

92

The Antiseptic

Vol-43

NO-1

January - 1946

JL

Lm 211 / NO 4 AN.

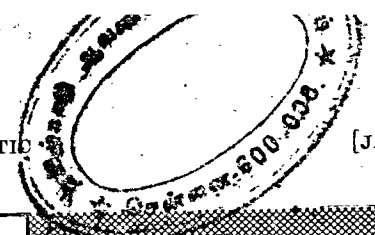
N 46.43.1

14 71 546.

1946]

THE ANTISEPTIC

[JAN.



TOILET



AND

80 YEARS OF

VITAMINS WANDER

All WANDER vitamin products are subject to regular check by the Institute for Official Vitamin Control in Switzerland, thus guaranteeing to both physician and patient the maximum exactitude.

B-Vit (B₁),	neurotropic factor: neuritis, polyneuritis, sciatica, etc.
C-Vit (C),	Hypovitaminosis, scurvy, Moeller-Barlow's disease, hæmorrhagic diathesis, etc.
Vi-De (D₂),	rachitis, scrofulosis, fractures.
Vi-Etal (E),	abortions of all kinds, frigidity, impotence.
Vi-Nicotyl (PP),	anti-pellagra factor, also specially indicated in cases of sulfonamide intolerance (cyanosis).

EXPERIENCE

Sole Importers: Dr. A. WANDER (India) LIMITED, P. O. Box 1125, BOMBAY.

CONTENTS

ORIGINAL ARTICLES:

	PAGE		PAGE
Operative Treatment of Indirect Inguinal Hernia. U. MOHAN. RAU. M.S., F.R.C.S. (Eng.), Hony. Surgeon, Govt. General Hospital Madras.	1	Toxicosis of Mepacrine. S. N. DAS. L.M.F., Somra, Dt. Bengal.	
Infantile Hepatic Cirrhosis. A. V. S. SARMA, M.B.B.S. (Mad.), D.C.H., R.C.P. & S. (Eng.), Madras.	12	A Case of Malaria Complicated with Meningitis. Ratilal C. PATEL, L.C.P.S. (Bom.), L.T.M. (Cal.), Sadhali (Baroda).	
Diagnosis of Leprosy. R. Subramaniam, M.D. (Madras), M.R.C.P. (Lond.), M.O., Leprosy, Dept. Govt. General Hospital, Madras.	35	Cases of Diphtheria of Tongue. Dr. D. T. MEHTA, L.C.P.S. (Bom.), Gheekanta, Ahmedabad.	
The Present Day Caesarian Operation. F. R. W. K. Allen, D.M., M.A.O., M.A., (Dub.), M.R.C.O.G., F.I.C.S.,	39	EDITORIAL: The Crucial Year.	
Impetigo Contagiosa. T. V. VENKATESAN, M.B.B.S., The Govt. Erskine, Hospital, Madura.	51	GLEANNINGS from MEDICAL PRESS: Medicine & Therapeutics	
CASES and COMMENTS: Acute Pulmonary Edema. M. P. Rajan, L.M.P., Laheria-Sarai.	52	Surgery	
My Experience with Cinchonine. GIRINDRA NATH SINHA, L.M.P. (B. & O.), M.O., Barwadin (Palamar)	54	Obstetrics & Gynaecology	
Chronic Myeloid Leukæmia in a Girl. P. N. LAHA, M.D., (Pat.), Agra.	56	Proceedings of Associations	
		Book Reviews	
		Correspondence	
		Preparations & Inventions	
		News and Notes	
		A Query	

META-LIVER CO

Concentrated Liver Extract ...	28 Gm.
Vitamin B ₁ ...	6 Mg.
Vitamin B ₂ ...	120 S-B Units
Assimilable Iron ...	30 gr.
Traces of Copper & Manganese ...	per Oz.

Indicated in all forms of Anæmias, Sprue, Chlorosis, Allergy etc. In pre-tubercular conditions, convalescence after prolonged illness and surgical operations, hæmorrhages etc.

Especially indicated in pregnancy, and after child-birth.

OTHER SPECIALITIES:—

MALIMUL	METADOL
META-BRONCOL	META-LACTOL
META-CALCIN	META-VIGOR
META-CREOL	MORIOL-D.

Standardised B.P. Tinctures etc.

Manufactured by:—

The Bombay Drug House, Ltd., Bombay No. 7.

When writing to advertisers, please mention the "Antiseptic."

11 FEB 1946

when SULPHATHIAZOLE has to be prescribed
invite you to prescribe

R. 'M & B 760'
'THIAZAMIDE'



SUPPLIES:

Tablets, containers of 20, 25, 100, 500. Powder: Bottles of 15 gm.
Powder with 1% Proflavine: Bottles of 15 gm.
'THIAZAMIDE SODIUM' 6 x 1 gm.

The manufacture and sale of this product is fully protected by Indian patents Nos. 26513/39 and 26850/39 (May & Baker Ltd.), and by corresponding patents in many other countries.

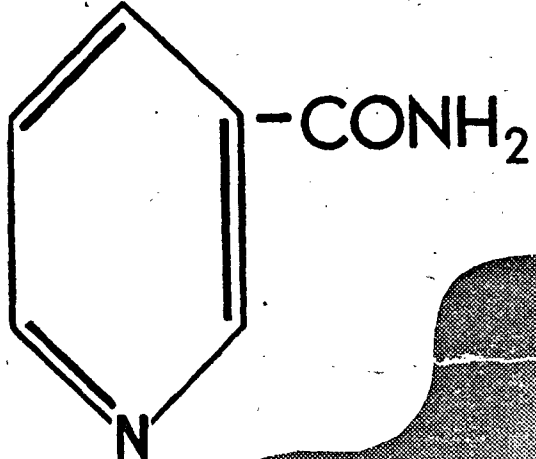
MAY & BAKER LIMITED
Distributed by MAY & BAKER (INDIA) LTD.

★ TRADE MARK

INDEX TO ADVERTISERS

	PAGE		PAGE
Albert David Ltd.	41	Khatau Makanji Spinnig & Weaving Co. Ltd.	67
Alembic Chemical Works Co., Ltd.	57, 65	Kothari Book Depot	42
Allied Drug Industries Ltd.	49, 69	Kulkarni's Laboratories, Dr.	72
Andhra Pharmaceutical Works Ltd.	61	Lexin Laboratory	79
Angier Chemical Co., Ltd.	28	Liverites Co.	42
Anglo-French Drug Co., (Estn.) Ltd.	20	Maharashtra Chemicals Ltd.	78
Associated Drug Co. Ltd.	25	Malik & Co.	51
Associated Drugs & Chemical Concern Ltd.	55	Mandoss & Co., Ltd.	71
Bengal Chemical & Pharmaceutical Works		Marmite Food Extract Co.	77
Inside of Back cover &	44	May & Baker (India) Ltd. Front Cover & 3,	32
Bengal Drug House Ltd.	70	Meclec Nutriment & Pharmaceuticals Ltd.	28
Bengal Immunity Co., Ltd.	40	Medical Supply Concern Ltd.	51
Bengal Research Institute	77	Modern Drug House	51
Bhattacharyya & Co.	51	Morison Son & Jones (India) Ltd.	10
Biddle Sawyer & Co., (India) Ltd.	58	Mukerji & Co., Ltd., H.	54
Birla Laboratories	26	National Chemical & Pharm. Works Ltd.	30
Bombay Drug House Ltd.	2	Navaratna Pharmaceutical Labs.	68
Bombay Surgico Medical Agency	8	Nestle's Milk Products	6
Boots Pure Drug Co., Ltd.	48	New Surgical Trading Co.	16
British Drug Houses Ltd.	38	Nonglay Modern Virtues	46
Brothers, V. M.	46	Oakley, Bowden & Co. (Madras) Ltd.	13
Inside of Front Cover	31	Oriental Pharmaceutical Industries Ltd.	9
Butterworth & Co. (India) Ltd.	71	Oriental Research & Chemical Lab. Ltd.	16
Calcutta Clinical Research	50	Orient Laboratory Ltd.	17
Chemo-Pharma Laboratories Ltd.	62	Parekh Trading Co.	10, 53
Ciba (India) Ltd.	23	Parke Davis & Co. Outside of Back Cover	
Cipla Laboratories	33	Pearl Chemical Industries	47
Continental Drug Co.	12	Pharmaceutical Laboratories of India	13
Corn Products Co., (India) Ltd.	74	Phoenix Drug House	50
Cossor & Son, A. C., Ltd.	25	Polyclinical Laboratory	30
Clinic, The	43	Premier Drug Co.	47
Crookes Laboratories	21	Primeo Ltd.	51
Davis & Lawrence Co.	11	Punjab Medical Journal, The	78
Dhur & Sons, Ltd., U.N.	43	Purohit's Pharmacy, Dr.	14
DeKage & Co. B. C.	76	Ranbaxy & Co.	27
Deodhar Bros.	43, 52, 79	Reckitt & Sons (Dettol)	35
Dysentone Pharmacy	43	Roy & Co., S.C.	77
East India Pharm. Works Ltd.	52	Scientific Indian Glass Co., Ltd.	47
Eli Lilly & Co. Inside of Front Cover	26	South Indian Eye Laboratory	12
Fairdeal Corporation Ltd.	34	Squibb & Sons, E. R.	36, 37
Glaxo Laboratories Ltd.	29	Standard Pharmaceutical Works Ltd.	29
Globe Research Institute	43	Suren & Co., W. T.	24
Glukol Laboratory Ltd.	73	Syntetic (India) Ltd.	60
Godrej Soaps Ltd.	51	Tata Oil Mills Co., Ltd.	54
Gracely Drug Co., S.A.	56	Times Surgical Co.	73
Hanovia Ltd.	80	Travancore Sugars & Chemicals Ltd.	14
Health	9	Union Drug Co., Ltd. Front Cover &	66
Hering & Kent	54	Unique Drug House Ltd.	53
Himalaya Drug Co.	46	Unique Trading Corporation	42
Hind Agencies	59	United Pharmaceutical Co.	50
Horlicks Malted Milk Co.	22	Victory Chemical & Pharma. Works Ltd.	47
Imperial Chemical Industries (India) Ltd.	40	Volkart Bros.	75
Indian Health Institute & Lab. Ltd.	15	Vyas Bros. Ltd.	80
India Syringe Works	78	Wander (India) Ltd., Dr. A.	1, 5
Indo-Continental Trading Co.	27, 45	Waterbury Chemical Co.	15
Indo-Pharma Phar. Works	74	William R. Warner & Co., Ltd.	11, 19
James Wright Ltd.	50	Zandu Pharmaceutical Works Ltd.	18
Jammi Venkataramanayya & Sons	30, 63, 64	Zill & Co.	7
John Wyeth & Brother, Ltd.	44	Zone Chemical Co.	42
Jubilee Trading Company			

A PRODUCT OF THE HOUSE OF DR. A. WANDER S. A., BERNE-SWITZERLAND



TABLETS 100mg. AMPOULES

Vi-Nicotyl

WANDER

(NICOTINIC ACID AMIDE = PELLAGRA PREVENTIVE FACTOR PP)

Sole Importers:

Dr. A. WANDER (India) LIMITED, Post Box 1125, BOMBAY.

When writing to advertisers, please mention the "Antiseptic."

OUR CONCESSION OFFER For QUALITY GOODS

All prices are of units, unless otherwise stated

BEST QUALITY ENG. or U.S.A. RECORD SYRINGES NAKED—2 c.c. 5 c.c. 10 c.c. 20 c.c.
Rs. 10-8 14-8 16-8 18-8 each.

Stainless Record needles V-2 A or English 5-8 doz.

ALL GLASS HYPODERMIC SYRINGES.—First class quality, naked.

2 c.c. 5 c.c. 10 c.c. 20 c.c. 30 c.c. 50 c.c. 100 c.c.
Rs. 5-12 8-12 10-8 13-0 22-8 32-0 35-0

ALL METAL 1 c.c. RECORD SYRINGE—German complete, each Rs. 6-12-0

JOHNSON & JOHNSON CATGUT—Plain or Chromic in sterilized tubes from 0000 to 4
Rs. 9-8 per Dozen tubes.

Best Australian sterilised Catgut plain or chromic 20 Days boilable, in vials
all Nos. at Rs. 7-8 doz. tubes.

BEST ENGLISH SILK WORM GUT—Non-sterile: Fine Rs. 5-8; Medium Rs. 5-14;

Coarse Rs. 6-12; Extracoarse Rs. 7-8 Packet, 100 strands.

„ in sterilized tubes medium Rs. 19-8 Doz. tubes.

SURGEON'S HORSE HAIR LIGATURE—Unsterilized Rs. 1-8 packet, 100 strands.

„ sterilized in tubes Rs. 16-8 Doz.

SURGEON'S SILK LIGATURE—of best Chinese Silk, available in hanks of 10 yards each from
Nos. 0 to 12 Rs. 7-0 doz.

BEST CANADA OR ENG. MAKE ROUGH RUBBER GLOVES—from 6" to 8½" at Rs. 17-8 per doz. pairs.

BEST ENGLISH THERMOMETERS—1-2 Min. Guaranteed at Rs. 16-8 per Doz. Zeal 29-0 doz.

SPATULAS MEDICINE—steel or horn. 4" 5" 6" 7" 8" 9"
4-8 6-8 7-8 8-8 9-12 12-0 per doz.

URICACITIC PESSARIES—2" to 3½" Doz. 12-0-0

URINOMETERS—Complete with Cylinder, 2-4-0 Lectometers 3/-

GLYCERINE SYRINGE—American Type, with glass barrel, ½ oz. Rs. 2-8 1 oz. Rs. 3-0

SUPERIOR ICEBAGS—Rubber 7, 8, 9, Doz. 27-0-0

AIR CUSHION—18" Superior Each. 4-12-0

MEASURE GLASS—accurate and Superior.

1 dr. 2 dr. 1 oz. 2 oz. 4 oz. 8 oz. 16 oz. 20 oz. 32 oz.
8-8 9-8 10-0 12-8 27-0 30-0 42-0 48-0 66-0 per doz.

DROPPING BOTTLE—Stopped Schusters ½ oz. 1 oz. 2 oz. 4 oz.
6-0 5-0 5-12 11-4 per doz.

CINCHONA FEBRIFUGE B.P. 45-0 lb.

QUININE AMPOULES—Govt. tested, fully guaranteed 5 gr. x 1 cc. or 2 c.c. x 6 amp. Box. 3-6
10 gr. x 2 cc. or 1 c.c. x 6 amp. „ 5-0

EMETIN HYDROCHLORE INJECTIONS—Eng. ½ gr. x ½ cc. x 12 amp. 5-8

1 gr. x 1 cc. x 12" 9-0

TRIPLE DISTILLED WATER—Ampoules. 10 cc. Each Rs. 1-6-0 Box of 12 ampoules.

M&B 593—Bottle of 25 Rs. 2-2 5 cc. „ „ 1-4-0 „ „ „

SOLUSEPTICINE M&B—5% Box. of 6 amp. 4-4 M.D. U.S.A. Patented latest type

English make Stethoscope thick tubing 2-0 yd. [Stethoscope comp. 14-8

„ „ Hot water bags 11-0 each.

BEST QUALITY LATEX RUBBER—French letters 1-8 doz. Mecantash

„ „ „ washable sheathes paragon 4-0 doz. sheeting 4-8 yd.

„ „ „ Check pessaries 10-8 doz.

ENEMA SYRINGE—Complete with 3 nozzles Canadian 4-8 each.

Breast Pumps „ 3-8 „

Vaginal douche „ 5-12 „

All Rubber douche can complete „ 4-0 „

„ „ Sheeting „ 4-12 yd.

Every article sold under unconditional guarantee of full refund of value paid
for unapproved article returned to us within a week. There can be no better
guarantee for safe purchases.

INDIA'S PREMIER HOUSE OF QUALITY PRODUCTS AT UNRIVALLED PRICES

BOMBAY SURGICO MEDICAL AGENCY, P. O. Box 61, BARODA

Largest Stockists of Hospital requisites, Surgical Sundries and Laboratory Equipment

When writing to advertisers, please mention the "Antiseptic."

"INDULABO PASTE"

WHERE Induction of Labour is therapeutically indicated **Indulabo Paste** is used now by many doctors with perfectly safe results. The paste is useful right from the twelfth week after conception up to the full term according to indications. The preparation of **Indulabo Paste** is based on an original German formula which has been perfected by years of clinical trials and research in our laboratories by reputed physicians.

Prices: Rs. 31-8 for the **Complete Outfit of Indulabo Paste** (containing one refill tube of Indulabo Paste, one special low-pressure glass syringe with

metal cannula, and one turn key); per Refill tube of **Indulabo Paste** Rs. 25/- Physicians who have already bought the **Complete Outfit of Indulabo Paste** once, should thereafter order for the Refill tube of Indulabo Paste only. When ordering please state what you want, the **Complete Outfit** or the **Refill**

Important:—"Indulabo Paste" is supplied only to qualified and registered doctors who must place their orders on their own letterheads or prescription blanks, attaching their full signature.

Exhaustive literature giving composition, indications, etc., will be sent on request to the members of the Medical Profession only.

HERING & KENT Post Box 323, (A.M.), Opp Lloyds Bank, 261-265, Hornby Road, Fort Bombay. Telephone No. 24297.

OINTMENT OPISULPHANIL

Composition.—Sulphanilamide ($C_6H_4OHSO_2NH_2$) 5% with Urea Peroxide in a cholesterol-rich, water-dispersible base.

Indications.—Acne, Whitlow, Post-Scarlatinal Rhinitis, Infected Wounds, Cuts, Small Second degree Burns, Ivy Dermatitis, Eczema and other Contagious Infections;

Ointment Opisulphanil is just another case showing that the House of OPIL always keeps abreast of Medical Research. The Management of Streptococcal and Staphylococcal Infections of the skin always presents an important problem. The House of OPIL takes great pleasure in offering to the Medical Profession, an ointment unique both for its bacteriostatic as well as bactericidal effects.

Why Urea Peroxide?—That Sulphonamide Compounds are by themselves only bacteriostatic rather than bactericidal (in vitro) is an established fact, and it has been found that 5% Sulphanilamide, Sulphathiazole or Sulphadiazine ointments in a water dispersible base always run the risk of being contaminated with disease-producing germs which these Sulphonamides are not capable of killing. Experiments were therefore carried out to find whether small additions of other chemicals particularly certain oxidizing agents, would not increase the self sterilizing properties of those ointments. As a result, it was found that, among a wide variety of oxidising agents tried out, Urea Peroxide was by far the most effective.

Ointment Opisulphanil is therefore a safe, far superior and definitely more economical ointment. This is the best form of external Sulphanilamide therapy that we can recommend.

Please ask for Literature and Sample.

Oriental Pharmaceutical Industries, Ltd.,
BOMBAY 16.

ANGINOPHYLIN

The Double-salt of Theophylline and Ethylene Diamine, containing about 70% of Theophylline. It is highly soluble in water, has no injurious effect on the stomach, is readily absorbed, possesses a powerful action and does not irritate Kidney.

ANGINOPHYLIN with LUMINAL

In addition each tab. contains $\frac{1}{4}$ Gr. Luminal. It has got the same actions as Anginophylin with the sedative action of Luminal. It is therefore extremely useful in Cardio-Vascular diseases with Insomnia and Nervous excitement Cardiac Asthma and other anginal pains due to anxiety-neurosis.

FOUR PRINCIPAL MODES OF ACTIONS.

1. VASODILATOR
2. CARDIAC STIMULANT
3. DIURETIC &
4. STIMULANT OF RESPIRATORY CENTRES.

PRICE:—Rs. 3/12/- & Rs. 4/- respectively, each bottle of 30 tablets.
Packing & Postage Extra.

Product of:—A. PETERSON & CO.,
3rd Floor, Sir Phirozshah Mehta Road, Fort, BOMBAY.

Bombay Agents:—PAREKH TRADING CO., Princess Street, BOMBAY—2.

Madras Agents:—B. V. RAMANJULU & CO. 159, Broadway, G. T., MADRAS.

For Particulars and orders, please address to the Agents.

WOMEN AND THE CLIMACTERIC

For thousands of women who undertake heavy tasks through employment—and even in the home—muscular pains, backache and headache are the inevitable results of too-prolonged efforts.

This applies particularly to those subject to dysmenorrhoea and those approaching middle age and the climacteric.

Veganin gives most satisfactory results in such conditions since it is a synergistic association of codeine, acetylsalicylic acid and phenacetin, producing rapid and prolonged relief without ill effects. Veganin is not advertised to the public.



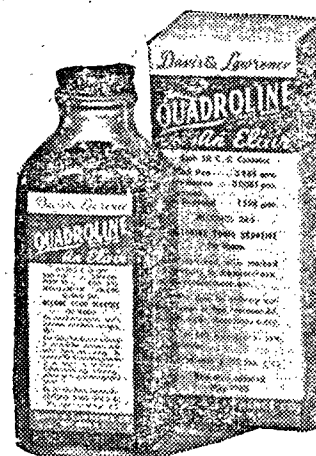
MARTIN & HARRIS LTD.,
Mercantile Buildings, Lall Bazar, Calcutta.
Also at Bombay, Madras, and Karachi

Prepared by
WILLIAM R. WARNER & CO., LTD.,
LONDON, ENGLAND.

QUADROLINE *an Elixir*

TRADE MARK

Quadroline is a most efficient and pleasant tasting medication in elixir form combining three agents proven important for the relief of women's complaints. It is rightly called "A reliable prescription" as it has been prescribed by the Medical profession all over the world for many years. Here are a few pertinent facts regarding QUADROLINE:



INDICATIONS.

1. Amenorrhoea
2. Dysmenorrhoea
3. Threatened Abortion

PHARMACOLOGY

1. Absorbed by the blood stream, it
2. allays the irritability of the terminal nerve endings in the womb,
3. relaxes the tonic spasm and restores normal contractility of the uterine muscle.

- ADVANTAGES**
1. Pleasant tasting.
 2. Contains no toxic drugs.
 3. Does not depress the general or generative systems.

The principal therapeutic agents are as follows: Each 30 c.c. of QUADROLINE contains:

Viburnum prunifolium	3.883 gms.
Piscidia Erythrina	1.296 gms.
Hydrastinum	0.0081 gms.

DISTRIBUTOR

APPAR & CO., "Appar Buildings" (P.O. Box No. 1362), Esplanade, Madras, India
DAVIS & LAWRENCE CO., Manufacturing Pharmacists, Dobbs Ferry, New York, U. S. A.

When writing to advertisers, please mention the "Antiseptic."

EPHEDRINE HYDROCHLORIDE B.P.

Guaranteed to conform to B. P. Standards.

In containers of 100, 500 and 1000, of $\frac{1}{4}$ grain, $\frac{1}{2}$ grain and 1 grain tablets. Pure alkaloid in crystal form in 1 oz., 4 oz., and 1 lb. packing.



MARKER ALKALOIDS-QUETTA

Manufacturers of pure drugs and fine alkaloids for the Medical Profession.

SOLE DISTRIBUTORS:

J. L. MORISON SON & JONES (India) LTD.,

P. O. BOX No. 258, BOMBAY

C.D.C. PRODUCTS

Some Fine Pharmaceuticals Since 1925



See that you
Get the C.D.C.
Star Seal Label

BVIMIN
(Vitamin "B₁")

CVIMIN
(Vitamin "C")

COLOCAL
(Colloidal Calcium
with Vitamin "D")

GADOSOL
(Colloidal Copper
Morrhuate)

HEMOSOL
(Colloidal Iron Mor-
rhuate Co.)

HEPORAL
(Crude Liver Extract)

IDOSOL
(Colloidal Iodine)

★ **IRADIN**
(Vitamins "A" & "D"
concentrate)

THISIN
(Guaiacol - Iodoform
Co.)

★ **UROXYL**
(Hexamine - Caffeine-
Sodium-Salicylate with
p-Aminophenyl Sulfa-
mide)

★ **VITALYN**
(Vitamin "B" com-
plex)

★ **VIMALT**
(Vitamins-Malt Co.)

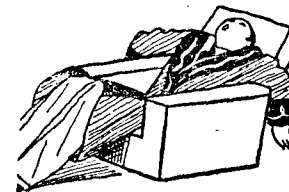
CONTINENTAL DRUG COMPANY, WORLI BOMBAY

For Catalogue & Price list apply: Dept. A/M 101.

Penicillin Therapy In Infective Conditions of the Eye

Name & Composition	Packing & Price	Indication	General Principles in applying Penicillin
1. Penicillin (Strong) Penicillin 20,000 units Fatty Vehicle to 100	1oz. 100 Grains Rs. 5/-	Infective conditions of the eye.	The ointment should be ap- plied six times a day preceded by warm Saline wash.
2. Penicillin Cum Sulphathiozle Penicillin 5000 units Sulphathiozle Fatty Vehicle to 100	1 oz. Rs. 7/8/- 100 Grains Rs. 2/8/-	Gonococcal & pneu- mococcal affections of the eye.	
3. Penicillin Cum Sulphadiazine Penicillin 5000 units. Sulphadiazine 5 Fatty Vehicle 100	1 oz. Rs. 7/8/- 100 Grains Rs. 2/8/-	Staphylo, Pnemo Gonococcal affec- tions of the eye.	
4. Penicillin cum Sulphanilamide Penicillin 5000 units Sulphanilamide 5	1 oz. Rs. 7/8/- 100 Grains Rs. 2/8/-	Trachoma and chro- nic infective condi- tions of the eye.	
5. Penicillin Cum Atropine Penicillin 5000 units Atropine Fatty Vehicle	1 oz. Rs. 7/8/- 100 Grains Rs. 2/8/-	Ulcer Cornea due to infective conditions of the eye.	
6. Penicillin cum Yellow Oxide of Mercury.	"	Keratitis and chronic infection of the lid, Sclera etc.	

The South Indian Eye Laboratory, Chodavaram, VIZAG S. INDIA.



Is the bridge from
prostration to activity.

HERESY?

To orthodox pharmacologists, subcutaneous injection is the only effective route for the administration of adrenaline.

There is unequivocal testimony from clinicians of high repute that adrenaline is absorbed from BROVON inhalant, rapidly, and in amount equal to the average injection of adrenaline.

BROVON Inhalant can therefore deputise efficiently for you if:

(a) You admit the value of adrenaline in asthma, and

(b) You cannot spare time to give routine injections of adrenaline to asthmatics.

BROVON Inhalant is not merely 'another remedy for asthma'; it is a scientific achievement which merits your attention.

For full particulars write to:—

OAKLEY, BOWDEN & Co. (Madras) Ltd. P. B. 67, Madras.

Manufacturers: MOORE MEDICINAL PRODUCTS LTD., U.K.

CALCIUM 'PLOI'

Calcium-L-Gluconate in strengths
of 5% & 10% solutions.

CALCIUM—'PLOI' is prepared from alcohol precipitated Calcium in pyrogen-free double distilled water and filtered in vacuum. It answers to the highest conception of suitability for intravenous and intramuscular uses.

BILOGEN

(Liver Tonic)

A faithful combination of indige-
nous hepatic drugs with Sodi.
Phosphas Sodi. Benzoas and
proteolytic enzymes.

BILOGEN acts as a specific in liver troubles in infancy and childhood. It is also very useful in Dyspepsia, Bilious attacks, habitual constipation, etc. of adults.

CHLORONITE

brand

E. C.

(5% available chlorine)

The special feature of "CHLORONITE" brand original ELECTROLYTIC CHLORINE is that it contains as high as 5% of available Chlorine. It is a high antiseptic, disinfectant and deodorant for all purposes wherever Chlorine is permissible.

**PHARMACEUTICAL LABORATORIES OF INDIA,
133, Upper Circular Road, CALCUTTA.**

Stockist:—BOMBAY BENGAL TRADING AGENCY,
Western India House, Pherozshah Mehta Road, Bombay.

When writing to advertisers, please mention the "Antiseptic."

PRODUCTS YOU CAN TRUST



TASCO PECTORAL SYRUP

A palatable combination of Potassium Guaiacol Sulphonas, Sodium Benzoas, etc. in a delicately flavoured syrup. For coughs, colds, bronchitis, etc.

TANASEC

For burns and scalds; contains Acid Tannic 5%, Phenol 0.5% in a water-soluble jelly base.

THE TRAVANCORE SUGARS & CHEMICALS LTD.,

(INCORPORATED IN TRAVANCORE)

Secretary & Treasurers: PARRY & CO., LTD.

ASTHMA

HAS TO BE TREATED RATIONALLY



Palliatives are indicated in cases of Asthma to relieve the paroxysmal distress; but their place is that of a symptomatic measure only. The chronic aspect of Asthma needs a much more rational treatment at the hands of the physician.

In **SHWAS-HARI** you will find a dependable formula of proved efficiency in all Respiratory affections in general and in Asthma in particular. As such it is a satis-

factory expectorant, sedative and pulmonary antiseptic and to add a valuable restorative and reconstructive that tones the constitution against future attack.

12 oz. Hospital size of Shwas-hari Available for Rs. 10/- Nett By V.P.P. to the Medical Profession; Post Packing Free.

Samples & Literature free on request

Manufacturers: **Dr. PUROHIT'S PHARMACY, Kolhapur (Bombay)**
Madras Stockists:—**ATPAH & Co.,** **SRI KRISHNAN BROS.**



Available as Shwas-hari Plain & Shwas-hari compound in sizes of 3 oz., 6 oz., 12 oz. bottles at all good chemists.

When writing to advertisers, please mention the "Antiseptic."

Asthemia

The incidence of asthenia and malnutrition demands a preparation of proved tonic powers which is admirably provided in Waterbury's Compound. The intake of this preparation, which contains as its components products obtained by the enzymatic action of pancreatic ferments on cod liver oil, livers and spleens, malt extract and hypophosphites, results in the stimulation of physical vigour and disappearance of the signs of inanition. Waterbury's Compound is agreeable to the palate and is suitable for administration to patients of all ages.

(Supplied PLAIN, or with Creosote and Guaiacol.)

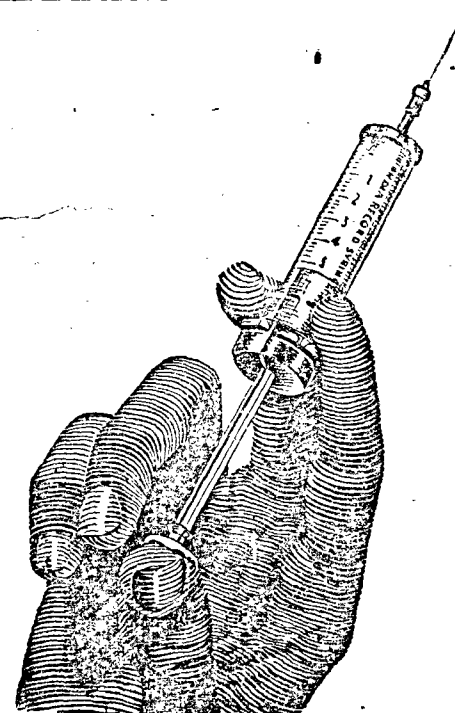
MARTIN & HARRIS Ltd.,

Mercantile Buildings, Lall Bazar, Calcutta.

Also at Bombay, Madras and Karachi.

Made by Waterbury Chemical Co., Inc., New York and St. Louis, U.S.A.

WATERBURY'S COMPOUND



INDIA'S OWN BETTER THAN BEFORE INDIA RECORD SYRINGES

Silver Plated Metal Parts

RATES:— 1 c.c. 6/8 2 c.c. 8/8/-
5 c.c. 11/8/- 10 c.c. 14/8/- 20 c.c. 18/8/-

BARREL REPLACEMENT

RATES:— 1 c.c. 4/12 2 c.c. 6/8/-
5 c.c. 10/0/- 10 c.c. 12/8/- 20 c.c. 15/8/-

EVERY KIND OF REPAIRING OF USED RECORD SYRINGES UNDERTAKEN

British Make Stainless Steel Needles
for all Glass & Record Syringes
also available

For Illustrated Price List, apply to:—

THE INDIA SYRINGE WORKS,
BOMBAY 14.
Phone 32496 Grams: 'INDRECORD'



CARICAPEPTOL

Elixir of Vegetable Enzymes

Product of O.R.C.L., producers of QUMARESH

GRAMS—"COWORKER" PHONE: 26880

your SURGICAL NEEDS

1. Hypodermic Syringes & Needles
2. Catgut & Sutures
3. All sorts of Medical Sundries
4. Hospital Enamelware & Rubber goods
5. Drugs & Chemicals
6. Laboratory requisites, etc.
7. A.S.R. Blades & Handles.
- & "Esters" Stethoscope, "80" Type

THE NEW SURGICAL TRADING CO.

2 VITHALDAS RD., PRINCES ST., BOMBAY.

P. O. BOX: 2321

DIRECT IMPORTERS AND DEALERS

When writing to advertisers, please mention the "Antiseptic."

TRADE
MARK**CASYLOTROPIN** BRAND

(Salicyl, Hexamine, Caffeine preparation)

Ampoules of 5 c.cm. for Intravenous or Intramuscular Injection.

Composition & Chemical Formula:—*Each Ampoule of 5 c.c. contains:—*

Hexamine	... 2.0 Gm.
Sodii Salicylate	... 0.8 "
Caffeine Sodii Salicylate	... 0.2 "
Aqua Bi-Distil (Sterile) to	5.0 "

INDICATION:—

1. Infectious Inflammation of Urinary Passages.

E.g., Cystitis, Pyelitis, Pyonephrosis etc.

CASYLOTROPIN is specially efficacious in Chronic Cystitis set up by Prostatic Hypertrophy and accompanied by alkalascence. It is also used with success as a Prophylactic to prevent Cystitis after Prostatectomy.

One Ampoule of 5 c.cm. is injected every other day until urine remains permanently clear with acid reaction.

2. Infectious Inflammation of Bile Passages.

E.g. Chole-Cystitis

One Ampoule of c.cm. is initially injected daily when symptoms decrease, 5 c.cm. is used every other day.

3. Rheumatic Affections.

CASYLOTROPIN lessens the Swelling, leads to a rapid cessation of Pain diminishes the liability to Pericarditis and other complications of rheumatic cases.

One Ampoule of 5 c.cm. is injected twice a week or once a week according to the severity of the case.

Mode of Action

When Casylotropin is injected, the Hexamine is possibly split up in the system into Formaldehyde and Sodium Salicylate into Salicylic Acid. These split-up products act as formidable enemies to the causative pathogenic germs or bacteria responsible for the indicated diseases. The Caffeine moiety of Casylotropin keeps up the Heart and act as a mild diuretic.

Clinical Results: Since the introduction of Casylotropin by the Medical Research Laboratory in the year 1934 extensive trial has been given by quite a large number of qualified Medical men in Bombay, Punjab, Delhi and in Bengal with uniformly successful results in Varieties of complications indicated above. In cases of Chole-Cystitis Casylotropin is said to have acted like a magical cure.

About 75% swelling of knee-joint and the acute agonising pain of the Rheumatic patients are said to have been removed by one or two doses administered intravenously by the Medical Officers of District Hospitals in Bengal. One course of 6 injections on an average, cured the patients permanently.

Packings: CASYLOTROPIN is supplied in boxes of 6 ampoules for Intravenous administration Intramuscular packing with 6 additional ampoules of Procaine solution are also supplied

Price: Casylotropin (Intravenous)	Rs. 6/- Nett
Casylotropin (Intramuscular)	Rs. 6/8/- Nett.

For particulars please write for a free copy of Medical Guide containing many tried prescriptions to:—

THE ORIENT LABORATORY LTD.,

With which is incorporated.

MEDICAL RESEARCH LABORATORY.

12/A, MUSALMAN PARA LANE, CALCUTTA.

FERARCHIN
(AMPOULES)

For Malaria and Anæmia
A most harmonious combination of IRON,
ARSENIC and QUININE for Painless
Intramuscular Injection.

Each 2 c.c. Ampoule of Ferarchin contains:—

Readily Soluble Organic

- Comp. of Iron gr. 1 (0.0648 gm.)

Quinine and Chinchonine gr. 5 (0.3234 gm.)

Alkaloid gr. 5 (0.3234 gm.)

Organic Salt of Arsenic

(equivalent to Arsenious

Acid) gr. 1/100 (0.00065 gm.)

Crethane q. s.

Aqua (Bi-Distil and Sterilised) to 2 c.c.

Use:—Ferarchin is to be used in (i) acute & Chronic stages of Malaria including Malignant type with enlarged liver and spleen.

(ii) In anæmia arising out of repeated attacks of Malaria.

(iii) Ague and all other fevers with the exception of kala-azar.

Therapeutics:—It has been established by clinical tests that:—

(a) Ferarchin stops malarial fever even in cases where oral administration and injections of quinine bi-hydrochlor fail.

(b) Acts directly upon Liver and spleen to cause their abnormality to sink and even a most indolent liver is made to resume its normal function.

(c) Removes anæmia, increases red blood corpuscles, and causes a fresh supply of normal blood in the system.

(d) Stimulates in short, the whole system—a completely broken down system of malarial patients being reorganised.

Contra-indications:—

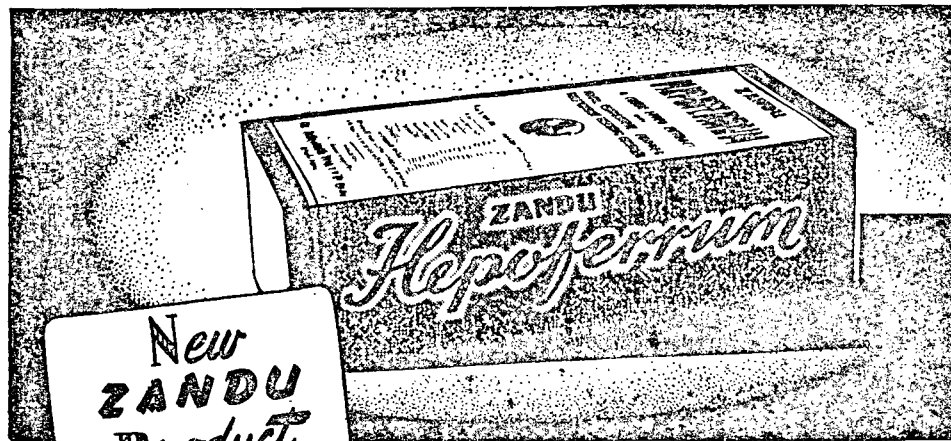
Ferarchin should never be used in case where arsenic administration is not desired.

Doses:—2 c.c. of the solution is to be injected intramuscularly in deep gluteal muscles at a time in an adult.

2 c.c. 6 in a Box Rs. 6-12/-

FERARCHIN (Strong) 2 c.c. 6 in a box Rs. 10-12.

FERARCHIN (Special) 1 c.c. 6 in a box Rs. 5.



HEPOFERRUM

★ a powerful Haemopoietic Tonic ★

Many prominent physicians are finding Zandu's HEPOFERRUM to be a thoroughly dependable and a most powerful tonic upon which they may rely for prompt, gratifying relief of the distressing symptoms encountered in all types of Tropical Anæmias, Nutritional Setbacks, Debility and convalescence after prolonged illness.

Zandu's HEPOFERRUM produces a response which is equal to that produced by the best of this type of Hæmopoietic Tonic.

ZANDU'S HEPOFERRUM

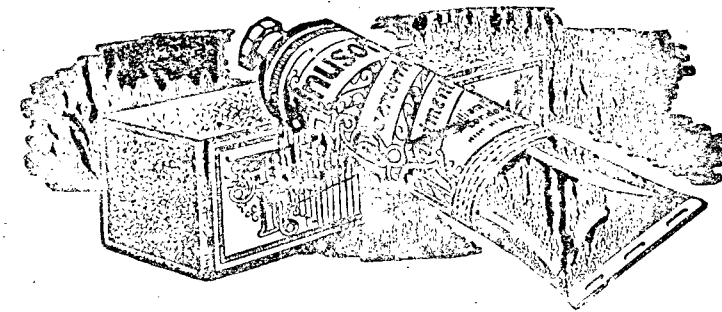
is a superfine combination of Crude Liver Extract, Iron, Manganese, Copper, Malt Extract, Vitamin B Complex, Etc.



BOMBAY 14.

Madras Agent:—DAMODAR & CO., NAINIAPPA NAYAK STREET, MADRAS.

When writing to advertisers, please mention the "Antiseptic."



HAEMORRHOIDS

The immediate relief of irritation

Anusol Haemorrhoidal Ointment can be confidently applied in cases where local inflammation of the anal regions is present. This preparation, because of its soothing, emollient and haemostatic effect, also relieves the pain and discomfort caused by haemorrhoids. Anusol Ointment does not contain narcotics, analgesic or local anesthetic drugs, and therefore does not mask the symptoms, and improvement is genuine.

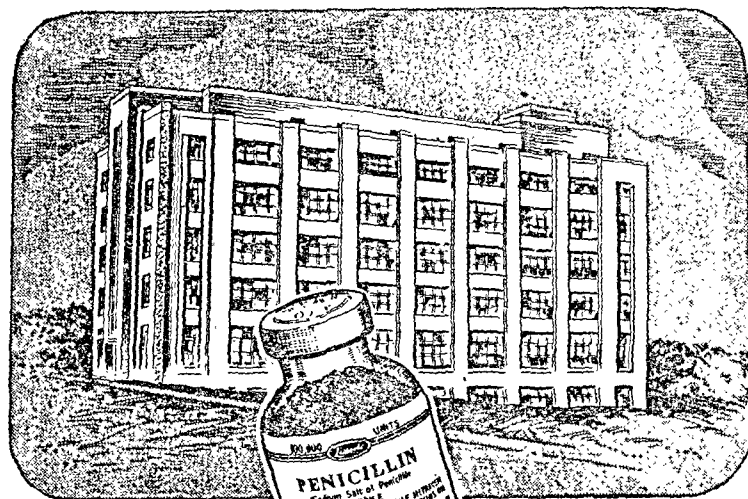
Martin & Harris Ltd., Mercantile Buildings, Lall Bazar, Calcutta.
Also at Bombay, Madras and Karachi.

Prepared by WILLIAM R. WARNER & CO., LTD., LONDON, ENGLAND.

ANUSOL

HAEMORRHOIDAL
OINTMENT

When writing to advertisers, please mention the "Antiseptic."



PENICILLIN BUILDING

LEDERLE LABORATORIES, INC.
PEARL RIVER, N.Y.

Penicillin Lederle

THE FASCINATING STORY of Penicillin continues to unfold with the accumulation of clinical data from military and civilian sources. Increasing

availability is stimulating further research, so that additional indications for this incredibly useful substance are certain to appear. At present.....

Penicillin is indicated for—

- Staphylococcal Infections (with or without bacteremia)
- Hemolytic Streptococcal Infections (with or without bacteremia)
- Gonococcal Infections
- Anaerobic Streptococcal Infections
- Clostridial Infections
- Pneumococcal Infections
- Meningococcal Infections

Penicillin possesses a low toxicity.



Sole Agents for India: ANGLO-FRENCH DRUG CO., (ESTN.) LTD.
P. O. BOX 460 BOMBAY 1

Stockists in Madras:

Messrs. DABHA & Co., 86, Niniappa Naick St., P.T.

When writing to advertisers, please mention the "Antiseptic."

COLLOSOL KAOLIN

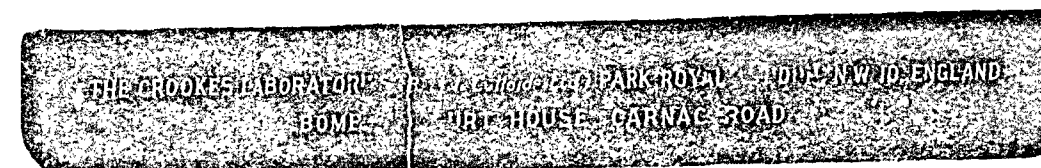
A valuable protective, adsorptive and filter agent in the treatment of intestinal toxæmia.

IN all forms of intestinal toxæmia, Crookes' Kaolin, with its remarkable power of absorbing poisons, especially bacterial toxins, has achieved a great measure of success. It exercises the effect of forming adherent coating on the bowel wall, protecting the surface from irritant particles and digestive juices in ulcerated conditions and preventing the adsorption of toxins into the circulation.

In conditions of ulcerative colitis and chronic conditions of the intestines where there is a large excess in the coliform type of bacillus, Crookes' Lacto-Kaolin is more especially recommended owing to the properties of the lactose constituent.

Both products enormously enhance the efficiency of ordinary kaolin treatment owing to the unique fineness of their particles, for it is upon this fineness that the adsorptive power depends.

Issued in 6 oz., 16 oz., and 2½ lb. tins.



When writing to advertisers, please mention the "Antiseptic."

IMPERIAL CHEMICAL [PHARMACEUTICALS] LIMITED

MEPACRINE IN MALARIA

It is not possible during war time to discuss the extensive investigations which have been carried out in various parts of the world to determine the relative merits of Mepacrine and Quinine, but the conclusions of the appropriate official bodies in Great Britain and America are that 'Mepacrine is a more effective agent than Quinine against Malaria.'

(Medical Research Council Committee on Malaria, 23rd August, 1944)

Mepacrine was first produced in Great Britain by I.C.I. in 1940, since which time hundreds of millions of tablets have been, and are being, despatched all over the world.

(Mepacrine is not yet available for distribution in India through normal Trade channels but supplies may be obtained from Government Quinine Selling Agencies.)

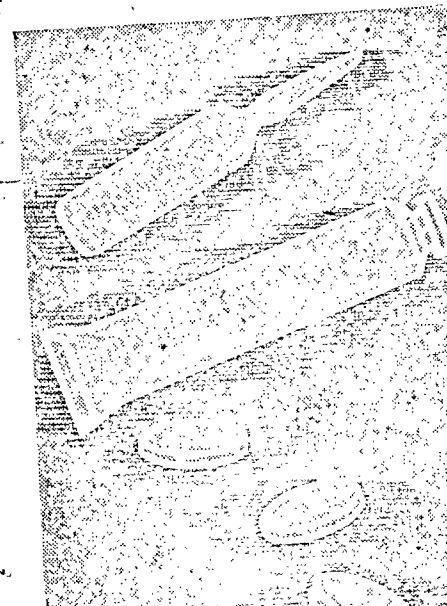


Issued by:—

IMPERIAL CHEMICAL INDUSTRIES (INDIA) LTD.
Calcutta — Bombay — Madras — New Delhi — Karachi

NO. 2

When writing to advertisers, please mention the "Antiseptic."



PERANDREN INJECTIONS



PERANDREN OINTMENT



... and now ...

