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The Antiseptic

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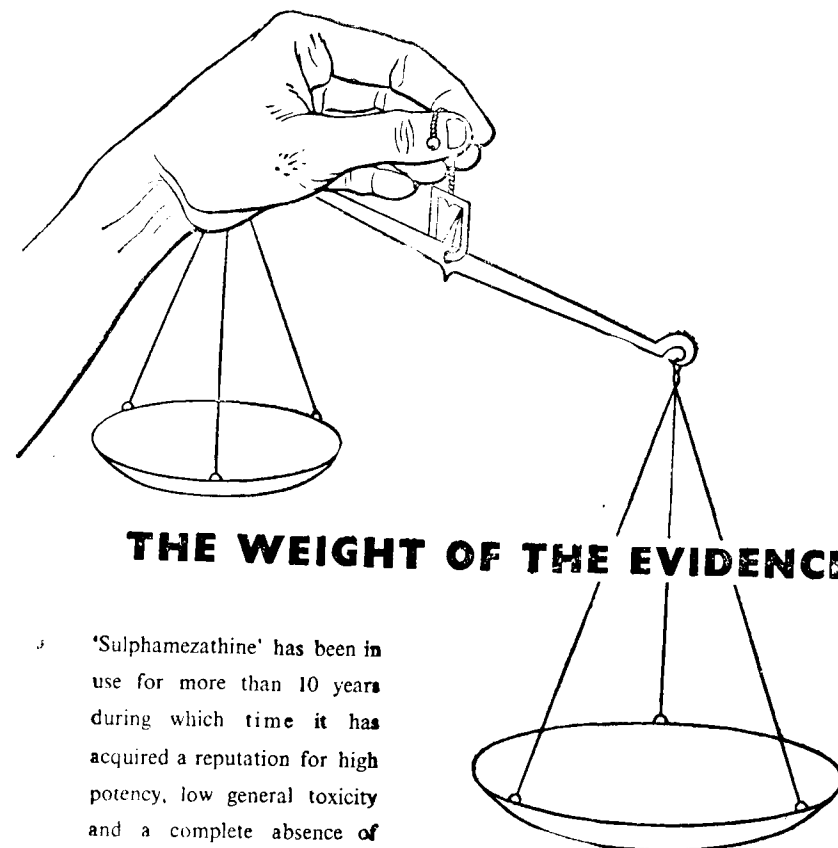
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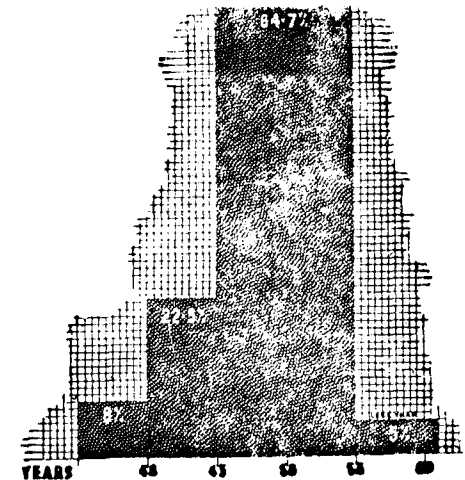
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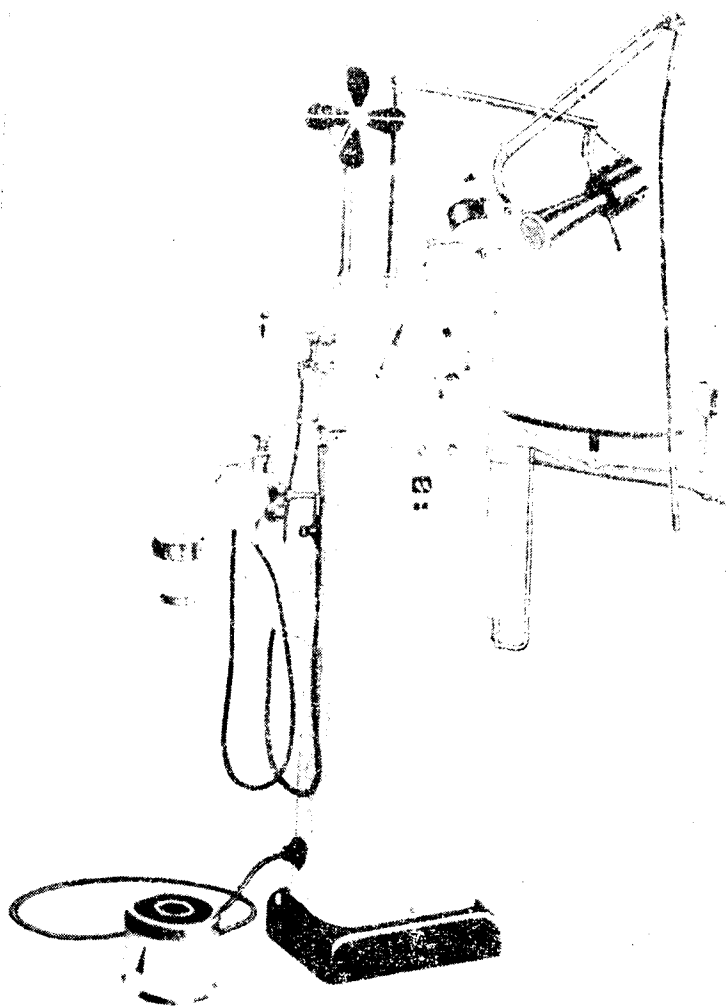
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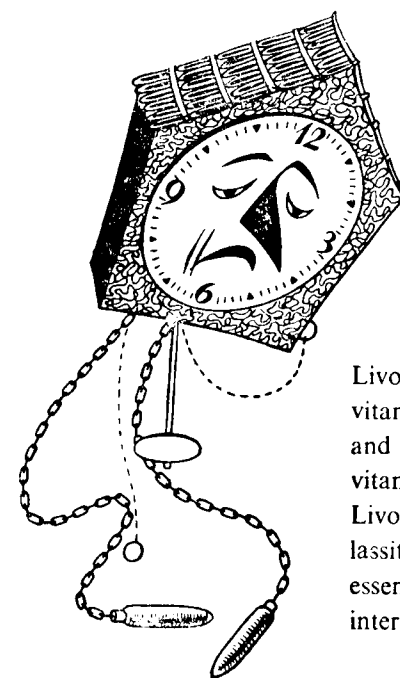
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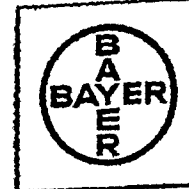
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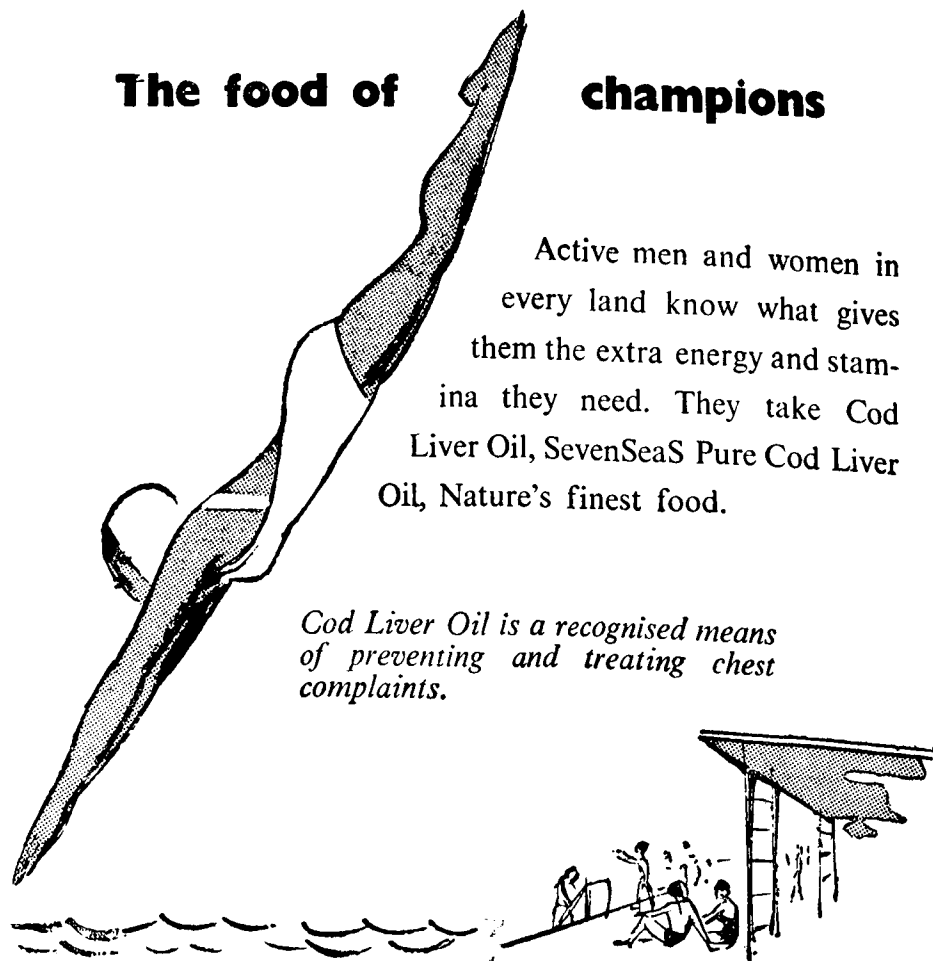
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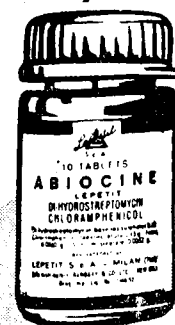
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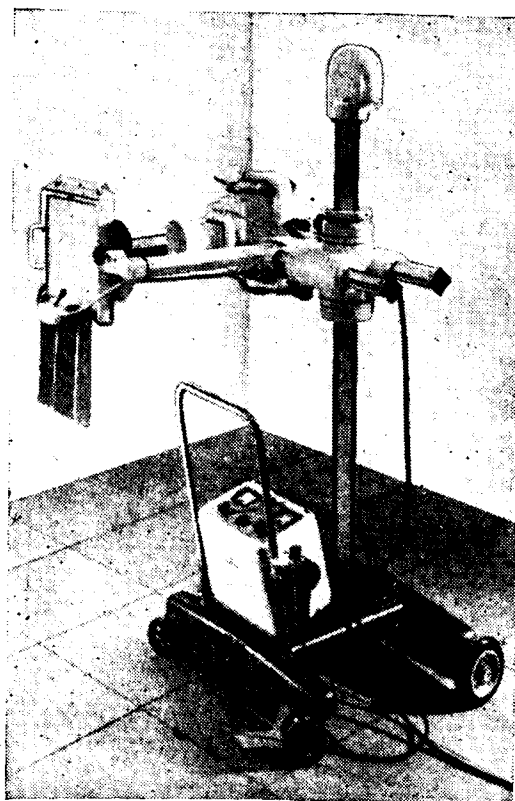


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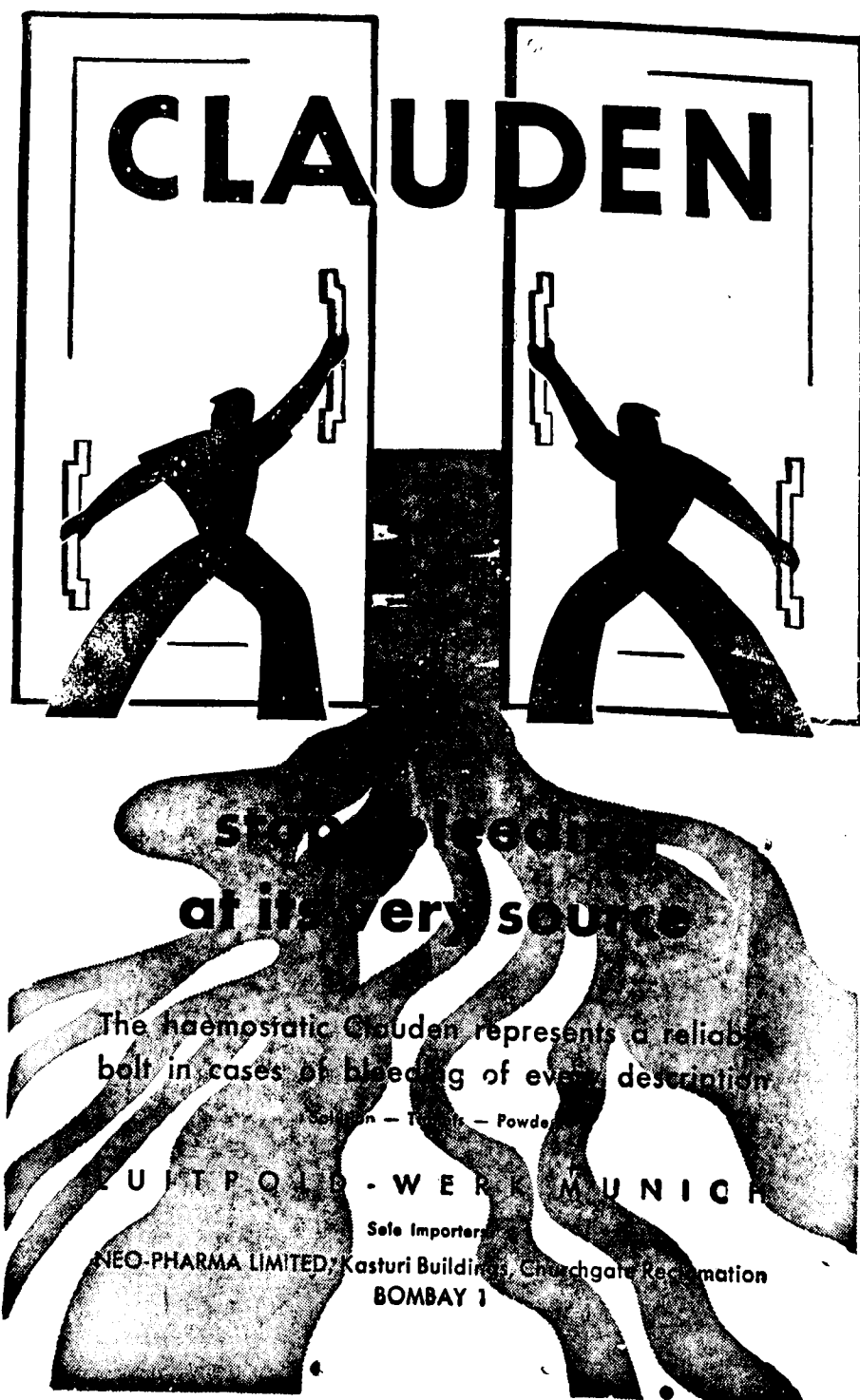
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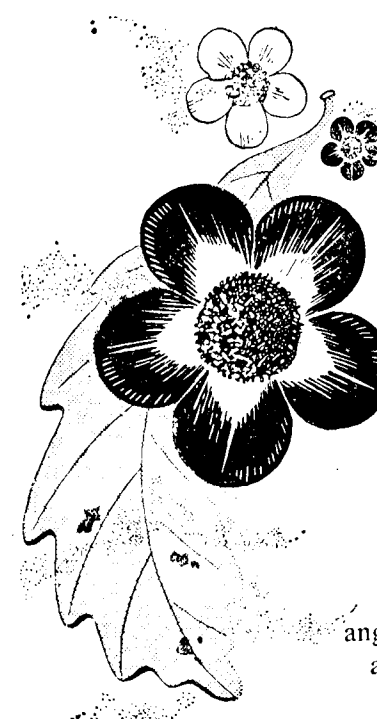
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STANDARD PHARMACEUTICAL WORKS LTD.
CALCUTTA-14.

POTENT & RELIABLE

UNI-B-COMPLEX

TABLETS		INTRAMUSCULAR		INTRAVENOUS	
Vit B ₁	10.0 mgm.	Vit. B ₁	50 mg.	Vit B ₁	50 mg.
Vit B ₂	5 mgm.	Vit. B ₂	5 mg.	Vit B ₂	10 mg.
Nicotinic	50 mgm.	Niacinamide	150 mg.	Niacinamide	200 mg.
Cal. Pantho-		Pyridoxine Hcl	5 mg.	Pyridoxine Hcl	5 mg.
thenate	1.0 mgm.	Panthenol	5 mg.	Panthenol	10 mg.
pyridoxine	0.25 mg.	Procaine Hcl	20 mg.	Choline H. Citras	25 mg.
Excipient	Q.S. per tablet.	Betaine H. citras	25 mg.	Acetyl methionine	2 mg.
		Acetyl methionine	2 mg.	Inositol	2 mg.
		Inositol	2 mg.	Preserv. chlorobutol	2.5%
		Preserv. Benzyl alcohol	(2.5%) per c.c.		per c.c.

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Ergoapiol-(Smith)

A Menstrual Regulator . . .

When the periods are irregular, due to constitutional causes, ERGOAPIOL (Smith) is a reliable prescription. Containing apiol (M.H.S. special) together with ergot and oil of savin of the highest quality, this preparation effectively stimulates uterine tone and controls menstrual and postpartum bleeding.

In cases of Amenorrhoea, Dysmenorrhoea, Menorrhagia and Metrorrhoea.

hagia, Ergoapiol serves as a good uterine tonic and hemostatic. Valuable in obstetrics after delivery of the child.

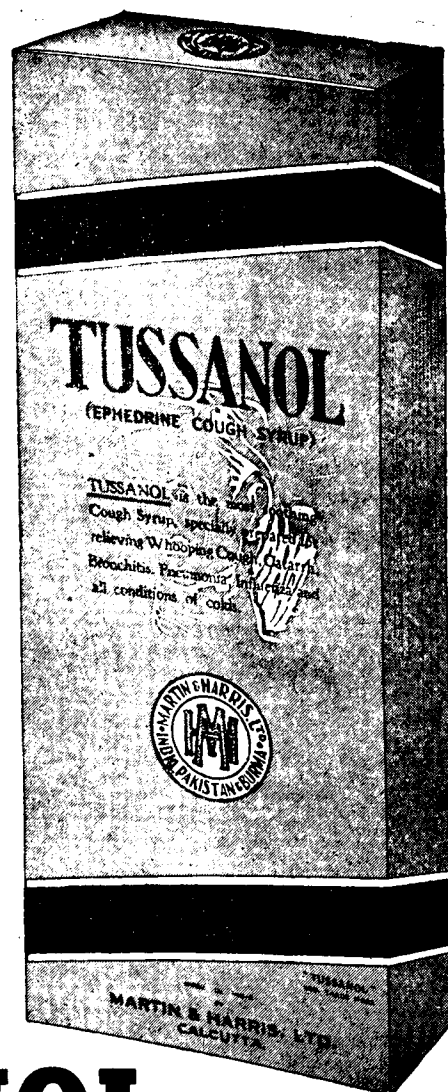
DOSAGE: 1 to 2 capsules 3 or 4 times daily. Supplied only in packages of 20 capsules. Literature on request.

As a safeguard against imposition the letters MHS are embossed on the inner surface of each capsule, visible only when the capsule is cut in half at seam as shown.

MARTIN H. SMITH COMPANY
NEW YORK, N.Y.

Cough!

when
diagnosis
demands a
cough remedy
a majority
of physicians
prescribe



TUSSANOL

(COUGH SYRUP)

THE SAFEST REMEDY FOR PATIENTS OF ALL AGES

A MARTIN & HARRIS PRODUCT

mass miniature radiography

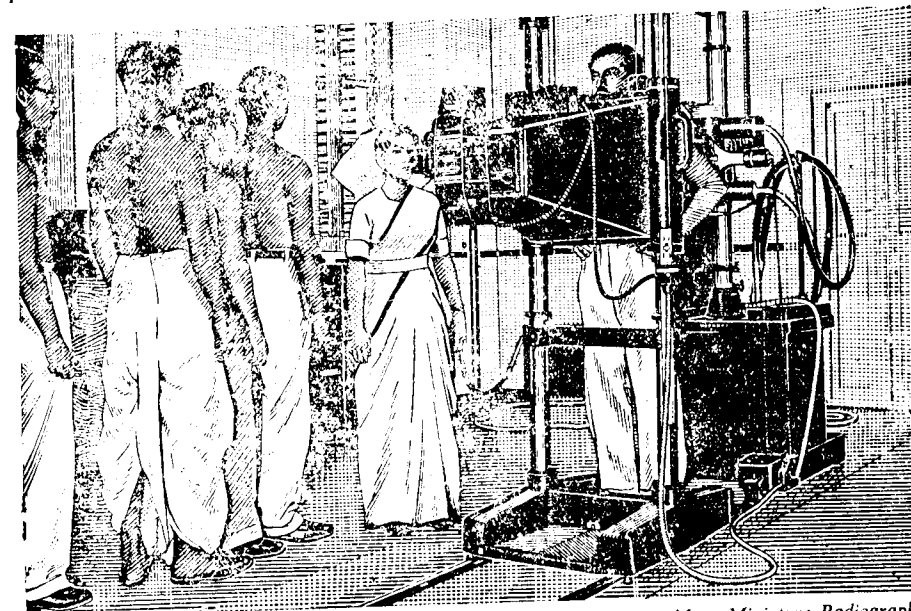
Over 10 million exposures made with
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Since 1943, when it was first introduced, something of the order of ten million successful exposures have been made with Watson Mass Miniature Radiography Apparatus.

In the opinion of medical specialists the results obtained are unsurpassed and minimal lesions, which are only just discernible in full-size films, have time and again been detected from the miniature (35 m.m. or 70 m.m.) radiographs.

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PULMO-COD

WITH
Creosote & Gualacol

Supplies
Minerals and generous amount of Vitamins

For Vigour and Vitality

Pulmo-Cod also prevents Seasonal Ailments, Cold, Cough, Bronchitis, Rickets, Summer Complaints, and Bowel Irregularities among Children

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Md. L. No. DL 62 M
DL 42 MB

STADMED
PULMO-COD
(Creosote & Gualacol)

Each fluid oz. contains:

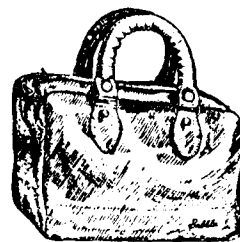
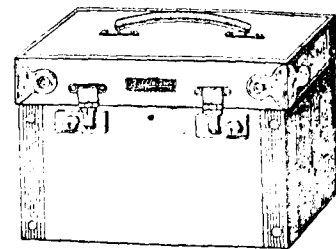
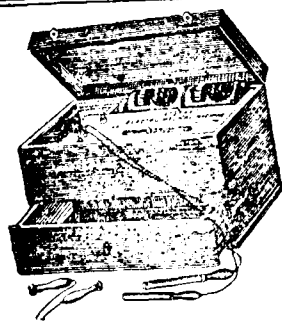
Pancreatic hydrolysate of shark & Codliver Oil 50% v/v

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Vitamin B₁ 3 mgs.
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Vitamin B₁₂ 5.0 mcgs.
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Folic Acid 920 mcgs.
Sodi Hypo. 120 mgs.
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{ Creosote 1/3%
Gualacol 1% }

Extract Wild Cherry, Gentian, Eucalypt. 0.7%
Invert Sugar, Glycerine, Malt & Aromatics q.s.

STADMED LTD.
15, JAWPORE ROAD,
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No.	1-a	4-a	3-a
1-a	Electro-Medical Machine (Automatic) for Gout, Rheumatism, Paralysis & Nervous diseases working with 2 Torch cells ... 15/-	13-a Midwifery Pouche Chrome Plated ... 42/-	
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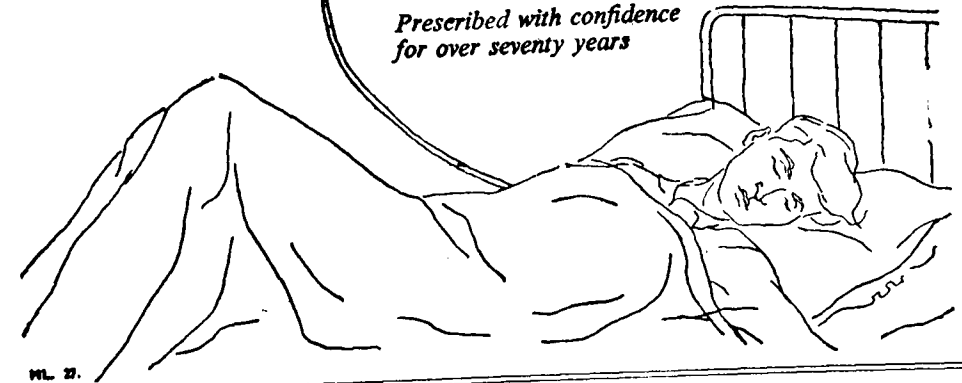
diet in
surgical
cases

Some nutritional disturbance is unavoidable in surgical operations, but this can be reduced to a minimum if due regard is paid to pre-operative diet. Horlicks, a food drink, helps surgical patients to make better progress by supplying readily absorbed mixed carbohydrates necessary for the maintenance of the glycogen reserves. The toxicity due to anaesthesia is lessened, the risk of post-operative vomiting is reduced.

The balanced nourishment of Horlicks materially assists recovery. It has a soothing effect which promotes restful sleep.

HORLICKS

Prescribed with confidence
for over seventy years



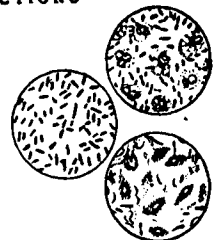
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CHEMOTHERAPEUTIC
TREATMENT OF

**BACILLARY DYSENTERY
& INFANTILE DIARRHOEA**

COLITIS, CHOLERA
AND OTHER
INTESTINAL INFECTIONS

SPECIALITIES

- LOW TOXICITY
- QUICK EFFECT
- SPECIFICITY
- SMALL DOSAGE



SULFABENZIDE

SULPHANILYLBENZAMIDE

DOSAGE

4 tablets initially followed by 2 tablets every four hours till the condition subsides. Average total dose: 30 Tablets.

PRESENTATION

Tablets each containing 0.5 gm. (7 1/2 grs.) in bottles of 30, 100, 200, 500 and 1000.



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CO., LTD. CALCUTTA 13

For

SYNERGIC ACTION

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PERFECT TOLERANCE

DOUBLE ECONOMY

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ISOPASCAL & CD

ISONIAZID, PAS ACID,
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where
PAIN
is a
symptom...

as in
HEADACHE
TOOTHACHE
MUSCLE PAIN
NEURALGIA
NEURITIS
DYSMENORRHOEA
INFLUENZA

Therapy of the underlying causal condition is no doubt the prime consideration. However, when treatment of the basic disease does not or cannot afford prompt relief, 'ANACIN' will often alleviate the distress of pain and impart a sense of well-being.

'ANACIN' is a non-toxic and clinically dependable preparation, specially formulated to provide a prolonged period of analgesia with a single dose of 1 or 2 tablets.

Composition

Quinine 1/4 gr. Aspirin 3 gr.
Phenacetin 3 gr. Caffeine 1/4 gr

ANACIN
ANALGESIC TABLETS

* In pilfer-proof containers of 32 tablets and packets of 2 tablets each.

* Trade Mark

Manufactured and Distributed by:
GEOFFREY MANNERS & COMPANY LIMITED, BOMBAY
Trademark Proprietors:
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ERKA

BLOODPRESSURE

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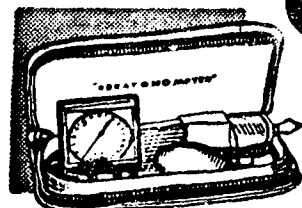
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ERKAMETER

STAND MODEL

Standfast: Light oval profiled aluminum tube with heavy iron base, ivory white or reseda green

300 mm scale



ERKATONOMETER

IN ZIP LEATHER CASE

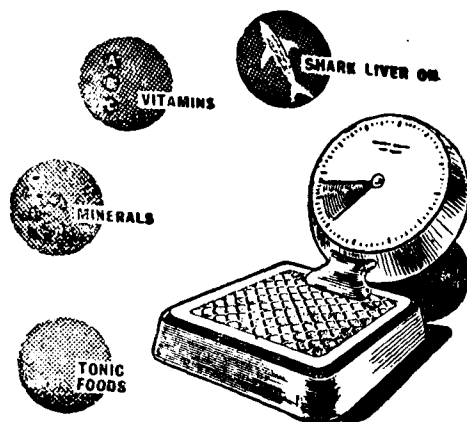
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THE NEEDLE

SWINGS FARTHER!

A valuable tonic and nutrient for increasing weight and building up resistance to diseases.

COMPOSITION

Each fluid ounce of SHARKOFERROL represents —

Vitamin A (from 40 mins. of Shark Liver Oil approx.)	25,000 I.U.
Vitamin D	5,000 I.U.
Saccharated Oxide of Iron N.F.	55 grs.
Hypophosphites of Lime, Sodium & Potassium B.P.C.	12.5 grs.
Vitamin B1 B.P.	3 mgms.
Vitamin B2 B.P.	2 mgms.
Niacinamide B.P.	40 mgms.
Copper & Manganese	Traces
Palatable Base enriched with Flavoured Malt Extract	0.2

SHARKOFERROL

In 1 lb. Bottles.

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WORKS CO. LTD., BARODA 3.



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RYBARVIN

INHALANT

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IT affords the most speedy relief yet known to Medical Science.



Manufactured in England by **RYBAR LABORATORIES LTD.**

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In General Debility and Anaemia



LIVER EXTRACT

VITAMIN B-COMPLEX

CUM LIVER

'OXOID' Liver Extract is invaluable in the treatment of diseases where deficiency of red blood corpuscles is established. Thus it may safely be recommended in secondary and pernicious anaemias, infectious diseases and convalescence.

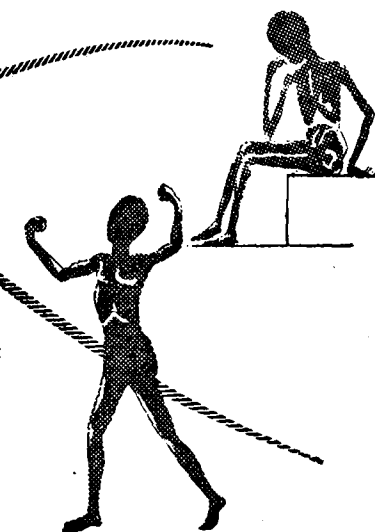
'Oxoid' Vitamin B-Complex with Liver is recommended in the treatment of conditions of the complex deficiency as a whole or of the individual factors and in conjunction with antibiotics and sulphonamides which may cause induced deficiency of B-complex. As a general tonic it is of particular value in pregnancy and lactation.

Package:

LIVER EXTRACT: 10 cc R.C. Vials, 20 cc R.C. Vials

Boxes of 50 amp. x 2 cc.

VITAMIN B-COMPLEX: 20 cc R.C. Vials



Sole Agents:

ANGLO-THAI CORPORATION LTD.,

Sole Distributors: **HERBERTSONS LTD.,**

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A BALANCED OUTLOOK



in anxiety states

Anxine Tablets provide comprehensive symptomatic treatment of anxiety states, psychoneuroses and psychosomatic disorders

by improving mood and increasing confidence,
by inducing gentle sedation and allaying anxiety
and

by securing the optimal degree of muscular relaxation.

Although each of the three components of Anxine Tablets, dexamphetamine sulphate, cyclobarbitone and mephnesin, makes an important contribution to the amelioration of the symptoms of anxiety states, none is adequate alone. It is only when they are combined, in the form of Anxine Tablets, that maximum control of symptoms is achieved.

Formula

Each Anxine Tablet

Contains:—

Dexamphetamine
sulphate 2.5 mg.
Cyclobarbitone 35 mg.
Mephnesin 120 mg.

ANXINE

Available in bottles of 50 tablets.

ALLEN & HANBURY LTD
(INCORPORATED IN ENGLAND)
CALCUTTA BOMBAY

It is a safe practice

Safety measures devised for our protection are now commonplace and readily accepted. In chemotherapy, few will deny that one of the most important of the safety measures is the careful and critical selection by the manufacturer of drugs that combine maximum therapeutic activity with minimum toxicity. Nowhere is this better seen than in the case of 'Sulphatriad'. When sulphonamide therapy is indicated, the prescription of 'Sulphatriad' for young and old has been clinically proved and accepted as a practice with a wide safety margin and range of effectiveness.

'SULPHATRIAD'

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brand

COMPOUND SULPHONAMIDES

for fast therapeutic effect plus greater clinical safety

Available as 0.5 Gm. tablets and as a suspension

Detailed literature is available
on request

AN M&B brand MEDICAL PRODUCT

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CASEO-ZYME

The hydrolysates of Casein and Yeast amply enriched with B Complex Vitamins and Lipotropic factors for successful Protein Therapy

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Each fluid ounce contains		
Amino Acids	...	20% w/v
Proteolytic Enzymes	...	250 mg.
Vitamin B ₁	...	5 mg.
Vitamin B ₆	...	2 mg.
Methionine	...	200 mg.
Choline	...	200 mg.
Inositol	...	50 mg.

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Contains:

FOLIC ACID, VITAMIN B₁₂, CHOLINE CHLORIDE, BETAINE HYDROCHLORIDE, INOSITOL, ACETYL METHIONINE, GLYCEROPHOSPHATES, ETC.

A Product

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You can depend on

NAVARATNA

VERMAZINE FORTIS

Containing 4 gms. of Piperazine Hydrate per fl. oz. of a palatable Orange flavoured Syrup

A STABLE, ELEGANT AND SAFE SINGLE DOSE
ASCARIFUGE ALSO INDICATED IN THREAD-
WORM INFECTIONS

AVAILABLE AT ALL LEADING CHEMISTS

Navaratna Pharmaceutical Laboratories,

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Introducing

OPIL

"OPIL" WHOLE LIVER EXTRACT

Each c.c. of **Opil Whole Liver Extract** contains the anti-anæmia erythrocyte maturing principles from 15 grammes of fresh liver.

The Product is Standardised for B₁₂ activity by microbiological methods.

It is less painful and more effective.

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With 'Plastules', adequate iron dosage may be administered with utmost therapeutic advantage. The inclusion of vitamin B₁₂, folic acid, liver extract and yeast, corrects any concomitant deficiency of these important hæmopoietic factors.

Plastules*

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Available in four combinations

- ★ Plain
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Packing: Bottles of 30 and 300 capsules

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'GLAXO'

3 injections at monthly intervals.

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2 injections at an interval of one month.

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3 injections at intervals of one month.

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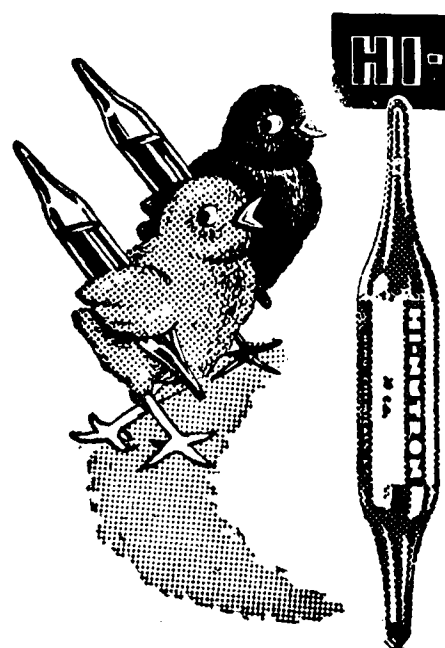
(Diphtheria-Tetanus-Pertussis Prophylactic)

3 injections at intervals of one month.



All preparations are issued in boxes of 3 × 1 cc. ampoules, except Diphtheria Prophylactic 'Glaxo' which is available in 3 cc. vials.

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HI-NUTRON

restores nitrogen equilibrium

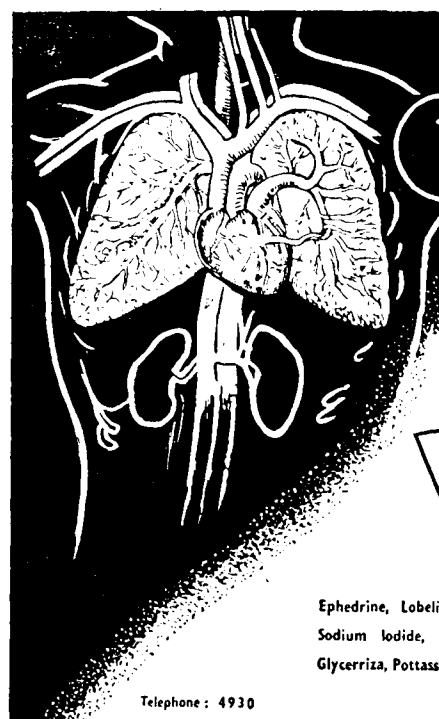
The negative nitrogen balance in illness leads to breakdown and excretion of body proteins like those of the muscles; the patient gets thinner every day.

HI-NUTRON restores the nitrogen equilibrium preventing waste during illness and aiding convalescence.

HI-NUTRON contains the protein 'Myosin' which provides all the essential amino acids.

Ampoules of 5 and 10 cc.

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MULTIMIX

(Oral & Injectable)
A DEPENDABLE ANTI-ASTHMATIC

For
SYNERGETIC THERAPY
OF
BRONCHIAL ASTHMA &
SPASMODIC COUGHS

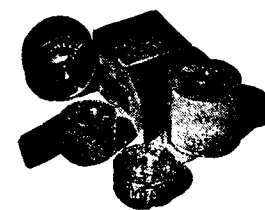
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That is the secret of Dalmas Elastic Wound Dressings; they do aid healing and not only give safety from infection, but prevent any secondary infection. A Dalmas dressing is easy to apply & perfect in its protection.



DALZO Zinc Oxide plasters have proved their reliability and efficiency throughout the world. They are hygienically safe and fully antiseptic. Available in 10 yd; 5 yd; 3½ yd; or 1 yd; spools with widths ¼" to 3".

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FRACTOPL Fractoplast Pls of Paris Band are easily applied and quick to dry. They give a perfect protective case do not crack.

