Fer. per Hydrog. 1½ gr.; Ext. Quassia, 1 gr.; Ext. Nuc. Vom. ¼ gr.; Pulv. Saponis, ½ gr.	75
FERRI ET STRYCHNIÆ — Ferrum per Hydr, 2 grs.; Strychniæ, 1-60 gr.	75
FERRI SULPH. EXS. 2 grs.	40
NEURALGIC	2 75
— Quiniæ Sulph. 2 grs.; Morphiæ Sulph. 1-20 gr.; Strychniæ, 1-30 gr.; Acid Arsenious, 1-20 gr.; Ext. Aconiti, ½ gr.	
NEURALGIC, (Brown Sequ'd)	2 00
— Ext. Hyoscyami, ⅔ gr.; Ext. Conii. ⅔ gr.; Ext. Ignat. Amar. ½ gr.; Ext. Opii, ½ gr.; Ext. Aconiti, ⅓ gr.; Ext. Cannab. Ind. ¼ gr.; Ext. Stramon, 1-5 gr.; Ext. Belladon. 1-6 gr.	
QUINIÆ COMP	1 50
— Quiniæ Sulph. 1 gr.; Fer. Carb. (Vall.) 2 grs.; Acid Arsenious, 1-60 gr.	
QUINIÆ ET FERRI	1 50
— Quiniæ Sulph. 1 gr.; Ferr. per Hydrog. 1 gr.	
QUINIÆ ET FERRI CIT. 2 grs.	1 00
QUINIÆ ET FERRI ET STRYCH PHOS — Quiniæ Phos. 1 gr.; Ferri Phos. 1 gr.; Strychniæ Phos. 1-60 gr.	1 50
QUINIÆ IODOFORM ET FERRI — Iodoform, 1 gr.; Fer. Carb. (Vall's) 2 grs.; Quiniæ Sulph. ½ gr.	2 25
QUINIÆ ET FERRI, (Valer) 2 grs	3 00
TONIC — Ext. Gentianæ, 1 gr.; Ext. Humuli, ½ gr.; Ferri Carb. Sacch. ½ gr.; Ext. Nuc. Vom. 1-20 gr.; Res. Podophylli, 1-25 gr.; Ol. Res. Zingiber ⅕₀ gtt.	60
ZINCI PHOSPHIDE AND NUC VOM — Zinci Phos. ⅕₀ gr.; Ext. Nuc. Vom. ¼ gr.	1 00
STRYCHNIÆ, 1-16, 1-20, 1-30, 1-32, 1-40 and 1-60 gr.	40
STRYCHNIÆ SULPH. 1-32 gr.	40
ZINC PHOSPHIDE, 1-6 and ¼ gr.	75
PIL. PHOSPHORI, 1-25, 1-50, 1-100 grs.	1 00
PIL. PHOSPHORI COMP — Phosphori, 1-100 gr.; Ext. Nuc. Vom. ¼ gr.	1 50
PIL. PHOSPHORI CUM NUCE VOM — Phosphori, 1-50 gr.; Ext. Nuc. Vom. ⅛ gr.	1 50
PIL. PHOSPHORI CUM FERRO — Phosphori, 1-50 gr.; Ferri Redact. 1 gr.	1 50
PIL. PHOSPHORI CUM FERRO ET NUC VOM — Phosphori, 1-100 gr.; Ferri Carb. 1 gr.; Ext. Nuc. Vom. ¼ gr.	1 50
PIL. PHOSPHORI CUM FERRO ET QUINIA ET NUC VOM — Phosphori, 1-100 gr.; Ferri Carb. 1 gr.; Quiniæ Sul. 1 gr.; Ext. Nuc. Vom. ¼ gr.	2 00
PIL. PHOSPHORI CUM QUINIA — Phosphori, 1-50 gr.; Quiniæ Sul. 1 gr.	2 00
PIL. PHOSPHORI CUM QUINIA CO — Phosphori, 1-50 gr.; Ferri Redact, 1 gr.; Quiniæ Sul. ½ gr.; Strychnia, 1-60 gr.	1 50
QUINIÆ ET FERRI CARB — Quiniæ Sulph. 1 gr.; Ferri Carb. 2 grs.	1 50

A CLASS OF MEDICINES EFFICACIOUS AND EASY OF ADMINISTRATION.

GENTLEMEN:—

Although a practitioner of over forty years, I think I may feel privileged to express my great pleasure and appreciation of the new class of remedies prepared by you, called "Parvules." I regard them the greatest improvement in modern medicine, and I could scarcely practice my profession without them, as they are so handy, so convenient and easily taken by children and adults. Their most important quality is their unvarying and *reliable* strength and efficacy. I can obtain with a grain or less of Calomel, with a grain or less of Aloin, and with a grain or less of Podophyllin, divided respectfully into the tenth, twentieth or fortieth part of a grain, in "Parvules," all that I could desire in most cases, and in a more satisfactory manner than in the usual form. I have used successfully a "Parvule" of one-fiftieth of a grain of Sulph. Morphia repeatedly for two or three hours, and have relieved pain without the least nausea or vomiting in patients that could not bear opiates in any other form; I do not know what to attribute this to, except the peculiar mode of preparing the "Parvules," as they are so readily dissolved and absorbed after being taken, and in indorsing them I must disclaim any favoritism or sympathy with Homœopathy; a "Parvule" given every hour it will be seen is not Homœopathy, in theory or practice. I usually give two "Parvules" of Calomel every hour until six or seven doses are taken, and the result is the same as with ten grains of the same, without the embarrassing effect. I give four or five "Parvules" of Aloin, the effect is the same as four or five Cathartic Pills, also with the Podophyllin "Parvules;" they will relieve habitual constipation, derangement of the liver and digestive organs, if given, one or two, three times a day.

I have no doubt that every practitioner who will use these "Parvules" will find the same results which convinced me of their importance and convenience. I have no other medicine chest in my daily rounds, than my pocket case of "Parvules."

Yours very truly,

Reaville, N. J., GEORGE P. REX, M. D.

PARVULES.

Small doses for frequent and easy administration.

Acidi Arseniosi.....1-100 gr.
Medical properties—Alterative, Antiperiodic.

Acidi Salicylici.....1-10 gr.
Med. prop.—Antirheumatic.

Acidi Tannici.....1-20 gr.
Med. prop.—Astringent.

Aconiti Rad.....1-20 gr.
Med. prop.—Narcotic, Sudorific.

Aloin.....1-10 gr.
Med. prop.—A most desirable cathartic.

Aluminis.....1-10 gr.
Men. prop.—Astringent.

Ammonii Chloridi.....1-10 gr.
Med. prop.—Diuretic, Stimulant.

Antimonii et Potass. Tart.....1-100 gr.
Med. prop.—Expectorant, Alterative.

Arnicæ Flor..... 1-5 gr.
Med. prop.—Narcotic, Stimulant, Diaphoretic.

Arsenici Iodidi.....1-100 gr.
Med. prop.—Alterative.

Belladonnæ Fol.....1-20 gr.
Med. prop.—Narcotic, Diaphoretic, Diuretic.

Calomel.....1-20 gr.
Med prop.—Alterative, Purgative.

Camphoræ.....1-20 gr.
Med. prop.—Diaphoretic, Carminative.

Cantharidis..... 1-50 gr.
Med. prop.—Diuretic, Stimulant.

Capsici.....1-20 gr.
Med. prop.—Stimulant and Carminative.

Cathartic Comp. Officinal.....1-3 gr.
Med. prop.—Cathartic.

Cathartic Comp. Improved.....1-3 gr.
Med. prop.—Cathartic.

Digitalis Fol.....1-20 gr.
Med. prop.—Sedative, Narcotic, Diuretic.

Dover's Powder.....1-3 gr.
Med. prop.—Anodyne, Soporific.

Ergotinæ.....1-10 gr.
Med. prop.—Emmenagogue, Parturient.

Ferri Redacti.....1-10 gr.
Med. prop.—Tonic.

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Med. prop.—Nervous and Arterial Sedative.

Hydrarg. Bi-Chlor.....1-100 gr.
Mep. prop.—Mercurial, Alterative.

Hydrarg. cum Creta.....1-10 gr.
Med. prop.—Alterative.

Hydrarg. Iodid.....1-20 gr.
Med. prop.—Alterative.

Hydrastin.....1-20 gr.
Med. prop.—Tonic, Astringent.

Iodoformi.....1-10 gr.
Med. prop.—Alterative.

Ipecac.....1-50 gr.
Med. prop.—Emetic, Expectorant.

Morphiæ Sulph.....1-50 gr.
Med. prop.—Narcotic, Sedative.

Nucis Vomicæ.....1-50 gr.
Med. prop.—Tonic, Stimulant.

Opii.....1-40 gr.
Med. prop.—Narcotic, Sedative, Anodyne.

Phosphorus.....1-200 gr.
Med. prop.—Nerve Stimulant.

Piperinæ.....1-20 gr.
Med. prop.—Tonic, Antiperiodic, Carminative.

Podophyllini.....1-40 gr.
Med. prop.—Cathartic, Cholagogue.

Potass. Bromidi.....1-5 gr.
Med. prop.—Alterative, Resolvent.

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Med. prop.—Alterative.

Potass. Nitratis.....1-10 gr.
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Med. prop.—Tonic, Antiperiodic.

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THE DOSE of any of the Parvules will vary from one to four according to age, or the frequency of their administration. For instance, one Parvule every hour, or two every two hours, or three every three hours, and so on for adults. For children, one three times a day is the minimum dose.

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PHYSICIANS' PRESCRIPTIONS.

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ELIXIR CALISAYA. (Warner & Co.)

This Tonic Elixir, so agreeable to the taste, comprises all the more active principles of Calisaya Bark in their native combination, and derives additional energy from its association with several of the most grateful Aromatic Tonics. It is admirably adapted to convalescents as an effective invigorator and restorative, rapidly improving the appetite and impaired digestion, and contributing much to cheerfulness and buoyancy of mind.

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The Elixir combines the superior tonic properties of Calisaya Bark with those of the Pyrophosphate of Iron, affording a pleasant cordial and antiperiodic. Each dessert spoonful contains 1 gr. of the Iron Salt with 2 grs. of the Extract of Bark. The dose for an adult is a dessertspoonful three times a day, immediately before or after meals.

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Each dessertsponful contains one grain Phos. Quinia, two grains Phos. Iron, and one sixtieth grain of Phos. Strychnia. A powerful general tonic, particularly adapted to cases of Debility and Nervous Prostration. Used with the greatest benefit in Chlorosis, Indigestion, and tendency to Paralysis. Given in doses of one to two teaspoonfuls three times a day.

SYRUP OF THE HYPOPHOSPHITES COMP. (Warner & Co.)

Lime, Soda, Potassa and Iron. Dr. Churchill's Remedy for Consumption, Etc.

Each teaspoonful contains 2 grains of the Lime, 1½ grains of Soda, 1 grain potassa, and two-third grain of the Iron Salt. Dose.—One teaspoonsful.

SYRUP OF THE PHOSPHATES COM. (Warner & Co.)

Iron, Lime, Soda and Potash. Chemical Food.

This Preparation contains the Phosphates in a soluble form, with an excess of Phosphoric Acid. It is an eligible and agreeable method of administering the Phosphates. It is pleasant to the taste, does not derange the digestive organs and assimilates well, furnishing a nutritive tonic, well adapted to enfeebled constitutions. Each teaspoonful contains 1 grain of Phosphate of Iron, 2½ grains of Phophate of Lime, and a smaller phosphates of Soda and Potash.

WINE OF IRON AND BEEF. (Warner & Co.)

Liebig's Ext. Citrate of Iron and Malaga Wine. Tonic, Nutritive, Stimulant.

This Preparation possesses in the highest degree the valuable properties of its ingredients so combined as to form a pleasant remedy for Debility, Exhaustion, Impoverishment of the Blood, Convalescence, etc. Dose —One tablespoonful, containing one grain of Citrate Iron and the virtues of one ounce of Beef.

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THE CANADA LANCET,

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Original Communications.

PASTEUR ON THE ATTENUATION OF VIRUSES.*

TRANSLATED BY C. W. COVERNTON, M.D., M.R.C.S., TORONTO.

(Continued from page 325.)

I have now to deal with a new virus met for the first time under the following conditions: The year 1881 was remarkable at Paris for a very serious epizootic, that kind of affection known under the name of typhoid fever of horses; an omnibus company of Paris lost more than 1500 horses. We have commenced some researches on this disease which—unfortunately for our experiments—did not reappear in 1882. In inoculating rabbits with the frothy matter escaping from the nostrils at the moment of the death of the horse suffering from the affection in question, the rabbits died and their blood presented a new microbe in the form of the figure 8 with a lengthened intersection. This microbe communicates to the rabbits a veritable typhoid fever which kills them in less than twenty-four hours; the lungs are generally hepatised, with pleurisy, Peyer's patches are tumefied, sometimes of a raspberry red and hemorrhagic. The fold of the ileo-colic valve is always very much swollen and more often hemorrhagic than those of the intestine; the kidneys sometimes hemorrhagic; the liver often a little pale. The animal falls rapidly into a pronounced comatose state; after four hours inoculation, the fever is evidenced by more than one degree C. of elevation of temperature, even when death happens only after thirty-six hours; peritonitis is also a frequent concomitant. The attenuation of this microbe takes place when cultures in broth are exposed to the contact of the air; but it is difficult to seize, because the period during which it displays itself is followed almost immediately by the death of the microbe. In other words if a culture of this microbe is made and abandoned to the contact of the air, in trying each day its virulence, this is shown to be always mortal for the rabbits until all of a sudden the culture is found dead, that is to say no longer capable of being cultivated and without any action upon animals. In cultures in contact with air the culture passes from virulence to death in from fifteen to thirty days if it is left at a temperature of 35° Cent. On the contrary developed at 35° and left at the temperature of the ambient air, the cultures were preserved six or eight months. *In vacuo* the cultures are preserved virulent for at least a year, whether at the stove or at ordinary temperature. For success in seizing and fixing attenuation, we have had recourse to the following artifice which will call to mind that which we have recently described for demonstrating that it is truly to the oxygen of the air that is due the attenuation of the microbe of charbon at 43° Cent. A culture was made by aid of the virulent blood of a dead rabbit, and it was left to itself; each day a new flask of broth was seeded so as to have as many cultures as days of rest of the first mother culture. A time arrives when the seeding of this mother culture shows itself to be sterile; arrived at this point we take as mother culture of a new series of daily cultures, the culture made on the eve of the death of the first mother culture. The second mother culture dies in its turn: then we remake a new series of daily cultures by taking for the mother culture the fecund culture of the eve of the death of the second mother culture, and so on progressively. By this method we finish by procuring cultures which do not occasion the death of the rabbits, but are limited to the occasioning of curable abscesses, the development of which is sometimes enormous. At this time it is easy to pronounce that we now have to do with vaccinal viruses, that is to say, that the convalescent rabbits will now bear without injury the most virulent cultures of the microscopic organism of the typhoid fever of rabbits. The vaccinal cultures made at short intervals preserve their vaccinal virulence. The proof of the influence of the oxygen of the air in the attenuation is again furnished by the cultures;

*Delivered before the Ontario Medical Association at Toronto, June, 1883.

in vacuo, or protected from the influence of the air, they preserve their virulence and only die after a very long time, manifesting that virulence up to the death of the culture. To resume, it cannot be doubted that we possess a general method of attenuation, the application of which should only be modified according to the exigencies of the physiological peculiarities of different microbes. The general principles have been discovered, and we cannot withhold our belief that in the future this order of research will be full of hope; but however splendid the demonstrated truth may be, it does not always enjoy the privilege of being readily accepted. I have met in France and elsewhere obstinate opponents. Allow me to choose among them one whose personal merit has the greatest right to our attention; I mean Dr. Koch, of Berlin. There appeared at Berlin a year ago, the paper entitled "Collection of the Works of the German Sanitary Office." My labors are there attacked with a strange vehemence by Dr. Koch and his pupils. Truly surprising things are to be found in certain papers in this collection; it is in divers places insinuated that M. Pasteur does not know how to cultivate microbes up to a state of purity, that he cannot know whether his works are exempt from causes of error, because he is ignorant of the manner of recognising micro-organisms, that he has deluded a school of medicine to publish "incredible facts" as to cultures. It is there stated that the method employed by me for inoculation consists in injecting under the skin one or several syringes full of liquid, that I have never had on hand pure septicæmia without a complication of other diseases, that I have incorrectly applied the word septicæmia, that he (M. Koch) approaches much nearer to the truth in calling it malignant œdema, that M. Pasteur does not know how to recognize the septic vibrio though he may have discovered it. In the experiments of charbon communicated to fowls by the sole fact of lowering their temperature after inoculation, Dr. Koch, who finds nothing remarkable in this experiment, asks whether the fowls under the lower temperature who became inoculated with charbon, were not capable of taking it naturally, because, said he, a German author in inoculating fowls with charbon obtained eleven times in thirty-one positive results. That is an assertion that Dr. Koch would have done well to have refrained from making before establishing objections against the truth of very exact observations. The pupils of Dr. Koch have outdone their master; we find, for example, in their papers, that the only certain guarantee of the purity of the cultures is incessant control by medium of a microscope, which is impossible with Pasteur's cultures. Another stronger passage concerning the attenuation of viruses. It is M. Lœffler who speaks: "When in the experiments of Gaffky, the cultures have presented an uncertain action, an attenuation of the virus, there existed always an adulteration by very analogous organs of rapid growth, but not pathogenic." M. Lœffler is, nevertheless, more indulgent than his master and than his colleague, M. Gaffky; he does me the honour of saying that he is disposed to believe that my cultures were pure, but do we know? In the mind of the writer that which might have led me into error is that the adulteration of my cultures commenced with the vaccination. "The air of a laboratory," said he, "devoted for long years to investigations for bacteria, is full of an enormous mass of germs; is it not possible that a germ may have become placed on the vaccinating needle, the more probably so that he had occasion frequently to try the virulence of the cultures? It is this which would have made me admit the attenuation of the virus of fowl cholera." This is not all, when I think I have in my hands fowls vaccinated, the writer imagines that I could have taken for such fowls, fowls which were simply non-receptive of fowl cholera. Finally, the writer does not believe that I have operated, as I have stated, on 80 fowls in some of my experiments, because that would have involved an expenditure of too much money. It is true, that to establish the great fact of the attenuation of virus, the State has permitted me to have been regardless of cost. Perhaps in this assembly some persons may entertain the opinions of my opponents; I beg to invite them now to state their objections, I shall be happy to enlighten them.