PERANDREN
Tablets

SOLE AGENTS
ADMINISTRATION
OF ANDROGENS



SOLE IMPORTERS

CIBA

(India)

LIMITED

BOMBA

P. O. BOX 470

When writing to advertisers, please mention the "Antiseptic."

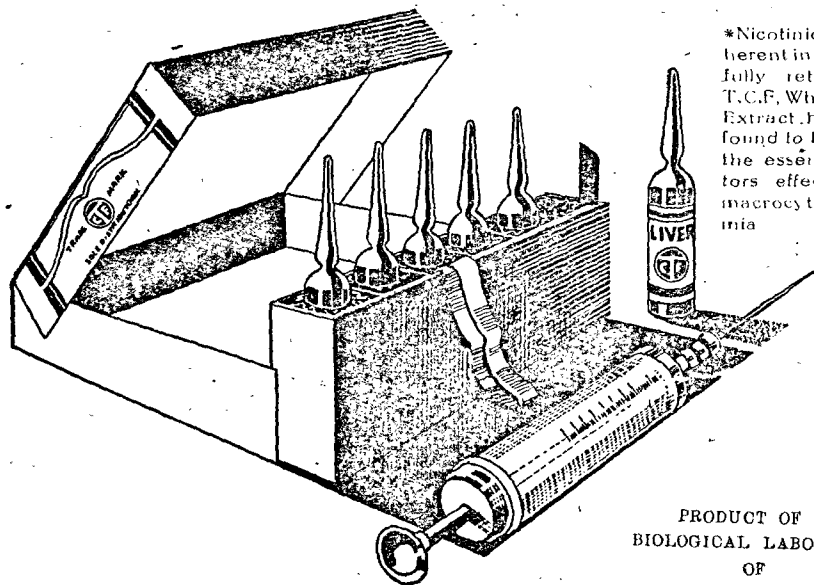
T. C. F. WHOLE LIVER EXTRACT

TRADE



MARK

- T.C.F. Whole Liver Extract has remarkable therapeutic value in Tropical macrocytic anaemia and pregnancy anaemias.
- T.C.F. Whole Liver Extract not only contains all the anti-pernicious anaemia factors, but also Whipple's factors, Wills's factors and Vitamin B-Complex comprising Thiamin (B_1), Riboflavin (B_2), Adermin (B_6), Pantothenic acid (Filtrate-factor) and Nicotinic Acid* (P-P Factor) from fresh young healthy sheep liver.
- Packed in 2 c.c. & 5 c.c. Ampoules and 10 c.c. rubber-capped Vials.



*Nicotinic Acid is inherent in liver and fully retained in T.C.F. Whole Liver Extract has been found to be one of the essential factors effective in macrocytic anaemia

PRODUCT OF THE
BIOLOGICAL LABORATORY
OF

TEDDINGTON CHEMICAL FACTORY LTD.
BOMBAY.

Samples, Prices & literature etc., on application to:

Sole Distributors:— **W. T. SUREN & CO.,**
BOMBAY (Post Box 229)

Calcutta Depot:
Suite No. 13, Howrah Motor
Buildings,
P6, Mission Row Extension.

Madras Depot:
12, Sunkurama Chetty St.

Karachi Depot:
54, Forbes Building,
Bunder Road.

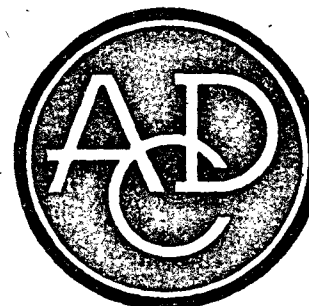
When writing to advertisers, please mention the "Antiseptic."

LIVOZYME

A FERRUGENOUS, NON-ALCOHOLIC, RECONSTRUCTIVE and NUTRITIONAL TONIC containing all the ENZYMES, VITAMIN B COMPLEX and ANTI-ANÆMIC FACTORS from the Total Extracts of LIVER, STOMACH and YEAST as well as the Hypophosphites of Calcium, Manganese and Potassium.

FORMULA

Each Fluid Ounce Contains:—



Liver Extract, (Equivalent to	1 oz. Fresh Liver)
Stomach Extract, (Equivalent to	5 gm. Fresh Stomach)
Yeast Extract, (Equivalent to	2 oz. Fresh Yeast)
Vitamin B	$\frac{1}{2}$ mg.
Nicotinic Acid (B. p.p.)	30 mg.
Ferrous Sulphate Exsiccatus	2½ gr.
Copper Sulph.	1/20 gr.
Manganese Hypophos.	$\frac{1}{2}$ gr.
Potassium Hypophos.	$\frac{1}{2}$ gr.
Calcium Hypophos	2 gr.

Manufactured by:
ASSOCIATED DRUG COMPANY LTD.
YERCAUD.

Further Information from:
'ASCO' PHARMACEUTICALS,
2, Lingha Chetty St., MADRAS.

Absolute Accuracy

The "Accoson" Dominion Sphygmomanometer is the latest to be produced. Designed for simplicity, it is a universal model maintaining all the special features of "Accoson" instruments. Absolutely accurate; non-leak perfect control valve; clear reading mercury column; finest quality rubber for arm band and tubing, to withstand all climatic conditions. 260 m/m calibration. It is the ideal blood pressure apparatus for general practice. Highest quality finish in unbreakable plastic moulded case.

DOMINION BLOOD PRESSURE STANDARD

Made in England.

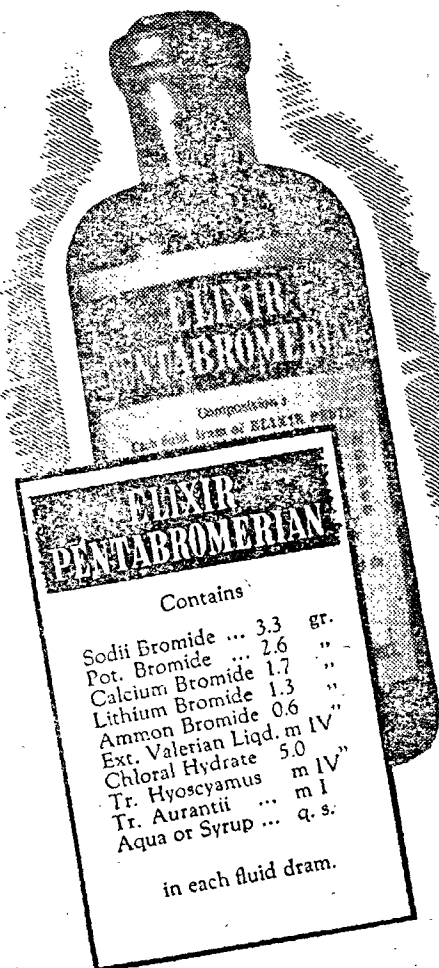
A. C. COSSOR & SON (Thermometers) LTD.,
ACCOSON WORKS, LONDON, N.4, ENGLAND

AGENTS

BOMBAY
CALCUTTA
KARACHI
MADRAS
CEYLON

H. S. Cox & Co., Ltd. 24, Rampart Row Fort.
Messrs. Adair Dutt & Co. Ltd., 5, Dalhousie Sq. E.
M. G. Shahani & Co., Victoria Road.
Messrs. Adair Dutt & Co. Ltd., 1-29, Mount Road.
W. D. Carolis, 19 1/3 York St., Colombo.

A SCIENTIFIC COMBINATION
OF NERVE SEDATIVES, HYPNOTICS
AND ANTI-SPASMODICS IN A
PALATABLE FORM



A BIRLA LABORATORIES PRODUCT

Sales Office:
54, Pathuriaghat Street, Calcutta.

Sole Distributors for the Madras Presidency:—
DADHA & CO.,
86, Nainiappa Naick Street, P. T., Madras.

BABY FOOD No 1

Balanced food for babies deprived of breast-feeding, had been exercising the best brains in science and nutrition research. SIMILAC has been accepted, after rigorous laboratory tests, as Baby Food No. 1. It is the only milk product nearest to breast milk as is evident from the following analysis:—



SIMILAC

	Similac. Reliquified.	Breast milk.
FATS	3.4%	3.5%
LACTOSE	6.8%	6.5%
PROTEIN	1.5%	1.5%
SALTS	0.4%	0.2%
MOISTURE	87.4%	88.0%



Accepted by the American Medical Association as the only milk food that approximates breast milk physically, chemically and metabolically and exclusively prescribed by physicians and pediatricians in the U. S. and elsewhere.

Write for literature to Sole Distributors
for India.
THE FAIRDEAL CORPORATION LTD.,
Laxmi Bldg., Sir P. M. Road, Fort, Bombay.

FC. 14.

When writing to advertisers, please mention the "Antiseptic."

SULPHINDON

IS PURE

SULPHADIAZINE

The least toxic and therapeutically the most effective of all Sulpha drugs.

The drug of choice in systemic sulphonamide therapy.

PRICE REDUCTION

30 Tablets Rs. 3-12 ONLY



Manufactured by

INDO-PHARMA

PHARMACEUTICAL WORKS
BOMBAY 14
PHONE: 61297

The extensive trials carried out with

AKTISOL-ALBUM

'SHIONO'

(p-amino-phenyl-sulfonamide)

in a series of cases by Dr. W. N. Welinkar, L.R.C.P., M.R.C.S., in the Venereal department of Sri J. J. Hospital, Bombay, show that "AKTISOL-ALBUM" is tolerated remarkably well by all the patients—vomiting, nausea, cyanosis etc. were conspicuous by their absence in all our patients—discharge lessening and completely disappearing within 24 hours."

—(Med. Bulletin Vol. IX No. 206).

We shall be now glad to attend to the requirements of the Profession and the Hospitals for AKTISOL-ALBUM tablets (packings 20's and 100's) and AKTIWEISS-Aktisol Album soluble-injections (packing 10x2 c.c.)

Sole Agents:

RANBAXY AND COMPANY,

16, Marina Arcade, Connaught Circus.

P. O. Box No. 104, NEW DELHI.

(Agents for Bengal, Bihar, Orissa and Assam:)

SREE PAUL & COMPANY, G.P.O. Box No. 92, CALCUTTA.

When writing to advertisers, please mention the "Antiseptic."



In Convalescence after Influenza, Pleurisy, Pneumonia, Bronchitis

The soothing, inflammation-allaying properties of Angier's and its general tonic effect especially commend its use in convalescence from acute respiratory affections. It will clear up any remaining catarrh, whether of the respiratory or digestive organs. It will restore tone to the digestive functions, and greatly improve assimilation and nutrition.

An absolutely perfect emulsion,

it is presented in a form pleasing to the taste, and acceptable to the most fastidious. Moreover, it can be administered to advantage in conjunction with other remedies, such as salol, aspirin, bismuth, etc.

Angier's is made with petroleum specially purified for internal use. It is the original petroleum emulsion, the result of many years of careful research and experiment.

MARTIN & HARRIS, LTD., Mercantile Bldgs., Lall Bazar, CALCUTTA.

Proprietors: THE ANGIER CHEMICAL COMPANY LIMITED

ANGIER'S
Emulsion

FOR QUALITY  AND EFFICACY

HEPATOGEN

1. HEPATOGEN SIMPLEX
2. HEPATOGEN FORTE
3. HEPATOGEN B & C

For less severe anæmias. Purified, and concentrated Liver Extract for painless intramuscular use.

Very highly concentrated for immediate response in Pernicious and severe anæmias.

With Vit. B₁ & C for anæmias associated with neuralgic complaints.

Indicated in all anæmias including tropical macrocytic and pregnancy sprue etc.

Available in 2 c.c. and 5 c.c. ampoules and 10 c.c. Rubber capped phials and also for ORAL USE with Vit. B & C: Iron, Copper and Manganese and Stomach Extract and Glycerophosphates etc., in 6 oz. pks.

BETAGEN

4. VITAMIN B COMPLEX

For Oral use.

Bitagen is indicated in beri-beri, anorexia, retarded growth, nervousness, pellagra, fretfulness, rigidity, pallor, etc.

Vitamins A, B, C and D with Iron, Manganese, Glycerophosphates etc., in nutritive Malt and Honey, Very Palatable Tonic for general debility, anæmias malnutrition etc.

5. FERRADAGEN

THE MECLEC NUTRIMENTS & PHARMACEUTICALS, LIMITED.
(EASTERN DRUGS & SYNTHETICS) 99-A, Armenian Street, G. T., Madras.

When writing to advertisers, please mention the "Antiseptic."

Another Quality Product of GLOBE RESEARCH LIVOCOD

A guard against Liver Complaints and also with curative value

Contents:—Indigenous Drugs, Hepatic stimulants with active principles of Fresh Liver Extract.

Indications:—Acute and Chronic Dyspepsia, Chronic congestion of the Liver, Fat indigestion, Bilious attacks, feeling of nausea, loss of appetite, Cirrhosis of Liver, Habitual constipation, Heart Burn, Chronic Duodenitis, etc., etc.

Issued in 4 oz. Phial

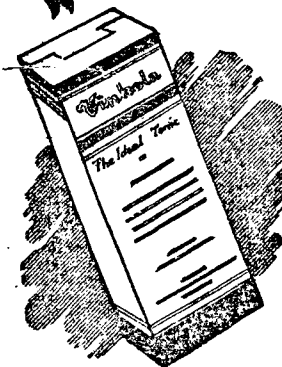
For Samples and Literatures write to:

GLOBE RESEARCH INSTITUTE LTD.,

30-A, Dharamtolla Street, Calcutta.

Delhi Depot:—Chandni Chowk, Iswari Nibas, Delhi.

A 'Standard' Tonic VINKOLA



A scientific preparation of exceptional recuperative value in all run down conditions, depression and debility and an ideal sustainer during periods of stress and strain



STANDARD PHARMACEUTICAL WORKS LTD.
CALCUTTA

Dept Manager for Madras Presidency:

V. P. SIVAM ESQ., 114 Nyniappa Naick Street, P. T., MADRAS.

When writing to advertisers, please mention the "Antiseptic."

USE POLY'S TRIED REMEDIES

RAYCALCIN *with* **GOLD**

Most suitable for Tuberculosis & Arthritis. Contains Calcium Gluconate, Liver Extracts, Choline, Vitamins B & C with Gold.

Syrup RAYCALCIN

Ind: Cold, Cough, Bronchitis, Pleurisy, Scrofula, Hayfever, Tuberculosis etc.

FILARSEN

For all Filarial manifestations.

POLYCLINICAL LABORATORY**SPECIAL TO DOCTORS****The National Chemical & Pharmaceutical Works, Ltd.,**

Head Office :—Station Road, Navsari (Baroda State)

'Phone : No. 365.

T'Grams : "SPIRIT"

MAIN POINTS

- *.....A handsome and continued Dividend is being allotted since 5 years.
 - *.....The Company holds a good reserved Fund.
 - *.....The Managing Agents have agreed not to claim any remuneration until 6 per cent Dividend free of tax is allotted on shares. No commission or any other allowance for Managing Agents concerning Purchasings and Sales has been approved.
 - *.....Large interested parties are keen to purchase these shares in bulk, but the Company fervently desire to subscribe the same in Medical Practitioners.
- The Shares are still obtainable at existing value and could be had on payment as under :—
- (a) For every ordinary share of Rs. 25/- an amount of Rs. 15/- is to be paid on each such share while making an application for the purchase of shares.
 - (b) The balance of Rs. 10/- for each such share has to be paid on allotment.
 - (c) Influential agents are required for the sale of shares. The Company offers better advantages to Doctors.

For further particulars please communicate with Head Office.

When writing to advertisers, please mention the "Antiseptic."

Diphtheria Prophylactics

Successful immunisation against Diphtheria depends upon a number of factors. Among them are the choice of a suitable prophylactic, correct dosage, proper spacing of injections *and the efficiency of the antigen*. The Diphtheria Prophylactics prepared at The Wellcome Physiological Research Laboratories conform to high and exacting standards. They may be used with complete confidence in their immunising efficiency.

Specify

- 'WELLCOME' DIPHThERIA PROPHYLACTIC A.P.T.
BRAND Alum Precipitated Toxoid
- 'WELLCOME' DIPHThERIA PROPHYLACTIC T.A.F.
BRAND Toxoid-Antitoxin Floccules
- 'WELLCOME' DIPHThERIA PROPHYLACTIC T.A.M.
BRAND Toxoid-Antitoxin Mixture

Prepared at THE WELLCOME PHYSIOLOGICAL RESEARCH LABORATORIES



Supplied by
BURROUGHS WELLCOME & CO.

(The Wellcome Foundation Ltd. Incorporated in England)

LONDON

and COOK'S BUILDING, HORNBY ROAD, BOMBAY

When writing to advertisers, please mention the "Antiseptic."

'NEO-HALARSINE'

TRADE MARK

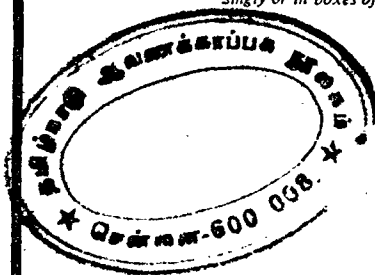
BRAND

OXOPHENARSINE TARTRATE

has been produced specially to meet the growing demand for an arsenical suited to the shorter and more intensive methods of treating syphilis. Repeated tests indicate that, both in the destruction of superficial treponemata and in the reversal of positive serological reactions, 'Neo-Halarsine' compares favourably with neo-arsphenamine. The average dose for an adult man is 0.09 gramme, for a woman 0.06 gramme.

Solutions retain their full therapeutic efficacy and freedom from toxicity for at least twelve hours after being made up.

Supplied in ampoules of 0.045, 0.06 and 0.09 gramme packed singly or in boxes of ten.



MAY & BAKER LIMITED
Distributed by MAY & BAKER (INDIA) LTD.

When writing to advertisers, please mention the "Antiseptic."

The Antiseptic

ESTD 1904

A Monthly Journal of Medicine and Surgery

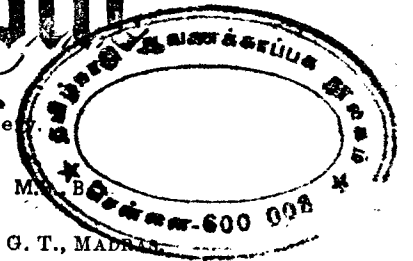
Published on the 15th of every month

Editors: U. RAMA RAU, & U. KRISHNA RAU, M.A.

Editorial & Publishing Office:

RAMARAU BUILDINGS " 323-24, Thambu Chetty St., G. T., MADRAS

Annual Subscription: Rs. 7-8-0; Foreign—18 Sh.—Post Paid.



Vol. 43.

JANUARY, 1946

No. 1.

Original Articles

Operative Treatment of Indirect Inguinal Hernia*

U. MOHAN RAU, M.S., F.R.C.S. (ENG.),

Hony. Surgeon, Govt. General Hospital, Madras.

A SURVEY of the literature on the inguinal hernia reveals a curiously repetitious pattern since the revolutionary publications of BASSINI, half-a-century ago. Most of it is either conscious or unconscious reiteration of what has been said again and again. But the writings of the last few years, the last decade so to say, reveal a definitely more critical attitude, both towards the teachings of the masters and the contributions of their successors. Newer methods of treatment are now based upon rational anatomical and physiological foundations and any attempt at modern treatment of hernia is useless unless backed by a knowledge of the anatomy and physiology of the inguinal region.

A dissection in the inguinal region will reveal the external oblique aponeurosis, after cutting through the skin and subcutaneous tissue. Incision through this will reveal the conjoint tendon and the spermatic cord covered by cremasteric fascia etc. On lifting this spermatic cord and keeping it to one side, we come to the posterior wall of the inguinal canal. This is depicted diagrammatically here (Fig. I) and it reveals 3 structures in the posterior inguinal wall:—

- I. Internal abdominal ring, made bigger than normal for clarification.
- II. Inferior epigastric vessels.
- III. The transversalis fascia. Behind this fascia is extraperitoneal fat and behind it is the peritoneum. The internal ring is nothing but a gap in the transversalis fascia forming the posterior inguinal wall and through this you will all recollect, the spermatic cord comes out.

Let me now dwell a little upon 3 important structures seen in Figure 1.

I. The internal abdominal ring.—Normally, this is just big enough to permit the emergence of the spermatic cord. If there is a hernial sac, in addition to the spermatic cord, this ring is naturally bigger than normal. In

* A paper read before the South Indian Provincial Medical Conference and published with the kind permission of the Secretary.

small hernial sacs, the ring is slightly bigger, whereas, as the hernia increases both in size and duration, the ring becomes bigger and bigger, expanding more and more towards the medial aspect of the inguinal canal.

Thus we see that in small hernia, where the internal ring is small, simple removal of the sac is sufficient to restore the internal ring to its normal

size; but in bigger hernias, where the ring is bigger than normal, in addition to removal of the sac, the internal ring has got to be narrowed by suturing the margins together [as in Fig. I (a)]. Only by this procedure can we restore the internal ring to its normal size and thus prevent a recurrence of the hernia.

II. The conjoint tendon.—According to the usual description of this structure, this is supposed to be a conjoint insertion of the internal oblique and

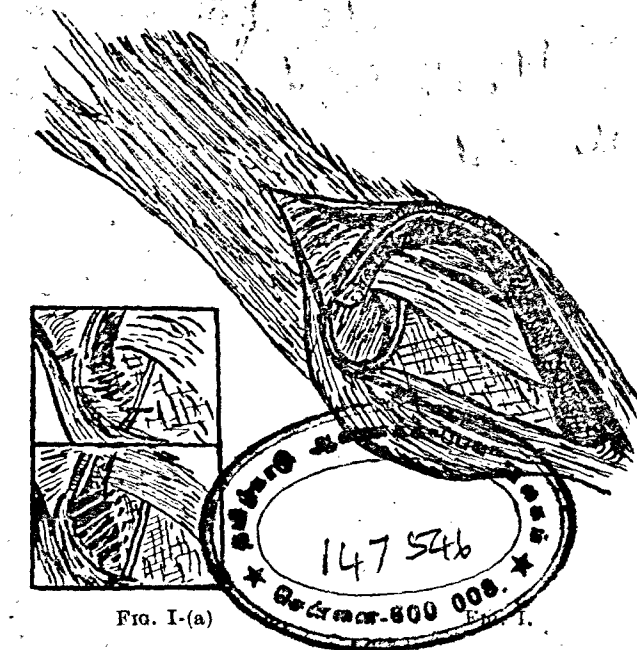


FIG. I-(a)

transversalis muscles. These arise from the lateral part of the inguinal ligament and arching over the spermatic cord, get inserted into the pubic crest and into the ilio-pectineal line.

Very great emphasis has been laid recently upon what is now popularly known as the "shutter" or "sphincter" action of the conjoint tendon. In a living person, whenever the intra-abdominal pressure is raised and therefore there is a *vis a tergo* tending to propel the abdominal contents along the pathway of the spermatic cord into the inguinal canal, in addition to the external oblique becoming tense, the fibres of the conjoint tendon straighten out, bringing its lower edge down to the inguinal ligament, thus strengthening the region of the posterior inguinal wall. The school led by OGILVIE of London, lays very great emphasis on this "sphincteric" action of the conjoint tendon and they maintain that during an operation on a patient with an indirect hernia, if the conjoint tendon is seen to be well-developed, no steps need be taken to strengthen the posterior inguinal canal, because they argue that this sphincteric action will guard against any recurrence. But if this sphincteric action has been interfered with due to atrophy of the lower arched fibres of the conjoint tendon, a state of affairs that is seen in large or long standing indirect hernia, only then do OGILVIE and his followers advocate some procedures intended to reinforce or strengthen the posterior inguinal wall.

Recent work of ZIMMERMANN, ANSON and McVAY and the older observations of POLYA and others, have also revealed an interesting and

not uncommon congenital abnormality. In some of the specimens (living and dead) examined by these authors, it was found that the lower border of the conjoint tendon, instead of coming down to the pubic spine for insertion, ended at a variable distance above the pubic bone, leaving a triangular area in the medial end of the inguinal canal. This triangular area, known as the inguinal triangle, is bounded above by the lower free border of the conjoint tendon, medially by the lateral border of the rectus sheath and inferiorly by the inguinal ligament (Fig. II). The floor of this triangle is formed by the transversalis fascia only and owing to the

high insertion of the conjoint tendon is unsupported by overlying muscle. The full brunt of the intra-abdominal pressure is borne mainly by the transversalis fascia in this case. It is maintained that this unsupported floor yields, giving rise to recurrent hernia, years after an operation for indirect hernia. It is also pointed out that in persons with this abnormality, any attempt at tight suturing

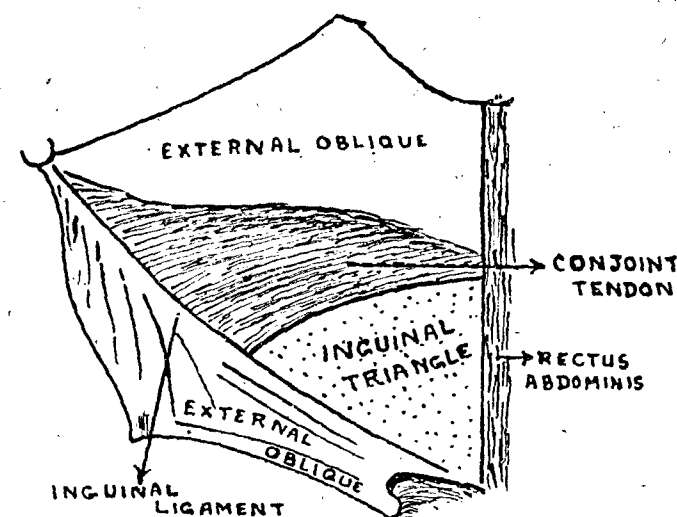


FIG. II.

of the conjoint tendon to the inguinal ligament will fail, owing to excessive tension on the stitches, owing to the distance of the conjoint tendon from the inguinal ligament. The authors maintain, and rightly too, that in those hernia subjects where this abnormality is detected the surest method of providing permanent cure is by providing adequate support to this region either by using silk filigree, or by fascia lata, or by one of the other methods to be mentioned later.

III. Transversalis fascia.—In the large majority of patients who suffer from indirect hernia, this is normal and strong, the only defect or deficiency being the internal abdominal ring. But in cases of very big or very long standing indirect herniae, this transversalis fascia is stretched out and lax. It is the consensus of opinion to-day that in these cases, the transversalis fascia should be made taut by plication or by suture and that it must be supported with other aids like silk filigree, or fascia lata etc., to be mentioned shortly.

With this very brief survey of the more recent observations on inguinal hernia, let me pass on to the modern trends in the treatment of indirect inguinal hernia. From a clinician's point of view, I think it is easier to consider the hernia at the various ages and stages.

Hernia in children.—In children, the inguinal hernia is in practically 100% of cases, indirect. The hernial sac has a narrow neck and it is an

embryological remnant, being a completely unobliterated, or more often, a partially unobliterated portion of the processus vaginalis. In these children, the internal ring is normal, the musculature of the inguinal region is good and the transversalis fascia is strong. Hence in them the only surgical treatment required is isolation and excision of the sac. The internal ring, the conjoint tendon and the transversalis fascia should not be interfered with at all.

Hernia in adults.—I. *Early or small indirect hernia* in older subjects present the same pathological findings as those in infants. In them also the sac is congenital, and the internal ring, the conjoint tendon and the transversalis fascia are all normal. These hernia are amenable to the same simple therapy, viz, isolation and excision of the hernial sac only—a therapy that is now universally accepted to be the ideal for these small herniæ.

II. With longer duration of the hernia or in bigger hernia, however, the internal ring becomes stretched and dilated by the presence of the hernial contents. The musculo-fascial defence provided by the conjoint tendon and transversalis fascia are still sound. The conjoint tendon and transversalis fascia are normal. Hence, in such cases, after isolation and excision of the sac, the internal ring should be narrowed by approximating its edges with suitable suture material or by reconstructing its medial part with silk lattice (Fig. I-a). Nothing else is necessary, because nothing else is abnormal. It is considered to be unnecessary in such cases to suture the conjoint tendon to the inguinal ligament because in thus attempting to do more than what is necessary, a lot of harm is done to the important arched fibres of the conjoint tendon.

III. In very large and long standing indirect hernia in adults, the problem is entirely different, because the anatomical changes are more marked. Due to prolonged and excessive pressure, the internal ring becomes grossly dilated and embraces practically the entire inguinal floor, rendering the transversalis fascia absolutely useless. Further more, the conjoint tendon becomes atrophic and attenuated due to pressure by the hernial mass. It is in such cases where the internal ring, the conjoint tendon and the transversalis fascia are all abnormal and weak, where, in short, the normal inguinal mechanism and musculo-fascial defences are damaged beyond repair, that the replacement of nature's handiwork by that of man becomes necessary. It is only in these cases that, in addition to a complete excision of the hernial sac, the floor of the inguinal canal has to be strengthened by some artificial means—artificial in the sense that the normal anatomy is not restored, as in the other groups. There are several methods by which this reinforcement, this strengthening, is brought about.

A. **WILLYS ANDREWS' WHITE FASCIA METHOD.**—In this the posterior wall is strengthened by suturing the conjoint tendon and the upper medial leaf of the external oblique to the inguinal ligament, behind the spermatic cord. The cord is then placed on the external oblique flap so sutured and the lower lateral flap is then made to cover the spermatic cord. By this technique, the entire inguinal canal is strengthened mainly by the overlap of the external oblique aponeurosis and hence the term, "white fascia" method.

B. **GALLIE AND LE MESURIER** resorted to their fascial strip plaiting for this reinforcement, the fascial strips being taken from the fascia lata on the lateral aspect of the thigh. (Fig. III *vide page 5*).

C. Others have used similar fascial strips cut from the edges of the external oblique aponeurosis.

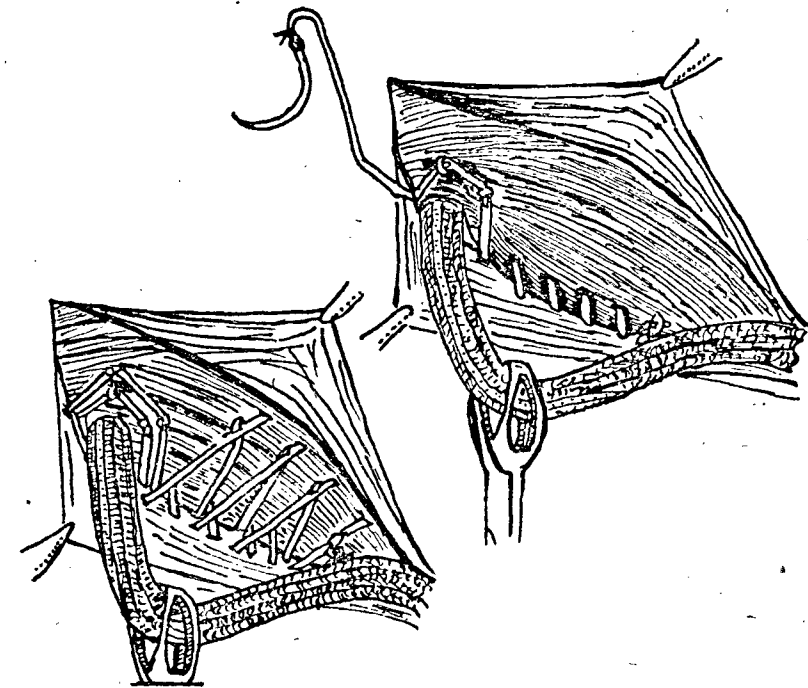


FIG. III.

D. **OGILVIE** and his school recommend for this reinforcement the silk-lattice, so well demonstrated in Fig. IV. In this the posterior inguinal wall is reinforced by building a silk lattice-work between the lower border of the conjoint tendon and the inguinal ligament.

E. More recently pedunculated fascial flaps with an intact blood supply have been used very successfully.

1. **TURNER** has recommended the cutting of a rectangular flap from the fascia of the thigh just below inguinal ligament. This flap is left attached

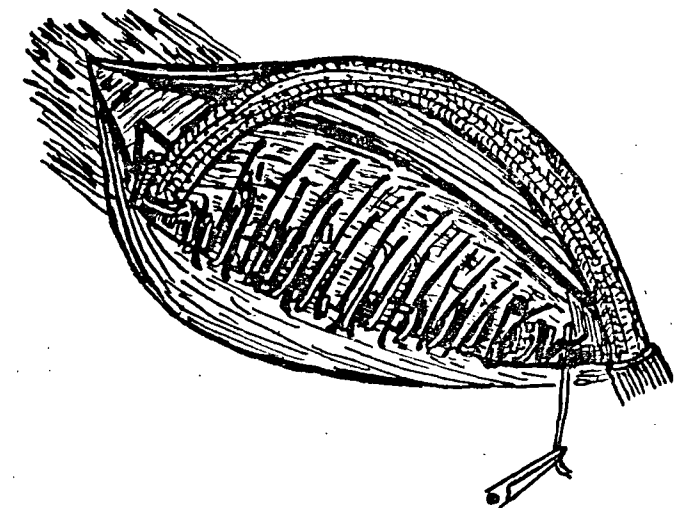


FIG. IV.

superiorly. The flap is then turned up under the inguinal ligament to cover the inguinal region.

2. WANGENSTEEN uses a pedunculated flap of fascia lata with its attached tensor muscles in the repair of large inguinal defects.

With your permission, I will now proceed to make a few observations and describe briefly the technique of operative treatment of inguinal hernia that I follow.

Hernia in children.—The operative treatment that I follow for hernia in infants is the same as the one generally recommended *viz.*, excision of the sac only and restoration of the inguinal canal to its normal state. The results of this operation are very satisfactory. I would like to emphasize here that the cremasteric and internal spermatic fascial layers covering the spermatic cord are very well developed in children and unless these layers are cut in the long axis of the spermatic cord, the isolation of the delicate sac is made unnecessarily difficult.

Hernia in adults.—*Anæsthesia*:—I have found that spinal anæsthesia is the ideal for the large majority of cases. It provides good anæsthesia and good relaxation, and has very few severe post-operative complications. In the majority, it avoids retching and vomiting, so often associated with general anæsthesia.

For elderly subjects and for those with high blood pressure, I use local anæsthesia. This requires better pre-medication and more co-operation from the patient and is sometimes not so completely painless as the spinal. But in these elderly subjects the incidence of retention of urine is much less after local than after spinal and so is the alteration of B.P., which though uncommon in low spinal, does sometimes take place.

Incision:—Instead of the classical oblique incision $\frac{1}{2}$ " above and parallel to the inguinal ligament, I use the transverse incision, along the natural skin crease, as recommended by OGILVIE. I use this, not with the idea of displaying cosmetic surgery in the pudendal region but because I feel with OGILVIE that a transverse incision is very comfortable to the patient and is never keloidal or painful.

The skin and subcutaneous tissues are dissected back as usual, giving

a good and wide exposure of the external oblique aponeurosis.

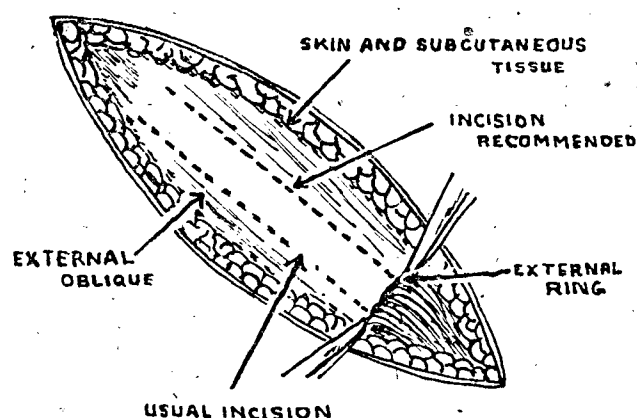


FIG. V.

I then make a cut through the external oblique aponeurosis. (Fig. V.) Instead of the cut being made as is usually done, I make it more medially and slightly higher, as this incision, by giving a big lower lateral flap, facilitates the overlap of the external oblique aponeurosis

—an essential step in the technique that I follow. The cut in the external oblique is extended medially into the external abdominal ring and carefully

beyond it into the inter-columnar fascia covering the spermatic cord. The cut is also extended outwards to a point $1\frac{1}{2}$ " to 2" beyond the internal ring on the lateral side.

The 2 flaps of external oblique aponeurosis are then dissected off the underlying structures, exposing the inguinal canal, containing the spermatic cord with its coverings. The cremasteric covering of the spermatic cord is then incised longitudinally, and the underlying cord and hernial sac, covered with infundibuliform fascia only, is dissected out, by stripping off the cremaster.

A longitudinal incision by a gentle stroke of the knife, through the infundibuliform fascia, will reveal the hernial sac. This sac is picked up with a pair of artery forceps and is then dissected out and isolated, first its body, then its fundus, and lastly its neck.

At the fundus, some difficulty may be encountered because of dense adhesions and increased vascularity. These are generally overcome, but in cases where the fundus is very densely adherent, I have cut the sac proximal to the fundus, leaving the fundus still attached to the spermatic cord. The results of this technique, attributed to BARKER, have been very satisfactory.

When the fundus is free, the sac is dissected upwards towards its neck. As the neck is reached, a small retractor *must be inserted* under the upper leaf of cremaster, drawing this muscle and the lower fibres of the conjoint tendon upwards and outwards. This is necessary to give a good exposure of the internal abdominal ring. In some cases the fascial covering at the neck is very well developed and thick, and this should be snipped with scissors close to and all round the neck. Only then will it be possible to isolate the sac really high enough. After the sac has been isolated as high as is possible, it is opened and the interior of the sac inspected.

It has been the experience of some of my colleagues and myself, that a small medial direct hernial pouch is present in more cases of indirect inguinal hernia than is usually believed. This medial portion of what is known as the "pantaloön" sac (one pouch on the lateral side and another on the medial side of the inferior epigastric artery) must be excised along with the indirect sac, because if it is left behind, it may lead to the development of a direct recurrent hernia later. In order to isolate this medial pouch, the finger is inserted through the opened hernial sac into the abdominal cavity and with a piece of gauze the structures on the medial side of the neck of the hernial sac are gently pushed away. If there is a medial pouch, this pouch will easily slip out by the inner side of, and as a continuation of, the indirect sac. This stripping must go on till either there is no more yielding of the peritoneum on the inner side or till the bladder is reached. Dissection is further facilitated if this medial pouch is caught hold of in an artery forceps and traction applied through this forceps.

If such a pouch is present, the hernial sac to be excised will appear like, Fig. VI-2. and not like Fig. VI-1. (*vide Fig. VI, page 8.*)

At this stage, let me make it very clear that I differ very strongly from the usual routine procedure of twisting the sac before transfixing it with catgut and excising it. This twisting is unnecessary and in certain types of hernial sac, results in inadequate excision. If the hernia is of this type, Fig. VI-1, then twisting may take up all the slack, leaving behind, after excision, a smooth inner peritoneal surface, as in Fig. VI-3.

But if the hernial sac is of this type *i.e.* with a medial pouch (Fig. VI-2), then twisting does not take up the medial pouch completely. Hence after

excision of the sac, there will be a small pouch left behind, predisposing to recurrence. (Fig. VI-4).

In order to prevent this, I do not twist these "pantaloons" sacs; under vision, I apply a purse string suture round the common neck of both sacs (Fig. VI-5) and tighten this suture and tie it off, as high as is possible. The distal portions of the sacs are excised, leaving behind a flat peritoneal surface (Fig. VI-6).

Having thus dealt with the hernial sac, I next ascertain the state of the 3 vital structures *viz.*, the

internal abdominal ring, the conjoint tendon and the transversalis fascia. One of the following five combinations may commonly be present:

No.	Internal ring	Conjoint tendon	Transversalis fascia
I	Normal in size.	Well developed. Normally inserted.	Strong.
II	Bigger than normal, but less than 3 cms. in diameter.	do.	do.
III	do.	do.	Margins of the internal ring and transversalis fascia not holding the stitches properly.
IV	Bigger than 3 cms. in diameter.	Atrophic.	Weak.
V	Normal in size.	Well developed but high insertion and consequently a big inguinal triangle.	Strong.

FIG. VI.

If the state of affairs is as in I, then the operation is completed by allowing the cord to fall back into its original place, the cremaster is sutured over it and then the external oblique is sutured and lastly the skin.

If the condition is as in II, then in addition to simple suture of the cremaster and the external oblique and the skin, in layers, I narrow the internal abdominal ring by stitches of No. 1, chromic, 20 day catgut.

The state of affairs in group III requires a little explanation. The internal ring, though abnormal, is less than 3 cms. in diameter; the conjoint tendon is well-developed. But when an attempt is made to narrow the internal ring the stitches cut out, making the matter worse than before. This has happened in quite a number of cases. In these cases, in spite of a good musculature, I feel that in view of the weak transversalis fascia, it is safer to carry out the reinforcement of the posterior inguinal canal, just as we do in the next group of cases.

In group IV, the internal ring is bigger than 3 cms. in diameter and the conjoint tendon is atrophic. In these, I deliberately reinforce the posterior inguinal wall by a modified Willys Andrews' white fascia method, which I shall describe presently.

The Vth group, where the conjoint tendon is inserted higher than normal. I must confess that it is only recently that I have started looking out for this anatomical abnormality. In some of these, I have merely overlapped the external oblique flaps, keeping the cord subcutaneous. In others, I have used the fascia lata to reinforce the inguinal canal and guard this weak area. The cases are too few for me to pronounce any definite opinion.

The modified Willys Andrews' method of reinforcing the posterior inguinal canal.—Having decided that a reinforcement is necessary, first, I excise the cremasteric muscle and fascia, as this procedure allows closer approximation of the conjoint tendon to the inguinal ligament and facilitates a complete closure of the external abdominal ring, particularly near the pubic crest (an otherwise weak point). Then, if there is any strong transversalis fascia left, I take up the slack in this and suture it up. The next step consists in stitching the conjoint tendon to the inguinal ligament behind the cord. Then I stitch the upper flap of external oblique to the inguinal ligament just in front of the conjoint tendon and the spermatic cord is still held forwards. This suturing is done both medial and lateral to the internal abdominal ring. Then I stitch the lower lateral flap of external oblique to the upper medial flap, behind the cord. The cord is thus kept subcutaneously. The main skin vessels are ligatured with plain 00 catgut and the skin incision closed with fishing gut.

At this juncture, I would like to make a few additional remarks about certain points regarding this operative procedure.

I. Use of catgut.—For the suturing of the internal ring, the conjoint tendon and the external oblique flaps, I use No. 1, Ch. 20 day, catgut. I feel strongly that in spite of some very convincing articles to the contrary, the best suture material for hernia is catgut. This stays in place till its work is done and then gets absorbed. During this period it may cause a little cedema, a little temperature and a little pain, but ultimately they all spontaneously subside and the patient is free from suture trouble for the rest of his life.

I concede that non-absorbable suture materials produce less reaction and more scar tissue and that they, if used as a filigree, produce a permanent scaffolding which will add to the strength of the inguinal canal. But, and this is a very important point, the use of non-absorbable suture material requires very great aseptic care, which may not be possible in all circumstances and in all hospitals. Even in those clinics where there is a most meticulous aseptic technique, those who have used silk in a large number of cases concede that a certain amount of sepsis is inevitable and some of us know how miserable the patient and the surgeon feel, once the wound gets infected, however mild the infection is. There starts a sinus in the wound and this goes on discharging pus for several months till the foreign body, *viz.*, silk comes off completely. Sometimes the removal of the silk requires a secondary operation. Even supposing the wound heals completely, the patient is not immune from the formation of these chronic sinuses. A probable diminution in his general condition and a co-existing septic focus in the body, will sometimes produce a flare up in the wound, which will burst at one point and form a chronic sinus. I had 2 instances, wherein one about 2 years and in another about 18 months after the patients were discharged cured they came back with sinuses discharging pus. In both, the wounds took a long time to heal and one of them, a graduate, was so fed up with these sinuses, that when he developed a hernia on the opposite side, he requested me not to use similar suture materials. Gentlemen, I know I am biased in favour of catgut but, I feel, I am biased with justification. With my limited experience in South India I feel that, at any rate under tropical conditions, the best suture material is catgut and if the results, early and late, with catgut are as good as with silk, I do not see any reason as to why we should use silk at all.

II. Suturing the conjoint tendon to the inguinal ligament.—This "old fashioned" technique, attributed to Bassini, has been very severely criticised on the following grounds:—

- (1) That the muscle cannot unite with the inguinal ligament.
- (2) That by anchoring the muscle down to the inguinal ligament even if there is union the muscle gets torn off during any straining.

But the arguments that have convinced me are the following:

(1) The consensus of opinion, experimental and operative is that union does occur between the internal oblique and inguinal ligament, provided that—(a) Areolar tissue covering the muscle and the inguinal ligament is removed; (b) the stitches are not tied so tightly as to produce muscle necrosis; (c) the stitches are tied just tightly enough to keep the margins of the conjoint tendon and inguinal in continuous opposition; (d) there is *no tension on the stitches*. This is avoided by not attempting to suture a highly arching or highly inserted conjoint tendon to the inguinal ligament.

(2) It is an accepted fact that the conjoint tendon *shuts down on the inguinal ligament* in active contraction as in straining etc. Hence, the tension on the sutures holding the conjoint tendon down must be relaxed, if anything, during the process of straining, because the conjoint tendon has been sutured in the position it would take up normally when in active contraction. Therefore the tearing away of the conjoint tendon pictured so vividly in the mind's eye of the anti-Bassinists, during active movement and straining, is a slight misconception.

Further, I feel that such suturing, by providing an additional layer in the inguinal region, does take away a big portion of the intra-abdominal

tension during the days immediately after the operation, when vomiting, distension or straining to pass urine, all produce increased intra-abdominal tension, at a time when the tissues used for strengthening the posterior inguinal canal have not firmly united.

III. The overlap of the external oblique aponeurosis and keeping the spermatic cord subcutaneous.—I do this because I feel that by thus closing the entire inguinal canal medial to the internal ring and by thus overlapping the external oblique aponeurosis, at least one of the weakest points (the medial part) of the posterior inguinal wall is reinforced by two layers of external oblique aponeurosis.

It has been criticised that keeping the cord subcutaneously leads to testicular neuralgia, neuralgia in the groin, hydrocele and even testicular atrophy. But in not one of the cases that I have examined, have these delayed complications manifested themselves. Personally I have absolutely no hesitation in keeping the cord subcutaneous.

A word about post-operative treatment.—I believe in the time-honoured method of 3 weeks absolute rest in bed and 3 months of very light work. Though it appears very dramatic to make a patient get up and walk about on the 3rd or 4th post-operative day, and though there may be some rationale for this in children and in small hernia in adults, I feel that this is very irrational in the large oblique hernia, where so much depends on the firm union of structures that have been recently and artificially united.

Recently, I have started rehabilitation exercises meant to develop the abdominal muscles.