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The importance of family life in the stability of any community is becoming increasingly recognised in many countries, and with this is developed the need of an efficient and harmless contraceptive, aesthetically pleasing and easy to use. Gynomin ideally fulfils the requirements. Its high spermicidal properties together with its cleanliness of application and its reliability of keeping in all climates promote confidence and trust which help considerably to maintain a happy family life.

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You get better Vitamin A
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For the improved
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Acne
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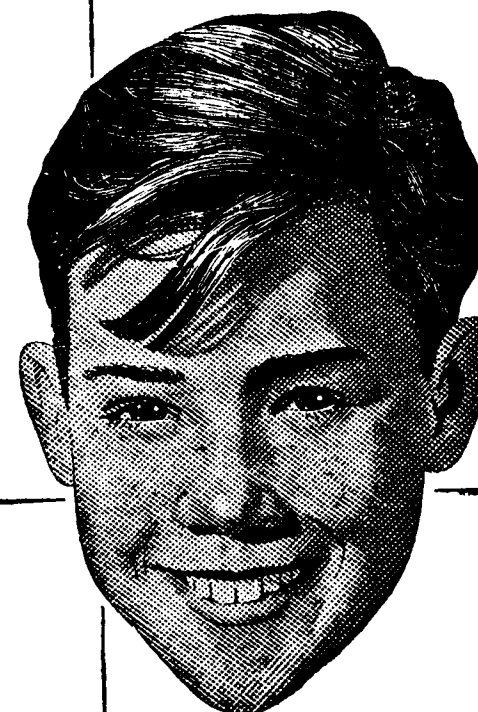
This new form of application (30 drops per cc) consists of a clear non-oily, non-alcoholic water-miscible solution, containing 150,000 I.U. per cc (about 82 mg vitamin A palmitate). The drops are taken in tea, coffee, fruit juice, etc., where they emulsify easily. In order to avoid any after-taste, the dose should be followed by a liquid draught.

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Packings: 7.5 cc 50 cc

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FERROMALT—Liquid malt extract is used as the basis of this preparation and the extract chosen is the finest available, being rich in the B-complex vitamins, protein, mineral salts and diastase. To this are added Collosol Ferro-cuprum (colloidal iron and copper), vitamin D and concentrated orange juice.



FERROMALT

IN 4 oz. AND 8 oz. BOTTLES

Made by THE CROOKES LABORATORIES LIMITED
Makers of CROOKES HALIBUT OIL

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FOR OVER **80** YEARS
*Prescribed With Confidence
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HEWLETT'S MIXTURE

WITH OR WITHOUT OPIUM IN 4 OZS. & 10 OZS. BOTTLES.

**A PRINCIPAL REMEDY
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Contains:

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LIQ. BISMUTH.
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**INDIGESTION
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PALATABLE DIETARY SUPPLEMENT

Ensures healthy growth and
maintenance of body structure.



Each Fl. Oz. of Sanimalt provides:

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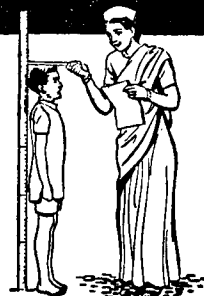
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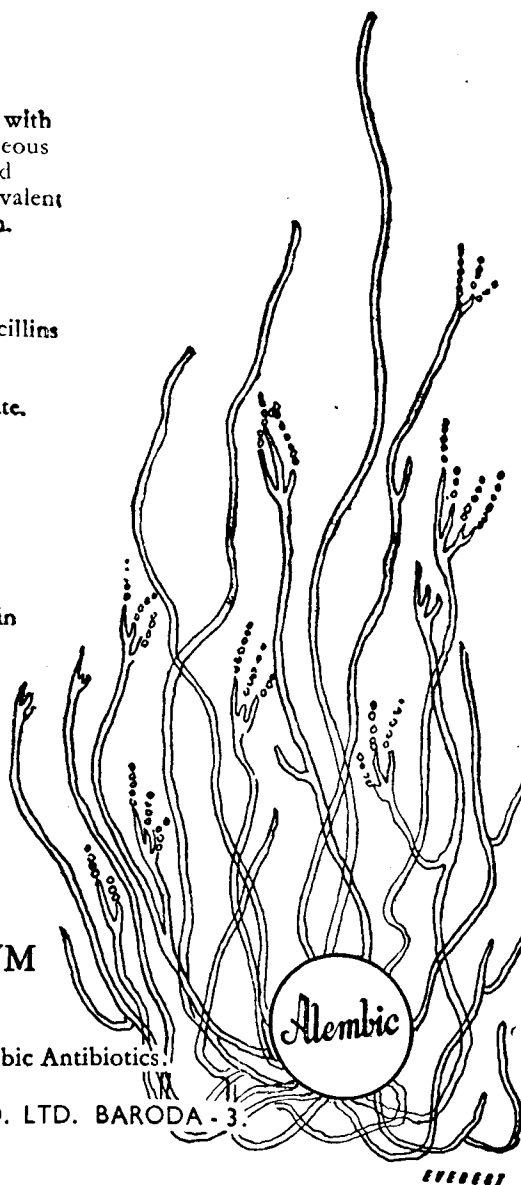
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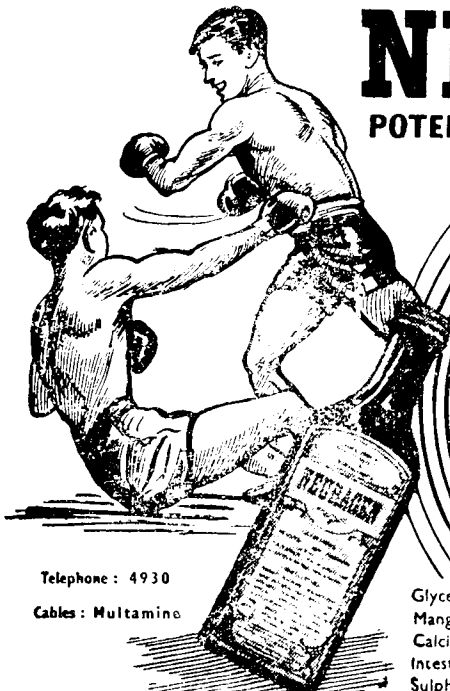
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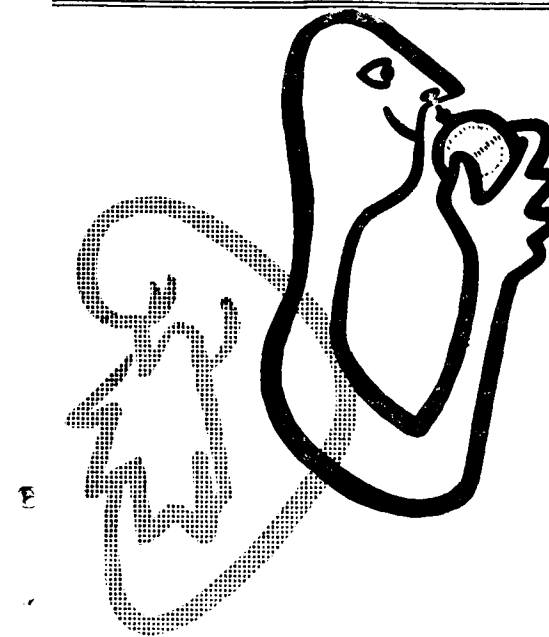
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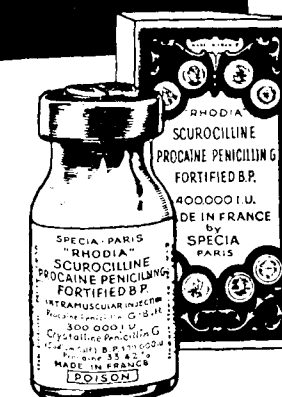
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1. Bunim, J. J., et al.: J. A. M. A. 157:311, 1955.
2. Boland, E. W.: California Med. 82:65, 1955.
3. Waite H.: Bull. Rheumat. Dis. 5:81, 1955
4. Spies, T. D.: GP, in press.

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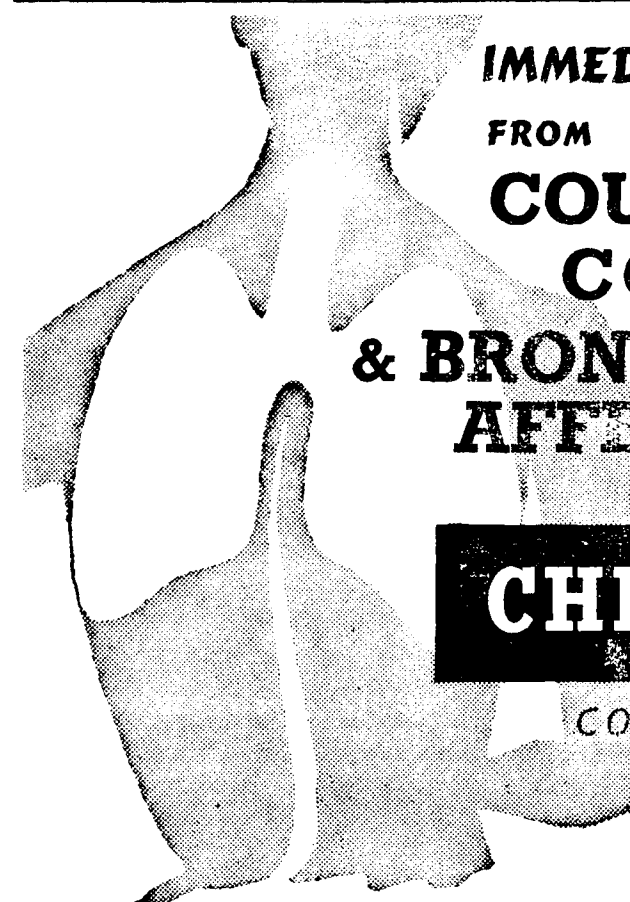
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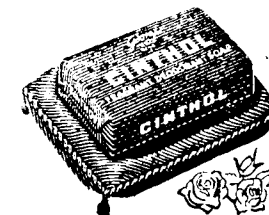
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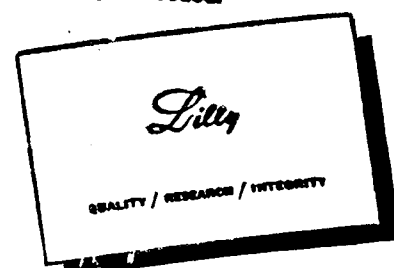
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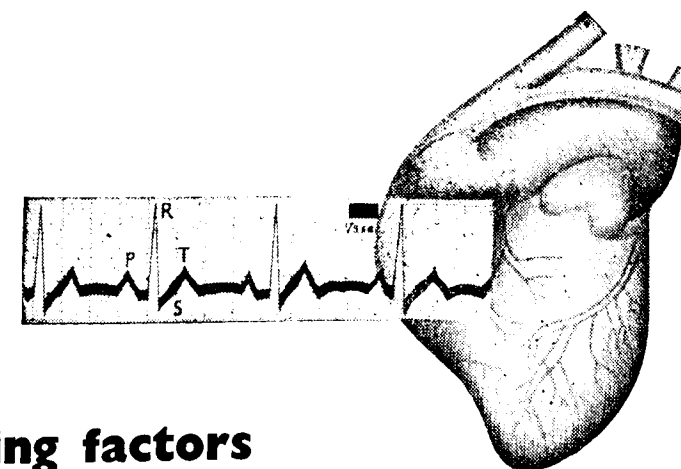
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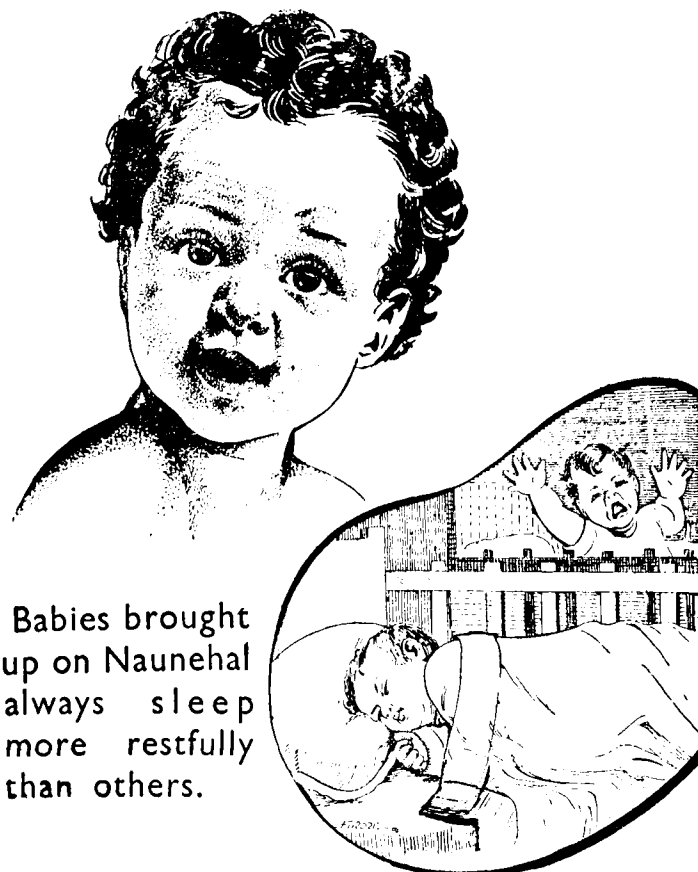
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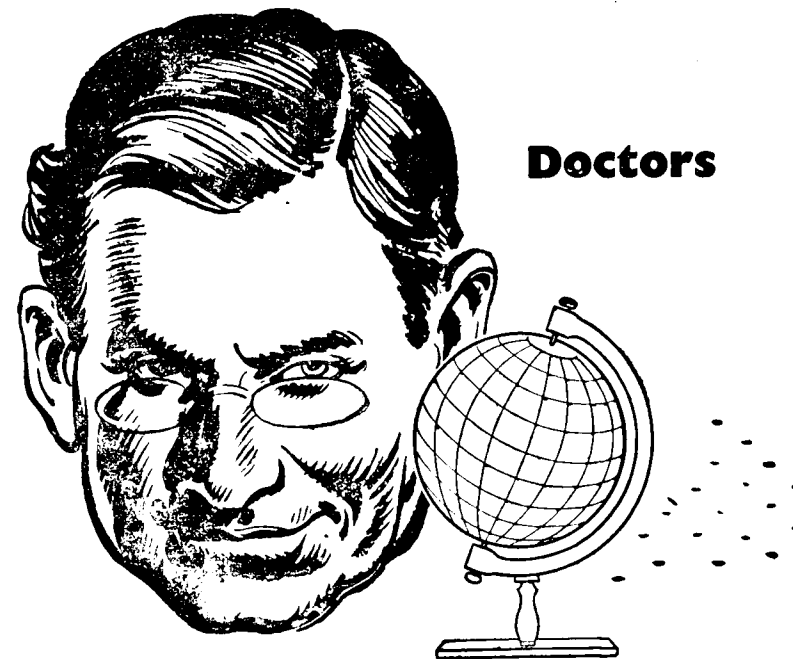
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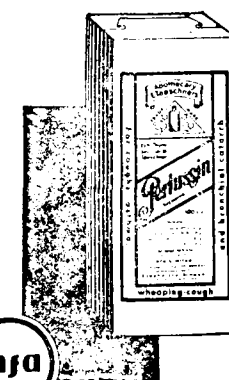
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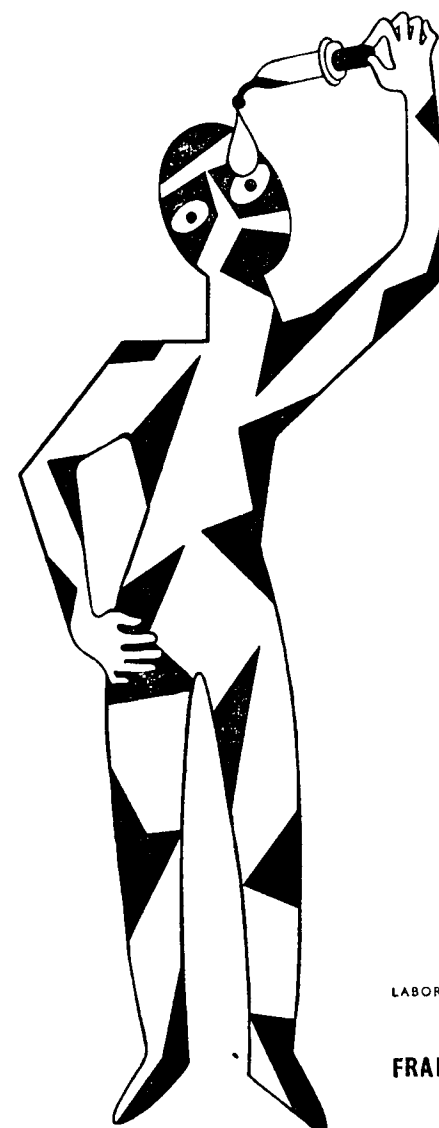
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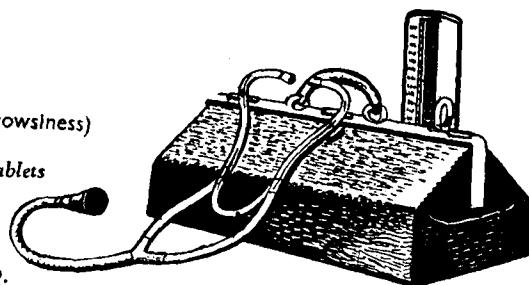
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No. 1

Original Articles

PIN-HOLE MEATUS IN THE ADULT MALE*

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Hon. Surgeon, Govt. General Hospital, Madras 3

IT is the intention of this paper to draw the attention of the readers to the condition of pin-hole external urinary meatus in the adult male. Though an apparently minor disease, it has been responsible for an enormous amount of morbidity, and though it occurs not infrequently, has not received the attention that it deserves.

Incidence.—During the 7½ years ending with December '53, out of a total of 327 cases of urethral strictures of all types that were treated by the author, there were 41 cases of narrow pin-hole meatus—an incidence of 12.5%.

The age-distribution of 32 of these 41 cases was as follows :—

Between 15 and 20 years	...	8 cases
" 21 and 30 "	...	9 "
" 31 and 40 "	...	6 "
" 41 and 50 "	...	7 "
" 51 and above	...	2 "

The ages of the other nine cases were not mentioned.

Thus contrary to some popular impressions, pin-hole external urinary meatus was found to be responsible for dysuria and other symptoms even after the second decade of life.

Symptoms and signs.—All these patients had to strain to pass urine. The urinary stream was very narrow and came out in a "thin jet." The act of micturition took longer than in other healthy people.

*Specially contributed to the ANTISEPTIC.

In these 41 cases, erection was normal and ejaculation was painless in all. Only one patient complained of infertility and seminal examination revealed azoospermia.



FIG. 1. A case of pin-hole meatus with urethral fistula. Note the depigmentation of the glans in the perimeatal region, and the external orifice of a urethral fistula, at the peno-scrotal junction.

Local complications:—The following well-recognized complications of other forms of urethral stricture were noted in these cases:—

1. Ten cases had periurethral abscesses and urethral fistulae (vide Figs. 1 and 3).

2. Eight cases came for relief of acute retention of urine.

3. Three cases were brought for treatment with extravasation of urine.

4. Three cases sought relief for dysuria and an elephantoid condition of the penis.

Systemic complications:—Due to associated urinary sepsis and chronic back-pressure in the vesical and renal regions, the kidney function was below normal in several of these cases. In one extreme example, the blood urea was 90 mg. per cent and the blood urea

Local examination:—The penile shaft was usually normal. However in many cases due to the presence of adhesions between the preputial or penile skin and the region of the corona glandis, the coronal sulcus was either not present at all or seen very incompletely. This gave a shortened appearance to the penis and the glans looked incomplete.

Depigmentation of the covering of the glans penis in the infra and peri-meatal regions (vide Figs. 1 and 2) was a marked feature in 16 cases; this depigmentation was much less near the coronal sulcus. Quite a few of these adults had an abnormally high placed external urinary meatus.



FIG. 2. To show the depigmentation of the glans penis.

clearance was only 14.7% of normal. Recurrent attacks of fever with rigors were occasionally seen. A moderately severe degree of secondary anaemia was present in three patients.



FIG. 3. This patient had phimosis with adherent prepuce, pin-hole meatus and urethral fistula (the external orifice of which is seen near the peno-scrotal junction).

Macroscopic pathology.—(A) **Urethra:**—The state of the urethral lumen was studied in several of these cases during the operative treatment of their diseases. These studies were supplemented by urethroscopic examinations and by urethrograms. These last were carried out, by radiologically visualizing the urethra by injecting 10 cc. of iodized oil into the

urethra, adopting the standard technique.

These studies revealed that the narrowing was restricted to the external meatus and the neighbouring 2 to 3 mm. of the terminal urethra. The rest of the urethra, except for a generalized dilatation, revealed no abnormality.

However, the urethra just proximal to the stricture was asymmetrically dilated, there being more dilatation towards the floor than towards the roof of the urethra (vide Fig. 4).

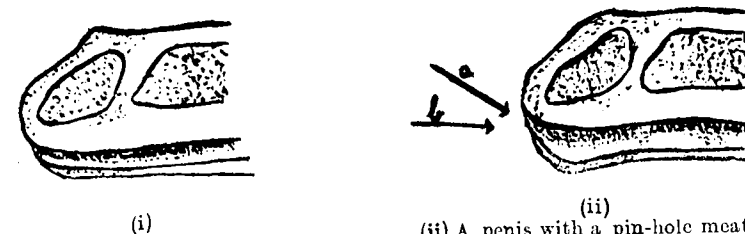


FIG. 4. Diagrammatic representation of longitudinal sections of the terminal portions of the penis in:—(i) Normal penis.

(ii) A penis with a pin-hole meatus. Note in ii, the generalised dilatation of the urethra and also the asymmetrical dilatation close to the pin-hole meatus. Arrow a indicates correct direction for dilatation, and arrow b, the wrong direction.

(B) **Bladder:**—Cystoscopically, trabeculations and sacculations were seen, suggesting chronic obstruction to the outflow of urine from the bladder.

(C) **Kidneys:**—These were investigated radiologically in 10 cases in this series. In only one there was very obvious bilateral hydronephrosis (Fig. 5, see page 4)*

*After submitting this paper for publication I have come across 2 more cases of bilateral hydronephrosis due to neglected pin-hole meatus.

WHAT WAS THE ETIOLOGY OF THIS CONDITION? I. *Congenital cause*.—In a few probably this condition was entirely congenital because:—

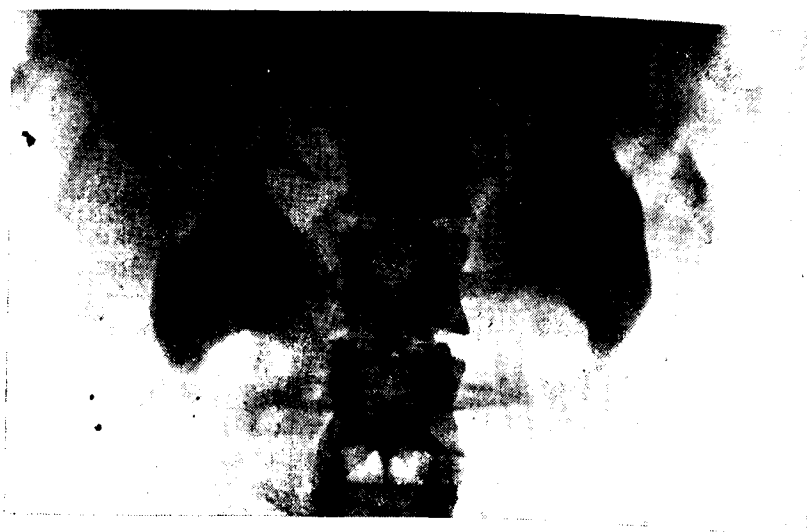


FIG. 5. A pyelogram from a case of pin-hole meatus, showing bilateral hydronephrosis.

(a) Embryological studies and clinical observations carried out by others elsewhere have revealed the external urinary meatus to be a favourite site for congenital narrowing; and (b) the adhesions between the preputial skin and the glans penis that were present in some of these cases could also be explained embryologically by a failure of "desquamation" a process of epithelial breakdown that normally took place just prior to birth and resulted in the separation of the deep surface of the preputial fold from the surface epithelium of the glans penis.

II. *Acquired cause*.—However, the following observations made plausible, an *acquired cause* for narrowed pin-hole meatus in other cases in this series: (a) Out of these 41 cases, 21 gave a history of circumcision having been done on them for attempted cure of difficult micturition. (b) Some of these cases came to us with a phimosis, and dysuria or urethral fistula, etc. (e.g. case shown in Fig. 3). When we attempted to circumcise these patients, circumcision was technically difficult because of dense and vascular adhesions between the glans penis and the under-aspect of the preputial skin. The adhesions appeared to be post-inflammatory and there were signs of inflammation in the neighbouring regions. The adhesions were densest in the region of the corona glandis—an area not so well drained as the regions nearer the preputial orifice. In many there was ulceration of the glans. These ulcers were also seen near the external urinary meatus, which was inflamed.

(c) The presence of depigmented patches in the skin of the glans perhaps suggested old healed inflammatory scars.

(d) Though phimosis was fairly common in new born babies and infants, pin-hole meatus was not at all common.

Hence the chain of events that lead to an acquired narrowing of the meatus was probably as follows:

(i) Balanoposthitis due to inadequate drainage of the preputial sac because of a pre-existing phimosis. Phimotic patients are more liable to infection of the preputial sac than others.

(ii) As a result of balanitis, meatal ulceration.

(iii) Healing of these ulcers, with fibrosis and consequent narrowing of the external urinary meatus.

Treatment.—I. **INTERMITTENT DILATATION OF THE NARROWED MEATUS**.—This was one of the commonest procedures that we have adopted. It was easily carried out and gave good results in many cases.

Main instrument used.—When the meatus was very narrow, the finer sizes of Hegar's uterine dilators have been found useful for the dilatations. In view of the asymmetrical dilatation of the terminal urethra just proximal to the stricture (vide Fig. 4, page 3) the Hegar's uterine dilators were used with the concavity of the curve of the instrument looking towards the ventral (scrotal) aspect of the urethra. In the absence of Hegar's uterine dilators, the smaller sizes of Lister's urethral bougies (sizes 0-2, $\frac{1}{2}$ -3 or 1-4 Eng. for the initial dilatations) were found to be almost as good. Once the pin-hole meatus had been dilated up to size 12 Fr, W. Powell's straight urethral bougies commencing with the smallest (size 12 Fr.) were used for further dilatations. Owing to the absence of a curvature in these latter bougies, they were easier to handle especially by the patients themselves.

ANÆSTHESIA.—1. *General anaesthesia* was generally preferred in very nervous patients and especially for the initial dilatations.

2. *Local anaesthesia* using anaesthetic ointments (e.g. "Ane-thaine," "Nupercaine") was used in all patients who were not nervous, and in almost the entire series, for second and subsequent dilatations.

In this method, the region of the meatus was anesthetized by smearing it with the anaesthetic ointment. After a minute or two, a fine bougie or dilator was smeared liberally with the anaesthetic ointment and then introduced into the meatus and the neighbouring urethra for about 1 cm. This bougie was held in position for a minute; it was then withdrawn and the process was repeated with the next bigger-sized bougie. By this technique the mucous membrane of the meatus and the terminal urethra and any raw area that had been produced by the dilatation got anesthetized.

Technique of dilatation:—Standing on the right or left side of the patient, the glans penis was held from the side so as to avoid pressure on the urethra which was along the ventral aspect of the glans. The smallest size sound was then passed into the narrowed meatus.

A recapitulation of Fig. 4 would reveal that the floor of the urethra proximal to the stricture was dilated more than the roof. Hence, instead of passing the bougies along the long axis of the penile shaft, if the bougies were passed inwards and downwards (Fig. 4 i.e. towards the floor of the urethra), dilatation was not only easy but the risk of false passages and associated trauma was greatly minimized. To avoid excessive trauma not more than three bougies were passed at one sitting.

These dilatations were repeated at intervals of a week for the first three or four dilatations and then at progressively increasing intervals.

If there was excessive pain during micturition subsequent to these dilatations, the patient was advised to apply an anaesthetic ointment to the region of the meatus a couple of minutes before he started the urinary flow.

The results of this line of treatment were good in some cases. The old adage "once a stricture, always a stricture" applied well to these cases of pin-hole external urinary meatus. Dilatations had to be done at intervals varying from 4 weeks to 12-14 weeks depending on how quickly the stricture contracted down again. This varied in different individuals.

Many of these patients, particularly those from the intelligent classes, have been taught to dilate the meatus themselves and to keep themselves free from symptoms. Five persons in this series have been dilating their meati once every 4 to 6 weeks for over 5 years now and are leading an active normal life.

II. PERINEAL URETHROSTOMY AND RETROGRADE DILATATION:—

Indications:—This operation was used by us for the following 2 groups of cases:

(i) Those patients who were not able to come frequently for repeated dilatations and who were also not willing to dilate their narrowed meatus themselves; and (ii) those in whom the pin-hole meatus narrowed down so quickly after a dilatation that treatment with dilatations alone was practically ineffective.

THE PRINCIPLES UNDERLYING THE OPERATIONS WERE: (a) *Deviation of the urine from the diseased area.* This was brought about by draining the bladder through a perineal urethrostomy (vide Fig. 6, see page 7).

(b) *Dilatation of the narrowed external meatus in a retrograde direction:*—Retrograde dilatation i.e. dilatation of the narrowed urethra from its wide scrotal end to its narrow free end, by passing

a sound through an external urethrotomy wound facilitated easy dilatation and minimized trauma to the neighbouring urethra.

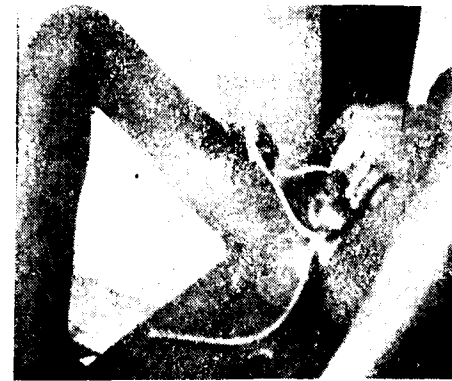


FIG. 6. To show the perineal urethrostomy drainage of the bladder and an indwelling urethral catheter, in a case subjected to operation.

(c) *Maintenance of the meatus in a dilated state during the process of healing:*—This was attained by means of a urethral catheter left *in situ* (vide Fig. 6). This catheter maintained the meatus open and by acting as a splint, facilitated re-epithelialization of the raw meatus by the neighbouring prolific urethral epithelium.

Technique of the operation:—Under low spinal anaesthesia and with the patient in the lithotomy position, external urethrostomy was done using a $1\frac{1}{2}$ " to 2" median incision. If

the incision was kept exactly in the midline, the urethral lumen was easy to identify.

After laying open the urethra at the bottom of the incision, a self-retaining rubber catheter was introduced into the bladder through the proximal opening in the urethra.

The soft tissues around the distal opening in the urethra at the bottom of the perineal wound were then retracted and through this distal opening sounds were passed along the penile urethra to the external meatus and the narrowed meatus was dilated.

A thin rubber catheter was then threaded along the penile urethra from the perineal opening till it came out from the external urinary meatus. This catheter was retained in position, by suturing the two ends of the catheter together (vide Fig. 6).

A few stitches were used to close the perineal wound, layer by layer, on either side of the tubes, but not between them. No separate drain was necessary in the wound.

In the post-operative period, the patient was given parenteral penicillin and oral sulphanilamides. These minimized both the urinary infections and the mild urethritis around the catheter. Both the penile urethral and the urethrostomy catheters were removed by about the 14th post-operative day and the patient was allowed to pass urine *per vias naturales*. The perineal wound was covered with sterile dressing. This wound usually healed completely by the end of two to three weeks.

RESULTS OF THE OPERATION:—There was no shock and no mortality in the nine cases operated upon during the period under survey.

The immediate results have been very good; all the patients were able to pass urine freely.

The late results are available in 7 cases, the longest interval being five years and the shortest in this series, being three and a half years. In one case there has been a recrudescence of the trouble. The other six are quite happy, though one of them is now complaining of having to strain a little to pass urine, though the urinary stream is quite broad.

III. OTHER LINES OF TREATMENT:—Several other operative procedures have been tried by other surgeons. Of these, one of the most popular appeared to be meatotomy of the narrowed meatus, preferably with a diathermy knife. With a knife, a cut about $\frac{1}{2}$ " to $\frac{3}{4}$ " long was made just to one side of the middle line and downwards, so as to lay widely open the extreme terminal portion of the urethra. The urethral mucous membrane was stitched to the skin of the glans, whenever possible. Pressure applied on the cut surfaces for a few minutes, generally stopped the oozing of blood. The wound edges were kept apart and prevented from bridging across the gap till epithelialization was complete.

Though this method has given excellent results in the hands of some of my colleagues, I have not been very happy with the ultimate results.

IV. Treatment of associated urethral fistulae, abscesses, acute retention of urine have followed the normal, well-recognised therapeutic or operative lines.

A word about prophylaxis.—Since phimosis seems to play an important role in the aetiology of pin hole urinary meatus, early circumcision for every individual with phimosis, should diminish the incidence and gravity of these cases in later life.

Summary.—1. The incidence, the symptoms and signs, the complications and the gross pathology of pin-hole meatus are described, and the probable aetiology is discussed, based on observations made on 41 cases of this condition in the adult male.

2. The surgical treatment of this disease is dealt with in detail and the results of therapy are briefly assessed.

Acknowledgements.—It is with pleasure that I acknowledge with grateful thanks the help rendered to me by my enthusiastic assistants, Drs. Nanjunda Rao, Kumaravelu, Narendran and Venkatakrisnan. It was very kind of the Editors of the *Indian Journal of Surgery* to have permitted me to quote from my article in their esteemed *Journal* (Vol. xv, No. 4). I also thank the successive Deans of the Government General Hospital, Madras for permission to make use of the Hospital records.

CONTINUED MILD PYREXIA

It is easy to place too little significance on clinical features, but one can err in the opposite direction. Children have been confined to bed for months on end for a continued mild pyrexia—a "ninety-niner" it could be called—with no symptoms, no signs, no leucocytosis, a normal sedimentation rate, and all investigations negative. Surely the advice here is to throw the thermometer out of the window and allow the child to get up.—(*Current Medical Digest*, Sep. 1955, from *B.M.J.*, 12-2-1955).

TETRACYCLENE (ACHROMYCIN) IN VENEREAL DISEASES*

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ACHROMYCIN which has been recently developed by Lederle Laboratories is a crystalline antibiotic prepared by the catalytic hydrogenation of aureomycin and by fermentation, structurally differing from aureomycin in the absence of chlorine in position 7 of the chemical formula of the latter. A review of the findings on the pharmacology *in vitro* and of the clinical observations in the literature on achromycin, shows that it is a more stable drug, possessing a high solubility and greater absorption, and has shown fewer side-reactions than any of the newer antibiotics, with the added advantage of a comparable broad spectrum antibacterial activity, to aureomycin and terramycin. The drug passes through the blood-brain-barrier and the C.S.F. levels have been reported to be four times higher than those of aureomycin. It is also reported that there is no antagonism between achromycin and the other antibiotics and little or no synergism. In human beings, adequate blood-levels are attained with 250 mg. doses given orally, every six hours.

A report is presented on the therapeutic value of achromycin in venereal diseases. Adequate quantities of achromycin in capsules, achromycin-triple-sulpha tablets and achromycin intramuscular, were generously donated by Lederle Laboratories for the purpose of this therapeutic investigation. Achromycin is put up in 250 mg. capsules. Achromycin-triple-sulpha is a combination of achromycin 125 mg. with 167 mg. each of sulphadiazine, sulphamerazine and sulphamethazine incorporated in each tablet. Achromycin-intramuscular is a powder containing 100 mg. in each vial. For the oral administration of the antibiotic, the patients were hospitalized and patients receiving the intramuscular medication were treated on an ambulatory basis.

The diagnosis of the diseases was established by careful clinical and laboratory examinations. In the selection of the types of disease, emphasis was placed on the treatment of cases of gonorrhoea, Lymphogranuloma venereum and Donovanosis although a few cases of syphilis, chancroids and other borderline disease conditions were included in the scheme.

Table I gives the total number of cases treated with achromycin, the number of cases under each category of disease, the sex-wise distribution and the preparation used in the treatment:—

*Specially contributed to the ANTISEPTIC.

TABLE I

Category of disease	Number of		Total	Preparations used in treatment
	Males	Females		
Acute gonorrhoea ...	52	-	52	37 cases had oral achromycin
Lymphogranuloma venereum (Total)	18	10	28	13 with achromycin (oral); and 12 with achromycin-triple-sulpha (oral)
Inguinal ...	15	2	17	
Genito-anorectal syndrome ...	3	8	11	
Donovanosis (Granuloma venereum)	14	6	20	All 20 with achromycin (oral)
Syphilis ...	-	4	4	Achromycin oral
Chancreoids ...	2	-	2	Achro. oral-1 and achro.-triple-sulpha 1 case
Non-specific urethritis ...	3	-	3	Achromycin (oral)
Reiter's syndrome ...	-	1	1	
TOTAL ...	89	21	110	

Gonorrhoea.—For the purpose of this study only male patients with acute gonococcal urethritis, were chosen as it is easier to assess the value of the drug both clinically and bacteriologically. Routine cultural tests were not made either for diagnosis or for cure, as in our experience, a positive smear in an acute case in the male and repeated careful negative smears after treatment during an observation period of ten days have a high degree of accuracy in the diagnosis and cure of the disease.