M. Koch, of Berlin, ascended the platform, and in German made the following brief remarks, which were thus immediately rendered into French by M. Hultenhoff: "Having learnt by the programme of the Congress that M. Pasteur would speak today on the attenuation of virus, I have repaired to the sitting in the hope of learning some new facts on a subject which interests me in a high degree.

I must confess that I have been disappointed in this expectation, and that there is not in the communication of M. Pasteur anything that is new. I do not consider it necessary to reply here to the attacks of M. Pasteur for two reasons—first, because the points in dispute enter only indirectly into the domain of hygiene properly so called; and, secondly, not being sufficiently versed in the French language, and M. Pasteur not sufficiently in the German, we could not here engage in a profitable discussion. I reserve my reply to M. Pasteur for the columns of the medical journals."

M. Pasteur replied to M. Koch that if he had been able to follow the lecture he had just delivered, he must have been convinced that new facts have to-day been demonstrated; that he would tranquilly await the reply of M. Koch, and reserve the right also of replying if there were need for so doing.

M. Sormani, of Pavia, said that the discoveries of M. Pasteur had filled the scientific world with his renown, and had opened new fields for study and observation. Italy had welcomed this discovery as a great blessing for human and veterinary hygiene, for agriculture, for national wealth, equally as for science.

A member of the commission which superintended Charbon vaccination at Milan, and president of the commission that performed them at Pavia, said, "I will relate briefly the conclusions arrived at on the experiments accomplished in Italy. As soon as the commencement of the current year, the Minister of Agriculture sent Professor Perroncito to Paris to learn the method of charbon vaccinations after the method of M. Pasteur. M. Perroncito immediately commenced the study; the veterinary schools of Milan, of Turin, of Bologna, of Pisa did the same. At Pavia we undertook the charbon vaccinations; at first all the experiments were not attended with favourable results—in some cases the animals died as a consequence of the vaccination; in some others, animals vaccinated and re-vaccinated died during the trials of control. We must seek the reasons for these failures; the first fault is that of having employed the vaccine of the ox for vaccinating small animals, as rabbits, guinea-pigs, white rats, and sheep, which are the most sensible reactives of the charbon virus. That which is vaccine for a resisting animal, as for example the horse, is poison for an animal of feebler resistance and kills it. It is not only the quantity that has to be precisely determined, it is especially the quality, although the quantity also may be an element that must not be neglected. A second source of error has been the proof of control; we have seen revaccinated animals die, but if we carefully investigate the history of these animals we shall find that as a rule they had not shown febrilê manifestations after these vaccinations; they might really be considered as non-vaccinated animals, because they had not experienced the ordinary effects of vaccination. At Bologna, following the relation of Professor Gotti, of six sheep vaccinated four died; but if we investigate the table of temperatures which were registered after the two vaccinations, we shall find that only the two sheep whose temperature exceeded 41° C. survived; all the others, whose temperature after vaccination did not reach 41°, died. From this fact we may conclude, that we ought always to take the temperature of animals after each vaccination, and especially after the second, and that it is necessary to revaccinate a third time all the animals who have not shown a manifest access of fever; this is one of the last precepts given by M. Pasteur. In some cases there have been obtained, as at the Veterinary School of Turin, fatal results to almost all the animals in the experience of the virus of control. We may consider that, in these cases, with the charbon virus septic virus has been inoculated, and as the latter is stronger than the former, in the struggle it remains conqueror. Animals, although vaccinated with the power of resistance of charbon, may sometimes fall victims to the bacteria of septicæmia. None of these accidents have happened in the experiments performed by Professor Perroncito, at Turin, at the city of Rizzetti, and at Strambino, nor in the experiments that we made at Pavia. We operated always with the thermometer and the microscope in hand; we have, nevertheless, stumbled over another source of difficulty—it was the third possible case. The vaccinated animals did not die, neither during vaccination, nor after proofs of control, nor even after the trials of control of animals pure from vaccination and from charbon. When we experimented on ovine animals, the experiment succeeded easily and well; but when we experimented on bovine animals, the result of the con-

trol was almost always the recovery of the victims. It is true that the designated victims have always a strong fever and experience a local reaction and a phlegmonous tumor; but they do not die, at least this is so in the generality of cases. This same result has been obtained by M. Pasteur, who in his experiences of control has verified the resistance of bovine animals to charbon artificially inoculated, that charbon artificially inoculated is not so serious for oxen as spontaneous charbon. This may be dependent on two causes. The organ primarily affected during natural charbon is always the intestine, the stomach, or some internal organ indispensable to life, whilst the inoculation of artificial virus is made in the subcutaneous cellular tissue. Animals in a state of nature infect themselves with charbon on account of their proclivity to this disease, a disposition which for other animals of the same species is feeble or nil. But in experimenting we cannot always choose the animals the most predisposed, but have to take them on the chance. Animals that have recovered after this malady, local or general, have become refractory to charbon; this is a manifest proof that the anterior malady was really charbon. I can then announce that the experiments on the vaccination of charbon have had in Italy the success of a true scientific control, accomplished by the most rigorous methods, without blind enthusiasm, and without preconceived and false ideas, but with most satisfactory results.

M. Pasteur desired to make a few remarks on the communication of Professor Sormani. In the first place he was not aware that the vaccine sent by him had been used on rabbits and guinea-pigs, who are much too sensible to reactives; it is necessary always to proportion the st.ength of the vaccine virus to the animal to be experimented on, and the vaccine sent to Italy was only fit for the ovine and bovine species. Nothing easier than to procure it suitable for rabbits and guinea-pigs. As a consequence the experiments in vaccinating at Turin had succeeded badly. This want of success may very easily be explained, for it was the blood of a sheep having succumbed to charbon more than twenty-four hours that the inoculation had been made from. In this case the septic vibrio had been inoculated at the same time with the bacteride, and as the first kills more rapidly than the second, it is evident that the animals succumbed to septicæmia. The same thing may happen to human vaccination when it is made without care, the different viruses inoculated each evolving its particular results. It is necessary to take the greatest precautions for charbon vaccinations, especially when we are operating on a species as sensitive as the equine. M. Pasteur has seen in a series of vaccinations made during one day on sheep, the last on a horse, this terminated by septic death of the animal on account of the remaining virus in a tube which had been uncorked all day and used all day. To resume, great precautions in the technique of vaccination are necessary, and the strength of the virus must be proportioned to the species on which experiments are made. In all cases the statistical figures are to-day very encouraging for the method, since among the vaccinated animals there have died only one sheep in 300, and one ox or animal of the bovine race in 200.

THE BACILLUS TUBERCULOSIS IN ITS PRACTICAL BEARING ON THE DIAGNOSIS, PROGNOSIS, AND TREATMENT OF THE DISEASE.*

BY J. E. GRAHAM, M.D.

Ever since the discoveries published by Dr. Koch more than a year ago, pathologists have been busily engaged, first, in testing the genuineness of the discovery, and secondly, in placing a proper estimate on the presence of these bacteria in the diagnosis, prognosis, and treatment of consumption.

With regard to the first point, the genuineness of the discovery, it must be admitted that so far the great majority of the more distinguished pathologists have, by their investigations, strengthened the position taken by Koch, viz.: that the bacilli described by him are peculiar to tuberculosis, and that they are immediately connected with the production of the disease. The few who have arrayed themselves in the opposition are, as he himself asserts, with two or three exceptions, men who have paid more attention to clinical medicine than pathology, and are for that reason unable to conduct these investigations with the delicacy and skill which are absolutely necessary in the solution of a

* Read before the Ontario Medical Association.

question of this nature. When it is considered that Koch continued his investigations for two years after the discovery was made, before he published it, having at his command every facility for the proper carrying on of his work, and having at the same time a knowledge of bacteriology, perhaps superior to any existing scientist, one is surprised that men who have worked perhaps with interruptions for a few months, with very poor advantages, at a subject about which their previous knowledge was not very extensive, should be so ready to oppose themselves to the great discoverer. It may be safely said that the discovery has held its ground against any assaults which have been up to the present made upon it.

It is however with the practical aspect of the question that we, as physicians, are principally interested.

(1) Can phthisis be diagnosed by means of the presence of bacilli in the sputa? (2) Has the number of bacilli any relation to the prognosis? (3) Has the discovery aided us to any extent in the prevention and treatment of this formidable disease?

In answer to the first question, it might be said that a number of investigations have been made, and the result has been in the affirmative, that we can diagnose the presence of this disease, even in cases which would remain doubtful with our ordinary means of physical examination. You all know how difficult it is sometimes to diagnose phthisis from chronic bronchitic cirrhosis of the lungs. In cases of this kind, the discovery of the bacillus would be a sure evidence of phthisis. The most important investigations which have been made so far, are as follows:

Balmer and Fræntzel (*Berliner Klinisch Wochenschrift*, 1882, No. 45) examined the sputa in 120 cases of phthisis and in that of all of them found bacilli. In cases of chronic bronchitis they found none. They found the organisms most abundant in acute cases, and in those rapidly progressing. Prof. D'Espine, of Geneva, found the bacilli in the expectoration of twenty cases, in whom the diagnosis of phthisis had previously been made. They were absent in five cases of chronic bronchitis, with emphysema. As the result of his experiments, Prof. D'Espine does not think that the number of bacilli is in proportion to the severity of the disease. He, however, is of opinion that they are always present in phthisis, and that several examinations should be made on different days, before the absence of bacilli should be considered certain. Dr. Kowalski, in a paper read before the Medical Society of Vienna, stated that he has since May 1st, 1882, examined the sputa from 600 patients, and that he had not in a single case found the bacilli where tuberculosis was not present. He considers the presence of bacilli to be a sure indication of phthisis, and that the number is in direct proportion to the severity of the disease. Dr. Pfeifer, of Wiesbaden, in the *Berliner Klinische Wochenschrift*, confirms the opinion of previous observers, viz.: that the bacillus is always present at some time or other in the sputa of the tuberculosis, and that they vary in number and size in direct proportion to the severity of the disease. In England, pathologists and physicians in practice have interested themselves very much on this subject. Dr. West, at a meeting of the Pathological Society of London, gave the following conclusions reached after the investigation of over fifty cases:

(1) That bacilli were found in the sputa of all cases of phthisis in which there was excavation, and that they varied in number with the rate of destruction. (2) That the arrangement in groups and masses indicated greater destruction than if the bacilli were isolated, unless the isolated bacilli were in great numbers. (3) That he had detected no variation in size of the bacilli in different cases. (4) That the bacilli being in his opinion evidence of destruction of the lung, they might, in some doubtful cases, be of diagnostic value, but that in most cases they were merely an additional confirmation of what was already clear from physical signs, and the same was true as regarded prognosis.

Dr. C. Theodore Williams read a paper at a meeting of the London Medical Society, February 12th, 1883. He, with his assistants, examined the sputa from 130 different cases. The results of his experiments agree with those already given with regard to the specific character of the bacilli. The fact that none were found in cases of bronchitis, in which the expectoration was extremely fœtid and abundant, separates the tubercle bacilli from the numerous organisms connected with fermentation and decomposition. As to the bearing of these on the prognosis of the disease, he does not

think there is any definite ratio between the activity of the disease and the number of bacilli, though as a rule they are few in cases where the disease is quiescent. Dr. Whipham gave the results of the examination of twenty cases. They corresponded with those obtained by Balmer and Frœntzel. Dr. G. A. Heron gave the results of the examination of the sputa of sixty-two cases. They were similar to those already given. The general opinion of members of the London Medical Society appeared to be that bacilli were always found in cases of tuberculosis and in that disease alone. Also, that they varied in number in proportion to the severity of the disease.

In America, pathologists have interested themselves more in the question of the etiology of the disease. No series of investigations have so far been made to show the bearing which these bodies have on the diagnosis and prognosis. In order that I might satisfy myself on these two points, I examined the sputa of forty consecutive cases. The method of staining employed was Ehrlich's. The specimens were allowed to remain in the staining fluid about three-quarters of an hour at 100° F., and afterwards mounted in Canada balsam. In the majority of the cases the sputa was brought from the hospital by Mr. Patterson, and examined before I had seen the case. The experiments were conducted in this way so as to leave the mind fully unbiased. Of the forty cases, in about twenty the staining was done by myself, in seventeen it was done by Mr. Patterson, and in three by Mr. Foster. I examined all the slides myself, and also examined most of the patients. I will now give you a brief history of these cases, together with the results.

Case 1.—Mr. S., my own patient. Physical signs show consolidation of a portion of the left lower and of the right upper lobes of the lungs. The disease is of four or five months' standing, and advancing rapidly. On the first examination the bacilli were found in limited numbers, on the second they were found in large numbers.

Case 2.—Miss G., my own patient. Case of rapid tuberculosis of three or four months' standing. Other parts of the body affected as well as the lungs. Few bacilli were found on first examination, but the second proved them to be present in large numbers. Between the times of these two examinations signs of breaking down of the lungs commenced.

Case 3.—Sputa sent by Dr. Cameron; case of advanced phthisis; patient has since died; bacilli found in very large numbers.

Case 4.—Sputa also sent by Dr. Cameron, with the following history: Patient's father, mother, two brothers and two sisters died of phthisis. One brother living is subject to slight cough. In his own case the disease is of three years' standing; slight hemorrhage at different times; pulse, 124; temperature, 101; bacilli found in large numbers.

Case 5.—J. F., ward 13, T. G. H. No history accompanies this case; said to be one of phthisis; bacilli were not found.

Case 6.—B., ward 14, T. G. H. Has had cough more or less for three years, and has lost flesh; expansion diminished on right side; evidences of consolidation; bacilli were not shown satisfactorily.

Case 7.—C., phthisis. No history; bacilli found on third examination.

Case 8.—J. T., T. G. H. Patient has cough; purulent sputa; evidence of consolidation; night sweats, loss of flesh, etc.; bacilli found in limited numbers.

Case 9.—W., ward 5, T. G. H. Fifteen months standing; tuberculosis in both lungs, with pneumothorax; patient has since died; bacilli found on third examination in limited numbers.

Case 10.—Miss B., T. G. H. Patient died the day after the sputa was obtained; disease was undoubtedly phthisis; made two examinations and found no bacilli. It is probable that in this case the sputa came from the throat and not from the lungs, as the patient was very weak.

Case 11.—D., T. G. H. Has had cough for the last five years, and has expectorated blood occasionally during the last two years. The whole of the right lung is involved, and part of the left; bacilli found in large numbers on third examination.

Case 12.—J. B., T. G. H. Had an attack of pleurisy five years ago; has not been well since; shortness of breathing; not much expectoration, with greatly diminished expansion on the right side; dulness on percussion on the same side, with diminished breathing sounds; puerile breathing on left side; two examinations made; no bacilli in either case.

Case 13.—McG., Dispensary patient. Sputa sent by Mr. Foster; phthisis; bacilli were found in large numbers.

Case 14.—G., Dr. Stewart's case. Patient caught

cold seven years ago, and has been ill ever since; night sweats; left lung involved; signs of cavity in the left infraclavicular region; bacilli not numerous, but very distinct.

Case 15.—T. W., ward W., T. G. H. Cough for six months; left lung involved, with signs of breaking down; bacilli found in very large numbers.

Case 16.—C., T. G. H. Upper part of left lung is diseased; not much breaking down; disease pursuing a chronic course; bacilli found in moderately large numbers.

Case 17.—J. R., advanced phthisis. Patient has since died; bacilli found in large numbers.

Case 18.—Sputa sent by Dr. Burns. A case of advanced phthisis; bacilli found in very large numbers.

Case 19.—F., T. G. H. Phthisis of six months' duration; both lungs are affected; patient died the day after the sputa was obtained; bacilli not very numerous.

Case 20.—Mrs. L., my own patient. Chronic bronchitis, with dilated bronchi; no bacilli were found, although two examinations were made.

Case 21.—Mrs. R., my own patient. She has suffered for years with chronic sub-cutaneous abcesses; suspect tuberculous deposit in the apex of the left lung; no bacilli were found, although three examinations were made.

Case 22.—C., my own patient. Suffering from slowly advancing phthisis; the bacilli were not numerous, but distinct.

Case 23.—B., T. G. H. A case of chronic bronchitis, with dilated bronchi; no bacilli; three different examinations were made.

Case 24.—M. T., a patient suffering from advancing phthisis; lungs breaking down; mother and brother died of the same disease; bacilli found in moderately large numbers.

Case 25.—M. S., my own patient, suffering from acute bronchitis, since recovered; no bacilli.