Conclusion.—During the short period that has been allotted to me, I have attempted to survey the modern trends and to describe with moderate details, the technique that I have found satisfactory—during the operation, in the immediate post-operative period and in the late follow-up results also. I have selected this method because it is technically easy, requires no 2nd incision or wide dissection, does not involve the use of non-absorbable suture materials which are not suited either to the tropical temperature or temperament, and takes no more time than the usual methods of herniorrhaphy. I do not claim any originality for this technique. If during these 45 minutes of your valuable time that I have taken, I have impressed upon you the necessity for an anatomico—physiological approach to the operative treatment of inguinal hernia, and the necessity for an attempt to match the surgical procedure to the specific lesion present, I shall feel highly gratified and elated that the dawn of a new era is in sight an era of unparalleled success in the surgical treatment of oblique inguinal hernia.

References:

1. Brandon, W. J. M.—"The House that Bassini Built." *Lancet*, 268: 167.
2. Herzfeld—"Hernia in Infancy," *Am. J. of Surg.*, xxxix., No. 2.
3. Mair, G. P.—"Criticism of the Bassini Operation," *B.M.J.*, Aug. 11. '45, p. 178.
4. Ogilvie H.—"Post Graduate Surgery," Vol. III, 1937.
5. Zimmermann—"Recent Trends in the Treatment of Inguinal Hernia," *Internat., Abs. of Surg.*, 68: 123-130.
6. Zimmermann—"Treatment of Direct Inguinal Hernia," *Surg., Gyn., Obst.*, 66: 192-198.

Infantile Hepatic Cirrhosis*

(Conditions described as infantile biliary cirrhosis; sub-acute toxic cirrhosis; and infantile liver.)

A. V. S. SARMA, M.B., B.S. (Mad.), D.C.H., R.C.P. & S. (Eng.),
Formerly Honorary Assistant Physician, Stanley Hospital, Madras, South India.

History.—The early observers and writers on the subject of infantile biliary cirrhosis are B. C. SEN (1887), J. B. GIBBONS (1891), J. N. GHOSE and MACKENZIE (1895), GHOSH and SIRCAR, T. F. PEARSE (1909), S. K. MUKHERJEE (1929), and N. G. PANDALAI (1934).

Recently many workers tackled the problem of the so-called infantile biliary cirrhosis and papers appeared on the subject in various journals and at various places, and in this work the writer has attempted to record every useful addition to the knowledge on the subject which is still incomplete.

Definition.—Infantile hepatic cirrhosis is a disease which occurs in infancy and early childhood with a steady and painless enlargement of the liver and spleen. Irregular fever and gastro-intestinal disturbances (vomiting, diarrhoea, and constipation) are present. Ascites and jaundice set in later in the course of the disease, and of the two, one may appear earlier than the other, or both may set in almost simultaneously.

Geographical distribution.—Infantile hepatic cirrhosis has a definite contribution to infant mortality in many provinces of India. Western pediatricians have not described any condition identical with the familiar cirrhosis of the liver in infants elaborated by writers in India. The writer was unable to see a single typical case at the Hospital for Sick Children, Great Ormond Street, London. Text books on children's diseases written by western authors are without any detailed description of the malady. WILFRID SHELDON (1943) in his book on "Diseases of Infancy and Childhood" discussing about biliary cirrhosis describes two chief forms, one in association with congenital obliteration of the bile ducts and the other accompanying subacute necrosis of the liver (multiple nodular hyperplasia of the liver). ROGERS and MEGAW (1942) help Indian readers no better, while Sir PHILIP MANSON BAHR has described the condition only briefly in his text book on "Tropical Disease."s

Infantile hepatic cirrhosis occurs in India, Mexico, North China and possibly in Japan. The incidence of this disease in India has been studied in detail. "In India it is common in Bengal, Madras, and Bombay Presidencies, and the United Provinces; it is more prevalent in rural districts than in towns" (MANSON-BAHR, 1940). According to TIRUMURTHI and NARAYANAMURTHI (1939), Bengal has the highest incidence, with Madras the next in order. Central Provinces, the United Provinces, Mysore, Hyderabad, Cochin, Malabar and Marwar also have victims from cirrhosis of liver in children. A great part of Bombay presidency, the Punjab, Rajputana, Sind and Assam are exempt from this malady. The Mexican analogue of the infantile hepatic cirrhosis of India according to Brahmachari, is characterised by diarrhoea, neurological signs and febrile bouts.

The writer has collected one hundred cases of cirrhosis of liver in infants for study in the thesis. Out of them, 84 cases are from the writer's

* Specially contributed to THE ANTISEPTIC

private practice, and 16 cases have been observed by the writer in Stanley Hospital, Madras. One case is from Central India, and two from Bombay Presidency. The rest are from Madras Presidency. From the Madras Presidency the cases drained as detailed below, from the various districts.

District.	No. of cases.
Madras City	71
Erode (Coimbatore)	1
Tanjore	3
Chinglepet	14
Tiruthani (North Arcot)	1
Nellore	4
Guntur	1
South Canara	1
Total	97

According to S. BALASUNDARAM (1939-40) the incidence of infantile hepatic cirrhosis in India is in those areas where the land is irrigated by canals and rivers and contains manganese in the soil.

Part II.

Aetiological factors:—*Race and social status:*—J. N. GHOSE (1887) thinks children from town and villages, suffered equally from the disease. The writer feels that the towns and cities claim more cases than the villages. According to J. N. GHOSE (1887), AHMED (1887), and P. KRISHNA RAO (1941), the rich and the poor are affected alike. RAKHALDAS GHOSE (1887), A. V. S. SARMA (1939), M. B. PRABHU (1940) and K. C. CHAUDHURI (1944) think along with many others that the condition is extremely rare among the very poor classes. The writer is yet to see a case in the jungle tribes and those hailing from hills and obscure spots for alms in the streets. GREEN-ARMYTAGE (1926) recorded the disease among the Europeans, Anglo-Indians, Muhammadans, and also in the Hindus, while the last class is incriminated as the chosen victim by the majority of writers—J. N. GHOSE (1887), McLEOD (1887), VAIDYANATHA IYER (1926), SANKARA IYER (1931), the writer (1939), M. B. PRABHU (1940), P. KRISHNA RAO (1941), K. C. CHAUDHURI (1944).

Out of the series of hundred cases incorporated in the appendix, the writer noticed the following incidence regarding the communities and income groups:—

Community.	No. of cases.
Hindu—Brahmin	68
Hindu—Non-Brahmin	20
Jain	2
Anglo-Indian	1
Indian Christian	1
Hindu Gujarati Brahmin	8
Total	100

Income Groups.	No. of cases.
I. Monthly income over Rs. 200	24
II. " between Rs. 50 and 200	66
III. " below Rs. 50	10

VAIDYANATHA IYER (1926) stated that the disease was seen both amongst vegetarians and non-vegetarians. SANKARA IYER (1931) reported his cases amongst Brahmins. A. V. S. SARMA (1939, 1940, 1941) and P. KRISHNA RAO (1941) feel that the majority of cases hail from vegetarian families—in the present series, 88 are from vegetarian families and 12 from non-vegetarian families. M. B. PRABHU noted a high incidence of the disease in the Brahmin community and alludes to the condition being akin to a heredo-familial disorder.

Age and sex.—TIRUMURTHI and RAO (1933-34), M. P. PRABHU (1940), and K. C. CHAUDHURI (1944) noted majority of their cases between one and two years.

A. V. S. SARMA (1939) found the disease clinically discernible after the age of 7 months.

A. V. S. SARMA (1939) and K. C. CHAUDHURI (1944) note preponderance of the disease in the male sex, while M. B. PRABHU (1940) and P. KRISHNA RAO (1941) write that male and female children are equally susceptible. The present series of 100 cases consists of 66 males and 34 females.

The children have been suspected by the writer to exhibit the disease either during the dentition period or during the age at which erect posture is attempted by the child.

Altitude.—MUKHERJEE (1922) wrote that the disease was found over an altitude of 1,000 feet above sea-level. S. BALASUNDARAM (1939) observed that the disease is common in the deltaic areas of India which are not over 2,500 feet above sea-level. P. KRISHNA RAO (1941) thinks that the altitude has no bearing in the production of the disease. According to S. BALASUNDARAM (1939-40) the incidence of infantile hepatic cirrhosis in India is in those areas where the land is irrigated by canals and rivers and contains manganese in the soil.

Multiple pregnancies.—SANKARA IYER (1931) wrote that quick succession of pregnancies seems to be a predisposing factor in the production of the disease but this point is negatived by P. KRISHNA RAO (1941). The writer feels that any mother by pregnancies in quick succession might predispose to hepatic cirrhosis in the child as the intra-uterine endowment of nourishment to the child might suffer from mineral and vitamin deficiencies.

Heredity and familial incidence.—The disease is certainly familial. In the present series transmission through females is suggested in 3 instances. A number of children of the same parents or the children of two brothers or sisters die from the disease. TIRUMURTHI recorded that the first child is generally the victim of the disease, but the writer disagrees with this view.

The term of identical twins chosen and studied by M. B. PRABHU (1940) showed cirrhosis in both the children, while the team of fraternal twins reported by P. KRISHNA RAO (1941) showed incidence of the disease only in the sister fed on cow's milk and not in the brother fed by the mother herself. The question of inherent tissue susceptibility to, and the effect of feeding on the development of the disease, crops up in the study of twins. In short, the suit between nature and nurture is come for trial, but no final verdict can be given as to which is the more important in the genesis of infantile hepatic cirrhosis. P. KRISHNA RAO will lay the crime at the door of nurture. PRABHU writes: "Twin children may simultaneously

be affected though not to the same extent." Consanguinity of marriage appears to increase the familial incidence.

Pathogenesis.—1. *Malaria*:—SEN (1887), COOMER (1887), the writer (1939), M. B. PRABHU (1940), P. KRISHNA RAO (1941) and many others feel that malaria has no causative bearing in this disease. MANSON-BAHR (1940) writes: "neither alcohol, syphilis, nor malaria has anything to do with it."

2. *Kala azar*:—Infantile hepatic cirrhosis was thought to be a variety of kala azar by CASTELLANI and CHALMER (1919). P. KRISHNA RAO (1941) records that while kala azar is not prevalent in the Mysore State, infantile hepatic cirrhosis occurs frequently. Assam, the hot-bed of kala azar infection, is said to be free from infantile hepatic cirrhosis.

3. *Tobacco, alcoholism, alcoholic derivatives, and some toxic drugs*:—Tobacco and alcohol have no claim here.

The toxic action of carbon tetrachloride, arsenic, copper phosphorus, manganese, atophan, sulphonamides, etc., are well known. Regarding copper and manganese, care must be taken to observe children taking tonics containing them. The writer had occasion to suspect a little patient having a tonic containing copper and manganese causing enlargement of the liver.

Certain drugs (Chloroform, Chloral Hydras, Santonin, etc.) have been specially observed as having a deleterious action on the liver. A child (case No. 25) treated for pertussis with a patent containing Chloral Hydras, Chloroform, and Alcohol developed a painless enlargement of the liver.

4. *Septic foci*:—Septic foci associated with cirrhotic children are chronic otitis, chronic tonsillitis, chronic sinusitis (antritis), chronic rhinitis, and chronic recurrent bronchitis. That hepatic cirrhosis is primary and as a nutritional consequence epithelial infections crop up always, is an idea that appeals to the writer.

5. *Helminthic infestation*:—This does not appear to have any bearing in this disease.

6. *Some diseases having an etiological bearing*:—T. B. MENON (1931) writes: "The tendency to affect children of the same mother leads to the suspicion of some ante-natal cause acting slowly after birth. It has also been argued that the disease is due to some toxin excreted in the mother's milk. The toxic and microbic origin of cirrhosis in mild inflammatory changes, suggests a similar condition might operate in infantile cirrhosis; especially as the condition called Hanot's cirrhosis, which is an almost analogous disease occurring in young adults, is being regarded as the result of angiocholitis. The occurrence of biliary cirrhosis apart from obstruction or inflammatory changes in the bile ducts is improbable and the same argument would hold in infantile cirrhosis."

Toxæmias of pregnancy were present in some mothers whose children later developed cirrhosis of liver (case numbers, 1, 12, 13, 14, 27, 48, 49, 53, 56, 63, 72, 100 vide Fig. 1 in page 16). Asthma, migraine, gastric ulcer and diabetes occurred in some of the parents of these children. Whooping-cough (case numbers 37 and 48), typhoid fever, and preventive vaccination against small-pox in some children (case numbers 28, 38, 39) also appeared to pave the way for hepatic cirrhosis.

7. *Syphilis*:—Congenital syphilis does not produce the condition of infantile hepatic cirrhosis discussed in this thesis. In practice, cases observed as having a syphilitic taint reacted badly to treatment with

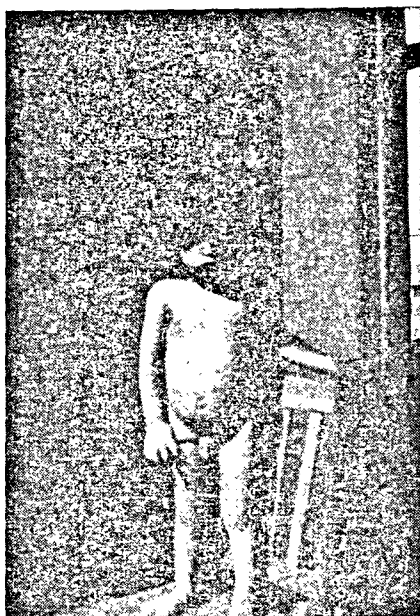


FIG. 1.

A boy aged 3 years with enlarged liver.



FIG. 2.

A boy aged 3 years with enlarged liver.

mercury. It is the impression of the writer that a child with congenital syphilis may, like any other child, become a victim of infantile hepatic cirrhosis (*vide* cases: RAMAMURTHI and MUNIGANAPATHI Fig. 2).

8. *Diarrhoeas and dysentery*:—"McGAW in India, has pointed out recently the close association between cirrhosis of the liver and bacillary dysentery. He believes the one to be the direct sequel of the other" MANSON-BAHR (1940). "Bacillary dysentery has no etiological role in bringing about cirrhosis of the liver. None of the children under my investigation suffered from bacillary dysentery."—P. KRISHNA RAO (1941). "Post-dysenteric cirrhosis has been noted but a history of dysentery is not very common in this disease. Attacks of fever and leucocytosis point to infection. It is probably superadded."—M. B. PRABHU (1940).

According to A. V. S. SARMA (1939) diarrhoeas are important and generally suggest the starting point, (as in case numbers 2, 3, 4, 25, 26, 28, 31, 40, 50, 56, 70, 80, 86, 91, 93 and 100). Diarrhoeas occurring in an infant, and those particularly in summer have a great bearing. All atypical diarrhoeas of children seem infectious (virus infections?). "It has been stated that the condition (of infantile hepatic cirrhosis) is due to infection with a virus. Though definite proof of this is lacking, it is possible that the acute necrosis that occurs in cases is due to a superadded toxæmia as a result of previous damage of the liver cells by the virus" R. N. CHOPRA

(1932). There are reports indicating that *B. coli* and streptococci have been recovered from the urine of cirrhosis children. "LAHIRI (1936) obtained growth of *B. coli* in one case, and streptococcus hæmolyticus in another, from urine, out of a total of 11 cases. He is of the opinion that failure to get growth of *B. coli* in most cases may be due to the fact that the bacteria are excreted in showers with negative phases in the interval" P. KRISHNA RAO (1941) isolated *B. coli* from the urine and also growths of colonies of *B. coli*—*communis* from the cultures of scrapings of the liver. The "so-called positive bacteriological findings are due to secondary invasions" after death according to BHATTACHARJEE (1933). P. KRISHNA RAO (1941) is of the belief that the presence of bacteria in liver is merely not due to mechanical invasion after death.

9. *Cirrhotic toxins*:—Many parents have informed the writer in many cases that their children were chronically constipated at one time or other (case numbers 1, 4, 12, 20, 23, 24, 29, 51, 58, 60, 63 and 95), and that they had a bloated abdomen, fever, respiratory distress, insomnia and general uneasiness. Such attacks were invariably precipitated by the administration of castor oil. In some children, instead of constipation there was diarrhoea in addition to fever. After every such attack the liver and spleen were found to have increased in size. In the opinion of "TIRUMURTHI and NARAYANAMURTHI castor oil is by itself (Ricin or Ricinolic acid) a cirrhotic factor. A. V. S. SARMA (1939) recorded that some children (case numbers 8, 9, 22, 63) are sensitive to castor oil which in them might be a cirrhotic factor.

10. *Food factors*:—According to RAKHALDAS GHOSE (1887), ROY (1887), and GOTHOSKAR breast milk did not cause cirrhosis of liver. GREEN-ARMYtage (1926), KRISHNA AYYAR (1927), and GOTHOSKAR (1931) thought that cow's milk caused the disease. DEY (1887) thought that overfeeding of children with breast milk was the cause of the disease, while AHMED (1887) incriminated farinaceous foods, and VAIDYANATHA IYER (1926) blamed feeding of children with unsuitable and undigestible foods.

".....MUKHERJEE remarks that the disease is especially apt to occur in grossly overfed and pampered children in Bengal, and had adduced evidence that the virus is probably conveyed by the mother's milk to the child. GREEN-ARMYtage believes the true etiology to be a deficiency of vitamins in the mother's diet, thus depressing the endocrine system of the foetus, overfeeding of the child when born, and the insufficient feeding of milch animals."—MANSON-BAHR (1940).

A. V. S. SARMA (1939) stressed that the dietetic irregularities seem responsible to a large extent for the development of the disease. Generally in Madras, children are weaned between the 6th and 12th month. Breast feeding by itself or with the supplement of diluted cow's milk or one of the available condensed or dried milk foods is the mainstay, till the child is 7 or 8 months old, after which period, a little rice diet is started. The vehicle for the rice is a little ajwan, salt and ghee or pepper water, or curry made of dhall and greens or vegetables. A preponderance of carbohydrate, particularly as starches, and the presence of pungent, irritant, fibrous and non-nutritious elements in diet are noteworthy here. Sometimes tapioca or rice congee is administered. The children observed by the writer have indulged in sweets, chocolates, and biscuits to a culpable extent.

The idea that the mother could contribute to the disease through the medium of the breast milk is so prevalent in South Canara that the child

is handed over to a *Koraga* woman (*Koraga* is a hill tribe) who would breastfeed the baby and this procedure has been reported to be satisfactory in averting the disease.

P. KRISHNA RAO (1941) writes:—"I am of opinion that there are two important factors in the aetiology of the disease. One is cow's milk and the other is invasion of *B. coli* into the liver. Cow's milk brings about the predisposing factors of the disease-gastro-intestinal disorder and devitalisation of the liver, and *B. coli* completes the pathological process.

CONCLUSION:—The following case that came under my observation emphatically suggests that cow's milk is an important factor in the causative role of the disease. A Hindu woman gave birth to twins—one a male and the other a female child.....As she was not strong enough to feed both the children on breast milk she thought of feeding one of them only on her own milk, and the choice fell on the male child! The female child which was fed on cow's milk developed cirrhosis of the liver in her eighth month. The male child was entirely free from the disease even though he was suffering from malignant tertian malaria at the time. It is noteworthy that these two children brought up in identical environment but fed on different kinds of milk reacted differently with regard to the development of cirrhosis of the liver. This is a unique illustration which supports the view expressed above (Reported at the Mysore Medical Conference, 1935.)

The writer feels that cow's milk alone cannot have the bearing that P. KRISHNA RAO believes it has in the genesis of this disease. It is probably excess of fat in cow's milk when overfeeding occurs, that is the crucial point (*Case Nos. 34, 79 and 86*).

M. B. PRABHU (1940) writes: "The diet, no doubt, is more or less full of starch and considered from nutritional point of view, may be defective but is no way inferior to the diet given to infants amongst the poorest and ignorant in whom the disease is practically unknown."

NARAYANAMURTHI and TIRUMURTHI (1939) held that mother's milk itself may in some way be responsible for producing the disease.

K. C. CHAUDHURI (1944) recently concluded thus:—"Thus improper feeding or dietetic errors alone cannot be held responsible for the causation of the disease."

The milk yielded by cows when stall fed, especially with oil cake, may be different from that yielded by cows feeding on pasture. The cows getting oil cake yield richer and larger quantity of milk probably containing in it an injurious element. This is a popular impression.

Pathology.—Before entering the debated field of infantile hepatic cirrhosis, study of the incidence of cirrhosis of liver in infants and children in general will be useful.

DONALD PATERSON (1941) gives the relative frequencies of the different types of cirrhosis as shown by an analysis of the 46 cases from the Hospital for Sick Children, Great Ormond Street, London, during 1910-'25.

CASES			
Congenital biliary cirrhosis	...	22	
Obliteration of bile ducts	...	15	Survived 6 months.
Ducts patent	...	7	2 survived for one year.
Syphilis	...	19	
Portal cirrhosis	...	3	
(2 aged 9 years and 1 aged 3 years.)			
Acute yellow atrophy	...	1	
Banti's disease	...	1	

BILIARY CIRRHOSIS:—*Congenital cirrhosis with or without congenital obliteration of the bile ducts:*—"The feature of the pathology is a uni and intra-lobular cirrhosis. Even when there is no extra-hepatic obstruction of the bile ducts, the liver still shows some type of diffuse lobular cirrhosis.

Non-obstructive hypertrophic biliary cirrhosis (Hanot syndrome):—"This is unusual in childhood and was not seen at the Great Ormond Street." The liver is dark green, and shows a finely granular surface. The cirrhosis is of extra- and intra-lobular type, with a great increase in the number of small intra-hepatic bile ducts."

Acquired obstructive biliary cirrhosis:—Extremely rare in childhood, this form is due to a stone in the bile duct, new growth in the head of the pancreas, and tuberculous glands at the hilum of the liver. No case of this was seen in the Great Ormond Street series.

Multi-lobular (Portal) cirrhosis:—This is rare in childhood and most frequent after the age of 8 years. There were three cases in the Great Ormond series.

This form is supposed to be due to some form of toxin or irritant from the bowel; and both alcohol and vinegar have been known to produce it.

Pathologically this is a multilobular cirrhosis and there is hypertrophy or proliferation of the liver cells in an attempt to make good the damaged tissue. The liver is nodular (hob-nailed liver).

Syphilitic pericellular cirrhosis:—This was the second commonest in the series of cases with 19 examples.

* The cirrhosis of liver occurring in Banti's disease and Kinnear Wilson's hepato-lenticular degeneration are known to every student of pathology.

In India GIBBONS (1891) first described the pathology of infantile liver cirrhosis and concluded that it was biliary or hypertrophic cirrhosis. ROLLESTON and McNEE described the condition as a form of biliary cirrhosis in young children in India.

GIBBONS (1890) described that the surface of the liver is finely granular (resembling Morocco leather), and that the substance of the liver is deeply bile-stained. Fibrosis of the liver is both interlobular and intercellular, and the fibrous tissue contains newly formed bile ducts. The radiating hepatic cords of cells are mostly destroyed into degenerating areas of debris with occasional escape of a few normally-looking cells.

According to T. E. MENON (1931) the cirrhosis of liver in infants is both mono-lobular and peri-cellular. Rarity, of periportal fibrous tissue, formation of new bile ducts and proliferation of bile canaliculi are noticeable features.

P. KRISHNA RAO (1941) came to the conclusion that the cirrhosis of the liver in infants is portal cirrhosis and not biliary cirrhosis. That the surface of the liver may be bile-stained in portal cirrhosis (DELAFIELD and PRUDDEN, 1936); that bile ducts may be more prominent that the connective tissue in portal cirrhosis (DELAFIELD and PRUDDEN 1936) BELL, 1936; MAC CALLUM, 1938; and MUIR, 1936; that the destruction of liver cells, loss of the normal architecture of the lobules, and extensive fibrosis in portal areas are characteristic of portal cirrhosis (KERTZ, KELLY, McNEE, GOHN, MOON and others); that extreme changes as in diffuse nodular

cirrhosis are rare in biliary cirrhosis (MACCALLUM, 1938); and that pseudolobulation may occur characteristically in portal cirrhosis; had been successfully raised by P. KRISHNA RAO (1941). SEN (1890) felt that Gibbons' nomenclature should be portal cirrhosis for the syndrome.

The profound study of the subject by M. V. R. RAO (1935) led him to classify the so-called infantile biliary cirrhosis as subacute toxic cirrhosis. His view is that a toxin brings about a primary lesion of hepatic veins and loss in liver cells is secondary, and the toxic action is sub-acute and produces retarded regeneration and continuous necrosis of liver cells.

The following are according to M. V. R. RAO the characteristic features of the sub-acute toxic cirrhosis that occurs in infants.

The characteristic lesion is in the liver. The Glisson's capsule is thickened due to sub-capsular fibrosis. The liver is definitely enlarged having lost its normal architecture. The parenchyma is divided irregularly into islands of cells by connective tissue network. The hepatic cells are seen in varying states of degeneration. Regenerative attempts are not marked except occasionally. A loss of normal arrangement of the capillary network, phlebosclerosis of the hepatic venous terminals, endophlebitis with or without thrombosis of the collecting veins (sub-lobular) and sclerosis of perisinusoidal capillary network have been observed. At places an inter-cellular fibrosis has been observed. The liver cells are deeply bile-stained. A specific distribution of fibrosis tissue especially around hepatic venous terminals is noteworthy.



FIG. 3.
Macroscopic appearance of the liver, showing granular surface, and on section islands of parenchyma encircled by connective tissue.

Regarding the changes in other organs M. V. R. RAO writes:—"Passive venous congestion of the spleen, diffuse parenchymatous nephritis, venous anastomosis between the systemic and portal venous systems in the region of the colon, kidneys, omentum etc., enlarged mesenteric glands,

œdema of the brain, subserous petechial hæmorrhages, bile-staining of all tissues, jaundice, anæmia ascites, and œdema of the lower extremities were important post-mortem appearances in this case. The pancreas was normal; the suprarenals showed congestion".

P. KRISHNA RAO (1941) objected to cirrhosis of liver in infants being called sub-acute toxic cirrhosis, and says that there is regenerative attempt by the liver tissue in infantile hepatic cirrhosis.

P. KRISHNA RAO (1941) gives the following features as characteristic of infantile hepatic cirrhosis:—

"(1) It is enlarged, has a finely granular surface and is hard to the touch.

"(2) Microscopic appearance is characterised by the formation of fibrous tissue which is distributed in a disorderly manner giving the "multi-lobular appearance". Within the lobules the liver cells are found in various stages of destruction, and hepatic veins are not visible in the centre. The destruction of liver cells in certain areas is so complete that there are only masses of necrosed cellular debris surrounded by fibrous tissue.

"(3) Regenerating nodules are found and they contain big hepatic cells which are not arranged in the normal radiating manner but grouped in masses.

"(4) Clinically there is development of ascites at the terminal stage of the disease. Jaundice is not present in all cases, but occurs in a few cases at the late stages of the disease."

"The histological features of the liver and the clinical conditions of the disease satisfy all the criteria of portal cirrhosis, and 'infantile cirrhosis' is therefore, undoubtedly a case of portal (or Laennec's cirrhosis)."

P. KRISHNA RAO isolated *B. coli* from the substance of the liver, post-mortem.

DR. U. S. RAO (1941) has described the post-mortem appearance on the following lines. The liver is large, bile-stained and cuts with resistance. There is slight increase in the peri-portal connective tissue, and there is thickening of the walls of hepatic venous divisions with surrounding fibrosis. Microscopically, the normal hepatic foliæ are nowhere seen. The surviving liver cells are in a state of degeneration, the cellular protoplasm is finely granular with pigment and lipoid particles and the nuclei stain poorly. There are areas of regeneration prominent around some portal spaces and bigger divisions of hepatic vein. A regenerating nodule appears as a mass of liver cells separated from one another by œdematous distension of the lymph spaces of Disse. Bile thrombi are seen in the biliary canaliculi of the hepatic cords belonging to the degenerating and regenerating parenchymal areas. Foot's technique reveals remarkably the fibrotic divisions of hepatic parenchyma. The terminals of the portal vein are clear but the terminals of the hepatic vein are scarce and such of them that are seen are in a state of phlebosclerosis, endophlebitis and partial thrombosis. The reticulum belt work of the sinusoidal capillary bed around the central veins is completely disorganised, and sclerosed and this reticulum in places undergoes collagenous change and is sometimes seen between the cells, thus producing inter-cellular cirrhosis. There is a slight

increase in the fibrous tissue of the Glisson's capsule. The portal spaces and their structures do not show any remarkable change.

The smallest divisions of the portal vein are clearly seen. There is marked crowding of the portal spaces.

The central veins (hepatic venous system) show marked sclerosis, endophlebitis, and partial thrombosis.

The hepatic artery shows no change.

There is a desquamative catarrh of the bile ducts, but no pericholangitis or periductal fibrosis.

Small columns of cells lining a potential lumen (resembling canals of Hering) are seen in the fibro-cellular connective tissue particularly surrounding the regenerating liver cells. These are pseudo-bile canaliculi. These are crowded in the fibrous tissue around portal spaces. This feature is not noticed around the bigger branches of the hepatic vein, where regeneration of the liver tissue into small pseudo-lobule is equally prominent.

Fully-formed, avascular and wavy collagenous connective tissue bands separating the small regenerated nodules and in many places surrounding small groups of liver cells are seen. The bands are loose and undergo a collagenous change. Moderate numbers of cells resembling large lymphocytes or endothelial cells are seen in the connective tissue bands, especially around portal spaces, where the crowding of the pseudo-bile canaliculi is also well marked, and this cellular reaction is also pronounced in the connective tissue bands, beneath the capsule. Elastic tissue is abundant in the bands of fibrous tissue especially in those around the portal systems and to a less extent in the bands separating the small groups of cells. The connective tissue in the Glisson's sheath of the portal spaces is slightly increased.

A partial post-mortem was possible in a case (No. 96-1944) under the writer's observation in the Stanley Hospital, Madras. Post-mortem, the body was intensely jaundiced and with a sanious discharge from the nostrils and the mouth. Abdomen was distended. When the abdomen was opened, the liver was seen intensely bile-stained and hard and very finely nodular. Only a small quantity of fluid could be tapped. The liver cut with resistance and a portion was removed from the right lobe.

Under the microscope, capsule of the liver is thickened in places. Surface is granular and bands of connective tissue run into the substance of the liver from the depressed areas on the surface of the liver.

The normal structure of the liver is lost. Small groups of liver cells of varying sizes, showing degenerative changes, separated by well formed connective tissue are seen. Areas of regeneration consisting of pseudo-lobules are also seen. Yellowish pigment particles are found in areas of degenerating and regenerating cells. Droplets of fat are present in the degenerating cells as demonstrated by fat stains.

Biliary thrombi are present in the biliary canaliculi in places.

The connective tissue is infiltrated with lymphocytes, a few polymorphs and an occasional eosinophile. The periportal fibrous tissue is also increased somewhat.

A few central veins show some thickening of their walls.

Discussion.—The discussion is considered under the following heads:—

- A. Heredity.
- B. Endocrine aspects.
- C. Infections and toxins.
- D. Food factors.
- E. Allergy.

F. The pathological picture of infantile hepatic cirrhosis; and the probable production of the disease.

G. Suggestions for future work on the subject.

A. Heredity.—The hereditary aspect has been partly discussed under the aetiological factors. A. V. S. SARMA (1939) and P. KRISHNA RAO (1941) stressed that the disease is common in the vegetarian public. M. B. PRABHU (1940) thinks that the disease is common in the Hindu Brahmin community only and compares

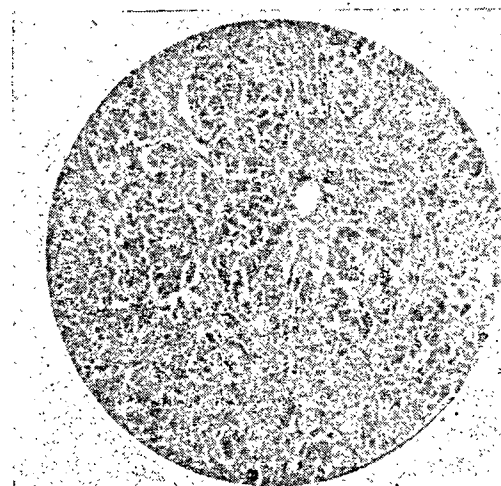


FIG. 4-a.

Photomicrograph of the liver X60 showing isolated groups of parenchymal cells caught in the connective tissue strands.

the condition to the hereditary diseases like some ataxias, amaurotic idiocy, myopathies, Wilson's disease, Gaucher's disease and familiar acholuric jaundice. M. V. RADHAKRISHNA RAO (1933-'34; 1935; 1937) favours a congenital tissue proclivity. M. B. PRABHU says:—"Infection, intoxication, or metabolic strain may merely act to this basic defect, just as influenza is credited to expose weak links of dormant lesions as myocardial insufficiency or quiescent or arrested tuberculosis, in an individual. This hypothesis will also explain why amongst the children of the same parents, some should get the affection and others escape from it (say under Mendelian Law of Inheritance).

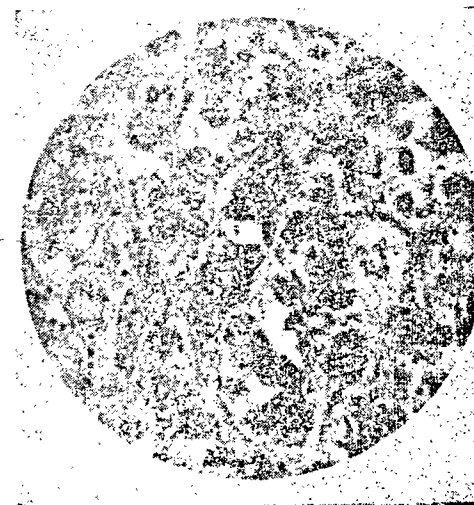


FIG. 4-b.

Photomicrograph of the liver. X 270. Small groups of liver cells with degenerative changes and separated by connective tissue are seen. Regeneration and pseudo-lobulation are also seen. Pigment also visible in a few cells. Also noteworthy are biliary thrombi in bile canaliculi.

The writer's impression is that the disease is no doubt confined to the children of Brahmins who also form part of the vegetarian public,

Infantile hepatic cirrhosis occurring in identical or monozygotic twins (SARASWATHI and SAROJINI) has been reported by M. B. PRABHU, but the dietary of these twins has not been described. The disease occurring in fraternal or dizygotic twins has been studied by P. KRISHNA RAO. The sister developed the disease on a diet of cow's milk, but her brother escaped on a diet of mother's milk. A boy (Hindu, Brahmin) of 11 years came under the writer's care for chronic interstitial nephritis (progressive renal fibrosis) in January 1945. His twin brother died at the age of 1½ years, of infantile hepatic cirrhosis. The twins were fed by the mother and supplemented on cow's milk. An elder brother of the patient died of chronic interstitial nephritis at 20 years. Paternal uncle is asthmatic. Paternal grand-mother and her mother are victims of migraine. Kahn and Wasserman reactions of the twins and their parents are negative. The part played by Nature and nurture in the genesis of this fell disease has not yet been revealed to any great extent.

B. Endocrine aspects.—“GREEN ARMYTAGE believes the true aetiology to be in a deficiency of vitamins in the mother's diet, thus depressing mammary secretion and the endocrine system of the foetus, over-feeding of the child when born, and the insufficient feeding of the milch animals.”—MANSON-BAHR (1940).

Mild chronic hypoadrenia (congenitally present due to hypo-plasia of adrenal glands and acquired after a chronic infectious disease, toxic condition, or malnutrition) exhibits symptoms like nausea, abdominal pain, and diarrhoea alternating with constipation. MURRAY B. GORDON (1942) describes that in mild chronic hypoadrenia there is a marked susceptibility to infections especially of the upper respiratory tract and to allergic disorders such as asthma, hay fever, rhinitis, cough and food intolerance, and further disturbances of carbohydrate metabolism (low fasting blood sugar and increased sugar tolerance) are also present.

There is a remarkable similarity in the low blood sugar level and other symptoms of mild chronic hypo-adrenia and those of infantile hepatic cirrhosis. Cirrhosis of liver is detected between the 6th month and the 3rd year in infants and there is a tendency to spontaneous retrogression of the disease by the end of the 3rd year. The switch-over period of the infant's life i.e. from shortly after birth to the end of the third year, is noteworthy, because at that time a new and permanent adrenal cortex is built up in place of the old cortex. During this switch-over period malnutrition, including deficiency of vitamin C which is presumably essential for the normal functioning of the adrenal cortex, probably plays an important role in producing the derangement in adreno-cortical function. Deficiency of cortical function is claimed by VORZAR as responsible for the deficient fat absorption from the intestine.

C. Infections and toxins.—*B. coli* and streptococci were isolated from the urine of some cases. *B. coli* isolation from two cases was reported by P. KRISHNA RAO in 1934. LAHIRI in 1936 isolated *B. coli* from urine in one case and streptococcus haemolyticus in another case.

MEGAW believes that cirrhosis of liver is a direct sequel to bacillary dysentery. P. KRISHNA RAO (1941) disagreed with the above view. P. KRISHNA RAO isolated *B. coli* from the urine and also growths of *B. coli communis* from cultures of scrapings of the liver. Post-mortem, these positive findings may after all be secondary invasions as stressed by BHATTACHARJEE (1933). The same criticism has been advanced by many others,

Summer diarrhoeas are probably infective and they have been found as the starting point (as in case numbers 2, 3, 4, 25, 26, 28, 31, 40, 50, 56, 70, 80, 86, 87, 91, 93, 100, i.e., 17%) in infantile hepatic cirrhosis by A. V. S. SARMA (1939). Is there any virus behind this? That virus infection might be the cause of the disease has been already stressed by R. N. CHOPRA (1932).

The writer has seen children of mothers who had toxæmias of pregnancy (eclampsia, hyperemesis, albuminuria, neuritis) develop later infantile hepatic cirrhosis (case numbers 1, 12, 13, 27, 48, 49, 53, 56, 63, 72, 73, and 100).

Infection and toxic action may also produce a mild chronic hypoadrenia as explained already by the writer.

D. Food factors.—Food factors have already been partly discussed under the aetiological factors. A. V. S. SARMA (1939) stressed that diet seems to be responsible to a large extent for the development of the disease and pointed out in particular the intolerance to fat by the infants (case Nos. 34 and 79). A portion of the left lobe of the liver and the spleen removed post-mortem from a case (Govindammal, female child, 5 years old, died on 3-2-1945 in Stanley Hospital, Madras—*vide* appendix) were studied specially to observe the changes caused in them by malnutrition. The liver was hard, bile stained, and finely nodular.

Liver:—Under the microscope, fatty degeneration involving all the zones and almost all the cells seen. Slight increase in periportal connective tissues with lymphocytis infiltration.

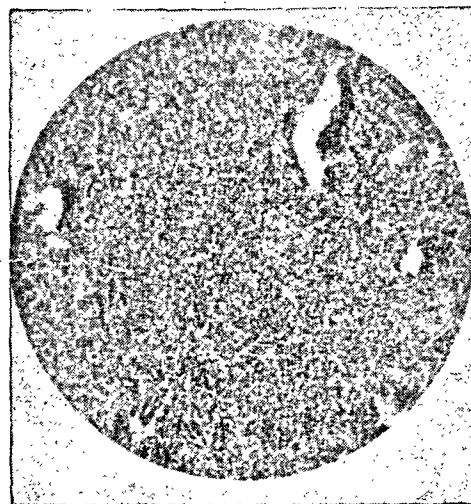


FIG. 5-a.
Photomicrograph of the liver. X 60.
Showing fatty degeneration and increase in periportal connective tissue.

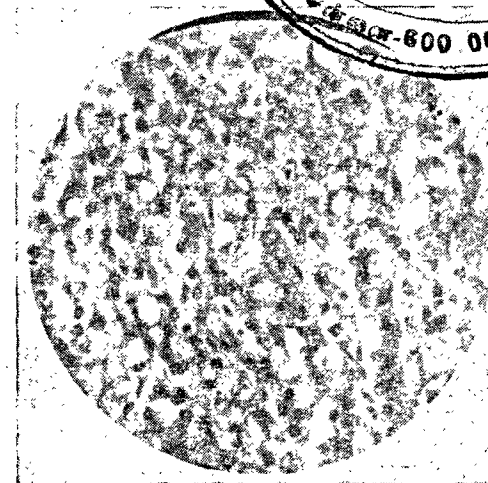


FIG. 5-b.
Photomicrograph of the liver. X 270.
Showing intense fatty change.

Spleen:—Chronic venous congestion.

P. KRISHNA RAO (1941) thinks that the disease is due to cow's milk diet and *B. coli* invasion of the liver.

The authoritative work of H. P. HIMSWORTH and L. E. GLYNN (1944) summarised below will be found very useful in this connection.

"1. Two types of experimental hepatitis in rats can be distinguished: (a) toxipathic hepatitis, due to the direct action of noxious substances on the liver cells, and (b) trophopathic hepatitis, due to dietary deficiencies of a component of protein.

"2. Experimental toxipathic hepatitis develops rapidly after exposure to the poison. The liver shows a diffuse zonal necrosis. In survivors recovery is complete. Repeated exposures to the poison however produce a diffuse hepatic fibrosis.

"3. Experimental trophopathic hepatitis develops only after a long latent period. The liver shows massive necrosis which always leads to post-necrotic scarring and, in severe cases, to nodular hyperplasia.

"4. In man the hepatitis following exposure to such poisons as Chloroform, Phosphorus, and Carbon Tetrachloride has the features characteristic of toxipathic hepatitis. The zonal hepatitis seen in eclampsia and infective hepatitis, and after treatment with the organic arsenical preparations, also appears to be of this type. Association of two or more weak toxipathic agent may produce a high incidence of severe hepatitis.

"5. In man massive hepatic necrosis and its sequel nodular hyperplasia, may be attributed to a trophopathic hepatitis. There is suggestive evidence that this can arise as the direct result of a dietary deficiency. But most commonly it develops as a complication of a preceding illness and it is then to be regarded as a conditioned deficiency disease distinct and separated from the illness which it complicated.

"6. Restriction of the intra-hepatic circulation is an important pre-disposing cause of trophopathic hepatitis in man. It most commonly results from the swelling of liver cells previously injured by a toxipathic agent. Pregnancy, vomiting and anorexia contribute to the development of a trophopathic hepatitis by reducing the amount of protective nutrient available to the liver cells. An increasing metabolic rate may have the same effect by increasing the general bodily requirements for protein. It is also possible that certain poisons, such as Selenium and T. N. T. can produce the condition by combining with components of protein so as to render them unutilisable."

Cow's milk given to infants, i.e., without dilution and modification is not ideal by virtue of its high content of fat which, as a rule, is not tolerated by infants. To overcome this it has to be diluted with water; and the carbohydrate content is made up in the diluted and modified feed by addition of sugar. The proteins and valuable amino-acids suffer severe dilution and are not in any way compensated for; and this factor should be having an important bearing in the production of hepatic cirrhosis in children brought upon cow's milk as according to HIMSWORTH and GLYNN the protein moiety of feed must be adequate in the dietary to prevent a trophopathic hepatitis.

The following quotations also throw light on the subject of "trophopathic hepatitis"—(LANCET 8-4-1944).

"Thus WHIPPLE showed that protein deficiency rendered the livers of dogs susceptible to chloroform necrosis, and EARLE and VICTOR found that severe liver necrosis could result in rats from an excess of cystine in the

diet. More recently GYORGY and GOLDBLATT, in investigating a dietary deficiency capable of causing an acute focal or diffuse hepatic necrosis with fatty infiltration in young rats, identified the definite factor as casein. The possibility of counteracting these effects by various dietary supplements was examined and methionine alone or cystine and choline in combination were found to do this. HIMSWORTH and GLYNN produced massive hepatic necrosis in rats by a low protein diet and that methionine (found in casein) afforded complete protection. These results clearly prove that dietary factors as distinct from general protoplasmic poisons and viruses, are capable of producing necrosis of the liver in rats. In healing this leads to fibrosis and, if the animal lives long enough, to nodular hyperplasia. HIMSWORTH and GLYNN differentiate this sequel from portal cirrhosis, which can be produced by diets causing fatty infiltration and also by toxins. On this and other grounds they describe "trophopathic" and toxipathic hepatitis with distinctive fibrotic sequelæ, and "dietary portal cirrhosis."

"The application of these differences to hepatitis and hepatic fibrosis in man must await further investigation. The view widely taken by pathologists and supported as far as man is concerned by biopsy studies, is that the exact histological picture for any agent capable of causing liver necrosis is largely determined by dosage and the duration of the injurious effect. An agent acting intensely may produce acute necrosis and death with the picture of "acute-atrophy," or if survival takes place a picture of fibrosis with a pronounced element of nodular hyperplasia, especially in younger subjects. The same agent acting over a longer period may produce a slightly different picture, such as that typical of alcoholic "cirrhosis" which, it is estimated, takes 5-15 years to develop. These differences, are, however, believed to be differences of degree and not fundamental. To what extent can liver disease in man be attributed to dietary deficiency? While pointing out that "no certain evidence of the occurrence of massive hepatic necrosis due to a deficient diet has yet been produced in man, HIMSWORTH and his colleague draw attention to the suggestion that the high incidence of cirrhosis of the liver among poor natives in the Punjab and Rand, may be of this nature, a suggestion which GILLMANN has supported by producing hepatic cirrhosis in rats by feeding them on the ordinary diet of natives in the mines of South Africa."

P. KRISHNA RAO (1941) thinks that infantile hepatic cirrhosis is a variety of portal cirrhosis. The clinical condition of infantile hepatic cirrhosis appears to include more than one variety, as is the case with migraine, asthma or eczema. Cases arising mainly from dietetic errors might show, post-mortem, the portal type of hepatic cirrhosis, while those wherein toxic or infective elements predominate might exhibit, post-mortem, biliary type of hepatic cirrhosis. In the writer's opinion an allergic basis is common to all types. If the toxo-infective condition is neither acute nor chronic in action, 'sub-acute toxic cirrhosis' which is described by M. V. R. RAO, may be the post-mortem picture. That such clinical types do exist is the conviction of the writer. In one group of cases jaundice is terminal and appears later than ascites, while in another jaundice sets in earlier than ascites; the former group conforms to the classical description of portal cirrhosis (*Vide Figs. 6, 7, 8 and 9, Page 28*) (atrophic variety of LAENNEC), and the latter is unison with the orthodox version of biliary cirrhosis (hypertrophic variety of HANOT).



FIG. 6.
Clinical photograph of Case No. 36
on 30-8-1939.