52 patients with acute urethritis were treated, 37 of whom received oral achromycin and 15 intramuscular achromycin. Two patients in the series suffered from acute unilateral epididymitis as a complication of urethritis. Routine serological tests for syphilis were performed on the patients with gonococcal urethritis and all except 3 were negative. The 3 cases were sero-positive in low dilutions with a titre of 4 and below. The dose of achromycin oral was 1 g. consisting of four capsules administered as a single session treatment. 33 patients were cured clinically and bacteriologically in 24 to 48 hours and remained cured during an observation period of ten days. Four patients failed to respond with the 1 g. dose but were cured with 1 g. of the drug daily for two days. Three of the patients presented themselves with acute gonococcal urethritis 27 days, 45 days and 6 months after the treatment for the first attack and an epidemiological investigation of the sexual partners confirmed the diagnosis of re-infection in these patients. They were cured with 2 g. of achromycin. One of the patients in the series with acute urethritis and a negative serology, who was cured with 1 g. of achromycin reported five weeks later with a penile chancre, dark-field positive

to *Treponema pallidum* but sero-negative. He denied any fresh contact in the interval between the cure of the urethritis and the appearance of the chancre. One patient with acute gonococcal epididymitis was treated with 1 g. of achromycin daily for four days with satisfactory results. Eight patients with acute anterior urethritis were treated with one dose of 100 mg. achromycin intramuscular; 4 did not respond (a failure rate of 50%); 2 of these failures and another additional fresh case were treated with 200 mg. given in a single session. Two of them failed to respond with 200 mg. of the drug and defaulted from further observation. The third patient who failed to respond with 200 mg. of the drug, was cured with 300 mg. of achromycin.

Six patients with gonococcal urethritis were treated with 300 mg. achromycin-intramuscular in a single session. There was one failure. All the patients who received achromycin intramuscularly complained of pain at the site of injection which lasted for 48 to 72 hours. The pain was much more severe in patients who received the larger dose of the drug. One patient with acute gonococcal epididymitis was treated with 400 mg. of achromycin intramuscular daily for four days. The epididymal tenderness and swelling subsided and the urethral discharge disappeared with clear urine. Bacteriological examination of the urine was negative to pus cells or gonococci.

Lymphogranuloma venereum.—Table II gives the detailed classification of the types of *LG*V treated with the antibiotic:—

TABLE II

Clinical condition	Number of		Total
	Males	Females	
Acute <i>LG</i> V bubo			
unilateral ...	9	1	10
bilateral ...	4	-	4
Chronic			
unilateral ...	1	-	1
bilateral ...	1	1	2
Ano-rectal syndrome of <i>LG</i> V			
with stricture ...	2	5*	7
without stricture ...	1	3*	4
TOTAL	18	10	28

* One case in each category with genital ulceration and with recto-vaginal fistula.

The diagnosis of the disease was established on the basis of the clinical condition, a positive Frei-reaction, hyperproteinemia and hyperglobulinemia and in some cases by the demonstration of virus bodies in the bubo-pus and histological examination of biopsied lymph nodes.

Inguinal adenitis (*LGV*).—Among the 17 patients with inguinal adenitis due to *LGV* the affection was unilateral in 11 and bilateral in 6. The disease was subacute in 14 and chronic in 3, the duration of the malady varying from one to sixteen weeks. In the 3 chronic cases the condition was complicated by discharging sinuses. Thirteen patients received achromycin capsules orally and 4 patients were treated with achromycin-triple-sulpha tablets. The dose of achromycin capsules was 1 g. daily and the duration of therapy varied from 6 to 20 days depending upon the duration of the infection, the extent of involvement and the response to treatment. During the course of therapy, the buboes in 4 patients became fluctuant and were aspirated.

Four patients were treated with achromycin-triple-sulpha tablets using 8 tablets a day for four to twelve days. The treatment had to be discontinued in two patients before a satisfactory therapeutic response could be obtained, as they developed toxic intolerance to the drug in the form of pyrexia and vomiting. In one of the two patients the treatment was completed with achromycin capsules. The therapeutic response may be stated to have been very satisfactory except in the two cases who failed to complete the treatment. Of the 15 patients successfully treated, who were followed up for a period of six months, none showed any clinical evidence of recurrence of the disease. The serum proteins in a few of the patients examined, returned to normal values although the Frei-test remained positive.

Chronic ano-rectal lymphogranuloma venereum.—There were 11 patients (3 men and 8 women) with chronic ano-rectal lymphogranuloma under study. The duration of the disease in these patients varied from six months to six years. In 7 patients there was ano-proctitis with inflammatory stricture of the rectum. The stricture was of the annular, diaphragmatic type in 5 patients and of the tubular type with considerable peri-rectal pathology in 2 patients. The remaining 4 patients suffered from ano-proctitis without stricture. One female patient from each of these categories presented in addition esthiomene with recto-vaginal fistula. Eight patients received treatment with achromycin-triple-sulpha at the rate of 8 tablets a day for variable periods ranging from 8 days to 3 months. The smallest total dose was 64 tablets and the largest amount of drug administered was 416 tablets. Three patients in the group with ano-rectal disease, were treated with achromycin capsules, the dose being 1 g. a day for 20 days. With both types of treatment the response was satisfactory in patients with ano-rectal lymphogranuloma without stricture and in the others in whom the stricture was of the annular type. In all patients but one, the subjective symptoms of pain, tenesmus, rectal blood-stained leucorrhœa, and straining at stool, subsided dramatically during the first week or ten days of therapy. The objective improvement was rather equivocal. In the

patients without stricture, all but one achieved healing of the ulceration of the mucous membrane and subsidence of the œdema and polyposis. Proctoscopic examination revealed a smooth resilient mucous membrane without blood or pus and the normal function of defecation was restored. In one patient with ano-proctitis without stricture a therapeutic paradox occurred at the termination of therapy. While the symptoms of tenesmus and rectal discharge and painful defecation disappeared, digital examination revealed a developing but resilient annular stricture, an inch and a half from the anal margin; otherwise the mucous membrane felt normal. In 5 patients who had ano-rectal *LGV* with an annular type of stricture just admitting the tip of the index finger, antibiotic therapy combined with mechanical dilatation with increasing sizes of Hegar's dilators gave satisfactory results at the end of the period of hospitalization. The results of treatment with the antibiotic and mechanical dilatation in the two patients with tubular stricture and peri-rectal fibrosis were unsatisfactory although the subjective symptoms were relieved. The stricture was uninfluenced by treatment and in one of the patients, a colostomy had to be performed preliminary to a radical excision of the rectum.

There are two factors which determine a satisfactory treatment response in ano-rectal lymphogranuloma with stricture. The first is the relative proportion between the inflammatory and the fibrotic components of the pathological process and the second is the extent and degree of peri-rectal inflammation and fibrosis. Antibiotic therapy yields good and lasting results, if the disease process is confined to the mucous membrane and sub-mucous tissue of the rectum and is predominantly inflammatory in character. This would explain the unsatisfactory response to antibiotic therapy in patients with chronic ano-rectal *LGV* with irreversible fibrotic change as the dominant pathological picture.

Among 8 patients with ano-rectal *LGV* treated with achromycin-triple-sulpha tablets, 4 developed toxic intolerance to the drug on the 8th or 9th day of therapy. The treatment with tablets was discontinued and the patients were given achromycin capsules to complete the treatment schedule without developing any further side-reactions.

Donovanosis (*Granuloma venereum*).—Twenty patients (14 men and 6 women) with Donovanosis received treatment with achromycin capsules. The duration of the disease in the patients under study varied from a few weeks to 8 years. *Donovania granulomatis* was demonstrated in tissue smears from all the patients. (*Table III*, see page 14).

There were three pairs of conjugal donovanosis, 2 of whom suffered from active pulmonary tuberculosis. One patient, a female, suffered from a concomitant anorectal lymphogranuloma venereum. Fifty percent of the patients revealed a low-titred positive serology but without any clinical evidence of syphilis. The treatment schedule consisted of 1 g. achromycin (oral) daily for 20 days. The therapeutic

response in 19 of the 20 patients under treatment was very satisfactory. The tissue spreads from the lesions became negative to *Donovania granulomatis* in from 5 to 7 days after the commencement of the therapy and the lesions completely healed during the period of

TABLE III

Showing the geographical distribution of the lesions

Lesions	No. of cases	Sex
Penile lesions alone	8	Men
Penile and scrotal alone	1	
Penile, scrotal and groin	1	
Penile and groin	2	
Peno-scrotal and buccal	1	
Anal, peri-anal and groin	1	Women
Labial and groin	1	
Labial, vaginal and cervical	2	
Labial, peri-anal and perineal	2	
Labial, cervical, with LGV rectum	1	

hospitalization which varied from 25 to 45 days. Among these 19 cases treated successfully there were 4 with streptomycin-resistant lesions. Only one patient, a male with a chronic sclerotic type of granuloma venereum of eight years' duration, failed to respond to achromycin, both clinically and bacteriologically after 20 days of therapy but a cure was achieved by a change-over to another antibiotic, chloramphenicol, administered intramuscularly at the rate of 1 g. daily for twenty days. Although the immediate response of these cases to achromycin was eminently satisfactory, the notorious tendency of the disease to relapse should be borne in mind and a minimum period of two years' post-treatment-observation is essential to assess the permanency of the cure.

Syphilis. A limited study was undertaken to evaluate the effect of achromycin in 4 cases of early syphilis. Two married women with 22 and 24 weeks' pregnancy respectively and with dark-field positive sero-positive secondary syphilis were hospitalised and treated with achromycin at the rate of 500 mg. six hourly for 12 days. Dark-field examinations of the lesions for *Treponema pallidum* regularly made every 12 hours after the commencement of therapy were found to have become negative after 120 hours. The lesions healed within the period of completion of treatment. No Herxheimer reaction was observed. In both cases, the epidemiological precaution was taken to examine the husbands and treat them with PAM for early latent syphilis. After discharge from the hospital, the 2 pregnant women were kept under monthly observation. They delivered healthy babies at full term. The mothers and the infants were checked-up clinically and serologically for a period of three months. Both the mothers were clinically free from syphilis. There was a remarkable decline in the reactivity of the sera from a pre-treatment

titre of 64 in both cases to a doubtful reaction of 2 in the other. Both the infants remained healthy clinically and serologically negative to syphilis during the three months of post-natal observation.

The third case was of a married woman with darkfield positive sero-positive secondary syphilis. The husband on examination was also suffering from involuting secondary syphilis. The wife was treated with achromycin and the husband with PAM. The same schedule of therapy with achromycin was followed in this patient as in the pregnant cases. There was rapid involution of the clinical lesions with disappearance of *Treponema pallidum* from the lesions, in about a week. The post-treatment follow-up at six months showed that the woman was clinically free from infection and the serology had become negative.

The fourth case was of a female child, 10 years old with acquired non-venereal infection of a months' duration, who was admitted with dark-field positive condylomatous lesions of the vulva and anus, mucous patches on lips, tongue and tonsillar areas with a high-titred positive serology. The parents and other siblings of the family were clinically and serologically negative to syphilis. The child was treated with achromycin (oral) 250 mg. 6 hourly for 24 days. The clinical lesions healed in twelve days and at two months of post-treatment observation, the child was clinically free from infection and the positive pre-treatment titre of the serum declined from 128 to 16.

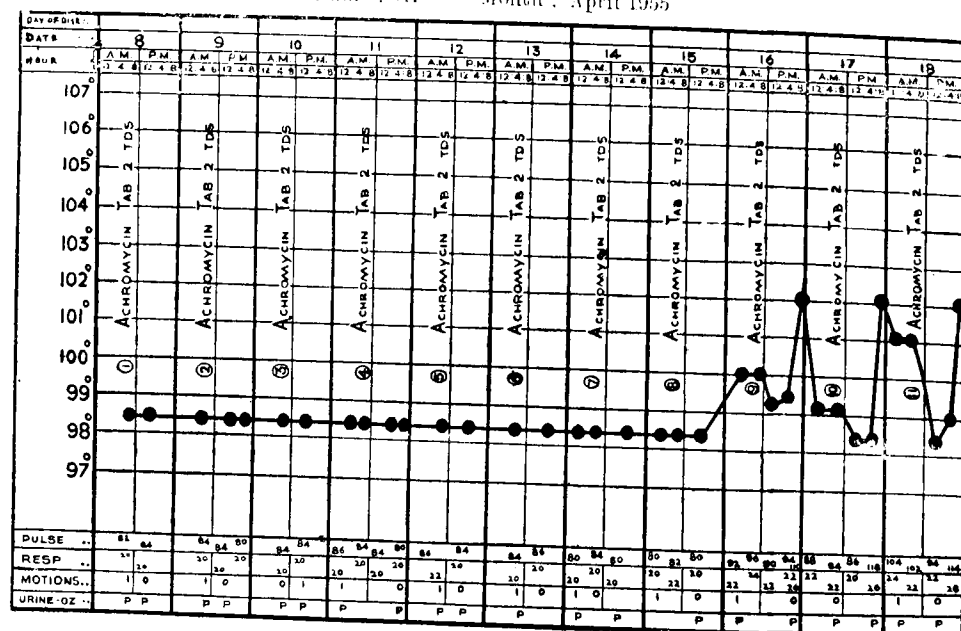
Chancroids.—Only 2 cases of chancroids in males with the diagnosis established by positive smears for Ducey bacilli, received treatment. One was treated with achromycin 1 g. daily for five days and the other with achromycin-triple-sulpha 4 tablets a day for six days. In both cases the lesions healed rapidly.

Non-gonococcal urethritis. Three male patients suffering from non-gonococcal urethritis were treated with achromycin 250 mg., 6 hourly for five days. In one patient the urethritis was due to *Trichomonas vaginalis* and in the other 2 patients, the condition was bacterial in origin. No attempt was made to cultivate the organisms. *Trichomonas-urethritis* failed to respond to the antibiotic treatment. But the 2 patients with bacterial urethritis cleared up satisfactorily at the end of the fifth day of treatment and defaulted from post-treatment observation.

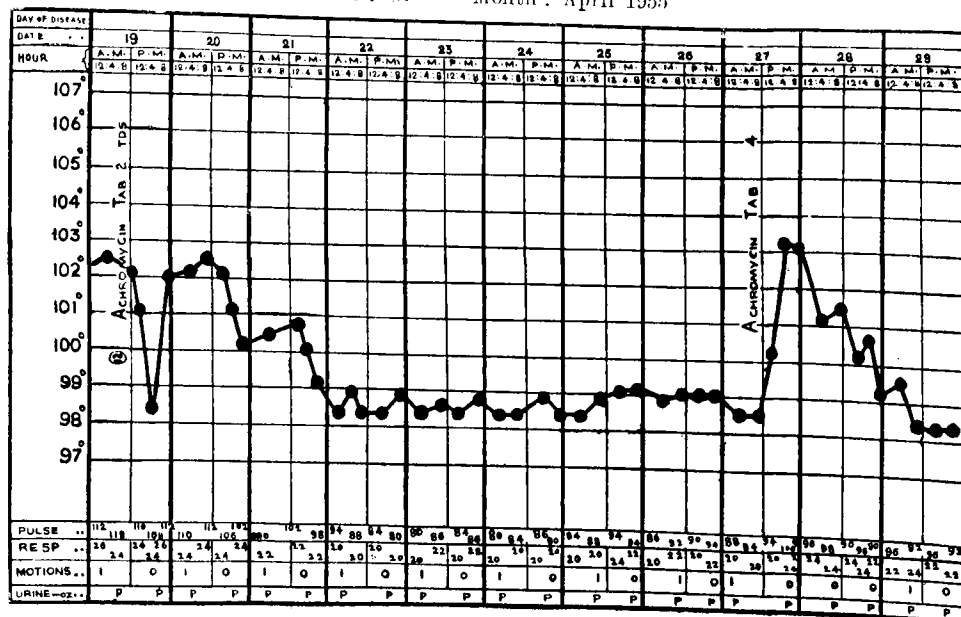
Reiter's syndrome.—A married female patient, 25 years old was referred to the V.D. Department for kerato-conjunctivitis of two weeks' duration. On examination the patient looked ill, but apyrexial. The left knee joint was swollen and painful with movements greatly restricted. There was fluid in the joint. The left cornea was hazy with marked circumcorneal injection and there was associated conjunctivitis of the same eye. Photophobia and lachrymation were minimal. Examination of the genitalia revealed a profuse purulent vaginal discharge, the vaginal mucous membrane and the cervix

uteri were inflamed and oedematous. Mucopurulent urethral and cervical discharges were present. Bacteriological examination of smears from the urethra, vagina and cervix showed plenty of pus cells and a variety of secondary organisms but no gonococci, *Trichomonas vaginalis* or *monilia* were seen. The exudates were not cultured. A straw-coloured opalescent fluid was aspirated from the

TEMPERATURE CHART
Name: G. Month: April 1955

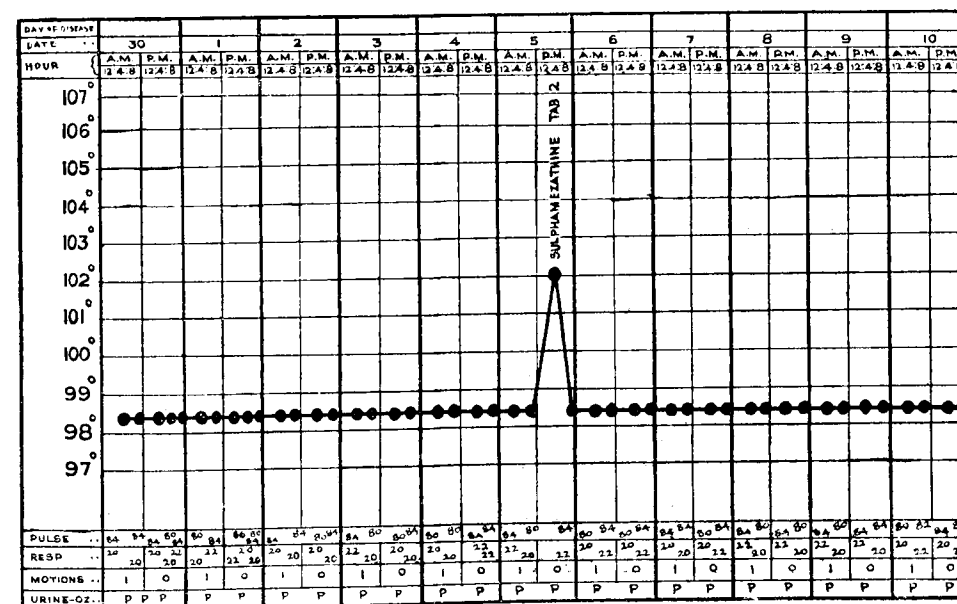


TEMPERATURE CHART—(Contd.)
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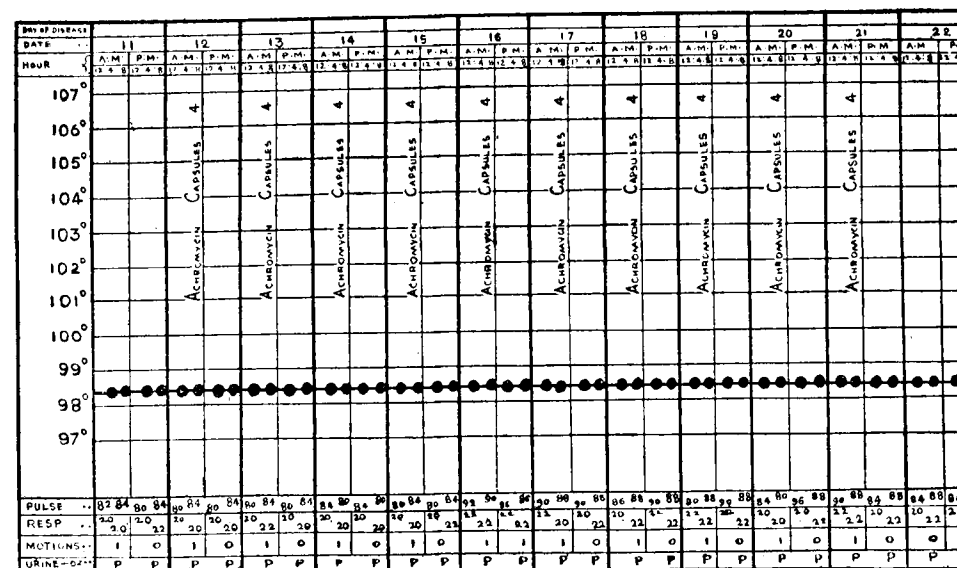


swollen left knee joint and examined bacteriologically. Plenty of pus cells were seen but no organisms. A tentative diagnosis of Reiter's syndrome was made on the basis of the triad of ocular, genital and arthritic manifestations. She was treated with achromycin, 250 mg. 6 hourly for seventeen days, totalling 17 g. of the drug. Improvement was noted in the eye, genital and joint conditions. The

TEMPERATURE CHART—(Contd.)
Name: G. Months: April & May 1955



TEMPERATURE CHART—(Contd.)
Name: G. Month: May 1955



joint swelling and pain completely subsided in three weeks. The eye condition showed marked improvement with a residual leucoma of the left cornea. The urethral, vaginal and cervical inflammations had subsided with great diminution in the discharge. The patient was discharged and asked to attend the Ophthalmic Hospital for the treatment of the residual opacity of the cornea.

Reactions to therapy.—The treatment of patients in this study with achromycin for the various categories of venereal disease was remarkably free from any side-reactions, either minor or major. One patient with ano-rectal lymphogranuloma venereum developed erythema-nodosum-like lesions on the fifth day of achromycin therapy. But the treatment was continued and the cutaneous lesions subsided after a few days. It is suggested that the cutaneous eruption was an allergic manifestation of the disease and not of the drug, since with continuance of therapy, the lesions disappeared. Nearly 50% of patients treated with achromycin-triple-sulpha tablets developed severe febrile and gastro-intestinal reactions on the 8th or 9th day of therapy. When the drug was stopped, the fever and other reactions subsided. Treatment was continued with achromycin without the temperature chart (*See pages 16 and 17*). It is but logical to assume that the allergic reactions except for some local pain at the site of injection, achromycin-intramuscular was well tolerated by the patients. The local pain could be minimised by reducing the bulk of the injected material using the smallest volume of water for dissolving the powder.

Summary and conclusion.—In this short study, 110 patients suffering from the various categories of venereal diseases were treated with achromycin-oral, achromycin-intramuscular and achromycin-triple-sulpha combination. A minimum of 300 mg. of achromycin-intramuscular is indicated for the cure of an acute uncomplicated gonococcal urethritis. One gramme of achromycin (oral) cured 88% of cases of acute urethritis. A higher cure-rate may be achieved by increasing the dosage to 2 g. In complicated cases as in gonorrhoea with epididymitis, a total of 4 g. achromycin-oral, administered for four days or 400 mg. of achromycin-intramuscular daily for four days appeared to be the minimum dosage for cure. In the inguinal type of LGV, in Donovanosis and chancroids, achromycin (oral) was found to be very effective. In the ano-rectal lymphogranuloma, the inflammatory component of the disease process rapidly responded to achromycin but the fibrotic structure was not influenced except in the early resilient annular type of strictures.

Achromycin-triple-sulpha is not recommended for the treatment of any of the venereal diseases except chancroids on account of the frequency of severe febrile reaction which the drug causes and the reaction was found to be due to the sulpha-component of the preparation. As the treatment for chancroids could be completed within a period of six or seven days and as the febrile reaction due to achromycin-sulpha combination, occurs invariably on the 8th or 9th day of therapy, it would be fairly safe to treat chancroids with the combination.

Although only four cases of early syphilis were treated with achromycin in our study, the results of the therapy seemed to be very satisfactory. In the 2 cases of

syphilis with pregnancy, the cure of the maternal infection and prevention of pre-natal syphilis in the infant born full-term and observed for three months post-natally are noteworthy features. The number of cases of non-gonococcal urethritis and Reiter's syndrome treated with achromycin were too few but the immediate response may be considered satisfactory.

In conclusion it may be stated that achromycin is a useful addition in our therapeutic attack against all the five venereal diseases and has the advantage over the other antibiotics in the almost complete freedom from toxic or allergic reactions. The present high cost of the drug will preclude its routine use in institutional practice in our country and the oral administration of the drug requires hospitalization. But in cases that are sensitive or intolerant to other antibiotics, achromycin will be a useful, therapeutically effective and non-reaction-producing drug.

REFERENCES:

1. Cunningham, R. W. and Hines, L. R. (1953-54)—The Pharmacology of Tetracycline (Achromycin) Antibiotics Annual Medical Encyclopedia Inc.
2. Gohar, M.A., Makawi, M. and Monoufi, (1954)—Zeitschr. F. Hygiene, 140: 324.
3. Putnam, L.E., Hendricks, F.D. and Welch, H. (1953-1954)—Tetracycline (Achromycin) A New Antibiotic-Anti-
4. Sanford, J.P., Favour, C.B., Harrison, J. H. (1954)—N. Eng. J., Med. 251: 20, 810.
5. Wood, W.S., Kipnis, G.P. and Dowling, H. F., (1953-1954)—Blood Cerebrospinal Fluid Gradients of Tetracycline (Achromycin) Analogues. Antibiotics Annual Medical Encyclopedia Inc.

UTERINE INVERSION AND A NEW METHOD OF TREATMENT

The first part of the article consists of a long review of the literature pertaining to the incidence, pathogenesis, and treatment of inversion of the uterus. There are different types to be considered. In local inversion a small part of the endometrial tissue is visible; in partial inversion only the uterine cavity is involved; in incomplete inversion, the uterine fundus is pressed through the cervical canal; in complete inversion the uterine fundus is totally visible through the cervical canal; there may be total inversion, or complete inversion with vaginal inversion. Pathogenically, the condition is divided as follows:

1. Puerperal or to toco-genetic inversion is subdivided into acute, subacute, or chronic, and spontaneous or violent. The incidence reported in the literature varies from 1 case in 400,000 to 1 in 4,000. The causes are mainly excessive abdominal pressure in the third stage, improper traction on the umbilical cord, cervical lacerations, uterine malformations and difficult separation of the placenta. The spontaneous type is less frequently described in the literature; the causes mentioned are fundal implantation of the placenta, uterine hypoplasia, and anomalies in the innervation of the different uterine segments.

2. The incidence of nonpuerperal or oncogenetic inversion is lower than that of the puerperal type, and from 1928 to 1953 only 21 cases were reported in the literature. Myomas were the immediate causes in 22 cases, there was a sarcoma in 1 case, and a polyp in 1. Of the many theories presented to explain the mechanism of spontaneous inversion, the main theory appears to be that of the development of changes in the uterine musculature with resulting atony or atrophy.

3. The idiopathic type of inversion is not related to pregnancy, delivery, or the puerperium and there is also no evidence of tumors. It is seen mainly in older persons with some degree of prolapse.

With regard to symptoms, the degree of shock may be variable, depending on the suddenness of its appearance. The shock occurs not only as a result of the amount of blood lost—it is also neurogenic in origin. The total mortality among patients with the toco-genetic type of inversion is about 15.8 per cent and for the oncogenetic type, about 8 per cent. The diagnosis is usually easy to make in the

puerperal stage if one has this possibility in mind. The oncogenetic and idiopathic types can be more easily overlooked because of a concurrent prolapse.

The method of treatment should be determined by the degree of inversion, the condition of the patient, and the time of the diagnosis. When shock is severe it may be advisable to use conservative measures until the condition of the patient is improved. A mortality up to 30 per cent is reported if reposition is attempted during shock; when reposition was done after treatment for shock the mortality was reduced to 5 per cent. Blood transfusions and circulatory supportive medication are necessary in the interim. Only when bleeding is very severe can reposition be life-saving.

A contraction ring or oedema are difficulties to be expected in the conservatively treated cases; they can, however, be overcome by the administration of spinal anaesthesia or adrenalin. After reposition a uterine tamponade is performed and uterine tonics are given. If this treatment is not successful, one may have to resort to vaginal hysterectomy.

Many operative procedures for repositioning and reinforcement of the uterus have been developed: the operations are done either abdominally or vaginally. The names of Haultain, Kustner, and Spinelli are familiar, but all procedures have their advantages and disadvantages. Successful pregnancies have been reported in many cases in which operative treatment was used and in none of these was a caesarean section performed.

In conclusion the authors report a case of their own in which a new method of treatment was used. The patient was a Para 2, 30 years of age, and inversion of the uterus occurred when manual removal of the placenta was done because of retention. Reposition was successful but inversion recurred 3 days later, accompanied by excessive bleeding; repeat blood transfusions and antibiotics were given until the patient was finally ready for surgical treatment 6 weeks later. The contraction ring was injected with 8 cc. of kinetin; within 10 minutes a definite relaxation of the contracting was obtained. The operative procedure is described in detail. The patient was up on the tenth day and was discharged the seventeenth day. The use of hyaluronidase preparation to relax the contraction has proved to be very successful.—(*Geburtsh and Frauenh.*, 1955, 15: 126; via *Int. Abst. of Surg.*, Oct. 1955).

TREATMENT OF HEMOPHILIA

Rosenfield emphasizes that treatment of hemophilia should be practised in accordance with the results of adequate laboratory assay of the individual coagulation defect. Laboratory tests should be sufficiently complete to reveal severe, moderate, mild, or minimal plasma deficiency and to show whether the patient is deficient in antihemophilic globulin, plasma thromboplastin component, or plasma thromboplastin antecedent, whether an anti-coagulant is present, and how much normal plasma would be required to correct the defect in thromboplastin activation. Massive blood loss should be treated with compatible whole blood. If fresh blood is required but not available, the supernatant plasma of compatible stored plasma. Blood or plasma intended for use to correct antihemophilic globulin deficiency should be drawn with extreme care to avoid any initiation of coagulation. Small clots have been found responsible for serious depletion of the antihemophilic globulin content of the donor blood. Numerous blood transfusions given over the years may have frequently resulted in iso-immunization of the recipients with hemophilia to nearly all reported blood factors. Persons with hemophilia should, therefore, be screened for evidence of iso-immunization during periods of remission before they require transfusion of whole blood, so that the blood bank may be in a better position to obtain compatible blood when an emergency arises. Compatibility tests with donor red blood cells should include the indirect antiglobulin test.—(*New York J. Med.*, 55: 1150-1152, April 15, 1955, New York; *Journal of American Med. Assn.*).

ON THE MANAGEMENT OF THE NEUROPARALYTIC TYPE OF REACTION IN ANTI-RABIC VACCINATION*

(With a Case Report)

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REACTIONS to anti-rabic vaccination in man may occur occasionally. Some of them are mild and benign in nature; they include general reactions like rise of temperature, headache, vomiting, diarrhoea, insomnia and palpitation in addition to local reactions like erythematous and urticarial rashes at the site of injection. Due to their benign nature, these reactions are not often recorded. Other reactions are however, severe and of serious import. These may be of two types: Rage de laboratoire and neuroparalytic accidents (van Rooyen and Rhodes 1948). The incidence of paralytic accidents with the killed phenolised virus is 0.012% (Greenwood, 1945); the exact incidence is not known; but is variously given as 1 in 220 to 1 in 10690 (Banerjee and Maiti, 1954); 1 in 1028 to 1 in 1406 when treated with attenuated living virus vaccine and 1 in 8500 with killed fixed virus vaccine (Ahuja, 1950) and 1 in 1350 with vaccine from the Pasteur Institute, Shillong (Bhattacharyya, 1955).

Rage de laboratoire occurs when the vaccine contains the living virus; the *virus fixe* is the causative factor in the accident. The disease occurs from just after the course of injection to about 40 days later and it consists of paralytic symptoms. Only 30 cases have been recorded and the disease is uniformly fatal (van Rooyen and Rhodes, 1948).

Neuroparalytic accidents may occur from vaccines containing the killed virus. These may be of the Landry's type, dorso-lumbar type, neuritic type, meningo-encephalomyelitic and other rare types. The Landry's type constitutes 30%; dorso-lumbar myelitis 30%; and cranial and peripheral neuritis 30% of the total paralytic accidents (Konar *et al.*, 1955). Dang (1942) reported one case of the dorso-lumbar myelitis, Dwivedi (1949) one of paralysis of urinary bladder, Banerjee and Maiti (1954) two of ascending myelitis, Konar *et al.* (1955); two more cases of ascending myelitis and Bhattacharyya (1955) one of dorso-lumbar myelitis. Except one case of Banerjee and Maiti (1954) the accidents in the above series occurred between the 8th to the 12th day of the institution of vaccination. These reactions usually occur between the 13th and the 15th day of anti-rabic treatment (van Rooyen and Rhodes, 1948) but Konar *et al.* (1955) consider that the usual period of incidence is between the 8th injection of the vaccine and two months after completion of the treatment.

*Specially contributed to the ANTISEPTIC.

The case under report is one of ascending myelitis with meningeal irritation occurring 10 days after the institution of anti-rabic treatment.

Case report.—S., male, aged 36 who was bitten by a stray dog on 7-8-'55 received daily injections of anti-rabic vaccine of 5 cc. each for 8 days, 15 days after the bite; 2 days after the last injection, he had slight fever, headache accompanied by running from the nose. Next day, he felt numbness and weakness of the lower limbs which gradually increased, till he was unable to move them; there was an associated loss of sensation also. He developed retention of urine and stool. The following day, his upper limbs became weak, and hyperæsthetic; the trunk also became hyperæsthetic. Difficulty in deglutition developed a day later, when he vomited twice. He was then admitted in M.W.II., of the Assam Medical College Hospital on the 6th of September 1955.

On examination, the higher functions were normal; slightly dilated, equal pupils responding sluggishly to light. *Fundus* (8-9-'55): Discs hyperæmic; margins blurred; veins dilated; vessels tortuous; scattered exudate in both eyes. Other cranial nerves—normal.

MOTOR SYSTEM:—Upper limbs: power weak; tone less; no wasting. Lower limbs: power absent; tone flaccid; no wasting. Neck-rigidity: slight. Kernig's sign: positive.

SENSORY SYSTEM:—Upper limbs and upper part of trunk: markedly hyperæsthetic and tender; erythematous. Lower limbs: all types of sensations lost.

REFLEX:—*Tendon reflexes:*—Upper limbs: present but diminished. Lower limbs: absent. *Superficial reflexes:* abdominal absent, plantar: indifferent. *Visceral:* Bladder and bowels—locked. Temperature: 100°F; pulse: 104/min; respiration: 22/min; B-P: 118/70 mm. of Hg.

Blood picture:—Hb: 12 gm.%, T.C.: 9500/cmm. D.L.C.: P-62, L-29, M-3, E-6. *Urine:* NAD. *Stool:* NAD. *C.S.F.:* (8-9-'55) 90 drops per minute, crystal clear, no deposit. *Protein:* 110 mg%. *Chloride:* 650 mg%. *Sugar:* 25 mg%. *Pus cells:* scanty. *Pyogenic organisms:* nil. *A.F.B.:* nil. *Culture:* sterile. *W.R. and Kahn* (10-9-'55): negative.

TREATMENT:—Achromycin: 250 mg. six hourly. Vitamin B₁: 25 mg. I.M. daily, tidal drainage for retention of urine and enema, when necessary.

9-9-'55:—Muscle power of upper limbs improved. Tenderness almost nil. Hyperæsthesia and redness of skin diminished. No difficulty in swallowing. Patient felt better but temperature was intermittent going up to 101°F. No improvement in lower limbs. No control over and sensation of micturition and defæcation.

10-9-'55:—Cortisone 150 mg. daily started. Temperature: normal.

11-9-'55:—Upper limbs getting weaker. Temperature: normal. Hyperæsthesia persisted.

12-9-'55:—Aspirin gr. 10 with calcium lactate gr. 10 *t.i.d.*

14-9-'55:—Hyperæsthesia: almost absent. No other change.

17-9-'55:—Left upper limb regained power; hyperæsthesia: absent.

19-9-'55:—Temperature 103°F. Cortisone and Achromycin stopped; hexamin started; the abdomen was distended. *Liver and spleen:* palpable. Nivaquin was given but blood showed no malarial parasites. Since then temperature persisted intermittently during his whole stay in the hospital. Culture of the urine sterile.

22-9-'55:—Patient felt the sense of touch and joint-sensations in the lower limbs.

24-9-'55:—Hyperæsthesia now in the lower part of the trunk. Cortisone, anti-histaminic drugs and aspirin were given.

25-9-'55:—Patient had profuse hæmaturia and diarrhoea; was restless, thirsty and his abdomen was distended; pulse 120/min; temperature 100.4°F; respiration: 24/min. Cortisone was stopped. Peristone N I.V., calcium, vitamin C, vitamin K, and Coagulen (Ciba) were administered. T.C.: 10500/cmm., D.L.C.: P-72, L-23, M-4, E-1. At 10-30 p.m. patient was quiet. Blood in urine. Stool: no cellular exudate, no organism. Sulpho-quino-vael given.

26-9-'55:—Patient was better; pulse was 84/min. Blood clot was found on catheterisation. Alkaline mixture started.

27-9-'55:—Patient could move right great toe. Urine: red. Temperature: 102°F, pulse: 80/min. Urine: acid. Alb: + + + R.B.C.: + + +. Pus cells: +. Culture: sterile. Achromycin—250 mg. 6 hourly, Peristone N I.V.

28-9-'55:—Urine: reddish. Power of the lower limbs improved.

30-9-'55:—Temperature 101°F; pulse: 84/min. Blood urea: 40 mg%. Streptomycin 1 g. daily I.M. Dextrose-saline: I.V.

3-10-'55:—Patient left hospital against medical advice.

On examination.—Upper limbs: power and tone—almost normal; reflexes: normal; trunk: no hyperæsthesia, nor redness of skin; Lower limb: can move the great toe slightly. Muscle: flaccid. Sensation: touch, pain and joint sensation regained partially. Knee and ankle reflexes: absent. Plantar: no response. No control over and sensation of, micturition and defæcation. Urine: pinkish. Temperature: 100°F; pulse: 84/min.