Case 26.—Mrs. D., also under my care. She has had cough for some years. This winter she has shown signs of phthisis. Bacilli, not numerous, and small but distinct. In this case the finding of bacilli was a material aid in diagnosis.

Case 27.—C., T. G. H. Left apex involved, other parts of the lungs healthy; bacilli not numerous, but distinct.

Case 28.—T. G. H. Patient suffering from emphysema and subsequent development of phthisis; bacilli found in moderately large numbers.

Case 29.—Large part of left lung involved; disease of a year's standing; bacilli not numerous, but distinct.

Case 30.—This and the two following cases were given me by Mr. Foster, who prepared the slides. Dr. S. since died of phthisis; rapid disease; bacilli numerous.

Case 31.—Patient from House of Providence. Case of phthisis; bacilli numerous.

Case 32.—Also from House of Providence. Diagnosis doubtful; bacilli not distinct, if seen at all.

Case 33.—G. came to me for consultation; rapid tuberculosis, with few physical signs in the lungs; bacilli not numerous but distinct. In this case the discovery of bacteria was of great assistance in the diagnosis.

Case 34.—B., my own patient. An undoubted case of phthisis of two years' standing; bacilli not numerous but distinct.

Case 35.—S., T. G. H. Patient suffering from phthisis; bacilli not numerous.

Case 36.—C., T. G. H. Has had cough for the past two or three years; has lately lost flesh. Examination of the chest revealed the presence of bronchitis and emphysema. No bacilli.

Case 37.—N., T. G. H. Decided phthisis of ten months' standing; bacilli numerous.

Case 38.—T., T. G. H. Case of phthisis. No history; bacilli not numerous, but distinct.

Case 39.—C. B. Phthisis; bacilli numerous.

Case 40.—C. G., T. G. H. Phthisis of ten years' standing, which is now in an advanced stage; bacilli numerous. On examining these reports it will be found that thirty-three were decided cases of phthisis, three were of doubtful diagnosis, and four were cases of bronchitis, acute and chronic. In the thirty-three cases positively diagnosed as phthisis, in thirty-one bacilli were unmistakeably found; in one they were not distinctly shown, and in one (No. 10) they were not found at all, probably for the reason already given, that the patient was too weak to expectorate from the lungs. In the four cases of bronchitis no bacilli were found, and they were also absent in the three cases in which the diagnosis was doubtful. The undecided character of the diagnosis in two or three of the cases was owing to their having left the hospital.

In the great majority of cases the bacilli were found on the first examination, but in many, two, three, and even four trials were made before they were found. These investigations are of more value, as they were made by one in general practice, without any of the great facilities which belong to a pathological laboratory. They thus demonstrate the possibility of practising physicians using this as an additional means of diagnosis. Within the last two or three months Mr. Heneage Gibbs has discovered a much more rapid and simple means of staining, which will tend to its further use by the profession.

The following conclusions might reasonably be arrived at from these experiments :

(1) That bacilli are found in the sputa of almost, if not all, cases of phthisis. It is doubtful if there is any case of active disease in which bacilli will not be found, provided the sputa comes from the lungs, and five or six different examinations are made. (2) They are found on the first examination in three-fourths of the cases. (3) The presence of the bacilli is a positive evidence of the disease. (4) There are doubtful cases in which the examination of the sputa for the bacilli will be of decided value in arriving at a correct diagnosis. In three or four of the cases given the presence or absence of bacilli was to me of great assistance. (5) As to prognosis, the number of bacilli is in proportion to the amount and rapidity of the process of destruction. There are cases in which there is a rapid formation of miliary tubercle, in which the sputa will show a small number of bacilli. As soon, however, as in such cases breaking down commences, the bacilli will be found in very great abundance. This fact was shown in No. 2. (6) It might be said, as a general rule, that in the more chronic cases the bacilli are fewer in number and, I think, smaller. I must here express my thanks to Mr. Patterson for his valuable assistance in staining so many specimens.

Has this discovery had any influence on our treatment of the disease ? Yes, in two particulars, the prevention and the cure. A most ridiculous argument has been used against the contagion theory of phthisis, that, if it is proved to be correct, consumptive patients will not receive that care and attention from relatives as at present. There are very many ways by which the attendants on cases of phthisis could guard themselves from the disease without relaxing their efforts in administering all the comfort possible to the patient. Rooms could be better ventilated, sputa ought to be disinfected and frequently removed. The attendants, more especially if they also are predisposed to the disease, ought to take sufficient outdoor exercise and try in every way to keep in a good state of health.

The results of experiments made on the lower animals with regard to this subject of contagion are in my opinion as conclusive as it is possible for them to be. Altogether apart from these, however, there is sufficient clinical evidence to support this theory. In my short experience as a practising physician, I have seen enough to convince me of the strong probability of contagion in this disease. I have for instance observed the following case. A young man of scrofulous family, a young woman of a strong healthy family and one noted for the longevity of its members. Two or three years after marriage her husband became phthisical, and died after six months illness. His wife, who attended him faithfully during his illness, in a few months afterwards developed the same disease, which pursued a rapid course and terminated fatally. She was the only one of her family who suffered from phthisis. My friend and former teacher, Dr. Richardson, of this city, who for the last thirty years has been a strong believer in the contagiousness of consumption, arrived at his conclusions entirely from clinical evidence. The following remarkable case came under his observation : A young lady, the youngest of a large family of very healthy children, became very much attached to a friend who was suffering from phthisis. For two months she was her sick friend's constant companion and slept in the same room. Shortly after the death of the latter, she too exhibited signs of tubercular disease, and died within a year. The tuberculosis developed itself in her case very gradually, almost imperceptibly, showing that it was not the result of catarrhal pneumonia. Now this young lady was the only member of that family who was known to have had phthisis, in fact a remarkably healthy record had been shown for generations back. She was as strong and healthy as the others previous to her stay with this consumptive patient. Is it not extremely probable that if this young lady had not come in close contact with the disease she would never have devel-

oped it? Would it not be proper, with our present knowledge, to forbid such close intimacy which to all appearance was the cause of disease and death.

A mother suffers for some months and dies of phthisis. Two grown-up daughters wait on her. A short time afterwards the elder becomes consumptive and dies before the year is out; she is followed by her younger sister. A brother and sister who at that time were children under ten years of age, were all that remained with the father. They, on account of their age and lively dispositions, were very little with their mother or sisters. One would suppose that the younger who was born a few years before his mother's death would be especially delicate. It was generally predicted that these two would follow their sisters when they arrived at the same age. This was not the case. They are now long past twenty and in very good health. They are liable of course to contract the disease if they should come in contact with it. Take another case, a family living in western Ontario, five of whom died of phthisis one after another. A brother who left home shortly after the first case appeared, escapes the disease and is now healthy and strong. These are but a few of the many instances which I could give to support the probability of the contagion of phthisis. You may ask how it is that in such a place as the Brompton Hospital, nurses and physicians should have lived so long in the building and not have taken the disease. In order to understand this, one requires to study the peculiarity of bacteria in the etiology of disease. Some forms are exceedingly delicate and will only grow between certain degrees of temperature and on a particular kind of soil. Take for instance the Microsporon furfur, the parasite producing that disease of the skin Pityriasis Versicolor. According to Dr. Thinn's investigations, this will grow only in a certain range of temperature, and he experimented for weeks before he could find a soil in which he could successfully cultivate it. Such is also the case with the bacteria of tuberculosis. There is no doubt but that certain individuals possess a predisposition to the disease, and there is no doubt also but that close damp houses afford an atmosphere in which these germs luxuriate.

It is difficult to understand why very distinguished London physicians should be so opposed to the contagion theory. There are two reasons for this. They are as a class very conservative and perhaps slow to accept new views or theories. Consulting physicians have not the same opportunity to watch the course of the disease in families as the general practitioner. The instances of contagion in my opinion are as plain as those of typhoid fever, leprosy, or even syphilis. How many are exposed to the contagion of typhoid and do not contract the disease. It is probable that the germs of this malady are at all times floating in the atmosphere near the ventilators of sewers, and yet how comparatively few take the disease. The history of leprosy is a remarkable example of how the whole profession may be misled by the opinions of a few distinguished men. This disease was considered contagious beyond all doubt by the ancients and those of the middle ages. In modern times Hebra and a few others of note from necessarily limited observation gave the opinion that the ancients were wrong, that the disease was not contagious; but at the present time, as the result of experience on this continent and the islands of the Pacific, the profession is rapidly returning to the old view, viz.: that it is contagious, and that cases should be isolated. Thus it is seen that the arguments deduced from experience in consumption hospitals are not so strong nor as convincing as one would at first suppose. Another feature in the etiology of phthisis and one difficult of explanation is shown in the following case: A woman of tubercular parentage marries a man with similar antecedents. Nine children are born to them, every one of whom died of tubercular disease, some in the earlier years of tubercular meningitis and tabes mesenterica, while others at eighteen or twenty years of age died of pulmonary phthisis. In such an example it is difficult to understand how the children could become tuberculous at so early an age from outside influence. It is possible that they might have been infected through their mother's milk, or from the milk of diseased cattle. Dr. Watson Cheyne, in his experiments as given in the April number of the London *Practitioner*, found that when inoculations were made on pregnant animals the tubercular disease was not conveyed to the fœtus in utero. This is a point which needs further investigation. These are certainly cases in which it would appear that the germs might have been reproduced in this way.

As a result of this discovery it may be asserted

that physicians are now more careful in the disinfection of sputa, ventilation of sick rooms, and in warning healthy members of a family from intimate contact with the disease. If on the outbreak of the disease the one affected were immediately sent to a warm equable climate, we would not have the sad record of a whole family falling victims to this dreadful scourge.

The inhalation treatment is the direct outcome of the germ theory of phthisis. A paper was read at the last meeting of the Association by Dr. Philp, in which the records of successful cases were given. In England there is a difference of opinion on this point. The experience of some has been negative, while others have had very good results. In my own experience I have found respirators of benefit in allaying cough, but have seen no positive results in the cure of the disease.

A CASE OF ACUTE TRAUMATIC TETANUS; EXHIBITING THE EFFECTS OF COMPLETE INSULATION OF THE WOUND BY NEUROTOMY.*

BY WM. BURT, M.D., PARIS, ONT.

The young woman I bring before you to-day is one of two cases which are reported in the New York *Medical Journal* for June, 1876, as having suffered from acute traumatic tetanus. It is now seven years since the report was made, and nearly eight years since she suffered from that disease, which may be ranked with the most formidable and distressing that come under the notice of the surgeon. My apology for presenting her to you at this meeting, although a report has already been made, is that a presentation of the patient, which has not heretofore been done at any association, is often of more benefit than simply a rehearsal of the history or a drawing on paper, no matter how skilful the artist. Another reason is that I have a second edition of the article referred to to offer you I shall not detain you with any lengthy history, but allow you to read and observe for yourselves. The method of operating which I wish to speak of consists in completely insulating the tetanic wound, when occurring in the extremities, by neurotomy, performed on the main nerve or nerves leading to the wound, and by means of a transverse incision dividing the superficial sensory nerves that also supply it. This will completely insulate the wound, as I claim to have done in this case, and which I claim may be done in many cases that come under the notice of the surgeon. The operation I performed on this right arm was the insulation of a wound on the radial side of the forearm by dividing the musculo-spiral nerve at the bend of the elbow, and the sensory cutaneous nerves by a transverse incision lower down. I made the remark in my first report that I considered amputation uncalled for, unless for other reasons, save in the case of the fingers and toes. To this I now take exception and would have erased that part which refers to the phalanx, as I believe better results will follow complete insulation of the parts higher up by neurotomy than by amputation. I wish also to point out to you that whereas I operated on the third day of the disease, I would now operate immediately on recognizing the case to be one of acute traumatic tetanus.

One word in reference to nerve-stretching, which has been introduced in recent years as a treatment for this disease. I do not know that this operation has received a more classical name; it may be that it is still upon its trial and not ready for a classical baptism. However, as far as the history of nerve-stretching in traumatic tetanus goes, it does not appear satisfactory to me. It does not appear that you can completely insulate a wound in the extremities by this method. Any surgeon can perform the operation of complete insulation by neurotomy, but I believe many surgeons, after performing the operation of nerve stretching, would not feel sure that the nerve was rightly stretched, if we are justified as yet in using the word rightly at all here. It is still further shrouded in such terms as "moderate traction," "a considerable degree of force is to be exerted," and "in tetanus it may do good by diminishing the excitability of the different nerves." My reason for presenting you but one case operated on is that I know of no other operated on in a similar way, and it may never be my lot to have another. Many surgeons are often for a long time without a case of acute traumatic tetanus, and then again two or three may present themselves close together. On account of the fatality of the disease, anything that would promise any hope of relief I claim we would be justified in resorting to. In the issue of April 21st of the *London Lancet*, Mr. Geo. Lawson, of

* Read before the Ontario Medical Association.

the Middlesex Hospital, is responsible for the following words in a description of a case of acute traumatic tetanus :—"The following case is an example of acute traumatic tetanus, a disease from which a patient very rarely if ever recovers." And the same opinion I heard given by one of our celebrated American surgeons, when standing by the bedside of a youth suffering from the disease. The latter opinion was given thirteen years ago, the former but to-day, as it were, so that during the last decade the prognosis of acute traumatic tetanus has changed but little, if any. This, Mr. President, is my apology for presenting you this case to-day, a case in which the operation of complete insulation was followed with immediate and satisfactory results. The spasms prior to the operation came on every few minutes. After the operation they were much less in severity, and ranged from twelve to five a day during the following week. Within three months after the operation, she returned to her work at the factory, having nearly recovered full use of her arm. The operation was performed under chloroform and with the aid of Esmarch's bandage, both of which are helps, I believe, in relieving the tetanic spasms, but helps not to be relied on to the exclusion of complete insulation by neurotomy performed at the earliest opportunity.

Correspondence.

SPLINT FOR THE FOREARM.

To the Editor of the Canada Lancet.

SIR,—In regard to the discussion at the last meeting of the Ontario Medical Association, held in Toronto, regarding a splint for the forearm, some of the speakers maintained that it was impossible to preserve the normal width of the interosseous space by any splint or appliance. I understood that Dr. McNaughton claims (and I say justly too,) that if we secure the normal curve of the forearm and press closely towards the interosseous space that there can be no deformity in fractures near the lower end of the radius. After giving the splint a fair trial in six consecutive cases of Colles' fracture, I am satisfied that I have had better results than with any splint I formerly used. I consider it maintains the normal curve of the forearm, and fixes the hand in a natural position with a facility and certainty that leaves nothing to be desired in the way of a retentive appliance.

A. H. MCKINNON.

Hillsburg, June 25, 1883.

Reports of Societies.

TORONTO MEDICAL SOCIETY.

Regular meeting May 17th, the president, Dr. Graham, in the chair. The treasurer, Dr. Spencer, presented his report—referred to the Council for audit.

Dr. McPhedran presented the following case. A woman æt. 40; mother of eleven children, twins being born on two occasions; miscarried twice, each of these also twin pregnancies; nursed the first three children. Fourth child was nursed till three months old, when the mother's face and legs began to swell. By the fifth month the face was so swollen as to "bury the ears" and the eyes were almost closed. The swelling was hard and smooth, and the whole face of a purplish color: a hard swelling as large as an English walnut on the right frontal eminence. She was unable to lie down owing to rushing sensations in the head and ears; these sensations were almost constant but greatly aggravated by lying down. Child was weaned at the fifth month; recovery not complete till five months later. At next pregnancy she was confined of twins, tried to nurse them, and the symptoms described above returned immediately. This time she became purple all over. Recovered under former treatment in a month. After each subsequent accouchement the symptoms returned in the third month after confinement, though no effort was made to remove the children; but she had no trouble after the two miscarriages. She was last confined in December, 1882, twins—and the symptoms of her old trouble began three months later. In the face there are many hard nodules, especially in the track of Steno's duct; some of them have disappeared and fresh ones developed. There are many small ones on the inner surfaces of the cheeks and lips. They are not tender nor painful. The face is slightly puffed and darker in color than natural. The knees are swollen, the right especially, presenting the appearance on the outside when flexed of an accumulation of synovia. She is un-

able to kneel. The elbows were slightly swollen and frequently gave a cracking noise when flexed. The nodules are doubtless due to enlargement of the lymphatic structures, owing perhaps to engorgement and apparently caused in some way by lactation. The case was submitted to elicit the opinion of the Society as to the nature of the affection and the course of treatment most advisable to be pursued.

Dr. Cameron considered the enlargements due to dilatation and occlusion of the lymph channels —really a lymphatic thrombosis—instead of the venous thrombosis so often seen after confinement. Dr. Workman suggested electricity as treatment.

Dr. Ferguson read a paper on Puerperal Pyrexia. This may be, 1. Neurosal, the elevation of temperature here being dependent upon altered relationship of nerve governance. 2. Cases due to such causes as constipation, urinary derangement, etc. 3. A deranged relationship between the effete matters entering the circulating fluids and those rejected. 4. Malarial fever in the newly confined. 5. The septic diseases proper, viz.: *(a)* Sapræmia, or the entrance into the system of dead poison; this always has a local origin, and *(b)* Septicæmia, from local or constitutional infection. In this condition the free use of quinine is indicated. As illustrating the value of this drug he mentioned some experiments on dogs. To No. 1 he gave five grains every six hours. After three doses the contents of a hypodermic syringe of offensive lochial discharge was injected. No. 2 received a similar injection, but five grains of quinine had been added to it. No. 3 received the injection without quinine at any time. Nos. 1 and 2 recovered, No. 3 died in forty-one hours. To be effectual in cases of puerperal septicæmia, this drug (quinine) must be given to the amount of $\frac{1}{100}$ of the weight of the patient, twenty grains would be the minimum dose. Discussion on the paper was postponed till next meeting.