FIG. 7.
Clinical photograph of Case No. 49
on 11-2-1940. Portal type of cirrhosis.

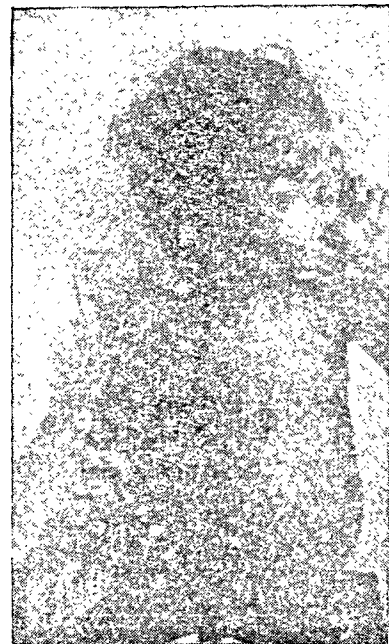


FIG. 8.
Clinical photograph of Case No. 96
on 15-1-1945.



FIG. 9.
Clinical photograph of Case No. 97
on 5-1-1945.

PHOSPHOTON
PHOSPHORUS TONIC *Cipla*
(ORAL)

Agents for Madras: CIPLA AGENCY, 256, Thambu Chetty St., G. T., Madras.

The most potent synthetic oestrogen

● Dienoestrol is the most potent and least toxic of the synthetic oestrogens.

The nausea and sickness commonly experienced with stilboestrol are conspicuously absent with dienoestrol. This is of particular importance in the treatment of carcinoma of the prostate.

It is completely effective by mouth; the indications for its use are all those conditions requiring oestrogenic therapy.

It is effective in doses of about one third to one quarter of those used in stilboestrol therapy, and is available in tablets of 0.1 and 0.3 mg.



NEO-CLINESTROL
(Brand of DIENOESTROL)

Tablets of 0.1 mg. in bottles of 25 & 100
Tablets of 0.3 mg. in bottles of 25 & 100

GLAXO LABORATORIES LTD. GREENFORD, MIDDLESEX.
Representatives in India, H. J. FOSTER & CO., LTD.
BOMBAY - MADRAS - CALCUTTA - LAHORE.

DIPHTHERIA PROPHYLAXIS

Of the several official preparations for diphtheria prophylaxis, the alum precipitated toxoid is in general use. Immunisation of infant and young children is usually undertaken between the ages of 1 and 5 years, and in such subjects Diphtheria A.P.T. is practically reaction-free.

With Diphtheria A.P.T. a Schick conversion rate of 90%—98% is common.



Available in boxes of
2 x 0.5 cc. ampoules
and phials of 3 cc.

DIPHTHERIA A.P.T.

Glaxo

GLAXO LABORATORIES LTD.
Greenford Middlesex England.

Representatives in India,
H. J. Foster & Co. Ltd.
Bombay Calcutta Lahore Madras

ANTISEPSIS

An authoritative statement

'The most reliable procedure for the complete elimination of streptococci from the naked hands is as follows. Wash for one to two minutes in a pint of warm water, using plenty of yellow bar soap and a nail brush to the nail sulci; then pour into the palm of one hand a teaspoonful of neat Dettol, or a thin tragacanth paste containing 30 per cent. Dettol, and work into the skin of the hands till dry (one to two minutes).'*

which is non-poisonous even at full strength and applicable, without causing pain or injury, to raw wounds and surfaces; which does not inhibit the natural process of repair; which is stable at all clinically desirable temperatures and at all dilutions; which is non-staining, agreeable in use and pleasant to smell.

This list of qualities might well describe the theoretically ideal antiseptic. In fact it describes 'Dettol'—which in ten years has become the antiseptic of choice, for the protection of patients and staff alike, in nearly every hospital in the British Empire.

An antiseptic with a high Rideal - Walker coefficient whose bactericidal activity is well maintained in the presence of blood, pus and other organic matter; which is lethal to a great diversity of bacteria, including haemolytic streptococci;

M 16

* Colebrook, L. (1933) *Brit. med. J.*, 2, 725.

When writing to advertisers, please mention the "Antiseptic."

THE PRICELESS INGREDIENT OF EVERY PRODUCT



IS THE HONOR AND INTEGRITY OF ITS MAKER

PENICILLIN SODIUM (SQUIBB)

Now available in vials of 100,000 Units

The ancient dictum, "out of evil cometh good," has never been more strikingly demonstrated than in the greatest contribution the War has made to the cause of suffering humanity, the development of Penicillin on a commercial scale to an extent that now permits the release of supplies for civilian use. This development would certainly have taken ten times as long without the stimulus of War conditions and the utter disregard of expense brought about by War, and for generations to come Penicillin might easily have been a laboratory curiosity at a prohibitive cost. Squibb has been in the fore-front in all stages in the development of Penicillin.

Penicillin is particularly valuable in all staphylococci, hemolytic or anerobic streptococci, pneumococci, meningococci, gonococci or clostridia infections. Ample supplies are now available in Calcutta and Bombay, and further information will gladly be furnished on request.

E. R. SQUIBB & SONS, NEW YORK.

SOLE AGENTS IN INDIA

MARTIN & HARRIS LTD.,

Mercantile Buildings, Lal Bazar, CALCUTTA.
Savoy Chambers, Wallace Street, BOMBAY.

When writing to advertisers, please mention the "Antiseptic."

GEORGY and GOLDBLATT point out that a low intake of protein with insufficient supply of the vitamin B complex (including choline) is a prominent feature of the diet of persons addicted to alcohol. "Some corroboration of the reported beneficial effect on cirrhosis in man of a highly nutritious diet supplemented with the vitamin B complex comes from PATAK and POST, and from LOWRY et al., of the beneficial effect of choline, high casein diet, or choline with a high casein diet in rats with hepatic cirrhosis produced by low choline and low casein diet with added cystine..... In view of these results, those of Rao, suggesting that the infantile cirrhosis of Hindu children (a variety of portal cirrhosis) is caused by a diet of cow's milk combined with B. coli infection, must be seriously considered." (British Medical Journal 6-2-1943).

E. Allergy.—Allergy denotes peculiar reactions. One of ten per cent. of human beings are allergic. Allergy is a clinical concept as opposed to anaphylaxis which is concerned in the laboratory, is inherited from parents, and is against various substances. Its duration in the young is long. The allergic reaction (first or repeated) is due to allergins of unknown immunological nature provoked by allergens (protein or non-protein). A sensitizing dose and time interval are not always essential. The sensitivity is highly developed in some tissues and entirely absent in others. The reactions are mainly in the skin, respiratory and gastro-intestinal tissues.

The allergic aspects of infantile hepatic cirrhosis will be touched upon in the following order:—

1. Etiological factors. 2. Pathogenesis. 3. Pathology, clinical picture and course of the disease. 4. Diagnosis and prognosis. 5. The exact bearing of allergy including suggestions and conclusions.

1. *Etiological factors*:—Infantile liver cirrhosis is common amongst the vegetarian section of the public and this is probably so because the diet is more complex, less nutritious, and often conducive to alimentary allergy. In the writer's opinion, the disease appears to start generally during the latter half of the first year. This is the period when weaning, dentition, and the child's attempt to sit up are seen. More male children are afflicted by this malady (66 males and 34 females), and in this sex incidence this disease resembles infantile coxema and asthma which are accepted allergic manifestations.

Infantile liver cirrhosis is observed to be familial. In the writer's series, 70 per cent. show an allergic disturbance in the family, generally in the parents, wherein it is more often unilateral (in one parent) than bilateral (in both parents). Cases 63 and 80 are typical in this respect. It is reasonable to expect the inheritance of an allergic diathesis with all its potential morbidity by the children from their allergic parentage. Consanguinity of marriage might make the inheritance of allergic diathesis more certain because of obvious bilateral influences. Allergic inheritance is either germinal (true Mendelian through the germ plasma of the parents) or placental or serum sensitisation (active or passive sensitisation of the foetus in utero). (Vide Figs. 10 and 11, Page 30)

The transmission of the disease by the mother through the medium of her breast milk can be understood when a gastric subacidity and consequent incompleteness of protein digestion as also excretion of intermediate protein derivatives into the breast milk of the mother are conceded as being essential in sensitising the child. In the human species a single

layer at placental cells only separates the maternal from the foetal tissues, and seeing that a pregnant woman is fed to the extent of fulfilling even peculiar longings and fantastic cravings, it is not too much to expect occasional sensitisation of the child for food products, even in utero.



FIG. 10.
Clinical photograph of Case No. 63.



FIG. 11.
Clinical photograph of Case No. 80.
(Beside him is his asthmatic sister).

2. *Pathogenesis*.—The inheritance of the allergic diathesis being inherited by infants whose gastro-intestinal tract is most vulnerable to catarrhs and food allergies, is a point of no small importance.

Incidence of pertussis, diphtheria, typhoid, dysenteries and atypical diarrhoeas, as also the frequent occurrence of upper respiratory upsets (nasal turbinate hypertrophies, sore throats including tonsillitis, antritis, and chronic otorrhoea) and coecal infections of the skin in children developing hepatic cirrhosis, requires close study from the view point of non-bacterial and bacterial allergy.

A recurrent bronchial catarrh with a taint of added infection may indicate the manifestation of a basic allergic diathesis with a superimposed bacterial contact which will only serve to intensify the sensitivity by damaging the tissues more and more.

The role of diarrhoeas and dysenteries seems to be two fold. They lead to hepatic damage by toxic absorption, and they also inflict injury to the mucous lining of the gut, and such injury will be aiding the absorption of food stuffs as such (examples; albumen water, arrowroot congee, apple gratings, milk components) and thereby sensitising the tissue for further onslaughts. "Cyclic diarrhoea" is, in the writer's opinion, an allergic manifestation, and seems to lead ultimately to hepatic cirrhosis.

Vaccination (vaccinia virus) (case numbers 26, 38, 39) has been observed to lead to generalised eruption, gastro-enteritis, and hepatomegaly

(Figures 12 and 13). This is not to be slighted as the vaccinia virus is capable of producing allergic manifestations in susceptible subjects.



FIG. 12-a.
Clinical photograph of Case No. 38
on 10-10-'39.



FIG. 12-b.
Clinical photograph of Case No. 38
on 16-4-'40.



FIG. 13-a.
Clinical photograph of Case No. 39
on 31-12-1939.



FIG. 13-b.
Clinical photograph of Case No. 39
on 12-2-1940.

Some children have been observed to be very sensitive to castor oil (case numbers 8, 9, 22 and 63) which is generally a household remedy for constipation. Castor oil binds the bowel after initial purgation and this is a drawback for its daily use.

The writer also believes that castor oil might aid to dissolve and absorb cirrhotogenic substances from the bowel. In the opinion of TIRUMURTHI and NARAYANAMURTHI (1939) castor oil is by itself (ricin or ricinolic acid) a cirrhotogenic factor.

2. *Pathology*:—The points to be answered are:—(i) Can allergy account for the characteristic hepatic damage? (ii) Can allergy account for the clinical manifestations of the disease? The following quotations serve to answer the above two questions in the positive.

The Schwartzman phenomenon characterised by hæmorrhagic necrosis at the prepared area, can occur also in the liver, kidneys, stomach, and other organs of not only animals but also of men. *The caustive factors may be bacteria or viruses*. The relationship of Arthus phenomenon to Schwartzman phenomenon is an established fact. The pathological basis of allergy consists of (1) spasm of smooth muscle and (2) increased capillary permeability.

BRAY writes:—"DALE agrees with LEWIS' view that in anaphylactic and allergic responses, the union of the antigen and the antibody acted like any other injurious substance by releasing some pre-formed H. substance. Such a response could occur in one of the two ways, either the histaminase may be liberated from the reacting cells or anaphylactic injury to cells of some large organ such as the liver, might liberate histamine into the general circulation in such quantities as to produce its effect in the body generally and thereby cause a histamine response in cells not themselves sensitized to the antigen. This view agrees in the main in the experiments of WEIL and MARWARING with regard to the liver being the site of anaphylactic reaction, but from BEST and McHENRY's findings and THORNTON's experiments, histamine in the general circulation could only produce an effect if it was liberated extremely freely, or if there was a deficiency of histamine, or a deficient secretion of adrenaline."

Allergy may be bacterial or non-bacterial.

According to POTTENGER the differences between non-bacterial and bacterial allergy can be tabulated as below:—

NON-BACTERIAL ALLERGY.	BACTERIAL ALLERGY.
Local Action	
1. Rapid dilation of local blood vessels and quick exudation.	1. Reaction more marked in tissues containing the bacteria than in others.
2. Destruction or new formation of tissue is not marked except in chronic cases.	2. Destruction and new formation of tissues occur.
General Reaction	
Manifestation as vagus syndrome: Bronchospasm, increased bronchial secretion, increased permeability of blood vessels and cells, increased K-Ca ratio, an increase in the alkalinity of tissues and eosinophilia.	Manifestation in the sympathetic system:—Fever, sweating, contraction of the pilomotor muscles, rapid heart, poor appetite, constipation, decrease in the alkalinity of the blood leucocytosis and anæmia.

The symptomatology of infantile liver can be built up by combining bacterial allergy and non-bacterial allergy.

The course of the disease may be acute and rapid, or chronic and prolonged; and in the former, bacterial and non-bacterial allergy seems to participate while in the latter non-bacterial allergy alone may take part, and that too might be due to acquired sensitivity only.

4. *Diagnosis*:—The family history, personal history and clinical manifestations help to assess the bearing of allergy on infantile liver cirrhosis. A large percentage of cases inherit the allergic diathesis and the rest might acquire sensitivity. Skin testing will clinch the diagnosis.

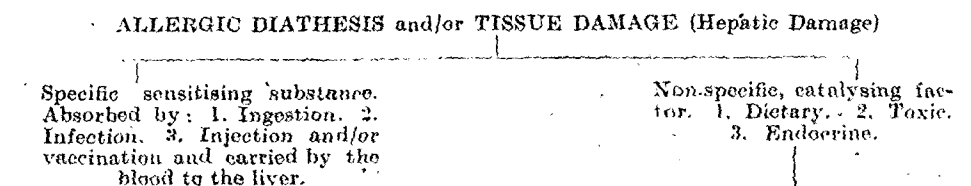
The rapid pulse, sweating, respiratory spasm, constipation and abdominal distention, and the occasional lymph glandular enlargement give also a clue to the allergic element in the disease.

The exact bearing of allergy including the writer's suggestions.—The respiratory and digestive systems are entodermal in origin and the two systems are controlled by a common vago-sympathetic nervous balance. An allergic explosion like asthma in the respiratory tract is so overt as to be appreciated by the patient even. A similar occurrence, latent though it might be, seems to manifest itself particularly in the liver as an integral part of gastro-intestinal hyper-sensitivity. "Symptoms of food allergy are especially frequent in children who would seem predisposed by over feeding, feeble activity of gastric juices, and the frequency of enteritis."—BRAY. Mild chronic hypoadrenia is a possible predisposing factor as has been elaborated already.

Biochemical studies in allergic individuals show definite tendencies toward a low blood sugar, a low cell chloride content, and high amino-acid content of the blood; a normal blood cholesterol and a normal blood calcium, with an inclination toward low figures for the blood phosphorus and potassium. Gastric analysis show a deficiency of acid secretion and liver function tests indicate some hepatic insufficiency.

The incidence of allergic diseases in parents and in the children themselves as also the favourable therapeutic response from anti-allergic drugs embolden the writer to associate allergy with the subject of infantile hepatic cirrhosis. Also similarity of the biochemical findings between infantile hepatic cirrhosis and allergic disorders is noteworthy.

Schematically the allergic basis in infantile hepatic cirrhosis can be represented as below and the plan is drawn by the writer after Bray's schematic representation of the allergic state.



ALLERGIC REACTION IN THE LIVER TISSUE

Repeated allergic reactions in hepatic parenchyma which are expected to produce repeated necroses appear to result ultimately in infantile hepatic cirrhosis.

Suggestions.—1. Routine skin testing may be employed using standardised extract of allergens (especially ingestants) and after detecting the specific allergens thereby, specific desensitisation (enteral and parenteral) may be employed both in the prevention and treatment of food allergies in infants.

2. Infections of the gut and other mucous tracts in children may always get specific treatment whenever available (example serum treatment of bacillary dysentery, also phage treatment; diphtheria, typhoid, pneumonia and vaccine treatment of pertussis).

3. For all cases of infantile hepatic cirrhosis before ascites is markedly present adrenal cortex may be given with safety and confidence, and preferably along with other usual anti-allergic remedies like Calcium, Vitamin C and Nicotinic acid, Theophylline group of drugs etc.

F. The pathological picture of the disease.—GIBBONS (1890) held that infantile hepatic cirrhosis is biliary cirrhosis. M. V. R. RAO (1937) thinks that the so-called infantile biliary cirrhosis is a "sub-acute toxic cirrhosis." P. KRISHNA RAO (1941) thinks that the cirrhosis is "portal cirrhosis." The findings of P. KRISHNA RAO were probably only on cases which were reared on cow's milk, the fat of which is badly tolerated as a rule by infants, and which by fatty infiltration ultimately leads to the portal type of cirrhosis only. The work of HINSWORTH and GLYNN has valuable bearing on this point. The incrimination by him of *B. coli* in the genesis of this disease must be accepted with reserve and await confirmation.

A. V. S. SARMA (1939) postulated an allergic basis for the disease; and allergy means spasm of smooth muscle and increased capillary permeability as its integral parts. The suggestion has also come that the central necrosis of liver found in infantile hepatic cirrhosis is a point in proof of the predominating influence of vaso-spasm (sympatheticotonia) of hepatic venous terminals in the porto-hepatic venous circuit and U. S. RAO (1940) tried to counteract the same by vagomimetic drugs (like acetylcholine) in the treatment of the disease.

The probable production of the disease.—How is this cirrhosis of liver caused in children?

The following is the hypothesis put forward by the writer in answer to the above. The basic element is probably an allergic diathesis. The disease being peculiar to children is probably due to the switch-over period of the adrenal cortex rendering the liver vulnerable to cirrhosis. Allergy may be specially to the ingested products. Out of the intolerance to dietetic agents; excess of fat of cow's milk; insufficiency in the diet (especially the protective proteins or anti-cirrhosis factor of vitamin B complex); a toxic factor from the bowel; and an infective element (A virus); one or more appear by continued action to produce ultimately infantile hepatic cirrhosis.

Clinically recognised cirrhosis of liver is a final manifestation which has had its previous existence without overt signs and symptoms. Looking at the end result of fibrosis of the lung or the kidney, it is not always that the clinician is able to trace the exact march of events to the end results. Cirrhosis of the liver is the final production, the story of whose previous scenes of pathology is as baffling as it is enchanting.

G. Suggestions for future work.—1. The technique of IVERSEN and ROHOLM (1939) in aspiration biopsy of the liver may be practised in

infantile hepatic cirrhosis. The liver in early, middle and late stages has to be studied microscopically and specially for the detection of any inclusion bodies.

2. HINSWORTH and GLYNN have suggested that cirrhosis of the liver among the poor natives of the Punjab and Rand is common and it is "trophopathic necrosis" of liver. J. GILLMANN produced hepatic cirrhosis in rats by feeding them on the ordinary diet of natives in the mines of South Africa. The work similar to that by J. GILLMANN may be done in India to realise thoroughly the bearing of diet on the genesis of hepatic cirrhosis in general, and of infantile hepatic cirrhosis in particular.

3. Recent bacteriological methods may be employed to detect if any virus or infective agent is the etiological factor.

4. The rearing of children on breast milk needs attention by way of enriching the diet of the mother who must have enough proximate principles (especially adequate amount of quality protein, *i.e.*, proteins of high biological value), and liberal supply of vitamins. Artificial feeding of infants on cow's milk deserves very careful attention. Cow's milk when diluted with water to lower the fat content must simultaneously be enriched with quality protein (white of egg, or pure casein or soya bean) and sugar. Or defatted cow's milk may be used. Or again, proprietary products like Casec, Sanatogen, Plasmon may be used as adjuvants. Vitamins A, B, factors, C and D must be liberally added to this artificial feeding. The supply of B factors (as in yeast) are particularly ensured as they seem to prevent experimental trophopathic necrosis of liver. The writer suggests the above procedure in dietary for the prevention of infantile hepatic cirrhosis.

(To be continued).

Diagnosis of Leprosy*

R. SUBRAMANIAM, M.D. (Madras), M.R.C.P. (Lond.),
M.O., Leprosy Dept., Government General Hospital, Madras.

THIS brief article is written with the idea of bringing home to the general practitioner certain aspects of the disease which are either not stressed or are not given in the standard tropical disease books. In the last few years the writer has had the unique opportunity of cases being referred to him from various departments, as either suspected cases of leprosy or to eliminate leprosy. While in the large majority of the cases, diagnosis of leprosy is an easy thing if the cardinal features of the disease are borne in mind, in a small percentage of cases even a leprologist, with years of experience and with all available laboratory facilities, may find difficulty in diagnosing a case.

It is convenient to group cases of leprosy either as infective or non-infective. The infective cases are called lepromatous leprosy and non-infective cases neural leprosy cases. Apart from the public health point of view, the importance of the infective cases is, that they give rise to the serious complications that are met within leprosy.

The infective or lepromatous cases are characterised by an erythematous macule or macules. These cases are likely to be missed if examined

* Specially contributed to THE ANTISEPTIC.

in an ill-lighted room. The macules are sometimes only very slightly different from the adjacent skin. It is best to examine these cases in direct sunlight. The distinguishing feature about these macules is that their edge is not well defined (*i.e.*, the edge of the macule imperceptibly fades into the adjacent healthy skin). Generally several portions of the body are involved unless the case is seen very early. The skin gets the appearance of "*peau de orange*" as in cases of malignant breast skin. In a few cases which the writer examined, these occurred in several isolated urticaria-like wheals, with the hair follicles standing out. These wheals, unlike in urticaria, are characterised by the absence of the intense itching and are not transitory. Even in early cases the ears and particularly the free margin of the ears are involved and show thickening, or erythematous macule and later on nodule formation.

As the disease advances (even with treatment) skin over every part of the body gets involved and shows the diffuse infiltration. In these cases the skin smears from various parts of the body show lepra bacilli in clumps lying free or in lepra cells. In these cases the eyes, nose and trachea are affected. The bone marrow shows the presence of lepra bacilli. (It is easier to demonstrate the lepra bacilli in smears from skin than from the marrow).

The common eye lesions are iritis and iridocyclitis and corneal ulcers. Corneal ulceration and opacity might occur with lagophthalmos and facial paralysis in neural leprosy. The nose is invariably affected. The nasal mucous membrane becomes the seat of ulceration and it might cause destruction of the cartilage, septum and the bridge of the nose resulting in the deformed and flattened nose. The ulcer on taking smear shows large number of lepra bacilli. It is the crusts of the nasal ulcers that give rise to the very offensive smell in the lepromatous cases. The trachea is also likely to become ulcerated and gets narrow and constricted and causes dyspnoea. Almost the only emergency in a case of leprosy is tracheotomy.

It is worth while bearing in mind that the complications of infective cases are more common in Europeans and Anglo-Indian leprosy patients, than among Indian patients. For some reason not known, leprosy tends to take a more serious turn in Europeans and those with mixed blood. By this the writer does not mean that the eye and nose lesions do not occur in Indians.

In the neural cases it is very difficult to demonstrate the bacilli. The patch, if present, is very definitely seen. If a man can be seen the patch can also be seen even at a considerable distance. The patch in a dark skin has a light copper colour. The patch may be flush with the surface, slightly elevated or well elevated and scaly. The patch is always anæsthetic, first to heat, later on to touch and still later to pain. The peripheral nerves like the ulnar and peroneal are thickened. Most commonly, when the patient comes for medical aid, the patch is anæsthetic to touch. When the patch is flush with the surface it is called simple macular leprosy. When elevated it is called minor tuberculoid leprosy. When elevated and scaling it is called major tuberculoid leprosy. In tuberculoid leprosy, the cutaneous nerve in the area affected stands out prominently, and is easily palpated from the patch. Apart from these two types, one other type of neural leprosy is seen in which the peripheral nerves, like the ulnar and peroneal nerves are thickened with anæsthesia over their distribution without any patch. This is known as neural anæsthetic type of leprosy. This type of case one should hesitate in diagnosing too frequently as other conditions

in which anæsthesia occur over the area of ulnar nerve distribution as in cervical rib, should be borne in mind.

The features of neural-leprosy cases are: (1) definite patch; (2) anæ-



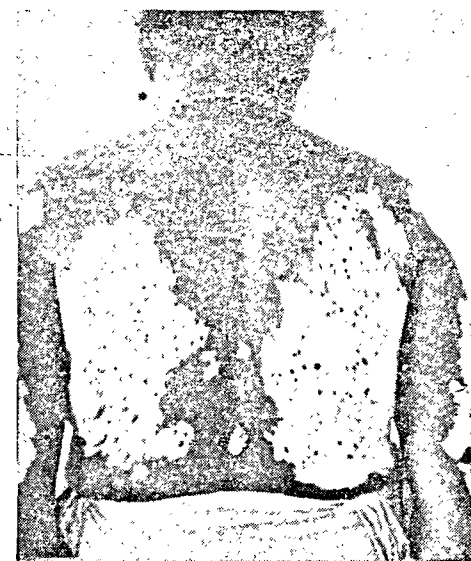
Simple Neural Lesion.

Well defined patch, flush with the surface and anæsthetic.



Minor Tuberculoid Leprosy.

Raised lesion, particularly the edges. Patch is anæsthetic to touch.



Leucoderma.

Areas of normal skin (pea-shaped). Note dead white skin. Depigmentation as contrasted with hypopigmentation of leprosy. The patch is not anæsthetic.

thesia; and (3) thickening of the peripheral nerves. The writer has observed in a large series of cases that the knee jerks, ankle jerks and biceps jerks are brisk even with advanced leprosy. Claw-hands occur in the hands and foot-drop in the leg. Most commonly peripheral neuritis cases are referred to leprologist. In both cases anæsthesia of glove and stocking type occur. In peripheral neuritis, unless seen very early, the deep reflexes are feeble; whereas in leprosy the deep reflexes are brisk.

M.—Hindu, male, age 45, was referred to leprosy department for opinion; he had bilateral drop-foot and anæsthesia up to the knees. The jerks, both knees and ankle were completely lost and there was no thickening of the peripheral nerves. The case was

therefore diagnosed as peripheral neuritis and with rest, good food and vitamin B complex, the patient completely recovered.

The next case was in a villager who had claw hands, bilateral drop foot, oedema of the legs and marked anæmia. In this case he had anæsthesia over the ulnar border. He walked with difficulty. He had anæsthesia over the legs up to the knees. Motion examination showed that he had ankylostome infection. The peripheral nerves were not thickened. Patient was treated for ankylostomiasis and anæmia. With improvement in general condition, the drop-foot disappeared and X-ray of the vertebral spine in the cervical region showed bilateral cervical ribs.

The above two cases are quoted just to show the points to be borne in mind to eliminate neural leprosy. Apart from these clinical signs, history of contact might be helpful.

Apart from these two main groups of cases, one comes across cases with succulent looking patches. These cases histologically are not definitely lepromatous or neural. They appear to bear some features common to both lepromatous cases and neural cases. Because of this, they are called atypical lepromas or intermediate lesion. These cases are particularly met with during debilitated condition as in puerperium or after an infectious fever like typhoid. Smears from these cases show lepra bacilli. These cases are likely to clear up spontaneously and are those which are often responsible for the quack remedies enjoying a certain amount of popularity. These can be spotted with certainty only by a biopsy of the lesion. They are attended with the best prognosis and do not need any therapy whatsoever.

The next group of cases are incipient lesions of childhood. These are cases occurring in children who have been in contact with infective cases of leprosy. In this group the clinical features are multiple hypopigmented macules occurring in various parts of the body, (looking like tinea versicolor) not anæsthetic and smears are negative for bacilli. The diagnosis is made by the history of contact and the multiple hypopigmented macules. The prognosis in these cases is very uncertain. Some of these turn out to be infective, others neural, and some of them clear up. Unfortunately with our present knowledge, it is not possible to say what will be the end result when a case is brought for consultation. The writer feels that cases which continue to remain in contact with infective cases become infective, and others where the infection has been massive, but not repeated, turn out to be neural cases and yet others with minimal infection probably clear up. It is better to withhold treatment in these cases and separate them from infective cases.

Differential diagnosis of leprosy.—The infective cases have to be differentiated from seborrhœic dermatitis. The shiny multiple greasy patches may be very deceptive. One must always take smears to eliminate leprosy.

The papular syphilides may very closely resemble lepromatous cases. History, blood Wassermann and Kahn are useful. Blood Wassermann alone is unreliable as in a good proportion of cases of lepromatous leprosy it is positive.

The common conditions from which neural leprosy has to be distinguished are cervical rib, residual anterior poliomyelitis, tinea versicolor,

pityriasis rosæ, psoriasis and syringomyelia. The writer has come across every one of these diseases being mistaken for leprosy. It is worth while to bear in mind that face lesions are not always anæsthetic. Leucoderma, the so-called white leprosy, has nothing to do with leprosy and is characterised by dead white patches with no anæsthesia, with islands of normal skin in the depigmented areas, exactly circular in shape. These patches sometimes clear up spontaneously; and before disappearing a number of these small normal skin areas which are pea-shaped appear and coalesce and give a sort of honey-combed appearance. There is a familial tendency for this disease and at least a large percentage of these cases give a history of bowel disturbance. There may be an obvious focal sepsis and correction of the same has cleared up the leucoderma patches in one of the cases seen by the writer. These cases do not show any thickening of the peripheral nerves and are likely to be a source of difficulty only when an isolated patch is present. The hairs in the depigmented area are also depigmented; whereas in leprosy, in hypo-pigmented areas alopecia results.

As emphasised at the beginning, diagnosis of leprosy should be safeguarded and should be based on history and the presence of the bacilli in infective cases, and definite nerve involvement in the neural cases.

The Present Day Cæsarion Operation*

F. R. W. KINKEAD ALLEN,

D.M., M.A.O., M.A. (Trinity College, Dublin), M.R.C.O.G., F.I.C.S.,

Master in the Art of Obstetrics and Doctor in Medicine of the University of Dublin.

Introductory remarks.—I am quite opposed to the classical operation. Even before labour has commenced, sufficient lower segment can almost always be made available, by pushing the bladder off the cervix if necessary, to avoid an incision in the body of the uterus. With this technique, as the case requires, a woman may be delivered repeatedly by the abdominal route, or, after an initial operation, subsequent births may take place per vaginam, provided the operator has avoided sepsis and has repaired the uterine wound properly.

One should bear in mind that when a head is impacted low in the pelvis it may be extremely difficult to withdraw it into the abdomen. In such a case, provided the fœtus is in good condition and the enlargement required at the pelvic outlet does not exceed 5 cm., symphysiotomy and not the Cæsarion operation is indicated.

If she has been much examined outside hospital before admission it is advisable to protect the parturient by a prophylactic injection of 1,500 international units of concentrated tetanus anti-toxin made by a reliable laboratory such as the Haffkine Institute. The dose should be repeated after an interval of a week.

The question of sterilisation or of amputation of the uterus requires very careful consideration. Considerations are the mother's age, station in life, financial status, the number and sex of her children and the possibility that a woman may remain a chronic invalid for life or even die years afterwards as a result of being left with a latent focus of infection in her uterus. No irrevocable decision on sterilisation should be made

* Specially contributed to THE ANTISEPTIC

until the infant is delivered alive and without a deformity which would jeopardize its survival or render it repugnant to the parents. I desire to stress that Prof. J. P. GREENHILL advises Cæsarian-hysterectomy rather than the extraperitoneal operation in cases compromised by sepsis and in view of the pathology of the majority of such cases it is difficult to disagree with his opinion. Cæsarian-hysterectomy is also indicated for rupture or wound of the uterus too great for repair, carcinoma multiple myomata, the unintentional opening of a septic focus such as the intestines, an appendix abscess or an infected dermoid, intractable hæmorrhage from an atonic uterus after the placenta has separated or serious disintegration of the muscular wall accompanying abruptio-placentæ and in such a case the transverse incision in the lower segment has the advantage that it forms part of the line of amputation. Panhysterectomy is the operation of election in a case complicated by injury to the cervix from ineffective attempts at vaginal delivery or occlusion of the cervix. Removal of the cervix in a nuliparous gravida, unless injured, is undesirable but in a woman who has had her cervix dilated it averts any risk of carcinoma.

There are disadvantages inherent in each kind of suture material. In the experience of Professor MUNRO KERR, thick silk has migrated through the bladder wall and given rise to calculus formation. There is a risk of nylon slipping off pedicles if not tied very expertly. Linen and cotton thread is inclined to break unless it is thick. Experience in war surgery has shown the danger of using unabsorbable material in potentially infected wounds. On the whole medium hard (20 day) and ultratan (40 day) No. 1 catgut is probably the most satisfactory all round material for pedicles and muscles. Nothing thicker than plain catgut should be used for peritoneal apposition.

It is an advantage to have a vacuum pump to deal with spill and blood because there is less chance of the infant inspiring contaminated meconium or of the adhesions which may result from intraperitoneal gauze packs.

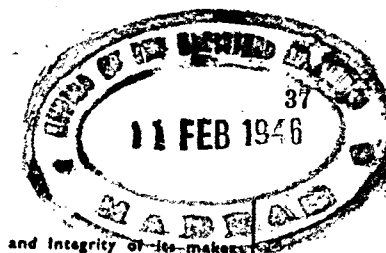
One must arrange for having to resuscitate the infant.

Where medical treatment has failed to alleviate congestive heart failure and it has been decided for special reasons to section the patient, rapid emptying of the uterus is particularly dangerous.

Professor MILES PHILLIPS remarks in this connection: "I find it a wise precaution to have an assistant ready to apply pressure on the epigastrium with a sterilized warm double cloth during and for sometime after evacuation."

The preparation of the patient.—Except in an emergency the parturient should be admitted to hospital several days before the date fixed for the operation.

It is advisable to obtain the conscious and subconscious co-operation of the patient by sympathetic assurance and explanation of the type of anæsthetic to be employed. Routine blood and urine examinations must not be neglected and a well balanced diet rich in proteins, mineral salts and vitamins prescribed. Regular bathing, using plenty of soap, under a tap or shower of warm water should be instituted and if she desires to be seated it must be on a sloping slab of polished, sterilised stone, never in a tub in which water can collect and contaminate the vagina. Breathing and limb exercises are to be encouraged and the patient should move about in the hospital garden as much as possible.



The Priceless Ingredient of every Product



Is the Honor and Integrity of its makers

THAT THE DIABETIC MAY LEAD A NORMAL LIFE INSULIN SQUIBB

INSULIN SQUIBB is an aqueous solution of the active anti-diabetic principle derived from the islands of Langerhans of the pancreas, and is made under license of the University of Toronto. The potency and stability of each lot of Insulin Squibb are carefully determined by approved methods and the product conforms to standards established and maintained by the Insulin Committee, University of Toronto. Insulin, thus tested and standardized, is a substantially stable product.

Insulin is a very useful and often very necessary supplement to the dietary treatment of diabetes mellitus. When a diabetic is given this preparation in appropriate doses and under suitable conditions, he is enabled to utilize carbohydrates and fats in a comparatively satisfactory manner; the concentration of sugar in the blood is maintained within normal limits; the urine remains free of sugar and ketone bodies; and diabetic acidosis and coma are prevented.

Professional literature available free of charge upon request to the Sole Agents.

E. R. SQUIBB & SONS, NEW YORK

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

SOLE AGENTS IN INDIA

MARTIN & HARRIS LTD.

CALCUTTA — BOMBAY — MADRAS — KARACHI

B.D.H. MALE SEX HORMONES

Testosterone Propionate B.D.H.

Methyl-testosterone B.D.H.

Androgen therapy is becoming increasingly recognised as a useful form of treatment in both the male and female. In the male, hypogonadism, eunuchoidism and certain forms of impotence are particular indications for its use; it is effective also in the syndrome now being recognised as the male climacteric, and in premature senility; irregular uterine bleeding and chronic mastitis and mastodynia are indications for androgen therapy in the female.

Whenever male hormone therapy is to be adopted, Testosterone Propionate B.D.H. should be given by injection since it is approximately five times more effective on a weight for weight basis than methyl-testosterone by oral administration. The use of tablets of Methyl-testosterone B.D.H. by mouth is of value in cases in which injections are not practicable, or in order to supplement injections of Testosterone Propionate B.D.H., but whenever treatment by injection is possible, Testosterone Propionate B.D.H. should be employed in order to produce the maximum response.

Stocks of B.D.H. Male Sex Hormones are held by leading chemists and full particulars are obtainable from—

THE BRITISH DRUG HOUSES LTD.
(Incorporated in England)

Imperial Chemical House

BOMBAY

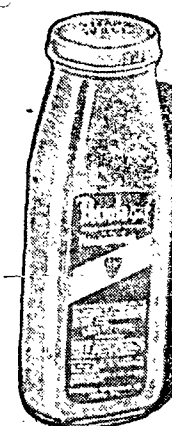
Ballard Estate

MHS/11/461

When writing to advertisers, please mention the "Antiseptic"



A Palatable Aid for **CONSTIPATION**



PATIENTS co-operate willingly when 'Petrolagar' is prescribed for constipation. A pharmaceutical preparation which pleases the palate and at the same time has qualities which make it therapeutically efficient is of unusual value in the practice of medicine.

IN 2 VARIETIES • PLAIN • WITH PHENOLPHTHALEIN

'Petrolagar'

BRAND EMULSION

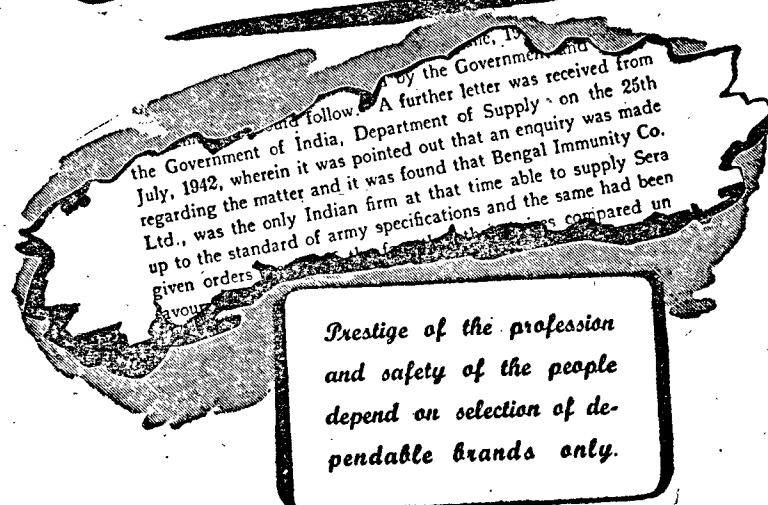
Sole Distributors for India:

GEOFFREY MANNERS & CO., LTD.
BOMBAY . CALCUTTA . MADRAS . LAHORE

JOHN WYETH & BROTHER LIMITED CLIFTON HOUSE, EUSTON ROAD, LONDON, N.W.1

When writing to advertisers, please mention the "Antiseptic."

RECOGNISED AS
India's Best...



*Prestige of the profession
 and safety of the people
 depend on selection of de-
 pendable brands only.*

INDIA PRODUCES HER OWN AND ALSO EXPORTS

SERUM & VACCINE

BENGAL IMMUNITY CO., LTD., CALCUTTA

When writing to advertisers, please mention the "Antiseptic."

On the eve of the day chosen for the operation, after an enema, the abdomen, flanks, back and vulval region are to be thoroughly washed with soap and water by a nurse. When the skin has been dried the whole of the above mentioned areas are to be painted with a 1% solution of Acramine red or Acramine yellow (Glaxo) the alcohol content of which should be 75%. In a clean case the vagina should not be treated but where vaginal examinations or attempts at delivery have been made under conditions of dubious asepsis the vagina may be thoroughly cleansed with soap and sterile water, douched with Dettol, O-syl or Cyllin-M and meticulously painted with the above mentioned Acramine solution. Where Acramine is not available Bonney's Blue, 30% Dettol in spirit or Tincture of Iodine may be substituted. The whole of the prepared body surface is to be kept covered with sterile towels, but the towel between the legs must be removed temporarily to permit of urination.

Sedation with a barbiturate or a chloral and bromide draught on the night before the operation is very important if the patient is nervous or sleepless. A cup of tea or milk and a biscuit often acts as an adjuvant to the sleeping draught.

Anæsthesia.—In order to save time, Pentothal Sodium anæsthesia, without any premedication, may be employed in a serious case of exsanguination and the operation performed in the ward as recommended by Professor S. J. CAMERON. Blood transfusion, so important for placenta prævia, should be continued during the operation. I use Pentothal Sodium for anæsthesia with some trepidation because of its effect upon the infant and because hæmorrhage from the wounds is almost as free as with inhalation anæsthesia.

Spinal anæsthesia, except in the hands of the very expert, is dangerous; if it must be used the dose should not exceed 1.5 c.c. Stovaine or Nupercaine (heavy) solution and the head of the patient kept raised on pillows, especially when she is in the Trendelenburg posture. To combat the fall in blood pressure an intravenous drip infusion should be set up where blood transfusion is not being given.

After experience of operating under local infiltration anæsthesia and observing the resultant post-operative wellbeing of both his patients I doubt whether an operator will ever willingly revert to other methods of anæsthesia. The alleged disadvantages of local anæsthesia are that it is time consuming for the surgeon and that occasionally it fails to act; it takes me 20 minutes to carry out the field block; but these can be overcome by having the materials for general anæsthesia at hand and by training an anæsthetist to do the block. The advantages are many. Death due to local anæsthesia is extremely rare. One can manage without an anæsthetist. For the novice the operation is simplified; he need no longer struggle in the depths of a pool of blood while his assistant sponges feverishly; he is able to have a clear view into the pelvis because hæmorrhage is minimal and gives the impression of being less than during a vaginal delivery. The abdominal wall relaxes completely and adequate exposure is obtained without retractors. The intestines do not obtrude and the uterus retracts with remarkable rapidity. Closure of the abdomen is effected without straining or other difficulty. Post operative vomiting and headache are abolished. Immediately on her return to bed the mother can enjoy a cup of tea, coffee or ovaltine. The child is delivered with its eyes

open and commences to breathe and cry while awaiting the arrival of the placenta, which separates so quickly that one has barely time to clear the mucous and liquor from the infant's pharynx with a piece of gauze on one's little finger and lay the baby between the mother's legs before it is time to lift the placenta out of the wound. It is true that the mother occasionally groans and grumbles during the incision of the skin and may even attempt to draw up her legs or move her hands towards the incision, but provided the abdominal muscles are relaxed, these movements are reflexive and when questioned next day she will deny that she felt any pain. If the abdominal muscles are tense it indicates that the infiltration is a failure and a general anæsthetic must be given. My regret is that I so long delayed following the lead of Mr. MCINTOSH MARSHALL and others in the employment of local anæsthesia for this operation.

When time permits one should premedicate with a Hypodermic of 20 to 30 mg. (1/3 to 1/2 grain) Omnopon to be given about 5 hours before the operation is due to commence and followed by 75 to 100 mg. Pethidine + 0.3 mg. (1/200 grain) Scopolamine 30 to 45 minutes before the patient leaves the ward for the theatre. If Morphine is known to excite the patient, if there is placenta prævia or insufficient time intramuscular Pethidine 75 to 100 mg. + Scopolamine 0.3 mg. (1/200 grain) 45 minutes before the parturient is due to be sent to the theatre and as she is on the point of being taken from her bed, Pethidine 75 to 100 mg. + Scopolamine 0.15 mg. (1/400 grain) should be substituted. If Pethidine is not available it is better to inject 20 to 30 mg. Omnopon slowly intravenously when the patient is on the table instead of the earlier dose.

I prefer Nupercaine (Ciba). Nupercaine is boilable and produces anæsthesia for 2 hours. Nupercaine does not inactivate the sulpha drugs. The Normal Isotonic Saline used for preparing solutions and boiling syringes and needles must have a pH. below 7. To secure this 1 or 2 drops of of H. Cl. dil. (B.P.) may be added. Syringes and storage bottles must be of neutral glass. One must avoid injecting a vein and reduce the dose for toxic and small women. Dissolve and autoclave or boil 0.1 g. Nupercaine in 200 c.c. Normal (Isotonic) Saline to produce a 0.05% (1/2000) solution and to this may be added 1 c.c. 0.1% Adrenalin Chloride solution immediately before the injections commence to prevent oxidation of the Adrenalin. Under no circumstances must a quantity of Nupercaine exceeding 0.1 g. be injected and even a dose of this magnitude is only safe provided the dilution is 1 in 2,000. The dose for small or toxic women should be reduced to 0.05 g. or 0.06 g. and the solution diluted to 1 in 3,000. Great care is required to avoid injecting any of the solution into a vein. (The instructions in the manufacturer's handbook should be carefully studied).

I find that using Omnopon and Pethidine as described above the needle pricks are not noticed. Unless as a result of the premedication the patient is dozing peacefully, put her to sleep with the very lightest inhalation narcosis, which in order to avoid frightening her should be given on the sheet and not on a mask and in this way she will not feel the needle pricks. To bilaterally block the thoracic nerves below and slightly internal to their respective ribs, turn the patient onto her side and draw her back slightly free of the edge of the table. Prepare her back from the inferior angles of the scapulæ to the iliac crests with methylated spirit. Feel for the uppermost 12th rib and at a distance of about 8 cm. from the midline of the back introduce the point of a needle and advance it until it impinges upon

the rib. Manceuvre the point until it will pass the caudad border of the rib and advance it 1 cm. Attach a syringe containing the anæsthetic solution to the needle, perform the aspiration test and if negative inject 7 to 10 c.c. of the solution moving the point of the needle slightly backward and again forward in an altered direction to diffuse the solution. Each time you move the needle you must repeat the aspiration test before recommencing the injection of the solution. Repeat this procedure for the 11th, 10th and 9th nerves at their respective ribs. Next deal with the nerves on the lowermost side in a similar manner without moving the patient.

Turn the patient on her back.

To be certain of blocking the ilio-hypogastric nerves it is necessary to infiltrate the internal oblique muscle from 3 to 4 cm. cephalad to 2 cm., caudad to the anterior superior iliac spine in a line 2 cm. medial to the spine, and the infiltration must be continued laterally and cephalad through the internal oblique and transversalis muscles to a distance of 3 to 4 cm., from 3 to 4 cm. cephalad to 2 to 3 cm. caudad to the iliac crest. This infiltration requires 20 c.c. anæsthetic solution each side.