Discussion.—No definite clear-cut line of management except general measures with cessation of injections is known. Everybody agrees that once the pre-monitory signs of the severe reactions manifest themselves, the injections must be stopped and the patient put to bed. Retention of urine is to be treated; tidal drainage is very useful. Enema must be given when necessary. Careful note must

be taken of any urinary infection and appropriate treatment given. Attention should be directed to the skin; for bed-sore adversely affects the prognosis. The position of the patient in bed should be changed often to avoid pulmonary congestion. Easily digestible balanced diet should be given and above all, the *morale* of the patient must be maintained by encouragement; for the patient may take a long time to recover. Physiotherapy is essential; passive movements of the limbs just short of producing pain should be resorted to, taking particular care to flex all the joints at least once a day to avoid adhesions around the joints. Gentle massage helps to maintain circulation in the part. Paralysed limbs must be kept in the optimal positions and necessary support should be given to avoid stretching of the paralysed muscles. The earliest opportunity must be taken to encourage active movement.

There is no specific drug known for the treatment of this condition for the simple reason that the definite cause of the neuroparalytic accidents is unknown. Various theories have been propounded: -- fixed virus when vaccine containing living virus is used; toxin in the vaccine; action of ferments; anaphylaxis; reactions to normal nervous tissue in the vaccine and many others. The injection of brain tissue induces "antibodies which react with the antigen in the perivascular tissue and the vessel wall bringing about inflammation and degeneration..... All cases of neuroparalytic accidents can be accounted for by supposing that either *virus fixe* or normal nervous tissue may be the aetiological agent..... it is likely that the agents have the effect producing intravascular thrombosis in the central nervous system." (van Rooyen and Rhodes, 1948). From a consideration of the causation, it will be seen that treatment should be -- antigen reaction, and removal or canalisation of the thrombus in the vessels. We do not possess any drug which can destroy the virus. From an analogy of the encouraging effects recorded with some broad-spectrum antibiotics in a few virus diseases, achromycin, terramycin etc. may be tried. To counteract the allergic reactions, the anti-histaminic group of drugs and also cortisone and ACTH may be administered. Nicotinic acid having a capillary dilating effect should also be included in the therapeutic armamentarium. The use of Vit. B₁ is not justified from pathological considerations.

No comparative study regarding the effects of the various drugs has been made and such a study is not easy in view of the infrequency of these accidents. Banerjee and Maiti (1954) mention 13 cases with neurological complications after anti-rabic vaccination treated with ACTH without fatality. But then, the mortality in Landry's type is 30% and with dorsolumbar type about 5%. Dang (1942), Dwivedi (1949), Bhattacharyya (1955) treated their cases successfully without ACTH and one of the cases of Banerjee and Maiti (1954) also survived without this drug. The first case of

Konar *et al* (1955) did not respond to ACTH at all and though the second case had "marked subjective improvement" the objective improvement was but slight. It is to be noted that ACTH and cortisone impart non-specifically, a sense of well-being to the patients. The case under report did not show any improvement on cortisone therapy and haematuria occurred during the second course. Consideration should be given to the above findings as regards the therapeutic efficacy of cortisone and ACTH before treatment with these drugs is resorted to with undue expectation; when such a treatment is instituted, it should be in the nature of therapeutic assessment and the mainstay of management should be on general lines with adequate weightage on physiotherapy and prevention of treatment when necessary, of urinary infection.

Summary.—1. A neuromuscular type of accident after anti-rabic vaccination in man is recorded.

2. In the absence of knowledge of the definite causative factor in such accidents occurring after antirabic vaccination, the general line of management with physiotherapy still remains the mainstay in the management of such cases.

My thanks are due to Dr. H. C. Barua, Principal and Superintendent, Assam Medical College and Hospitals, Dibrugarh for kind permission to report the case and to Mr. B. Bhattacharjee, the Librarian of the College for his help in the preparation of this article.

REFERENCES:

1. Ahuja, L. M. (1950)—I.J.M.R., 38: 183.
2. Banerjee, J. C. and Maiti, C. R. (1951)—Calcutta M. J., 51: 287.
3. Bhattacharyya, M. N. (1955)—J. Ind. M. A., 24: 631.
4. Dang, M. L. (1912)—J. Ind. M. A., 11: 173.
5. Dwivedi, J. K. (1919)—J. Ind. M. A., 18: 393.
6. Greenwood, M. (1945-6)—Bull. Hith. Org. L. O. N., 12: 301, quoted by van Rooyen, C. E. and Rhodes, A. J. (1918)—Virus Diseases of Man, 2nd Edn., Thomas Nelson & Son, New York.
7. Konar, N. R., Mandal, A., Roy Chowdhury, D. C. (1955)—J. Ind. M. A., 24: 632-634.
8. van Rooyen, C. E., Rhodes, A. J. (1918)—Virus Diseases of Man, Thomas Nelson & Sons, 2nd Edn., pp. 876-887.

SODIUM CINNAMATE AS A SALICYLATE ADDITIVE FOR CONTROL OF PAIN IN ARTHRITIS AND RHEUMATISM

Since 1874, when sodium salicylate was first introduced, it has become the standard medication for the relief of arthritic and rheumatic pain and is of particular importance in the treatment of rheumatic fever.

Although sodium salicylate has been found effective and efficient, certain toxic manifestations such as nausea and salicylism, characterized by ringing in the ears and gastrointestinal upsets, have been common. These untoward effects have resulted from attempts to maintain a sufficiently high level of salicylates in the body to produce analgesia. In order to reduce the intake of salicylates and still maintain analgesia, various combinations have been tried. Among the successful combinations are salicylates with para-aminobenzoic acid combinations of salicylates with succinic acid, and the subject of the present reports, *salicylates with cinnamates*. The subject of the present report consists of combinations of salicylates with cinnamates to enhance the effect of salicylate therapy in rheumatic and arthritic pain.

The formula tested was the basic one consisting of:—

Sodium salicylate, U.S.P.	150 mg.
Sodium cinnamate	25 mg.
(Recipients to make 5 grain size tablet).	

The type of case treated was the arthritic or rheumatic individual who has passed the first acute stage and has settled into a chronic painful state. This is the ideal subject for evaluation of medication.

Results after eight weeks of treatment of 14 males and 23 females (with an average age of 49 years) with two tablets three times per diem of the above formula showed significant improvement in the degree of movement at joints affected and significant reduction of pain.

A second group of patients was treated in which a control medication of plain sodium salicylate was used for comparison with the salicylate-cinnamate compound. Each patient in the second group received a six-week course with each medication. There were 15 males and 13 females having an average age of 52 years. The dose of each medication was two tablets three times daily for six weeks. Each medication showed significant improvement. When the salicylate-cinnamate combination was used, there was significantly greater improvement than with sodium salicylate plain.

When the salicylate-cinnamate compound was used there were 21 cases of complete restoration of motion, six more cases than when sodium salicylate plain was used.

A total of 124 cases was treated in order to compare results of treatment by a standard medication compared with the new salicylate-cinnamate combination. It was found that a significant superiority was evidenced by salicylate-cinnamate formula in regard to relief from pain and restoration of motion in arthritic and rheumatic conditions. The formula best suited for use was a salicylate-cinnamate compound with acetophenitidin and a bicarbonate buffer. —(N.Y. St. J. Med., 55: 13, 1955).

POLIOMYELITIS IN PREGNANCY

One thousand, one hundred and fifty-eight patients were admitted to the Winnipeg Municipal Hospitals in Canada in 1953 suffering from poliomyelitis. Of 511 females, 153 were married women in the reproductive age group and fifty-one of these pregnant. The proportion of pregnant women was significantly higher than that of other adult groups admitted. This probably represents an increased susceptibility of pregnant women to the disease. The data available suggested that pregnant women were equally susceptible throughout the course of pregnancy. The mortality from poliomyelitis in pregnant women was very similar to that in other adults of comparable age-groups. The comparison of length of hospital stay did not suggest any significant increase in morbidity in the third trimester as compared with the first two.

The management of patients with respiratory paralysis was not complicated by the presence of a pregnant uterus at term. Seven of the 51 pregnancies were terminated by abortion, 40 were terminated by deliveries, 2 women died undelivered and 2 are still pregnant. Of the 40 deliveries, 39 were live births. This incidence of 1 abortion for every 6 live births may be somewhat higher than the usual incidence of abortion. In patients with low spinal paralysis, assistance was usually required in the second stage of labour. Five patients were delivered in respirators. Delivery was not difficult with uncomplicated vertex presentations. Considerable difficulty was, however, encountered with a high spinal case with a patient who came to term after the acute phase of the poliomyelitis had subsided. Of the 39 live births 4 died within the first 2 weeks of birth and 1 of the 4 died 9 days after delivery with some evidence of poliomyelitis, presumably contracted during labour. There was no evidence that the poliomyelitis virus had crossed the placental barrier in any case. —(The Amer. J. of Obst. and Gynec., 69: 265, 1955).

AN INTRODUCTION TO THE INFLUENCE OF BODY WEIGHT AND HEIGHT ON DISEASES, ACCIDENTS AND MORTALITY*

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"O Health! Health! The Blessings of the Rich!
The Riches of the Poor! Who can buy thee at
Too Dear a rate, since there is no Enjoying
This World without thee!"—Ben Johnson

DR. OSCAR H. ROGERS has earned encomium from the medical and actuarial professions all over the world for being the first to consider the mortality from overweight in life assurance practice. He read a paper before the twelfth annual meeting of the Association of Life Insurance Medical Directors of America in May, 1901. Prior to this, hale and hearty stout individuals were considered to be most suitable candidates for life assurance acceptance. Dr. Rogers included a report on 1,552 men who were 30 per cent or more overweight according to the standards he used, which revealed an alarming death rate among the overweight subjects. Dr. Rogers is well-known in India, for his Blood-Pressure Table used by medical practitioners and life assurance companies even two years ago. The "Tycos" aneroid sphygmomanometer was originally devised by Dr. Rogers in 1905. Since the publication of the paper by Dr. Rogers, the medical and actuarial professions are taking greater interest in the obesity problem which is one of the worst insurance handicaps.

In India, medical practitioners and life assessors took a long time to learn the relation of body-build to mortality, and till about 1910 no serious attention was paid to this subject. In 1924, the Oriental Life Assurance Co. of Bombay started recording accurately the height, weight, chest and abdominal measurements of proposers for life assurance. In June, 1926, Dr. Edward Houseman published an important article *The Indian Medical Gazette*, on the "Medical Aspects of Life Insurance in India, with special reference to Calcutta" wherein he laid stress on height and weight and incorporated a tentative table showing the heights and weights of 2,554 Indians and Europeans examined by him and his associates Caddy and Brandon for life assurance. This article was followed in 1942 by Colonel Sir Ramnath Chopra's "Normal Blood Pressure" and mine in 1948 on "Female Blood Pressure" and in 1949 on "Calcutta Police Health Examination."

Since the publication of Dr. Houseman's article there was no other serious move to consider the effects of body-weight on life

*Specially contributed to the ANTISEPTIC.

assurance mortality. In 1941, appeared my first article on the importance of height and weight in life assurance mortality; this was followed subsequently by several more papers on the subject. The subject of over and under-weights in relation to life assurance has not been given the importance and attention it deserves, by even the leading well-staffed and well-equipped Life Assurance Companies in India, Ceylon, Pakistan and Burmah.

The Metropolitan Life Insurance Company of New York, the largest Insurance Institution in the world, and the Prudential Assurance Company of London which is the largest Insurance Company in the British Commonwealth, both publish at regular intervals detailed information relating to the obesity death-rates and the influence of obesity on diseases and accidents.

The Oriental Life Assurance Company of Bombay published for the first time in 1924, height, weight, chest and abdominal measurement tables, based on Indian experience. Prior to this, the English and American height and weight tables, of Dr. Robertson or Dr. Hutchinson were used in assessing Indian lives; this led to disastrous results in the long run. Oriental's height and weight tables were prepared *province-wise* with a maximum of 5,600 lives in the case of Madras Hindus and only 287 lives in the case of Burmese. Owing to the smallness of the number of entrants in these tables, and to meet the popular demand, I published in 1951, height, weight, chest and abdominal measurement tables based on 10,000 Indian lives which are since being extensively used by the medical practitioners and life assessors in India and Pakistan. They have been printed in all the leading insurance journals in India and Pakistan and have also been incorporated in standard text-books of reference on Insurance.

Obesity is a major and a serious health problem of the present time and on a modest calculation, at least one-fifth of the world population are overweight, according to Dr. Donald B. Armstrong and his associates. During my fifteen years' experience as Chief Medical Officer to a large Departmental Life Office I have come across a fairly large number of obese and overweight subjects. Constables and sepoys of Uttar Pradesh and Bihar are particularly inclined to obesity, those over 40 being usually the victims. Obesity, like high blood-pressure, starts under pleasurable circumstances among the successful men in life. It was noted that those who have attained the higher ranks of Deputy Superintendents and Inspectors of Police, Sub-Inspectors, Subedars, Jamadars and Head constables are particularly liable, 3 out of every 10 being obese. Applicants who are obese usually have abdominal girth exceeding chest measurement by 2 to 4 inches and weight 40 to 72 pounds more than the standard for age, height and race; these make them undesirable risks for life assurance acceptance. The victims do not regret the very heavy fat they carry, but on the other hand feel rather happy

and proud of it as a hall-mark of rank and affluence. 40 per cent of the obese gave histories of familial tendencies to obesity. Futeher obtained a history of heredity in 60 per cent of his cases and Joslin in 21 per cent. Most of the overweights studied by me showed a tendency to arterial hypertension and 43 per cent were actually suffering from it though apparently ignorant of the damage done. I have found in my long experience that overweight subjects of 40 years and over with thick and short necks are certain victims of high blood-pressure. A higher mortality sets in as soon as the person becomes 20 per cent overweight for his age, height and race, the common disabilities being cardio-vascular, renal diseases, and diabetes. My observations are based on a study of 1,172 subjects, not sufficiently large to draw definite conclusions. The experience of other medical practitioners based on statistical studies, would indeed be interesting to know.

In my long association with the Life Assurance Industry extending over a quarter of a century I have found that overweight up to 50 lb. or underweight up to 30 lb. is readily overlooked as a routine measure. Keen competition for securing business is indirectly responsible for this; but it is dangerous from the enhanced mortality point of view. Without meaning any offence, I might state that these liberal allowances account for the disproportionate death-claims dealt with, by life assurance companies of long standing and that if risks are properly assessed, premature death-claims in respect of life assurance companies of 20 years' standing and more, will not be more than 40 per cent of the maturity-claims. The large heartedness in assessing risks—mostly due to inexperience—is partly responsible for the premature closing down of many life offices, as evidenced by the numerous liquidations and amalgamations during the last decade.

Master and his associates who published in Aug. 1950, a paper based on their study of 74,000 industrial workers, showed that there was, at every age and in both sexes a steady progression in average blood pressure, both systolic and diastolic, with increase in body weight for height. Levy and his associates in July, 1946, pointed out that sustained hypertension in a large number of army officers developed in those overweight at a rate of two and a half times as high as in those not overweight. Blood pressure and pulse rate on an annual basis both averaged about 60 per cent higher in overweight persons than in those not overweight. Halls-Dally's experience is that arterial pressure varies with height and weight and *vice-versa*. Height has a similar but lesser influence. Coronary arteriosclerosis of an advanced degree was more common in the overweights than in others.

The close association of overweight with diabetes is a well known fact. The wide experience of Joslin and his associates is also well-known. Using the previous maximum weight as the basis prior to the onset of the disease, they found that among patients

40 years and over at onset, 60 per cent were at least 20 per cent above the average weight and an additional 25 per cent moderately overweight, or a total of 85 per cent with the same degree of overweight. It is interesting to note that only 5 per cent of the victims were underweight.

Dublin *et al* have shown that gall-bladder disease of a degree sufficient to cause clinical symptoms is particularly frequent in overweight subjects. Women suffer more than men. A study of the weights of applicants accepted for life assurance with a history of gallstones or cholecystitis, revealed that 41 per cent of the men and 53 per cent of the women were overweight. The incidence of cancer is higher in overweight women than in women of lighter weight. Moss, Morrin and Frank have recorded a high frequency of cancer of the genital organs in obese women.

It is an acknowledged fact that overweight is a common aetiological factor in arthritis and gout. Britten, found that a history of rheumatism or gout is appreciably more frequent with men who were markedly overweight than those of average or underweight. Harmon has demonstrated that osteoarthritis of the hip showed that obesity of a significant degree was present in one-third of the cases. Hernia appears to be more common in overweight persons than in underweights; so also inguinal hernia. The frequency of post-operative hernia is generally greater in overweights than in underweights as also disorders of kidney function. Dublin and his associates have demonstrated that the proportion of those who suffer from albuminuria and glycosuria of a significant degree is higher among overweight persons than among average and underweights. Puberty is delayed in obese children and obese women are less fertile than women of a thin and spare build.

Investigations conducted in the past by life assurance companies in America and Europe have demonstrated that there is a remarkably higher mortality among overweight persons than among persons of average or underweight. Some new aspects of this problem have been brought out in a comprehensive study completed in 1951 by the Metropolitan Life Insurance Company of New York, on policy holders who were confined to sub-standard risks solely because they were overweight; they were first class risks solely on other respects *i.e.*, with physical condition, medical history in all occupation. The findings were based upon the mortality experience of 25,998 men and 24,901 women, *i.e.*, a total of 50,899 subjects, who were insured during the period 1925 to 1934, inclusive, and traced to the anniversary of their policies in 1950. During the investigation period there were a total of 6,400 deaths, 3,713 among men and 2,687 among women. The mortality of these overweight persons was measured by the comparable experience of each sex among persons accepted for standard insurance. The detailed

figures relating to this valuable investigation have not been published in India, Pakistan, Burma and Ceylon.

The details of the percentage of male and female mortality are given in Tables 1 to 4.

**Per cent actual of deaths among men and women
Limited to substandard insurance because of overweight
By age at issue of insurance**

*Issue of 1925-1934: Traced to policy anniversary in 1950
Metropolitan Life Insurance Company of New York*

Death rates of standard risk in each sex=100%

TABLE 1

Life Insurance Mortality of Cases Rated up for Overweight Men		
Mortality	Per cent actual of expected death	
By age at examination	All ages (20-64 years)	150 %
	20-29	180 "
	30-39	169 "
	40-49	152 "
	50-64	131 "
By time elapsed since examination	Under 5 years	133 "
	5-14 years	152 "
By degree of overweight	Moderate obesity	142 %
	Marked obesity	179 "

NOTE:—Death rates are much above normal at every age. The excess is relatively greatest among the younger ages. The mortality ratios are high regardless of time elapsed since examination, and tend to increase with time. Mortality also increases with the degree of overweight.

TABLE 2

Life Insurance Mortality of Cases Rated for Overweight Women		
Mortality	Per cent actual of expected death	
By age at examination	All ages (20-64 years)	147 %
	20-29	134 "
	30-39	152 "
	40-49	150 "
	50-64	134 "
By time elapsed since examination	Under 5 years	151 "
	5-14 years	144 "
	15-24 years	149 "
By degree of overweight	Moderate obesity	142 %
	Marked obesity	161 "

NOTE:—Mortality is well above normal at every age and at all durations since examination. It is highest among those with marked obesity. The variations in the mortality ratios by age at examination and time elapsed since examination tend to be less in women than in men.

The absence of death from tuberculosis among policyholders of both sexes is a very striking feature in these tables; in India and Pakistan however, this fell disease takes a very heavy toll, next only to cardio-vascular renal diseases. From a comparison of Tables 3 and 4 it will be seen that women are more susceptible to cancer, diabetes, influenza and pneumonia than men. These facts should be remembered while assessing female candidates for life assurance.

From the latest investigation of the Metropolitan Life Insurance Company of New York, it has been demonstrated that the adverse effect of overweight is felt at every period of life. Among overweight men between the ages of 20 and 64 years at the time of these policies were issued, the mortality was 150 per cent that of men accepted

TABLE 3

Life Insurance Mortality Study of
Cases Rated for Overweight Men

Causes of death	
Cardiovascular renal diseases	... 51.8 %
Cancer	... 11.2 "
Diabetes	... 5.7 "
Influenza and pneumonia	... 3.3 "
Cirrhosis of liver	... 2.7 "
Accidents	... 4.8 "
All other causes	... 20.5 "
Appendicitis	... 2.2 "
Suicide	... 1.7 "

under the standard rates. The mortality-ratio diminished regularly with age at issue from a maximum of 180 per cent at ages 20 to 29 years to 131 per cent at ages 50 to 64 years. Among overweight women the mortality was also $1\frac{1}{2}$ times that of women accepted at standard rates and varies little from that figure in the several age-groups.

It is worthy of note that the mortality in either sex increases with the degree of overweight. Thus men with marked obesity had, in the aggregate, a mortality 79 per cent above the standard risks, compared with an excess of 42 per cent for those moderately obese.

The excess mortality of overweight persons is accounted for by the very high death-rate from various diseases, particularly the degenerative conditions. Both sexes present the same general picture. The degenerative diseases of the heart, arteries and the kidneys have been shown to contribute to most of the extra deaths. Among both sexes the number of observed deaths from these causes is about 70 per cent greater than expected. The situation in this respect is relatively worse among those under 45, when the mortality is at least double than that expected. Among the major diseases diabetes causes a mortality of more than three times the expected one. The mortality from cirrhosis of the liver is much above the normal, specially among men. The death rate from gall bladder disease, particularly gallstones, was high among women. Deaths from child-bearing was significantly in excess of normal. There is good indication to show that obesity constitutes an extra-hazard in pregnancy.

The course of pregnancy and child-bearing is beset with difficulties more often for overweight than for average or underweight women, and both mother and child are affected. The investigations by Odell, Mengert, Mathews, Der Brucke and Sheldon show a high frequency of complications during pregnancy and delivery and an

TABLE 4

Life Insurance Mortality Study of
Cases Rated for Overweight Women

Causes of death	
Cardiovascular renal diseases	... 42.4 %
Cancer	... 18.7 "
Diabetes	... 8.9 "
Influenza and pneumonia	... 3.7 "
Diseases of gall-bladder	... 2.6 "
Accidents	... 2.8 "
All other causes	... 20.9 "
Puerperal state	... 1.6 "
Appendicitis	... 1.6 "

NOTE:—Preliminary analysis indicates that in both sexes the mortality is exceedingly high from all the degenerative diseases of the heart, arteries, and the kidneys, from diabetes, and diseases of the liver and gall-bladder. Deaths from child-bearing also exceeded the expected number. Death rate from cardiovascular renal conditions were relatively highest at ages under 45 of the major diseases, diabetes showed relatively the greatest excess mortality—more than three times the expected number in each sex. The death rate from cirrhosis of the liver among men was more than twice the normal.

increase in both maternal and foetal mortality. In addition operative incidence is also comparatively higher among the overweight women. The proportion of large babies is high and it has been observed that in women bearing large babies, diabetes is more likely to develop eventually than in average or underweight mothers. Chesley and his associates have found that in 75 per cent of women who are heavy weight with a history of eclampsia, toxamia develops in a subsequent pregnancy, as compared with only 26 per cent in women of light weight.

Surgeons often refer to the special difficulties and snags in operating upon obese persons. Seifert has reported that the operative mortality in appendicitis among the obese was 10 per cent as compared with only 2 per cent among persons of normal or lighter weight. The mortality from cholecystitis was 23 per cent among the obese as compared with 6 per cent in the lighter weights. Post-operative embolism and thrombosis is significantly more common in overweight persons as reported by Henderson, Barker and his associates have recorded that thrombo-embolism occurred in 8 per cent of the women weighing more than 200 lb. who underwent abdominal hysterectomy as compared with 4 per cent of the women weighing less than 200 lb. For intestinal operations the frequency of thromboembolism was 7.1 per cent in the group of women weighing 200 lb. or more as compared with 3.2 per cent among women of lesser weight.

It has been recorded that in overweight persons with transient hypertension, sustained hypertension develops quicker than in those of lighter build, and that they become disabled by cardiovascular diseases earlier. In persons with non-diabetic glycosuria diabetes is more likely to develop eventually, if they are overweight than if they are of average weight or underweight. Marble and his associates have experienced that on patients followed for at least a 10-year-period after the original diagnosis of non-diabetic glycosuria, the frequency of subsequent diabetes was four times more in overweight patients than as in those not overweight. Studies of life assurance experience reveal that in several groups of impaired risks the mortality was higher among those overweight than among those under-weight. Numerous examples of this are found among persons with a history of asthma or bronchitis (Dublin *et al*), and among persons with albuminuria (Christiernin *et al*) or hyperglycemia (Jimenis *et al*).

Further, the mortality from accidents was in the aggregate slightly higher in the obese than expected, but not significant enough. However, in automobile accidents there was a definite excess. Mortality from suicide was lower than expected. It is the experience of the Union Central Life Insurance Company of New York, that accidents caused significantly higher mortality among overweight men. In overweight women the accidental

mortality was above the standard, even though the death rate from this cause is generally low among women.

(To be continued)

CLINICAL AND PSYCHOSOMATIC STUDY OF 200 CASES OF PSORIASIS

The importance of violent fear and intense emotional shocks in precipitating attacks of psoriasis is generally admitted. Evidence obtained from the study of 200 patients with psoriasis during the last four years tends to support the theory that less conspicuous, often unnoticed, psychological factors play a causative part in virtually every attack of psoriasis. These factors may be exogenous, consisting of emotional traumas arising out of personal relationships, or endogenous in the case of patients possessing a particular mental constitution or a hereditary predisposition to psoriasis, and they may exist separately or in various combinations. Psychasthenia, or a state of anxiety coupled with mild depression, was found in more than half (52.5 per cent) of the patients in this series. A pure anxiety state, uncomplicated by depression, was evident in 32 patients (16 per cent) with symptoms such as epigastric constriction, functional dyspepsia, globus hystericus, vasomotor disturbances, palpitation, and tachycardia. A hereditary predisposition to psoriasis was found in 37 patients, all but four of whom were also psychasthenic or anxious. The inheritance of psoriasis may be either direct or indirect. When it is direct, the condition usually appears during the first 10 years of life. Indirect inheritance, on the other hand, usually appears later and is probably linked to a particular mental constitution common to several, often collateral, members of a family. Psychological factors vary in their significance according to the intellectual level of the patient and the extent of the conflicts to which they give rise. A divorce, for example, may have no effect in producing an attack of psoriasis when it represents deliverance from an unhappy marriage, but when it appears as the forerunner of worries such as the necessity of paying alimony or being separated from children, possibly with feelings of guilt toward them in the case of a re-marriage, moderate but lasting psoriasis may be the result. Serious parental discord, often manifested in open quarrels, was a precipitating cause of psoriatic attacks in 6 of the 15 children less than 15 years of age in this series. Six others had feelings of confusion and incompleteness caused by defective educational methods (absurd threats, excessive severity) or events such as the death of a parent, maternal psychosis, and real or fancied abandonment. An association between psychological factors and attacks of psoriasis was positively established in 48 per cent of all patients, and in 20.5 per cent, the connection was probable. The cause of the disorder could not be determined in 15 patients; in some of these, it may have been hereditary and in others the underlying psychological cause may have escaped detection because of the patient's reticence or inability to express it, or because the examiner failed to bring it out.—(*Semaine hop.*, Paris, 31: 1251-1261, April 6, 1955, via *La Med en France*).

DOCTOR-PATIENT RELATIONSHIP

Every doctor faces a new patient with the desire to make an accurate diagnosis and to put into action a course of treatment that will be curative. This necessitates a complete history of the patient, as well as a thorough physical examination, often augmented by tests from the laboratory and X-ray departments. But our doctor who is idealistic has additional motives in the handling of the patient. He wants his patient to feel, when the treatment is finished, that his doctor was not only learned and skilful, but also that he was sympathetic, and kind, and understanding, that although he was busy, he was never hurried, that although he was often tired and harassed, he was never ill-tempered nor impatient.—(*Current Medical Digest*, Sep. 1955).

EYE SYMPTOMS IN GENERAL DISEASES*

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THE eye has been aptly called 'Life's Window' since it is only through this organ that one can peep into the interior by means of an ophthalmoscope and detect, without any surgical manipulation, early minute changes in the blood vessels and nerves, characteristic of many systemic disorders. The ophthalmoscope has therefore, become an indispensable aid to diagnosis since it can give the physician a prophetic warning of a danger in the offing and put him on guard in time for proper and successful treatment. The importance of a knowledge of its use cannot therefore, be overestimated.

For the sake of convenience I divide the subject into the following groups:—(1) Subjective eye symptoms, (2) ocular diseases, (3) ophthalmoscopy, (4) strabismus or squint, (5) the pupils, (6) ocular signs in pregnancy and (7) eye signs in general anaesthesia.

Subjective eye symptoms.—*Corneal sensitivity* is best tested by gently touching the cornea with a piece of cotton. If sensitivity is diminished or has been lost, and is unilateral, we may suspect tumour of the cerebellum on the same side; if so, we would next look for nystagmus and staggering gait.

Scintillating scotoma is characterized by vertigo, sparkling lights before the eyes, and contraction of the field of vision. It lasts from fifteen minutes to half an hour, after which it abates and vision returns to normal. The aetiology is an angioneurotic disturbance of the circulation, and its most frequent cause is some constitutional disturbance, such as constipation, gastrointestinal toxæmia, or some focal infection such as sinusitis or bad teeth.

Nystagmus is usually of two kinds *viz.*, ocular nystagmus and vestibular nystagmus. Ocular nystagmus has certain special features, in that both movements of the eyes occur with equal rapidity and amplitude of excursion, and are never rotary. Vestibular nystagmus is distinguished by rhythmical movements of unequal velocity, or has two components, quick in one direction and slow in the other; it is this type with which we are here concerned. Nystagmus may be caused by various factors, such as alcohol, tobacco, intestinal intoxication, sea-sickness, brain abscess, brain tumour, meningitis, fracture of the skull, mastoiditis, and labyrinthine disease, syringomyelia, disseminated sclerosis and subacute combined degeneration etc.

In spontaneous nystagmus, which is always pathological, the rotary element is usually present with nystagmus in another plane.

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The quick component is toward the diseased side, unless the labyrinth is diseased or destroyed, when the quick component is toward the sound side for a few days, after which it subsides. But if it returns to the diseased side, meningitis occurs on that side.

The presence of nystagmus may be easily overlooked unless you have the patient look to the extreme right or left. Another way to determine a pathological vestibular nystagmus is by turning the patient in one direction for ten seconds and if the nystagmus lasts only half as long as that produced by turning him in the opposite direction for ten seconds we can reasonably assume some intracranial complication.

Diplopia: Double vision is practically always, with few rare exceptions, due to some degree of squint which however, may not be sufficiently marked to show itself as an obvious squint, and may be transient. In children, diplopia is generally the manifestation of some dysfunction of the ocular co-ordinating mechanisms due to refractive or fusing errors. But in adults, and especially in persons of middle or past-middle age, who had never before had any ocular troubles, the sudden appearance of diplopia is nearly always an indication of some degree of ocular paralysis, either as the result of some grave brain lesion (e.g., tumour, abscess etc.) or a disease of the general nervous system, or the advance of arteriosclerosis.

Ocular diseases.—Certain eye diseases are local manifestations of systemic disorders, the commonest of which are:—

(a) *Iritis*:—Which is never primary, but is always a sign of some deep-seated constitutional disease. The diagnosis usually lies between rheumatism, syphilis and tuberculosis. Rheumatic infection can usually be determined by the history of the case. Syphilis is confirmed, but not necessarily ruled out, by a Wassermann test. Tuberculosis, as it affects the eye, is generally more intractable than syphilis, the nodules lasting longer, and the von-Pirquet test will help to clinch the issue. It must be remembered that iritis may be a symptom also of gonorrhœal infection, bacillary dysentery and malaria.

(b) *Phlyctenular conjunctivitis or keratitis*:—When ulcers and syphilis can be ruled out, phlyctenular eruptions of the eye can almost always be attributed to dietetic deficiencies, particularly of protein and of vitamins of all kinds.

Ophthalmoscopy.—A few of the outstanding signs of systemic disease seen in the fundus of the eye will now be briefly discussed.

(i) *Optic neuritis*:—This consists of an inflamed condition of the nerve-head or optic disc, the vessels which emerge with the nerve being swollen and tortuous, and spreading out over the eye-ground so as almost to obliterate the circular boundary line of the disc. Often it indicates brain disease, such as meningitis, or a general inflamed state of the entire nervous system; but quite often,

too, it indicates some infected and congested condition of adjacent structures e.g., of the sinuses.

(ii) *Choked disc*:—In this condition the nerve head appears itself swollen and balloon-like, surrounded by swollen dark-coloured veins, the arteries being small and almost empty and the surrounding eye-ground rather pale. Choked disc is invariably the sign of grave intra-cranial disease, e.g., brain tumour, abscess etc.

(iii) *Optic atrophy*:—In any form of atrophy the appearance of the disc is extremely white. The atrophy may be the end-result of a choked disc. But quite often it is a sign of some general degenerative nervous disease e.g., tabes dorsalis, or brain disease.

(iv) *Sclerosis*:—This condition pertains to the arteries alone, which become opaque, and often white in appearance, due to light reflected from their opaque walls. In places they are practically empty. The hardened arteries, pressing upon the veins where they cross, obliterate the latter so that they appear interrupted at such crossings. There are areas of pallor over the fundus where the nutriment is cut off by the obliteration of vessels. It is, of course, an indication of a general arteriosclerosis.

(v) *Hæmorrhages*:—In certain conditions the ocular arteries give way and produce hæmorrhages into the retina. Sometimes, there is one large hæmorrhage, but more often numerous small ones occur. The ophthalmoscope shows a cloudy retina, with variously shaped red patches scattered over the ground, round, flame-shaped, linear, stellar, or irregular. These are the appearances seen in profound systemic diseases which raise the blood-pressure and degenerate the vessel walls, such as nephritis, diabetes, malaria etc. They are often accompanied by albuminuria, glycosuria etc.

(vi) *Anæmia*:—This is not always easy to recognise, since eye-grounds differ so much in different individuals. The arteries and veins are equally affected, since their relative sizes remain the same, but both are much smaller than normal, often indistinguishable and pale. There is a general pallor of the entire fundus and disc, but the lustre of the disc is not lost. The appearance indicates a general condition of anæmia and is particularly marked in pernicious anæmia, where the colour of the fundus is a peculiar saffron-yellow.

Strabismus (squint).—Squint is often a manifestation of ocular paralysis, due to some systemic disease. But it is also, of course, quite frequently the result of some dysfunction in the co-ordinating function of the eyes, due to refractive error, etc. It therefore, becomes necessary to differentiate between the two types of strabismus, which may be done as follows:—

(a) If the deviating eye is made to follow a small object moved to and fro laterally before the face, it will be seen to lag, or stop entirely, in the field of movement of the affected muscle, whereas

in comitant squint there will be little or no limitation of these conjugate movements.

(b) The patient is made to *fixate* an object at infinity, first with the sound eye, the affected eye being covered, but so that the operator can observe it; then with the bad eye, the sound eye being covered this time. The amount of deviation made by the covered eye in each case is measured by means of a pair of calipers; that which is made when the sound eye does the fixating being known as primary deviation, and that made when the squinting eye fixates as secondary deviation. In paralytic strabismus secondary deviation is greater than primary, because of the exaggerated innervation required to fixate with the paralytic eye. In comitant squint, due to refractive error, primary and secondary deviations are equal.

Paralytic squint is usually the result of an infectious disease, such as diphtheria, scarletina etc. which poisons the peripheral nerve supplying the ocular muscle, or to a central nerve lesion in the brain, due to syphilis, tuberculosis, meningitis, brain tumour, etc.; paralytic squint, appearing suddenly in adults, is almost always of brain origin.

The pupils:—Because of the intimate connection of the iris with the sympathetic and the cerebral nervous system, the size, behaviour, and shape of the pupil furnish extremely valuable data in health and disease as to the state of the body, manifested through the two nervous systems, a brief summary of which will be given.

In health the pupil is almost perfectly circular in shape. Distortions are practically always due to local mechanical causes, the dragging of the iris in one or more directions, either by reason of being caught and stuck down to the lens or the cornea by exudates, or being trapped in the wound of an ulcer or operation.

The size of the pupil in health is a difficult thing to define because it is continuously varying under physiological stimuli. What may be called its absolute or constant is a personal idiosyncrasy. Since light, which is the principal agent in stimulating contraction, is a more or less constant factor, it is to the action of the sympathetics, or dilators, that we must look, for an explanation of individual variations in the size of the pupils under similar conditions. In general it may be said that sensitive, neurotic persons, whose sympathetic system is easily excited and reacts readily, have larger pupils than more phlegmatic individuals.

Much more important are the variations in the size of the pupils due to abnormal or pathological causes concerning which the following rules may be laid down:—

Mydriasis (dilatation of the pupils) is caused by any condition which (a) paralyzes either the central or peripheral endings of the third nerve, or the short ciliaries; (b) inhibits the function of the third nerve through the brain or (c) stimulates the sympathetics.

Examples of the first kind are tumours of the brain or along the third nerve, toxins of acute infections such as diphtheria, scarlatina etc. and the action of certain drugs, notably atropin. In the second group are included fevers, comatose conditions, excited states of the brain. Of the third variety are pain, sensory irritation and abdominal diseases.

Myosis (contraction of the pupil) on the other hand results from influences which (a) irritate the third nerve, or (b) depress the sympathetics. Photophobia, from whatever cause, meningitis and certain drugs such as eserine, are instances of the former; spinal diseases, aneurisms (by pressure on the nerves and opium of the latter).

Normally the two pupils are equal in size. Inequality is practically always due to interruption of the motor oculi nerve path, either central or peripheral. Central causes are brain tumours, brain syphilis, tubercle of the brain and the like. Peripheral causes are injuries to the eye and toxins from acute infections. Occasionally one pupil is dilated because of pressure on the sympathetics by an aneurism. It must not be forgotten that diseases which interfere with light stimulus of the retina (cataract, optic atrophy etc.) will sometimes produce unilateral dilation.