Regular meeting May 31st, the president in the chair. Dr. F. Krauss and Dr. M. Wallace were elected members.

Dr. Riddel brought forward two patients, the first showing an admirable example of Eczema Pustulosum; the second with a deep seated tumor of the neck, considered by Dr. Aikins and Dr. Fulton to be cancerous. Operation was not advised. A discussion then took place on Puerperal Pyrexia, the paper read at the previous meeting.

Dr. Oldright considered that the type of this affection lately had been metritic.

Dr. Cameron regretted that the essayist had given no rules for differentiation; because if slight causes, as mental emotion, may send the temperature up 3° or 4°, it is of importance to be able to distinguish such cases. According to his observation, peritonitis seems more common than metritis.

Dr. Ryerson referred to the case of the Duchess of Connaught to emphasize the importance of good sanitary arrangements in accouchements.

Dr. McPhedran considered that general puerperal septicæmia may be complicated by a local diseased condition. A case in point was given. Sepsis may be effectually guarded against by proper precautions.

Dr. Machell showed a placenta and fœtus. Mrs. W. menstruated last time 9th November last. In December and January more or less morning sickness and pricking pains with a feeling of fullness in the breasts. Slight enlargement of abdomen towards end of January. During the latter part of February breasts became softer, and later, flabby; pricking pains ceased and abdomen seemed to get smaller, at the same time feeling cold and uncomfortable. These latter feelings have continued since last named date. Knowing that she had a fleshy mole two years ago, she was under the impression that this might be something similar. A vaginal examination revealed the fact that the uterus was enlarged to about the same size as in pregnancy between third and fourth month. Gave a placebo and asked her to report in a month. An offensive discharge brought her back in three weeks, when he introduced a bougie into the uterus and left it there. Within twelve hours labor came on and a few hours later brought away a dead fœtus with membranes intact and placenta attached. Fœtus was probably between the third and fourth month, of a greyish leaden color. Sac contained a dark colored grumous fluid—nothing abnormal in the appearance of placenta. No cause for the death of fœtus could be ascertained.

Dr. Davidson read the report of the meeting of Council, which was adopted.

Regular meeting June 14th, the president in the chair.

Dr. Cameron showed a boy, æt. 18, with the following history. At 5 years he took scarlet fever, was much reduced, but no otorrhœa or anasarca. At 6 years had St. Vitus' dance, which lasted seven months. At this time he complained of his nose. At 12 years he went to work on a farm, and kept well till three years ago, when he had zona for three weeks—after this whenever he got wet a rash came out on the lips and they would swell. About a year later the throat and nose became sore. Difficulty in swallowing and scabbing in nose, followed by discharge and offensive breath. Kept getting worse until a year ago in April when he went to the Hospital, where he remained a month and improved under carbolic spray and internal medication. Has been subject to otorrhœa from left ear and when in Hospital got erysipelas. Besides the otorrhœa, he presents the somewhat rare condition of adhesion of the soft palate to the pharynx, with perforation. Dr. Cameron considers it a case of congenital syphilis, the adhesions being due to the breaking down of gummata.

Dr. Palmer, referring to the presence of tinnitus remarked on the cause, viz., rarefaction of the air in the naso-pharyngeal space. He prophesied complete deafness, unless a communication were established between the mouth and naso-pharynx.

Dr. Reeve remarked that an opening through the membrana tympani might accomplish the desired end.

Dr. Cameron thought that the perforations in the soft palate allowed sufficient communication—operations for that purpose had usually been unsuccessful. He suspected necrosis of the bones in the nasal cavities; if so, their removal would doubtless improve matters.

Dr. Macdonald presented a heart containing only two cavities, viz., an auricle and a ventricle. History. K., æt. 12, tall for her age, an inmate of the Orphans' Home. Has always been cyanotic. Heart's action labored, with a pre-systolic murmur at the base, best heard to the left of the sternum, at the second intercostal space. Breathing regular. Has had no pain. Death caused by tuberculosis. The condition of the heart was only discovered post mortem. During life the foramen rale was supposed to be potent.

Dr. McPhedran considered the murmur to have been caused by the meeting of the venous and arterial streams in the single cavity.

Dr. Cameron referred to the theory of the formation of the normal heart from a single blood-vessel; he asked Dr. Sheard's views.

Dr. Sheard explained and illustrated Kolliker's idea. The tube is bent upon itself, the septum being formed by coalescence of the walls of the vessel. This septum grows downwards, ultimately completing the separation between the ventricles.

Dr. Ryerson showed a temporal bone which was carious to a large extent on the superior surface of the petrous portion. It was removed from a man æt. 32, having the following history. On the morning of May 24th he was seen by Dr. Sweetman; had great pain in head; dizziness, seemed rather silly. Temperature 101°; anorexia, constipation. History of chronic discharge from right ear. Symptoms varied in severity for a couple of days when he was advised to go to the Hospital. When seen by Dr. Ryerson on the 26th he had great pain in the head. Vomiting of most offensive material; quick, weak pulse, delirium, and loss of appetite. There was a brownish and very offensive discharge from the right ear. He was almost absolutely deaf. Ophthalmologic examination was negatived by the restlessness of patient. There was no swelling or venous enlargement over mastoid process or zygoma. He made a free incision, about 1½ inches in length, down to the bone over the mastoid with a view to local depletion. Bled freely for an hour, after which patient seemed a good deal better; pain much less. Symptoms, however, recurred. He became gradually comatose and died June 7th. Post-mortem next day revealed a large quantity of serous fluid beneath dura mater; pus along base of brain and a collection of pus in the substance of hemisphere, separated some distance from carious bone by comparatively healthy brain substance. Dr. Ryerson, in remarking on the case, pointed out the importance of attending to discharges from the ear. In the vast majority of cases the pus comes from the middle ear. Out of seventy-six cases of abscess of the brain, recorded by Gull and Sutton, twenty-five, or nearly one-third, were caused by ear disease. Field, of London, states that of five hundred cases of perforation of the membrana tympani from *all causes*, one per cent. died of abscess of the

brain. The question might arise in such a case as the above, would perforation of the mastoid have been advisable? Probably not. An instance was mentioned in which the symptoms were held to justify the operation. The relief, although great, was only temporary.

Dr. Reeve pointed out that suppurative otitis may, in many instances, be prevented by free and early local depletion, irrigation with a solution of atropine, and the use of Turkish and other baths.

Dr. Sheard showed a peculiar cyst—which was in connection with both ovaries, these being in a state of suppuration. Was it ovarian or parovarian? He inclined to the opinion that it was ovarian.

The President presented a specimen of Pleuritis and Endocarditis. On cutting into the left pleural sac, at the autopsy, what seemed almost to be a third pleural covering was seen. It was placed between the visceral and costal layers—being very slightly adherent to the latter.

RIDEAU AND BATHURST DISTRICT.

The 10th annual meeting of the above named medical association was held at Arnprior, on Wednesday, the 27th of June. A most important feature of this meeting, which is held soon after the Medical Council has had its annual session, is the address and report of the president, who is the representative for the district. The members are thus brought into intimate relation with the Council, and the course of the president made easy by knowing the views of those he represents. At the close of the address the election of officers was proceeded with, resulting as follows:—

President, Dr. Cranston, Arnprior; Vice-Presidents, Drs. Malloch, Ottawa, and Groves, Carp; Treasurer, Dr. Hill, Ottawa; Secretary, Dr. Small, Ottawa; Council, Drs. Dickson, Pembroke; Armstrong, Arnprior; Rattray, Cobden; Burns, Almonte; Baird, Pakenham; Bell, Bearbrook; Grant, Sweetland and H. P. Wright, Ottawa.

Papers were read by Drs. McFarlane, Almonte, and Groves, Carp. The former gentleman presented a very exhaustive paper on the "Management of the Bowels in Typhoid Fever." He referred to the many conditions that may be present, but the principal point was to deprecate any effort to render the bowels costive and to favor the maintenance of free evacuation throughout the course of the disease. In the discussion which followed, the general tenor of the remarks coincided with the reader's views. Dr. Groves' paper was upon some "Cases of Lead Poisoning" occurring in his practice, the source of the poison being a jar of vinegar, the fluid acting on the lining, which contained free litharge. Dr. Burns reported a case of gun-shot injury to the abdomen. A long discussion upon abdominal injuries in general followed.

The secretary distributed pamphlets and circulars issued by the Board of Health, requesting that the blanks should be filled and forwarded to Toronto. The next meeting will be at Ottawa in January, 1884.

Selected Articles.

HEMORRHAGE FROM THE RECTUM.

The causes and treatment of hemorrhage from the rectum, of a character requiring surgical treatment, are thus concisely summarized in a paper by Dr. J. M. Matthews, of Louisville, read by him before the Kentucky Medical Society (Louisville *Med. Herald.*)

Causes: The causes of hemorrhage from the rectum may be briefly named as follows:

1. Hemorrhage following the ligation of internal piles. 2. From ulceration of the bowel. 3. From capillary hemorrhoids. 4. From hemorrhagic diathesis. 5. From polypi.

These in my opinion constitute the only causes of hemorrhage requiring surgical interference. The existence of piles in all classes is recognized. The operation for their relief is often attended with much bleeding. True, that surgeons do the operation thousands of times without such an occurrence, yet so able a surgeon as Sir Astley Cooper lost a patient from hemorrhage after the ligating of a pile. There are three causes for hemorrhage following this operation, viz:—1. The division of a vessel or vessels at the time of operating. 2. Puncture of a vessel in transfixing tumor. 3. In sloughing of the pile.

The hemorrhage that takes place after ligating the tumors may be accidental, recurrent, or secondary. Primary hemorrhage is rare. It has been my experience that it is seldom necessary to apply a ligature for its arrest. Indeed I have never had occasion to do so in my practice. If a general oozing takes place, say after the recovery from shock, it can usually be arrested either by pressure or the application of *hot* water. If *cold* is used the reaction will sometimes prove dangerous. I am sure that hot water acts as a stimulant to both the

walls of the vessels and to the nerve fibrils in the wound. One advantage in its use is that it does not produce shock. That it is a valuable *hemostatic* can not be doubted. The styptic solutions of iron can not be used in these cases because they destroy the ligatures that have been applied to the piles.

Puncture of a vessel in transfixion. In the method advocated by Dr. Van Buren of New York, of transfixing these tumors, much bleeding may occur from the piercing of a blood-vessel by the needle. The only remedy in such event would be to draw down the pile and place a ligature *above* the point of bleeding.

Hemorrhage from sloughing of the tumors.—This is seldom met with if the operation is by the ligature. It has been the misfortune of the writer to see several severe cases of the kind following the operation of injecting piles with carbolic acid. In hemorrhages from sloughing, it is out of the question to attempt to apply the ligature. Recourse must be immediately had to plugging the rectum. This is best done by taking a bell-shaped sponge and threading it through the apex with a stout string, wet it in water and powder with the *persulp. iron;* push it gradually and steadily up the rectum, and pull upon the string, this expands the sponge and causes equal pressure. In lieu of this arrangement, cotton wool can be treated in like manner and placed in position through a speculum.

Hemorrhage from ulceration of the bowel.—I use the term *ulceration* here, believing that it is an *ill* term and should not be used in this connection, yet the authors have failed to give us a better one. True ulceration is not and can not be accompanied with much bleeding, for the reason that there is sufficient inflammatory action incident to the disease to clog the vessels, hence to *prevent* hemorrhage.

The condition to which I desire to direct your attention, in contradistinction to ulceration, is an *abrasion* sometimes found in the epithelium of the gut. This may arise from trivial causes, as the passage of hard fecal matter, etc. The result may cause serious alarm. There is no inflammation attending this "peeling" off. In its incipiency, the blood pours freely from the capillary structures unless active measures are taken to suppress it. The discharge may be pure blood, or blood mixed with the mucus of the bowel. Very many of these cases have, I am sure, been mistaken for other affections, notably, dysentery.

Treatment.—The object of treatment in cases of this nature is of course to produce sufficient *inflammatory* action to clog the vessels with lymph. The very best application to accomplish this is in my opinion *pure carbolic acid.* It should be applied not only to the abrasion proper, but to the mucous membrane surrounding it. It stops hemorrhage and does not destroy the membrane. Nitric acid, or the acid nitrate of mercury, would likely accomplish the same purpose, but at the risk of producing stricture. It would be inconvenient to apply the actual cautery. Very little account of the affection of which I am speaking is given in the works on surgery, or in the books devoted to diseases of the rectum; unique they may not be, but certainly demand more attention than they receive.

Hemorrhage from capillary piles.—It will be remembered that these are the small, spongy, raspberry-looking pile which is often met with. Its disposition is to bleed upon the slightest provocation. The blood lost is usually pure arterial. A hard stool, or straining at stool, is common cause of a rupture, and the amount of blood sometimes lost is enormous and may end fatally.

Treatment.—In my opinion it is best, in order to arrest the bleeding, to catch up the entire spongy mass and secure it by a silk ligature. The ordinary tenaculum forceps used in ligating piles are objectionable in these cases. They tear through the mass and cause fresh bleeding, besides they do not enable you to secure the mass with ease. I have devised a forceps which is made by Adolph Fischer of this city, which answers the purpose better. It has a *serrated* edge, instead of *forks*, and placed on the handle at an angle of about forty-five degrees. In many cases I have stopped the bleeding by the application of pure nitric or carbolic acid. The actual cautery here is a most excellent remedy. The thermo-cautery is the form in which it should be used

Hemorrhage from a hemorrhagic diathesis.—This as a cause for hemorrhage from the rectum is scarcely mentioned by the authors. That it occurs, has been evidenced in my practice, and when met with is of the most serious nature. Local measures seem to do but little good, and it is to be questioned if such patients are ever relieved. The diathesis is manifested in the rectum, as it would be in any other, or all portions of the body. The slightest scratch, or abrasion, or handling the part is sufficient cause for the hemorrhage, which is often uncontrollable.

Treatment.—This diathesis may be hereditary or it may be established by habit. Sedentary life conduces much to its production. The habits should be diligently inquired into, and a change, if necessary, positively enjoined. Exercise, fresh air, proper diet, etc., should be carefully looked after. The sheet-anchor, in the treatment, I believe to be ergot or *ergotin.* This should be combined with iron and given for its full effect. The best local applications are, hot water (injected), *subsulp. iron*, and pure *carbolic acid.* Each repeated as often as the case requires. The last cause which I have named for hemorrhage from the rectum calling for surgical interference are polypi. These

tumors may lie above the sphincter muscles for a long time, giving no special inconvenience, but all at once they may begin to bleed, either from detachment or other causes. They are very vascular and fed by a good-sized vessel. They should be brought into view and the pedicle ligated. This is best done under an anæsthetic, and by dilating the sphincter forcibly. If hemorrhage should occur from the sloughing of the tumor, or from its being torn off, the pedicle, or stump, must be sought, and if it is not possible to include it in a ligature, the rectum should be plugged in the manner herein described.

Hemorrhage from all the sources mentioned here has frequently been met with in my practice. If a proper diagnosis is made before serious damage is done by the loss of blood, the remedy is easily applied. A thorough investigation of each and every case is necessary to determine the remedy, and if the attention of the profession is so directed, I feel that the object of this paper has not been fruitless. I have met with one case of vicarious menstruation through the rectum, but such cases are very rare and require no treatment.

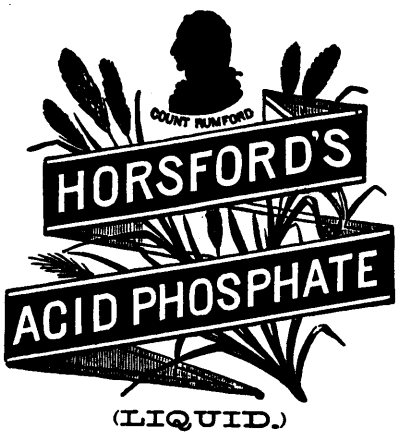
EXCISION OF THE KNEE.

Resection of the knee has long been an accepted surgical procedure in this country and in Germany, and the names of Fergusson and Langenbeck will always be associated with its early history. In France, however, it has been strenuously opposed, and in M. Ollier it has found a severe critic, who early drew attention to the serious shortening of the limb resulting from the operation when performed in young children, and to its high mortality among adults. He has stated that while the mortality after amputation of the thigh in cases of chronic suppurative osteo-arthritis was 40 per cent., the death-rate from excision of the knee in quite similar cases rose as high as 80 per cent. In an article in the last two numbers of the *Revue de Chirurgie* he makes a full recantation of these views, and, while speaking in a highly appreciative manner of the operation, offers some suggestions as to the methods of its performance which are well worthy of attention, particularly as coming from a surgeon of perhaps unequalled experience in this class of surgery.

M. Ollier has not altered his opinion of the value of excision of the knee in young children. His own investigations, corroborated by Prof. Humphrey and borne out by not a few lamentable cases, have conclusively shown that if the whole of the lower epiphysis of the femur be removed, as is often necessary, the growth of the limb is interfered with to a disastrous extent; and if the surgeon be able to preserve a part of the epiphysis, yet the disturbance occasioned by the operation to the nutrition of the actively growing portion that is left behind is so great that even then the limb is seriously shortened. On this account M. Ollier rejects altogether the operation of excision of the knee for patients under eight years of age. He further adds, in reference to this, that these patients are excellent subjects for incisions into joints, scraping, and free drainage; and that, if these measures fail, amputation is the sole resource. In this view we believe he is in accord with British surgeons.