After the abdomen is open, using fresh syringes and needles, infiltrate 5 c.c. into the extra peritoneal tissue on each side of the bladder and 10 c.c. beneath the loose peritoneum covering the lower uterine segment and cervix. By finger pressure disseminate the Nupercaine between the bladder and cervix. Where amputation is to follow disseminate 10 c.c. into each broad ligament.

Opening the abdomen—Empty the bladder and adjust the table or bed so that the patient's shoulders are lower than her pelvis.

If local anæsthesia alone is being used, the patient will object to more than gentle traction and, where a vacuum pump is not available, will dislike large intra-abdominal packs but small sponges with tapes attached or a narrow horseshoe shaped roll of gauze can be adjusted under the abdominal incision without discomfort.

Make a 16 to 18 cm. incision in the midline commencing above the symphysis. In a huddled case of osteomalacia the incision will have to be rather higher. Skin towels or rubber dam must protect the wound margins. Take a fresh knife after the skin incision has been completed. Draw the pyramidales and recti muscles laterally and carefully open the peritoneum. The abdominal wall is sometimes very thin and the uterus and bladder are immediately underneath. Old adhesions may require attention before satisfactory exposure can be obtained.

Incising the uterus.—Adequate exposure of the vesico-uterine excavation is essential. MUNRO KERR is correct in advocating the transverse incision as a general rule in the interest of the parturient. For a novice the vertical incision may be easier. The vertical incision is indicated where one is operating on account of a constriction ring or where access to the pelvis is obstructed in a severe case of osteomalacia. For a ventrad placenta prævia opinion is equally divided between the two incisions. The danger in the vertical incision is of injury to the bladder but this danger is remote if the bladder is well pushed down and protected by a retractor. Verify the area of loose peritoneal attachment, which extends for about 4 cm. vertically, between the lower limit of the corpus uteri and the fundus vesicæ. To aid this, where local anæsthesia is not being employed, 5 c.c. Normal Saline may be injected immediately under the peritoneum.

Order an injection of 0.5 mg. Ergometrine into the uterus or deltoid, but where the presenting part is deeply engaged in the pelvis *postpone* the injection of ergometrine until the presenting part is emerging through the incision in the uterus. About 2 cm. proximal to its reflexion from the bladder make a 12 cm. transverse incision in the peritoneum. By blunt dissection free the peritoneal flaps proximally and distally. Low in the cervix map out a 12 cm. transverse incision; to be able to leave a cover over the wound after repair one may push the bladder down off the lower segment. Some operators prefer to make a semilunar incision with the angles pointing cephalad (more usual) or caudad (rarely). When a vertical incision is made the bladder must be pushed, by gauze dissection, off the lower segment. In a case of ventrad placenta prævia heralded by large veins in the lower segment, where access is obstructed by deformity of the pelvis or where there is a constriction ring to be divided the vertical incision may have to encroach somewhat on the corpus. Unless as a result of long labour the lower segment is very thin, at each end of the proposed incision, insert a long, strong, stay suture. Cautiously cut through the muscle and any placenta protruding, a Bonney's compressor will minimise the bleeding, which, except under local anaesthesia, is very free, until the amniotic sac is reached. While assistants suck or mop out the spill and exert traction on the stay sutures to steady the lower segment against the abdominal wall, enlarge the wound laterally with round ended or bandage scissors cutting between two guiding fingers. Avoid going beyond the stay sutures for fear of wounding the uterine arteries, but the incision must be long enough for the head to emerge. Bleeding from the cut margins may be controlled by 4 Green-Armytage flat tongue or Allis' forceps. Where a vertical incision has been made intestinal clamps will serve until the spouting sinuses can be closed by Allis' forceps or hæmostats.

In a head presentation the face of the infant may be rotated into the incision by inserting a finger in the mouth. The mouth and throat of the child may be cleared by vacuum pump or sponging. In a breech presentation hook a finger into a groin and rotate it into the incision. Unless the presenting part is deeply engaged order an assistant to exert gentle pressure on the fundus uteri to aid manual delivery of the presenting part. If this fails, or if the presenting part is wedged into the pelvis, one or both blades of the obstetric forceps should be used to ease out the presenting part, though a finger in the groin or traction on a leg usually suffices to ease out a breech. I advise against using Willett's or tongue forceps for this purpose.

As the presenting part is delivered through the cervical incision, order an assistant to inject 5 units of "Pitocin" into the uterus or deltoid. Deliver the rest of the child slowly while uterine contraction and retraction aid extrusion as in a normal labour. Clear the infant's airway and if it commences to breathe place it between the mother's thighs. Wait for the placenta to separate, lift the cord to draw the membranes clear and hand baby and placenta to an attendant with instructions not to cut the cord until it ceases to pulsate. If the infant does not commence to breathe divide the cord between two hæmostats, hand the baby for treatment to the chosen attendant and wait for the uterus to cast of the placenta before lifting the cord to draw the membranes off the endo-metrium.

With a large sponge wrung out in hot Saline wipe the interior of the uterus free of shreds of the placenta or membranes. Palpate the cavity for a rupture, myoma, etc. The uterus should be hardening and blanching;

if it is too slow wrap the corpus in a hot damp towel and knead it. If there is uncontrolled hæmorrhage from a placenta prævia oversew the site in the lower segment. Failure of the uterus to contract should be treated by a second injection of 0.5 mg. Ergometrine into a muscle or 0.25 mg. into a vein or by tightly plugging the uterine cavity with gauze, which will subsequently be removed per vaginam, but bear in mind that death may result if one inadvertently includes this gauze in the suture line at the time of closure.

Where the uterus is potentially or actually infected and amputation is not desired lay one end of a 50 cm. (20 inch.) length of 2 m.m. (1/6 inch.) rubber tubing in the cavity of the uterus upto the fundus and push the remainder down to, but not through, the external "os," anchor the tube in position with catgut and insufflate 10 g. Sterilised Penicillin-Sulphathiazole powder into the uterine cavity, the incision, and the vesico-uterine excavation. (At the conclusion of the operation the end of the rubber tubing will be drawn into the vagina and strapped to the thigh for subsequent instillations of Penicillin).

Where stay sutures have not been employed, pick up just beyond the lateral extremities of the wound with Allis' forceps or temporary sutures for traction. Except where hysterectomy is to follow, close the incision in the cervix in two layers. *Do not* include the endometrium or the posterior wall of the cervix in the first row, the second row must overlap or at least approximate the fascia. Meticulously coapt the angles of the wound. Absolute hæmostasis must be attained. Remove the stay suture and with a continuous thread of finest material close the visceral peritoneum, the upper flap of which may first be anchored by a couple of stitches over the uterine incision.

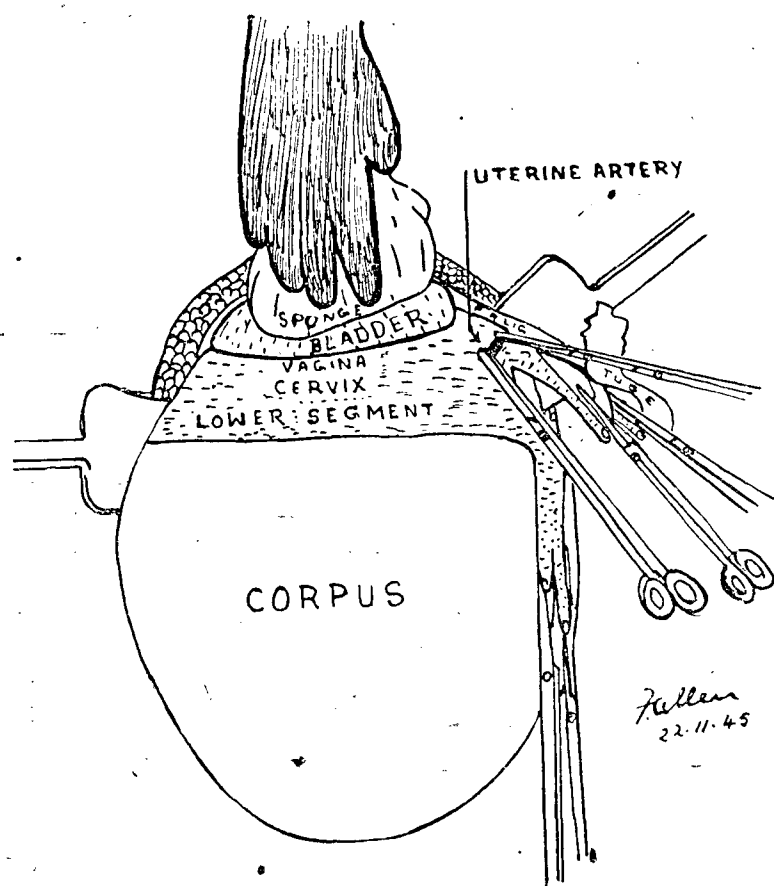
Where a vertical incision has been made take the body of the uterus in one hand and with scissors in the other hand level off the endometrium of the thick corpus if the incision has gone so high. In the corporeal portion of the wound oppose the muscle and peritoneum only by continuous or interrupted sutures. Bury the knots under the peritoneum and meticulously coapt the peritoneal margins. The portion of the wound made over the lower segment must be repaired in the same way as a transverse incision and care is required at the point of junction of the corpus and lower segment.

Sterilisation.—If the woman has had several children of the desired sex or where some special reason exists exsect the Fallopian tubes where they enter the uterus, coapt the gaps in the uterine cornua and cover them accurately with peritoneum. Bury the cut ends of the tubes in the broad ligament without leaving any raw surfaces to cause adhesions and attach the stumps to their respective cornus.

Cæsarian hysterectomy.—In a frankly septic case or when dealing with a case of ablatio-placentæ complicated by threatened or extant anuria Cæsarian-hysterectomy "en bloc" is desirable. Eventrate the unopened uterus, partly close and wall off the abdominal cavity by large dry sponges and clamp the round and broad ligaments and the uterine arteries as described hereunder. Cut across the vagina or cervix below the presenting part and hand the uterus to an assistant to take to a side table and there to extract the infant if alive, while the operator carries on with the repair of the pelvic floor.

Professor F. J. BROWNE warns that in a case of carcinoma, if the cervix is not being removed, enough of the canal, after allowing for retraction, must be left to hold the radium applicators.

The subtotal operation is relatively simple. In a case of potential or extant sepsis before being incised the uterus should be everted and surrounded by towels to save the abdominal cavity from contamination.



One Stage—Caesarian-Hysterectomy.

Rapid amputation through the cervix or vagina is indicated after both uterine arteries have been clamped if the infant is alive or it will be asphyxiated.

Clamp the round ligaments close to the uterus and about 3 cm. from the uterus apply a ligature. Cut between the clamp and ligature. Apply two long clamps to each broad ligament on each side of the uterus. Do not sacrifice the ovaries unless they are diseased. Cut between the clamps. Similarly apply two more clamps to each broad ligament down to and including the uterine arteries or the uterine arteries may be picked up in a separate pair of hæmostats. The uterine arteries are located by touch. Take care to grasp the tissue close to the side of the uterus and thus avoid the ureter which is perilously near but which can be removed to a safer distance by pushing down the bladder by gauze dissection off the cervix. Cut down between the second pair of clamps and, after ascertaining that the uterine arteries are secured, extend the original transverse incision

After delivering the infant through the transverse incision in the lower segment cut the cord between two hæmostats. Unless they separate of their own accord leave the placenta and membranes "in situ" and, if it has not already been done, gently evert the uterus. Any bleeding from the uterus may be controlled by tight packing. Disseminate 5 c.c. Nupercaine solution sub-peritoneally on the posterior wall of the lower segment.

right round the uterus. If the original incision was vertical draw up the cervix as much as possible and amputate the uterus through a fresh incision in the cervix.

Place separate ligatures on the uterine arteries and two figure of 8 ligatures on each broad ligament.

Ligate any vessels which have been clamped or which are bleeding. Using catgut, coapt the edges of the cervix without including the endometrium (this also controls hæmorrhage), push the suture ends through into the vagina to act as a drain, sew the round and broad ligament stumps into the uterine stump, insufflate 5 g. sterilised Penicillin-Sulphathiazol powder and, after ascertaining that there is no bleeding, unite the peritoneal flaps over the junction. Insufflate 5 g. sterilised Penicillin-Sulphathiazol powder into the pelvic cavity. (Penicillin-Sulphathiazol powder contains 5,000 Oxford units Penicillin to each gramme of Sulphathiazol).

The total operation is a more formidable affair. Here it is advisable to incise the uterus vertically down to the external "os" instead of transversely.

The bladder must be pushed right off the cervix until the vagina can be felt under the fingers and this is made difficult because the cervix is so soft and dilated that it no longer acts as a landmark. If the field of operation is kept bloodless and the light is good the vaginal wall can be identified by the longitudinal muscle fibres whereas the fibres are transverse on the cervix. The vault of the vagina must be separated all around from the neighbouring tissues and organs. The danger of injuring the ureters is increased. In a case of carcinoma if deep "X" Ray or Radium therapy for "follow up" treatment will not be available a Wertheim's hysterectomy may be attempted by the operator if competent. Extra Nupercaine infiltration is required right down to the vaginal fornices. The initial stages of ligating and clamping the round and broad ligaments and the uterine arteries is the same as for subtotal hysterectomy. Unless the lowermost clamps have been applied right down to the vaginal fornices in each broad ligament, after the bladder has been completely separated from the cervix, it will be necessary to place a clamp from above downwards as close as possible to the vaginal fornix on each ligamentum transversus coli. Open the vagina transversely with a scalpel and extend the incision laterally within the clamps through the lateral ligaments of the cervix and the uterosacral ligaments until the dorsal wall of the vagina is severed as close as possible to the cervix. The cut vaginal edges and especially the lateral vaginal arteries bleed and hæmostasis must be secured by ligation. Close the vagina in the same way as described for the lower segment and unite it to the stumps of the broad and round ligaments. Sew the peritoneal flaps over the junction.

Closure of the abdomen.—Remove and count all sponges etc. Level up the patient. Dry out the pelvic cavity especially the pouch of Douglas. Tuck the free border of the omentum down into the recto-uterine excavation over the coils of intestines. If it has been everted, return the uterus to the abdominal cavity, unless it has been amputated. Close the abdomen in layers. Tension sutures are essential. For the skin I prefer to use Allen and Hanbury's "Auto-skin clips."

The supravescical extra-peritoneal lower segment operation: In potentially infected cases, where the patient refuses amputation of the

uterus, the operation may be performed extra-peritoneally but statistically it is not yet proved that it gives results really superior to the properly performed transperitoneal lower segment operation. Only catgut should be used for this operation owing to the risk of sepsis in the wound. If the presenting part is fixed push it up well. Insert a self-retaining catheter. Most operators make an 18 cm. midline abdominal wall incision down to the pubes separating the pyramidales and recti in the midline. I prefer the Pfannenstiel incision which extends in the supra pubic skin fold from just medial to one anterior superior iliac spine across to the other. The incision must be carried down through skin, fat and fascia to the muscles. Without buttonholing it, separate the anterior rectus sheath from the underlying muscles cephalad to near the umbilicus and caudad to the symphysis. Draw the pyramidales and recti part in the midline. Order an assistant to distend the bladder with 1% aqueous methylene blue solution (usually about 100 c.c. is sufficient) and then to clamp the catheter.

If local anaesthesia is being used infiltrate 10 c.c. of solution on either side into the perivesical tissues.

There is now a choice of two operative procedures.

The Physick-Sellheim-Michon operation.—Define the peritoneal attachment to the dome and the lateral limits of the bladder. With a gauze covered finger tip work round the right lateral ligament of the bladder in the cellular tissue between the transversalis fascia and the perivesical fascia on the base of the bladder and the fascia over the lower uterine segment from which the peritoneum strips easily.

Inadvertent peritoneal tears must be tied off and any damage to the bladder muscle repaired without including the mucous membrane in the suture line.

Draw the bladder slightly to the right and with gauze on a finger tip work around the left lateral ligament until the two finger tips meet behind the bladder in the subperitoneal space.

In some cases it is possible by means of blunt or sharp dissection to raise the peritoneal attachment from the dome of the bladder. Where this cannot be effected a clamp must be placed close to the bladder across utero-vesical pouch of peritoneum, after ensuring the exclusion of bowel or omentum, the peritoneum severed from the bladder and sealed by sewing and/or tying off without leaving apertures.

By pushing the bladder down (distally) off the cervix behind the pubes where the large retractor may hold it and by stripping the peritoneum upwards (proximally) off the lower uterine segment ample space is exposed for a transverse or vertical 12 c.m. incision which is to be made in the usual manner and the foetus and placenta delivered.

The Waters operations.—Make a "T" incision in the transversalis and perivesical fasciae to permit the bladder to bulge forward. The peritoneum is only firmly adherent over the postero-superior surface of the perivesical fascia and the object is to raise a cap of this peritoneo-fascial fusion off the dome of the bladder. Draw the fat pad and cellular tissue including the peritoneal attachment to the fascia proximally. Release the catheter clamp to empty the bladder. Work a scalpel handle or finger tip over each lateral angle of the bladder muscle to separate the peritoneo-fascial flap from its attachments to the muscle. Stretch the central firm attachment, and working with the edge of a knife or scissors-clipping, detach the peritoneo-fascial flap. Should the bladder be injured, which is not uncommon,

the muscle but not the mucous membrane must be repaired. Should the peritoneum be opened the hole, if small, must be tied off without using a needle, or, if large, repaired in such a manner that there is no puncture left in the peritoneum. Mobilise the remainder of the peritoneo-fascial cap from the dome of the bladder by blunt dissection, push the bladder down behind the pubes and hold it there by a large retractor to obtain a sufficient exposure for a 12 c.m. extraperitoneal transverse incision through the perivesical fascia on the dorsal surface the bladder, the fascia and the muscle of the cervix.

As described under the transperitoneal lower segment operation, make a transverse incision in the lower segment, extract the infant and placenta and sew up the cervix. It is advisable to dust 10 g. sterilised Penicillin-Sulphathiazol powder all over the uterine wound and subperitoneal space and to leave a length of 2 mm. (1/6 in) rubber tubing down to the vesico-uterine excavation. This will serve as a drain, or if the case becomes septic, for instilling Penicillin. Bring the perivesical fascia and transversalis fascia together with a point or two of catgut. Level up the patient and close the abdomen in layers without omitting the tension sutures. A self retaining catheter should be kept in the bladder for a week.

If all goes well remove the drain to the retrovesical space in 48 hours.

After treatment.—To assist involution put the infant to the breast after the operation, the earlier the better.

Immediately after the operation and during the puerperium the patient should lie and sleep as much as possible in Sims' posture unless the uterus has been amputated.

The mother should sit up-right on the 3rd day and be out of bed on the 5th day, provided there is no fever or other complication such as hysterectomy. From the earliest moment deep breathing, leg exercises and arm exercises in bed are important.

Remove the skin clips or stitches on the 7th or 8th day.

If union is not quite satisfactory dress the wound once daily with finely powdered urea or Sodium Sulphate until the purulent discharge dries up and then change over to Cod-liver or Shark-liver oil or sterile anhydrous Glycerine until healing takes place. Do not remove the tension sutures until the abdominal wound is firmly united; the 10th day is the earliest on which I remove tension sutures.

Post-operative retention of urine is usually best treated by giving intramuscular injections of 0.125 to 0.25 mg. Doryl, Horyl, Esmodil or Carbachol which may be repeated up to 3 times in 24 hours.

When required the Sulpha drugs should be administered in sufficient dosage and according to their rate of excretion: Sulphathiazol 2 hourly; Sulphanilamide 4 hourly; Sulphapyridine, Sulphadiazine and Sulphamezathine 6 hourly; Sulphamerazine 8 hourly. Give alkalies to keep the urinary pH. at 8. Every patient must have a fluid intake of 120 to 160 ounces (3 to 4 litres) in each 24 hours and if this cannot be consumed voluntarily it should be given by means of an indwelling transnasal gastric tube or intravenous drip. The fluid intake and urinary output must be charted to see that the patient is passing 250 c.c. (8½ oz.) every 6 hours. Nausea and vomiting may be avoided by giving 50 to 60 mg. Nicotinic acid with each dose of a Sulpha drug.

For a case of mild sepsis, where a tube has been left in the uterus and where the organisms prove susceptible, during the first 48 hours, instill every 6 hours 5,000 units Penicillin in 5 cc. sterile distilled water. This

may be reduced to twice daily for a further 4 to 5 days if required at all. Where the organisms are insusceptible to Penicillin substitute instillations of sterile anhydrous glycerine.

For a serious case of sepsis, due to susceptible organisms, 2 hourly intramuscular doses of at least 12,500 units Penicillin, or a continuous intramuscular drip ensuring a minimum dose of 100,000 units in 24 hours, will be required in addition to instillations.

Distension is best treated by large doses of activated charcoal. For ileus neither Pilitrine nor purgatives are advisable. Drainage of the stomach and intestines by means of a Miller Abbott tube, or, in its absence, by means of an indwelling transnasal Ryle's or Bailey's tube gives better results. Intravenous or rectal fluids are imperative.

Acute dilatation of the stomach is to be overcome by continuous aspiration through a Bailey's or Ryle's tube while fluid loss is replaced by intravenous and rectal routes.

Lochio-stasis due to retrodisplacement of the uterus will not occur if the patient is kept in Sims' posture. By inserting a finger in the rectum and raising the uterus thereon replacement can be effected where Sims' posture has been neglected. Lochiostasis due to acute anteversion is a rare complication.

Dehydration must be obviated by fruit juices, tea, coffee and other drinks in plenty. If the patient is unable to retain fluid by mouth it must be given intravenously and rectally. I encourage my patients to eat a normal diet from the first day of the puerperium.

If there is diarrhoea an iron containing mixture will usually rapidly control the excessive evacuations and improve the anaemia.

References:

1. Kinkead, R.J.—"Craniotomy and its Alternatives," Dublin Journal of Medical Science, May 1880.
2. Moir, J. Chassar—"Oxytocic Drugs and their Use," The Journal of Obstetrics and Gynaecology of the British Empire, Vol. 51, No. 3, page 247.
3. De Lee and Greenhill—"Principles and Practice of Obstetrics," 8th Edition.
4. Waters, E. G.—"Extraperitoneal Caesarian Section," American Journal of Obstetrics and Gynaecology, 39: 423, March 1940, and Year Book of Obstetrics and Gynaecology 1940.
5. Beck, A.C.—"Detailed Technique of a Modified Local Anaesthesia for Caesarian Section," American Journal of Obstetrics and Gynaecology, 44: 558 October 1942, "Obstetrical Practice" 3rd Edition and Year Book of Obstetrics and Gynaecology 1942.
6. Potter M.G. and Elton N.W.—"Improved method of Uterine Closure in High Classic Caesarian Section," American Journal of Obstetrics and Gynaecology 43: 303, February 1942, and Year Book of Obstetrics and Gynaecology 1942.
7. Green-Armytage, V.B.—"Lecture IX, Tropical Midwifery," 1st Edition, 1928.
8. Cripps, J. A. Rae Hall, Barbara and Haultain, W.F.T. "Analgesia in Labour," British Medical Journal 14 Oct. 1944 p. 498.
9. Eisaman J.R., and Austin B.R.—"Extraperitoneal Caesarian Section," The Pennsylvania Medical Journal, May 1942, and Year Book of Obstetrics and Gynaecology 1942.
10. Stearns, Howard C. "Extraperitoneal Caesarian Section," Western Journal of Surgery, December 1943, and the Year Book of Obstetrics and Gynaecology 1944.
11. James, Norman R.—"Regional Analgesia for Intra-Abdominal Surgery"
12. Kerr, J.M. Munro, "Operative Obstetrics," 4th Edition.
13. Berkeley, Comyns, and Bonney, Victor "The Difficulties and Emergencies of Obstetric Practice" 3rd Edition.
14. Bishop, Carr, Anson and Ashley "The Parietal Intramuscular Plexus of the Thoracic Nerves" Quarterly Bulletin, Northwestern University Medical School, Chicago, Fall Quarter, 1943.
15. Michon, L. "Sur un point de technique de la Césarienne basé de l'utilisation systématique d'un lambeau péritonéal pour réaliser l'exclusion de la zone opératoire Gynaecologie et Obstétrique, vol 26, Oct. 1932.
16. Marshall, C. McL. "Caesarian Section, The Lower Segment Operation," 1939.
17. Young, J. H. "Caesarian Section," 1944.

Impetigo Contagiosa*

T. V. VENKATESAN, M.B.B.S.,

Honorary Skin Specialist, The Government Erskine Hospital, Madura.

Definition.—Impetigo contagiosa is a superficial inflammation of the skin, characterised by the formation of vesicles which terminate in suppuration and crust formation.

Ætiology.—The disease is caused by Streptococcus. In the crusts, Staphylococci are abundantly found.

Varieties—The following varieties have been described by R. T. BRAIN, M.D., F.R.C.P. (1) Bullous or vesicular type of Impetigo Serosa, where the bullae or vesicles are abundant, and that stage is more prolonged before crust formation.

(2) Ecthyma which is an aggravated form of impetigo contagiosa. It is due to the implantation in the skin of the streptococcus. Generally the children are affected and their general health is below par. The lesions are common upon the legs and when the crust are removed ulcers are seen.

(3) Septic intertrigo, which occurs generally in the axilla under the breasts and between the scrotum and the thigh.

(4) Impetigo circinata, which spreads in rings and somewhat resembles and is often confused with ringworm.

(5) Impetigo pityroides are pale scaly lesions.

(6) Weeping pus coccal dermatitis, where the oozing and the pustular stage are prolonged before crust formation.

(7) Impetigo vulgaris is the commonest type. This generally affects the face before affecting any other part of the body. The disease commences as a minute reddish spot. Next the vesicular stage sets in, which develops quickly into the pustular stage almost before one has time to observe the vesicular stage. The pustules dry up with great rapidity forming yellowish crust. It is generally at this stage that the patient is seen by the doctor, as all these occur within 24 to 48 hours.

Prognosis.—The disease if left to itself or improperly treated will go on indefinitely forming daughter lesions and grand-daughter lesions inoculating and reinoculating itself on different parts of the body.

Treatment.—This can be considered under two headings. 1. Local. 2. General.

1. **LOCAL TREATMENT:**—The first step in the treatment is the removal of the crust. This is done by one of the following methods:—

(1) The best method is application of Starch Boracic Poultice. The part is covered with muslin soaked in the poultice and applied to the part. The poultice should be renewed four times in the day.

(2) 2% Sodium Sulphate is applied for one hour followed by 1% Sodium Bicarbonate.

(3) The old Edinburgh method is called the Bennett's soaks, which consists in the application of Sodium Bicarbonate lotion.

After removal of the crust the following methods can be adopted:—

(1) The application of 1% Ammoniated Mercury in Vaseline or Zinc paste.

(2) The application of a 2% watery solution of Gentian Violet.

Recently the Sulphonamides and its various derivatives have been tried in the treatment of Impetigo Contagiosa. I have tried at the Government

* Specially contributed to THE ANTISEPTIC.

Erskine Hospital, Madura, the following drugs:—(1) Sulphanilamide; (2) Sulphathiazole (Cibazol and Thiazamide); (3) Sulphadiazine; (4) Sulphamido Phyridine (M & B 693); (5) Sulfamethazine-Calcium (Diazinol-Wander).

In using the above drugs the following principles should be borne in mind:—(1) These drugs should be used for a shorter time than is being used now, owing to the risk of hypersensitiveness of the skin and other tissues and of the serious toxic effects on the liver, kidneys, and hæmatopoietic system. (2) A combined oral treatment and external application with the drug chosen is necessary. (3) The proper concentration for external application is 5%. (4) I have found that the best suitable medium for this 5% strength of the drug is the Zinc cream. (5) Of all the compounds of Sulphonamide used for impetigo contagiosa, I have found that Calcic Sulfamethazine (Diazinol-Wander) is the drug par excellence in the treatment.

The two drugs that are found to be of service in the treatment of impetigo, are Sulphathiazole (Cibazole and Thiazamide) and Calcic Sulfamethazine (Diazinol-Wander). For experimental purposes 30 cases were treated with Sulphathiazole and 30 cases with Sulfamethazine-Calcium. The following routine was adopted:

(1) The crusts were removed with Cataplasma Boro Amyli.

(2) The areas of the skin affected were painted daily with 5% Sulphathiazole or Calcic Sulfamethazine, as the case may be, for three hours for five days.

(3) Internally the patients were given for five days Calcic Sulfamethazine or Sulphathiazole, as the case may be, in the following manner:

Time.	Dosage.
8 a.m.	... 2 Tablets.
12 noon	... 2 Tablets.
4 p.m.	... 1 Tablet.
8 p.m.	... 1 Tablet.

The tablets were crushed and given in a cup of tomato, orange, or lime juice on each occasion and the patients were instructed to take a cup of water after each feed of the tablets.

Results:—(1) The recovery was quicker with Calcic Sulfamethazine than with Sulphathiazole. The patients were better by third or fourth day.

(2) The tendency to itching was practically absent after a course of Calcic Sulfamethazine than with Sulphathiazole.

Recurrence:—Out of 30 cases treated with Sulphathiazole the recurrence was noticed only in three cases. Out of 30 cases treated with Sulfamethazine no recurrence was noticed.

2. **GENERAL TREATMENT.**—The general treatment consists in giving a good nourishing diet and Cod-liver oil and vitamin A medication in debilitated children. The oral administration of Sulphathiazole or Sulfamethazine has already been referred to.

Summary.—1. There are many varieties of impetigo contagiosa but the chief feature in all cases is the yellowish crust formation.

2. In all cases the treatment will be of use only if the crusts are removed.

3. Of all the lines of treatment the external application and the internal medication of Sulphathiazole or Calcic Sulfamethazine are the best. Of the two drugs, Calcium Sulfamethazine is the drug to be preferred.

The most up-to-date medication
in Entamœbiasis Histolytica

Albert David's SIODO-ENTERIN

5:7 Di-iodo-8-hydroxyquinolin containing
about 64% of Iodine.

Accepted by the council of American Medical Association and included in N. N. R. 1945 as "an anti-protozoan agent for use in amoebic dysentery and in the treatment of trichomonas hominis (intestinalis) infections."

Indications:—All stages of amoebic dysentery, acute and chronic; balantidial infections, lamblia-sis, colitis, summer diarrhoeas.

ALBERT DAVID LTD.

Head Office:

15, Chittaranjan Avenue : CALCUTTA.

Branch Offices:

Gupta Mahal,

Church Gate Reclamation, BOMBAY.

2/27, Broadway,
MADRAS.



THE PERFECT POULTICE...for Pneumonia, Bronchitis, Pleurisy, Boils, Burns, Sprains, etc. Prescribed by leading physicians with great success. ANTIPHLOZONE is composed of the finest ingredients yet is priced within reach of all. Keep a tin handy. Sold every where.

**THE ZONE CHEMICAL CO.,
BOMBAY, 4.**

AVAILABLE AT REDUCED RATES

1. Hypodermic Syringes, Needles etc.
2. Medical Sundries of every descriptions.
3. All sorts of Hospital appliances.
4. Laboratory glasswares, chemicals, stains etc.

Detailed list on request from:

THE
Unique Trading Corporation

51-53, New Hanuman Lane,
BOMBAY 2.

T'grams: "UNILAB"

Just Received? Just Received?

**Following publications
offering at:—**

MEDICAL ANNUAL...1945 Rs. 16/-
FRENCH DIFF. DIAGNOSIS,
1945 ... Rs. 60/-

Rowbotham Acute Injuries
of Head, 1945 ... Rs. 22/8/-

Henry-Limb Surgery, 1945 Rs. 22/8/-

Minitte Anesthesia, 1945 Rs. 18/12/-

Medical Physics, 1944 ... Rs. 65/-

Price-T.B. in Childhood, 1942 Rs. 13/-

Baily Warfare Surgery

Six Parts ... Rs. 60/-

Baily Emergency Surgery,
1945 Rep. ... Rs. 58/-

Ten Teacher's Gynæcology,
1944 ... Rs. 13/8/-

Always place your inquiry for
Medical-Books, Medical Journals
Etc; with Messrs:—

**KOTHARI BOOK DEPOT,
PAREL, BOMBAY. 12.**

When writing to advertisers, please mention the "Antiseptic."

LIVERITES (Regd.)

A well tried remedy for Infantile
Biliary Cirrhosis

*"Composition, and literatures
on request"*

VINO-FORMAT CO.

(With Vitamins B₁ & C.)

A General Tonic for Muscular Tone
and Nervous Vigour

Composition:—

Formates of Potassium, Sodium and
Lithium, Vitamins B₁ & C, and fer-
mented grape juice in a palatable base.

Vitamin Content:—

B₁ = 2000 I.U. per fluid oz.

C = 2000 I.U. per fluid oz.

*Available at all leading Chemists or
direct from:—*

**LIVERITES COMPANY,
TANUKU (M. & S. M.)**

BELL'S ORCHINAL COMPOUND

INJECTION AND ORAL

Orchic substance fortified with Pro-
vitamin A and Nascent vitamin C. Endo-
crine Tonic and Rejuvenator.

Indispensable in

Premature old age, Sexual Neurosis,
Senility, Debility, Neurasthenia, Deficiency
of Mental and Physical Power, wasting
Diseases, Convalescence, Arteriosclerosis,
Prostatitis etc.

*Free Medical Sample and
Price List on request.*

Sole Distributors:

DEODHAR BROS.,

National Insurance Building,
Hornby Road, FORT, BOMBAY. No. 1
Grams: "PENIVAZ"

SEROCALCIN

5 c.c. and 3 c.c.

(Intramuscular)

*Calcium with Liver extract &
Vitamin B complex & C Synthetic*

Best Injection for the rapid restora-
tion of Health where indicating the
use of Calcium.

GLUKOVINE

A scientific preparation of excep-
tional substitute Tonic (wine) for
strength, Vitality and for Nursing
mothers.

GLUKOL LABORATORY LTD.,

143/1 Raja Dinendra Street,
CALCUTTA.

When writing to advertisers, please mention the "Antiseptic."

* **NAPIER & DASGUPTA'S HÆMATOLOGICAL TECHNIQUE.** Third Edition revised by C. R. Das Gupta, Department of Hematology, Calcutta School of Tropical Medicine, Illustrated. 1945. Rs. 8.

* **KNOWLES' INTRODUCTION TO MEDICAL PROTOZOOLOGY.** Second Edition Revised by B. M. Das Gupta, Professor of Protozoology, Calcutta School of Tropical Medicine. 104 illustrations and 10 coloured plates. 1944. Rs. 20.

* **COMPLEMENT-FIXATION FOR CLINICAL PURPOSES.** By Lt.-Col. S. D. S. Greval, I.M.S., Imperial Serologist and Chemical Examiner to the Government of India. 1946. Rs. 5.

* **A HANDBOOK OF PSYCHOLOGICAL MEDICINE.** By A. K. Deb, M.Sc., M.B. (CAL.), D.P.M. (LOND.). Suitable for the students and general practitioners. 1945. Rs. 5.

* **A HANDBOOK OF TROPICAL DISEASES** with Treatment and Prescriptions by J. C. Banerjee M.B. (CAL.), M.R.C.P. (LOND.) and P. B. Bhattacharya, M.B., D.T.M., Fourth Edition; 1945. Illustrated. Rs. 18.

* **CLASSIFICATION OF DRUGS.** By A. Bhattacharjee. Re. 1-8.

U. N. DHUR & SONS, LTD.,
Medical Booksellers. 15, College Square, CALCUTTA.

DYSENTONE (Regd.)

(TABLETS)

for all kinds of **Dysentery** acute or Chronic.

Many Certificates from Medical Men.

Wanted Influential Stockists for
different Districts.

For Packings, Prices & Sample.

Please approach:

Our Sole Distributors: M/s. B. C. PAUL & Co.,

Gujranwala (Punjab.)

Manufactured by:—

The Dysentone Pharmacy (India) (Regd.)

BIOLOGICAL LABORATORIES

(South India)

Presents Ampoules of:

TYPHOSIN—for Typhoid—Aborts the
course.

BRONCHOLIN—for Bronchial affections

Order for our Colloid Gold, Silver,
Sulphur, Iron, milk and all common
injections.

Agents:—"THE CLINIC"
MAYAVARAM (S.I.R.)

B₁ Deficiency

GIVES RISE TO VARIOUS PATHOLOGICAL CONDITIONS SUCH AS BERI-BERI, NEURITIS, NEURALGIAS, GASTRO-INTESTINAL ATONY ETC.

You can successfully treat them with

B. C. P. W.

VITABIN

Biologically standardized Vitamin B₁; 1 mg. equals 333 I.U.

Tablets of 3 mg. and 1 mg. : For oral use.,

Ampoules of 25 mg. and 5 mg. : For parenteral use

BENGAL CHEMICAL : Calcutta : Bombay

Agents :—N. DASAI GOWNDER & CO., 41, Bunder Street, G.T., Madras.



MEDICINAL PRODUCTS OF ANIMAL ORIGIN

MANUFACTURED BY:—THE ARMOUR LABORATORIES, LONDON.

CHEMISTS COUNTER LINES

ARMOUR'S JUNKET PRODUCTS

(Tablets, Powder, Essence)

A FULL RANGE OF GLANDULAR PRODUCTS PREPARED FROM FRESH WARM GLANDS SUPPLIED IN AMPOULES, TABLETS, LIQUIDS, POWDERS AND CAPSULES

Also **PEPSIN** all strengths
PEPTONE both Bacteriological and Commercial
ADRENALIN B.P. 1932 (Pure)
PANCREATIN U. S. P.
LECITHIN Powder, Paste

SEND YOUR ENQUIRIES TO THE:

Sole Distributors for India, Burma & Ceylon

JUBILEE TRADING COMPANY, 14, Pollock Street, CALCUTTA.

Branches at:—BOMBAY, MADRAS, KARACHI & AMRITSAR.

When writing to advertisers, please mention the "Antiseptic."

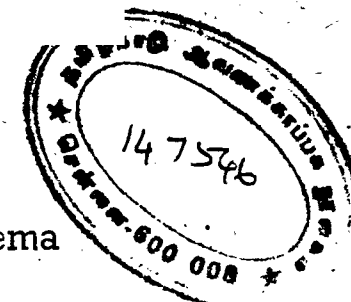
Cases and Comments

Acute Pulmonary Œdema

M. P. RANJAN, L.M.P.,

Formerly House Physician and Surgeon,

Darbhang Medical School Hospital, Hospital Road, Laheria-Sarai.



Definition.—It is a condition of rapid transudation from the pulmo-capillaries to the alveolar-spaces.

Etiology.—1. *Age*:—Above 40 years : rare in children.

2. *Sex*:—Common in females.

3. *Causative factors*:—(a) Circulatory failure: (i) heart disease, specially aortic lesions; (ii) arterio-sclerosis; (iii) hypertension; (iv) nephroclerosis; (v) weakness of left ventricle, thus allowing fluid to accomodate the lungs.

(b) *Toxic*: (i) acute or chronic nephritis; (ii) pregnancy; (iii) diabetes.

(c) *Exciting causes*: (i) epileptic fits; (ii) heavy meals; (iii) angino-eurotic Œdema; (iv) paracentesis of pleural effusion; (v) administration of næsthesia; (vi) inhalation of irritant gas like chlorine; (vii) complication after operation on lung as: (a) thoracoplasty; and (b) lobectomy.

Pathology.—The alveoli appear to be full of thin serous exudate. The lung gets heavier, sodden and on squeezing copious exudation in the form of frothy, greyish-yellow or pinkish (rose coloured) is seen. Frothy fluid of a similar character may be noticed in bronchi, trachea or in the nasopharynx in hyperacute cases.

Clinical Picture.—1. *Symptoms*:—(a) Sudden onset especially when the patient is at rest.

(b) Severe dyspnoea and cyanosis.

(c) Copious frothy expectoration, blood-stained (rose coloured) and buminous sputum from mouth and nose.

(d) Pain and feeling of oppression of chest.

2. *Physical signs*:—(a) Feeble pulse.

(b) Face pale, anxious expression, cold sweat.

(c) *Chest*: (i) movements hurried: accessory muscles of respiration in action; (ii) vocal fremitus diminished; (iii) impaired percussion note at the bases; (iv) harsh vesicular breathing getting faint, afterwards pious bubbling rales all over and crepitations.

Diagnosis.—Obvious.

Differential diagnosis.—1. Acute suppurative bronchitis: (a) fever; purulent or muco-purulent, less copious expectoration. 2. Asthma: physical signs; (b) late and scanty expectoration.

Complication.—Nil, owing to acute and rapid course.

Sequelæ.—Bronchitis.

Course.—A few minutes to hours. The scene may end in 4 minutes or be delayed till 48 hours. If prolonged, collapse with unconsciousness

sets in and brings the fatal issue. The beat of the heart may be audible even after complete cessation of respirations.

Prognosis.—Always grave. Recurrences rare but in angino-neurotic patients relapse may occur at variable intervals for years.

Treatment.—1. Prompt and energetic treatment.

2. Atropine Sulph. gr. 1/100 hypo. immediately acts like a charm. The drug may be repeated frequently up to gr. 1/50 every 2 hours till full physiological action of the drug is obtained. If necessary, may be combined with gr. 1/4 of Morphine Sulph.

3. When cyanosis and urgent dyspnoea, venesection 10 to 20 oz. of blood-letting will serve the purpose and mitigate the attack.

4. According to BULLOWA, intravenous injection of 100 c.c. of Sucrose in order to abstract fluid from the tissue spaces—better in action than Glucose and the effects are more lasting.

5. Dry cupping to reflexly stimulate the capillaries to absorb fluid.

6. Oxygen inhalation when necessary.

7. Coramine, Adrenaline, Ephedrine and Calcium according to necessity.

Conclusion.—It is one of the most serious medical emergencies usually terminating in death. It is a rare condition but too serious and beyond control, hence prompt treatment is absolutely indicated which is often life-saving.

References:

1. Price, F.W., Text-book and Practice of Medicine, 5th Edn. 1937, page 1166-67
2. Dunlop, D. M. and others, Text-book of Medical Treatment, 2nd Edn. 1943, page 832.
3. Savill, T. D., System of Clinical Medicine, 11th Edn. 1939, page 171.
4. Majumdar, A. R., Bed-side Medicine, 4th Edn. 1938, page 334.

My Experience with Cinchonine

GIRINDRA NATH SINHA, L.M.P. (B. & O.)

Medical Officer, D. B. Dispensary, Barwadin (Palamar).

I HAVE used Cinchonine bihydrochlor grs. xv in 2 c.c. Sacarine solution intragluteally in two dozen malaria cases and have noticed the following toxic symptoms in two cases.

Case 1:—One R. SAHU, aged 55 years, was suffering from malaria, duration of fever four days. Thorough physical examination revealed no defect anywhere. There was no complication. Had taken a little breakfast consisting of some dried fruits and milk with sugar at about 8 a.m. At about 10-30 a.m. I injected one ampoule Cinchonine bihydrochloride grs. xv in 2 c.c. sacarine in the upper outer quadrant of the left buttock, with due precautions. In about 5 minutes the patient complained of darkness all around him, and fell down on the ground while trying to get up. He complained of extreme weakness and could not maintain his balance. His

pulse was feeble but rapid and regular. He had an anxious look and was perspiring. Vomiting was persistent. I gave Glucose—Sodi. Bicarb. drink but that also could not be retained.

Treatment.—I kept the patient in an airy place, well covered and comfortably with the foot end of the bed raised.

R. Glucose ... 3 iv
Sodi. Bicarb. ... 3 i
Aqua ad ... 3 iv

Fiat mist, one teaspoonful frequently.

The patient was kept under constant watch. In the evening the condition of the patient slightly improved. In the night he had a little sleep after which he was much better and he demanded food. I gave him plain barley water with Glucose D. After that I gave him the following mixture:

R. Quinine Sulph. ... grs. ii
Acid hydrobrom. dil ... m v
Syrup Rose ... 3 i
Aqua ad ... 3 i

Fiat. mist one, send 4 doses, one every four hours.

The temperature never went high after the injection. The mixture referred to above was administered for two days. After this Malt Easton (B.C.P.W.) one Teaspoonful thrice daily was administered after food. The patient had an uneventful recovery.

Case 2:—LACHAMI, aged 35 years, a young man of robust health, was suffering from malaria since 5 days. He had no complication. Thorough examination revealed no defect anywhere. Had taken a little carbohydrate food at 10 a.m. Temperature rose at 12 a.m. The temperature came down at 4 P.M.

At 6 p.m. the same day I injected one ampoule Cinchonine bihydro grs. xv in 2 c.c. in the left buttock, with all necessary precautions. In about 5 minutes he developed the same symptoms and persistent vomiting. This patient was also kept under observation and was treated on the same lines. After a little sleep in the night his condition improved much and the after treatment adopted was the same as in the previous case. He too had an uneventful recovery, his temperature never rising after the injection.

Points of interest:—1. Exactly the same toxic symptoms developed in the two cases.

2. The rapid onset of the symptoms.

3. The resulting cure of malaria with a very small dose of Quinine after the injections.

4. I referred the report to the manufacturers who attributed these symptoms to individual idiosyncrasy and assured that these symptoms could not be due to any defect in manufacture or faulty technique of injection since out of the six ampoules provided in the box which I used in six different patients, only the 4th & the 6th developed these symptoms and the others had no complaint.

5. Since much information regarding the action of this drug is not available in the standard literatures, I shall be obliged if any reader who has used the injections be pleased to enlighten on the subject.

Chronic Myeloid Leukæmia in a Girl Aged Eight Years

P. N. LAHA, M.D., (Pat.),

(From the Children's Out-door, Thomason Hospital, Agra.)