Pupillary reactions:—In health the pupil reacts with great quickness and sensitivity to stimulus on both the sides of the nervous circuit i.e., to light and to sensory stimulus. A sluggish or immobile pupil may, of course be due to adhesion of the iris to the lens or cornea, but usually it is a sign of paralysis of the third nerve, central or peripheral. Most of these are cases of cerebral syphilis.

The Argyll-Robertson pupil, in which the pupil contracts to accommodation but fails to respond to light, occurs in locomotor ataxia, myelitis etc.

Wernicke pupillary reaction is a test for determining the location of a suspected lesion in the optic tract, employed in cases of hemianopsia. If the light reflex is present in the blind half of the eye, the lesion is back of the optic thalamus; if not, it is in front of this ganglion; because at that point the reflex and optic paths part company.

Hippus, a periodic contraction and expansion of the pupils, is seen in psychic diseases, such as mania, hysteria etc.

Ocular signs in pregnancy.—One or two valuable diagnostic indications may be had from the eye in the pathology of pregnancy.

Pernicious vomiting of pregnancy:—The ophthalmoscope often helps greatly in differentiating simple reflex vomiting of pregnancy from the more severe types of pernicious vomiting which occur in pregnant women. In the former case the fundus of the eye manifests no definite variations from normal. But in the severe toxic type, the ophthalmoscope will usually show even in its incipency, a halo of cloudiness around the nerve-head, due to cedema, often extending to the entire retina.

Puerperal eclampsia:—This is such a distressing condition that any definite warning of their threatened incidence is of great practical value. The ocular indications are at times strongly prophetic and serve to put the physician on his guard. The earliest danger signals are defective vision, spots before the eyes, coloured lights and even sudden blindness. The ophthalmoscope shows nothing special, but the presence of the pupillary light-reflex proves that for the present the temporary pathology is confined to both visual areas of the cerebral cortex.

Eye signs in general anaesthesia are of interest to surgeons and anaesthetists. The ocular signs consist of: (1) lid and corneal reflexes, (2) globular signs and (3) pupillary signs.

The first group consists of the conjunctivo-palpebral reflex, Parson's sign, and corneal reflex. The first two alone are present in the primary stage of anaesthesia, while the corneal reflex is usually present in the primary and intermediate stages, disappearing or being feebly present when the advanced stage is reached. These sensory reflexes may disappear much earlier than normal, especially in those patients who have had morphine pre-medication; also in the debilitated and very sick; but they are seldom present in small children.

The globular signs are dependent upon the activity or degree of tension of the recti muscles. The eyes are usually shifting actively from side to side in the early primary stage, and gradually cease active movements if the intermediate stage is reached. During the intermediate stage, divergent strabismus usually occurs. If, however, the narcosis becomes lighter, after having been in the advanced stage, the recti muscles will again resume their tension. In babies and children the eyes are usually parallel in all stages of narcosis. But in adults the globular signs are so constant as to constitute an invaluable working sign in anaesthesia.

The pupillary signs exhibit a light reflex that is active all through the three stages of surgical anaesthesia. It is abolished only when the toxic degree is reached, at the point where the pupils begin to dilate from overdose or toxicity. Therefore, an active pupillary light reflex is a positive assurance that a toxic degree of narcosis is not present. The size of the pupils varies, due to many causes. One should have the utmost respect for dilated pupils. Dilation may occur at either end of the anaesthesia i.e., in too light anaesthesia, due to irritation of the sympathetics or in too deep anaesthesia, due to profound sympathetic toxicity. Unless there are unmistakable evidences of light narcosis, cease to administer the anaesthetic until definite signs of light narcosis appear, especially in ether anaesthesia. Ignoring this warning has often led to grave errors. If the dilated pupils are due to toxicity, a few breaths of fresh air will reduce their size. On the other hand, if they are due to light narcosis, they will be unchanged or even augmented in size.

DIETETIC TREATMENT OF DIABETES MELLITUS*

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IN a discussion on the dietetic treatment of diabetes mellitus it is desirable to review briefly the aetiology, diagnosis and treatment of the condition.

Since the advent in 1921 of insulin for the treatment of diabetes mellitus, it has been conclusively proved that the disease is due at least in some cases to the defective production of insulin by the cells of Langerhans in the pancreas.

This defective production may be due to various causes, e.g.: (1) certain poisons, (2) general infections damaging the cells, (3) diseased condition of the pancreas due to specific agents or carcinoma of the pancreas, and (4) inherited defect in the pancreas.

The defective production of insulin interferes with the metabolism of the carbohydrates taken in with the food which manifests itself by an increase in blood-sugar in the system and the appearance of sugar in the urine.

Normally the concentration of sugar in the blood should not rise above 0.15 p.c. at any time during the day or night, and there should be no sugar in the urine.

So the diagnosis of diabetes mellitus can be easily made by the examination of the urine and blood. A representative specimen of urine should be obtained from the total quantity passed during the whole of the night. It is necessary to differentiate between diabetes mellitus and glycosuria.

Glycosuria is usually temporary, and is due to indiscriminate consumption of carbohydrates; this can be remedied by observing moderation in the consumption of sugar and carbohydrates so as not to transgress the threshold; diabetes mellitus requires elaborate modification of the whole diet, to suit individual case.

Man is usually not satisfied with the minimum essential quantity of food required for the maintenance of a healthy and useful life, and frequently indulges in over-eating. He takes plenty of carbohydrates, vegetables and fats, meat and eggs.

Any suggestion by the doctor, to restrict his diet, annoys him and does not appeal to him till he gets tired of insulin injections; then he realises his folly and takes to the restricted diet, to find that it does him good.

We cannot forget the agitation and fuss which greeted the rationing of rice, wheat etc. when first it was introduced about ten

* Specially contributed to the ANTISEPTIC

years ago but people soon became used to it and in fact found it to be beneficial.

So also the diabetic patient gets used to his restricted diet, and is quite happy and contented with it, when he finds that he is able to attend to his daily duties without feeling at all fatigued or exhausted after the day's work.

The value of human diet depends upon the calories that it furnishes for the maintenance of normal life. As a general rule the physiological need of a healthy man of average weight doing moderate work, is food that would provide about 2900 calories.

The three main elements in food are: Carbohydrates, proteins and fats. And when the food is metabolized, each element yields a certain amount of calories. So if we know the proportion of the three elements in the food we eat, the total amount of calories can be calculated. Thus we know that one gramme of carbohydrate yields 4 calories, 1 g. of protein yields 4 calories and 1 g. of fat yields 9 calories.

Therefore, in order to produce 2900 calories the approximate proportion of the 3 different elements should be, carbohydrates 400 g. protein 100 g. and fat 100 g.

In the case of a diabetic patient there is impairment of metabolic capacity due to defective secretion of insulin in the pancreas, and on this account we have to rationalise the diet in such a way that the available insulin is able to metabolise the whole of the carbohydrates taken in the food and thus accomplish the glycogenic function of the liver without exceeding the threshold limit. Approximately, 1670 calories are enough for a diabetic patient to carry on his daily routine without feeling fatigued. In order to secure this, the food should contain about 100 g. carbohydrates, 70 g. protein and 110 g. fat.

If we know the approximate percentage composition of the carbohydrates, protein and fats in the food, we can adjust the daily *menu* by prescribing appropriate quantities of each.

As stated before, the appearance of sugar in the urine and blood is due to defective carbohydrate metabolism due to an insufficient quantity of insulin produced by the pancreas. So in treating diabetes we have to remedy this defect, either by decreasing the carbohydrate intake to such an extent that the amount of insulin naturally produced in the system is able to metabolise the whole of the carbohydrates, or by supplying the deficit of insulin by injecting commercial insulin in sufficient quantity to metabolise the excess of the carbohydrates taken in the food so that the glycogenic function of the pancreas is maintained and no excess of glycogen passes in the blood or urine as such.

I prefer the former line of treatment as it is less expensive and requires no medical aid, once the basic diet has been ascertained: the other alternative requires medical aid, unless the patient is intelligent and can take the injections himself, which is not without some risk.

The latter treatment may be called substitution treatment. It is just like the hormone-treatment of certain diseases, or vitamin therapy for avitaminosis.

I have devised a chart to suit our Indian dietary which I give my patients, with each item of the daily menu, entered thereon, asking him to bring the chart along with his urine every day. If I find the urine to be sugar-free, I prescribe him the diet in the next higher step in the food-ladder; but if I detect any sugar in the urine I bring him back to the lower step of the ladder, or give him another purge and start him from the first step of the ladder and go on increasing or decreasing the food according to requirement. I have invariably found this line of treatment to be successful; the patient usually reaches the highest step in the ladder by the end of 15 days.

It is very interesting to note that even a little indiscretion on his part such as a little more quantity of carbohydrate or some sugar in his tea or milk etc., is reflected in the appearance of sugar in the urine.

I start the treatment by giving him a good purge with calomel, and almost starving him for the first two days, instructing him to take perfect rest by lying in bed, so that he does not feel exhausted, for want of food. On the 3rd day I start giving him a little food, and if I find the urine to be sugar-free, I go up a step higher in the food-ladder, but if I find even a trace of sugar in the urine I again give him a mild purge and start him from the foot of the ladder. As a rule this second purge makes his urine sugar-free; then I go on increasing the quantity of food daily, so that he gets more calories and does not feel the pangs of hunger very much. This gradual increase does not throw any strain on his metabolism, and I am able to increase or decrease the food as per requirements.

Theory is one thing and practice is another. Theoretically we know the percentage composition of food stuffs, but one has to adjust the *menu* from practical experience.

My food chart is as under:—

FOOD CHART

Name..... Age..... Sex..... Occupation..... Date of admission.....

Date; Day of treatment; 5% vegetables; Eggs; Ghee; *Dahi* (curds).
Milk; Pulse; Flour; Potatoes; Rice; Oranges; Meat.
Urine exam; Sp. Gravity; Sugar; Diacetic acid; Acetone; etc.,
Carbohydrates; Proteins; Fat; Total calories.

My daily menu for 15 days is as under:—

1st and 2nd days.—No food excepting 5 cups of tea with a little milk and no sugar, one cup to be taken at 7 a.m., 10 a.m., 1 p.m., 4 p.m. and 8 p.m. respectively.

3rd day.—7 a.m. Tea. 9 a.m. one egg. 11 a.m. Vegetables: cabbage, methi 2½ ounces each, dahi 2 oz.; 1 p.m. milk 4 oz.; 4 p.m. Tea one cup. 7 p.m. one egg, cabbage and methi 2 oz. each; 9 p.m. Milk 2 oz.

4th day.—The same as on the 3rd day, but with addition of one egg at 5 a.m.

5th day.—6 a.m. Tea. 8 a.m. milk 4 oz. 10 a.m. one egg, cabbage, tomato, cauliflower, methi bhaji 2 oz each; chicken soup 1 oz. 2 p.m. Tea. 5 p.m. one egg, chapati 2 oz (with bran). 7 p.m. cabbage, cauliflower and methi bhaji 2 oz. each; soup 1 oz.

6th day.—6 a.m. Tea; 8 a.m. milk 4 oz. 10 a.m. one egg, cabbage, knolkhol, dudhi, methi bhaji 2 oz. each; chicken soup 2 oz. chapati 2 oz. 2 p.m. Tea. 5 p.m. one egg and chapati 2 oz.; 7 p.m. cabbage, radish, cauliflower and cucumber 2 oz. each; soup 2 oz.; mung dal 2 oz.; 9 p.m. milk 3 oz.

7th day.—6 a.m. Tea. 8 a.m. egg mixture of one egg. 10 a.m. Soup 2 oz., cauliflower, tomato, radish, potato 2 oz. each; chapati 2 oz. 2 p.m. Tea; 5 p.m. two eggs. 7 p.m. Cabbage cauliflower, knolkhol; methi bhaji 2 oz. each. 9 p.m. milk 4 oz.

8th day.—The same as on the 7th day, but two eggs at 5 p.m. with one chapati.

9th day.—The same as on the 8th day, but one egg and one chapati 2 oz., and dahi 2 oz. at 10 a.m. in addition.

10th day. 6 a.m. Tea with one biscuit. 8 a.m. milk 4 oz. 10 a.m. Two eggs, chapati and mung dal 2 oz. each, meat 2 oz., cabbage cauliflower, dudhi, knolkhol and dahi 2 oz. each. 2 p.m. tea with soyabean biscuit. 5 p.m. one egg with one chapati 2 oz. 7 p.m. one egg, one chapati, cauliflower, tomato soup 2 oz. 9 p.m. milk 4 oz.

11th day.—The same as on the 10th day, but add ghee 1 oz. to the 10 a.m. meal, and potato 2 oz. to the 7 p.m. meal.

12th day.—6 a.m. Tea. 8 a.m. egg mixture. 10 a.m. soup 3 oz., cabbage, cauliflower, tomato, methi bhaji, green peas and chapati 2 oz. each. 2 p.m. coffee with biscuit. 5 p.m. One omelette from two eggs with chapati 2 oz. 7 p.m. Rice, soup, cabbage, cauliflower, dudhi, knolkhol and dahi (curds) 3 oz. each. 9 p.m. milk 6 oz.

13th day.—The same as on the 12th day, but with addition of 1 oz. of ghee to 10 a.m. meal, and one potato.

14th day.—6 a.m. Tea. 8 a.m. egg mixture. 10 a.m. soup 4 oz., meat, cabbage, cauliflower, dudhi, methi bhaji, chapati, and dahi 2 oz. each. 2 p.m. coffee. 5 p.m. one omelette from two eggs, with chapati 2 oz. 7 p.m. 4 oz., cabbage, cauliflower, green peas tomato, methi bhaji, rice and dahi 2 oz. each. 9 p.m. milk 6 oz.

15th day.—6 a.m. Tea. 8 a.m. egg mixture: 10 a.m. soup 4 oz., chapati, cabbage, knolkhol, cauliflower, dudhi bhinda, vengam, green peas, meat, fish, dahi, ghee 2 oz. each. 2 p.m. tea with biscuit: 5 p.m. one omelette from two eggs with a chapati 2 oz. 7 p.m. soup, cauliflower, cabbage, dudhi, rice, dahi, methi bhaji, and chapati. 9 p.m. milk 8 oz.

It will be noticed that the patient gets a variety of foods on the 15th day, but in limited quantity. I have found that the quantities noted usually suffice and enable him to attend to his usual daily duties, without any discomfort.

As a general rule, I avoid giving too much of wheat or rice or other starchy food or vegetables or any other tuber that grows underground. Sugar as such is strictly prohibited. Saccharine may be used if necessary.

VERTIGO*

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VERTIGO, which means a 'turning' is used to designate any movement or sense of movement or unsteadiness either in the individual himself or in the external objects, that involves a defect, real or apparent, in the equilibrium of the body. The patient calls it 'giddiness' or 'dizziness.' Vertigo, it must be understood, is always accompanied by a disturbance of balance, which makes the patient seek a support. Vague disturbances of balance unaccompanied by any sensation of movement and rarely accompanied by signs or organic disease, are not designated 'vertigo.' In vertigo, the senses are deceived into seeing or feeling movement. There is no need to postulate a turning movement and refer as true or false vertigo.

Vertigo is always the result of direct or indirect disturbance of the labyrinth, vestibular nerves or cerebellum.

The internal ear or labyrinth consists of an intricate system of cavities in the posterior part of the temporal bone, called the osseous labyrinth, and a series of hollow membranous structures connected with the filaments of the acoustic nerve, which lie in the osseous labyrinth and constitute the membranous labyrinth. The osseous labyrinth is composed of an intermediate chamber termed the vestibule, posterior to which are placed the three semi-circular canals, whilst anteriorly is situated the cochlea. All the cavities communicate with one another. The corresponding membranous parts do not completely occupy the osseous chambers, and the intervening space is filled with a fluid termed the 'perilymph.' The membranous labyrinth also contains a fluid called 'endolymph.' In the anterior part of the medial wall of the vestibule there is a circular depression termed the 'recessus sphaericus,' the bottom of which is perforated by some minute holes, which give admission to the filaments from the acoustic nerve.

The vestibular nerve takes its origin in the cells of the ganglion of Scarpa which is situated at the outer end of the external auditory meatus. The peripheral processes supply the labyrinth and semi-circular canals, the central processes join with those of cochlear nerve fibres and passing between the restiform body and the ascending root of the fifth nerve, end in a mass of nerve cells called the vestibular nucleus beneath the lateral part of the floor of the fourth ventricle. The connections of the nerve with the brain stem, cerebellum, nuclei of the eye muscles, the vestibulo-spinal tract of the spinal cord and the nearness of the vestibular nuclei to the vagal centres must be remembered to explain the reactions when the vestibular nerve is affected.

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Regarding the physiology, we do not use our labyrinth for balancing in normal circumstances. The firm ground on which we stand along with the visual and skin-muscle-joint impressions enable us to balance without the help of the labyrinth. But when the ground is not firm, as in learning to balance on a trapezium, we get the help of the labyrinth to balance ourselves. This delicate sense organ is constantly receiving and transmitting impressions of the very existence of which we are unaware, until it goes wrong. The impulses are flowing up each vestibular nerve so as to balance one another, travelling also to the eye nuclei, cerebellum and the body muscles without impinging on our consciousness.

Aetiology.—I, NEURAL CAUSES:—(1) Central lesions; (2) Peripheral lesions: (a) associated with deafness; and (b) not associated with deafness.

II. EXTRA NEURAL CAUSES:—(1) Cardio-vascular:—(a) irregularity of blood supply as in loss of blood; (b) feeble cardiac action; (c) Stokes-Adams syndrome; and (d) arterial disease as in hypertensive cerebral attack. (2) Digestive disturbances: (a) flatulent dyspepsia; and (b) torpid liver. (3) Ocular: (a) errors of refraction, especially astigmatism and (b) diplopia. (4) Endocrine disturbances. (5) Menopausal disorders; (6) Toxic states:—(a) specific fevers; (b) administration of anaesthetics, morphia and alcoholism; and (c) drugs acting on the vestibular nerve; (7) Migraine; (8) Aura in epilepsy; and (9) Paroxysmal positional vertigo.

I. NEURAL CAUSES:—(1) *Vertigo due to central lesions*:—(a) The most likely cause is a vascular lesion or a patch of sclerosis. In disseminated sclerosis the symptoms are those of acute vestibular failure. Differential diagnosis is established by the presence of diplopia, the sensory disturbances showing considerable variation in extent and degree and the triad symptoms of tremor, nystagmus and scanning speech. (b) *Tumours of the posterior cranial fossa*:—The commonest is a neuro-fibroma of the acoustic nerve. There is postural vertigo and nystagmus is present in these cases. (c) *Arachnoiditis of the posterior fossa*:—The retraction of the head; a high leukocytosis and an examination of the C.S.F. will clinch the diagnosis:—(d) *Cerebellar tumours*. Here there is nystagmus, hemiataxia, unconscious balancing movements and hypotonia.

(2) *Vertigo due to peripheral lesions*:—(a) *Acute vestibulitis* occurs due to inflammation of the labyrinth and cochlea. There is lack of harmony between the two labyrinths. Severe constitutional symptoms such as fever etc. are followed by intense vertigo, incessant vomiting and bilateral ataxy. These symptoms disappear in the course of a few days, leaving complete bilateral and permanent deafness. In other cases, either the cerebellar or vestibular symptoms clear up in the course of a few weeks. There is pallor, nausea and vomiting, a slow thready pulse and a fall in blood-pressure. These

associated symptoms are due to the disturbance spreading from the vestibular nuclei in the brain stem to the adjacent vagal centre. It is important to note that the patient complains of severe epigastric pain if the vomiting is associated with an empty stomach. Bile may also be vomited by some. Rarely, diarrhoea may also occur. Vertigo is present. Objects appear to move in one direction, while the patient feels he is moving in the opposite direction. Nystagmus may be rotatory, horizontal or vertical. The patient falls or deviates in the direction of the affected side. This picture of abject misery, continues and slowly disappears as central compensation is established. The patient creeps about cautiously at first and then regains his balance gradually. (b) *Meniere's disease*:—This is a condition characterised by paroxysmal attacks of severe labyrinthine vertigo occurring at irregular intervals and associated with tinnitus and progressive deafness. It is a disease of adult life. Meniere, considered that hæmorrhage into the labyrinth was responsible for this condition, but the very slow loss of vestibular function militates against this theory. Some consider that the cause is a distention of the endolymphatic system, but the real aetiology is not known.

SYMPTOMS:—The attacks set in suddenly with a buzzing noise in the ears followed by intense vertigo, both subjective and objective. The patient falls down as if shot, but sometimes he has time to assume a sitting or lying posture. Often, consciousness is lost only for a few moments. Spontaneous nystagmus occurs on the side of the lesion and unilateral cerebellar signs are present there. There is repeated nausea and vomiting; the skin is pale; sweat is clammy; the patient lies perfectly still, and is in terror lest the least movement should bring in more vertigo. The attack lasts from a few minutes to a whole day. The patient recovers from the attack perfectly well but persistent attacks produce a nerve deafness. As slow vestibular destruction follows, the attacks become less and less severe and finally stops when the function of the labyrinth is destroyed. Convulsions are absent. Barany's caloric test is positive in all vestibular destructive lesions. It consists in irrigating the external auditory meatus with hot or cold water or air. With an intact vestibular mechanism this causes irritation of the vestibular apparatus with the appearance of nystagmus or lateral deviation of the eyes to the side of irrigation. When the vestibular mechanism is impaired this test fails completely. (a) *Acute attacks of vertigo without deafness*:—(i) *Endolymphatic hydrops*:—There is an obstructive distention of the endolymphatic system without any involvement of the central nervous system. The attacks of vertigo are preceded by deafness and tinnitus or may occur without any warning. It occurs in people below fifty. Attacks occur in groups at intervals of days or weeks. There are periods of complete freedom. The hearing in the affected ear is distorted so much that loud, musical and high-pitched sounds are distressing to the patient. The

auditory apparatus is found to be normal but there is nerve deafness. Usually only one labyrinth is affected though sometimes both may be involved. (ii) *Injury* due to fracture of the skull involving the labyrinth or severe concussion shaking the delicate membranous labyrinth and damaging it. There is giddiness which persists even after the effects of the injury have passed off. (iii) *Infection* is usually secondary to otitis media, and spreads by erosion of the bony labyrinth. There is slight dizziness which is accentuated by pressure (fistula sign). This warning sign in chronic suppurative otitis media calls for early operative interference, if the labyrinth and, sometimes life, has to be saved. When the labyrinth is infected, acute labyrinthitis follows. In meningococcal meningitis, the infection spreads outwards from the meninges to the labyrinth. There is residual deafness and disturbances of the balance even after the meningitis is cured. *Mumps* produces neuro-labyrinthitis of one side only. *In geniculate herpes*, there is acute vestibular failure, accompanied by fascial paralysis and vesicular eruptions round the affected ear. This is Ramsay Hunt syndrome. (iv) *Toxic*:—Specific fevers and drugs acts on the vestibular nerve; the most common and most modern offender is Streptomycin. This may cause permanent impairment of the vestibular function, both labyrinths being usually affected. In an effort to overcome this selective toxic action of the drug, the dihydro-compound was evolved. Unfortunately, this dihydro-compound has a toxic effect on the cochlear apparatus producing deafness. Streptomycin must therefore, be used with care, and should be promptly withdrawn immediately toxic symptoms begin to manifest.

II. EXTRA-NEURAL CAUSES:—(1) *Cardio-vascular*:—Under this, head are grouped: (a) irregularity of blood supply as in loss of blood, feeble cardiac action, Stokes-Adams syndrome hypertensive cerebral attacks. Here there is more giddiness than actual vertigo and a careful examination of the system reveals the cause. (2) *Digestive disturbances*:—Most common is flatulent dyspepsia. Here the patient complains of anorexia, heartburn and giddiness sometimes. Hepatitis and disordered function of the liver produce giddiness with vomiting of bile. (3) Other causes like errors of refraction especially astigmatism, diplopia and menopausal and endocrine disorders are to be mentioned only for purposes of differential diagnosis. (4) An epileptic fit preceded by a vertiginous aura makes its cause apparent by the loss of consciousness which follows and complete recovery from the fit after a short time. (5) *Migraine*:—Attacks commence commonly on waking up in the morning when on raising his head from the pillow the patient experiences a sense of vestibular disorientation with giddiness, ocular confusion and nausea. The diagnosis is established by the association of recurring headaches on waking in the morning, which is intense, unilateral, frontal, occipital, or general, with vomiting, vestibular symptoms and peculiar disturbances of vision. (6) *Paroxysmal positional vertigo* is caused only

with the head in a certain position usually backwards and to one side. The paroxysm of vertigo lasts only for a few seconds and does not re-appear for at least half an hour, even when the offending position is resumed. It is distinguished from C.N.S. forms by the fatigue that accompanies these attacks. Though the symptom of vertigo leads to an enquiry into the efficiency of the cardio-vascular, digestive, ocular etc., systems of extra-neural origin, most cases of severe vertigo show some part of the vestibular system to be at fault. Real vertigo is only associated with diseases of the vestibular system. The C.N.S. lesion is differentiated by the following two points: (a) deafness is absent in these lesions, and (b) the symptoms persist for a long time, at least, three weeks.

TREATMENT:—Treat the cause first. Exclude extra-neural causes by proper examination, system by system. An infected ear must be treated with the antibiotic, ear drops. It is important to keep the patient moving after the acute stage has passed. Special balancing exercises are useful. Some consider exercising in groups effect quicker results in balancing power. During an attack of acute vestibulitis, rest and powerful sedatives are prescribed. Calcibronat orally or by the intravenous route and phenyl-barbiturates are given. Vomiting can be controlled by an injection of phenobarbitone sodium (3 grains) or by injections of Thiodemine (Vitamin B₁ and B₆). In Meniere's disease, barbiturates have a calming influence. Hyoscine and antihistamine drugs are useful in modifying the severity of the attacks. In Meniere's disease, the intake of sodium is limited. A low sodium diet prevents retention of fluid in the body and thus helps to ward off attacks. Injections of histamine and nicotinic acid have been tried to influence the blood supply of the labyrinth and are sometimes useful. Deliberate intoxication of the vestibular labyrinth with streptomycin is successful in some cases but, as sometimes happens, the remedy is worse than the disease.

When the attacks are not controlled by conservative methods, operation on the labyrinth has to be performed. When the disease is unilateral, labyrinthectomy *i.e.*, opening the bony external semicircular canal and removing a part of the membranous labyrinth is enough to cure the condition. In bilateral cases, when the hearing in the affected ear is useful, intra-cranial sections of the vestibular nerve should be undertaken.

Vertigo is such a disturbing complaint to both patient and doctor that it calls for a complete investigation into its cause and enjoins correct diagnosis and treatment; and, above all, there must be a patient and sympathetic attitude towards the sufferer.

Summary.—Vertigo is used to designate any movement or sense of movement in the individual himself or in the external object; and is accompanied by a disturbance of balance. We do not normally use our labyrinth for balancing but for balancing on a trapezium we get the help of the labyrinth. The causes are neural and extra-neural; the neural causes are:—central and peripheral lesions including

acute labyrinthitis, Meniere's disease, endolymphatic hydrops, infections and drug toxins; the extra-neural causes are cardio-vascular and digestive disorders, ocular causes, epileptic fits, migraine and paroxysmal positional vertigo.

The treatment is outlined in the concluding paragraphs on page 49.

REFERENCES:

1. Camthorne, Terence (October 1952)—B.M.J., pp. 931-933.
2. Price—Text-book of Medicine, pp. 1295-1297.
3. Cunningham—Text-book of Anatomy.

HIGH CALCIUM INTAKE IN THE LAST MONTH OF PREGNANCY

Many investigators have shown that calcium plays an important part in uterine activity during the various stages of labour.

In the latter part of pregnancy, there is a fall in the serum calcium level, while the requirements of calcium and phosphorus then are almost double those of the nonpregnant woman.

Taking these observations into consideration, 100 patients in whom normal deliveries were anticipated, were given additional calcium in the last month of pregnancy, to be taken until labour started. There was no modification in diet, and the patients continued to take vitamin and mineral tablets (containing 4 grains of calcium phosphate, dibasic) which are given routinely to all maternity cases, starting from the third month of pregnancy. Sixty public cases were given supplementary calcium in the form of calcium gluconate (Ca 9.31%), a 10 grain tablet to be taken three times daily an hour or so before meals. Forty private cases were given the supplementary calcium in the form of purified bone meal (calcium phosphate, tribasic, Ca. 38.76%) 5 grains three times a day an hour or so before meals. The bone meal was contained in a capsule in which the vitamins A, D, B complex, iron and a fraction of sodium iodide were included (Natalex). About 10% of the patients taking calcium gluconate complained of heart-burn, or regurgitation of gastric contents following the medication and it had to be discontinued in the series. The Natalex capsule, however, was better tolerated as a rule, and the heartburn that was encountered occasionally was not disturbing enough to make it necessary to discontinue the treatment except in 2 of the 40 cases.

Of the 60 public patients, 32 were between the ages of 20 and 30, and 28 between 30 and 40. Fourteen were primiparous, and 46 multiparous. Of the 40 private patients, 28 were between the ages of 20 and 30, and 12 between 30 and 40. Twenty were primiparous and 20 were multiparous.

The progress and character of labour of all patients taking increased supplementary calcium compared favourably with that in control cases. Once started, labour progressed steadily at varying rates and intensities until full dilatation of the cervix was accomplished. There was good uterine relaxation between the contractions, and the patients' reactions to the contractions were very good, except in 1 case, a breech presentation with dry labour..... There was hardly any noise and no hysteria or panic right through the first stage of labour. There was no uterine inertia or tetany in any of the cases in this series; there were no precipitate deliveries. (Two multiparous patients had had precipitate deliveries previously). The second stage of labour was less strikingly influenced than the first. Here, there was a fair amount of suffering, necessitating analgesia in the majority of cases, during the bearing-down pains. However, the duration was much shorter, and labour more efficient than in the control cases. The third stage of labour and the post-partum course were uneventful. The results in the private cases (taking Natalex) were more consistent than in the public cases (taking calcium gluconate). Ten patients of this latter group did not believe that they were ready for the delivery table. Two multiparas volunteered the statement that they enjoyed this last delivery. Calcium taken by mouth in the last month of pregnancy (together with vitamins and other minerals) in the suggested amounts, was found to have a favourable effect on the course of labour in normal cases.—(*Canadian Med. Assoc. Jour.*, 71: 166, 1954).

CONSTIPATION—ITS CAUSES AND TREATMENT*

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Morvi

CONSTIPATION is often said to be a disease of civilization and a serious handicap to the rapid advancement of art and science and those who suffer from it are sluggish and dull and cannot do sustained work without fatigue.

The causes of constipation are numerous and it may be the result of a wide range of abnormal conditions.

Constipation may be due to diseased meninges of the cerebro-spinal centres, pressure exerted by various tumours of the abdominal cavity or to a variety of diseases of the stomach and liver. Even the mere neglect to answer nature's calls, will soon lead to pronounced constipation, with all its dire consequences. It is often associated with obstruction of the pyloric end of the stomach, atonic dyspepsia, jaundice or pregnancy or old age. Also hurried eating or the eating of undigestible food may predispose to it. In fact anything that causes abnormal delay in the onward passage of food through portions of the gastro-intestinal tract, will almost certainly produce constipation, if not corrected in time. If neglected, the sensitive nerve elements supplying the mucous membrane of the bowel, are soon obtunded and gradually become blunted, while the muscular coats of the colon soon undergo atrophic changes. The chain of glands along the gut quickly become hypertrophied and fail to pour out their normal secretions, and the peristaltic movements grow weak and ineffective.

Constipation will rapidly produce auto-toxæmia, or self-intoxication, because in stasis, the intestinal canal becomes a hot-bed for the development and multiplication of pathogenic germs and for the ready absorption of poisonous toxins.

In our attempts to prevent this disease or to aid in correcting it, we must keep the alimentary canal always clean. "Clean out and keep clean" should be the motto.

People suffering from constipation also suffer from headache, vertigo and neuralgia. They may also suffer from torpid liver, indigestion, palpitation, and often from a reflex cough. When the bowels are thoroughly cleared these symptoms are relieved. The engorged portal circulation is freed, the processes of absorption and assimilation once more become normal; the constant introduction of toxic substances into the general circulation is arrested, and several consequential nervous phenomena right themselves.

In treating this diseased condition, the physician is not handicapped by the lack of remedies. They are numerous indeed. But one should select and apply the remedy to suit the needs of each

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individual case in order to correct the tendency to constipation. It should be one that can be gradually withdrawn, leaving the bowels to function normally. Most laxative remedies, when routinely applied lose their initial effect and the dose has to be increased. This is especially true when the medicinal treatment is not reinforced by active exercise, massage and by regularly visiting the closet at a fixed time every day. Many of the remedies are recommended to be used singly but many more are prescribed in combination. Just how they should be used will depend upon the cause of the constipation if ascertainable or upon what part of the intestinal tract we wish to tackle.

Purgative remedies are not indicated except in the beginning of the treatment in certain patients. Very heavy eaters, and those with more or less sedentary habits, and have had constipation for a long time need brisk purgation to clean the alimentary tract of the effete load of faecal matter.

Clinical forms of constipation—(1) *Simple constipation*:—Simple constipation is of interest as it is often the prelude to more serious trouble. At first one simply suppresses defecation; this leads to habitual constipation, which is difficult to overcome and gets more obstinate, and finally gives rise to complications; often it remains latent and is well tolerated for a long time. The patient complains of abdominal pain, distress and distention after meals, sometimes also of vomiting. The tongue is furred, with a thick deposit, which may be merely yellowish. A purgative relieves these symptoms. If one is careful to secure free regular evacuation of the intestines by using mild laxatives and is careful about his food, the constipation will disappear and the dyspepsia will be relieved.

(2) *Spasmodic constipation*:—Spasmodic constipation marks an advanced degree. The intestines irritated chronically by the retained food, reacts with a permanent spasm. The patient always complains of a sensation of heaviness, and of pain in the colon, mainly in the left iliac fossa, and sometimes on the right side or the sensation of a transverse bar. When palpating the left iliac fossa, one readily feels portions of the descending colon and of the sigmoid flexure that are hard and slightly painful. Sometimes one feels the transverse colon like a taut rope. At times there are accumulations of faeces in the large intestine, sometimes the colon does not move at all, in spite of purgatives and enemas, so that the lumps in the colon must be the result of intestinal spasm. Defaecation occurs infrequently or it may take place daily, but only in insufficient quantity. The faeces come out as hard balls, frequently covered by glairy mucus. The faeces may be less hard but are passed in small masses or in the form of thin ropes.

(3) *Atonic constipation*:—Here the intestinal contents move slowly along the large intestine, from the caecum to its end, and may occasionally be arrested, very likely, either in the caecum or more often

in the sigmoid flexure, or also in the rectum, but without accumulating to any extent at any particular point, as seen in cases in which the lumen of the intestine is constricted. It seems as though there was present especially a sluggishness of colonic contractions. Here the colon is soft and flabby; sometimes it is thick, not dilated and ballooned, while distention due to gas, causes it to roll under the hands of the examiner, especially in the region of the caecum. The patient complains of distress and gas after meals and of vague abdominal discomfort and pain in the side. The pain is less severe than in the spastic form, and appears more particularly in the form of attacks of colic. Atonic constipation is sometimes seen in patients who were vigorous or even obese, but who have lost weight, and whose intestinal walls and abdominal girth have lost their former resistance.

(4) *Constipation with intoxication*:—Whether spasmodic or atonic in nature, constipation may be complicated with symptoms of intoxication. These attacks occur irregularly or periodically and lead to malnutrition and a change in the general condition, at times so grave that one hardly feels justified in attributing it to simple constipation. Nevertheless a painstaking examination of the patient fails to disclose any other disease. The loss in strength may be so great as to render the man incapable of doing any work.

The toxæmia in the course of constipation starts insidiously. During the first two or three days of faecal retention, the patient about to experience a toxic explosion hardly suffers; he digests his food fairly well, then starts with malaise and poor appetite. The mouth tastes bitter, a condition of nausea supervenes, vomiting either of food or bile not infrequently takes place, sometimes there is a slight elevation of temperature, the abdomen is bloated, slightly painful, especially on palpating the large intestine but these intestinal phenomena are frequently of slight import, the toxic syndrome alone dominating the scene.

If the toxic constipation has lasted for a long time, systemic deterioration becomes pronounced. The patient becomes progressively and irremediably emaciated, the skin is pale, and the complexion is dirty, and the body sometimes emits a bad odour. The weakness progresses, accompanied by a permanent general malaise. Headache is almost constant. The extremities are cold, even though the forehead may be burning. There is no appetite, the tongue is dirty, the breath fetid, the liver is small. The abdomen is usually bloated, tense, painful, especially on the left, and also at the sigmoid flexure. The accumulated scybala can be felt in the sigmoid flexure, the caecum is dilated and atonic producing splashing and gurgling sounds. The objective examination of the abdomen of the patient does not disclose any grave lesion to explain the profound alteration in the general condition. It all amounts to a nutritional

disturbance, the origin of which is shown to lie in an intestinal auto-intoxication not only by alternating toxic attacks corresponding to periods of constipation, but also, by abnormal chemical elements in the urine. The point to be remembered, above all, is that such a state of affairs will ultimately lead to a state of incurable cachexia.

(5) *Constipation with irritation, colitis and pericolitis*.—Prolonged constipation produces an irritation of the intestinal mucous membrane, and leads to inflammation and colitis, or which passing even beyond the intestinal wall, may give rise to peritoneal reactions and give rise to pericolitis.