The change that has taken place in M. Ollier's estimate of the value of excision of the knee has resulted from the success attending in his hands the use of a strict antiseptic plan of treatment. In place of a mortality of 80 per cent., he is able to record a series of seven successive resections of the knee, with only one death, which took place a few hours after the operation (from carbolic intoxication he believes)—a mortality of 14 per cent. During the last session he had twenty-two resections of large joints and amputations of the thigh or leg, without a single instance of infective mischief; while ten years ago, he states, he would have lost from 40 to 50 per cent. of such cases from erysipelas or pyæmia. Well may he exclaim that antiseptic dressings have so altered the conditions attending operations that it is necessary to review with care opinions founded upon data obtained under the old system.

The method of operating that M. Ollier advocates is the subperiosteal, but he would vary its details according to whether it is performed for injury or disease. For injury he recommends a single vertical median incision over the front of the joint, extending quite into the joint above the patella, and also below where the ligamentum patellæ is to be split. He then saws through the patella vertically, but before completing the excision of the articulated surfaces through the opening thus made, he makes an incision for drainage on each side into the joint, one just in front of the biceps tendon, the other in front or behind the sartorius, and subsequently he places a drain in each of them. He then divides the crucial ligaments, bends the joint fully, protrudes the femur and peels off from it the periosteum and ligamentous and tendinous attachments, and saws off the end. He treats the tibia in the same way. The sections of the patella are then wired together, and the wound closed with a drain at its upper and lower end. When operating for disease he recommends that a freer opening be made into the joint, as more room is required for the following up of all the recesses of the synovial cavity and for the treatment of the patella itself. He therefore employs an H incision, making a straight cut into the joint below the patella, extending laterally not quite as far as the lateral ligament, and not being quite so long as the transverse diameter of the



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3 grains Phosphate of Lime ($3CaO\ PO_5$)
½ grain Phosphate of Magnes. ($3MgO\ PO_5$)
1-6 grain Phosphate of Iron ($Fe_2\ O_3\ PO_5$)
¼ grain Phosphate of Potash ($3KO,\ PO_5$)

Total amount of Phosphoric Acid in one fluid drachm, free and combined, 7 grains.

It contains no pyrophosphate. or metaphosphate of any base whatever.

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Seminal Losses,

Impaired Vitality,

Spermatorrhœa.

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condyles. From each extremity of this he makes a vertical cut upwards and downwards, of a length varying with the extent of the disease and the amount of bone requiring removal. In this way two small flaps are marked out, of which the lower is always the smaller. Two incisions for drainage are made at the sides of the joint, as in the other operation, care being taken to have the inner one behind the sartorius tendon, and both of them made without injury to tendons. The upper flap is then raised, the joint well explored, and the patella, if necessary, removed by shelling it out from its anterior periosteal investment. The periosteum and ligamentous and capsuled attachments are then carefully peeled off from those parts of the femur and tibia which are to be removed, and those bones are sawn across. The synovial membrane is excised or scraped, as the case may be, and an opening for drainage made at the top of the suprapatellar pouch; then the bones are united by two wire sutures, and the cutaneous incision united, special care being taken to stitch together the cut ends of the ligamentum patellæ.

M. Ollier first points out that the aim of the surgeon is to obtain bony union after excision of the knee. To preserve the periosteum where possible directly aids in the ossific union of the two bones, while to leave the lateral ligaments as well as the posterior intact, is an important aid in maintaining the bony parts in exact and firm apposition. He lays considerable stress upon the importance of suturing carefully the divided ends of the ligamentum patellæ, so as to enable the quadriceps extensor muscle to counteract the tendency of the flexors to displace the tibia backwards. In cases of compound comminuted fracture into the knee-joint, M. Ollier is in favor of excision, even where a great length of bone has to be removed, and he suggests that in such cases it would be well to remove a part of the soft tissues in front of the joint; if not, when the ends of the bones are approximated the soft parts are greatly relaxed and bulge considerably around the bone, and as the flexors shorten more quickly than the extensor muscle, there is great danger of displacement of the tibia backwards, which can be prevented by artificially shortening the extensor tendon.

M. Ollier hopes that hereafter excision may be successfully performed in military surgery. In connexion with this, it is interesting to note that in the volume of the "Surgical History of the American War," just issued, it is recorded that excision of the knee-joint was performed for shot fracture in fifty-seven cases, with a total of forty-four deaths, ten recoveries, and three cases in which the issue has not been determined. In thirty-two cases the operation was primary; four patients recovered, but in one of them secondary amputation of the thigh was performed. Only one out of thirteen cases of intermediary excision proved successful; but of seven secondary operations, as many as four, or 57 per cent., were successful. This was before the days of antiseptic surgery, at a peried when M. Ollier was having a mortality of 80 per cent. in excisions for disease.—*The Lancet.*

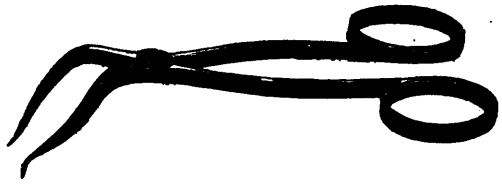
TRACHEOTOMY.—A NEW DILATOR.

BY W. J. OTIS, M.D., BOSTON.

The operation of tracheotomy is by no means a simple operation, and its performance is probably more dreaded by surgeons than that of any other. Numerous instruments have from time to time been invented for the purpose of making its performance more easy; but of these very few are in general use, nor can it be said that any of them are indispensable, as any competent surgeon could if called upon suddenly perform the operation with the instruments found in the ordinary pocket-case, improvising a tube by bending up a probe or a piece of wire, or dispensing with the tube entirely and stitching the cut edges of skin and trachea together. If, however, the surgeon has sufficient time to select his instruments according to the peculiarities of the case, it is then that some of the special instruments will be found of great assistance.

Of the numerous instruments that have been invented for this operation the greater part of them are either tracheotomes or dilators. There can be no doubt of the superiority of the knife over any tracheotome, and in the hands of the incompetent the latter may prove a dangerous instrument. As for the dilators, they are not easy to insert, are liable to slip out, and take up so much room in the tracheal wound that it is difficult to insert the tube.

The accompanying cut represents an instrument



devised by the writer, the peculiar feature of which is a tenaculum and dilator combined. The action is the same as in the Richardson dilator, the blades being bent at an angle instead of being parallel, so as to act as retractors of the soft parts, and each blade terminating in a hook. The point of each hook being turned down aids in introducing. By pressing the points lightly against the trachea and opening the blades the hooks insert themselves firmly into the trachea, leaving space enough between them for the knife to pass. The instrument is now a tenaculum, by which the trachea can be

lifted forward and held firmly before opening it, which is particularly to be desired when operating on children, where the trachea is situated deeply and often has a great range of up-and-down movement. To open the trachea the knife is inserted between the blades, and as the rings of the trachea are cut the instrument can now be used as a dilator, holding open the edges of the cut perfectly with no danger of slipping out.

The interior of the trachea can now be inspected, false membrane or any foreign substances removed, and hemorrhage stopped previous to inserting the tube. As the blades of the dilator take up no room the tracheal opening need be made no larger than is absolutely necessary to admit the tube. The tube can be readily inserted, and the dilator quickly dislodged by merely closing the blades.

The advantages claimed for this instrument are: —1. A tenaculum for elevating the trachea and controlling its movements. 2. A dilator, the operator never losing his hold on the first opening made into the trachea. 3. The blades of the dilator being hooks take up no space, and allow easy introduction of the tube through the smallest possible opening.

Successful Case of Removal of Large Spleen.—A successful case of removal of the spleen in leukemia, by Fernando Franzolini, of Turin, is recorded in the *Wiener Medicinischen Wochenschrift*, No. 20. The patient was a pale, delicate woman, twenty-two years of age, who worked in a match factory at Paderno. From childhood she had been sickly, and since the age of seventeen menstruation had been irregular, and at times she had suffered from hysterical symptoms. She had never lived in a malarial region, and had never suffered from intermittent fever. The white blood-cells were five times more numerous than normal. There was no albumen in the urine. An incision was made along the linea alba to the left of the umbilicus, twenty-two centimeters (eight inches and a half) in length. The coils of intestine and the large omentum which presented were protected by warm-water compresses, and the spleen, with the help of the assistants, was pushed out of the wound. On account of the shortness of the pedicle in the floor of the peritoneal cavity, it was found necessary to place a double silk ligature on the splenic artery, which was the size of the forefinger, and on the vein, which was the size of the thumb. The gastro-splenic ligament, included in two ligatures, and the diaphragmatic, in one ligature, were divided. The patient lost scarcely a spoonful of blood. The operation lasted eighty minutes. The spleen measured, in length, ten and one fourth inches; in breadth, six and one half inches; in thickness, two and three fourth inches; and weighed, after removal of nine ounces of blood, fifty-two ounces. The wound healed, and the patient is perfectly well with the exception of severe uterine pain at the menstrual period. The white cells diminished gradually, and in January, 1882, four months after the operation, showed almost a normal condition. —*Louisville Med. News.*

Chloroform Breath in Gastric Disturbance.—The French correspondent of the *Medical Press* (April 18, 1883,) says:—There is a symptom of gastric disturbance in children which I have never yet seen mentioned in any text-book, French or English, and yet it is almost invariably constant and generally to be met with at the *début* of the affection, so that it may be considered as a sure premonitory sign. I mean that of the breath, which smells as if the child had freely inhaled chloroform. I have always found that this "chloroform breath" not only commenced with the gastric disturbance, but continued during the whole period of the malady, and that its cessation indicated also a cessation in all the other general symptoms, fever, vomiting, etc., and consequently a return to health. I have remarked this peculiar odor in children of every age, and once in a grown-up person; it was then very strongly marked. I do not pretend bringing to light anything new, but I have never heard this peculiar symptom alluded to anywhere. In gastric derangement or *embarras gastrique*, as the French call it, the breath has always been described as possessing a heavy odor, but that is very different from the chloroform smell which is sometimes so pronounced as to be liable to induce the medical man to believe that the patient had been using the anæsthetic.

Another correspondent writes to the same journal (April 15, 1883) as follows: As a corollary to your French correspondent's remarks in last week's *Medical Press*, I may mention that this phenomenon is not confined to gastric disturbance. It is at times common immediately after sexual connection, and during the act a naturally foul breath may become quite sweet and of a distinct chloroform odor. The explanation is to me a mystery, but I am *positive* as to the fact.—*Med. & Surg. Rep.*

Treatment of Fractures of the Long Bones.—Dr. James R. Taylor, of New York, read a paper on the above subject before the American Medical Association, June 6th, 1883, in which he briefly presented some methods of diagnosis and treatment from the extensive surgical *clientele* of the out-door department of Bellevue Hospital. He first spoke of fracture of the thigh bone, which he treats with a saddle made to fit into the perineum, whereby he secures the most perfect comfort possible by any apparatus used for the purpose of counter-extension. This neatly devised little sad-

dle is held in position by a strap, running to the headboard on each side, thus securing the patient in an immovable position. By fastening strips of adhesive plaster, previously secured to the leg, to a screw arrangement in the foot of the bed, he can produce any desired degree of extension of the limbs by simply turning the little screw at the foot of the bed; the chief advantage of the whole apparatus over all other instruments being the little saddle on which the patient sits, as it were, with comfort, he claims, rather than misery, as in most other methods. He announced himself as opposed to the old method of using stones and other suspensory weights to produce extension of the limbs, and then turned his attention to the treatment of fractured ribs. He brings the broken ends into place by raising the arms over the head, an original method by which he claims there is no trouble in adjustment. They are then held in place by a band of adhesive plaster around the body.—*Med. News.*

Diagnosis of Peri-nephritic Abscess—.In an excellent paper on Peri-nephritic Abscess (*Am. Jour. Med. Sci.*, April, 1883), Dr. J. B. Roberts gives the following tabular statement of symptoms to assist in the localization of the disease, and its diagnosis.

All anterior regions.—Pain, tenderness, swelling, œdema, and pointing in front and side of abdomen.

All posterior regions.—Pain, tenderness, swelling, œdema, and pointing in loin.

Upper tracts. —Pleuritic friction, pleural effusion, empyema, expectoration of pus; dyspnœa; suprarenal involvement; solar plexus involvement. (On right side.) Bilateral œdema of legs; jaundice; fatty stools; persistent vomiting; rapid emaciation; ascites.

Middle tracts.—Albuminuria and casts; suprapubic, scrotal or vulvar pain or anæsthesia; suppression of urine; uræmia; pus in the urine; œdema of scrotum or varicocele (especially in left side).

Lower tracts.—Flexion of hip; pain or anæsthesia of front, inside, or outside of thigh; retraction of testicle; pain at knee; scrotal or vulvar pain or anæsthesia, without accompanying albuminuria; unilateral œdema of legs; abscess of sinus near Poupart's ligament; constipation (if left side); involvement of chyle receptacle (if right side.)

Chronic Cystitis.—Dr. Duncasse (Gazette des Hopitaux—N. O. Medical and Surgical Journal) regards corn silk as par excellence the remedy in chronic cystitis, allaying the inflammation and facilitaiting the expulsion of gravel. So marked also are its anæsthetic properties in such cases that the writer thinks it must possess some alkaloidal narcotic substance. This anæsthetic action is not marked in acute cystitis. He quotes with approval the conclusion of Landrieux regarding the stigmata maidis as follows: 1. Not only are the different preparations of stigmata maidis useful as a modifier of the secretions of the urinary passages, but these same preparations can be equally considered as an incontestible diuretic agent. 2. Diuresis is rapidly produced, and in three or four days the augmentation of the amount of urine becomes evident and considerable. 3. The diuretic effects are observed, not only in the organs of urinary secretion, but also in disturbances of the circulatory system (diseases of the heart and blood vessels). 4. The pulse is regulated, the arterial tension is increased, while the venous tension is diminished. 5. The medicament does not cause the least disturbance, either of the nervous system or the digestive functions 6. Tolerance for this drug is complete and absolute, and medication in chronic diseases can be continued without inconvenience for a month or six weeks, according to my observations

The Bread-Pill Cure of Hysteria.—M. M. Landouzy and Ballet, in the *Revue Mensuelle de Médecine*, give the history of an hysterical patient to which it is well to give an extended publicity, not because it presents any novel feature but as a proof of the scientific errors of those ill-trained minds which attribute the cure of hysteria to supernatural influences. An hysterical patient twenty-six years of age, who had previously suffered from chorea, was received in the wards of the Charité. There was very marked contraction of the lower limbs, and the patient was unable to execute the slightest movement, not being even able to raise herself in bed. After one or two hypodermic injections of morphia, at her express desire, she was told that she should have a more energetic remedy, and must use it cautiously. On October 7th, bread-pills were prescribed, and the next morning she related that, wishing to poison herself, she had swallowed the pills, and eagerly asked to have another pill; this was accorded, and resulted in her complete recovery. Two days later on she helped to clean the wards. In a month's time she left the hospital.—*Brit. Med. Jour.*

Femoral Hernia.—Rupture of Coverings. —Dr. Bernard Pitts records in the *Lancet*, April 7, 1883, the case of a woman aged 46, who had a right femoral hernia for twenty years. She had been once operated upon. One evening upon sneezing, the skin over the tumor, near to, but not in the line of the cicatrix, gave way, and a foot of intestine escaped. She was brought to the hospital three hours later on a cold frosty night. The exposed intestine was congested, dirty, bruised and cold. Taxis failing, the wound in the skin was enlarged, the crural ring was nicked, and by manipulation the bowel was returned. The thickened sac was dissected out and removed, drainage for peritoneal cavity provided, and the edge of the sac

brought together by very strong catgut, the edges of the wound by silk sutures, and carbolic gauze used as a dressing. The patient did well.—*Med. and Surg. Rep.*

PURPURA AND SUPPRESSION OF MENSES.—Dr. Lindsay stated at a recent meeting of the Ulster Medical Society, that several cases of purpura had come under his notice in women who were suffering from suppression of menstruation. He was not prepared to say that these cases were examples of vicarious menstruation; but in the absence of any well-established pathology of purpura, he thought he was warranted in concluding that the disease had its immediately exciting cause in altered innervation consequent upon the non-performance of the menstrual function. In the case under discussion, the administration of iron produced melæna, and had to be discontinued. The mineral acids were then given, and in two weeks the eruption had disappeared; and with the exception of slight languor and fatigue, the patient was again in her usual health.—*Lancet.*

NEW TREATMENT OF SARCOMA.—Prof. Winiwacter, of Liege, has been employing parenchymatous injections of hyperosmic acid in cases of sarcoma and lymphoma with astonishing success (Revue Medicale). A man applied at his clinic with a sarcoma of the neck as large as a child's head, deemed inoperable. For a fortnight he made daily an injection into its substance of three drops of a one per cent solution of the acid. The tumor rapidly softened, serous pus was discharged from the points where the injections had been made, the infiltration rapidly diminished, and at the end of a month the tumor had completely disappeared. There had been no sign of inflammation, and none of constitutional affection. Since this case he has resorted to it in others like it, as well as in cases of lymphoma and scrofulous adenoma. Only in genuine carcinoma has its result been disappointing.—*Weekly Med. Rev.*

ERGOT AS A PREVENTIVE OF THE POISONOUS EFFECTS OF SALICYLIC ACID—Dr. Schilling recommends the administration of ergot in conjunction with salicylic acid or quinine, to obviate the unpleasant effects of those drugs. He had observed, in a number of cases in which large doses of salicylic acid were taken, a marked congestion of the external auditory canal and membrana tympani. He was thus led to give ergot to cause a contraction of the vessels, and obtained in every case a cessation or notable diminution of tinnitus and deafness. The dose of ergot (aqueous extract) should be about one-tenth that of the salicylic acid The antipyretic effect of the latter is not weakened by the ergot. Like favorable results were obtained by combining ergot with quinine.—*Allgem. Med. Central-Zeitung.—Med. Rec.*

REMOVAL OF WARTS.—Warts may be removed by cauterization, as recommended by Dr. Cellier in the *Journal de Méd. et de Chir. Pratiques (Medical Record).* An ordinary pin is thrust through the base of the wart, care being taken not to wound the healthy tissue beneath. Then the skin being protected, the head of the pin is heated in the flame of a candle. It is said that the wart becomes white and fissured in a few minutes, and comes away on the point of the pin. Dr. Cellier also says, that it is only necessary to remove one wart on the hand, that though there may be a dozen, all the others will disappear without treatment.