Introductory.—Myeloid leukæmia is a rare disease. Comparatively it is rare in the female sex and very rare in young age. VIDAL (1872) has remarked that leucocythæmia must be very rare in early infancy, as he had not found any case of its occurrence at that period of life, although he had made himself acquainted with most of the works which had appeared on the disease upto 1856. Of the thirty-two patients whose cases he analysed, the youngest was 13½ years of age. But TROUSSEAU (1872) recorded a case of leucocythæmia in a child aged 15 months. It is nearly twice as common in males, as in females. CABOT (1908) gives the following figures about leukæmia. Of the 87 cases, 54 were in males and 33 in females. The disease occurs most often between the thirtieth and the fiftieth years; thus of 89 cases in this series, 53 occurred between thirty-one and fifty. After sixty it is definitely rare, only one case of this series being beyond that age. Before the twentieth year it is uncommon, distinctly more uncommon than the lymphatic form of the disease. There were 17 cases of this series between twenty-one and thirty years of age, only 9 before the twentieth year. It is a fact of some interest that among the cases occurring in young persons the female sex predominates, as it does in pernicious anæmia, although in the whole series as above noted the males were very much more numerous. MUSSER and WINTROBE (1924) are of opinion that chronic myeloid leukæmia occurs more frequently between the ages of twenty-five and forty-five and is exceedingly rare in infancy. All varieties may, however, occur at any age. There is a decided dominance of male incidence in the lymphatic forms, acute and chronic (nearly 2 to 1). In chronic myeloid leukæmia the disproportion is less marked, but definite male predisposition is evident and especially marked in patients under twenty-five years of age and in those over forty-five. According to OSLER this form is rather more common in males than in females, and between the thirtieth and fiftieth years. OSLER's youngest patient was a child of 8 months. WITTS (1942) opines that the disease is more common among males, who make up 69 per cent of the cases. It is very rare before puberty, and more than half the cases begin between 30 and 50, the greatest incidence being between 35 and 45. The age incidence of the various forms is peculiar, the maximum incidence of the acute variety being in the first five years, in the chronic myelogenous between thirty-five and forty-five, and in the chronic lymphatic form between forty-five and sixty years. For this there is no explanation (BOYD, 1941). Chronic myeloid and chronic lymphatic leukæmias in children are rarities (SHELDON, 1941).

Case report.—S., 8 years, Hindu female child, was brought to the out-door with the complaints of gradual enlargement of spleen, duration 8 months; progressive pallor, duration 4 months; and occasional bleeding from gums, duration 2 months.

On examination.—The child was markedly pale with a temperature of 100° F. and pulse and respiration rates of 106 and 26 respectively. Spleen was enlarged 2 inches below the umbilicus and was very hard to the feel.

Liver was enlarged 1½ inches below the costal margin and was firm to the feel. Superficial glands in the neck were enlarged, hard and discrete. There was a hæmic murmur at the mitral and pulmonary areas. Other systems revealed no abnormality.

Investigations.—Blood, total white cells 360,000, myelocytes 31.0 per cent. (Neutrophil 28.0 per cent., Eosinophil 2.0 per cent., Basophil 1.0 per cent.), Metamyelocytes 33.0 per cent. (Neutrophil 29.0 per cent., Eosinophil 3.0 per cent., Basophil 1.0 per cent.), Premyelocytes 10.0 per cent., Myeloblasts 6.0 per cent., Granular cells 18.0 per cent., Polymorphonuclears 16.0 per cent., Eosinophils 2.0 per cent., Monocytes 2.0 per cent.

Comments.—A case of chronic myeloid leukæmia has been described in a girl aged 8 years. The importance of the case is the rarity regarding the incidence of age (8 years) and the same about sex (female).

Acknowledgment.—My thanks are due to Major-General H. C. Buckley, I.M.S., Principal, Medical College and Superintendent, Thomason Hospital, Agra, for his kind permission to publish the report of the case. I must thank my colleague Dr. G. K. Tiagi, M.D., (Med.), M.D. (Path), P.M.S., Reader in Pathology, Medical College, Agra, for the report of the examination of blood of the patient.

References:

1. Boyd, W.—(1941), *The Pathology of Internal Diseases*, 603, Lea and Febiger, Philadelphia.
2. Cabot, R. C.—(1908) *A System of Medicine*, Edited by W. Osler and T. McCrae, Vol. IV, 655-656, Henry Frowde, Oxford University Press, London.
3. Musser, J. H. and Wintrobe, M. M.—(1924), *Practice of Medicine*, Edited by F. Tice, Vol. VI, 861-862, W. F. Prior Company, INC., Maryland.
4. Osler, W.—*The Principles and Practice of Medicine*, thirteenth edition, 931, D. Appleton Century, New York.
5. Sheldon, W.—(1941), *Diseases of Infancy and Childhood*, 451, J. & A. Churchill Ltd., London.
6. Trousseau, A.—(1872), *Lectures on Clinical Medicine*, Vol. V, 165, New Sydenham Society, London.
7. Ibid—Idem 173.
8. Vidal, E.—(1872), Quoted by Trousseau, *Lectures on Clinical Medicine*, Vol. V, 173, New Sydenham Society, London.
9. Wits, L. J.—(1942), *A Text-book of the Practice of Medicine*, Edited by F. W. Price, 803, Oxford University Press, London.

Toxicosis of Mepacrine

S. N. DAS, L.M.F.,

Formerly M.O., M.I.M. Charitable Disp. Somra Drug Stores, Somra,
P.O., Hoogli, Dt. Bengal.

LIKE "Atebrine" (Bayer) Mepacrine exhibits at times certain troublesome bye-effects particularly when high dosage of the drug is given especially in weak and anæmic patients. Symptoms of yellow discoloration, abdominal pain, and mental disorder though not very uncommon, are seen.

Yellow coloration of the skin of conjunctivæ is harmless and is generally seen at the completion of the course. Suspension of the drug soon clears the condition. It is essential that the fluid intake should be maintained at a reasonably high level during treatment for proper excretion of the drug.

Abdominal pain is usually localised in the upper abdominal region and though not very common occurs when the drug is given in an empty stomach. It can be avoided by giving the drug strictly after some food and it quickly yields to a mixture containing Sodii Bicarb, Belladonna and Mag. Sulph.

Various forms of *mental disorder* psychosis are being reported now-a-days by various workers. Recently I have come across seven cases of mental derangement that occurred amongst nearly 1,400 malarial patients ($\frac{1}{2}\%$ in my series) treated with Mepacrine.

Of these, six cases exhibited mild form of excitement and were controlled easily with usual sedatives in a week's time. I describe below the most severe case (case No. 7). All these 7 cases did not receive high doses of the drug (4 tabs. a day, 16 tabs. in all in 4 days—a course) and the exact explanation for the production of this mental derangement is not clear. Possibly, however, personal idiosyncrasy, low state of health with anæmia and the stress and strain of these hard days may be responsible.

Case report.—A case of mepacrine-psychosis—A Hindu male (40) was treated in November, 1944, with oral Mepacrine tabs. for acute malaria with a clinical cure. Two days after completion of the course the patient gradually developed a severe form of mental excitement—was very restless, boisterous, emotional, bursting into peals of laughter without reason; was talking nonsense—his speech was incoherent and incessant, had irrational behaviour; there was no yellow coloration of the skin and conjunctivæ, spleen was just palpable, had insomnia and was anæmic and anorexic.

No history (family or personal) of psychosis was present and the memory for the period of mental disorder is completely blank.

Sedative line of treatment with Elixir Bromo-valerian, Luminal, Calci-Bronat (Sandoz) and plenty of fluids with Glucose and perfect rest were prescribed. The condition did not improve much with this treatment for a fortnight when I added Elixir-B com. (Health) 3 ii thrice daily (hoping to improve the appetite and to soothe the nervous system). I was glad to find great improvement and the mental condition was found normal in a week's time. Another fortnight's treatment with B-com and Hæmatinic with liver extract plastules completed the cure.

It is interesting to note in this case the role of vitamin B as a sedative.

My thanks are due to my father, Mr. B. Das, Sibpur, Howrah, who encouraged me to write this article.

References:

1. Price and others—A Text-book of the Practice of Medicine, 5th Edn., 1937.
2. R. Ghose—A Treatise on Materia Medica and Therapeutics, 14th Edn., 1936.
3. Dr. Durgadas Gupta—Lecture-notes on Anti-Malarial Remedies (1939).
4. Dr. S. Das—Records of Interesting Cases (1944).

A Case of Malaria Complicated with Meningitis

RATILAL, C. PATEL L.C.P.S., (Bom.), L.T.M., (Cal.),
Sadhali, (Baroda).

IN the afternoon of 17-9-45 I was consulted by a local practitioner of indigenous medicine for a delirious case of high fever suspected of pneumonia. On examination:—History of fever with rigor coming down to normal after injection Quinine I.M. given by him. Duration 3 days.

Patient, aged 11 years, boy, unconscious with delirious temperature 101.8°F , pulse 90 p.m., resp. 40 p.m., chest normal, abdomen, spleen ++, constipation, retention of urine for whole day, nervous sys.: pupil dilated but reacting to light, rigidity of neck ++ with severe retraction. Kernig's positive. At first by history and spleen ++ I suspected cerebral malaria. As patient was very violent and rowdy injection Dial (Phenobarbitone) $\frac{1}{2}$ c.c. I.M. given when patient was quiet: (1) Injection Quinine Bihydrochlor gr. v (Sacchros sol.); (2) Injection Glucose 25 c.c. 25%; (3) Injection Adrenalin Hydrochloride m. v. Three injections combined given intravenously.

Injection Quinine Bihydrochlor grs. v, I.M. given. As there was severe retraction of neck, Kernig's positive and patient still unconscious, so as to relieve C.S.F. tension and to rule out meningitis the lumbar puncture was performed and the C. S. F. came out under high tension and purulent. So I collected C.S.F. specimen in sterile test-tube for bacteriological examination and then I prepared blood smears thick and thin for malarial parasites and D. C. count.

As C.S.F. was under tension and purulent I clinically diagnosed the case as meningitis. So injection Sodium Sulphadiazin (Lederle) 10 c.c. 25% W./V. diluted in 40 c.c. distilled water and then 20 c.c. of this diluted solution given intravenously. Injection Pyelopurin 5 c.c. given intravenously. For retention of urine catheter was passed and bladder emptied of about 2-4 ozs. of urine. I prescribed for the night

R Pot. citras	...	grs. x
Sodabiearb	...	grs. xv
Spt. Ammon Aromat	...	℥ x
Spt. Camphor	...	℥ v
Spt. Ethernitrisi	...	℥ x
Aqua Chloroform ad 3 p. t.d.s.		
Sulphadiazine tab. 2 crushed t.d.s.		
Urotrophin	...	grs. v t.d.s.
Coramin ℥ x—xv t.d.s.		

Next day, by early morning train, I sent C. S. F. with blood for exam. at Sayaji General Hospital, Baroda. Then I examined the patient, temperature 98.5 from last night after injection and same in morning exam. Rigidity of neck disappeared. But still patient was violent and debilitated (1) Injection Glucose 25 c.c. 25%; (2) Injection Normal Saline 25 c.c.; (3) Injection Pyelopurin 5 c.c.; above three combined given intravenously. Injection Dial $1\frac{1}{2}$ c.c. I.M. given.

In the evening the man from Baroda returned with laboratory report as follows:—

1. Blood for M. P. and D. C. crescents found: Polymorph 74%; Monocytes 2%; Lymphocytes 24%; Eosinophils 0%.

N.B.—Blood shows moderate Leucocytosis.

2. Cerebro-spinal fluid :—A fair No. of pus. cells found (Polymorph in nature).

A few gram-negative diplococci resembling meningococci found. On next morning I examined the patient, temperature 98.5 ° F, previous day and night and patient was quiet and conscious taking feeds with medicine. But he developed deafness of both ears. Now I advised injection vitamin B. and Prostigmin injection for deafness and patient is given only tonic mist.

R Ferri at Ammon citras	...	grs. x
Acid Hydrochloride Dil	...	℥ v
Tr. Nux Vomica	...	℥ v
Tr. Gentian	...	℥ xv
Glypepsin	...	3p.
Aqua ad	...	3 p. t.d.s. after meals.

Analysis and points of interest:—(1) Sporadic occurrence of meningitis; (2) malaria with meningitis both in one patient; (3) thanks to invention of Sulphonamide drugs that patient of such fatal disease is saved miraculously by village practitioner like me away from hospital facilities of city; (4) intractable sequelæ of bilateral nerve deafness; I made mistake that instead of preparing blood smear before injection of Quinine I prepared smears after giving Quinine. So question still remains whether crescents found were due to old infection.

Cases of Diphtheria of Tongue

DR. D. T. MEHTA, L.C.P.S., (Bombay),
Gheekanta, Ahmedabad.

THESE cases are rarely seen. They are very common in Europe than here.

There is a white wash leather-like membrane on the tongue or it may be patch like on the tip of the tongue or on the side of the tongue. There are ulcers on the tongue as well as on the margins of the tongue. Membrane is thick. Main character of it is that, when we try to remove it or swab it it bleeds. It looks like stomatitis or thrust on the tongue but the difference is that it bleeds when we try to swab or remove it. It does not improve with Sulphonamide or Vitamin B treatment. Glands of the neck near the angles of mandible are enlarged.

Real test of it, that a swab to be taken for diphtheria germ for microscopic examination. But as we are not able to do it, we should try to give anti diphtheria line of treatment and see the result. It will improve without taking a slide of it.

I have seen this kind of cases last year. I have seen 3 such cases in one family. DR. MOHILE, M.R.C.P. was called for consultation for this and he at once advised me to give anti diphtheria line of treatment. He had told me that this kind of disease is very common in England than here.

Treatment.—Anti diphtheria injection start in big doses 16,000 to 20,000 at a time and then gradually reducing—Gargles of antiseptic lotion—S.T. 39 or listerine, sulphadiazol for other streptococcus infection mixed with it. Afterwards liver extract with vitamin B as a tonic as well as for the damage occurred after diphtheria toxin to the local part.

Thanks to DR. MOHILE, M.R.C.P., Ahmedabad, for all owing me to publish this kind of cases.

PRICE REDUCTION FOR VITAMINS

FOR THE FOLLOWING PREPARATIONS:—

NAME:	PACKING:	NEW RATES:
VITAMINDON B ₁ (Thiamine Tablets)	1 mg. 40 tabs.	Rs. 1 - 4
VITAMINDON B ₁	5 mgs. 20 tabs.	Rs. 1 - 8
VITAMINDON B ₁	10 mgs. 20 tabs.	Rs. 2 - 4
VITAMINDON B ₁	20 mgs. 20 tabs.	Rs. 3-12
VITAMINDON B ₁	50 mgs. 20 tabs.	Rs. 9 - 0
VITAMINDON B ₂ (Riboflavin Tabs.)	3 mgs. 30 tabs.	Rs. 3 - 0
VITAMINDON C (Ascorbic Acid Tabs.)	50 mgs. 30 tabs.	Rs. 2 - 0

AT NEW RATES FROM ALL CHEMISTS



Manufactured by
INDO - PHARMA
PHARMACEUTICAL WORKS
BOMBAY 14
PHONE 361297

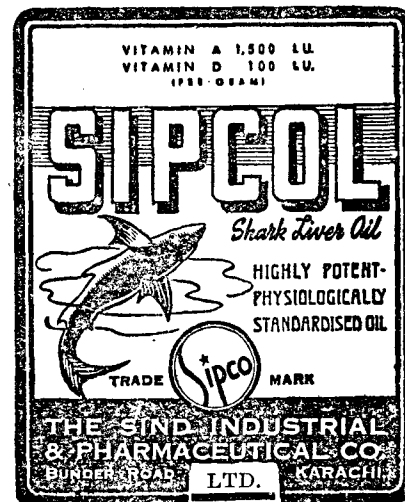
For **MALARIA****QUINO (BLACK PILLS)****COMPOSITION**

Pulves Chiretta B.P.
 „ Cinchona Bark Red B.P.

DITAMINE
DITINE
ECHITAMINE } Active
 ingredient
 of Quinine
 Bisulphate

Bottle of 100 Pills Rs. 3/-
 1000 Rs. 20/-

Sole Distributors:—**V. M. BROS.**,
 89, PRINCESS ST., BOMBAY 2.



*SIPCOL IS HIGHLY
 RECOMMENDED FOR HEALTH
 AND VIGOUR*

Distributors:
HIND AGENCIES,
 Bombay & Karachi.

LIVO-CALCIN

(WITH GOLD)
 for **TUBERCULOSIS**

Each 5 c.c. ampoules chiefly represents:—

Calcium Gluconate ... 0.5 gm. (10%)
 Liver Extract
 (Anti-anæmic principle)
 obtained from ... 20 gms. of fresh
 healthy goat liver
 (equivalent to 500 gms. of
 fresh liver taken orally)
 Choline Hydrochlor ... 1/60 gr.
 Parathyroid Hormones 10 units (U.S.P.)
 Vitamin C ... 250 I. U.
 Vitamin B₁ ... 1000 I. U.
 Vitamin B₂ (Complex)... 30 mg.
 Nicotinic Acid
 Gold equivalent to ... 0.002 gr.
 of metallic Gold per c.c.

Available in two forms—(Plain)
 & (With Gold)

To be used Intramuscularly.

LIVO-CALCIN CAN ALSO BE USED
 INTRAVENOUSLY IN EXCEPTIONAL
 CASES WHERE DEEMED NECESSARY

PEARL CHEMICAL INDUSTRIES,
 85, Belghachia Road, Belghachia, Calcutta

GLASSWARES

FOR LABORATORIES

Insist on **"SIGCOL"** GOODS

The Complete Range You Require

Manufactured by

SCIENTIFIC INDIAN GLASS Co., Ltd.,

29, WATERLOO STREET,
 (Great Eastern Hotel Annexe)
 CALCUTTA.

BIOLACTIN

*The Standard prescription
 for Diarrhoea in Children*

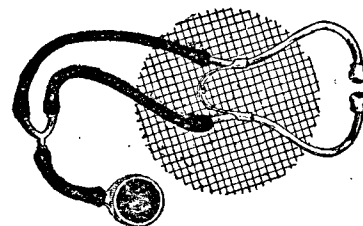
INDICATIONS

Enteritis, Colitis, Fetid Diar-
 rhœa, Eczema, Urticaria etc.

DOSE:

2-3 tablets 3 times a day
 dissolved in Milk

**INDIAN HEALTH INSTITUTE
 AND LABORATORY LTD.,**
 CALCUTTA.

STETHOSCOPE

Latest Model complete with folding frame,
 watch shaped chest piece (Y connected)
 and thick rubber tube Rs. 10/8

"DURO" Tablets Making Machine
 Rs. 12/8.

Universal Syringe with 3 canulas for
 Ear, Glycerine and wound—All Metal
 2 oz. Rs. 7/- 4 oz. Rs. 8/-

Pile syringe with 3 needles 30 m.m. gra-
 duated all metal Rs. 15/-

For all Surgical instruments
 please enquire

NONGLAY MODERN VIRTUES,
 GHASMANDI, SIALKOT CITY.

VICTO (Germicidal) SOAP

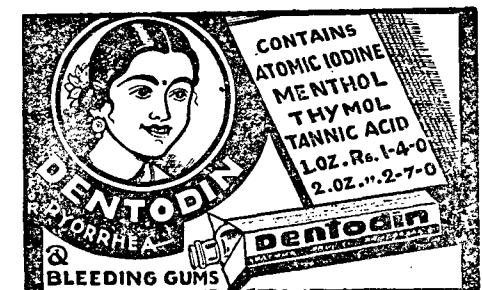
Protects the skin from infection
 Heals pimples, boils, dhobies-
 itch, prickly heat etc.

Contains 1% Biniiodide
 of Mercury

V (Scabies) SOAP

A quick, safe and sure cure
 for Scabies

**VICTORY CHEMICAL &
 PHARMACEUTICAL WORKS LTD.,**
 CHALAKUDI.

**VASADRIN**

Tablets

For Asthma and Bronchitis with
 Vasaka, Ephedrin, Codein, Caffein,
 Belladonna and Phenobarbitone.

Distributors Wanted in unrepresented areas.

PREMIER DRUG CO.,
 Gandhi Road, AHMEDABAD.

When writing to advertisers, please mention the "Antiseptic."

When writing to advertisers, please mention the "Antiseptic."

LUTEOSTAB

PROGESTATIONAL HORMONE

A solution of progesterone in oil for administration by intramuscular injection in the treatment of threatened and habitual abortion and for conditions associated with a deficiency of the corpus luteum hormone.

Ampoules of 2 mg., and 5 mg.

Box of 6

ETHISTERONE-BOOTS

ETHISTERONE-BOOTS is an orally active analogue of the corpus luteum hormone, progesterone, having the same action as progesterone by injection. ETHISTERONE-BOOTS may be employed in all cases where there is deficiency of the corpus luteum hormone.

Tablets of 5 mg., and 10 mg.

Bottle of 25

For particulars



please apply to

BOOTS PURE DRUG COMPANY LIMITED

P.O. Box 2070
CALCUTTA

P.O. Box 680
BOMBAY

P.O. Box 158
Br. COCHIN

Manufactured by:

BOOTS PURE DRUG CO., LTD., NOTTINGHAM, ENGLAND

M/17

METHYL TESTOSTERONE-BOOTS

Methyl Testosterone-Boots is a synthetic male sex hormone supplied in tablets each containing 5 mg. for oral administration. Clinical results have confirmed that Methyl Testosterone administered orally produces the same effects as Testosterone Propionate by injection. Generally, about three to four times as much Methyl Testosterone orally by weight is required, to give an equivalent clinical response, as Testosterone Propionate by injection.

Supplied in tablets containing 5 mg.

Bottle of 25 tablets

TESTOSTERONE PROPIONATE-BOOTS

MALE SEX HORMONE

Testosterone Propionate-Boots is the propionic ester of the male sex hormone testosterone, supplied as a solution in oil for intramuscular injection.

Testosterone Propionate is indicated in the treatment of eunuchism, hypogonadism and selected cases of impotence in males. It has given satisfactory results in a number of gynaecological conditions where it is desired to antagonise the action of oestrogenic hormones such as in functional hæmorrhage and inhibition of lactation.

Boxes of 6 x 5 mg. ampoules
Boxes of 6 x 10 mg. ampoules
Boxes of 3 x 25 mg. ampoules

For particulars



please apply to

BOOTS PURE DRUG COMPANY LIMITED

P.O. Box 2070
CALCUTTA

P.O. Box 680
BOMBAY

P.O. Box 158
Br. COCHIN

Manufactured by:

BOOTS PURE DRUG CO., LTD., NOTTINGHAM, ENGLAND

M/22

When writing to advertisers, please mention the "Antiseptic."

The Antiseptic

ESTD. 1904.

A Monthly Journal of Medicine and Surgery.

Published on the 15th of every month

Editors: U. RAMA RAU, & U. KRISHNA RAU, M.B., B.S.

Editorial & Publishing Office:

RAMARAU BUILDINGS "323-24, Thambu Chetty St., G. T., MADRAS,

Annual Subscription: Rs. 7-8-0; Foreign—15 Sh.—Post Paid.

Vol. 43.

JANUARY, 1946

No. 1.

The Crucial Year

VIEWING in retrospect the year which had then become a memory in January last, we ventured to point out that it will go down in history as the turning point in the history of the Second World War. Our prophesy had come true; the year 1944 had really been a turning point in the history of the Second World War. The world has moved considerably forward since. The war has come to an end; the Nazi and Fascist hordes have been lain low; but the peace for which the world longed, the peace which the Allies promised to the world, is yet far, far away. If we are to speak the truth, we should say that the world is in a much greater mess than it had been at any time before. Fear of domination by the bigger powers oppresses the small nations in Europe. Battles royal are still going on in some countries in Asia. If the Allies who had proclaimed from the housetops that the war was fought for the cause of democracy and freedom, had stuck to it, if the authors of the Atlantic Charter and the other powers who adhered to it had stood by the principles enunciated therein, we would now be living in a world quite different from the one to which we had become accustomed. But no. Proclamations and Charters had been thrown to the winds; imperialism is again rearing its ugly head; we have the unfortunate spectacle of peoples and parties professing socialism defending imperialism unashamedly. Until and unless the big powers give up their greed and stand solidly and unitedly for freedom and democracy, whatever the consequences, we shudder to think of the future. Already people have begun to predict another world war in the near future on racial lines, unless the Big Three think rightly, decide justly and act quickly. The year 1946 is therefore not only a crucial year in India's history for freedom, as MR. PETHICK LAWRENCE, the Secretary of State for India, has put it, but it is a crucial year in the history of the world as well. Whether it is peace or war depends in a large measure on the Big Three. It is for them to prove to the world that they have given up imperialist designs and desire to see every nation, big or small, rise to its full height and free status. Then and then only can lasting peace be established in the world.

Coming to India, the Secretary of State gives us the definite assurance that "we will do our utmost to assist India to attain that position (full

[61]

and free status of an equal partner in the British Commonwealth). There is no longer any need for denunciations or organised pressure to secure this end. If there ever was a time when there was cause for that, it is so no longer." But an ounce of practice is worth more than tons of precept. In spite of this declaration from such a high quarter, in spite of many previous declarations that India has Dominion Status in action by the previous Secretaries of State, and in spite of the definite offer made by SIR STAFFORD CRIPPS on behalf of the British Government, we find no ocular proofs of it in the day to day administration. Hundreds if not thousands still continue to rot in prison; civil liberties are suppressed; the people continue to suffer as ever from famine and pestilence uncared for and unattended to in spite of the preparation of hundreds of blue books to ameliorate their lot; the good old policy of lack of trust in the accredited representatives of the people still holds sway; and the game of bolstering up communal or sectional cliques as a buffer against the onward rush of nationalism is still played to the full. If the Secretary of State wants us to take him seriously, he should see to it that a real change of heart is brought about in those who hold the reins in India at the present moment.

We had necessarily to refer to the larger and wider issue facing the world and our country as the successful tackling of the problems with which we are directly concerned depends in a very large measure on the satisfactory settlement of that issue. As DR. AMESUR, President of the All India Medical Conference, held at Amritsar, on the 24th of December, observed: "This country lacks as much the personal health services as in community services at present. We have to cure disease, tackle sanitation, drainage, water supply and epidemic and endemic diseases. We have to give health education and physical education. We have to look after the proper nutrition of the people so that even the poorest of the poor can have a balanced diet and maintain himself in good health. Malnutrition has to be banished from the country by the inclusion of the necessary vitamins to the diet of the nation.... We have also all the dangerous diseases flourishing in the country as their congenial home on account of want of resistance due to poverty and malnutrition. Malaria, tuberculosis, small-pox, cholera, plague, leprosy, venereal diseases, kala-azar, hookworm, cancer, mental diseases and mental deficiencies have to be tackled..... Our task is then very heavy and our burden grievous on account of past neglect with an irresponsible, callous and hostile government in power... We have to start where other nations completed fifty years ago. We have not only to cover this period of time but have also to overtake them in the race for improvement." It required a famine on a colossal scale, resulting in the loss of millions of precious lives, for the alien government to recognise the need for taking immediate steps in the matter. In appointing the Bhore Committee, the Government of India asked them to "plan boldly, avoiding, on the one hand, extravagant programmes, which are obviously incapable of fulfilment and, on the other hand, halting and inadequate schemes which would have no effect on the general health standards, and which would bring little return for the expenditure involved." This Committee have, after a thorough examination of the problem in all its aspects, submitted their report to the Government of India. This report has not yet been published, and it will therefore be premature to deal with it at any length. But from the summary of the recommendations vouchsafed to us by the Associated Press of India and other news agencies and correspondents we understand that they have proposed a short term plan and a

long term plan. The short term plan consists of laying the solid foundations of the public health of the country. Personal health services, including the directional organisations associated with the Ministers of Public Health, professional education and expenditure on other items, it is estimated, will require 163 crores in the first five years in British India; and the next five years will require 200 crores which complete a ten year programme. The recurring annual expenditure will be 40 crores during the first five years, and 81 crores during the next five-years, and the annual per capita expenditure will be Rs. 1-3-11 during the first five years and Rs. 2-6-6 during the next five years. From an expenditure of three annas per head at present we are to reach an expenditure of nearly two and a half rupees. To carry out this far-reaching programme we must have money. The reply made by the Government spokesman to the debate which took place in the Council of State on Mr. P. N. SARRU's motion three years back does not give us much cause for hope. To have the money required to carry out this ten year programme, we must increase our national income; to increase our national income we must have in our hands all the instruments of national regeneration; and to possess such instruments we must have complete and unquestioned Swaraj to order our house as we pleased, to spend our taxes as we pleased without outside demand and dictation, and to run our national economy in the way best suited to our national interests. Everytime we take up these vast national questions, the rock of foreign domination frowns in our face. Only when that is removed shall we be free to cut our coat according to the cloth and to increase the production of the cloth in various ways. Our readers will thus see the close bearing the larger issue has towards this problem.

This is not all. In the very rapid march the country is making towards self-determination and self-government, we cannot, in the words of DR. AMESUR, lag behind in the matter of Medical Swaraj. This Medical Swaraj means the removal of external controls emanating from England and the abolition of the Indian Medical Service as an institution. The I. M. S. means to us subordination and an almost forcible cultivation of Inferiority Complex. Medical education, the holding of key medical posts, including big administrative jobs, principalships and professorships, attractive civil surgeoncies, where lucrative practice is to be obtained, well paid appointments in big cities with amenities and good private practice are the fine plums of the service which no man, however skilled and eminent, may pluck. It is but natural that there is so much heart-burning when the vested interests of the I.M.S. are guarded by bulwarks and bastions starting from the Secretary of State down to the Provincial Governments. Our patience in tolerating these preserves when their holders (except a few) have no extraordinary and, in some cases, even ordinary merit, to entitle them to establish a prescriptive right to monopoly, is at times to be wondered at. It has to be made clear by the profession and the public to all popular Provincial Governments which are expected to come to office within the next few months after the provincial elections, that the civil department should be spared from the I.M.S. and men from the independent medical profession should be made to fill all future vacancies in the cadre of the I.M.S., that there should be no further recruitment from England from the year 1946, and that the medical men demobilised from the army should be absorbed by the post-war army without being put in civil appointments. Secondly, the present day restrictions on Ministers

which lay down that a certain percentage of offices under provincial governments should be reserved for the I.M.S. should be removed, and intimate correlation should be established between the independent medical profession and Government medical institutions and hospitals for research and the promotion of common objects to serve the country at large. The independent medical profession must be made the reservoir from which should be drawn in future the talent needed for Government service and medical institutions. Besides, the profession, as a whole, has to play a great part in carrying out the far-reaching plan of reforms recommended by the Bhore Committee. To rid the country of the monopoly at present enjoyed by the I.M.S., to carry out the great programme of Health Reform chalked out by the Bhore Committee, we have to get rid of the distinctions and the various complexes that have been created and fostered among the members of the ranks, and the profession as a whole should act as one body. The two major professional organisations in the country have taken steps to bring about the much needed amalgamation. There will be many a slip between the cup and the lip; vested interests will stand in the way of amalgamation. We can only hope and pray that saner counsels will prevail and the fusion will be brought about. From this point of view also one can say that the year 1946 is a crucial year so far as the future of the Indian medical profession is concerned.

We shall be failing in our duty if we do not make a passing reference to ourselves. The numerous Paper Control Orders have placed serious restrictions in our way. We have not been able to carry out the many schemes of improvement which we have planned to make the ANTISEPTIC the Bible of medical knowledge which we desire it to be, and it is only with the greatest difficulty that we are able to maintain the standard of the Journal unimpaired. We have been denied the use of glazed paper which we have been accustomed to use; we have been denied the supply of art paper to make the illustrations useful and effective; and the restrictions in the quantity of even newsprint allowed to us prevents us from satisfying the increasing demands of the profession for the Journal, that many newcomers have to be placed in the waiting list for long. In spite of these sickening restrictions we are carrying on to the best of our ability, maintaining the standard and improving it wherever possible, thanks to the unfailing response for contributions from our readers and to the continued support we are receiving from our advertisers. To all of them we owe a deep debt of gratitude. This crucial year will, we hope, bring about the dawn of a new era, and in that hope we wish all our subscribers and advertisers a HAPPY AND PROSPEROUS NEW YEAR.

Gleanings From Medical Press

MEDICINE and THERAPEUTICS

Low blood pressure.—The range of normal blood pressure in health may well extend down to 100 or even 95 m.m. Hg. It is not so uncommon to meet healthy young people who have pressures of this level. They are often of slight asthenic build and have slow pulses. Above the age of 40 such pressures are usually abnormal. The symptoms commonly associated with hypotension are lassitude, fatigue, giddiness, weakness, faintness, and a poor capacity for exertion. Patients with such symptoms do not have an abnormally low pressure. So the symptoms and pressure do not run parallel.

To gauge the significance of a low reading in any individual with symptoms one must know what his pressure is in normal health. The blood pressure depends upon several factors. It will fall in some cases of severe myocardial damage, but here the cause is obvious; an infarct is the commonest cause. At the periphery the tone of the arterioles is the most important influence. This depends on the activity of the vasomotor centre and upon the state of the arterioles themselves. This last is influenced by the secretions of the adrenals and the pituitary body, and probably also of the kidneys. Changes in the blood volume hardly come in here and one need not discuss shock. Anæmia in some way lowers the blood pressure—perhaps both centrally (myocardial) and at the periphery. Aortic stenosis is the only valvular defect associated with low blood pressure. If these grosser and more obvious causes are excluded, one must consider the patient who comes with the symptoms enumerated above, and in whom the tension seems to be abnormally low for him. The low blood pressure should be regarded as part of a state of general debility, and not stressed too much as an individual item. These patients are sometimes neurotic, and fasten upon their figures of low blood pressure. A phase of debility such as this may not uncommonly follow an influenzal infection. But often nothing definite is found. One must remember the possibility of early tuberculosis. Addison's disease will be indicated as a rule by other symptoms before the blood pressure falls to 110 m.m. Hg.

The same state of postural hypotension is probably a lesion of the sympathetic nervous system, and the fall to 50 or 60 m.m. Hg. systolic on standing is diagnostic. It is also associated with impotence and lack of sweating; it is almost entirely confined to males.

The idiopathic cases of hypotension are often difficult to treat. After infection the usual routine of convalescence should restore the normal. Often the appetite is bad, and for some patients a little alcohol is very beneficial. Drugs are probably least useful unless the patient cannot get rest and

change. Strychnine in full doses, pushed to the limit of tolerance, is undoubtedly valuable. The directly pressor drugs should be tried.—B.M.J.

Reason for use of dextrose in diabetic acidosis.—Peters shows that extreme reduction of carbohydrate in the diet lowers the tolerance for dextrose. The phenomena of starvation diabetes have been attributed to variations in the secretion of insulin by those who hold that every fluctuation in the combustion of carbohydrate depends on a change in the secretory activity of the islands of Langerhans. Such a theory is not compatible with the facts. Although the exact *modus operandi* of insulin on the metabolism of carbohydrate is not known, it has been established that its preponderant action is to accelerate oxidation of muscle glycogen and that it has no direct effect on the formation or breakdown of liver glycogen. Every substance that is capable of forming carbohydrate is converted to glucose by the depancreatized animal. Since almost all compounds except dextrose must be transformed to glycogen by the liver as a preliminary step in the conversion to glucose, this in itself constitutes proof that hepatic glycogenesis does not require insulin. Among the disorders encountered when the combustion of carbohydrate is impaired or retarded, the most prominent are increased protein catabolism and ketosis. The literature on diabetes in the era from 1915 until insulin was in general use abounds in papers in which acidosis is attributed to the failure of patients to adhere to dietetic regimens that could only have led to slow death from malnutrition or from tuberculosis and other diseases that prey on the malnourished. The aim of treatment was to keep the urine free from sugar, regardless of the nutritive needs of a patient. It was known that although loss of sugar in the urine increased progressively as the carbohydrate in the diet was raised above the amount required to induce glycosuria, there was a wide zone within which only a part of added increments of sugar were excreted, another example of the acceleration of carbohydrate utilization by hyperglycæmia. This led some to advocate the prescription of enough carbohydrate to insure the utilization of the largest quantity that could be accomplished without producing distressing polyuria. With the advent of insulin such expedients were no longer necessary. Nevertheless, the mental attitude, including the doctrine that ketosis is the wages of dietary sin, has been slow in dying. Diabetic acidosis and the coma in which it culminates mark the most extreme diabetic state. The most urgent therapeutic indications are restoration of the fluid and salt supplies of the body and the integrity of the circulation and elimination of the ketosis and glycosuria which are

responsible for the salt and water depletion. Reversal of the metabolic disorder requires the administration of insulin and the provision of sugar. The routine prescribed for the patient in diabetic acidosis consists in the injection of 50 units of insulin. An intravenous infusion of 500 cc. of 10 per cent dextrose solution is then begun, together with subcutaneous injection of isotonic solution of sodium chloride. The patient is prohibited from receiving anything by mouth. After the first priming dose of 50 gm. dextrose is given intravenously at the rate of about 10 gm. per hour with doses of 20 to 40 units of insulin at the same intervals until the blood sugar begins to descend definitely. At this time dextrose is given at a faster rate (about 20 gm. per hour), while the insulin is reduced to half or less of its earlier dosage, according to the course of the blood sugar. Oral administration of fluids is not begun until the patient has been completely conscious and entirely free from all gastro-intestinal symptoms for from two to six hours.—J.A.M.A.

The medical management of ulcerative colitis.—"Of all the forms of ulcerative colitis, the amœbic is the most amenable to treatment. Without any additional supportive treatment, amœbiasis can be controlled or perhaps cured in most instances by the properly timed administration of a suitable combination of preparations of ipecac, arsenic and iodine. A suitable program for the administration of these chemotherapeutic drugs is as follows: 2/3 grain (0.043 gm.) of the active principle of ipecac, namely emetine hydrochloride, administered subcutaneously twice daily until 4 grains (0.26 gm.) of the drug has been given. On the same day in which the emetine is given, 0.25 gm. of carbarsone should be given three times a day and administered for four days. This is to be followed by 0.25 to 0.5 gm. of diodoquin for seven days, and this in turn is to be followed by a second course of emetine and carbarsone. A series of stools should be examined after this for the trophozoites or cysts of *Endameba histolytica*."—Bargen, J. A. J.A.M.A. 126: 1009 (Dec. 16) 1944.—Bull. New Eng. Med.

Cholecystitis—diet and treatment.—On theoretical grounds which are difficult to defend, various diets have been prescribed for cholecystitis. In particular a low fat diet has been recommended because the liver may be diseased, or because the flow of bile is scanty, or because cholesterol forms gall stone. In the ordinary uncomplicated case of cholecystitis there is no reason to believe that any of these fears is justified. Fat in the normal stimulus for the discharge of bile into the duodenum, and this promotes the drainage of the biliary system. The dyspepsia of cholecystitis is probably due to reflex disturbances of gastric tonus, and the diet should be planned from this point of view. Provided fried foods and indigestible types of fatty foods, the

patient should tolerate ordinary quantities of natural fats, such as butter, milk, cream and eggs. Small dry meals are probably better than slops, as in other forms of gastric flatulence, and fluids should be taken between meals. A bland diet should, therefore be planned on these lines. Spices and condiments, rich foods, new bread, gaseous vegetables should be avoided, and raw fruit and greens taken with forbearance. Many patients with cholecystitis are obese, and their diet should be reduced to a level at which they will lose weight.

Biliary antiseptics are probably of little value. Medicinal treatment comes down to biliary drainage and symptomatic remedies for dyspepsia. Biliary drainage is best promoted to a teaspoonful or more of 25% solution of magnesium sulphate on waking in the morning and a dessert teaspoonful of olive oil before the midday and evening meals. For the flatulence, alkalis may be given combined with carminatives.—B.M.J.

Bronchial asthma treated by breathing exercises.—Failure of the usual measures—such as specific and nonspecific desensitization—led H. Weiser (*The Lancet*, Aug. 26, 1945) to treat 29 children and 12 adults suffering from bronchial asthma by intensive breathing exercises only.

The aims were: to correct the physical deformities produced by the asthmatic attacks; to restore the elasticity of the thorax which is often fixed and distended in these cases; to develop and strengthen weak body muscles, especially those respiratory muscles which were not already hypertrophied. Breathing exercises also have a psychologic effect, and the increase in bodily fitness, restores the patient's courage and self-confidence.

Treatment begins with massage of the chest, back and front, between the attacks; at each session massage should be continued until a skin reaction is visible. Rhythmic compression of the chest follows, carried out by the physio-therapist, with the patient lying first on his back and afterwards on his side. At each compression the patient emits a hissing or humming sound throughout expiration. Blowing exercises at the spirometer follow, the patient being taught to read off and note down his own vital capacity. Latter in treatment the patient carries out increasingly vigorous exercises in the gymnasium.

At each treatment session, after a few strenuous exercises the patient is allowed to rest, either sitting, or lying on his back with his knees bent. During this interval the physio-therapist compresses his chest again, and the patient hisses or hums as he breathes out. The patient counts his breaths aloud, and after the prescribed number (between 20 and 80), begins his exercises again. The rest-pauses are increased towards the end of the sessions, and the number and strenuousness of the exercises are diminished. At the end of each treatment the vital capacity is measured again, and it is especially important that the patient should

read off and take down all measurements of his own increases in efficiency, not only the spirometer readings, but the number of strokes he pulls on the rowing apparatus and so on. Exercises should be numerous and varied so that he maintains a lively interest in them. If he is given only a few exercises, however useful they are, they become mechanical and are carried out without interest and with little success.—G.P.

Diabetic neuropathy.—The authors present a review of 100 cases of diabetic neuropathy. The purpose of the study was to show that so-called diabetic neuritis or neuropathy is not, as is generally believed, exclusively a peripheral neuritis, but is also a generalized neurologic disturbance involving the entire nervous system. There is strong evidence to suggest that neuropathy is only one manifestation of vitamin B deficiency in diabetic patients and that the deficiency in most cases is secondary to metabolic disturbances in diabetes. The cases included in this study were followed for periods from one to ten years. Thirty-one cases had a peripheral neuritis; 26 patients had a myelopathy; 9 had signs of encephalopathy alone or combined with a myelopathy and 11 had a neurogenic bladder. Pain and sensory disorders were the most common symptoms and signs. Muscular weakness was quite frequent and atrophy was observed in only 11 cases. Tendon reflex changes were found in 66 cases. Hyperflexia was seen in 5. Sphincter disorders, especially of the urinary bladder, were present in 25 cases and 17 had some disorder of gait.

The role of diabetes in the development of the neuropathy is still obscure. The authors conclude, however, that diabetic neuropathy is a generalized neurologic disturbance. It is observed not only in the acute stage of diabetes but also seen after the control of the glycosuria and hyperglycemia, and in the chronic and even mild cases of diabetes. This neuropathy develops most frequently in patients over 50 years of age and is preceded or accompanied by marked loss of weight. Symptoms and signs of a vitamin B-complex deficiency are frequently associated with it. The vitamin deficiency is secondary or "conditioned," and it appears to be caused by the disturbed metabolism and at times by an associated chronic infection or other complication. A demonstrable dietary insufficiency is a factor in only certain cases. Complete recovery from the neuropathy is uncertain and slow but it occurs following prolonged therapy with vitamin B and control of the glycosuria and hyperglycemia. (Rudy, A. and Epstein, S. H.: *Journal of Clinical Endocrinology* 5: 92, February, 1945).

Papaverine in the treatment of coronary disease.—The authors studied the effect of papaverine on 13 patients with angina pectoris. The patients varied in age from 46 to 72 and 11 of them were men. All had

had angina pectoris for six months to 15 years and six had a history of myocardial infarction in the past. The response of these patients to other types of therapy usually administered for angina pectoris was known. On each visit the patient was given a supply of medication to be taken four times a day for at least a week. The medication consisted of papaverine hydrochloride in 100 or 200 mg. doses. The effect of papaverine hydrochloride given intravenously was also determined. The oral route was tried in 11 patients—There were 20 trial periods, in which 10 patients received 100 mg. and 10 received 200 mg. four times a day for one week. Toxic symptoms developed in 5. Demonstrable clinical improvement did not occur in any of the 10 patients able to tolerate papaverine by mouth. The response of 12 patients was studied to intravenous administration, which enabled half the patients with angina pectoris to do more work than had been possible otherwise and decreased the electro-cardiographic changes following exercise. This effect reached its maximum in 5 to 15 minutes after injection and was negligible after about 60 minutes. This method of therapy, however, is of little value in the clinical treatment of patients with angina pectoris. The oral administration of papaverine hydrochloride in doses of 33, 100 or 200 mg. to ambulatory patients did not improve their ability to exercise, and does not appear to be of practical value. Studies in a small group of patients suggest that the administration of papaverine hydrochloride intravenously in doses of 65 or 100 mg. is of considerable value in treating the pain of coronary occlusion or coronary failure. (Gray, W. et al.: *New England Journal of Medicine* 232: 389, April 5, 1945). (U.S.N.O.I.) and U.S.I.S.

Thiouracil.—Thiouracil causes a decrease in the protein-bound iodine of the blood and in the thyroxin iodine of the thyroid gland, but does not inhibit the hypermetabolic effects of performed thyroxin. These facts indicate that thiouracil inhibits the production of the thyroid hormone, but the exact process by which this is accomplished has not yet been determined. The drug can be depended on in essentially all cases to lower the basal metabolic rate to a normal range and to maintain it at that level so long as treatment is continued. Association with this response, in the basal metabolic rate is a clinical remission of the disease, with disappearance of tachycardia, hyperidrosis, nervousness, diarrhoea, weight loss and other toxic manifestations.

By accurately regulating the dosage of thiouracil it is believed that the goitrogenic effect can be kept low. In spite of the fact that many thyroid glands have decreased in size with treatment, it is not considered advisable to give prolonged thiouracil treatment to a patient who has an extremely large gland, since there is some possibility that the gland will actually become larger.—Williams and Clute: *New England J. Med.*

SURGERY

Preparation of the diabetic patient for operation.—Before the introduction of insulin in 1923 very few operations were performed on diabetic patients. Nowadays diabetes is in no wise a contra-indication for any operation provided that (1) a physician is at hand who knows how to look after these patients; (2) adequate facilities are available for estimation of the blood sugar, &c.; (3) the best anæsthetic is chosen and given by a good anæsthetist; and (4) that the operation is well and quickly done.

That is, if all the conditions are ideal, the risk of operation is very little more than in the case of the non-diabetic of equal age. It is important to make certain that the diagnosis is correct. The presence of glycosuria does not necessarily prove that the patient has diabetes since he may have a low threshold to the kidney and a normal sugar tolerance.

The anæsthetic is very important and a local or spinal anæsthetic causes least disturbance. Gas and oxygen is the next best provided sufficient oxygen is given to prevent any cyanosis since the blood sugar is always raised by cyanosis. The intravenous anæsthetics, pentothal and evipan, come next and I have seen no ill-effect from these. Ether which may be necessary to get complete relaxation with gas and oxygen does raise the blood sugar and should be used only in small amounts. Avertin is better not used because it is said to lower the glycogen in the liver by 50%, and so renders the liver more liable to damage. Finally, chloroform should never be used because of its action on the liver.