The colitis is especially frequent in the lower portion of the large intestine, where it manifests itself although not always, by the discharge of some glairy matter tinged with blood that adheres to the surface of the hard faecal masses. It frequently affects the iliac colon, where it may give rise to pain in the left flank and to a slight induration of the intestinal wall. When it is more severe, sigmoiditis may be manifested by false diarrhoea, *i.e.*, by frequent defaecation several times during the day, consisting of a serous liquid of yellow or brownish colour mixed with glairy matter while the intestine remains filled with scybala that are easily perceptible to the touch.

The diagnosis of pericolitis is difficult. In its clinical picture, there are, besides the constipation, only signs of peritoneal irritation, mainly pain which is continuous, dull and increased by moving, by shaking, by travelling in any crude vehicle, by abdominal palpation, or by movement of the intestine. It is located in the flanks or in the iliac fossa, on the right or left side, according to the predominant localization.

Very deep palpation, repeated shaking, violent purgation, in fact anything that excites intestinal movement will induce an attack of pain with prolonged suffering. During the slow evolution of the disease, there are interspersed attacks of pain, of intestinal obstruction, or of localised febrile peritonitis. Sometimes there is vomiting, often abdominal tympanitis but no ascites.

The following facts lead to the diagnosis of pericolitis: (1) signs of peri-intestinal irritation (continuous and increased pain) digestive distress without definite characterization, some induration of the peritoneum around the intestine, (2) the absence of signs of intra-intestinal inflammation (faeces well-digested with but little mucus, and containing no soluble albumin or blood), and (3) constipation.

The diagnosis is a very difficult one and often can be mistaken for tuberculous peritonitis or *vice versa*.

Chronic gaseous intestinal constipation.—The filling up of the bowels with noxious gases is the result of an atrocious neglect of the body; it is a nuisance when the gases are expelled causing an abomination of stench. The toxic substances enter into all the

tissues of the body, resulting in auto-intoxication and untoward effects on other organs of the body.

The large intestine is some five feet in length and 2 to 2½ inches in diameter, therefore, capable of holding a considerable volume of foul gases, which crowd out the abdominal walls for several inches, push up the diaphragm, press down the kidneys and the pelvic organs, besides exciting the generative organs, causing lustful dreams. Pain is experienced in the region of the heart, appendix ovaries, uterus, bladder, sigmoid flexures; in fact, more or less the whole abdomen and the sides and back are often involved. It produces also nervousness, vertigo, disturbed sleep, irregular circulation of blood with colicky pains in the region of the greatest gaseous disturbance, *i.e.*, the caecum and sigmoid flexure.

Gaseous constipation is a very serious matter as it invades the whole length of the gastrointestinal canal, disturbing and displacing organs and constantly irritating the involuntary and voluntary nervous systems, so that rest is impossible to such patients.

The human body is only a blotting paper for the gastro-intestinal canal, absorbing the normal as well as the abnormal substances.—Premature ageing, intestinal auto-intoxication, auto-toxaemia, and neurasthenia, indicate that the gastro-intestinal blotter has become quite fouled and useless requiring to be sterilised and prepared for re-use.

In chronic gaseous, zigzagged, ballooned bowels, the large intestine gets greatly distorted forming pouches, loops, kinks, dislocations and bands.

Relieve the bowels of abnormal gases and trust to Nature that in due time the various organs will resume their normal location. Nine-tenths of the diseases that afflict man can be traced to habitual self-poisoning. More than eighty per cent of tuberculosis cases might be prevented by keeping the gastro-intestinal canal clean and free from retained effete matter. Chronic constipation, indigestion, toxicosis, insomnia, malnutrition, and toxic anaemia, can lead to serious disorders and severe maladies affecting various organs of the body.

Premature old age, which is very common nowadays is caused by the saturation of body fluids with toxic matter.

Doctors will do well to take the cue from the plumbing trade, if they wish to prevent the filling up of the bowels, with faeces and gases—the bane of human existence. As local treatment for chronic proctocolitis, flush the bowels with water at a temperature of 100°F. twice or thrice a day. Ask the patient to drink 2 or 3 quarts of water during the day. In due time hygienic conditions of the gastro-intestinal apparatus will be established.

Pathogenesis of habitual constipation.—Inteligent treatment of constipation requires an understanding of the various types of

constipation, and the pathogenesis thereof. One of the most common types is the so-called habitual constipation, which is a purely functional disorder; chronic constipation, strictly speaking is a disease caused by various anatomic lesions within and outside of the intestinal tract. Chronic constipation is a symptomatic manifestation of such lesions. Symptomatic constipation must be differentiated from the functional. The functional or habitual constipation is a condition primarily involving the peristalsis of the colon, although the underlying causes may be higher up in the gastro-intestinal tract in the nervous system or elsewhere.

Habitual constipation is a neuromuscular disorder of the colon, the mobility of which is affected; the peristalsis is either diminished becoming flaccid, or overstimulated, becoming spastic. But, the smooth muscle walls of the large intestine show no anatomic changes. We find no evidence of muscular dystrophy or atrophy in pure cases of habitual constipation. The muscles are capable of normal response to stimulation. What is lacking is the normal stimulation and nervous control.

The peristalsis of the intestinal wall is an anatomic function controlled and innervated by Anerbach's plexus, which is stimulated directly by the intestinal contents and controlled by the autonomic nervous system. The stimulation from the intestinal contents is a two-fold process, both the physical and chemical qualities exerting an influence.

Under 'physical,' we understand the stimulation of peristalsis, by the bulk of faecal matter. Food residue, or any other unabsorbed material in the colon by its presence, stimulates peristalsis. In cases where the residue in the colon is inadequate, there is a lack of normal stimulation of peristalsis resulting in habitual constipation. This form of habitual constipation is due entirely to improper diet, which is poor in residue and largely absorbed in the small intestines. It occurs temporarily, for instance in people confined to bed on a soft diet, as in acute febrile conditions and after operations.

The intestinal contents control colonic peristalsis also in another way. Certain materials act chemically and influence the motility of the colon. Some of these are found in foods or in the products of digestion, others are found in the secretions of the intestinal tract or other tissues. Cholin of the intestinal secretion, seems to exert a powerful stimulating influence on peristalsis. Bile stimulates peristalsis. There is some evidence that the spleen secretes a hormone which stimulates peristalsis.

There is yet another type of habitual constipation, known in literature as *Dyschesia*, which affects the lower end of the sigmoid and rectum. This form may be simply symptomatic of some disease, where anatomic lesions are present, such as tumours, haemorrhoids, or strictures of the rectum. It may be purely functional without any demonstrable lesions. In this type of constipation, the faecal matter

reaches the sigmoid in normal time, but the normal stimulation to defaecation is lacking. In defaecation, both voluntary and involuntary muscles play an important role, abdominal pressure being an important factor in the process.

At times the cause of dyschesia lies in the voluntary muscles—weak abdominal and pelvic walls. This may be constitutional or due to general debility. In women who have given birth to many children, the overstretching of the abdominal walls and lacerations of the perineum may cause it.

At times, dyschesia is due to pain on defaecation, as in cases of haemorrhoids, fissure-in-ano, ischio-rectal abscesses etc. Then we get either reflex spasms of the sphincter or relaxation of peristalsis above.

When we analyse various forms of habitual constipation as a group, we come to the conclusion that one group is due to deficiencies in diet, either in supplying insufficient food residue, or insufficient chemical stimulation of peristalsis. Another and by far the largest group, is due to instability or excessive irritability of the autonomic nervous system. These cases may be due to endocrine dysfunction. The third group, the rectal type, is either due to poor hygiene or weakness of the muscles.

Success in treating constipation.—Patients and even doctors sometimes forget, that if a mild irritant be applied to any part of the body, the reaction at first produced gradually grows less and less until at last it is reduced to nothing, in other words, complete tolerance is established.

Now, a cathartic acts as a more or less powerful irritant to the nerves of the intestinal mucous membrane, causing increased activity. But if the use of that same cathartic be continued, the intestinal nerves gradually acquire a tolerance to it and it ceases to act as a cathartic. Increasing the dose will again produce some effect, but, at last, complete tolerance is established and the patient complains that the remedy has ceased to help. The doctor should then assure the patient that this result is no ground for discouragement. It is merely a beneficent provision of nature permitting the body to adapt itself to diverse conditions.

There is another point relating to the nervous mechanism which must be kept in mind for successful treatment, *viz.*, although the intestinal nerves are sensitive to a particular drug and get blunted by its constant use, the sensitivity returns when the drug is withdrawn or stopped. In this, lies the key to success in the treatment of constipation. To illustrate: a patient is advised to take say, 2 or 3 grains of phenolphthalein every second or third night. When it shows signs of losing effect, we increase the dose to 3 or 4 grains. When that no longer suffices, we may give 5 grains; when even that dose is no longer effective we change over to aloin. When the limit

of dosage has been reached with this drug, we may change to podophyllin. By the time we have used this for some length of time, the bowel will have recovered its sensibility to the one first used. Thus we may go through the gamut of three remedies as often as we choose until a correct habit has been established for normal defecation. It must be understood that any other remedies may be used in place of the three mentioned. It is the principle alone that matters *viz.*, of changing over from one to another, when necessary.

TREATMENT:—The severity of certain forms of constipation, either toxic or inflammatory, shows that the affection must not be neglected and that treatment must be promptly instituted before complications develop.

Preventive treatment consists, mainly in regulating the diet which must not contain too much protein, or too much spices, but must be composed of vegetables and fruits rich in cellulose in suitable proportion.

Curative treatment varies according to the type of the malady. The question of purgatives and laxatives is an important one. Frequently patients appeal for help to be cured of constipation; in many diseases, the clearing out of the bowels is the primary thing to be attended to; the matter is complicated by the fact that different individuals react differently to certain drugs, and so need individual consideration. It is wrong to ask all patients to use the same laxative or purgative.

Great reliance is placed upon the old trinity: calomel, epsom salts and castor oil. But medicine moves forward and must be considered progressive when it substitutes a palatable remedy for a nauseating one; a safe remedy for a risky one; or a mild remedy for a drastic one, without incurring loss in efficacy.

The best laxative.—I regard phenolphthalein as the best laxative—agreeable to take and very efficacious, which may be given alone or in combination; 3 to 5 grains act as a good purgative in most cases. It has little or no taste and works well with little or no griping and with no constipating reaction. The best results are obtained by combining it with aloin, belladonna, strychnine and ipecac (½ gr. aloin). In a few cases, it may be necessary to double this dose at first. It is best given twice a week. Aloin is valuable in chronic constipation, and the addition of extract of belladonna prevents griping; strychnine promotes peristalsis, in the sluggish bowel and ipecac, by promoting intestinal secretion, relieves the dryness of the mucosa.

Cascara works well in some cases. It is nauseating and should be given as a coated pill or tablet or along with some aromatic elixir to serve as a vehicle.

In certain cases of acidity of the stomach and sluggish liver, good results are obtained by giving a teaspoonful of sodium phosphate in a tea-cup of hot water before breakfast, repeated for several days.

Suppositories, enemas of hot water, or oil or emollient substances like *Isabgol* etc., are counted among harmless but useful remedies. Among laxatives castor oil is most useful being least irritant; one may use with due care podophyllin, cuscutin, bilein, cascara sagrada, but they must not be continued indefinitely, for they are liable to irritate the intestines.

Saline purgatives, sodium and magnesium sulphate and citrate of magnesia have the disadvantage of eventually causing constipation. However calcined magnesia, and the laxative salines when gives in small doses, over long periods, work admirably well in some persons.

A teaspoonful of a mixture of equal parts of sodium sulphate, sodium citrate, and sodium bicarbonate taken in a cupful of hot water in the morning for twenty to fifty days continuously gives good results as a rule.

When there is much spasm, the intestines must be quietened by administering belladonna and valerian. If on the contrary, intestinal atony predominates, treatment with strychnine, glycerophosphates, or adrenal extract is indicated.

In toxic constipation, a vegetarian diet must form the basis of treatment—foods that increase the toxic symptoms must be prohibited.

Intestinal disinfection must be secured by the use of fresh curds or whey, and also by small doses of calomel, beta-naphthol, salol etc. Hepatic and biliary extracts are useful in exciting simultaneously the deranged hepatic and intestinal functions in this type of constipation.

Copious intestinal flushings are useful to empty the intestine mechanically and disinfect it at the same time.

In inflammatory constipation, the diet must be non-irritant and should not leave much residue.

In cases having peritonitic attacks, thick milk, or vegetable soups and fruit marmalades alone may be permitted. Purgatives that irritate the intestine or provoke spasm, must be given with caution and only in controlled doses. As a rule, castor oil is tolerated best: lukewarm emollient enemas, administered under slight pressure, are best for cleaning out the bowels. Pot. permanganate wash (1 or 2 grs. to a pint) acts as a very good disinfectant. Hot applications to the abdomen have a calming influence.

In cases that defy all treatment designed to break the vicious cycle, liquid paraffin, to which fluid extract of cascara has been added works wonderfully well. This is especially true in cases requiring prolonged treatment. The dose of cascara may be varied to suit the indications. The importance of daily evacuation at a stated hour must be brought home to all constipated patients. By following this advice they will soon acquire normal habits of daily evacuation.

Dilatation of the intestine from atony of varying degrees is, perhaps, the commonest cause of constipation. The nerve-filaments supplying the gut may be only slightly benumbed or in far advanced cases, they may be paralysed. This paralysis may and does, extend to the centres in the spinal cords controlling peristalsis and defecation. In treating cases in which this condition is advanced, belladonna or strychnine should be administered in order to aid in restoring tone to the nerve. Nux vomica is another useful drug for this purpose. Electricity should also be tried in stubborn cases.

Constipation in children and delicate women who suffer from *bili-usness* and flatulence responds to treatment with sulphur laxative granules, milk of magnesia, syrup of figs, and such other mild non-irritating drugs.

In Ayurveda, there are several harmless laxatives; even when taken over a long time, they exert no deleterious effect. Myrobalam (मरिच) is the most popular; a teaspoonful of this powder in hot water at bed time is quite efficient. Senna pods in infusion, or as *Senna-P* granules is also effective. Plantago *Isidgool* is a very good demulcent; 60 to 90 grains taken with milk or water is quite safe, even when taken for a long time. Cassia fistula is also a mild laxative specially for children. In homœopathic medicine, sulphur and nux vomica in low potencies of 3 x or 6 x may safely be taken for a considerable time without any deleterious effect.

Summary of Cathartics.—For a single administration at the beginning of an infectious fever, at the onset of labour, or before a surgical operation etc.:—Castor oil, magnesium sulphate effervescent magnesium citrate are best. In the presence of nausea or vomiting we may give calomel, magnesium oxide, rhubarb and soda. In cases of coma, croton oil is the best. For children—Aromatic fluid extract of cascara, syrup of senna, compound, liquorica powder, phenolphthalein and calomel and myrobalams (मरिच) and Cassia fistula.

For the insane—Phenolphthalein, Syrup of senna.

For chronic spastic constipation—Agar and petroleum;

For chronic atonic constipation—Fluid extract of cascara sagrada;

For occasional use—Aloin co-pills, and phenolphthalein; and

For use in cases of dropsy—Salts, gamboge, colocynth, Jalap, Elaterium.

Cathartics given to a nursing mother will purge also the baby—aloes particularly, all vegetable cathartics to some extent and salts only slightly.

Cathartics which can cause poisoning are:—Calomel, podophyllin, phenolphthalein, croton oil, when administered in excess.

HERPES ZOSTER AS A CAUSE OF CONGENITAL CATARACT

Two cases of congenital cataract in children whose mothers had herpes zoster during early pregnancy were observed and treated. The associated anomalies were similar to those produced by rubella infection from the mother; talipes equinovarus, microphthalmos and mental retardation. In one of the cases membranous cataract developed in one eye after the other eye had been operated on. Although rubella cataract is generally regarded as resulting in the offspring from an attack during the first three months of pregnancy, the mother of one of these cases had herpes zoster in the fourth month.—(*American Journal of Ophthalmology*, 39: 157, February 1955; via *Sight Saving Review*).

Cases and Comments

A CASE OF VOLVULUS WITH INTERNAL STRANGULATION THROUGH "THE MESENTERY"

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M.B., 42 years, Mahomedan female, was admitted in L.M. hospital, Asansol, at 7 a.m. on 27-8-55, with complaints of pain in the abdomen and severe constipation for six days, vomiting 2 to 3 times on the day of admission and an urge for defecation.

On clinical examination, she was slightly toxæmic and restless, pulse 110 per minute of moderate volume and tension, respiration 30 per minute more of the thoracic type, blood-pressure 110/80 m.m. of Hg. temperature 97.6°F, tongue dry and coated centrally, abdomen distended, moderately rigid and tender, tympanitic all over, no men distended, moderately rigid and tender, tympanitic all over, no fluid thrill, no shifting dullness and peristalsis heard. Heart and lungs N.A.D. A soap water and glycerine turpentine enema was tried with no result, only the enema fluid was returned. She refused to be operated on and was discharged on risk-bond against medical advice at 8 a.m.

The same evening at 5 p.m. she had to be readmitted in a worse general condition as she then agreed to undergo an operation. This time the patient was markedly toxic and restless, tongue dry, pulse 130 per minute, volume and tension low, respiration 40 per minute, blood-pressure 98/70 mm. of Hg., abdomen still more distended and rigidity, tenderness less marked; no fluid in peritoneal cavity; no peristalsis heard. The lapse of ten hours had greatly affected her general and local condition for the worse. Resuscitation was immediately started; plasmosan with glucose intravenously, coramine intramuscularly, continuous oxygen inhalation and suction by Ryles tube. When the general condition showed a little improvement, it was decided to explore the abdomen under local anaesthesia supplemented by oxygen and open ether.

Operation note.—The case being provisionally diagnosed as "Volvulus of sigmoid colon" the abdomen was opened by a left para-umbilical incision and the left flank was found to contain coils of collapsed small intestine. The descending and sigmoid colon were conspicuously absent from their normal position. Distended caecum was then palpated and incision prolonged upwards for thorough exploration. A hugely distended and twisted large intestine was found to occupy the sub-hepatic, right hypo-chondriac and lumbar regions under cover of loops of small intestines. The distended large intestine was of dark colour with multiple patches of subserous hæmorrhage. The affected gut was delivered, untwisted and treated with warm saline and hot sponges. But the gut wall did not show

any appreciable sign of viability. For reducing distention a flatus tube was passed; offensive foul-smelling fluid with a few bubbles of flatus came out but the distention was not relieved. The tip of the flatus tube could not be palpated in the lumen of the distended large intestine. It was concluded that the tube being soft had coiled inside the lumen.

While attempting to place the sigmoid in its normal anatomical position there was great resistance and on further search a very peculiar rare developmental anomaly was noticed. The sigmoid colon passed to the right through a gap under "the mesentery" which formed an arch by being attached to the vertebral column in its two extremities only. The affected large intestine was brought back to the left from under the arch in the mesentery and the tip of the flatus tube was then distinctly felt inside the affected coil. The distention was relieved and the gut wall began to show signs of viability; though the sub-serous hemorrhagic patches persisted the abdomen was closed as usual. Vigorous post-operative measures were carried out but in spite of all possible efforts the patient ultimately succumbed to post-operative shock and toxæmia, about ten hours after operation.

Summary.—A very rare case of developmental anomaly of "the mesentery" getting attached to the posterior abdominal wall at two extremities forming an arch and causing internal strangulation of gut is here reported.

Acknowledgement.—We express our grateful thanks to Dr. S. C. Mazumdar, Civil Surgeon, Burdwan for kindly according permission to us to publish this report, making use of official records.

TESTICULAR HORMONE IN MUSCULAR WASTING

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'Matruhaya,' Deccan Gymkhana, Poona-4

A YOUNG boy of 18 started getting pain in the hip and knee joints and marked weakness in all the muscles of the body. Treatment with injections of Irgapyrine and Unalgen I.M. relieved the pain in the joints but only temporarily. Investigations revealed nothing abnormal in the X-ray of the joints and in the blood chemistry.

Weakness of the muscles became more pronounced and progressed till he was unable to get up from the sitting posture or walk even with support. It was found on a detailed clinical examination that the boy had no hair on his chin or on his upper lip; he had very small testes and delayed secondary sex characters. Since testicular hormone is known to help protein-anabolism, the patient was put on 25 mg. of testosterone propionate (Andronex and Unites-trone) twice a week intramuscularly. After taking 10 injections the boy showed remarkable improvement in his power of the various muscles and in general health. His weight increased by 32 lbs. and he is able to walk with the aid of a walking stick. He has a slight growth of hair on the face, there is deposition of fat in the abdominal area and slight enlargement of the breasts. It would be interesting to study the relation of serum-protein and the testicular hormones in males and the effect of the latter in wasting diseases.

AN UNUSUAL CASE OF SCORPION-BITE

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SCORPION-BITES are of very common occurrence in this area especially between the latter part of June and the middle of August, when the rainy season sets in. Here is a report of an unusual case of scorpion bite which gave a lot of trouble both to the patient and to the doctor.

One day early in July '55, I was called in at night to see a Hindu female aged about 18 who was reported to have been stung by a scorpion on her foot, while she was fast asleep and to be in acute agony of pain. I took my syringe and procaine solution 2% with me.

When I saw her she was tossing in bed and shouting out due to the agony. There was no doubt that she was stung by a scorpion for it was killed by her husband and was lying there on the floor. Without losing time I cleaned the site of the scorpion bite with rectified spirit and injected in the spot an ampoule of lucaine parenteral (2% solution of procaine hydrochloride). After a few minutes, the patient felt a little better and I left the place. Next morning while I was on my rounds, the husband of the patient came and reported that her pain had again increased and wanted me to come. Usually one injection of procaine is sufficient to cure scorpion bites. So I told him that no more injection will be required and I gave him one tablet of codopyrin (Glaxo) to be given to the patient to relieve her pain. But an hour later I was called in as the patient was in acute pain. So I again went and injected another ampoule of lucaine parenteral in the same spot and applied liq. ammon. forte, over the site. For the next 3 days, I had no news of the patient's condition. But on the 4th day, I was called in to see the patient as she was running a high temperature. I went to see her again and learnt that she had been treated by some local quacks as the injections given by me did not do her any good.

Examination.—I saw the patient in a very toxæmic condition with a temperature of 103.8°F. She was semi-conscious and had a tendency to vomit. Her bowels were also loose and watery with an offensive smell. Her pulse was slow and weak, 86 per minute. Heart sounds were also weak and feeble. Respiration was normal, 20 per minute. Lungs were normal on both sides, liver and spleen not palpable. Her eyes were red and congested and the urine was scanty; the tongue was dry and covered with sordes. For three days domestic and other quack remedies had been tried but proved unavailing and the condition of the patient had grown worse. I was at my wit's end, as I had not come across such complications after scorpion bites

though I had treated hundreds of cases of scorpion bite every year, I was further handicapped by the absence of facilities for blood examination. So I pushed 5 lacs of sodium penicillin and (25%) 50 cc. glucose intramuscularly; I also gave her a mixture containing Hexamine gr. xv; Sodi bicarb g. xx; Spt. amm. arom. m xv; and Spt. chloroform m xx in each dose.

When I saw her again on the next day, there was no change in her toxæmic condition.

I again gave her 10 lacs of sodium penicillin *i.m.*, and glucose *i.v.* injection 50 cc. and the same mixture was continued; one tablet of Soneryl (M&B) was given at night, as she had had no sleep for last 3 days. When I found her condition to be no better on the next day I switched on to chloramphenicol and gave her one capsule of synthomycetine (Lepetit) at once and advised her relations to give one capsule of synthomycetine every 4 hours. Plain liquid diet such as milk, whey, fruit juice, glucose D were given to her.

Next day to my great relief I found her condition much better and the temperature had come down to 99°F.; and the toxæmic condition was much improved. Synthomycetine was continued, one capsule every 6 hours.

Next day she touched normal and looked cheerful. One capsule of synthomycetine thrice daily was continued for 2 days more and the recovery of the patient was uneventful within four days. No side-effects due to the drug were noted. For her run-down and anæmic condition I gave her Scotrat Forte oral (A D) and also six injections of Beplex (A F D). She was completely cured.

I am still at a loss to account for the toxæmic signs and symptoms after the scorpion bite in the case. I shall feel thankful if your readers can offer any useful comment on my case notes and throw more light as to whether all these symptoms were due to some enteric type of fever or were the after-effects of scorpion bite. The blood could not be examined for want of laboratory facilities nearby.

My grateful thanks are due to Mr. D. G. Sahashrabudhe, Manager, Saste Colliery of Ballarpur Collieries Company for his kind permission to publish this case report.

VOMITING IN CHILDREN

Vomiting by its frequency in so many disorders of childhood inevitably leads to errors in diagnosis. Some newly born infants vomit all fluid for the first few days, and are soon thought to have a congenital abnormality of the alimentary tract. Abdominal distension and peristalsis are important signs in any form of intestinal obstruction, but are not always obvious and depend on the position of the lesions. Radiological evidence of pooling of air in the upper part of the gut and its absence at a lower level is sometimes helpful in the diagnosis, but fluid levels can be misleading. If meconium has been freely expelled and there is no bile in the vomit it is safe to wait. Passage of a rubber catheter into the stomach will exclude an esophageal malformation. An unusual amount of mucus is often found in the vomit: this seems to be the main source of the trouble and can be remedied by gastric lavage.

—(Current Medical Digest, Sep. '55).

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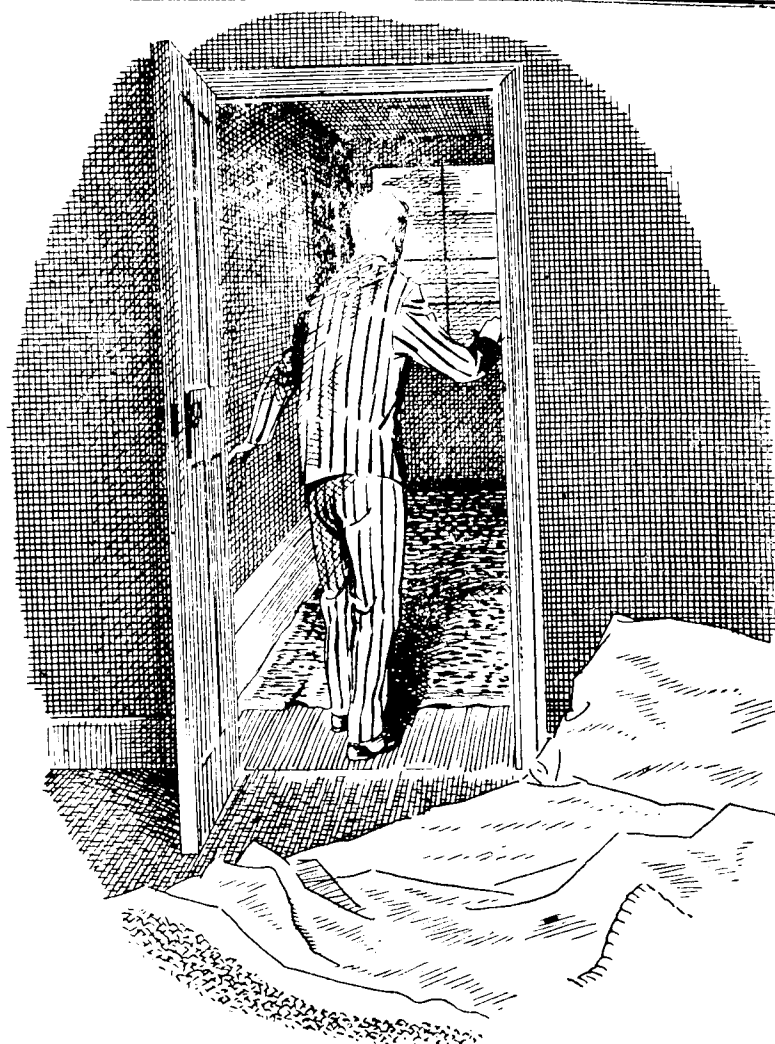
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Editorials

MOMENTOUS FIFTY-FIVE (1955)

THE YEAR THAT HAS COME TO A CLOSE was indeed a momentous and eventful one, viewed from any angle.

The freeze of the cold-war has begun to thaw, thanks to the untiring zeal and indefatigable efforts of our beloved Prime Minister, Shri JAWAHARLAL NEHRU, though the U.S.A. might continue to feel that the cold-war has taken on another phase! He has laboured incessantly to bring about the long-cherished cessation of hostilities among nations with different ideologies and to get them to accept the five cardinal principles leading to a happy co-existence, embodied in his "PANCH SHILA" doctrine. He has during 1955, journeyed practically throughout the whole world and established contacts of abiding friendship. He extended invitations on behalf of our country to every nation he visited, the response to which has been magnificent and exceedingly fruitful. Foreign assistance in the shape of money and personnel continued to flow which has enabled the country to perfect many of its plans and essential schemes. The contacts which he has established with several foreign countries, during the year, will help in industrial expansion. World-war is now unthinkable, with the growing realization that military alliances are costly and futile and that peaceable negotiations of international disputes would alone help in bringing about world peace and good will among nations.

It is indeed, impossible in this short compass to catalogue our worthy Prime Minister's numerous achievements during this memorable year of grace 1955 A.D., in advancing India's interests in all directions.

The year has also witnessed considerable progress in the fields of medicine and public health. We have referred to these from time to time in our monthly editorials but would make a brief reference in this review to the most significant among these items.

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The outstanding event of the year is the formulation of the Second Five Year Plan in which 30 new major schemes and the continuance of 24 old ones relating to Public Health have been envisaged at a cost of over 200 crores of rupees. These include water-supply and drainage schemes, malaria control, leprosy relief and research, venereal diseases control, drugs manufacture in our own country and several other important items.

The Golden Jubilee Session of the Indian National Congress, which was held at SATYAMURTHINAGAR, Avadi, near Madras, was a most momentous and historic occasion which attracted large crowds from all over the country and at which very important business relating to practically every aspect of the country's material and moral welfare and progress was transacted. The expansion of rural credit for the development of industries and the improvement of rural areas in all directions, through Community Projects and National Extension Services were among the main items which engaged the attention of the Avadi Congress.

The opening of the Penicillin, DDT and Quinine Factories, the effective checks sought to be placed on the manufacture and sale of drugs by means of legislative enactments and the enormous progress in health schemes, *e.g.* malaria control, BCG Mass Inoculation Campaign and other similar measures for combating other diseases in S.E. Asia (India included), were amongst the other notable events of the year.

We continued to have the hearty co-operation and good wishes of our readers, contributors and advertisers, throughout the year and our warmest thanks are hereby gratefully tendered to them with the request that they will continue to extend their patronage in the years to come.

MAY THE NEW YEAR BRING YOU ALL PEACE, PROSPERITY AND PLENTY.

MEDICAL EDUCATION—RURAL MEDICAL RELIEF

INDIA'S Prime Minister Shri JAWAHARLAL NEHRU inaugurated the Medical Education Conference at Delhi on the 19th of November 1955, when he declared that medical education in India should have a twin objective of maintaining a high standard and of spreading medical relief in India's villages at a rapid rate, so that all the Indian people may be provided with equal opportunities for medical care. The Prime Minister has accepted the fact that it would be a great pity to reduce educational standards for the sake of spreading out but he was mightily keen "on spreading out also." The safest way to achieve this would lie in opening many more medical colleges all over the country, together with a corresponding increase in hospital facilities and by admitting the best fitted men and women into these colleges. The method of admitting candidates to the existing medical colleges has resulted in the creation of certain tests for the

evaluation of a prospective candidate's suitability for receiving medical education, which *prima-facie* appear to pay undue importance to extra-curricular activities; the primary consideration of whether a candidate is capable of the 'hard and scholarly work' which alone would ensure success in the medical courses, is unfortunately accorded a secondary place. Any changes contemplated by the Union Government in the matter of under-graduate medical education, should therefore, be introduced with considerable caution and circumspection and with the advice of genuine experts with ripe experience.

The Conference has recommended that the written examinations should be reduced to the minimum and that they should be replaced by practical and oral tests. At the present moment particularly when there is a desperate move, even from knowledgeable and influential quarters, for bringing about a great and rapid increase in the number of medical men to meet the enormous demands for rural medical relief the above recommendation will not augur well for medical education, and will probably result in an undesirable and even dangerous lowering of standards. Already there is rightly or wrongly, a general impression that oral tests provide an occasion for the 'flaunting of prejudices of various kinds, which are incompatible with a dispassionate assay of real merit.' By another resolution, the Conference stressed the desirability of giving importance in the final assessment, to the student's day-to-day work while at college along with his performance at the written examinations. This has been suggested by several educationists in the past even in respect of general education; but this consideration should not be allowed to reduce to a secondary place the written tests which are still acknowledged, by and large, to be the best and only means of assessing the student's basic knowledge and understanding of any given subject.

The need for close cooperation and coordination between the department of Preventive Medicine and other departments in Medical Colleges was rightly stressed at the Delhi Conference.

At the Tenth Madras State Medical Conference, which met at Salem a week after the Delhi Conference, the Madras State Health Minister Shri A. B. SHETTY welcomed the shift of emphasis from the predominantly individual and curative approach to a more community-minded and preventive outlook as a most important trend in modern medical education and said "the departments of social and preventive medicine which are expected to be established in our medical colleges will help to orientate teaching in the desired direction." The President of the Conference Shri Dr. Y. P. VASUDEVAN had a concrete suggestion to make in this connexion, when he said that a fundamental reorientation in medical education was essential as the basic problem in India was rural health and that an amalgamation must be effected of the preventive and curative services at top levels, so that unified control, cooperation and coordination might be achieved at the bottom levels *i.e.* in the primary centres." This would mean an extension of the duties of medical officers in charge

of dispensaries, to include environmental sanitation, social medicine and nutrition also. Whether in the present set-up or for that matter, in any altered or improved set-up, the dispensary doctor charged with the treatment of disease can be permanently saddled with looking after environmental sanitation without detriment to his legitimate primary duties, is a matter which would require careful consideration from different angles, before it is accepted or implemented.

There is no doubt some truth in the argument that a knowledge of the conditions in which the villagers live, work and suffer, and the psychology of the common people are of great importance for the doctor but these are best learnt in his day to day practice and through experience and cannot be very well included in the curricula of medical studies or in the routine duties of the medical practitioner, especially when there is only one for each centre; where, however, two qualified men are detailed for each centre this suggestion can be given a fair trial.

There has been incessant talk on every conceivable platform about the urgent need for medical relief in rural areas and various suggestions are made, such as compelling urban practitioners who are crowding in urban areas, to settle in villages or/and by turning out a large number of medical men with a lower qualification obtained in a short term course of medical training in District Hospitals.

It is not by such expedients of doubtful value that the problem of rural relief can be solved. The remedy lies, as we have so often stressed, in evolving ways and means of making rural medical practice sufficiently attractive to fully qualified medical men and women by offering better pay, prospects and amenities of life in rural areas, and by giving them full opportunities to keep their knowledge up-to-date. There is also much justice and truth in Dr. VASUDEVAN's complaint that no provision has been made in the Second Five Year Plan for a compulsory and contributory Health Insurance scheme for the general public which if introduced will have the double advantage of improving the health of the people and the prospects of medical practitioners.

At the Delhi Conference the need for State support to the indigenous systems of medicine was emphasised and the Prime Minister suggested that all that was good in the Ayurvedic and Unani systems of medicine should be taken up and incorporated in a scientific way in the general practice of medicine in the country. These systems have been so popular amongst the rural people and Ayurvedic medicines have been in daily use in every household, for hundreds of years that it is not possible or desirable to attempt to wean people from using these cheap, time-honoured, and tried remedies which can be easily procured and safely administered. It would therefore, be in the fitness of things not to ignore these systems but to reorientate them and bring them into line with the allopathic system. Quackery in any system is, of course, quite objectionable and should be sternly put down.

CANCER RELIEF

THE inauguration of the Anti-cancer Week and the Cancer Exhibition jointly organized in Madras by the South-Eastern Division of the Indian Cancer Society, the Women's Indian Association (Cancer Relief Fund), and the Indian Radiological Association, Madras Branch, has served to focus prominent attention on the problem of cancer relief in India. Rashtrapathi RAJENDRA PRASAD in his message pleaded for concerted efforts for educating the public about the nature of this fell disease and the necessity for early diagnosis and treatment. The Union Health Minister in her message welcomed the efforts of voluntary agencies in collecting funds for fighting this disease.

Inaugurating the week Shri SRI PRAKASA, the popular Governor of Madras State stressed the need for propaganda on an extensive scale to educate the public on all aspects of the prevention and treatment of cancer. Though accurate statistics for the incidence of cancer are not available, the number of deaths from cancer in the Madras State and Andhra State has been estimated at over 56,000 per year as compared with 72,000 deaths registered annually from dysentery and diarrhoea, 87,230 from respiratory diseases and 205,643 from fevers other than malaria. The progress made in the matter of Cancer relief during the last 20 years has been fairly good. The great and good work done by the Women's Indian Association under the able guidance of Dr. (Mrs.) MUTHULAKSHMI REDDY, has found concrete shape in the new Cancer Institute at Gandhinagar, Adyar. We have now facilities for treatment of cancer also at the Government General Hospital, The Stanley Hospital and the Women and Children's Hospital at Madras. Recently a cancer centre has been founded at Madurai and gradually every District Headquarters Hospital is to have the equipment and personnel needed. Excellent work is being done by Mission institutions in this direction, notably those at Vellore, Madurai, Nagercoil and Trivandrum.

The Report of the Madras Cancer Institute (Women's Indian Association) states that "virtually 95% of our cases come in an incurable stage where even palliation cannot be satisfactory. The best of therapy and the finest of research are helpless and a sense of hopelessness seizes us when we look at our streamlined machines and then at the huge open ulcers we have to treat." The Report also emphasises that the first step in the fight against cancer is not therapy or research so much as the education of the people and the family physician to suspect and diagnose cancer early. Since the inauguration of the Indian Cancer Society at Bombay on the 2nd May, 1951, considerable research work has been done by Dr. V. R. KHANOLKAR, and the Cancer Relief Movement has gained momentum. The Chittaranjan Cancer Research Institute at Calcutta, the Tata Memorial Hospital in Bombay and the Cancer Institute at Madras (in which only a part of the whole scheme has thus far been

carried out), have all been concentrating on the early diagnosis and active treatment of this disease.