GLYCERINE IN SKIN DISEASES.—M. Desguin, of Antwerp, has given glycerine internally in certain forms of skin disease with, it is said, marked success, especially in acné punctata and the furuncular diathesis. He commences with four drachms daily and gradually increases the dose. He states that the secretion of the cutaneous glands, which is thick and irritating in these diseases, becomes more liquid, and cutaneous irritation is notably lessened. During convalescence from scarlet fever, he believes that it facilitates desquamation.—*Med. & Surg. Rep.*

CASTOR-OIL AND GLYCERINE.—A mixture which is of an agreeable flavor and in which the nauseous smell of the oil is efficiently disguised, can be made thus:

℞. Ol. ricini.....ʒ j.
Glycerini.....ʒ j.
Tr. aurantii.....*M* xx.
Tr. senegæ.....*M* v.
Aquæ cinnam .....ad. ʒ ss.

This forms a beautiful emulsion, is easily taken, even by children, and if administered at bedtime will produce a gentle motion the following morning. *N. Y. Med. Rec.*

SORE NIPPLES.—Dr. Favre (*St. Petersburgh Medicinische Wochenschrift*) is of opinion that there are two varieties of these, fissures and erosions, and believes that the latter are to a large extent due to tight fitting dresses and pressure by corsets. He advises that the nipples be sprinkled with bismuth, dry, or that this be made into an ointment in the proportion of one of bismuth to two of vaseline. This procedure has often resulted in a cure within twenty-four hours.—*Gaillard's Medical Journal.*

CHLORATE OF POTASSIUM IN ULCERATING EPITHELIOMATA. In fine powder, this is said to yield excellent results when dusted over the surface of ulcers and ulcerating epitheliomata The surface should be cleansed and the powder dusted thickly on twice a day. This, it is claimed, relieves pain and promotes healing.

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A Monthly Journal of Medical and Surgical Science Criticism and News.

Communications solicited on all Medical and Scientific subjects, and also Reports of Cases occurring in practice. Advertisements inserted on the most liberal terms. All Letters and Communications to be addressed to the "Editor Canada Lancet," Toronto.

AGENTS.—DAWSON BROS., Montreal; J. & A. MCMILLAN, St. John, N.B.; GEO. STREET & Co., 30 Cornhill, London, Eng.; M. H. MAHLER, 16 Rue de la Grange Bateliere, Paris.

TORONTO, AUGUST, 1883.

The LANCET *has the largest circulation of any Medical Journal in Canada.*

THERAPEUTICS OF BUTTERMILK.

Koumiss excepted, which is itself a kind of buttermilk, no beverage is so grateful and refreshing to thirsty patients as buttermilk. It is a fortunate circumstance too, that while the patient is assuaging his thirst with the most agreeable drink, he is unconsciously taking in the very best of food. Patients who loathe every other kind of food will greedily partake of buttermilk. It also possesses medicinal properties of considerable value. It is therefore not surprising that it is daily growing in favor with the profession. One thing, however, is surprising, and that is, the absence of any extended reference to it in medical literature.

From time immemorial buttermilk has been a staple article of diet. In Scotland and the North of Ireland it is delivered by dealers as regularly as new milk. As everybody knows, these people are the great porridge eaters of the world. By them, buttermilk is preferred with their cherished dish, and judged by results porridge and buttermilk are wholesome articles of diet, for where can be found sounder bodies or clearer heads, than are to be found amongst these celebrated porridge and buttermilk eaters. Buttermilk may be roughly described as milk which has lost most of its fat, and a small percentage of its casein and which has become sour by fermentation. To suppose that the principal elements of buttermilk are constant in quantity, and in their relation to each other, is a great mistake. To assist us in ascertaining more accurately the composition of buttermilk, we shall first of all examine the cream-crock. It contains cream and milk in variable proportions. The milk has undergone fermentation and is acid, or sour, as it is commonly called. The relative proportions of cream and milk, contained in the cream-crock, depend on the fancy of the person who skims the milk-pans, in allowing much or little milk to pass over with the cream. There may therefore be much cream and little milk, or the reverse, a circumstance which has an important bearing on the contents of the churn, after the removal of the butter. Let it be borne in mind that under no condition is the whole of the fat removed. There is always a residuum of fat left in the churn. Should the cream be greatly in excess of the milk, this residuum of fat will be greater and *vice versa*. The casein contained in a given quantity of buttermilk, also varies in quantity. The thinner the layer of milk allowed to pass off with the cream, the poorer will be the resulting buttermilk in casein. The casein is still further reduced in the process of churning, a certain percentage being removed along with the butter. From this it is plain that buttermilk not only contains casein in variable quantity, but the casein is always slightly below the standard of average milk. Temperature is another disturbing factor in the proportionate relations of fat and casein contained in buttermilk, as compared with standard milk. If churning be performed at a temperature much too high the fat globules refuse to aggregate or coalesce so as to form butter. They behave in the same manner at a temperature much too low. As the real intermediate line is seldom exactly struck, it is easy to see that this furnishes an additional cause for a frequent excess of fat in buttermilk. If in connection with the foregoing facts we take the results of fermentation, or coagulation of milk, in which the sugar is converted into lactic acid, we shall have a tolerably clear idea of the ultimate constituents of buttermilk.

Coagulated skim milk differs but little from buttermilk in its chemical condition. It probably contains about the same quantity of fat. It is, of course, richer in casein, and herein lies the principal difference. In fact it is almost a perfect substitute for buttermilk, after being treated in the same manner as the contents of the cream-crock, that is, agitated, so as to break up, and thoroughly reduce the curds, and make the whole light and frothy by admixture with the atmosphere. Not long since a lady of our acquaintance hit upon the

above plan to satisfy the longings of an invalid for buttermilk, and it is to that circumstance that this article owes its origin. The season being winter buttermilk was unobtainable. The milk was coagulated by being put in a warm place. It was agitated by a revolving egg-beater until it was light and frothy. Sour milk thus treated tastes exactly like fresh buttermilk. In view of the fact that buttermilk is hard to get at certain seasons, the value of the proposed substitute becomes apparent.

The first process milk undergoes in the stomach is the coagulation of the casein. In sour milk this is already accomplished, and that too in a more satisfactory manner. Sweet cow's milk coagulates in the stomach in the form of semi-solid cakes, which many stomachs are unable to reduce to a proper state of subdivision. In sour milk on the contrary, the curds are loose and flakey, much resembling the curdling of human milk, which may be seen in the vomit of the over-fed infant at its mother's breast. The digestion of sour milk is made still more easy by the process of churning, by which the flakey curds are reduced to a state of fine subdivision.

Long experience has demonstrated the superior digestibility of buttermilk, and this inquiry simply furnishes the reasons. Buttermilk is a true milk peptonoid, that is the fashionable word of the day, —milk already partly digested. The range of its application is therefore wide and but little restriction need be observed in its use. It is good food and drink for young and old, sick and well. Being food it ought not, as many do, be taken between meals. This practice accounts largely for the common belief that buttermilk disagrees with many persons. Being an agreeable drink, it is often too freely used. Sick persons who partake of little or nothing else, may partake much oftener, and more freely. Although containing about the same quantity of nutrition as sweet milk, yet patients appear to be able to consume with ease at least double the quantity of buttermilk.

Buttermilk has at least three therapeutic properties more or less marked. It is a decided laxative to the bowels, and this fact should be borne in mind in the treatment of typhoid. This affords a hint for its use in habitual constipation. Buttermilk is a diuretic and may be prescribed with advantage in some kidney troubles. Owing to its acidity, combined with its laxative properties, it is believed to exercise a gentle impression on the liver. It is well adapted to many of the cases where it is customary to recommend lime-water and milk. It is invaluable in the treatment of diabetes, either exclusively or alternating with skim milk. In some cases of gastric ulcer and cancer of the stomach it is the only food that can be retained.

QUEBEC MEDICAL ELECTION.

The triennial meeting of the College of Physicians and Surgeons, Que., was held in Quebec on the 11th ult., under the Presidency of Dr. R. P. Howard of Montreal; Drs. A. G. Belleau and F. W. Campbell, acting as secretaries. Among those present were Drs. R. P. Howard, L. Larue, A. G. Belleau, C. Verge, Z. Gravel, A. Larochelle, J. Théberge, G. B. Lafleur, W. Lamontagne, F. W. Campbell, J. L. Leprohon, H. Sauvé, W. Osler, G. Ross, T. A. Rodger, J. A. Ross, E. P. Lachapelle, D. B. Desaulniers, T. Fortier, G. Lachance, R. Latraverse, C. E. Lemieux, sr., J. A. Sewell, G. O. Beaudry, J. Lanctot, N. H. Ladouceur, A. Robitaille, A. Marois, J. Langlois, V. P. Lavallée, E. P. Chevrefils, M. Guay, G. H. Dufresne, W. Marsden, J. P. Lavoie, A. Gavreau, L. Catellier, G. Bolduc, E. Gervais, C. Gingras, A. Dion, N. Lacerte, J. E. Ladriere, J. B. Bolduc, E. A. De St. George, C. S. Parke, S. Gauthier, J. B. Gibson, J. A. S. Brunelle, D. A. Hart, F. E. Roy, J. Marmette, A. Morisette, M. A. Falardeau, S. Bolduc, E. Duquet, E. Belleau, E. Badeau, J. B. Lamarche, J. M. Turcot, G. Turcot, E. Turcot, R. F. Rinfret, A. Jackson, F. R. Rinfret, F. D. Gilbert, P. Wells, A. Watters, W. Verge, G. Mazurette, J. Marceau, P. A. Shea, M. J. Ahern, F. J. Austin, H. Russell, V. St. Germain, L. Beauchesne, M. Fiset, A. Hamel, E. Morin, A. Vallée, C. Coté, A. Poliquin, F. Gendron, N. Lavoie.

The minutes of the last triennial meeting were read and approved. The treasurer, Dr. Lachabelle, presented his report which was adopted. M. Lamirande, the public prosecutor, also presented his report from which it appears that 44 actions were entered against persons practising medicine without license. Thirty-five of these were decided in favor of the College, nine were unfavorable, and five are *sub judice*. An animated discussion followed

upon some much-needed amendments to the act regarding the manner of electing governors. It was finally decided to submit the various propositions to the new board of Governors for their consideration, to report at the next triennial meeting. The election of Governors by ballot was then proceeded with, resulting as follows :

City and District of Quebec—L. Larue, A. G. Belleau, W. Marsden, C. S. Parke, E. A. De St. George, and H. Russell ;—Lieut. Governor Robitaille, C. Rinfret, C. Gingras, M. Guay, P. E. Grandbois, J. Marmette, and L. T. Rousseau. *City and District of Montreal*,—T. A. Rodger and J. B. Leprohon ;—J. Prevost, P. E. Migneault, D. A. Hart, N. H. Ladouceur, J. A. Duchesneau, J. Lanctot, L. D. Lafontaine, H. A. Migneault, and D. Marcil. *District of St. François*,—T. Larue, F. X. Paré and A. J. Austin. *District of Three Rivers*,—D. B. Desaulniers, Hon. J. J. Ross, and F. A. Dame.

University Representatives,—Laval, C. E. Lemieux, and J. A. Sewell, (Quebec), E. P. Lachapelle and A. Lamarche (Montreal) ; McGill, R. P. Howard, and Geo. Ross ; Victoria, E. H. Trudel, and W. H. Hingston ; Bishop's, F. W. Campbell and R. A. Kennedy.

At a subsequent meeting of the new board of governors the following officers were elected :— C. E. Lemieux, President ; Hon. J. J. Ross, and W. H. Hingston, Vice-Presidents ; A. G. Belleau, and F. W. Campbell, Secretaries ; L. Larue, Registrar, E. P. Lachapelle, Treasurer ; Profs. Miller, Howe, Verreault and Laflamme, Matriculation Examiners ; Drs. Church and P. E. Mignault, Assessors for McGill College ; A. C. McDonell and Ladouceur for Victoria, Marsden and F. E. Roy for Laval (Quebec), J. Reddy and O. Raymond for Laval (Montreal), and T. A. Rodger and J. B. Leprohon for Bishops. Examiners for Midwives, Drs. Marsden, Sewell, and Gingras for Quebec ; and E. P. Lachapelle, E. H. Trudel and R. A. Kennedy for Montreal.

RESORCINE IN THE TREATMENT OF WHOOPING COUGH.

Dr. Moncorvo, Professor of the Diseases of Children in the Polyclinique of Rio de Janeiro, in an article published in the March, April and May issues of *Uniao Medica*, advocates the topical employment of Resorcine in the strength of one per cent., applied by a fine pencil brush to the larynx. He gives fourteen instructive cases, of various degrees of severity and duration, in which this remedy was found by him highly serviceable. He gives the following as his general conclusions :

1st. That whooping cough, whose nature, up to a very recent period, has been subjected to the most diverse interpretations, in relation to its genesis, may, to-day, according to the latest microscopic researches, be included in the class of parasitic diseases.

2nd. That the disease appears attributable to the presence of micrococci which multiply prodigiously in the hyperglottic vicinity of the larynx, infiltrating its epithelial cells, which appear to be the predilective seat of their development.

3rd. That resorcine, applied to the laryngeal mucous membrane, caused in all the cases in which it was employed, rapid decrease of the number of the paroxysms, moderation of their intensity, and finally recovery in a short period of time, without the aid of any other medication.

Dr. Moncorvo says that resorcine, owing to its much less caustic action, and the absence of disagreeable taste and odour, is far preferable to carbolic acid. He has administered it internally to children, even the newly born, suffering under diarrhœa and dysentery. He advises that strict attention be given to the quality, so as to secure the article in purity, and he recommends that prepared by Monnet, of Geneva, which is of notable whiteness, and in the form of silvery bright crystalline needles. It is extremely soluble in water. Dr. M. recommends the topical application with the fine pencil brush, to be repeated every two hours. The first applications, he says, sometimes exacerbate the coughing fits, but this irritation ceases in two or three days. In twenty cases treated by him, he was not disappointed in his expectation in a single instance, and some of them had been very obstinate, or even dangerously complicated, as with hereditary syphilis, threatened hydrocephalus, pulmonary tuberculosis, intermittent fever, etc.

Resorcine, in its source being a congener of carbolic acid, no doubt acts in a similar manner as a parasiticide. Dr. Moncorvo states that he has, by numerous microscopic examinations of the

sputa expectorated by his patients laboring under whooping cough, verified the statements made by Letzerich, Henke, Steiner, Hagenbash and other writers, as to the parasitic character, or complication of the disease. The treatment advocated by him is therefore free from all insinuation of empiricism, and as we understand the article to be inexpensive, it will no doubt soon be largely sought after.

THE editor of the *Sanitary Journal* has been examining the evidence for and against vaccination. He desires not to be regarded as opposed to vaccination, but he is somewhat sceptical and states that "after carefully examining and sifting all the obtainable evidence, *pro* and *con*, in regard to the measure, he fears that it has been and is too much extolled, and too much relied upon, to the comparative neglect of other, and more strictly scientific preventive measures." He refers to the unsatisfactory results of the practice in Switzerland, and points out that the two principal legislative measures relating to compulsory vaccination in Great Britain were enacted and came into force "on the decline of two great epidemic periods, such periods being invariably followed by a decline in the mortality;" and, that, notwithstanding the reduced mortality since enforced vaccination, as compared with that previous to it, "there has been a great increase in the proportion of deaths in London (E.) since the commencement of compulsory vaccination." He thinks that the great difference between the mortality from small-pox amongst vaccinated and that amongst unvaccinated persons may be largely accounted for by the character of most of the unvaccinated, who are he believes of the poorest classes, "the improvident, the unsettled—who would be most exposed to, and from their habits, prone to take the disease, and the very ones amongst whom by far the greatest mortality would most certainly take place in hospital, or anywhere." These are a few of the most important points. The writer gives instances where outbreaks of small-pox have been repeatedly stamped out without vaccination, by isolation, quarantine, &c. It has been stated that possibly the profession may have been looking too much to the statistics of one side of the question of the value of vaccination. No doubt vaccination affords some protection, and the difficulty is in getting other preventive measures thoroughly carried out.