When an operation has to be performed the diabetic condition should be as well controlled as possible. If the diabetic condition is mild and the patient is not taking any insulin but having a small amount of carbohydrate, say 100 grammes or less he runs some danger of liver damage because of the low glycogen content. It is better in these cases to increase the carbohydrate to at least 150 grammes and to give a small dose of insulin, 1 unit for every 4 to 5 grammes of extra carbohydrate. For an extra 50 grammes I would give 10 units; 6 units in the morning and 4 units at night for two to three days before operation. The patient will probably be able to give up insulin a few days after the operation, provided there are complications. If the patient is having insulin but is passing a good deal of sugar and the operation is not being done in an emergency, it is better to increase the insulin for a few days and thus stabilize the condition. If, however, the patient belongs to the class which is liable to have overdoses when any attempt is made to get the urine sugar free, it is better not to make any change. The type of insulin must also be considered. I think it is much better to use the ordinary or quick-acting insulin in the preparation of the patient instead of the slow-acting insulins, since these do not act quickly enough to control the rise in the blood

sugar caused by the anæsthetic and are more likely to cause hypoglycæmia. It is better to allow two to three days for the change-over. If the patient is taking one dose of protamine zinc or globin insulin, say 20 units, he should be given 12 units in the morning and 8 units at night of the ordinary insulin. This may fail to control the glycosuria or may cause attacks of hypoglycæmia, but in two or three days the correct dose should be easily determined. If bigger doses are being taken they should be split in the same manner. Thus with 50 units of protamine zinc or globin insulin 30+20 should be given. If he is taking a mixture of ordinary and protamine zinc or globin insulin, say 12 units of ordinary and 8 units of protamine zinc or globin, the morning dose should be 12 units of ordinary and the evening dose 8 units of ordinary, but the evening dose may have to be increased by 2 or 4 units.

On the day of operation.—Morphia is always given to quieten the patient, but it tends to make the patient's breathing more shallow and increases the tendency to anoxia; the dose should be as small as possible, say 1/6th grain of morphia.

It is most important that the patient should not be starved before operation as this will reduce the amount of glycogen in the liver. He should have his usual feeds at bedtime and in the morning he should have at least 50 grammes of glucose in order to ensure that there is plenty of glycogen in the liver and muscles. He can of course have more than this if he is in the habit of taking it at breakfast. The dose of insulin must be varied according to the type of anæsthesia used, since it depends on two factors: (1) The amount of carbohydrate usually taken at breakfast; (2) the type of anæsthetic used.

(1) If he takes 50, 60 or 70 grammes of carbohydrate at breakfast he should be given 50, 60 or 70 grammes of glucose and his usual dose of insulin together with a supplement depending on the type of anæsthetic. If, however, he takes less than 50 grammes of carbohydrate, say 25 grammes, he should be given 50 grammes of glucose with a supplement for the extra 25 grammes and a supplement for the anæsthetic. The supplement for the carbohydrate is calculated on the basis of 1 unit of insulin taking care of 4 or 5 grammes of carbohydrate. Thus for the extra 25 grammes of carbohydrate the patient should be given an extra 6 units over and above his usual dose.

(2) The type of anæsthetic. If a local or spinal anæsthetic or gas and oxygen is being used I do not think that there is any need to give a supplement, but if gas and oxygen are being used with ether I think that at least 10 units should be given. In the case of pentothal I think that the supplement should be small say 2 or 4 units in addition to the usual dose. The insulin should be given half an hour before the sugar which is best flavoured with lemon or orange juice. It is

better not to put it into tea as this large dose of sugar spoils the taste of the tea.

The sugar should be given two hours before the time for the operation. There are no difficulties when the operation is to take place round 9, but it is more difficult when the operation is after this time. If the operation is timed for 12 noon to 3-30 p.m., say, he should be given his usual breakfast and insulin at the ordinary time. Then two hours before the time of the operation he should have 10 units of insulin followed by 50 grammes of glucose in place of the usual midday meal. If the operation does not take place till after tea the usual midday meal should be taken without any extra insulin, the extra sugar and insulin being taken as usual two hours before the operation. Finally, if the operation takes place after the evening meal the arrangement should be made on the same principles as for the morning meal.

If the dose of insulin and sugar is arranged somewhat on these lines the anæsthetic will not do the diabetic condition any harm. The only complication which may occur is hypoglycæmia. This will not show itself during the operation as this, together with the anæsthesia, will certainly cause a rise in the blood sugar. The mild symptoms will probably pass unnoticed but the patient may not recover consciousness at the right time

after the operation in which case an intravenous injection of glucose should be given.

TABLE I

Usual breakfast carbohydrate Grammes	Usual insulin Units	Dose of glucose Grammes	Dose of insulin Units	Extra insulin for anæsthetic		
				Local	Pentothal	Ether
25	30	50	36	0	2 or 4	10
50	30	50	30	0	2 or 4	10
60	30	30	30	0	2 or 4	10

I have seen this occur once only. The patient had been given pentothal with gas and oxygen for a perurethral resection of a prostate gland. He had not regained consciousness some three hours after the operation; he seemed asleep but otherwise normal. I estimated the blood sugar at once and found that it was 50 mg.%. I injected 10 c.c. of a 25% solution of glucose about forty-five minutes after the blood was collected and he woke up immediately.

Preparation for an emergency operation.—If the patient has been taking insulin and is not passing sugar the size of the dose of insulin and glucose is decided as for the set operation. If however, the patient is passing a good deal of sugar and some acetone

Choice of Local Burn Therapy*

REGION	FIRST DEGREE	SECOND DEGREE	SECOND AND THIRD DEGREE
FACE	Vaseline dressing Sulfadiazine ointment Triple dye	Vaseline dressing Pressure treatment (Koch) Saline packs Sulfadiazine emulsion	Vaseline pressure treatment Saline packs
HANDS	Boric acid; vaseline paste dressing Sulfonamide paste Dye therapy	Vaseline dressing Pressure treatment Saline baths	Vaseline and pressure dressing Saline baths
EXTREMITIES	Sulfonamide paste Triple dye Tanning methods	Pressure treatment Sulfonamide paste Tanning methods Saline baths	Pressure treatment Saline baths
TRUNK	Tannic acid-silver nitrate Sulfadiazine spray Triple dye Vaseline dressing	Tannic acid-silver nitrate Sulfadiazine spray Triple dye Pressure dressings	Tannic acid-silver nitrate Pressure dressings Saline baths
PERINEUM and GENITALIA	Boric acid ointment Sulfonamide paste or emulsion Dye therapy	Sulfonamide paste or emulsion Saline baths	Sulfonamide paste or emulsion Saline baths

* NOTE: This table is similar to that previously prepared and published in *The American Journal of Surgery*, 64-367, 1944.—*Medical Woman's Journal*.

bodies, the supplementary dose of insulin for the anæsthetic should be increased. If a local or spinal anæsthetic is given, a supplement of at least 10 units should be given; if pentothal is used the supplement should be 14 or 16 units and if ether is given it should be 20 to 25 units. Though this may be sufficient for the anæsthetic, the patient may need much more after the operation. If he is very ill, and passing much sugar and much acetone bodies and operation is urgent, much bigger doses both of insulin and sugar should be given. The dose of sugar should be increased to 100 grammes to make quite certain that there is plenty of sugar in the body and 100 units of insulin should be given. It is in this type of case that estimations of the blood sugar are most valuable both before and after operation. Big doses of insulin will be needed after the operation if coma is to be prevented, and the blood sugar should be estimated at frequent intervals.

—George Graham in *P.R.S.M.*

Penicillin in the treatment of empyema.—

By John Winslow Hirshfeld, M.D., C. W. Buggs, Ph.D., William E. Abbott, M.D., and Matthew A. Pilling, M.D. (Condensed from "*The Journal of the American Medical Association*," June 23, 1945).

Penicillin is almost nontoxic for man, yet it exerts a powerful antibacterial action against a wide variety of micro-organisms. Unlike the sulphonamides, penicillin is not inhibited by pus or other products of tissue destruction. When given intravenously or intramuscularly, it penetrates poorly into collections of pus, but if it is injected directly into an abscess it remains there for some time and may be found in considerable concentration as long as twenty-four to forty-eight hours after its injection. These unusual properties of penicillin have led some workers to treat empyema by aspiration of the pus, followed by instillation of penicillin. Theoretically, if this form of treatment is to be successful, the following conditions should prevail:

1. The causative bacteria must be susceptible to penicillin.
2. It must be possible for penicillin instilled in the empyema to contact all of the bacteria. Some empyemas are loculated so that it is impossible to reach all of the pockets with an aspirating needle.
3. The cavity must not contain pieces of necrotic lung or large clots of fibrin. Many empyemas of long standing, especially those caused by pneumococci, contain clots of fibrin several inches in diameter. An occasional empyema contains a piece of necrotic lung in the interstices of which bacteria are protected. Penicillin will not sterilize an empyema until these fibrin clots and pieces of necrotic lung are removed.
4. The anatomic conditions such as bronchial fistulas that cause constant reinfection of the cavity and allow the penicillin to escape must not be present. Bronchial fistulas, present more often than is generally

realized, not only permit constant contamination of the cavity by organisms from the mouth, but make it impossible to keep penicillin in the empyema.

5. The lung must be capable of re-expanding. Since re-expansion of the lung is the means by which empyema is cured, it is obvious that, if the lung is not capable of re-expanding, aspiration of pus and instillation of penicillin will not suffice to heal the lesion.

There is no doubt that penicillin when properly used will obviate the need of surgical drainage in certain cases of empyema. Those responding to penicillin are chiefly the cases that have been detected relatively early when the pus is still thin and those in which none of the complications described are present. There is also no doubt however, that, even when the complications described are present, penicillin can be of considerable aid as an adjunct to surgery. By means of penicillin and aspiration a large empyema can often be transformed into a small one that the lung can obliterate more quickly after rib resection. It is also possible to tide a critically ill patient over a period during which surgical intervention is hazardous. However, if the empyema is not bacteriologically and anatomically such that it will respond to penicillin therapy, to persist with aspiration of pus and instillation of penicillin is useless. An empyema is cured by expansion of the lung. Once the pleura becomes so thick that the lung cannot re-expand, an empyema cannot be cured by any means short of an operation designed to move the chest wall in to meet the lung. Such a procedure is serious and deforming and often must be done in stages. Drainage of an empyema by resecting a small section of rib under local anæsthesia is such a trivial procedure compared to the operation for obliteration of chronic empyema that one is not justified in risking the possibility of having to do the latter in hopes of avoiding the former. It is rational then to treat an empyema by aspiration of pus and instillation of penicillin as long as rapid improvement is being made. If the patient becomes afebrile and the fluid decreases in amount, becomes sterile on culture and resembles the penicillin that was injected, satisfactory progress is being made. However, if the patient has a persistent fever, if the pus continues to accumulate and if the cavity fails to decrease rapidly in size, surgical drainage should be accomplished without further temporizing.

To summarize, use penicillin:

1. To cure small empyemas without loculation, lung sequestrums or bronchial fistulas.
2. To make large empyemas smaller.
3. To tide over a critically ill patient until he can be operated on safely.—*G.P.*

The value of early closure of wounds.—

Early closure of wounds is not a new treatment; it has been practised at various times during the last fifty years. Each time it has

been discarded as a dangerous form of treatment. However, the great advantage of the treatment has been missed: if a wound can be closed successfully at an early date, return to function, and, in many cases, return to full functions, will be assured in minimum time.

Burns and Young point out in their paper on the treatment of femur by closed methods (*Lancet*, 1945 (i), 236):

"In the 'Medical History of the War' Sir Anthony Bowlby quotes details of a series of 211 compound fractures of the femur treated by delayed primary suture, 161 being successful. He observes that the results were greatly improved in proportion as the practice of delayed primary suture increased. Closure diminishes the risk of all kinds of complications and gives rise to much more rapid union. In 1919 Pearson and Drummond were impressed with the importance of obtaining knee movements from the start."

These notes were written on experiences obtained during the last war, before the days of sulphanilamide and before Fleming had discovered the *penicillium notatum*. Such treatment could only be carried out under the most careful supervision because of the possibility of flaring-up of infection in soft tissue and joints.

In the period between the two wars, these valuable observations were forgotten, and no serious work was performed to ascertain the potentialities of this form of treatment in spite of the advances made in chemotherapy. It was considered unsafe to suture a wound involving a compound fracture after six hours, even if careful excision and wound toilet were performed.

At the beginning of this war, British surgery was greatly influenced by the work of Trueta and his colleagues dealing with Spanish Civil War casualties. The treatment consisted of laying open the wound and surgical debridement, and enclosing the limb in plaster with the wounds left open: partial closure was practised in some cases. Infection was controlled by the administration of sulphonamides, &c. The œdema was reduced by the immobilization and even pressure exerted by the plaster, and subsided with healing of the wound, but this might be slow if at all extensive. This form of treatment undoubtedly saved innumerable limbs which would otherwise have had to be amputated. The great disadvantage was that slow healing of the wound gave rise to massive fibrous tissue formation, bone and tendons were exposed for long periods in the discharging wound with resultant sloughing and necrosis, and joints become stiff from immobilization and fibrosis.

Early closure of wounds is the natural evolution in wound surgery which keeps abreast of the discoveries and acquired knowledge of the properties of sulphanilamide and penicillin. The bacteriostatic properties of these drugs have gone a long way towards removing the danger of septicæmia and wound cellulitis. Infection due to staphylococcus, streptococcus and gas gangrene can be completely controlled in the vast

majority of cases. These discoveries combined with new methods of resuscitation and blood transfusion render the patient a far more suitable subject on whom to try the lessons learned by earlier surgeons. This has been proved by Colonel Jeffries and his co-workers. Up to date these drugs have been used purely as defensive weapons against infection, and, as such, their value has not been exploited to the full.

The use of penicillin and early closure does not obviate full removal of all dead and infected tissue at the primary excision. Many of these wounds, if they reached the base hospital within a few hours of injury can be primarily sutured under penicillin with absolute safety, but when they have been several days in transit without adequate observation and regular administration of penicillin, it is unwise to resort to primary suture. Delayed closure is carried out at the base hospital, ideally between the third and twelfth days. The administration of penicillin is started before the patient goes to the theatre and in case of heavy infection, due to inadequate excision, a massive dose of penicillin or twenty-four hour course may be given first (depending on general condition). The wound is inspected, cleansed with saline or peroxide; any residual recesses examined for retained foreign bodies or completely loose bone, and a swab taken. The skin edges are freshened and freed; they are then sutured without tension. In wounds where the skin edges cannot be brought together without tension, and a large raw surface is left, closure is completed by the application of a Thiersch or split-skin graft, sutured to the periphery, and even pressure applied by flavine emulsion wool and a firm bandage.

By this combined method the complete closure of even the most extensive wound can be obtained. Penicillin is given systematically for five days. Local application of penicillin by means of tubes has been disappointing, the wound frequently breaking down and forming sinuses.

Advantage of early closure.—It is well known how indurated and scarred a limb may become around a chronic varicose ulcer or an extensive burn. The fibrous tissue forming under the granulating surface penetrates deep into the underlying structures. The pain from a raw surface prevents the patient from moving the limb, while contractures further limit joint movement. So also in the extensive soft tissue wound, as healing occurs a large scar will develop adherent to the underlying muscle.

It is practically impossible to keep a large granulating surface free from pathogenic organisms for any length of time. Any secondary infection developing is followed by fresh fibrous tissue formation. The depth to which this fibrous tissue may extend is seen at any operation on a raid casualty treated by the old methods. It may reach to underlying bone, binding skin, deep fascia and tendons down to bone, and make movement impossible.

Complete closure of a soft tissue wound will not only prevent reinfection of the

wound but will also reduce the amount of scarred tissue formation to a minimum. Oedema of the tissue will be absorbed rapidly as soon as the source of irritation is removed. The patient's pain will be relieved and of his own volition he will start using his limb and an earlier return to function is assured.

If the tissue can be drawn together by closure, the recesses in the wound will be shut down, thereby preventing the pooling of serum blood or pus. The early movement of the muscles of the limb will help to express any such collection.

The protection of tendons can be assured by closure of the wound by complete suture. Where it is necessary to complete the closure by skin graft, an adherent scar may result, but this can be excised later and a full-thickness graft applied when the tendon has been saved from initial destruction. In the case of compound fractures early closure of the wound is absolutely essential to prevent secondary infection reaching the bone. If it should be necessary to swing skin flaps or make parallel skin incisions to retain tension on the main incision, these secondary incisions can be Thiersch-grafted.

Burns and Young have shown in cases of fractured femurs treated by control of infection and early closure of wounds that movements can be started immediately, alignment being controlled by weight traction (Tr. of Fractured Femurs, *Lancet*, 1945 (i), 236).

Wounds of the knee-joint demonstrate very clearly the value of early closure. It has been long known that the synovial membrane can look after itself as long as it is not being bombarded by infection from a source within or outside the joint. It is the damage to the soft tissues and bone that determines the ultimate functional result of a knee-joint injury. After surgical toilet of the wound and removal of the foreign body the synovial membrane is closed. The soft tissues must then be drawn together and the wound completely sutured or grafted.

Early closure by suture and skin graft will ensure minimal extra-articular scarring and rapid absorption of oedema and swelling. Throughout, the infection must be controlled by the administration of penicillin and sulphanilamide systematically. Fluid collecting in the joints is aspirated and penicillin is instilled into the joint to keep up the concentration of penicillin in the synovial fluid.

Failure to obtain a good result in cases of penetrating wounds of skin-joints is usually where there has been excessive bone damage (articular) and where, owing to the soft tissue loss, the wound has not been closed.—Freebody in *P. R. S. M.*

Undescended testicle.—".....therapy by endocrine substances causes descent only of those testes that would have descended at the time of puberty without treatment. It is thought, however, that glandular treatment of the undescended testis is important for three reasons. First, since the testis cannot function properly except

within the environment of the scrotum, it is to be supposed that the earlier it reaches this normal environment the greater is its chance of normal spermatogenesis at puberty. Secondly, glandular therapy makes it possible to determine at an early age whether there exists some mechanical hindrance to normal descent. Thirdly, even though glandular therapy may be ineffective in causing descent of the testis, it facilitates subsequent orchidopexy by growth of the parts to be operated on.

"..... The dose of chorionic gonadotropin advocated by most writers is 12,000 international units administered over a period of about two months. It is thought that if no significant change has resulted from this amount it is useless to persist with endocrine treatment.....

"All surgeons agree that the testicle that at puberty has failed to descend spontaneously or by endocrine therapy should be placed in the scrotum if possible. The optimum age for operation is agreed by most surgeons to be just before or at puberty—some time before the fourteenth birthday."—Quinby, W. C. *New England J. Med.* 232: 701 (June 14) 1945.

Anaesthesia in the aged.—In an article dealing with the subject of choice of anaesthetic for the aged or elderly patient, Surg. Lieut.-Commr. E. H. Watts (*Canadian Medical Association Journal*, July 1945, 53, 20) draws attention to the need for a thorough investigation of the cardiovascular and respiratory systems and the state of the kidneys. Another factor to be borne in mind, which directly affects the choice of drug for pre-medication, is that of apprehension, owing no doubt to a subconscious idea that awakening may not take place after anaesthesia. If morphine must be employed in the presence of pain the dose should be light, rarely more than 1/6 of a grain. Atropine, in dosage up to 1/100 of a grain, and hyoscine, in dosage up to 1/150 of a grain, both control secretion and stimulate the basal centres, and, in addition, the latter drug produces a high degree of amnesia and good sedative effect. The barbiturates are respiratory depressants, but in the case of a local block or spinal anaesthesia they are most valuable; the maximum dose for an elderly patient, however, should be 1½ grains of nembutal, or a comparable dose of other selected drugs. As regards the choice of anaesthetics, although age and shock have been given as contra-indications to the use of intravenous pentothal sodium, supplemented by nitrous oxide and oxygen, this method of anaesthesia is stated to have proved to be a useful and excellent combination. In an aged patient the dosage should be initially very small and supplemented with small fractional doses, repeated more frequently, if necessary. In this way respiratory depression will not be a cause for concern. Cyclopropane possesses the advantages of rapid and smooth induction, rapid recovery and excellent relaxation, allowing for the use of high oxygen

concentrations. Ether, owing to its irritating effect on the lungs, liver and kidneys, is steadily decreasing in favour for elderly patients. Nitrous oxide is useful for minor operations, but there is always the danger of anoxaemia. Chloroform should not be used for elderly patients, unless its use is rendered compulsory by lack of other agents, as in country practice. Recognition of the value of continuous spiral anaesthesia for the elderly patient is growing. Here, again, proper supportive measures are necessary. The authors state that the dosage need never be high at any given

time; if initial massive dosage is employed, one of the main advantages is completely lost. Initial massive dosage of single administration results in high absorption and reactions. If this is avoided the patient need never have a large amount of the drug employed to de-toxify at any time. Another advantage of this method is that the dosage can be made to conform to the case. Using Lemmon's technique (*Ann. Surg.*, 1940, 111, 141) working against time is eliminated, and additional doses can be given if more time is required for the operation.—*Practitioner*.

OBSTETRICS and GYNÆCOLOGY

Treatment of fissured nipples with local applications of vitamin A and D ointment.—During two years of study by John C. Brougher (*Western Journal of Surgery, Obstetrics and Gynecology*) a group of 100 postpartum patients who complained of pain and tenderness of nipples, with or without grossly demonstrable fissures, were treated with local dressings of vitamin A and D ointment; a second group of 200 postpartum women had regular prophylactic dressings of vitamin A and D ointment applied to the nipples immediately after delivery and throughout the puerperal period; a third group of 200 postpartum patients had routine prophylactic care of the nipples with local measures other than vitamin A and D ointment.

In the first group of patients simple fissured treatment with vitamin ointment and

aided by the use of a glass nipple shield, often healed promptly with no cessation of nursing. Gratifying subjective relief, as objective improvement, was frequently noted.

A comparison of results in the second and third groups of patients indicates the prophylactic benefit of routine postpartum applications of the vitamin ointment. In the second groups in which the vitamin ointment was periodically applied to the nipples from the time of delivery through the postpartum period, 12 per cent. more patients were able to nurse their babies than in the control group. In the latter group there were 15 grossly fissured nipples and 3 breast abscesses; in the group routinely dressed with the vitamin ointment there were only 5 fissured nipples and 1 breast abscess.—*G.P.*

Proceedings of Associations

Guntur District Medical Association ANNUAL REPORT

Extracts from the Annual Report of the Secretary for 1944-45 as approved and recommended by the Managing Committee for adoption by the General Body:—

We held five general meetings and six Managing Committee meetings in the year under report. The attendance at all the meetings was fairly good. Our present strength of membership this day is 76 as against 57 the same day last year. It is gratifying to mention that 50 members do belong to the Guntur town itself. Our financial position is sound; Rs. 823-4-3 has been standing to our credit on 1-10-45, though the outstanding arrears due mounted up to Rs. 300. During the year, a branch of the I.M.A. has been opened at Chirala. When there was no other branch in this district, our strength did not go beyond 80 in number. After opening branches at Ongole, Tenali and Chirala, the total strength of the I.M.A. in this district rose to about 125, as it is to-day.

REMITTANCES OF CENTRAL FUND CONTRIBUTIONS TO THE I.M.A.—So far in any year we had no hitch over these remittances either with the headquarters or the Andhra Provincial Branch. As per Rule 1 A (c)

of the I.M.A. the branches are held responsible direct to the head office, Calcutta, and we have been following the rule strictly. Further the Working Committee of the I.M.A. on 26-2-44 passed a resolution that the headquarters itself would collect Central Fund contributions from branches in Andhra since the Andhra Provincial Branch had fallen into arrears. If the I.M.A. should change its rules and direct the branches in Andhra to send Central Fund contribution and membership forms, etc., to the Andhra Provincial Branch we shall certainly have no objection to do so.

MEMBERSHIP DRIVE :—Dr. P. V. Chowdary and myself at our own expense visited the places and converted the District Medical Associations at Chittoor, Kurnool and Anantapur into District Branches of the I.M.A. and also opened branches of I.M.A. at Chirala and Giddalore. Besides, I addressed the Medical Associations at Nellore, Tenali, Ongole, Bellary, Chingleput, Cuddalore and lastly at Gudivada on 28-10-45 to stimulate enthusiasm among doctors to join I.M.A. The new branches have come into existence from 1-10-45.

ELECTIONS TO MEDICAL COUNCILS :—You are aware that my contention has been that I.M.A. though I be a candidate should not

be made to commit itself to elections officially. The I.M.A. would not only be making invidious differences between its own members, but also providing scope for dividing itself into opposing camps and parties. The present strength of I.M.A. in Andhra is only 460 out of about 3,000 doctors. When the total strength of I.M.A. is considered, it is only 8,500 out of 42,000 doctors in India. In either case the percentage is below twenty. The headquarters of the I.M.A. while agreeing with my views further pointed out that the rules of the I.M.A. and also the Government Servants' Conduct Rules were against I.M.A. taking part officially in any elections. One must contest elections on his own personal merits. If he should fail the fair name of I.M.A. at its present young age would not suffer. If he gets success, he will bring credit to I.M.A. as its worthy member. The scope of my report does not permit me to say further, since our Managing Committee has already resolved to recommend to this General Body to appoint a Sub-Committee to study the several allegations made against the Guntur Branch in the Annual Report of the Andhra Provincial Branch Council and other proceedings of it, as adopted at its meeting held at Vizag. on 12-10-45 with reference to Madras Government Ban, North Vizag Medical Relief Fund and Medical Council elections. So, I leave the matter there.

In closing my report, I should say that I have been working with the noble ideal before me to serve the noble profession; and I have determined to continue my efforts to work for the cause of the I.M.A.; and also to raise Guntur branch of the I.M.A. to the front rank of the medical profession not only in Andhra but also

in India. The medical profession at Guntur should prove itself a beacon light to the rest of the profession in India. I hope it is not a difficult matter, provided we keep our unity and solidarity intact and undisturbed. I am sure that we can run any business in the spirit of a team work.

12th Session of the Bengal Provincial Medical Licentiates' Conference, 1946.

The 12th Session of the Bengal Provincial Medical Licentiates' Conference under the auspices of the All-India Medical Licentiates' Association will be held at Howrah on the 26th (Saturday) and 27th (Sunday) January, 1946.

A 'Souvenir' for the occasion will be published for free distribution to the visitors and to other branches throughout India.

Bhagalpur Medical Officer's Association.

At the meeting of the Executive Committee held on 29-11-45 with Rai Bahadur B. K. Rai, M.B., D.M.H.E. (Cantab.), Civil Surgeon, Bhagalpur, in the chair, the utility of an organisation of all the medical officers serving under the local bodies of the Bihar Government was considered and it was resolved that the Secretary be authorised to contact the Health Officers of all the District Boards in the matter.

It was resolved that the vaccination in dispensaries be pushed on as far as possible by the dispensary staff and itself as there is no compulsion over the staff for any minimum daily number of vaccinations. The medical officers were requested to keep a separate register for vaccination which should be supplied by the district board.

Book Reviews

The Principles and Practice of Rectal Surgery: by WILLIAM B. GABRIEL, M.S., London, F.R.C.S. (Eng.), Surgeon to St. Mark's Hospital for Cancer, Fistula and Other Diseases of the Rectum—1945—third edition—432 pages with 11 coloured plates and 237 illustrations, (H. K. Lewis & Co., Ltd., London).

This book was first published in 1932—the second edition appeared in 1937. The interval of seven years since the publication of the second edition has witnessed a considerable increase in the knowledge of rectal diseases and their treatment. Dr. Gabriel who, perhaps, may be considered as one of the authorities on the subject, has chiefly stressed on the practical side of this subject—diagnosis and treatment—and has given attention even to the smallest details upon which success in rectal surgery depends. Details of examination, preparation and after treatment have also been very thoroughly described. In this book the chapter on Surgical Anatomy has been revised. The section on the diagnosis and treatment of fungus infections of the anal region has been written in collaboration

with Dr. Henry Semon. A new chapter on proctitis has been included. A special feature of this book has been the large number of illustrations, the majority of which are original. In this edition, the author has reproduced a number of illustrations from contemporary journals to illustrate his articles and they have certainly enhanced their value. The author has definitely succeeded in bringing out an authoritative work on the subject of rectal diseases and we congratulate him on his masterpiece. The printing and the general get-up and the illustrations are all of a very high standard. The publishers have also to be congratulated for it.

Medical Jurisprudence and Toxicology—By RAI BAHADUR JAISING P. MODI, L.R.C.P. & S., (Edin), L.R.F.P.S., (Glasgow), 1945. eighth edition revised, 766 pages with three plates and 169 illustrations—(N. M. Tripathi Ltd., Princess Street, Bombay-2.) Price Rs. 20/-

The book under review is the eighth edition of the well-known textbook of Medical Jurisprudence and Toxicology. The present

edition has been revised throughout, and certain sections, especially of toxicology, have been rearranged and rewritten. New sections of Thymol, Methylbromide, Avertin, Tetrachlorethane, Trichlorethylene, Amidopyrin, (Pyramidon), Phenylenediamides, Pyridine, Nutmeg, Mescal Buttons, (Peyotl), Pilocarpus, Microphyllus (Jaborandi), Areca or Bétel Nut and Strophanthus have been inserted and some new illustrations and descriptive medico-legal cases introduced.

As usual, the book is divided into two sections—the first dealing with Medical Jurisprudence and the second on toxicology. The very useful appendix contains the relevant portions of the Indian Evidence Act, the Indian Penal Code, the Code of Criminal Procedure and forms required by the Indian Lunacy Act. The book maintains the excellent standard of the previous editions and is well got-up and well printed. We should certainly consider this to be one of the standard books on the subject of Medical Jurisprudence and Toxicology in India. We recommend this book whole-heartedly and congratulate the author and the publishers on the production of such a useful book.

The Venereal Diseases—A Manual for Practitioners and Students by JAMES MARSHALL, M.B.B.S., M.R.C.S., L.R.C.P., 1945. 348 pages—illustrated—(Macmillan & Co., Ltd., London).

At the present moment, the problem of Venereal Diseases is very important. There is no denying the fact that it is widespread and there is no need also to stress that there has been rapid progress and research in its treatment. A book like this is very welcome in that it gives the general practitioner and students the very latest in the diagnosis and treatment of venereal diseases. The knowledge given is up-to-date. The illustrations and the printing are very good. General practitioners and students will find this a very useful volume.

Synopsis of Tropical Medicine. By SIR PHILIP MANSON-BAHR, G.M.C., D.S.O., M.D., F.R.C.P. 1944, 244 pages with 5 plates, (Cassell & Co., Ltd.).

This synopsis has been written in response to numerous requests to provide a guide to tropical medicine in a condensed form, suitable for medical officers in the Armed Forces and others who may be called to treat these cases in the tropics. This small book, within a short space of 200 pages has given all the latest information on the diagnosis and treatment of tropical diseases. The material is up-to-date and the presentation also is very good. It will be a very useful "aid" to those who work in the tropics.

Physical Treatment by Movement, Manipulation and Massage. By JAMES B. MENNELL, M.A., M.D., B.O., (CANTAB), etc., Consulting Physio-therapist, St. Thomas's Hospital. 1945. Fifth Edition, 512 pages

with 288 illustrations, some in colour. (J. & A. Churchill Ltd., London).

The idea of the author in writing this book was to point out to the practising masseurs and masseuses the rationale of massage treatment and to endeavour to introduce into their technique the care and gentleness which appear to be the key to success. He also wanted to place in the hands of doctors a book to which they can refer when issuing instructions to their masseurs. The subject matter of this book is so important but so little understood that Dr. Mennell's book will form a real guide to any one interested in this work. Such important subjects as Different Movements of Massage, The Treatment of Injuries, Fractures, Sprains by mobilisation and massage, The re-education of Muscle, Value of Massage in diseases like Neuresthenia, Hysteria, Neuralgia, Neuritis, Backache, and Deformities are dealt with in this book. It is difficult to realise the value of this treatment in the various diseases until and unless one reads this book in some detail. This is a good book on a very important subject.

Operative Procedure 1944. Published by Johnson & Johnson (Great Britain) Ltd.

This book which is a compilation of a series of plates published by Johnson & Johnson in all the leading surgical journals of the U.S.A. was first published in U.S.A. where it has proved of great service to surgeons and medical students. The few copies which reached this country, have been so warmly welcomed that the publishers decided to print a British Edition of the book. In the selection of subjects for this series, the help of several surgeons was obtained in pointing out not only the most timely technique but likewise the outstanding steps. The artist has, therefore, accurately illustrated the most approved techniques in surgery in a new, novel and original manner.

An Outline of Tropical Medicine.—By OTTO SAPHIR, M.D., Professor of Pathology, University of Illinois College of Medicine, 1945—The Michael Reese Research Foundation, Chicago.

This book is published for the Michael Reese Hospital, by the Michael Reese Research Foundation. It is meant to be a ready reference book to be of use to American physicians in treating tropical diseases in American soldiers returning from the various theatres of War. The subject of Tropical Medicine, has until now, been only of academic interest to most people in America and this war has brought most of the tropical diseases almost into every home, and the Foundation must be congratulated on the forethought with which they have acted promptly. Dr. SAPHIR, in his book has only given the barest essentials and the most important diseases encountered in the study of Tropical Medicine. It is just a compilation which is written in a simple style and contains many practical points,

Correspondence

Uncalled for and Unnecessary

To, The Editors, THE ANTISEPTIC, Madras.
Sir,

May I bring to the notice of Dr. T. S. S. Rajan, through your esteemed columns, that his reference to the School of Indian Medicine in his welcome address to the delegates of the South Indian Provincial Conference (Indian Medical Association), Trichinopoly, was uncalled for and unnecessary as it was not a subject relevant to the politics of I.M.A. He started with the concept of Ayurvedic theories of public health which according to him are out-dated—and jumps to express the benign intentions of the late Congress ministry in Madras.

The delegates might have been amused at the revelation of the discovery of an ex-

Minister of Health, in an institution in his auspices possessing a shelf of *unused retorts* and test tubes. Had intentions been honest as expressed there was scope for positive action. But the Hon. ex-Minister wanted to extract sand from under the feet and he was shown that this group could still stand. Possibly he has forgotten what all he did. If he could have access he will do well to go through those worthy files and refresh his memory.

The subsequent confessions of plausible intentions is possibly the propaganda of the coming hope of office. You are of my blood, I still trust you but cannot mistake your glitter with its absence within.

"Server Manzil" } Yours truly,
Vepery, P.O., } AHMED HUSAIN,
Madras, 20-11-'45 } L.I.M.

Preparations and Inventions

Planocaine solution tablets, designed for extemporaneous preparation of fresh ionic solutions of procaine hydrochloride containing adrenaline in any required strength, are prepared by May and Baker. The tablets are issued in two strengths and designated PLANOCAINE "T" and PLANOCAINE "T 10."

Planocaine "T" contains procaine hydrochloride 0.02 gm. and adrenaline 0.00002 gm. in each tablet, together with a stabilising

agent. Solutions of any desired strength in any required quantity can be readily prepared by dissolving aseptically the appropriate number of tablets in the required volume of sterile redistilled water.

Planocaine "T 10" contains 0.2 gm. of procaine hydrochloride and 0.0002 gm. of adrenaline in each tablet, together with a stabilising agent.

These are supplied in containers of 25 tablets.

News and Notes

"Blood"—The Journal of Hematology.

The launching issue of *Blood—The Journal of Hematology*, to appear in January, will establish another significant "first" in the annals of American scientific publication. Devoted exclusively to the field of the blood and blood-forming organs, the new periodical will, we have no doubt, serve a notably advancing branch of medical practice and research that has never till now had an organ of its own in the Western Hemisphere.

Dr. William Dameshek of Boston is Editor-in-chief, with Dr. Charles A. Doan,

Columbus, O., Dr. Thomas Hale Ham, A. U. S., Edgewood Arsenal, Md., Dr. Roy R. Kracke, Birmingham, Ala., Dr. Nathan Rosenthal, New York, and Dr. Maxwell M. Wintrobe, Salt Lake City; as associate editors. Dr. George R. Minot of Boston is consulting editor. An advisory editorial board has been named from among ranking specialists to represent all aspects of hematologic work.

The journal will be published bimonthly, constituting an annual volume of approximately 500 pages. Monographic supplements and special symposium numbers will also be issued.

A Query

Can sexual weakness of a male exert any influence in the atrophy of the muscles, specially those of hands (the part above the wrists) and the legs as a whole?

I have got one patient whose legs and hands (the parts above the wrists) are thinner in proportion to his body. He had

a habit of doing gymnastics but not of parallelogram, the figure improved much but not the affected parts. Is there any good patent remedy for it?

Tea Estate, } Yours faithfully,
Jalpaiguri } SUKUMAR GHATAK,
24-19-1945. } A. M. O. Mathura,

ANNOUNCING!

Adi-gel

ALUMINIUM HYDROXIDE GEL

Amphoteric—Colloidal—Aluminium Hydroxide Gel—totally free from alkalies. Pleasant and palatable Antacid for Hyperacidity, Flatulence, Indigestion, etc., etc.,

Allays irritation in Peptic Ulcers, and promptly relieves pain. In Ulcerative Colitis, rectal injections of ADIGEL with Kaolin and Liquid Paraffin give excellent results.

External applications of ADIGEL in Weeping Eczema, Impetigo, Epidermophytosis, Tinea Cruris, Ringworm, etc., produce a soothing, adherent coat, which checks acid exudation and augments cure.

8 oz. Bottles.

ALLIED DRUG INDUSTRIES LIMITED,

Manufacturing Chemists,

Chief Sales Office:
2, Mission Row,
CALCUTTA.

Telephone: Cal. 4141.

Laboratories:
ADI PARK,
Entally, Calcutta.

PARK 3266.

Telegrams:—"ADISEPTULE" Calcutta.

AGENTS:—P. R. JOSHI, NAYAGAON, LUCKNOW for U. P.,—SOUTH INDIA AGENCIES, 117, ARMENIAN STREET, MADRAS for South India; SHRI DURGA ALLIED AGENCIES, TADEPALLIGUDEM, for Andhra District area. INDO-CONTINENTAL PHARMACEUTICALS AGENCY, 13, NOBLE CHAMBERS, 116, PARSEE BAZAR STREET, FORT, BOMBAY for Bombay area.

JAMMI'S LIVER CURE

For Infantile Cirrhosis of the Liver

36 years of reputation and therapeutic record must convince physicians that JAMMI'S LIVER CURE is the one remedy known to medical service that has con-

sistently proved its curative value even in advanced cases of this dreaded disease and enjoys the exclusive preference of leading doctors over other treatment.

THE INEVITABLE CHOICE OF LEADING DOCTORS EVERYWHERE

JAMMI VENKATARAMANAYYA & SONS, : Mylapore, Madras.

Sub Office: Kumbakonam (S.I Ry.)

Branches: Bombay, Calcutta, Trichinopoly, Bangalore & Vizianagaram.

BROMARSITONE

SEDATIVE-RECONSTITUENT-
NEUROTIC

A sterile solution of Phosphorus, Iron, Arsenic, Bromides and Valerian.

Packing: 12 amps. x 2 c.c.

ACRIMIDE OINTMENT

AN ANTISEPTIC, NON-TOXIC
AND SOOTHING OINTMENT

Containing: Sulphanilamide, Cod-liver Oil, Acriflavine, Zinc Oxide, Aromatic Lanoline Vaseline base.

Packings: 1/2 oz., 2 oz., 16 oz.

Literature on request to:

UNITED PHARMACEUTICAL CO.,

Gokhale Building,
GIRGAON, BOMBAY 4

An Elegant
Reconstructive
Vitamin
Mineral
Tonic



• A Palatable
Elixir of vitamins
C & B complex
with Minerals for
Stimulating
General Metabo-
lism & Appetite.

A PHONIX DRUG HOUSE PRODUCT

Sole Selling Agents:—FAIRFIELD SYNDICATE, 10, Bonfield Lane, CALCUTTA.

Grams: "FAIRSYNDIC"

P. O. Box 503.

Phone: B. B. 5555

ARSENO-TYPHOID

A QUICK REMEDY FOR
FILARIA

FOR
ELEPHANTOID LEGS,
HANDS, FILARIAL SCRO-
TUM, WEEPING BREASTS
AND EVERY FORM OF
FILARIASIS

Particulars free from

CALCUTTA CLINICAL RESEARCH,
6, CHOWRINGHEE ROAD, CALCUTTA

BISMUDAL

Chemically pure and stable
suspensoid of Bismuth for treat-
ment of **SYPHILIS** in all its
stages and complications.

An easily injectable aqueous
suspension readily absorbed and
rapidly eliminated.

Absolutely non-toxic and painless.

For literatures please apply to:—

MEDICAL SUPPLY CONCE'N LTD.
197, Cornwallis Street, CALCUTTA.

LUNASAN

for
Mental Diseases

Indicated in cases of Insanity,
Blood-pressure, Hysteria,
Sleeplessness etc.

Large Phial Rs. 8/-; Small Rs. 5/-

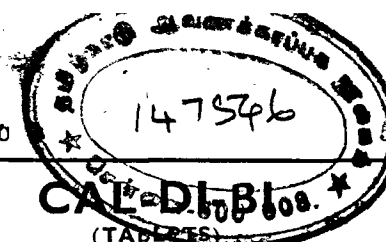
NEO-SAN

For New life and Vigour

Composed of Gold, Musk, Calcium,
Vitamin B₁ etc.

Large Phial Rs. 10/-; Small Rs. 6/-

S. BHATTACHARYYA & CO.,
Post Box No. 11436 :: CALCUTTA.



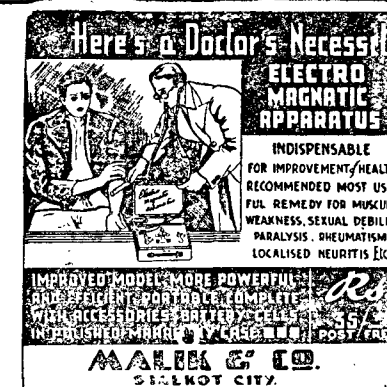
For effective oral Calcium Administration

Contains:

Calcium Gluconate 7 1/2 grs.; Calcium Glyce-
rophos 1 gr. Vitamin B₁ 333 I.U.; Vitamin
D 500 I.U.; Excipient (Flavoured) q.s.

PRIMCO LIMITED

Head Office: Lamington Chambers, Bombay 4
Branches: Thambu Chetty St., G. T., Madras;
66, College Street, Calcutta.



'COSMO'

A unique glands combination. According
to the latest scientific experiments with
the addition of IRON and VEGETABLE
extracts. 'COSMO' is indicated in
sleeplessness, loss of appetite nervousness
and in combating old age and its ailments.
'COSMO' infuses energy to the nerves,
muscles and vital organs (Literature on
request)

COSMO of 50 Tablets Bottle Rs. 10.

S. A. GRACELY DRUG CO.,
224, BAZAR ROAD BANDRA (BOMBAY 20)

A QUICK REMEDY
for
MALARIA

QUINO LIVO CIN

Prepared in our laboratory for the
first time in India

For further particulars apply to:—

MODERN DRUG HOUSE
72-B, ASHUTOSH MUKHERJEE ROAD-CALCUTTA.

ENTERO-QUINOL

Iodochloroxyquinoline

The ideal Chemotherapeutic agent
For the treatment of acute and chronic Amoebic
Dysentery and Intestinal Amoebiasis.

Prepared for the first time in India in our Research Laboratory.

Issued in
Tubes of 20 tablets
of 0.25 gm. each.

For further particulars please write to :
EAST INDIA PHARMACEUTICAL WORKS LTD.,
TOLLYGUNGE: CALCUTTA.



Put a few drops in your eyes. One-minute Cure for
Scorpion bites. Safe Remedy for young and old.
Experience alone will virtues unfold.

Half oz. bottle Re. -/13/-. One oz. bottle Re. 1/4/-

Apply for Catalogue of other preparations :—

Sole distributors:—**DEODHAR BROS.**
National Insurance Building,
204, Hornby Road, Fort Bombay 1.

Grams: "PENIVAZ"

When writing to advertisers, please mention the "Antiseptic."

PULV. ANTI-DYSENTRICA

The Only Power Preparation of ingredients recognised by ALLOPETHIC as well as AYURVEDIC Science for Dysentery and Diarrhoea.

It is indicated in cases of dysentery and other allied conditions of Diarrhoea in which the looseness of the bowels is due to inflammatory changes in the Intestinal Tract. It is a specific for Dysentery. The use of this preparation does away with necessity of giving purgatives or any other auxiliary treatment.

PRICE: Trial size Re. 1/- a bottle
2 ozs. Rs. 1/8- per bottle.

Packing and postage extra.

Agents: BOMBAY: PAREKH TRADING CO., Princess Street, BOMBAY 2.
MADRAS: B. V. RAMANJULU & CO., 159, Broadway, G. T., MADRAS.

SYRUP LEUCORHÆNA

Indicated in: LEUCORHÆNA
DYSMENORRÆNA &
ALLIED DISEASES

TILL RECENTLY:

Douching by sedative antiseptic or astringent lotions as the cases required assisted by general and uterine tonics was the treatment in vogue. The results were far from satisfactory.....

.....and now

The complaint being now accepted to be constitutional rather than local, medical men began looking for drugs and combinations which may influence the local condition at the same time correcting the constitutional trouble.

ESCORVAL'S SYRUP LEUCORHÆNA has more than justified the expectations of the scientist of Clarke Co.

PRICE: 8 oz. size: Rs. 2/4/-
16 oz. size: Rs. 4/-
Products of Clarke & Co.



Offers the latest rational therapy in
ASTHMA AND FILARIASIS

It contains a special allergy desensitising polypeptide.
derived from crustaceans, in stable organic arsenic solution.

Issued in box of 6 x 1 c.c. ampoules

N. B.—It does not contain any Vaccine.

FOR SAMPLES AND LITERATURES WRITE TO:

UNIQUE DRUG HOUSE LTD.,
23, Iswar Mill Lane, CALCUTTA.

When writing to advertisers, please mention the "Antiseptic."

DOCTORS & CHEMISTS

GLYCERINE is an important ingredient in soothing mixtures and ointments for the relief of pain and suffering. It is also a solvent for Pharmaceutical extracts. Doctors and Chemists should, therefore, use only the purest quality available. '501' Glycerine conforms to the highest standard namely that of the British Pharmacopoeia.

Supplies of '501' Glycerine are now available and wise Chemists will find it worth while to carry ready stocks, so as to meet the demands of their clients.



For particulars regarding price and packing please apply to:-

Tomco Sales Department

19-A, Vanter Street, P.B. No. 31, Madras.

THE TATA OIL MILLS CO., LTD.



CATARACT KNIVES

Graefe's Cataract Knives manufactured by us have given satisfaction to leading ophthalmic Surgeons all over India.

- Up-to-date machinery
- Skilled Labour
- Expert Supervision

Heat treatment and tempering a speciality with us, being done by gas-fired pyrometrically controlled furnace.

We also repair and resharpen old Cataract Knives and other Eye instruments.