There has been marvellous and continual progress in research and experimental work in Europe and America and periodical reports of such progress reveal the advances made in the use of radio-isotopes, radio-gold, radio-iodine, radio-cobalt, high voltage X-rays (of one million to 20 millions and more) and of the Betatron. Intracavitary method of radiation is largely used in the treatment of some forms of oral and cervical cancer. We are all agreed that active and vigorous propaganda is needed and that the prevention of cancer should be viewed in the context of public health and in relation to the control of other serious diseases, by the State which should husband its resources and apply them in a well-planned and co-ordinated fashion instead of giving undue weightage where it is not needed.

The Government of India in their Second Five Year Plan have proposed to start 3 new Research Centres. The Madras Cancer Institute will, we are told, receive from the State Government a grant of Rs. 6 lakhs for the 5 year period, for installing modern equipments. It is welcome news that the State Government propose to have two centres at Mangalore and Madurai, where radiation therapy will be given, and that they have under consideration a proposal to set up a Radon plant which would enable Radon seeds to be sent to distant hospitals for treatment of cancer cases.

While we heartily welcome and endorse these various proposals for cancer detection and relief and for vigorous propaganda amongst the people, we would like to sound a note of warning that the propaganda should not create a cancer-phobia, but should emphasise the fact that a cure is possible if the condition is recognised and treated at the early stages.

SUBTOTAL CHOLECYSTECTOMY IN ACUTE CHOLECYSTITIS

G. F. Madding (*American Journal of Surgery*, 89: (04, March 1955) has found the operation of subtotal cholecystectomy of value in cases of acute cholecystitis in which a total cholecystectomy cannot be safely done, especially in cases of acute suppurative or gangrenous cholecystitis in which the cystic duct and common bile duct are in "an oedematous, friable and infected field." In this operation the gallbladder is dissected "in a retrograde fashion" from the surface of the liver to within 1 cm. of the cystic duct and all the stones are removed, especially the one causing obstruction of the duct. Four illustrative cases are reported in which this procedure gave good results and no further surgical procedure was required. In the author's opinion total cholecystectomy is the operation of choice in cases of acute gallbladder disease, but in some cases in which the total operation is not feasible, he has found subtotal cholecystectomy can be done, with much better results than cholecystectomy except in "extreme bad risk cases," in which only the drainage operation is indicated.—(*Medical Times*).

GLEANINGS FROM THE MEDICAL PRESS

MEDICINE & THERAPEUTICS

Prognosis of hepatic cirrhosis.—(*Minerva Med.*, 46: 989-992, April 12, 1955, via *J. A. M. Association*).

The prognosis of hepatic cirrhosis is fatal (except for a few rare cases), the main feature of the condition being atrophy of the liver as a specific and functioning tissue. The disease, and therefore its prognosis, has not been substantially modified by modern treatment; this merely slows down the progression of the condition and checks some of its symptoms and their consequences. Despite present day therapy, 70% of patients with cirrhosis die within five years of its clinical diagnosis. The prognosis depends on an exact diagnosis and on the phase reached by the cirrhosis. Ascites is a grave sign, and when it is the result of the progressing of the disease the prognosis is poor. Jaundice accelerates the progression of the cirrhosis. Biopsy, which is a valuable diagnostic means, is of little use for the prognosis because it is limited to one particular area of the liver, whereas the prognosis is based on the condition of the entire organ and on its regenerative power. The main point of the prognosis lies within the liver itself, namely, on the cirrhotic-damage/liver-resistance ratio. The fatal prognosis of this condition can be modified by (1) prophylactically protecting the liver from all injuries, because any hepatic impairment may become the starting point of the condition; (2) maintaining or stimulating the regenerative powers of the liver and the rebuilding of the impaired parenchyma; and (3) trying to reach an early diagnosis of the cirrhotic damage so that it may be either kept within a restricted area or eliminated in the initial phase, the only time in which this is possible.

Successful short-term therapy of streptococcal endocarditis with penicillin and streptomycin.—(*Am. J. M. Sc.*, 230: 73-81 (July) 1955, via *J. A. M. Assocn.*).

During the past three years Hall and

associates treated 15 patients with endocarditis caused by penicillin-sensitive alpha and gamma streptococcus organisms with short-term penicillin and streptomycin therapy. In each case the diagnosis was established by 2 to 11 (average, 5) positive blood cultures. In 10 cases, an alpha Streptococcus was isolated, while a gamma streptococcus was found in the remaining five. In all except two of the patients the organisms were sensitive to 0.1 unit of penicillin or less per cubic centimeter. In 11 of the 15 cases streptomycin sensitivity of the causative organism was determined, and it ranged from 0.2 to 50 meg. per cubic centimeter. In 11 patients the underlying heart disease was of rheumatic origin. In three patients, diagnoses were calcific aortic stenosis, syphilitic aortic insufficiency, and tetralogy of Fallot, respectively. One patient may have had a normal heart prior to the onset of bacterial endocarditis. Antibiotic treatment was started as soon as the results of blood cultures became known. In some instances, digitalis, mercurial diuretics, and blood transfusions were also employed. The usual plan of antibiotic treatment consisted of the intramuscular injection of 600,000 units of aqueous procaine penicillin G at six hour intervals for 10 days, for a total dose of 24 million units. Streptomycin, or, more commonly, a mixture of equal parts of streptomycin and dihydrostreptomycin, was given concurrently in a dose of 0.5 g. at 6 hour intervals for 5 days, and 0.5 g. at 12 hour intervals for another 5 days, for a total of 15 gm. in 10 days. In a few of the patients treatment was continued for 13 or 17 days. Two of the patients died while hospitalized for treatment, and a third patient continued to be febrile and was successfully re-treated with larger doses of penicillin alone for six weeks. The 12 remaining patients were successfully treated by short-term combined antibiotic therapy. The authors show that the short-term therapy is the more desirable, since a regimen of four to six weeks of therapy, such as has been found necessary in the past, has many disadvantages.

Differential diagnosis between bronchial carcinoma and unspecific pneumonia.—(*Wien. Med. Wchnschr.*, 105: 514-516, June 25, 1955, Vienna, via J. A. M. Association).

Seven men between the ages of 40 and 67 are reported on, in whom differential diagnosis between unspecific pneumonia, which they had, and bronchial carcinoma, which was suspected, was clarified only by surgical intervention. The subjective complaints of the patients corresponded with those of almost any disease in the thoracic cavity and were of little value with regard to evaluation. There was relatively little irritation causing cough and only moderate expectoration in patients with abscess formation and bronchiectatic cavities. The lancinating pain in the chest and back was most pronounced in the patients with a middle lobe syndrome, and it was somewhat less intense in those with desquamative pneumonia. The involvement of the surrounding pleura played a decisive part in this pain. Patients with desquamative pneumonia of one year's duration associated with abscess formation had the greatest loss in body weight, i.e., 33 lb. (15 kg.), while patients with carnification pneumonia lost 22 lb. (10 kg.) in the course of five months. The duration of the disease varied from six weeks to one year and despite unsatisfactory results from conservative treatment supplementary tests were omitted. Signs of infiltration and disintegration lent themselves to interpretation in the sense of tuberculosis as well as of other parenchymatous diseases, while laboratory and cytological findings proved the absence of tuberculosis in most patients, particularly in those with carnification pneumonia. A malignant condition could not be proved or excluded. Horizontal and transverse tomographic examination supported the suspicion of tumour in five patients. In two patients with interstitial and chronic pneumonia the tomograms were not suggestive of tumour, but in both these patients bronchial narrowing or occlusion was shown by bronchography and bronchoscopy. Bronchoscopic findings were significant in revealing purulent secretion in the patients with abscess

formation and suppurative bronchitis. In the other patients, they only showed redness of the bronchial mucosa, and in one patient with desquamative pneumonia, bronchoscopy revealed narrowing of the bronchus, as did bronchography also. All patients had been treated with antibiotics and some of them with sulphonamide compounds and tuberculostatics, but without any improvement in the patients' condition. After exclusion of infarction pneumonia and tuberculosis, surgical intervention seemed indispensable because of the roentgenologically and bronchographically supported suspicion of tumour. Except for one patient with far advanced desquamative pneumonia who died of postoperative haemorrhage caused by erosion and of pulmonary gangrene, the other six patients recovered. Although the most modern diagnostic methods may have their limitations, it would be wrong not to make use of them. The author's cases were reported in an attempt to convince the physician of the necessity of making supplementary studies.

OBSTETRICS & GYNAECOLOGY

Obstetric misconceptions.—(*Current Medical Digest*).

Although facts of today may become fallacies of tomorrow, many current obstetric misconceptions can be discarded with safety and benefit for all concerned.

There is a general belief that having a baby will cure dysmenorrhea, correct uterine malposition, and free one forever of inhibitions which produce frigidity. These benefits are true only insofar as pregnancy tends to correct a pathologic condition, such as endometriosis; or to establish parenthood as a desirable feature in family maturity.

Bleeding in early pregnancy does not necessarily mean inevitable abortion or a possible defect in the embryo. Scant bleeding is a common accompaniment of implantation and early placental formation. The fear which bleeding often provokes in the patient may in itself be a possible factor in additional blood loss from early threatened abortion.

Expectant mothers often receive disturbing information about the influence of alcohol and tobacco on the developing foetus. From a caloric point of view a highball is practically equivalent to a candy bar. Unless drinking interferes with nutrition or leads to a directly traumatic episode it has no effect on foetal development.

Smoking in moderation will never be noticed by the unborn baby.....

Stretching has little, if any, influence on the foetus. Certainly hanging curtains, using rope, or holding onto a subway strap will not throw loops or tie knots in the umbilical cord.

Some misinformed men and women believe that relationship during pregnancy will influence the future social development of the unborn individual. The baby is above and apart from the vagina. Only indirect influences on foetal health can occur as a result of relationship in the latter weeks of pregnancy. These include: possible initiation of premature labour; the introduction of infection, and rarely the partial separation of a poorly implanted placenta..... Another prenatal fallacy is the feeling that the mother must eat enough for two. There is abundant evidence to support the benefits to the expectant mother and foetus of balanced protein, mineral, and carbohydrate intake. Muscle and bone-building proteins and minerals are needed but caloric requirements are certainly not doubled by pregnancy.

Age is a source of comment and concern in pregnancy, particularly for the person past 35 or 40. It is true that the time of greatest obstetric safety occurs in women from 20 to 24 years of age. Normal pregnancy at any age improves rather than impairs health. Death results from pathologic conditions or physiologic accidents, circumstances which seldom need accompany pregnancy.

Many mystic signs and pseudo-scientific methods of determining the sex of the infant before birth have been devised. To date, there is no way to tell the sex of an infant until it is seen at birth.

There is a general belief among patients and physicians that most babies are born at night. This is not true. Labour frequently begins or ends during the night, but actual birth occurs equally, if not a bit more frequently, during the day than at night.

Older practices of enforced postpartal bed-rest of 2 to 3 weeks have proved unnecessarily confining. Patients who are up and about after delivery have less trouble with bowel and bladder function; uterine involution is more rapid, and the likelihood of pelvic thrombosis is possibly less. Old fears of uterine prolapse are unfounded. Bearing down before cervical dilatation and trauma at delivery, not early ambulation, contribute to uterine prolapse. Certainly an empty uterus is not as likely to prolapse as one filled with foetus and fluids.

Postpartum bathing is as safe and comforting in the puerperium as it is during menstruation. A shower is the cleanest kind of bath. A day or so after delivery the normal mother may enjoy a shampoo and shower without fear of complications.

Beliefs that breast-feeding causes large breasts, a flabby waistline, a large appetite, and many personal inconveniences are not true. The normal mother while breast-feeding her infant undergoes involuntary exercise of all autonomically related smooth muscle structures. These contractions aid in involution not only of the breasts, but of the uterus, intestines, and bladder muscles as well. Nursing has little, if any, influence on ovulation. Certainly, as a preventive method, breast feeding frequently fails.

PAEDIATRICS

Evaluation of innocent heart murmurs.—(*Modern Medicine*, June 15, '55).

Innocent heart murmurs in children are quite common. Such murmurs were detected in 36% of 1,706 children. The murmur disappeared or remained in the innocent category in 97.5% of the patients observed for six years; diag-

nosis was changed to a pathologic murmur in the remaining 2.5%. The incidence of innocent murmurs is highest in the age group of 8 to 12 years; under the age of 3 years, the incidence is very small, and murmurs probably are signs of congenital malformations.

Of those children thought to have murmurs due to interventricular septal defects, diagnosis was changed to innocent murmurs in one-third on the basis of disappearance of the murmurs. The importance of follow-up examinations in removing the stigma of congenital heart disease from the children is thereby confirmed.

Innocent heart murmurs are heard most commonly over the basilar area. The pulmonic second sound is of diagnostic significance, since the sound is normal with functional murmurs and decreased or absent with pulmonic valvular disease. With pulmonary hypertension, whether primary or secondary, the second sound is accentuated.

Characteristically, the basilar innocent murmur is: (1) systolic in time, (2) located close to the sternum at the second and third left intercostal space, (3) groaning in quality, not harsh or blowing, (4) poorly transmitted, and (5) not associated with a thrill. Intensity varies with change in the patient's position and also from one examination to the next. The pulmonic second sound is normal in intensity.

Innocent murmurs in the apical region are less common than those in the basilar area but are more easily confused with organic murmurs, particularly with those caused by acquired lesions of the mitral valve.

The innocent apical murmur is: (a) systolic in time, (b) of greatest intensity in the fourth and fifth left intercostal space medial to the apex, (c) transmitted to the apex and up the left sternal border, (d) groaning in quality, and (e) not associated with a thrill. As with a basilar murmur, intensity varies with change in the patient's position and from examination to examination. Also, the pulmonic second sound is of normal intensity.

SURGERY

The surgical management of parotid tumours.—(*Canad. M. Ass. J.*, 1954, 71: 456).

Failure in the surgical management of parotid tumours continues to occur and the author attempts to analyze some of the reasons for this. They include the following: (a) lack of adequate knowledge of the surgical anatomy of the parotid region together with the incorrect surgical approach to the facial nerve; (b) lack of adequate preparation or assistance at the time of operation; and (c) failure to carry out a sufficiently wide removal of the tumour, or radical removal of the entire gland when indicated.

The surgical anatomy of the facial nerve and parotid gland is briefly reviewed and the methods advocated in the literature for identifying the facial nerve are analyzed.

The author believes that the simplest and most effective method of managing benign parotid tumours consists in complete exposure of the parotid gland area and tumour by wide reflection of skin flaps, and immediate and direct exposure of the facial nerve, tracing its branches through the gland substance, preserving these branches, and removing all parotid tissue superficial to them.

The author lists his indications for total parotidectomy, *viz.*, (1) benign-mixed tumours arising from the deep portion of the gland; (2) all recurrent benign mixed tumours; (3) all malignant tumours, in cases in which the diagnosis is made preoperatively or at the time of operation.

The author believes that radical neck dissection should be reserved for those primary malignant tumours in which cervical lymph node metastases develop, or in which there is local recurrence of a malignant tumour. The main complications of parotidectomy are recurrence, injury to the facial nerve, the Frey syndrome, a salivary fistula, and loss of sensation about the ear.

EAR, NOSE & THROAT

Mobilization of the stapes for otosclerotic deafness.—(*Arch. Otolaryng.*, Feb. 1955 via *Med. J. Austral.*, 25-6-55).

Rosen and Bergman report that while stapes was being palpated in a case of otosclerotic deafness there suddenly resulted a return of acute hearing as the footplate had been accidentally mobilized and normal hearing has been maintained. A technique has been developed for the deliberate mobilization of the fixed footplate of the stapes. Exposure of the stapes is made through an ear speculum in the external auditory canal. Under local anaesthesia the lower half of the drum membrane is lifted up out of its sulcus and folded up on itself, so

that the content of the tympanic cavity are exposed. With a specially designed finely pointed curved probe mobility of the stapes is tested by gently moving the long process of the incus. When the stapes is rigidly fixed, pressure against its neck may suddenly loosen the footplate with immediate improvement in the hearing. At its neck the stapes withstands the greatest pressure without fracture of the crura. The line of force should be in the line of the crura. After mobilization, the intact tympanic membrane and skin of the canal are put back into place. In a series of 14 cases reported, the improvement had been maintained for periods up to twenty-six months. If hearing does not improve fenestration can still be performed without penalty from the attempt at stapes mobilization.

Reviews of Books

BOOKS

Obstetric and Gynaecology Obstetrical Roentgenology.—By CLAUDE E. HEATON, M.D., Associate Professor of Obstetrics and Gynecology, New York University College of Medicine, New York, and ROBERT BERMAN, M.D., F.A.C.S., Assistant Clinical Professor of Obstetrics and Gynecology, New York University College of Medicine, New York, 596 pages, 486 illustrations. F. A. Davis Company, Philadelphia. Sole Distributors in India: M/s. Kothari Book Depot, King Edward Road, Parel, Bombay-12. Price Rs. 62.8.

During the past decade the use of X-rays in gynaecological and obstetric practice has been on the increase, and has been of great use in the early recognition of many of the abnormalities of pregnancy, particularly those related to the foetus and to the placenta. One need not therefore, emphasise the importance of the relationship between obstetrics and roentgenology. The first few chapters of this book are devoted to the technical aspects and to the clinical aspects of X-ray pelvimetry. The next few chapters are devoted to the inlet, outlet and the lateral view of the pelvis and the uterus.

Chapter 11 discusses the important subject of classification of the pelvis. Chapters 12 and 13 are devoted to the foetus and the placenta. The last chapter gives an exhaustive description of the practical application of X-ray pelvimetry. There is an extensive bibliography at the end of the book. Every chapter is illustrated by beautiful photographs and diagrams. The authors who are expert obstetricians and gynaecologists are also accomplished roentgenologists and as such they are well fitted to write this book. The book is well got up and nicely printed. We are sure it will be of much interest to all physicians practising in both these special fields. U.K.R.

Handbook of Paediatrics.—By HENRY K. SILVER, M.D., Associate Professor of Pediatrics, Yale University School of Medicine, C. HENRY KEMPE, M.D., Assistant Professor of Pediatrics, University of California School of Medicine, HENRY B. BRUYN, M.D., Assistant Professor of Pediatrics and Medicine, University of California School of Medicine and Assistant Clinical Professor of Pediatrics, Stanford University Medical School, San Francisco, California, Lange

Medical Publication, Los Altos, California, 1955, 548 pages. (Sole Distributors for India, Burma, Pakistan and Ceylon: M/s. Kothari Book Depot, King Edward Road, Parel, Bombay. Price: \$ 3.00.

In this little hand book the authors have endeavoured to present to the practising physician and the medical student a concise and readily available digest of the materials necessary for the diagnosis and management of paediatric disorders. As the authors have correctly stated, this hand book is intended to supplement rather than to replace the more complete textbooks on the subject. Beginning with a chapter on Paediatric history and physical examination the authors discuss in this handbook devoting useful chapters on paediatric management, paediatric procedures, nutrition and feeding, disorders of the skin, heart, lungs, blood, eye and the urinary tract. The chapters on the new-born infant and the premature infant contain helpful information. The chapters on allergic disorders and collagen diseases are also very well written. The chapter on paediatric emergencies gives useful information. In all these chapters the subject of paediatric diagnosis and treatment have been included. It is a useful book for reference in daily practice. U.K.R.

Human Biochemistry—By ISRAEL S. KLEINER, Ph.D., Professor of Biochemistry and Director of the Department of Biochemistry, New York Medical College. pp. 741 with 93 text illustrations and 5 colour plates, 4th edition, 1954. C. V. Mosby Co., St. Louis, U.S.A.

Biochemistry is a science that has continued to advance at a great speed in many directions. The student of modern medicine has come to realise that for a useful understanding of medicine, a study of biochemistry is absolutely necessary. The present book is an attempt to produce one such useful and compact volume. We think the author has succeeded in his ideal. The author has followed the usual classification and the various chapters are dealt with on scientific lines. Physical chemistry, Enzymes, Vitamins, Nitrogen

and Carbohydrate Metabolism are dealt with in detail. There are chapters on the chemistry of respiration and acid balance, metabolism and hormones. There is a chapter devoted specially to recent clinical application. The printing and get-up are very good and the illustrations are also good. We recommend the book to all medical practitioners. U.K.R.

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Medical Digest—Family Planning—
Social Hygiene Number, Part I Edited by Dr. U. B. NARAYAN RAO, October 1955, Bombay-4.

The subject of Family Planning is assuming greater and greater importance. It is one of the measures advocated for the solution of many of our difficulties. The editor of the *Medical Digest* has therefore, to be congratulated on his boldness in bringing out a volume of his very popular medical journal and in discussing this important aspect of social life. The number contains useful and interesting articles. We are sure that it will be read with advantage by those who are interested in this subject. U.K.R.

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Ophthalmic Medicine and Surgery with Sight Testing—By Dr. M. A. KAMATH, M.B. & C.M., Madras Medical Service (Retd.). Third edition, 382 pages with 73 illustrations. Kothari Book Depot, Parel, Bombay-12. Price: Rs. 12.

This, the third edition of Dr. Kamath's Book on Eye Diseases in India and the Tropics is a useful addition to the existing works on diseases of the eye. Dr. Kamath was for many years, Ophthalmic Surgeon, Government Eye Hospital, and Lecturer, Medical School, Tanjore and is eminently fitted to write on this subject. His son Dr. M. V. Kamath is also well-known. This book covers subjects, which in recent years have received considerable attention. The chapter on Newer Trends in Ophthalmic Therapy is well-written and is bound to be useful to the general practitioner. The chapter on operative treatment of cataract deserves special mention. The subject of local and regional anaesthesia has been practically re-written with useful illustrations added. Many other

chapters that may be read with advantage are those on Eye in General Medicine and Refraction. The chapters in ocular therapy and the method of prescribing glasses deserve special mention. The printing and the general get-up are good. We are sure it will be found useful by the general practitioners.

U.K.R.

Modern Sciences Vindicate Ayurveda—By Dr. V. GORE, M.Sc., D.Sc., Professor of Chemistry, M. M. Vidyalaya, Jabalpur, (M.P.), 72 pages Vin-dhya Prakashan Ltd., 1045, Lordganj, Jabalpur. Price: Rs. 1-8.

In this small booklet the author tries to explain the theories of Ayurveda on modern scientific lines. He tries to probe into the mysteries of *Vatha*, *Piththa* and *Kapha*. How far he has succeeded in doing this is difficult to say, but those interested in the subject may read it with benefit.

U.K.R.

The Oculorotary Muscles—By RICHARD G. SCOBBER, B.A., M.D., F.A.C.S., 1952. Second edition, pp. 512 with 159 illustrations. The C.V. Mosby Company, St. Louis.

The reader will find in this book everything that he need know about squints. The book begins with the back ground of ocular muscles giving the Anatomy and Physiology in a correlative manner expanding the basic knowledge necessary for adequate understanding of the oculorotary muscles.

Heterophoria is dealt with in all its aspects, and the comitant and non-comitant heterophorias, as distinct features of muscle anatomy have been described. The various aspects of treatment of these conditions, when and what to do in particular cases are fully explained. Ophthalmoplegia, some of the more important ocular syndromes connected with ocular muscles have been incorporated.

History and clinical note-taking have been exhaustively set forth and the reader has the choice of as many methods as may be necessary for elucidation of the condition.

The concluding chapters deal on the causes of failure in the surgical treatment of strabismus as a whole, together with surgical methods that have stood the test of time. The book is copiously illustrated and will be found very useful by all those engaged in ophthalmic practice. It should be a welcome addition to any medical library.

BOOKS RECEIVED

Synthetic Drugs (A Handbook for Chemists, Physicians and Pharmacists)—By H. RONALD FLECK, M.Sc., F.R.I.C., F.R.M.S. Pp. 380. Cleaver-Hume Press, Ltd., London. 70 sh. nett.

Electrocardiography for Students and Practitioners—By A. F. GOLWALLA, Pp. 53. (M/s. Current Technical Literature Co., Ltd., P.O. Box 1374, Bombay 1). Price Rs. 5/-

Preparations and Inventions

Livibex manufactured by Messrs Simran Drug Co. Ltd., Bangalore.

This is a highly concentrated animal protein hydrolysate in aqueous base, derived from non-alcoholic whole liver digest autolysed and liquefied, *en masse*, into the amino-acid state on proteolysis, for speedy absorption, and fortified with the addition of catalyst hæmatinics consisting of all vitamin B complex factors including folic acid and vitamin B₁₂.

Since the animal protein hydrolysates are of superior biological value to those

of vegetable origin, preparations like Livibex consisting of whole liver protein liquefied and digested *en masse* up to the extreme degree into amino acids in non-alcoholic medium seems to be very useful.

Indicated in tropical nutritional macrocytic anæmias of pregnancy, infancy and child birth, diabetes mellitus, sprue syndrome, coeliac diseases in children, hypoproteinæmia, extreme malnutrition, convalescence after medical and surgical care etc.

News and Notes

Quarantine Requirements of Foreign Countries

U. S. S. R.—Persons proceeding to U.S.S.R. from areas infected with cholera, plague or smallpox are subject to quarantine for a period of 6 days in case of cholera, 9 days in case of plague and 14 days in case of smallpox even though they may be protected against the diseases by vaccination.

China—Persons proceeding to China are required to be in possession of the international certificate of vaccination against cholera and smallpox.

Egypt—Persons arriving from cholera-infected areas who are carrying valid international cholera vaccination certificates will be placed under surveillance for an appropriate period in case they arrive within 5 days of the date of their departure from the cholera-infected area.

Certificates :—(1) Smallpox and cholera.

The certificates should be in the international forms as given in the International Sanitary Regulations authenticated by the approved stamps. This stamp is held by the Directors, Deputy Directors and Assistant Directors of Public Health, Chief Medical Officers of Health of Municipalities, Corporations and Local Bodies, Medical Officers in charge of all Government, Municipal and District Board Allopathic hospitals and dispensaries, President and Secretaries of the Local Branches of the Indian Medical Association. The validity of the cholera certificate shall extend for a period of 6 months beginning 6 days after the first injection of the vaccine or, in the event of a revaccination within such period of six months on the date of that revaccination. However in the case of Haj pilgrims the certificate shall indicate that two injections have been given within 7 days and its validity shall commence from the date of the second injection.

Smallpox certificate :—The validity of this certificate shall extend for a period of three years beginning 8 days after the date of a successful primary vaccination, or in the event of a revaccination, on the date of that revaccination.

Yellow-fever certificate :—Yellow fever

vaccination certificate is not normally required from travellers from India except by a few African countries. As the storage and administration of Yellow Fever Vaccine is controlled by the Government of India, this vaccine is not available to private medical practitioners, or to the general public. In India Yellow Fever vaccination is carried out and certificates issued at the following centres :—

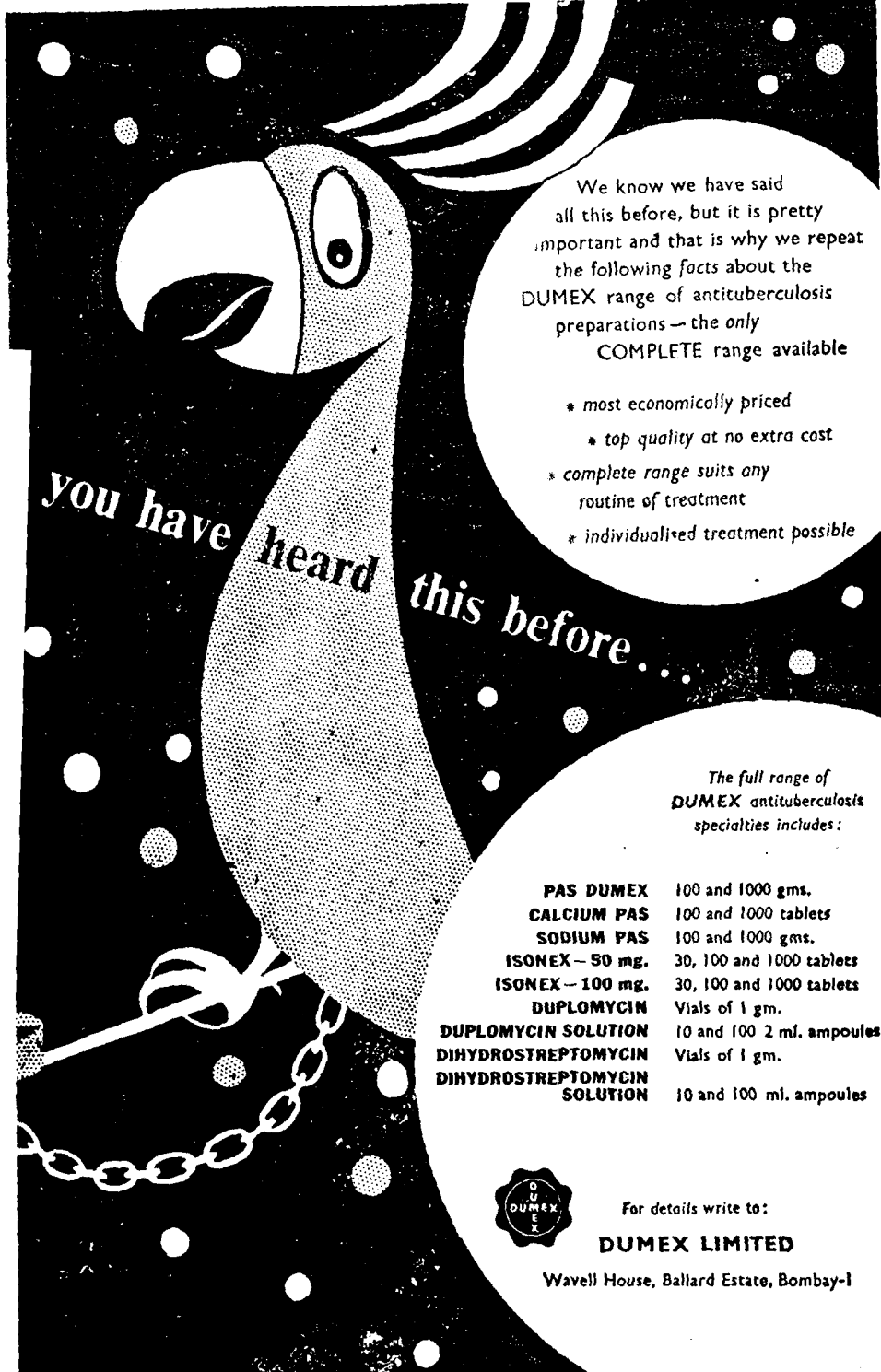
(1) Haffkine Institute, Bombay, (2) All India Institute of Hygiene and Public Health Calcutta, (3) The King Institute of Preventive Medicine, Guindy, Madras, (4) Central Research Institute, Kasauli, (5) Airport Health Officer, Bombay Airport, Bombay-29, (6) The Delhi State Public Health Laboratory, New Delhi, (7) The Chief Medical Officer, Porthandar State, (8) Navanagar State Irvin Hospital, Jammagar, and (9) Port Health Officer, Visakhapatnam.

The validity of yellow fever vaccination certificate shall commence 12 days after the vaccination if the vaccination is carried out in a yellow fever endemic area, or if the vaccination is carried out in a non-endemic yellow fever area and the person enters a yellow fever endemic area, within ten days of vaccination.

(The above valuable information will be useful to doctors who may have to certify their patients.—Ed.).

A Presentation Ceremony

Medicines worth about Rs. 35,000 were presented this afternoon at the Health Ministry to the Hon'ble Rajkumari Amrit Kaur, Union Minister of Health, India, on behalf of Messrs. Lepetit, S.p.A., Milan (Italy) by Bhai Mohan Singh, Managing Director, Ranbaxy & Company, Limited, New Delhi, sole distributors of the firm, for flood relief. At the presentation ceremony, H. E. Dr. E. Mizzan, Charge d'Affairs, Italian Embassy and S. Moharban Singh Dhupia, Regional Director, Ranbaxy & Co., Ltd., Col. C. K. Lakshmanan, Director General, Health Services; S. B. Balwant Singh Puri, Secretary-General, Indian Red Cross Society, besides other officials of the Health Ministry were also present. The medicines consisted of famous antibiotics: synthomycetine, abiocine, tempocillin and different kinds of vitamins. These have been donated for the Flood Relief Fund.



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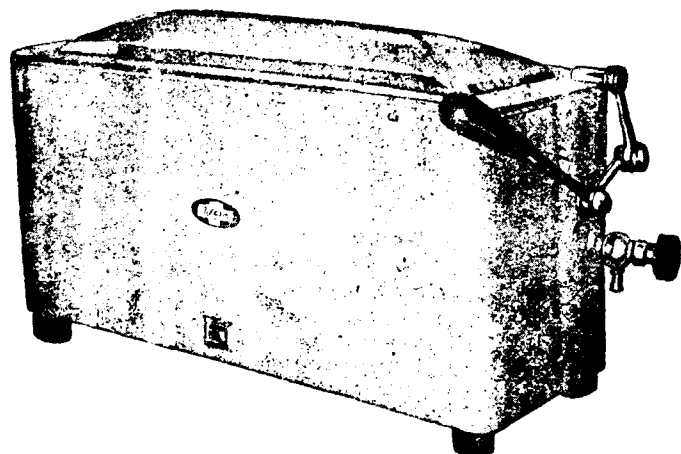


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Riboflavin	2.5 mg.
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Pot. glycerophosphate	250 mg.
Cal. glycerophosphate	250 mg.
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ALCOHOL	17% v/v.

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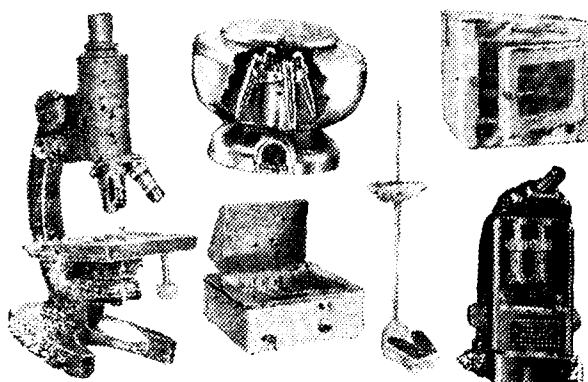
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Calci Gluconate 7 1/2 gr 1000	.. 5-4	(Coramin) Tab 500 ICI	doz. 9-0
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.. 500	.. 28-0	Prodayne tab 500 ICI	bot. 0-14
Sulphaguanidine.. 500	.. 5-8	Procaine Hydrochlor Solution	80cc 1 per cent Boots
.. 1000	.. 10-8	Record Syringe 10cc Military	bot. 0-14
Sulphathiazol .. 500	.. 8-0	.. Needle	Mount each 2-12
.. 1000	.. 15-0	Stovain Amp. 8x1cc M.B.	box 0-14
Sulphanilamide .. 1000	.. 8-8	Suture Needles Eng. Finest Quality	1-4 doz.
Alcin Comp. tab. 1000 PD .. bot. 5-4		Sulphanilamide Cream	Lilly 4 oz doz 5-4
Fresh Arrivals of injections		.. 2 lb L.P. JAR	2-0
Ger. & Italy.		Boots Atropine Sulphoint 1/2 oz. 0-6	
Vit. B1 100mg. 10cc bulb	1-8	Hyoscine Hydro Brom 1/100 x 500	Oral tab. Cox Eng. 1-12 bot.
.. B2 100mg. ..	4-10	Calomel oint. 1oz. tub USA	2-8 doz.
.. B complex Forte 10 cc.	1-7		
.. K 10mg. 1cc. 100 amp.	10-0		
.. Aqueous Solun. Box			
.. K 10mg 1cc. 8 amp. ..	1-2		
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1. S. N. SANYAL, *Cal. Med. Jour.*, 47, 313, 1950.
2. S. N. SANYAL, *Cal. Med. Jour.*, 49, 354, 1952.
3. GHOSH & GUPTA, *the Internat. Med. Abst. and Rev.* 16, 89, 1954.
4. S. N. SANYAL, *the Internat. Med. Abst. and Rev.* 16, 91, 1954.

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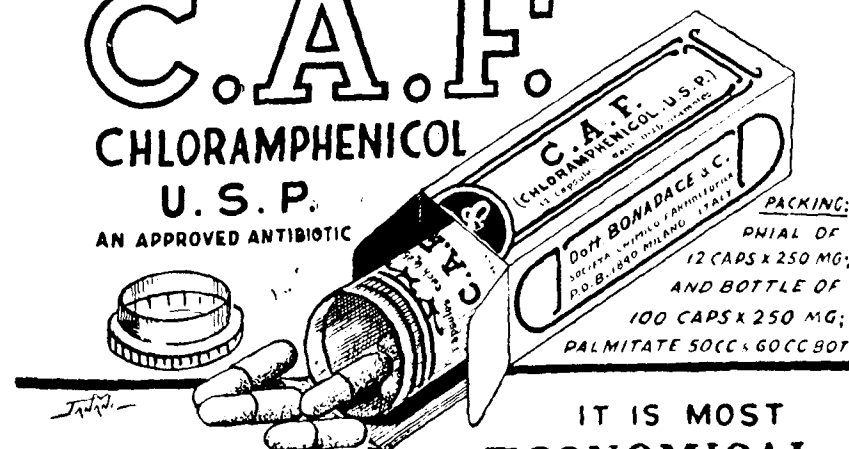
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Ref.: Indian Practitioner, January 1951 issue.

1. Dr. J. A. FERNANDEZ, M.R.C.P. (Ed.), M.R.C.S., L.R.C.P. (Lond.), Bombay. 'ZIMAX' gives satisfactory results in four cases out of six. Two cases have not reported back yet.