FORDYCE BARKER'S TRIBUTE TO YOUNG MEN.—My own experience has been that from this class I learn the most; it is from them that I get the most useful knowledge and the most valuable suggestions. I hold it to be one of the great missions of this Academy to bring out and develop, by its library and its scientific work, the young men who are to take care of its interests and give the stamp of character to the Academy and the medical profession of this city in the future. I do not hesitate to express the belief, based on a rather extensive acquaintance with the profession in other cities and other countries, that the number of young men of bright intellects, of noble zeal, who have had the largest opportunities at home and abroad for a thorough and complete education, which have been most conscientiously improved, is greater than has ever before been aggregated in any city in any age of the world, and that twenty years hence New York will have a galaxy of distinguished men who will give the medical profession such prominence with the public and with the profession elsewhere as has never before been attained.—*N. Y. Medical Journal.*

[These noble sentiments, by a noble man, are in striking contrast with those members of the profession who occasionally object to a Medical Journal on the ground that it contains articles written by young men, whom these worthies seem to consider as desiring to air their newly acquired knowledge.—ED.]

PLANS OF A MODERN COTTAGE.—Messrs. Palliser & Co. of Bridgeport, have lately issued a sheet containing plans and specifications for building a handsome six or eight room cottage with or without tower. The cost will vary from $1,700 to $3,000, according to size and style of finish. The publishers have found it the most popular plan they have ever issued, and state that it has been adopted in over five hundred houses. We have seen the plans and specifications referred to, and would recommend a perusal of them by those who contemplate building. This firm issues specifications in blank form for all kinds of buildings; also, forms of building contracts, and books on modern architecture.

HYPOSULPHITE OF SODA AS A DISINFECTANT.—The difficulty of finding a satisfactory disinfectant with which to destroy fœtor in cases of cancerous ulcers, is well known. Dr. W. E. Buck, in the *Brit. Med. Journal*, says he has tried a saturated solution of hyposulphite of soda added to an equal quantity of water, and found it exceedingly efficacious. The

ulcerating surface was well syringed and washed with the solution, and was then covered with rags steeped in the solution. The granulations were kept clean, and the fœtor was well kept under. It is cleanly, has no smell, does not stain, and is very cheap.

F. R. C. P., LOND.—Dr. Wm. Osler, of McGill College, Montreal, has been elected a Fellow of the Royal College of Physicians, London. We congratulate our young and talented confrère upon this justly merited mark of distinction. There is only one other Fellow of the College resident in Canada, viz. : Dr. J. A. Grant, Sr., of Ottawa. We are pleased to note this recognition of industry and talent among our Canadian confrères by old-world institutions.

BACILLUS TUBERCULOSIS IN AN ABSCESS.—Dr. R. C. Smith (*Brit. Med. Journal*), gives the details of a case of phthisis in a clerk aged 21 years. An abscess formed in the ischio-rectal fossa which was opened. A microscopic examination of this fluid by a half-inch object-glass, after the usual process of staining, revealed the presence of great quantities of well-marked typical tubercle-bacillus.

OL. SANTALI FLAV. IN GONORRHŒA.—Most successful results have been obtained in the treatment of gonorrhœa by olium santali flav. The dose is 15 to 20 drops in gelatine capsules, mucilage, or dropped on sugar, three times a day. It usually arrests the discharge in two or three days, but should be continued for about two weeks to prevent a relapse.

ST. JOHN MEDICAL SOCIETY.—At the annual meeting of the St. John Medical Society, the following officers were elected for the ensuing year :—Dr. P. R. Inches, President ; Dr. James Christie, and Dr. G. L. Taylor, (of Hampton,) Vice-Presidents ; Dr. Wm. Christie, Treasurer ; and Dr. Geo. A. Hetherington, Secretary.

THE thirty-seventh annual meeting of the Association of Medical Superintendents of American Institutions for the Insane, opened at Newport, R. I., on the 26th July. Delegates were present from thirty States, and from the provinces of Quebec and New Brunswick. Dr. John P. Gray, of Utica, N. Y., was elected President for the ensuing year.

PERSONAL.—Dr. W. J. Robinson, of Fergus, has recently married the daughter of the late Dr. Orton, and commenced practice in Ancaster, Ont. Dr. W. H. Aikins, son of Governor Aikins, has returned from Vienna, and is now in Winnipeg, Man.

APPOINTMENTS.—Dr. W. F. McLean has been appointed Demonstrator of Anatomy in the London Medical College, and Dr. J. M. Jackson Assistant Demonstrator.

John Thomas Duncan, M.D., of this city, has been appointed Associate Coroner in and for the city of Toronto. Dr. Riddel's resignation has been accepted.

ERRATUM.—On page 344 of the July issue, for Dr. Drink read Dr. Druitt.

Books and Pamphlets.

A TREATISE ON FRACTURES, by Lewis A Stimson, B.A., M.D., Professor of Surgical Pathology in the Medical Faculty of the University of the City of New York. Philadelphia: Henry C. Lea's Son & Co. Toronto : N. Ure & Co.

There are three things which especially recommend this little work to our favourable consideration ; its extremely practical character, its avoidance of unnecessary detail, and the unpretentiousness and absence of anything approaching egotism which the author displays. It does not purport to be so much the result of his own observations as a collection of those of others. To the student who needs a somewhat fuller account of fractures and their treatment than is to be found in the usual surgical text-books, it will be invaluable, as, except on the subject of compound fractures, on which the author has very little to say, it is full without being burdened with the cumbersome minutiæ in which so many book-makers delight. The author has, wisely we think, followed no cast iron rules, and has left much to the good sense and discrimination of his readers. The first third of the book is devoted to the varieties, etiology, pathology, complications and treatment of fractures in general, which are then individually discussed at length. The chapter on fractures of the thigh is particularly exhaustive, and considerable space is given to Colles fracture. The varieties of splints and other me-

chanical appliances of a like nature, including some of the later inventions, are described and illustrated by wood-cuts, but the author has carefully avoided cumbering his pages with accounts of improved and unpractical methods and apparatuses. The author is a moderate believer in the plaster-of-Paris dressing, and devotes some space to the explanation of the preparation and application of its various forms. On the subject of antiseptic dressings he has very little to say, and limits himself to detailing the rules for their employment. The book is profusely illustrated, and contains a quantity of valuable statistics, which, like the illustrations, are in the main taken from Gurlt's work. Its principal shortcoming is the smallness of the space devoted to differential diagnosis

THE INTERNATIONAL ENCYCLOPEDIA OF SURGERY. A Systematic Treatise on the Theory and Practice of Surgery, by authors of various nations. Edited by John Ashhurst, Jr., M.D., Prof. Clinical Surgery, University of Pennsylvania. Vol. III., 1883. New York: Wm. Wood & Co. Toronto: Willing & Williamson.

This elaborate work, which will be completed in six volumes, has reached three volumes, the first and second of which have been favorably noticed in our pages. Our admiration for the work increases as it progresses. It is one of which its authors may well be proud. The present volume contains about 700 pages, and is presented in a most attractive form by the publishers. We are informed that this great international work is being translated and published in France and Italy. The volume before us treats in a masterly way, injuries and diseases of the various tissues, muscles, tendons, fasciæ, lymphatics, bloodvessels, vascular system, aneurisms, nerves and joints. Several chromo-lithographs embellish this volume. The complete work will form a valuable contribution to modern surgery. The editor, in conclusion, laments the death of one of his most distinguished collaborators, the late Prof. W. H. VanBuren, of New York.

INSANITY; ITS CAUSES AND PREVENTION. By H. P. Stearns, M.D., Superintendent of the Retreat for the Insane, Hartford, Conn. New York: G. P. Putnam & Sons.

This is a most valuable book. The author tells us in his preface, "it has not been written for specialists exclusively, though it is hoped it will not prove wholly uninteresting to them, but rather for those in the general practice of medicine, educators, and the more intelligent lay members of society."

It is beyond all question that to the last two classes its careful perusal would be unspeakably valuable, but especially the three chapters treating of education in its three important forms, of scholastic, industrial, and moral. The whole of these is so good and forcible that to attempt quotations would be nothing short of mutilation, and as the book is not a large one—only 248 pages of short octavo—and on excellent paper with very plain type, we would hope that it will find a place on every drawing room table. Parents, teachers and all persons interested in the future well-being of youth could not fail to derive instruction from its wise admonitions; nor could it be less profitable to the young, who would find in it much good advice on the important subjects of marriage, alcohol, tobacco, insufficient sleep, overwork of brain, religion, poverty, rest and recreation, etc., all written in very plain, clear language. In truth the book would be a household treasure.

ON THE DISPOSAL OF SEWAGE. Issued by the Provincial Board of Health. Toronto: Printed by C. Blackett Robinson.

This is No. 11 of the series of *brochures* issued by the Provincial Board of Health, and is, it may safely be said, the only document of any practical value published by that body since its inauguration. It is merely what its name implies, a brief *resumé* of the various methods of disposing of sewage, chiefly adapted from such works as those of Parkes, Wilson, Bayles, Waring and Lutham, and is illustrated by several wood-cuts. The style is as simple as possible and entirely free from technological terms, so as to be comprehensible even to the most uninitiated. The pamphlet is a decided improvement upon its predecessors, and the appearance of a few more such would go far towards establishing the Board's reputation for doing something of value in the interest of public sanitation.

DIAGNOSIS OF OVARIAN CYSTS BY MEANS OF THE EXAMINATION OF THEIR CONTENTS. By H. J. Garrigues, A.M., M.D. New York: William Wood & Co. Toronto: Willing & Williamson.

This is a reprint in book form of the excellent papers on the above subject which appeared some time ago in the *Obstetrical Journal*.

NEW PRINCIPLE FOR THE ASSIMILATION OF FAT

HYDROLEINE "HYDRATED OIL."

"HYDROLEINE" may be described as partially digested oil, which will nourish and produce increase in weight, in those cases where oils or fats, not so treated, are difficult or impossible to digest. In CONSUMPTION and other WASTING DISEASES, the most prominent symptom is *emaciation*, of which the first is the starvation of the fatty tissues of the body, including the brain and nerves. This tendency to emaciation and loss of weight is arrested by the regular use of HYDROLEINE. The ordinary so-called emulsions of Cod Liver Oil and other fats, *whether pancreatised or not*, merely remain in the form of a coarse mechanical mixture for a short time after agitation. The digestion of oil, having in no sense been artificially produced, still devolves upon those functional powers, the deficiency of which is the most prominent symptoms in these cases.

"A great misconception as to the real characteristics of a true pancreatic emulsion has been entertained by many, and but few appear to have studied the different aspects presented by such an emulsion as is produced on fat by the energetic action of pure soluble pancreatin, as contrasted with the coarse mechanical mixtures of oil or fat and water, which are commonly supposed to represent this function of fermentative digestion.

Some seem to think that if a bottle of oil is shaken up with the compounds sold as the active principle of the pancreas, and a yellowish cloud is diffused for a time through the oil, an emulsion has been obtained. So it has, but not the true pancreatic emulsion, which forms an integral portion of the process by which fats are digested and assimilated. From the unvarying result of many hundred trials with the pure, active principles of healthy pancreatic fluid, taken at the time of digestion, I am perfectly convinced that no valuable result has been attained, unless the emulsion formed is as highly refractive of light as milk. The color may vary, according to the oil or fat used, from a far whiter fluid than the densest milk to the opacity and color of Devonshire cream, but unless at least the equivalent of the density of the best milk is produced in oil, when a third of water is held in suspension, no real pancreatic emulsion has been formed.

The mere mechanical mixture formed by common pancreatin is rarely better or more persistent than may be produced by rubbing up oil or fat with a solution of mucilage, or by a warm application of dissolved gelatin, shaken with oil until it becomes cold.

The first essential towards the digestion of fats or oils in the human body is that it shall assume the state of the very finest and most permanent emulsion, and this is only known to be attained when the oil and water is perfectly opaque, from the minuteness of the globules. This is the first function of the pancreatic emulsifying principle, and by this alone can we be certain that it possesses its proper fermentative activity."—*Prof. Bartlett's Treatise.*

(HYDRATED OIL)

HYDROLEINE

(WATER AND OIL.)

The efficacy of this Preparation is **NOT CONFINED** to cases of **CONSUMPTION**, as from its valuable tonic effect on the nervous system, in addition to its special stimulating action on the organs concerned in the production of Fat in the body, *it causes rapid increase in weight in persons of naturally thin habit, who do not present any evidence of disease.*

The principles upon which this discovery is based have been described in a treatise on "THE DIGESTION AND ASSIMILATION OF FATS IN THE HUMAN BODY," by H. C. BARTLETT, PH. D., F.C. S., and the experiments which were made, together with cases illustrating the effect of Hydrated Oil in practice, are concisely stated in a treatise on "CONSUMPTION AND WASTING DISEASES," by G. OVEREND DREWRY, M.D., of London.

In these treatises, the Chemistry and Physiology of the Digestion of Fats and Oils is made clear, not only by the description of a large number of experiments scientifically conducted, but by cases in which the deductions are most fully borne out by the results.

Copies of these valuable works will be sent free on application.

FORMULA OF HYDROLEINE.

Each dose of two teaspoonsful, equal to 120 *drops, contains:*

Pure Oil	80 *m* **(drops.)**
Distilled Water	35 "
Soluble Pancreatin	5 **grains.**
Soda	½ "
Boric Acid	¼ "
Hyocholic Acid	1-20 "

DOSE.—Two teaspoonsful alone, or mixed with twice the quality of soft water, to be taken thrice daily with meals.

Unlike the ordinary preparation of Cod-Liver Oil, it produces no unpleasant eructation or sense of nausea, and should be taken in such very much smaller doses, according to the directions, as will insure its complete assimilation; this, at the same time, renders its use economical in the highest degree.

Upon application from any of the Medical Faculty, I will be pleased to forward samples, which will substantiate the claims made for Maltopepsyn, and I hope for your assistance in this my endeavour to introduce a good preparation at a low price.

FOR CONSUMPTION AND WASTING DISEASES.

HYDROLEINE (HYDRATED OIL)

FOR DYSPEPSIA, INDIGESTION, ETC.,

MALTOPEPSYN.

Having for the past three years published the names of most of the leading physicians of Canada endorsing both these remedies, I will therefore now only give the names of a few of the profession, and will add the opinions of some of the leading Druggists throughout the Dominion.

JAS. H. RICHARDSON, M. D.,	TORONTO.
J. ALGERNON TEMPLE, M. D.,	"
J. H. MCCOLLUM, M.D.,	"
JOHN E. KENNEDY, M.D.,	"
O. S. WINSTANLEY, M.D.,	"
J. E. GRAHAM, M.D.,	"
J. H. BURNS, M.D.,	"
CHAS. WM. COVERNTON, M.D.,	"
JOHN, REDFIELD, M.D.,	MONTREAL.
D. C. MACCALLUM, M.D.,	"
F. G. RODDICK, M.D.,	"
GEO. ROSS, M.D.,	"
JOHN T. FINNIE, M.D.,	"
GASPARD ARCHAMBAULT, M.D.,	"
W. B. BURLAND, M.D.,	"
CASEY A. WOOD, M.D.,	"
A. LAPTHORN SMITH, M.D.,	"

FROM LEADING CHEMISTS AND DRUGGISTS.

144 ST. LAWRENCE MAIN ST., MONTREAL, NOV. 18, 1880.

I beg to say that Hydroleine is increasing in favor with the medical profession. It digests easily and in most cases rapidly, and brings up the weight of the patient. To prove which, several physicians have weighed their patients before beginning the remedy. My sales this month are larger than ever.

HENRY R. GRAY, Chemist.

TORONTO, AUG. 15, 1881.

With reference to your Maltopepsyn, I would say I have never sold any preparation of the kind which seemed to give such universal satisfaction both to physicians and patients.

The increasing sales with the testimony of numbers who have obtained marked benefit from its use, show that Hydroleine is a great success.

H. J. ROSE, Pharmacist.

TORONTO, JULY 20, 1881.

We have much pleasure in informing you that the sale for Hydroleine and Maltopepsyn is increasing greatly, both over counter and in dispensing. Many people who cannot take Cod Liver Oil take the Hydroleine with great benefit.

E. HOOPER & Co., Chemists and Druggists.

MONTREAL, AUG. 15, 1881.

We have very favorable news in reference to Hydroleine and Maltopepsyn. Their sale is increasing, and we have heard through medical men who have prescribed them that they both give entire satisfaction.

LAVIOLETTE & NELSON, Pharmacists.

MONTREAL, AUG. 15, 1881.

I have much pleasure in saying that numbers of my customers express themselves highly satisfied with the action of both Hydroleine and Maltopepsyn, and in consequence I find the sales increasing.

J. A. HARTE, Chemist and Druggist.

---

444 QUEEN ST. WEST, TORONTO, MARCH 4, 1882.

I have much pleasure in informing you that the sale of Hydroleine and Maltopepsyn is rapidly increasing, and the very best of results invariably follow their use. Leading medical men are ordering them freely, which fact is sufficient guarantee of their being reliable preparations.

HARRY SHERRIS.

171 KING ST. EAST, TORONTO, FEBRUARY 3, 1882.

I feel it a duty to the public and yourself to communicate to you the very satisfactory results affected by your Maltopepsyn.

JOSEPH DAVIDS & CO.

---

382 & 630 QUEEN ST., 324 SPADINA AVE., TORONTO, FEB., 1882.

I have been selling your Hydroleine and Maltopepsyn for some time past, and find it gives universal satisfaction.

JOSIAH GREEN.

---

243 YONGE ST., TORONTO, 1882.

I have sold Hydroleine and Maltopepsyn since their introduction, and must say that they have given entire satisfaction.

CHAS. W. HOWARTH.

BELLEVILLE, FEBRUARY, 1882.

We have sold both remedies, and find them spoken of very favorably by both the Medical Profession and the Public.

We can safely recommend them to parties needing such remedies.

L. W. YEOMANS & CO.

BELLEVILLE, ONT., FEBRUARY, 1882.