H. Mukerji & Co., Ltd.

Makers & Importers of Surgical Instruments and appliances

39/1, College Street - CALCUTTA.



50 tablets Rs 2/- 500—Rs. 3/8/-
500 " " 16/- 1,000— " 30/-

Literatures and clinical reports FREE.

Manufactured by: Himco Laboratories who gave you Diabetox, Leucol, Cystone, Eph'one, Malarina, etc., & c.

This is an Announcement and not a Prospectus

Copy of Prospectus has been filed with the Registrar, Joint Stock Companies and it may be obtained on application.

ADCCO LIMITED

A LEADING PHARMACEUTICAL CONCERN

(Incorporated under Indian Companies Act)

KALIGHAT : CALCUTTA

AUTHORISED CAPITAL ... Rs. 25,00,000

ISSUED CAPITAL ... Rs. 3,00,000

Present Issue to the public—2180 Ordinary 'A' Class Shares of Rs. 100/- each, payable Rs. 20/- with application, Rs. 20/- on allotment and the rest in 3 equal instalments at not less than three months intervals. Admission Fee Re. 1/-

The Company intends to restrict the allotment of shares only amongst the Doctors, Chemists, Pharmacists and persons connected in the trade of medicine.

DIVIDEND PAID IN—1943—10%, 1944—10%
1945—(Expected) 10% (Free from Income Tax)

BOARD OF DIRECTORS

1. Mr. J. N. MUKHERJEE, A.M.E.E., A.M.M.E., Chairman, Mechanical & Electrical Engineer, Chairman, Eastern Farming & Industries Ltd.
2. Mr. A. D. BHATIA, Chairman, Bharati Rasayanagar Ltd., Mg. Director, Gopal Medical Hall Ltd.
3. Mr. J. C. GANGULY, M.Sc., Formerly with B.C.P.W., Director, Bharati Rasayanagr Ltd..
4. Mr. N. C. Mukherjee, A.M.Ch.E., Chemical Engineer, (Ex-officio) Mg. Director, Solar Press & Publicity Ltd., Mg. Director, Giemee Traders Ltd., Mg. Agents to Bharati Rasayanagar Ltd.
5. Dr. N. ROY, M.B., D.T.M. (Ex-officio).
6. Vaidyacharya Kaviraj Nalini Ranjan Sen, Kavya-Vyakaran-Sankhya-Tarkatirtha, Principal, Ashtanga Ayurved Vidyalaya, Calcutta.

Managing Agents,
GIEMEE TRADERS LTD.,

Auditors,
H. P. DE & CO.
Registered Accountants

Consent of the Central Government has been obtained to this issue under D. I. Rules 94A. It must be distinctly understood that in giving this consent the Govt. of India do not take any responsibility for the soundness of any schemes or for the correctness of any statements made.

When writing to advertisers, please mention the "Antiseptic."

When writing to advertisers, please mention the "Antiseptic."



The
DUO-THERAPY
UNIT
MODEL VII

FOR COMBINED ULTRA-VIOLET and INFRA-RED IRRADIATION

When administering actinotherapy you employ two groups of radiations—the tonic, regenerative ultra-violet and the palliative, decongestive infra-red. Like acid and alkaline principles in pharmacognosy, these two complement and interact with each other; in many conditions a combination of the two groups gives the best clinical results.

The Duo-Therapy Unit equips you with full facilities for applying either or both groups, separately or conjointly, accurately and conveniently. The Unit embodies two standard therapeutic lamps:—

The ALPINE SUN (Model VII) the intense mercury arc source for ultra-violet irradiation.

The SOLLUX LAMP (Model VII) for radiant heat and/or infra-red irradiation.

Both sources operate from one outlet. Each has independent controls and adjustments. The combination gives a compact, powerful economical unit for all-round actinotherapy.

Ask nearest Hanovia Agent for copy of prospectus
No. 125 and details of the Duo-Therapy Unit

Hanovia Agents in India:

MALGHAM BROS.

26 Custom House Road
Fort, BOMBAY

ADAIR, DUTT & CO., LTD.

5 Dalhousie Square East
CALCUTTA



The Duo-Therapy Unit is manufactured by HANOVIA LTD., the Specialists in Actinotherapy Lamps, SLOUGH, England.

When writing to advertisers, please mention the "Antiseptic."



*External treatment
of congestions and
inflammations*

Alembic Alcophlogistin



When treatment by continuous application of moist heat is required, Alcophlogistin is the ideal medium. To overcome congestion and inflammation it can be directly applied to the inflamed or congested area; being antiseptic, it can be used even where the skin is broken.

Alcophlogistin is prepared from dehydrated and sterilized Aluminium silicate chemically pure concentrated glycerine, minute quantities of boric and salicylic acids, oils of peppermint and eucalyptus, compounds of Iodine and methyl salicylate.

INDICATIONS
 Boils: abscesses: chronic ulcers:
 pneumonia: pleurisy: influenza:
 colds: sore throat: sunburn:
 external piles: inflamed breasts:
 swollen joints: eczema: tonsil-
 litis: buboes: orchitis and swol-
 len glands.

ALEMBIC

CHEMICAL WORKS
CO., LTD., BARODA

AL 237.

★ ★ ★

For

HIGH GRADE PHARMACEUTICALS



BIDDLE SAWYER & CO., LTD.

BIDDLE SAWYER & CO., LTD., "EMPIRE HOUSE",
St. MARTINS-LE-GRAND, LONDON, E.C.1, represented
in India by: BIDDLE SAWYER & CO. India, LTD.,
PRINCE'S DOCK, FREER ROAD, BOMBAY 9. Importers
and Exporters of Fine Chemicals, Drugs, Galenicals,
Hormones, etc., etc. Offices: LONDON, NEW YORK, RIO
de JANEIRO, BOMBAY. Agents throughout the world.



DJK 5011

★ ★ ★

When writing to advertisers, please mention the "Antiseptic."

"I CANNOT SLEEP, DOCTOR!"

Every doctor numbers among his patients many whose chief concern and main reason for seeking advice is loss of sleep. This loss is often less real than the patient supposes. Several hours are spent in sleep, yet the patient complains of feeling tired, unfresh and incapable of doing a good day's work. What is required is something which will lessen the gap between the states of wakefulness and of being sound asleep and which will enable the patient to awake feeling rested, refreshed and energised.

In practice Horlicks proves most effective in producing sound and restful sleep. It adequately buffers the CO₂ content of the blood, neutralises gastric acidity and promotes gastric comfort, thus helping to bring about the mental and physical relaxation so essential for sound sleep.



When writing to advertisers, please mention the "Antiseptic."

SUBSTITUTE FOR COD LIVER OIL

"MORHUSYN"

MORHUSYN is an effective improvement over Cod Liver Oil, without any of its disagreeable taste or smell. It is a valuable nutritive tonic, most easily assimilable and non-constipating.

Morhusyn is especially indicated for improving weight and improving the general conditions. Its effects are best seen in tuberculosis, all forms of wasting diseases, infections of the lungs or bronchi, and nutritional disorders. It is an ideal tonic for under-grown, undeveloped and undernourished children.

COMPOSITION: Active, essential constituents of fresh cod liver oil, oleum morrhuae, combined with traces of copper, manganese, iron, calcium, arsenic and juices of fresh fruits in a sweet medium

IMPROVED PALATABLE

Packing: 6 oz., 1 lb. and 1 gallon (for Hospitals)

SOME OTHER PRODUCTS: ADRENALINE chlor. amp.—ASMO SYN tab. (for asthma)—BLISTYN jelly (for burns)—CALCIUM-D tab. & syrup—CYLOTOSYN amp. (replacing Cylotropin)—EMETINE amp.—EPHEDRINE amp.—FEROSYN tonic (for anaemias)—IGOSYN tab. (for arteriosclerosis)—PECTUSYN (cough syrup)—STRYCHNINE amp.—SYLAX (laxative)—SYN-TONIC (tonic for adults and children)—TANNOSYN tab. (for diarrhoea).

Copyright: Syntetic (India) Ltd. J.W.T.(E) LTD.

VITAMINS

A B₁ B₂ C D K & B complex

SYNTHETIC

Chemically & Biologically Tested

SYNTHETIC (INDIA) LTD., Sleater Rd., Bombay 7.

Copyright: Syntetic (India) Ltd. J.W.T.(E) LTD.

A LIVER EXTRACT of Exceptional Potency

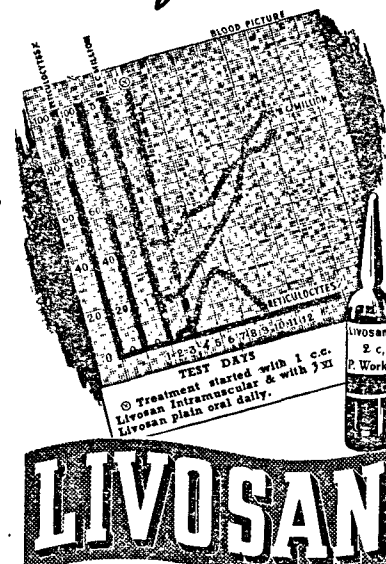
LIVOSAN (INJECTIBLE).

A total extract of liver in a highly concentrated and purified state, conserving all the active constituents of liver including vitamin B. Patronized for its exceptional potency by many Govt., Civil, Military and Mission Hospitals and thousands of doctors. 2 cc of Livosan is equivalent to 1000 grams of fresh liver taken orally and absorbed.

Supplied in 2 cc and 5 cc ampoules and 10 cc rubber stoppered phials.

LIVOSAN "FORTE" (INJECTIBLE).

Anti-anæmic principle isolated in pure state by methods of Dakin and West; issued



in 2 cc ampoules; three times stronger than ordinary Livosan injectible, but made absolutely painless by a special process. 1 to 2 injections sufficient to restore the blood picture in very severe cases of anaemia. Safe, convenient and economical both for the doctor and the patient.

LIVOSAN "T" (INJECTIBLE).

An injectible liver preparation containing—besides the natural vitamin constituents of liver—10 milligrammes of Nicotinic Acid for each 2 cc of LIVOSAN FORTE.

Specially indicated in all tropical anaemias associated with gastro-intestinal symptoms akin to Sprue—Syndrome and also in pregnancy anaemias.

THE ANDHRA PHARMACEUTICAL WORKS LTD., BEZWADA

IT'S ON THE CARDS PHYSICIANS PRESCRIBE THESE

KASAN

King of Cough Remedies

Kasan is an excellent sedative, expectorant and antiseptic to the respiratory passages. It instantly relieves troublesome and unproductive cough, facilitates easy expulsion of liquid sputum and has a healing and tonic effect on the respiratory and pulmonary systems. Indicated in Acute and Chronic Bronchitis, Pneumonia, Whooping Cough, Asthma and all other chronic or acute respiratory troubles.

VINOSAN

BRACE-S up weak systems

To our preparation Draksha Asva are added Glycero-phosphates of Calcium, Sodium and other minerals. This results in Vinosan, a rich and energising tonic which strengthens the nervous system and checks wasting diseases. Excellent on all nervous weaknesses, wasting diseases and devitalised conditions due to Malaria, Anaemia, Tuberculosis, etc.

ANDHRA PHARMACEUTICAL WORKS LTD., BEZWADA

When writing to advertisers, please mention the "Antiseptic."

INTRODUCING

• BIVIPLEX

a Vitamin B complex preparation for quick and efficient treatment of B complex deficiency.

Available as Syrup, Tablets and Ampoules.

• ANASCAB

25% W/V Benzyl Benzoate Emulsion for clean and effective treatment of Scabies.

Available in bottle of 4 ozs. and 8 ozs.

• OVESTROL

A preparation of Stilboestrol Dipropionate in combination with assimilable Calcium, Thyroid and Vitamin B Complex for economical Estrogen Therapy.

Available as tablets, for oral administration and ampoules for Intramuscular use.

AVAILABLE AT ALL CHEMISTS

Chemo-Pharma Laboratories Ltd.,

King's Lodge, Lamington Road, Byculla

BOMBAY.

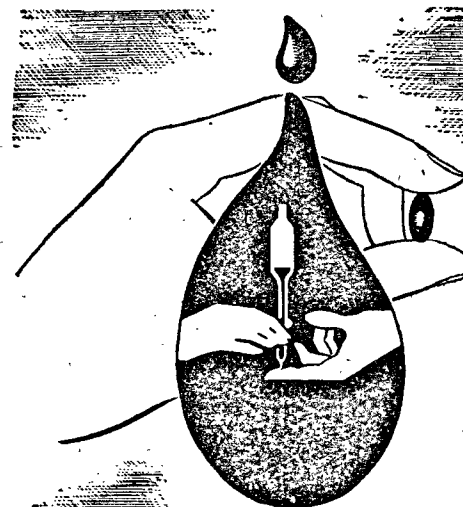
Agents for Northern & Central India

MESSRS. RANBAXY & Co., P. O. Box 104, NEW DELHI.

Agents for S.M.C. The Karnatak & Mysore State

MESSRS. MCKENSONS, P. O. Box 4533, BOMBAY 8.

When writing to advertisers, please mention the "Antiseptic."



Look at the Blood!

Because of the emphatic need for iron to provide adequate hæmoglobin, basic interest in the patient's hæmatological condition has been forcefully revived. Lack of important iron-giving foods in certain diets is an underlying cause of present and potential iron deficiencies for many. Since these deficiencies present a startling resemblance to the syndrome of vitamin B complex shortages, a differentiation is sometimes difficult. And while the alert physician properly evaluates the latest trends in therapy, the time-honoured axiom, 'LOOK AT THE BLOOD' is again being recognised as of paramount importance. Due to the presence of specially prepared iron (easily assimilated Ferrous Sulphate), hypochromic anæmias are economically corrected with 'PLASTULES.'



'PLASTULES'

BRAND *Hæmatonic Compound* REGD

For Anaemia and Debility

In two varieties: Plain; with LIVER EXTRACT.

Sole Distributors for India: GEOFFREY MANNERS & CO., LTD.
BOMBAY CALCUTTA MADRAS LAHORE

JOHN WYETH & BROTHER LIMITED, (Sole distributors for PETROLAGAR LABORATORIES LTD.) Clifton House, Euston Rd., London, N.W.1.

When writing to advertisers, please mention the "Antiseptic."

Vitamin medication in childhood



While in ordinary conditions the make-up of a child's diet may not have serious results, in wartime, vitamin deficiency due to an improperly balanced diet may have definitely adverse effects on the health, growth and development of the child.

It is wise therefore, to supplement the diet by accurately known amounts of the essential vitamins.

'Wyamin' Vitamin capsules are intended to provide a multiple vitamin therapy to cover any such deficiency, especially in cases where it may be difficult to ascertain correctly in which vitamin the diet is lacking.

Each capsule contains a supply of Vitamins A, D, B₁, B₂ complex, Nicotinic Acid (PP Factor) and C.

'WYAMIN'

TRADE MARK

VITAMIN CAPSULES

Sole Distributors for India:

GEOFFREY MANNERS & CO., LTD.
BOMBAY . CALCUTTA . MADRAS . LAHORE.



JOHN WYETH & BROTHER LIMITED, (Sole distributors for PETROLAGAR LABORATORIES LTD.) Clifton House, Euston Rd, London, N.W.1.

When writing to advertisers, please mention the "Antiseptic."

Reconstructive Digestive Tonic

Alembic

HEMO-DRAKSO-MALT

Any case in which malnutrition is a factor will respond to this combined tonic and food with improved digestion and consequent increase in weight. If it is required to increase the intake of food, Hemo-Drakso-Malt should be prescribed as an appetiser before meals; otherwise after meals. It will in either case improve the general metabolism.

Hemo-Drakso-Malt contains Haemoglobin and assimilable Iron, to promote regeneration of the red blood cells; glycerophosphates for their well known tonic properties, and pepsin to aid the digestion. Juice of grapes and malt extract made from barley provide further direct sources of food and stimulate the flow of the gastric juices.

The taste of Hemo-Drakso-Malt is much appreciated by all—adults as well as children.

INDICATIONS
In convalescence, especially from long and debilitating illnesses. In wasting diseases, anaemia, general weakness, malnutrition, impaired digestion etc.

ALEMBIC CHEMICAL WORKS
CO., LTD. BARODA

AL. 236.

When writing to advertisers, please mention the "Antiseptic."

EYELEX

The ointment containing 5% Urea Sulphazide (Red) in a non-irritating base for local treatment of infective conditions of the eye.

In tubes ready for immediate use.

STERODIN

For non-specific immunotherapy. An effective preparation for varied infections. Indispensable to abort an attack, reduce the severity or to shorten the course of infective states.

2 c.c. ampoules for subcutaneous or intramuscular injection.

UNION DRUG CO LTD CALCUTTA.

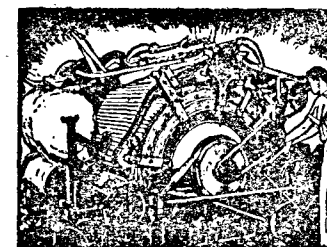
285, BOWBAZAR STREET,

TELEPHONES:—
Cal. 1159.
Cal. 4975.

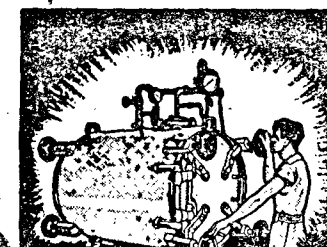
TELEGRAM:—
"BENZOIC"
Cal.

When writing to advertisers, please mention the "Antiseptic."

OUR QUALITY IS YOUR SAFETY



Good Carding is the essence of high quality Cotton Wool



Sterilization under high pressure



There are more reasons why discriminating doctors go in for Khatau's Absorbent Cotton Wool as surgical equipment. 100 per cent purity and asepticity is the standard set for Khatau's Cotton Wool. In every process of production—selection of quality cotton, combing, carding and process-

ing, high-pressure sterilisation and hygienic packing—precise manufacturing standards are employed.

Every roll is tested for quality and weight before it leaves the factory and Khatau's seal of quality, with over 70 years' reputation behind it, is the best public guarantee.

First in First-aid

KHATAU COTTON WOOL

THE KHATAU MAKANJI SPINNING & WEAVING, CO. LTD.,
Mills: BYCULLA, BOMBAY—Office: LAXMI BLDG, BALLARD PIER, BOMBAY, 1.

When writing to advertisers, please mention the "Antiseptic."

Navaratna Pharmaceutical Laboratories Offer

NAVARATNA NAVA-GYNAE CONC.

with
Vitamin B Complex
(Highly Concentrated)

Indication: For the effective treatment of Menorrhagia and certain kinds of Dysmenorrhœa, Amenorrhœa and Leucorrhœa.

Each fluid dram contains:—

Saraca Bark	...	60 Grains
Lodh Bark	...	40 "
Mootha	...	10 "
Berberis	...	10 "
Viburnum	...	10 "
Nigella Sativa	...	4 "
Woodfordia	...	4 "
Water Lilly	...	4 "
Calcium Lactate	...	4 "
Thiamine Hydrochloride (Vitamin B ₁)	...	200 I. U.
Yeast Ext. Conc.	...	4 Grains

NAVA-HEPON

Liver Extract Tonic with Iron and Vitamin B-Complex

Each fluid ounce contains:—

Ext. Hepatis Conc. corresponding to	...	14 Ozs. of fresh Liver
Vitamin B ₁ (Thiamine Hydrochloride)	...	200 I. U.
Vitamin B ₂ (Riboflavin)	...	0.2 Mg.
Nicotinic acid	...	30 Mg.
Ext. Bonemarrow Liq.	...	10 Minims
Ext. of Yeast	...	10 Minims
Ferri et Ammonium Citrate	...	5 Grains
Strychnine Glycerophosphate	...	1/24 "
Colloidal Copper and Manganese in traces with	...	flavouring Essences and adjuvants

Indication: As an adjuvant in the specific treatment of all forms of tropical Macrocytic and Microcytic anæmias and chlorosis. It is also safely indicated in anæmias of pregnancy.

NAVAKURCHIN

Kurchi Bismuth Iodide	...	50%
Kaoline	...	50%

An effective non-toxic preparation for the treatment of acute and chronic amœbic dysentery

Available at all Leading Chemists.

Navaratna Pharmaceutical Laboratories

Post Box No. 13, Mattancherry P. O. COCHIN.

When writing to advertisers, please mention the "Antiseptic."

Elixir SOLGADIN

BALANCED BODY BUILDER

Cod Liver Oil extractives, Alcohol & Orange Juice. Rich in Vitamins A, B, C & D. A palatable Tonic in all run-down conditions. Wasting Diseases, Convalescence, etc.



Issued by Allied Drug Industries, Ltd.
Manufacturing Chemists.
Chief Sales Office — 2, Mission Row, Calcutta

AGENTS:—P. R. JOSHI, NAYAGAON, LUCKNOW for U. P.,—SOUTH INDIA AGENCIES, 117, ARMENIAN STREET, MADRAS for South India: SHRI DURGA ALLIED AGENCIES, TADEPALLIGUDEM, for Andhra District area. INDO-CONTINENTAL PHARMACEUTICALS AGENCY, 13, NOBLE CHAMBERS, 116, PARSEE BAZAR STREET, FORT, BOMBAY for Bombay area.

When writing to advertisers, please mention the "Antiseptic."



**AN
APPLE
A DAY..**

... KEEPS THE DOCTOR AWAY. That was how people used to meet with the nutritive deficiencies in their daily diet when the science of nutrition was unknown.

Now with the newer knowledge of nutrition we know that apple is a protective food and contains a good deal of minerals, vitamin C, vitamins A and B in small quantities but not all that we need to supplement our dietetic deficiencies. Besides keep in mind that it is not apple-season all the time.

BDVine, rich in vitamins, essential minerals, proteins and fats in easily assimilable form is just the right tonic to provide us with all the necessary nutrition. Take to it to-day and keep fit and healthy.

BD VINE

The Supreme Tonic!

BENGAL DRUG HOUSE LTD., 22, STRAND ROAD, CALCUTTA.

"AVAILABLE AT ALL CHEMISTS & DRUGGISTS"

THE BRITISH JOURNAL OF PHYSICAL MEDICINE AND INDUSTRIAL HYGIENE

(Issued Bi-monthly)

IMPORTANT FEATURES

1. SPECIALISED ARTICLES CONTRIBUTED BY LEADING PHYSICIANS, RADIOLOGISTS, PHYSICIANS IN CHARGE OF PHYSIO-THERAPEUTIC DEPARTMENTS IN IMPORTANT LONDON AND PROVINCIAL HOSPITALS.
2. MEDICAL PROBLEMS IN INDUSTRY—In each issue there is an article dealing with this important subject contributed by Doctors with special experience of INDUSTRIAL PROBLEMS.
3. SPECIAL SECTION FOR THE INDUSTRIAL NURSE—A column specially contributed by an expert dealing with the problems of FIRST AID ORGANISATION, WELFARE and similar subjects associated with the FACTORY.

Annual Subscription: Rs 25-0-0 (Post free) Payable in advance with order.

Register your Subscription with our Sole Selling Concessionaires.

Messrs. P. VARADHACHARY & Co., No. 8, Lingha Chetty St., MADRAS.

THE EASTERN LAW HOUSE LTD., P. 13, Ganesh Chunder Avenue, CALCUTTA

THE UNIVERSITY BOOK AGENCY, 5, Kachery Road, LAHORE.

THE UPPER INDIA PUBLISHING HOUSE LTD., Literature Palace, Aminabad, LUCKNOW.

THE INTERNATIONAL BOOK HOUSE LTD., Ash Lane Fort, BOMBAY.

Messrs. H. W. CAVE & Co. P. O. Box 25, COLOMBO—CEYLON

BUTTERWORTH & CO., (INDIA) LTD.,

(Incorporated in England)

P. O. BOX 250, BOMBAY I.

Typharsen
WELL TRIED REMEDY FOR
Filariasis

TYPHARSEN HAS BEEN SUCCESSFULLY USED IN FILARIAL FEVER, ELEPHANTOID LEG, HAND AND EVERY OTHER FORM OF FILARIAL INFECTIONS

MANDOSS & CO. LTD.
221-2, STRAND BANK ROAD, CALCUTTA

WANTED AGENTS AND STOCKIST FOR QUININE, EMETIN INJECTABLES AND BIOLOGICAL PRODUCTS

When writing to advertisers, please mention the "Antiseptic."

Shatavari Cordial

is Indicated



In various disorders of menstruation e.g. Dysmonorrhoea, Metrorrhagia, Menorrhagia, specific and non-specific infections of female pelvic organs.

Besides the pelvic infections and menstrual abnormalities it is of great use in chronic low pyrexia, digestive disturbances, Hysterical states, Leucorrhoea, Threatened abortions and other similar conditions.

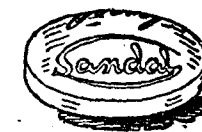
Dr. Kulkarni's Laboratories
Bombay 12

Available at all leading chemists.



When writing to advertisers, please mention the "Antiseptic."

Godrej Sandal



VEGETABLE TOILET SOAP

Cooling & Medicinal

● Its rich content of pure oil of *Santalum Album* preserves the disinfecting and medicinal properties for which Sandal is celebrated, in addition to providing its cool, soothing effects.

● In the treatment of scabies, prickly heat, pruritus, inflamed swellings and various other skin

diseases, and for reanimating sunburnt complexions, Godrej Sandal is very helpful.

● It is guaranteed free from pore-clogging animal fat, which is present in other similar soaps. Its cool, cleansing lather may thus be used with benefit on the most sensitive of skins.



TOILET SOAPS

GODREJ SOAPS, LTD.
Bombay (P. O. Jacob Circle) — Calcutta — Patna
Madras (164, Broadway) — Ernakulam
Hyderabad (Dn.) — Nagpur — Ahmedabad

To Keep Your **SYRINGES**

Safe, Always Sterile & Ready for Injection

We offer you our leakproof, highly chromium plated metal cases (can easily be placed in pocket) each for carrying syringe with six needles for the following prices:—

- | | | |
|----|--|--------------|
| 1. | Metal case for 2 c.c. syringe with six needles ... | Rs. 7/8 each |
| 2. | " " 5 c.c. " " " " " " | " " 10/8 " |
| 3. | " " 10 c.c. " " " " " " | " " 13/8 " |
| 4. | " " 20 c.c. " " " " " " | " " 16/8 " |

While ordering please note to mention the make of your syringes.

Times Surgical Company : Sialkot City

Tele:—"TISCO"

1 NEW ANTISEPTIC



PHENOL CO-EFFICIENT
(under Rideal-Walker
conditions, employing
staphylococcus aureus.) 3.0
PHENOL CO-EFFICIENT (under Rideal-Wal-
ker conditions, employing strepto-
coccus haemolyticus). 3.1
RIDEAL-WALKER CO-EFFICIENT (employing
bacterium typhosum). 3.75

A NEW WEAPON AGAINST STAPHYLOCOCCI and STREPTOCOCCI

A 16-page booklet with this title sum-
marises the newly-recognised importance
of staphylococci as causatives of severe
and sometimes fatal infections and the
effect of O-syl as a bactericide especially
against this pathogen. The evidence
presented includes records of two con-
trolled experiments with O-syl and brief
abstracts of recent investigations into
the bacteriology of impetigo and some
nursery complaints.

The publication is available to doctors
on request from James Wright Ltd.,
15, Chittaranjan Avenue, Calcutta.

O-syl

ANTISEPTIC
MADE IN ENGLAND
BY
LYSOL LTD.

2½ oz. As. 10 10 oz. Re. 1/11

From all Chemists and Stores, and
JAMES WRIGHT LTD.,
15, Chittaranjan Avenue, Calcutta,
56, Thambu Chetty Street, Madras.
STANDARD BRANDS LTD.
10, Underhill Road, Delhi,
5, Graham Road, Bombay.

In this new emergency package

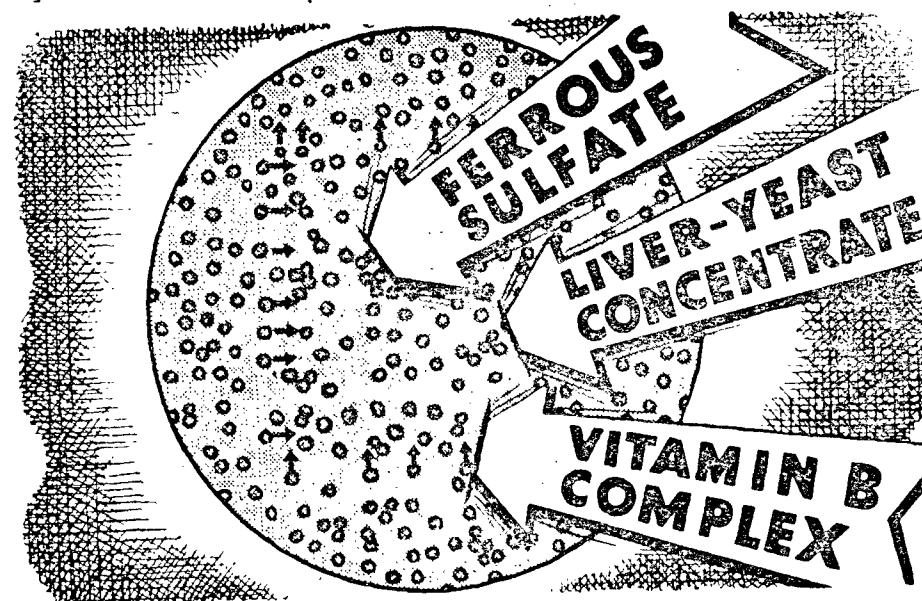


increased supplies of
DEXTROSOL
are now available

Pleased are the distributors of
DEXTROSOL to be able to announce
that supplies of this valuable thera-
peutic agent are now more adequate.
For the present the familiar tin is
replaced by an emergency wartime
pack.

CORN PRODUCTS CO. (INDIA) LTD.
P.O. BOX 264 BOMBAY

When writing to advertisers, please mention the "Antiseptic."



THREE WAYS - ONE TARGET

FORMULA

'LIRIMIN' Capsules are de-
signed for oral administra-
tion in the treatment of anemias
and certain forms of nutritional
deficiency diseases.

The Liver Extract in 'Lirimín'
Capsules is highly concentrated
and represents the antianemic
fraction of fresh livers. Iron in
the form of ferrous sulfate is
added to increase the hemo-
globin content of the red blood
cells. The Vitamin B-Complex
is included to increase the appe-
tite and improve the general
hematopoietic response.

The average content of each 'Lirimín'
Capsule is as follows: Ferrous sulfate,
exsiccated 0.30 Gm.; Liver-yeast Con-
centrate 0.25 Gm.; Thiamine hydro-
chloride (Vitamin B₁) 0.25 mg.
(equivalent to 83 International units);
Riboflavin (Vitamin B₂ or G)
0.50 mg.; together with other natural
factors of Vitamin B-complex derived
from the liver-yeast component.
'Lirimín' Capsules are supplied in
bottles of twenty-five and one hundred
capsules.

LIRIMIN
CAPSULES

Sharp & Dohme
PHILADELPHIA

SCIENTIFIC LITERATURE ON REQUEST FROM VOLKART BROTHERS, BOMBAY P.O. BOX 199

SOLE IMPORTERS FOR INDIA, BURMA & CEYLON

VOLKART VB BROTHERS

BOMBAY - CALCUTTA - CANNPORE - KARACHI - LAHORE - DELHI - MADRAS - COCHIN - COLOMBO

Copyright: Volkart Brothers

When writing to advertisers, please mention the "Antiseptic."

DR. PAN'S CHEMICAL LABORATORIES

*Our products are accurately and scientifically made.
Therefore they are reliable and efficacious.*

- | | 50 tabs. | 100 tabs. |
|---|----------|-----------|
| 1. SODA MINT .—5 gr. tablets. Dose: as per requirements. ... | 0 6 0 | 0 8 0 |
| 2. ALGIN .—5 gr. tablets for relief of pain, neuralgia, hypnotic and sedative. Dose: 1-2 tablets. ... | 0 11 0 | 0 15 0 |
| 3. DYSENT .—5 gr. tablets Dose: 2 tablets T.D. Herbal product for all kinds of dysentery. ... | 1 0 0 | 1 14 0 |
| 4. CARMI .—5 gr. tablets, Carminative of high order and analgesic, relieves colics and adominal pains ... | 1 1 0 | 1 12 0 |
| 5. PURGET .—5 gr. tablets, Dose: 2-3 tablets. Non griping-reliable purgative, contains herbs sugar coated. 50 tab. Re. 1 100 tab. Re. 1-11 Plain ... | 0 14 0 | 1 5 0 |
| 6. REDTA .—5 gr. tablets Dose: 1 tablet T. D. Excellent for chronic bronchitis asthma, cold, persistent cough, and diarrhoea. ... | 1 6 0 | 2 4 0 |
| 7. TONIK .—5 gr. tablets. Dose: 1 tablet T.D. after food for anæmia, lassitude, weakness of all kinds, specially nervous and sexual, contains organic iron, strychnine and other herbs ... | 1 6 0 | 2 4 0 |
| 8. RUMATO .—5 gr. tablets. Dose: 2-3 tablets T. D. for Rheumatism. Contains salts, herbs, carminatives sedatives and intestinal antiseptics, well tried and reliable. ... | 1 6 0 | 2 4 0 |
| 9. UKU .—5 gr. tablets, Antimalarial Specific, Dose: 2-3 tablets T. D. contains alstonia, vitex etc. It is non-poisonous, and more efficacious than Quinine and substitutes. Equally good as a preventive of Malaria, Dose: as preventive one tablet every alternate day ... | 0 14 0 | 2 12 0 |
| 10. APHRODION .—Gold covered pearls Dose: 1-2 pearls in a day. Aphrodisiac of high order. Does not contain any sedative or stimulants. It is combination of Bhasmas and herbs which are well known as rejuvenators in ayurvedic system of medicine. 15 pearls ... | 7 8 0 | |
| 11. EXE .—Eczema, ringworm and Psoriasis ointment ... | 1/2 oz. | 2 oz. |
| 12. PIM .—Pimples, black heads, scars acne etc, ointment ... | 0 10 0 | 1 4 0 |
| 13. BLACK OINTMENT .—For abscess, carbuncles, furuncles, ulcers wounds, as an adhesive ointment acting as plaster. ... | 0 7 0 | 1 8 0 |
| 14. BURNS OIL .—Antiseptic oily dressing for all kinds of burns, itches, and skin wounds ... | 2 oz. | 4 oz. |
| 15. VAPORIN .—An special pine wood inhalent, high vaporization, even at low temperature. For influenza, pneumonia, lung and throat affections. ... | 1 oz. | 2 oz. |
| | 2 0 0 | 3 12 0 |

Our Specialities

- | | | |
|---|--------|----------|
| 1. Eydol eye drops for CATARACT ... | 3 12 0 | a pkt. |
| 2. Trako eye drops for GRANULATIONS ... | 3 8 0 | " |
| 3. Jawahar —(Nerve Tonic and Food) ... | 17 4 0 | " |
| 4. Rumasa Oil for massaging painful joints ... | 2 8 0 | a bottle |
| 5. Tona —Tonic rejuvenator ... | 3 8 0 | a pkt. |
| 6. Lashine —grows luxuriant eye brows ... | 3 8 0 | a btl. |
| 7. Olsko —Oil for scabies itches and other skin affections ... | 4 8 0 | " |
| 8. Laxa —Mild safe vegetables laxative tablets ... | 2 0 0 | a pkt. |
| 9. Pricklon Lotion for prickly heat ... | 2 4 0 | " |

Daphne Cosmetic Beauty Aids

- | | | |
|---|--------|----------------|
| 1. Daphne Brillantine Lavender ... | 1 1 0 | 3 1/2 oz. btl. |
| 2. Daphne Brillantine Jasmine ... | 0 12 0 | 2 1/2 oz. btl. |
| 3. Swan smooth Face Powder (Four lovely shades) ... | 0 12 0 | a pkt. |
| 4. Daphne Talcum Powder Borated ... | 1 4 0 | a tin. |

Aim of our laboratory is to serve medical profession by supplying them useful, reliable and standard medicines at low prices: consistent with efficacy. The mounting sales every year of our products show the confidence they are enjoying amongst medical world.

Sole Agents for India: B. C. DeKAGE & CO., P O. Box 169, BOMBAY. 1

When writing to advertisers, please mention the "Antiseptic."

*Special Products of
B. R. I.*

BRIOVINE

An Ideal Nervine Tonic

HÆMO QUIN

For Malaria and other
Intermittent Fever

LIVARESH

A Liver tonic

Samples, Prices & Literature etc.
on application to:

BENGAL RESEARCH INSTITUTE,
13/3, Natherbagan Street,
CALCUTTA.

Dr. W. C. Roy's
Poyapilla
FOR INSANITY & MENTAL DISEASE



(Regd.)

ask your chemist or write to
S.C.ROY & CO.
167/3, CORNWALLIS STREET, CALCUTTA.

**In Nutritional Anaemia
and in Deficiency Diseases**

MARMITE YEAST EXTRACT

In India, and in other countries in which nutritional anaemia of the macrocytic type is prevalent, Marmite is of specific value, and there is abundant proof of its efficacy in certain deficiency diseases. It supplies anti-anæmic principles, predigested protein and important vitamins derived from yeast.

The usefulness of Marmite is enhanced by the fact that it is entirely a vegetable product.

1-oz. of MARMITE provides:

Riboflavin (vitamin B₂) 1.5 mg.
Niacin (nicotinic acid) 16.5 mg.

Manufactured in England by
THE MARMITE FOOD EXTRACT CO. LTD.

Distributing Agents: J. L. Morison, Son & Jones (India) Ltd., P.O. Box 258, Bombay.

When writing to advertisers, please mention the "Antiseptic."

ELIXIR

PEPSI-DIASTASE CO.

Formula: Pepsin Pancreatin
 Diastase Tint. Auranti
 Grape Juice Syrup

PEPSIN: The natural enzyme of gastric juice digests proteins and is used as an aid to weak digestive power.

PANCREATIN: It contains enzymes consisting of amylapsin, trypsin and steapsin; (1) Amylapsin changes starch into sugar and dextrin. (2) Trypsin converts proteins into Peptones in alkaline or natural media. (3) Steapsin a lipolytic ferment which saponifies and emulsifies fat.

DIASTASE: It contains amilolytic enzymes and converts 100 times its weight of starch into maltose and dextrine.

TINT. OF AURANTI: It is stomachic, bitter tonic and aromatic.

GRAPE JUICE: With its natural Vitamin source, promotes good appetite, aids digestion, restores lost vigour and health and is best refrigerent.

Indication: Atonic Dyspepsia, Flatulent Dyspepsia, Fullness after meals, Heartburn, Indigestion, Weak Digestion in Anæmia and after sickness.

Free Samples & literature on request
INDO-CONTINENTAL TRADING CO.,
 SANDHURST ROAD, BOMBAY 4.

ISAPHEN

Purgative Tablets

Each Tablet Contains:—

1/15th grain, Dihydroxy-Phenyl
 Isatin a synthetic compound.

Special Features

1. Non-toxic. Non-irritating.
2. Not absorbed in the blood stream.
3. Dose is very small as compared with Phenolphthalein.

Samples and literature
 sent on request.

THE

MAHARASHTRA CHEMICALS LTD.

KURLA—(BOMBAY)

BELL'S
HERBAL GERMASE

ORAL AND INJECTIONS

Unique preparation Containing

POLYVALENT HERBAL ENZYMES

INDICATIONS

- ***Respiratory Tract:**—Tonsillitis, Pharyngitis, Sinusitis and in Pneumonia, Pleurisy, Bronchitis.
- ***Digestive Tract:**—Gastritis, Dyspepsia, Peptic Ulcers, affections of liver and Bile passages, Peritonitis and Appendicitis.
- ***Urinary Tract:**—Pylitis and Albuminuria.
- ***In Diseases of Heart:**—Endocarditis, Pericarditis.
- ***In several other diseases such as:**—Gout, Rheumatism, Lumbago, Sciatica, Neuritis, Neuralgia, Puerperal fever, Burns, Bubo, Skin diseases and all septic conditions.

Free Medical Sample and Catalogue of other preparations on request:

Sole
 Distributors:

DEODHAR BROS.,

Grams:
 'PENIVAZ'

National Insurance Building, 204, Hornby Road, Fort, Bombay. 1.

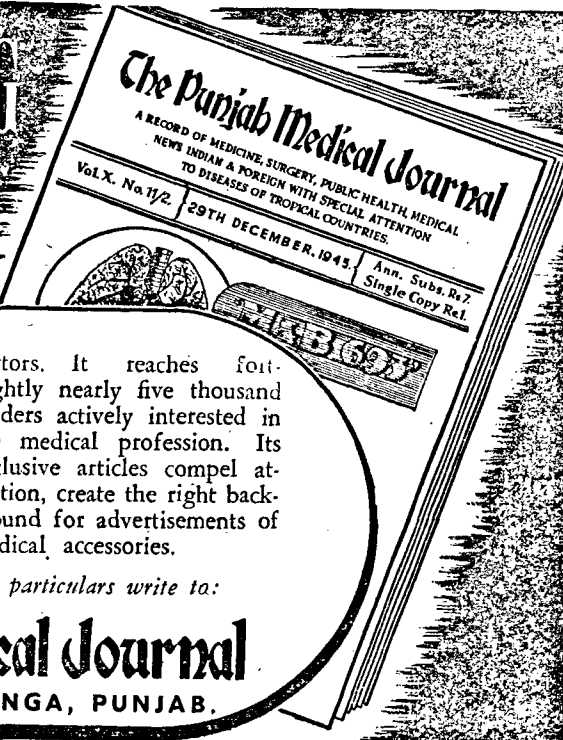
ADVERTISING VALUE

Results from advertising can be obtained only when sales messages repeatedly reach the largest number of the right people in the correct atmosphere. The Punjab Medical Journal takes good care of all these factors. It reaches fortnightly nearly five thousand readers actively interested in the medical profession. Its exclusive articles compel attention, create the right background for advertisements of medical accessories.

For advertising rates and full particulars write to:

The Punjab Medical Journal

AMIN GATE STREET, BANGA, PUNJAB.



PURE VENOMS

OF

COBRA

VIPERS

RATTLESNAKE

ORANGE SPIDER

CUBAN SPIDER

BLISTERING FLY

RED ANTS

HONEY BEE

Available in Therapeutic doses in 1 c.c., 2 c.c. ampoules.

Descriptive booklet free to the Medical Profession only.

LEXIN LABORATORY, MIHIJAM E.I.R. (SP).

When writing to advertisers, please mention the "Antiseptic."

Some Distinguished Specialities of SILTEN LTD., LONDON

LEUCOTROPIN

Injections for all Rheumatic diseases like sciatica, Lumbago, Arthritis etc.

RHEUMOTROPIN

Tablets for all Rheumatic diseases like sciatica, Lumbago, Arthritis etc.,

LEUCOSALYL

Injections for Lumbago and sciatica.

QUINTAS

Tablets for Dysmenorrhœa & all pains.

BRONCHISAN

Asthma Tablets for Bronchial Asthma, chronic Bronchitis, hay fever etc.

HEPANEMIN

Injections highly concentrated preparations.

HEPANEMIN COMPOUND

(for oral use)

Highly concentrated Liver preparations

DELATONE

Pills for Strength and Vitality.

For full particulars please apply to:

SOLE AGENTS FOR:
INDIA, BURMA & CEYLON

VYAS BROS. LTD.

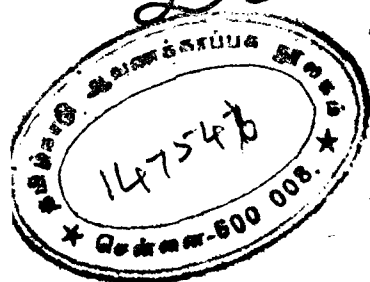
Chemists,
Princess St.,

BOMBAY-2

Station Road, ANAND, (Dist. Kaira).

Stockists: ARYAN DRUG STORES, 2184, IYYAR MUDALI ST.,
CHINTADRIPET, MADRAS.

"Dear Doctor"



Suppose every client of yours were to write to you asking your advice on matters of health, what a tedious job it would be replying to each. And you wouldn't be able to cope with all the inquiries without neglecting your work.

People today want to know a lot on matters of health—and you have a lot to tell them. There is a great deal of ignorance about healthful living which you with your knowledge and experience can dispel.

The magazine **HEALTH** opens its pages to you, to all doctors and writers on health. Articles of about 2000 words written in a popular, non-technical style, and photographs and drawings are invited. For leaflet giving details of the type of contributions required and particulars regarding honoraria, please write to:—

THE EDITOR

HEALTH

323-24, THAMBU CHETTY
STREET. MADRAS

ANT. 3.

When writing to advertisers, please mention the "Antiseptic."

For EFFICIENT LIVER THERAPY

ORAL AND PARENTERAL

JAKRITON

Re

A palatable and highly potent liver preparation for oral use in macrocytic anemias. Each ounce contains, equivalent of 12 oz. of fresh liver substance and additional amounts of Vitamin B₁ (400 I.U.) and Nicotinic Acid (0.6 grains). Specially useful in Pregnancy anæmia and Tropical Nutritional Anæmia. An excellent General Tonic.

HEPACIMA

A 'Liver cum Iron' Tonic of well balanced composition. Helps hæmoglobin regeneration and erythropoiesis. Formula includes accessory hæmopoietic factors e.g. Vitamin B₁, Nicotinic Acid, Copper and Manganese. Specially useful in convalescence after Malaria, Kalazar, Influenza and other debilitating diseases.

LIVER EXTRACT 'Jexin' Brand

A concentrated liver extract for parenteral use. Each 2 c.c. ampoule contains equivalent of 1000 Gms. of fresh liver. A perfectly dependable preparation for rapid hæmopoiesis in pernicious and other forms of macrocytic anæmia. Causes immediate and satisfactory reticulocyte response.

Literature on request.

BENGAL CHEMICAL : Calcutta : Bombay

Agents:—N. DASAI GOWNDER & C

at, G. T., Madras.

TO ENSURE ADEQUATE
CALCIUM INTAKE
Prescribe
DI-CAL-PHOS
*Wafers
or
Powder*

Wafers boxes of 50
Powder bottle of 4 oz.



INDICATIONS:

Rickets, dental caries, and
other hypocalcemic
conditions.

DOSE:

One or two wafers three
times daily.

**PARKE,
DAVIS
& CO.**

B o

A combination of 23% calcium and 18%
phosphorus in practically the same ratio in
which they occur in milk.

Readily soluble in the acid gastric juice and
easily available to the body.

The wafers containing 15 grains of Dicalcium
Phosphate, delightfully flavored, offer the
greatest convenience in administering adequate
quantities of calcium to children and adults.
The powder is well suited for babies.

HEALTH