In recommending Hydroleine and Maltopepsyn, we endorse the opinions of many of our customers who have used both.

JAS. CLARKE & CO.

BELLEVILLE, FEBRUARY, 1882.

I believe Hydroleine gives general satisfaction. I have also received very good reports from the use of Maltopepsyn in cases where other preparations have failed.

A. L. GEEN.

BELLEVILLE, ONT., FEBRUARY 7, 1882.

I have much pleasure in recommending your preparations of Maltopepsyn and Hydroleine, as they have given entire satisfaction wherever they have been used.

R. TEMPLETON.

BELLEVILLE, FEBRUARY 8, 1882.

I have much pleasure in assuring you of the general usefulness of your Hdyroleine, and the confidence bestowed upon it by those who have used it. One customer says, respecting his child troubled with Chronic Bronchitis, "Nothing answers him so well; he thrives upon it."

W. R. CARMICHAEL.

BROCKVILLE, ONT., FEB. 13, 1882.

We have much pleasure in stating that for the past two years we have sold Hydroleine. It has given satisfaction, as the sales of it have been considerable, and we have had no complaints.

ALLAN, TURNER & CO.

LONDON, ONT., NOV. 24, 1881.

I have much pleasure in informing you that the sale for Hydroleine and Maltopepsyn is increasing greatly, both over the counter and in dispensing. Many people who cannot take the Cod Liver Oil take Hydroleine with great benefit.

W. T. STRONG.

OWEN SOUND, JAN. 6, 1882.

The sale of your preparations, Hydroleine and Maltopepsyn, has been very large, giving satisfaction wherever used.

ROBERT WIGHTMAN.

WINGHAM, ONT., JAN. 11, 1882.

I have used Hydroleine and Maltopepsyn for over a year, and have the satisfaction of knowing that I can safely and confidently recommend them to my customers.

W. T. BRAY.

NEW REMEDY FOR TEETHING INFANTS

And Adults Suffering from Nervousness, Headache, Etc.

MORSE'S

GLYCEROLE OF CELERY COMPOUND.

EACH FLUID DRACHM CONTAINS:

CELERY SEED - - - -	4 Grains.
CATNIP HERB - - - - -	5 Grains.
CHAMOMILE - - - -	2 Grains.

Dose for Teething Infants, from 2 to 60 drops, according to age.
For Adults, from 1 to 2 teaspoonsful.

Celery Compound is a *safe* and pleasant substitute for opium and other powerful drugs, as has been proven by many physicians, and also at the Infant's Home. See following letter:—

INFANT'S HOME AND INFIRMARY.

HAZEN MORSE, ESQ. TORONTO, 29TH DECEMBER, 1882.

DEAR SIR,—I must thank you for the bottles of Celery Compound. I have used it especially with the teething infants, and have found it a certain remedy for feverishness and every form of indigestion, and for the weak and sickly ones it was invaluable as a tonic, and I shall have the greatest pleasure in recommending its use to everyone. Wishing you every success, I beg to remain, yours very respectfully,

M. WHITE, Head Nurse.

It is not necessary to speak of the advantages obtained by substituting Celery Compound for opium, as they will be at once apparent to every physician. I would call attention to the following notice, taken from the Toronto *Evening News*, March 7, 1883:—

THE DEADLY SOOTHING SYRUP.

The Drugs With Which Many Little Babies Are Poisoned.

Cincinnati Enquirer.

The recent death in St. Louis from the injudicious administration of a certain soothing syrup to two infants (twins) has aroused attention to the danger attending the use of opiates by mothers and nurses to quiet young babies. In this case the medicine was given every day for a week, according to the testimony of one witness. The children, it is supposed, became saturated with the opiate. R. Harger, a St. Louis chemist, said there was no opium in the sample bottle of soothing syrup furnished him, but that an ordinary bottle of the same stuff bought by him he found four grains of morphine to the ounce. The stuff is the more dangerous that those using it are not careful to shake the bottle, and the morphine floats on top. Another comes from the fact that the appetite for opium grows rapidly, and the dose which satisfied the child to-day is not enough for to-morrow, and it must be increased. If the stuff is in the house it is difficult to prevent nurses from using it surreptitiously. A careless person can easily make a mistake through inattention, and not be aware that an overdose has been taken until it is too late.

"There are cases," said Dr. T. C. Minor, "of poisoning from the use of soothing syrup happening occasionly in this city. In the returns to the health board there is a blank for 'immediate cause of death,' and another for 'remote cause of death.' I remember, it seems to me, at least three cases while I was health officer, where the immediate cause of death was stated to be the use of soothing syrup. This medicine contains considerable opium. I do not think opium should be given in any form to a young infant, except where the physicians deem it necessary, and then only under his direction. In cases of colic, which is the distention of the intestines by gas, warm teas will give the necessary relief, and are entirely safe. Paregoric is a safer thing than soothing syrup, but there should be no opiates administered to quiet a child. There is always danger that it will cause congestion of the brain. Some classes of congestion of the brain reported in young children are the result of administering soothing syrup, or some other opiate. It is more difficult to rally a child from the effects of an overdose of an opiate than an adult."

HAZEN MORSE,
Sole Proprietor,
International Bridge, Ontario, and Buffalo, N. Y.

BELLEVUE HOSPITAL MEDICAL COLLEGE,

CITY OF NEW YORK.

SESSIONS OF 1883-4.

THE standard of Medical Ethics recognized by the College is embodied in the Code of Ethics of the American Medical Association.

The COLLEGIATE YEAR embraces the Regular Winter Session and a Spring Session. The REGULAR SESSION begins on Wednesday, September 19, 1883, and ends about the middle of March, 1884. During this session, in addition to the regular didactic lectures, two or three hours are daily allotted to clinical instruction. Attendance upon two regular courses of lectures is required for graduation. The SPRING SESSION consists chiefly of recitations from Text-books. This Session begins about the middle of March and continues until the middle of June. During this Session, daily recitations in all the departments are held by a corps of Examiners appointed by the Faculty. Short courses of lectures are given on special subjects, and regular clinics are held in the Hospital and in the College building.

FACULTY.

ISAAC E. TAYLOR, M.D.,
Emeritus Professor of Obstetrics and Diseases of Women and Children, and President of the Faculty.

FORDYCE BARKER, M.D., LL.D.,
Professor of Clinical Midwifery and Diseases of Women.

AUSTIN FLINT, M.D., LL.D.,
Professor of the Principles and Practice of Medicine, and Clinical Medicine.

FREDERIC S. DENNIS, M.D.,
Professor of Principles and Practice of Surgery, and Clinical Surgery.

LEWIS A. SAYRE, M.D.,
Professor of Orthopedic Surgery and Clinical Surgery.

ALEXANDER B. MOTT, M.D.,
Professor of Clinical and Operative Surgery.

WILLIAM T. LUSK, M.D.,
Professor of Obstetrics and Diseases of Women and Children, and Clinical Midwifery.

BENJAMIN W. McCREADY, M.D.,
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A. A. SMITH, M.D.,
Professor of Materia Medica and Therapeutics, and Clinical Medicine.

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Professor of Physiology and Physiological Anatomy, and Secretary of the Faculty.

JOSEPH D. BRYANT, M.D.,
Professor of Anatomy and Clinical Surgery, and Associate Professor of Orthopedic Surgery.

R. OGDEN DOREMUS, M.D., LL.D.,
Professor of Chemistry and Toxicology.

EDWARD G. JANEWAY, M.D.,
Professor of Diseases of the Nervous System, and Clinical Medicine, and Associate Professor of Principles and Practice of Medicine.

Professors of Special Departments, etc.

HENRY D. NOYES, M.D.,
Professor of Ophthalmology and Otology.

EDWARD L. KEYES, M.D.,
Professor of Cutaneous and Genito-Urinary Diseases.

JOHN P. GRAY, M.D., LL.D.,
Professor of Psychological Medicine and Medical Jurisprudence.

WILLIAM H. WELCH, M.D.,
Professor of Pathological Anatomy and General Pathology.

J. LEWIS SMITH, M.D.,
Clinical Professor of Diseases of Children.

BEVERLY ROBINSON, M.D.,
Clinical Professor of Medicine.

FRANCKE H. BOSWORTH, M.D.,
Professor of Diseases of the Throat.

CHARLES A. DOREMUS, M.D., Ph.D.,
Professor Adjunct to the Chair of Chemistry and Toxicology.

WILLIAM H. WELCH, M.D.,
Demonstrator of Anatomy.

Fees for the Regular Session.

Fees for Tickets to all the Lectures, Clinical and Didactic	$140 00
Fees for Students who have attended two full courses at other Medical Colleges, and for Graduates of other Medical Colleges	70 00
Matriculation Fee	5 00
Dissection Fee (including material for dissection)	10 00
Graduation Fee	30 00

No Fees for Lectures are required of third-course Students who have attended their second course at the Bellevue Hospital Medical College.

Fees for the Spring Session.

Matriculation (Ticket valid for the following Winter)	$5 00
Recitations, Clinics and Lectures	40 00
Dissection (Ticket valid for the following Winter)	10 00

For the annual Circular and Catalogue, giving regulations for graduation and other information, address

PROF. AUSTIN FLINT, JR.,
Secretary, Bellevue Hospital Medical College.

UNIVERSITY OF BISHOP'S COLLEGE,

MONTREAL.

FACULTY OF MEDICINE.

SESSION OF 1883-84.

THE THIRTEENTH WINTER SESSION Of this Faculty will open on the 2nd of October next. A pre-sessional course of Lectures on special subjects will commence on September 1st in the Lecture Room of the Montreal General Hospital, and will continue till the opening of the Winter Session. This course is FREE to all students of the College.

The Faculty of Medicine of Bishop's College bases its claim for public support upon the thoroughly practical character of its instruction, and the fact that the means at its disposal for this purpose are not excelled by any medical school in Canada. It was the first to establish a Chair of Practical Physiology, and its Physiological Laboratory is the most complete and extensive in the Dominion.

Its Diploma is recognized by the Royal College of Physicians, Edinburgh; the Royal College of Surgeons, England; and the Royal College of Physicians, London.

Students have the option of attending the practice of either the Montreal General Hospital (200 beds) or of the Hotel Dieu Hospital (200 beds), both of which Institutions have a staff who regularly and systematically visit them. At the Montreal General Hospital excellent facilities are afforded for the study of Practical Pathology, under the direction of the Pathologist of the Hospital. The practice of the Montreal Dispensary—where splendid opportunity is afforded to learn Dispensing—is open to the Students of Bishop's College.

The new Western Hospital has its attending staff composed of members of this Faculty. It has fifty beds, and has a Gynecological Department, and an Obstetrical Department, the latter being under the superintendence of the Professor of Midwifery of Bishop's College. This Hospital affords students a field for Midwifery practice unequalled in Canada. It is the only Gynecological Hospital in Canada, and the Professor of Gynecology will attend it during the Session, thus affording practical illustration of his course.

Two Gold Medals ("The Wood," and the "Robert Nelson" Gold Medals) and the "Dr. David" Scholarship are competed for annually.

Fees, about the same as at the other Medical Schools in Canada, but a student who pays the cost of the entire course, on the commencement of his studies, is able to effect considerable reduction.

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Professor of the Theory and Practice of Medicine,
Dean of Faculty.

R. A. KENNEDY, M.A., M.D., C.M.,
Professor of Midwifery and Diseases of Children, Registrar of Faculty.

J. BAKER EDWARDS, M.A., Ph. D., D. C. L.,
Emeritus Professor of Practical Chemistry and Microscopy.

GEORGE E. ARMSTRONG,
Professor of Physiology.

J. B. McCONNELL, M.D.,
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E. H. TRENHOLME, M.D., B.C.H.,
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C. ALBERT WOOD, C.M., M.D.,
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JAMES C. CAMERON, M.D., C.M., M.R.C.P.L.,
Professor of Medical Jurisprudence.

THOMAS SIMPSON, M.D.,
Professor of Hygiene.

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Professor of Anatomy.

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Professor of Chemistry and Lecturer on Histology.

DENNIS GAHERTY, C.M., M.D.,
Demonstrator of Anatomy.

ANTHONY KERRY, C.M., M.D.,
Curator of Museum.

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Lecturer on Minor Surgery.

ALEXANDER PROUDFOOT, M.D., C.M.,
Lecturer on Diseases of the Eye, Ear and Throat.

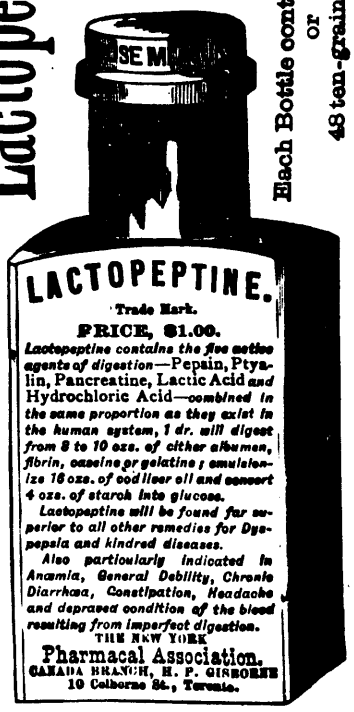
JOSEPH BEMROSE, F. C., Lecturer on Practical Chemistry.

For Circular giving every requisite information apply to

RICHARD A. KENNEDY, M.D.,
Registrar, Montreal.

Montreal, May, 1883.

Lactopeptine.



Each Bottle contains 1 ounce
or
48 tea-grain Doses.

DEMONSTRATED SUPERIORITY OF

LACTOPEPTINE

AS A DIGESTIVE AGENT.

Certificate of Composition and Properties of Lactopeptine by Professor ATTFIELD, Ph.D., F.R.S., F.I.C., F.C.S., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain.

LONDON, May 3, 1882.

Lactopeptine having been prescribed for some of my friends during the past five years—apparently with very satisfactory results—its formula, which is stated on the bottles, and its general character, have become well known to me. But recently the manufacturer of this article has asked me to witness its preparation on the large scale, to take samples of its ingredients from large bulks, and examine them and also mix them myself, and to prepare Lactopeptine from ingredients made under my own direction, doing all this with the object of certifying that Lactopeptine is what its maker professes it to be, and that its ingredients are in quality the best that can be obtained. This I have done, and I now report that the almost inodorous and tasteless pulverulent substance termed Lactopeptine is a mixture of the three chief agents which enable ourselves and all animals to digest food. That is to say, Lactopeptine is a skilfully prepared combination of meat-converting, fat-converting, and starch-converting materials, acidified with those small proportions of acids that are always present in the healthy stomach; all being disseminated in an appropriate vehicle, namely, powdered sugar of milk. The acids used at the factory—lactic and hydrochloric—are the best to be met with and are perfectly combined to form a permanent preparation; the milk sugar is absolutely pure; the powder known as "diastase" or starch-digesting (bread-, potato-, and pastry-digesting) material, as well as the pancreatin," or fat-digesting ingredient, are as good as any I can prepare; while the pepsin is much superior to that ordinarily used in medicine. Indeed, as regards this chief ingredient, pepsin, I have only met with one European or American specimen equal to that used by the manufacturer of Lactopeptine. A perfectly parallel series of experiments showed that any given weight of acidified pepsin, alone, at first acts somewhat more rapidly than Lactopeptine containing the same weight of the same pepsin. Sooner or later, however, the action of the Lactopeptine overtakes and outstrips that of pepsin alone, due, no doubt, to the meat-digesting as well as the fat-digesting power of the pancreatin contained in the Lactopeptine. My conclusion is that Lactopeptine is a most valuable digesting agent, and superior to pepsin alone.

JOHN ATTFIELD.

LACTOPEPTINE contains all the agents of digestion that act upon food, from mastication to its conversion into chyle, thus combining all the principles required to promote a Healthy Digestion.

One of its chief features (and the one which has gained it a preference over all digestive preparations) is, that it precisely represents in composition the natural digestive juices of the stomach, pancreas and salivary glands, and will therefore readily dissolve all foods necessary to the recuperation of the human organism.

FORMULA OF LACTOPEPTINE:

Sugar of Milk	40 ounces.	Veg. Ptyalin or Diastase	4 drachms.
Pepsin	8 ounces.	Lactic Acid	5 fl. drachms.
Pancreatine	6 ounces.	Hydrochloric Acid	5 fl. drachms.

LACTOPEPTINE is sold entirely by Physicians' Prescriptions, and its almost universal adoption by physicians is the strongest guarantee we can give that its therapeutic value has been most thoroughly established.

The undersigned having tested LACTOPEPTINE recommend it to the profession.

ALFRED F. A. KING, M.D., Washington, D. C. *Prof. of Obstetrics, University of Vermont.*

D. W. YANDELL, M.D., *Prof. of the Science and Art of Surg. and Clinical Surg., University of Louisville, Ky.*

L. P. YANDELL, M.D., *Prof. of Clin. Med., Diseases of Children, and Dermatology, University of Louisville, Ky.*

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W. W. DAWSON, M.D., Cincinnati, Ohio, *Prof. Prin. and Prac. Surg., Med. Col. of Ohio; Surg. to Good Samaritan Hospital.*

PROF. JOHN ATTFIELD, Ph.D., F.R.S., F.C.S., London, Eng.

For further particulars concerning Lactopeptine, the attention of the Profession is respectfully directed to our 32-page Pamphlet, which will be sent on application.

MANUFACTURED BY THE N. Y. PHARMACAL ASSOCIATION, NEW YORK.

CANADA BRANCH:—H. P. GISBORNE, 10 COLBORNE ST. TORONTO.