2. Dr. T. K. MEHTA, M.B., B.S., D.V.D., B.Y.L. Nair Hospital. 'ZIMAX' IS AN AYURVEDIC patent. I have found it very useful for acute and Subacute states of Eczema.

3. MEDICAL OFFICER, New India Asso. Co. Ltd. Fourteen cases in staff were treated by 'ZIMAX', out of which twelve were cases of Eczema and two of Athlete's foot. The Eczema cases were both dry and scaly type. Out of these cases, ten were relieved of itching in a day or two and Eczema entirely disappeared in ten or fifteen days. The relief obtain by 'ZIMAX' in Athlete's foot was very remarkable and a complete cure was effected in five or six applications.

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References:

1. Dr. V. M. KARKI, B.A., F.R.C.S., Consulting Surgeon to K. E. M. Hospital, Bombay.

2. Dr. J. P. PRATAP, Kapil Dispensary, Bombay-1.

Introductions: Sciatica, Fibrositis, Rheumatism, Osteo-Arthritis, Rheumatoid Arthritis, Chronic Infective Arthritis, Neuralgia and cramps etc.

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Ref.: Indian Medical Review: Therapeutic Number 1951 by Dr. MOHANLAL H. SHAH, M.B., B.S. (Bom.), D.T.M. (Liv.), Z.U. (Vina). I have found 'Smartone' very effective in reducing duration of convalescence following febrile illness like typhoid fever. Also in low blood pressure. Appetizer and Weight increase.

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Atophanyl I.M. or I.V. 4-4	2U 1-11	Combiotic 1/2 gr. 1-7 1 gr. 2-6
Vit. B1 10 cc 100 mg 1-5	Normal Saline 100A 5cc 3-8	Calci Ostelin 15cc 3-3 6A 3-0
Coramin Liq 15cc 3-12; 100cc 18-12	Santonine M&B 4-0; 50 16-12	Voice Tab 100 1-0 1000 5-0
Berlin 10cc 50mg 2-4; 100mg 2-12	Redoxon 2cc 5 2-6; 50 16-12	Vidilin 3 oz 4-1
Penicillin G Cryst. Glaxo or Dumex	5x5cc 4-0; 25x5cc 18-12	Hypo Syringes naked, each in box
2 5 10 lacs.	Testosterone Prop. 6 Amp. 1cc	2 5 10 20 50cc.
0-6-9 0-9 6 0-11-9	10mg 1-14; 25mg 2-10; 50mg 4-12	A.G. Jap. Sup 0-12 1-0 1-4 1-12 1-8
0-7-6 0-10-9 1-1-0 Squibb	100 20 8	Record
Procaine 20 lac Glaxo 1-11-6	10cc 25 mg. 2-10; 50 mg 4-12	LuerLockBD 7-0 9-12 11-12 17-031-8
4 lac Pfizer 0-14-0 Rhodia 0-8-9	Vit. A&D 1cc 6amp 3-6 [Galxo 3-0	Jap Sup 1-2 1-8 1-12 3-4 4-8
4lacGl. 0-9-0 Ita. 0-8-0 Sqb. 0-10-9	1/2 2cc 6amp 3-2; Vit. B12 100mc	Re. 1-0 more for side nozzle.
Oil 30 lac. x 10cc 1-14	1/2 2cc 6amp 3-2; Vit. B12 100mc	M. Case Jap 2cc 2-2 5cc 3-2 10cc 4-2
tab. 12; 2lac 2-2; 1 lac. 1-9	1/2 2cc 6amp 3-2; Vit. B12 100mc	Ind. 1-2 1-10 2-4 2-12 4-10
Oint doz. Eye 5-4 Skin 6-12	1/2 2cc 6amp 3-2; Vit. B12 100mc	Lint 3-0; Cotton 1-12
Lozenges 100 2-2 20 0-13	1/2 2cc 6amp 3-2; Vit. B12 100mc	Needles Stainless Steel:
Dieristich Squibb 1-5-6	1/2 2cc 6amp 3-2; Vit. B12 100mc	Eng. 2-10 Down 3-4 doz Record
Seclomycin 2-0 Ambistryn 1-2-6	1/2 2cc 6amp 3-2; Vit. B12 100mc	USA 5-0; Jap 1-8; B.D. 10-0
STAEPTO-PENICILLIN DMX 1-1-6	1/2 2cc 6amp 3-2; Vit. B12 100mc	Thermometers Amin. Hicks 2-12
BEL. 0-15 0	1/2 2cc 6amp 3-2; Vit. B12 100mc	Zeal Eng USA Jap. Sup. Flat
Streptomycin 1g. Pfizer 1-0-6	1/2 2cc 6amp 3-2; Vit. B12 100mc	30-0 18-0 15-0 7-4 8-4 12-8
Italy 0-12-9; Gl. 0-15-9 USA 0-11-0	1/2 2cc 6amp 3-2; Vit. B12 100mc	Saline app. 300 7-8 500cc 8-8
Synthomycin Kap. 13-10 Liq 8-6	1/2 2cc 6amp 3-2; Vit. B12 100mc	Abs. Gauge 20yd 3-8 Erkameter 60-0
Chloromycetin Kap 15-12 Liq 11-12	1/2 2cc 6amp 3-2; Vit. B12 100mc	Bar or Glycerine Mental Syringe
Chloramphenicol 100 18-8 12 6-12	1/2 2cc 6amp 3-2; Vit. B12 100mc	2oz 4-8 4oz 5-8
Autocymen 8cap 18-0; 100 185-0	1/2 2cc 6amp 3-2; Vit. B12 100mc	F.L. or d 1-8 Sup. 3-0 doz.
Terramycin 16 4-12; 8 18-1	1/2 2cc 6amp 3-2; Vit. B12 100mc	Stethoscope B.D. 23-0; Ger 9-8
Quinine Ger. 49-8; Java 47-0	1/2 2cc 6amp 3-2; Vit. B12 100mc	Wall Thermometer Jap. 1-8
Sulp. oz. 3-2; Howard 5-0 oz	1/2 2cc 6amp 3-2; Vit. B12 100mc	Vit. C 50 mg 1000 9-1; 100 1-8
B.G. 15-0 Howard 49-8	1/2 2cc 6amp 3-2; Vit. B12 100mc	100 100 100 2-0; 1000 15-8
Tab 2 gr 2-4 5 gr 4-8 100	1/2 2cc 6amp 3-2; Vit. B12 100mc	Vit B Complex 100 1-5 1000 5-10
1000 2 gr. 18-0; 5 gr. 38-12	1/2 2cc 6amp 3-2; Vit. B12 100mc	1/2 10mg. 1000 9-4 100 1-10
Howard 5gr. x 1100 49-8	1/2 2cc 6amp 3-2; Vit. B12 100mc	5mg 100 1-6 1000 7-0
Bihyd. 2 gr 4-4 5 gr 7-4	1/2 2cc 6amp 3-2; Vit. B12 100mc	Artery Forcep 2-0 Scissors 2-0
Equine Germ. 3-12	1/2 2cc 6amp 3-2; Vit. B12 100mc	Scalpel 1-4 Probe 0-6
[Howard 4-4; Java 3-11	1/2 2cc 6amp 3-2; Vit. B12 100mc	Tongue Depressor 1-0 Folding 3-10
Quin. Bihyd. 100 x 10gr x 2cc	1/2 2cc 6amp 3-2; Vit. B12 100mc	Tooth Forcep Universal 2-4
Ind. B.D.H. B.W. EVANS	1/2 2cc 6amp 3-2; Vit. B12 100mc	Ext Er of Liq 4 oz 2-8 1b 8-4
12-8 20-12 33-8 23-8	1/2 2cc 6amp 3-2; Vit. B12 100mc	Aletis rio 10-0 Eng. 2-8
8-8 15-8 5gr x 1cc 100 amp	1/2 2cc 6amp 3-2; Vit. B12 100mc	Pot. Bromide M&B 1b 3-10
Adrenalin Chl. sol 1. 1000 1-12 M&B	1/2 2cc 6amp 3-2; Vit. B12 100mc	Silver Protinate 1-0 Vitelin 2-0 oz
Aminophyllin 10cc 50 9-0; 6 1-7	1/2 2cc 6amp 3-2; Vit. B12 100mc	Aspirin 3-10 Sod Salicylas 3-8
Calcium Gluconate 10% 100amp	1/2 2cc 6amp 3-2; Vit. B12 100mc	Iodoform 2-2; Iodin Cryst 1-8 oz.
5cc 7-0 10cc 9-0	1/2 2cc 6amp 3-2; Vit. B12 100mc	Calomel oz 2-4
Sauze 5x10cc 5-1 10x5cc 8-12	1/2 2cc 6amp 3-2; Vit. B12 100mc	Yoastvite Tab. Small 3-0 Large 3-8
with Vit C 10x5cc 10-8	1/2 2cc 6amp 3-2; Vit. B12 100mc	Soda Citrate 1002gr. 1-4 5gr 1-8
5x10 cc 5-12; 50x5cc 47-0	1/2 2cc 6amp 3-2; Vit. B12 100mc	Fountain Pen Parker Type Sup. 3-8
Distill Water 100 amp 2cc 2-8	1/2 2cc 6amp 3-2; Vit. B12 100mc	Plastic Bag 12" 5-12
5cc 3-4 10cc 1-8	1/2 2cc 6amp 3-2; Vit. B12 100mc	Stethoscope Bag Plastic 1-4
Emetine Hyd 1/2gr 100A 40-0 12A 5-12	1/2 2cc 6amp 3-2; Vit. B12 100mc	Fountain Pen Torch Lamp. 3-12
Folic Acid 15mg 10cc 2-4	1/2 2cc 6amp 3-2; Vit. B12 100mc	Purity Barley 1/2 lb. 1-6 [L 5-12
Emetine 1 gr 12A 9-12	1/2 2cc 6amp 3-2; Vit. B12 100mc	Ring Pessary each 0-8 Vikel S 3-4
Glucose Soln. 25% 25cc 6A Thilo 3-0	1/2 2cc 6amp 3-2; Vit. B12 100mc	Cincophan 100x5 gr. 3-8
Irgapyrin 5A 7-8; 60A 86-0	1/2 2cc 6amp 3-2; Vit. B12 100mc	H. Tab. Atropia Sulph 1/60gr 20BW 0-8
Milk with Iodin 5cc 50 3-10 100 6-0	1/2 2cc 6amp 3-2; Vit. B12 100mc	Digitatin 1/100gr 20 0-8
N.A.B. 30 0-11 45 0-13 60 0-15	1/2 2cc 6amp 3-2; Vit. B12 100mc	Empty Gelatine Capsules:—
Progesterone 5mg 50 8-8 6 1-8	1/2 2cc 6amp 3-2; Vit. B12 100mc	00 0 1 2
10 mg 1-12; 25 mg 2-6	1/2 2cc 6amp 3-2; Vit. B12 100mc	1-14 1-14 1-12 1-10
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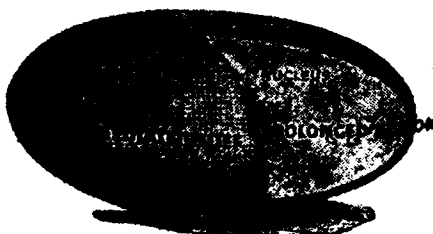
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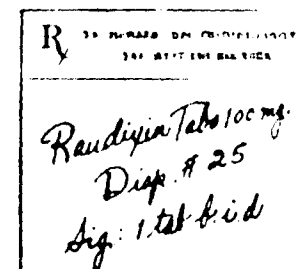
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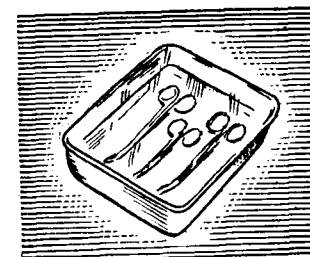
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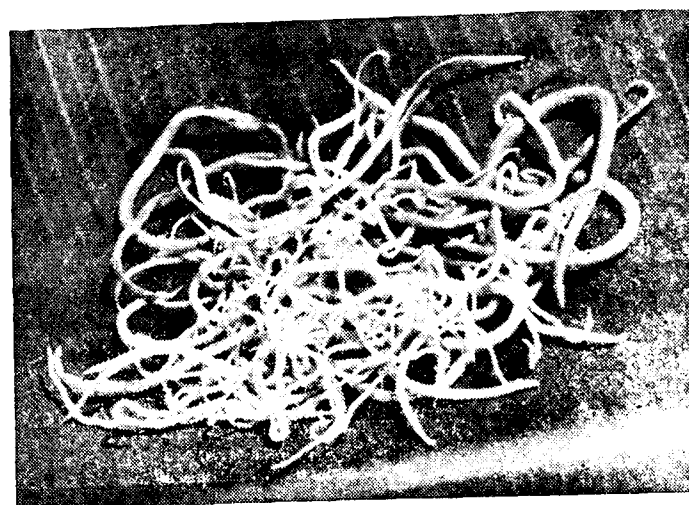
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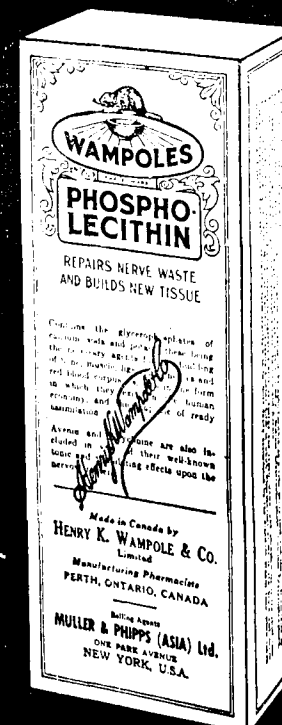
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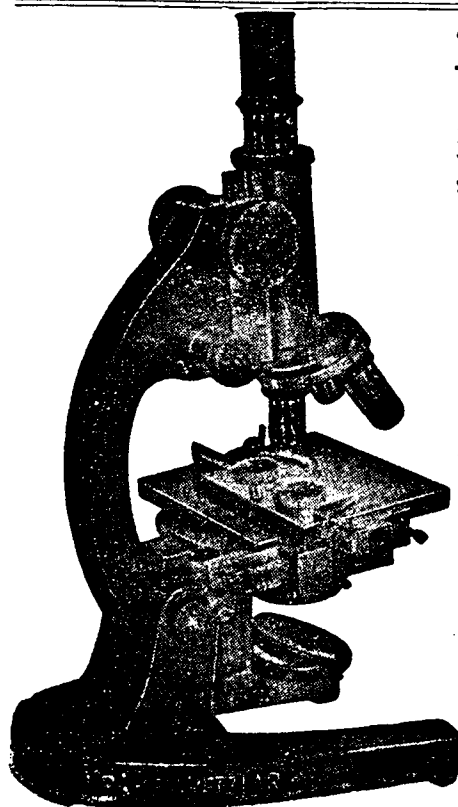
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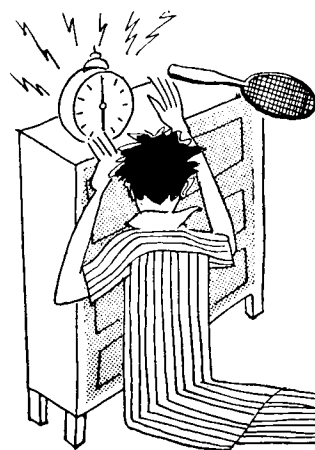
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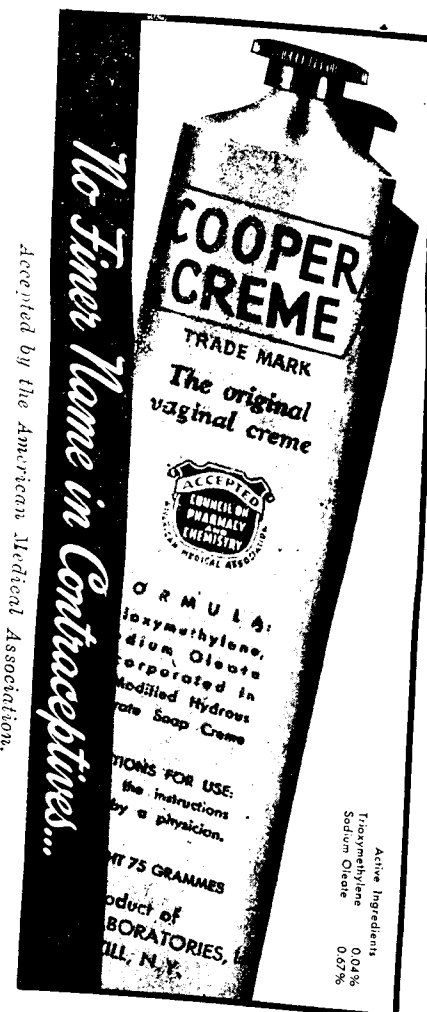


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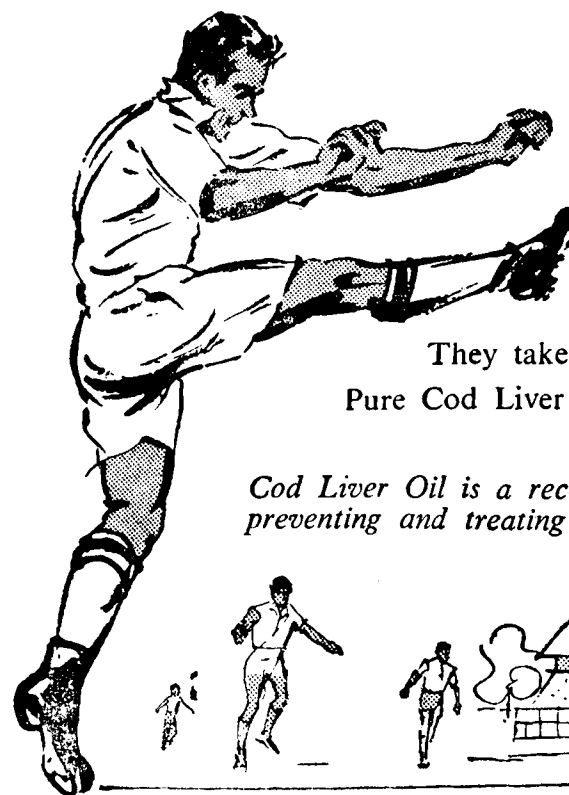
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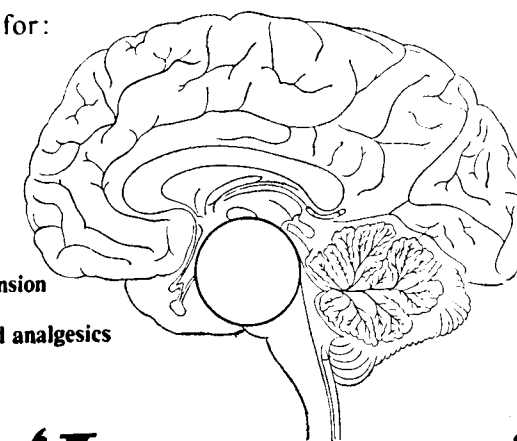
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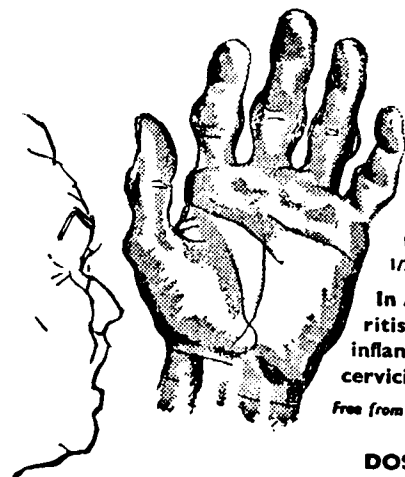
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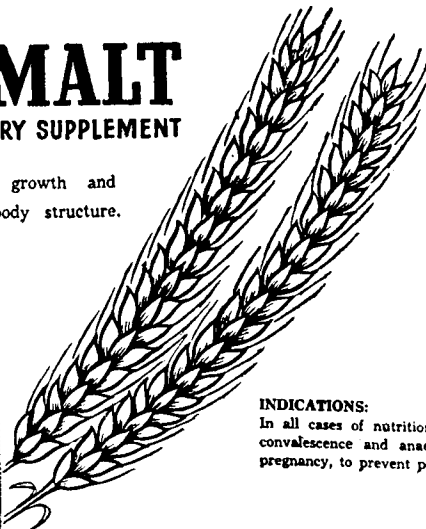
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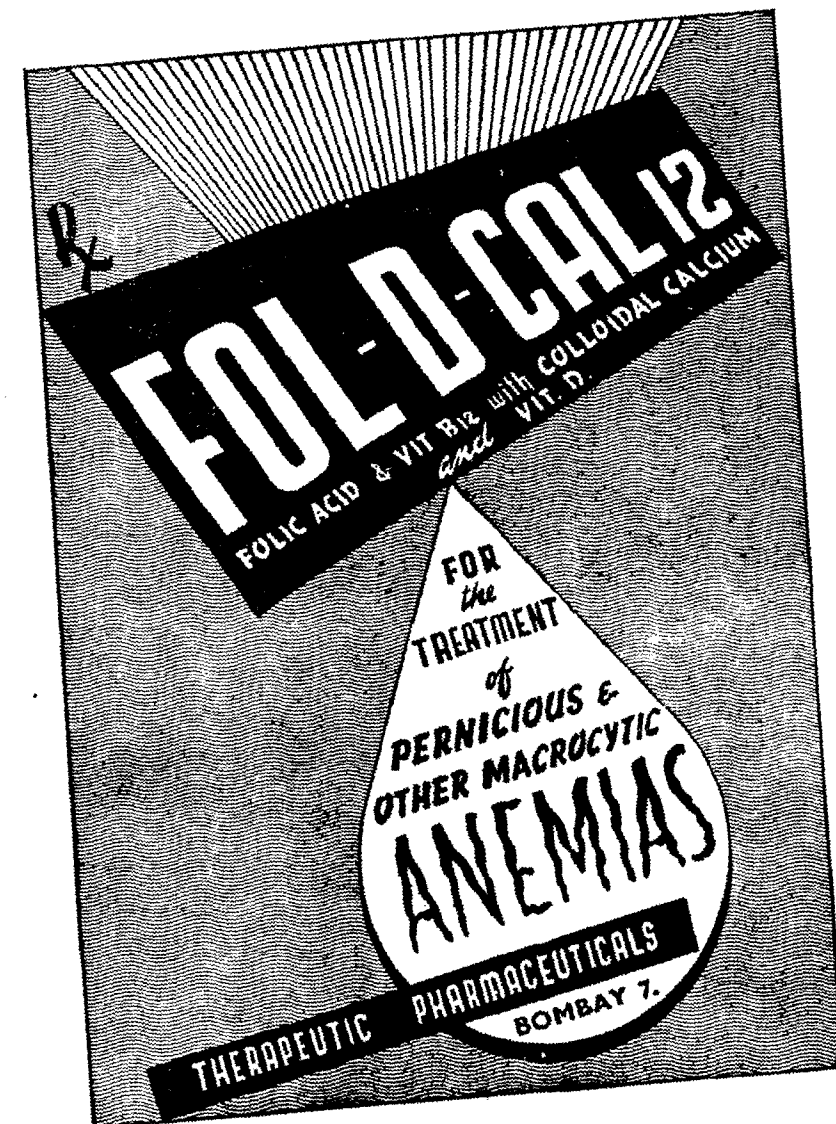
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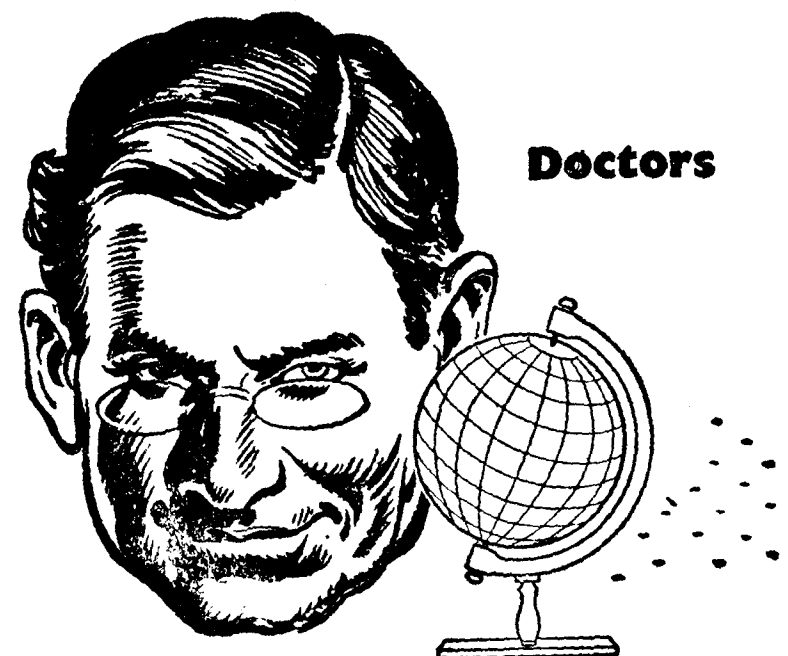
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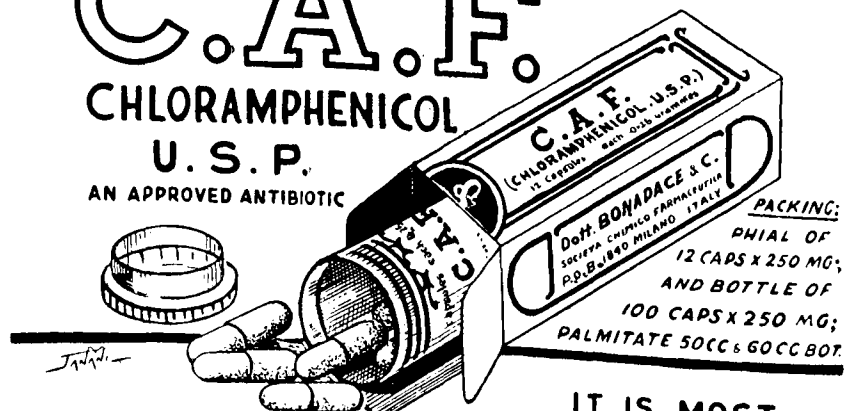
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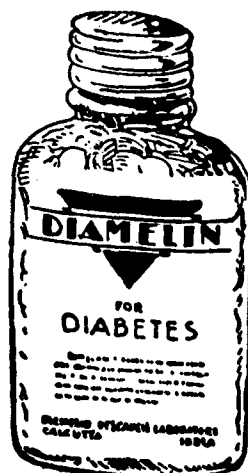
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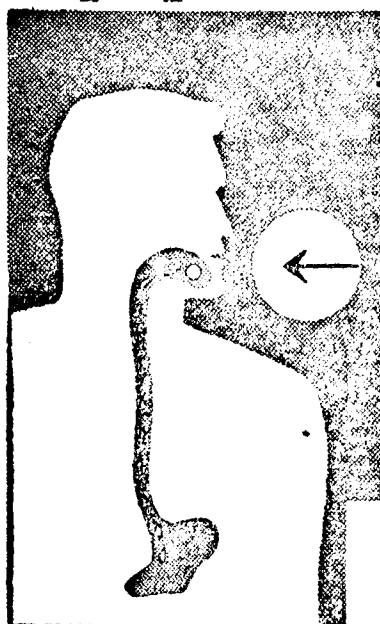
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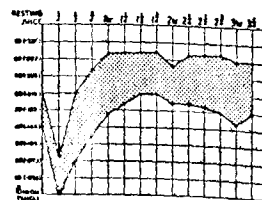
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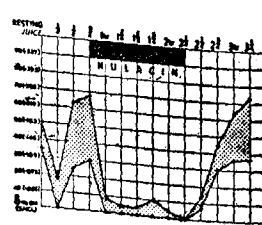
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REFERENCES

Medical Treatment of Peptic Ulcer, Med. Press, 27th Feb., 1952, 227: 195

The Control of Gastric Acidity, Brit. Med. J., 26th July, 1952, 2: 180

Notes on Remedial Agents, Med. Review, Sept., 1952, 46: 162

Discussion on Peptic Ulceration, Proc. Roy. Soc. Med., May, 1953, 46: 354

The Effect on Gastric Acidity of "Nulacin" Tabs., Med. J. Aust., 28th Nov., 1953, 2: 823

Control of Gastric Acidity by a new way of Antacid Administration, J. Lab. Clin. Med., Dec., 1953, 42: 953

Further Studies on the Reduction of Gastric Acidity, Brit. Med. J., 23rd Jan., 1954, 1: 183

Clinical Investigation Into the Action of Antacids, Practitioner, July, 1954, 173: 46

Management of Peptic Ulceration in General Practice, Med. World, Dec., 1954, 2: 591

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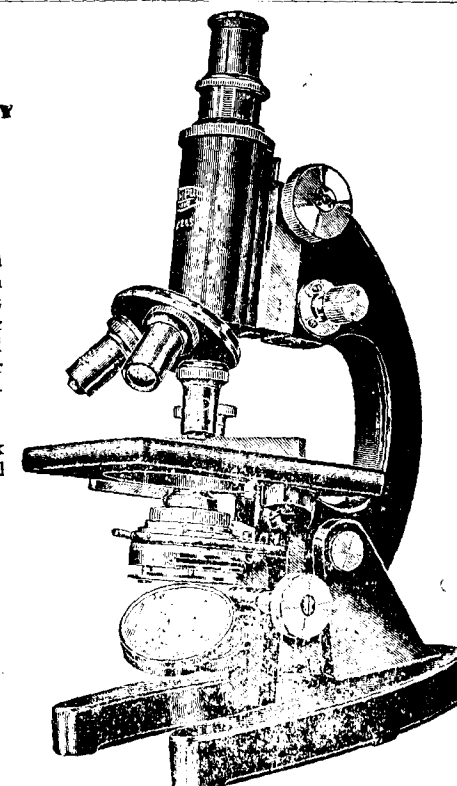
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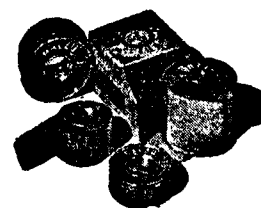
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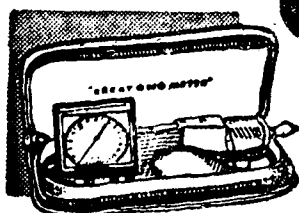
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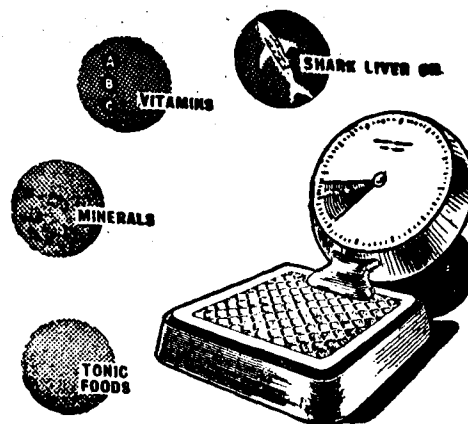
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Veratrum Viride extract, equivalent to total alkaloids of veratrum viride 1.25 mg.

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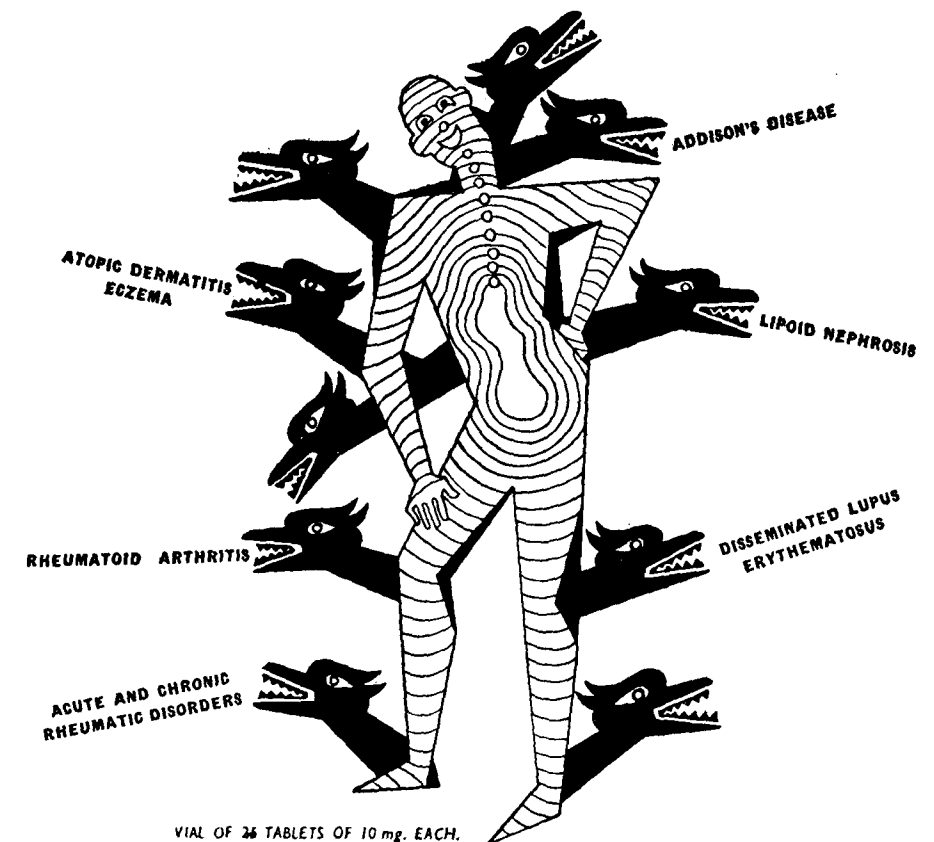
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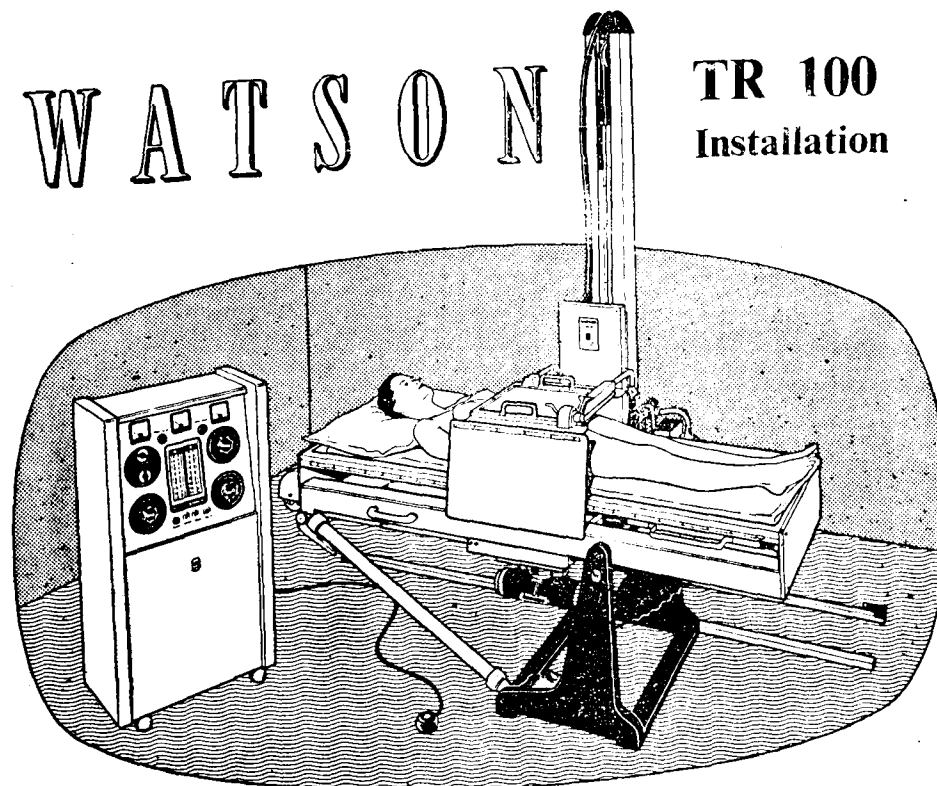
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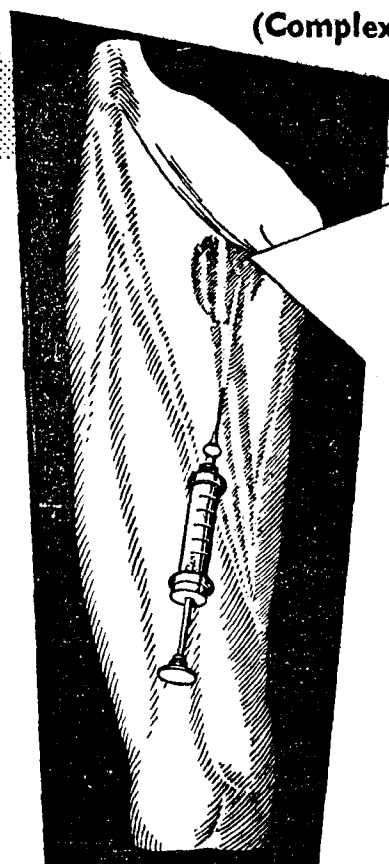
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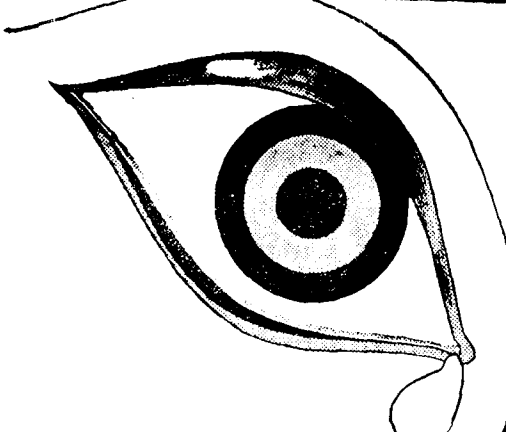
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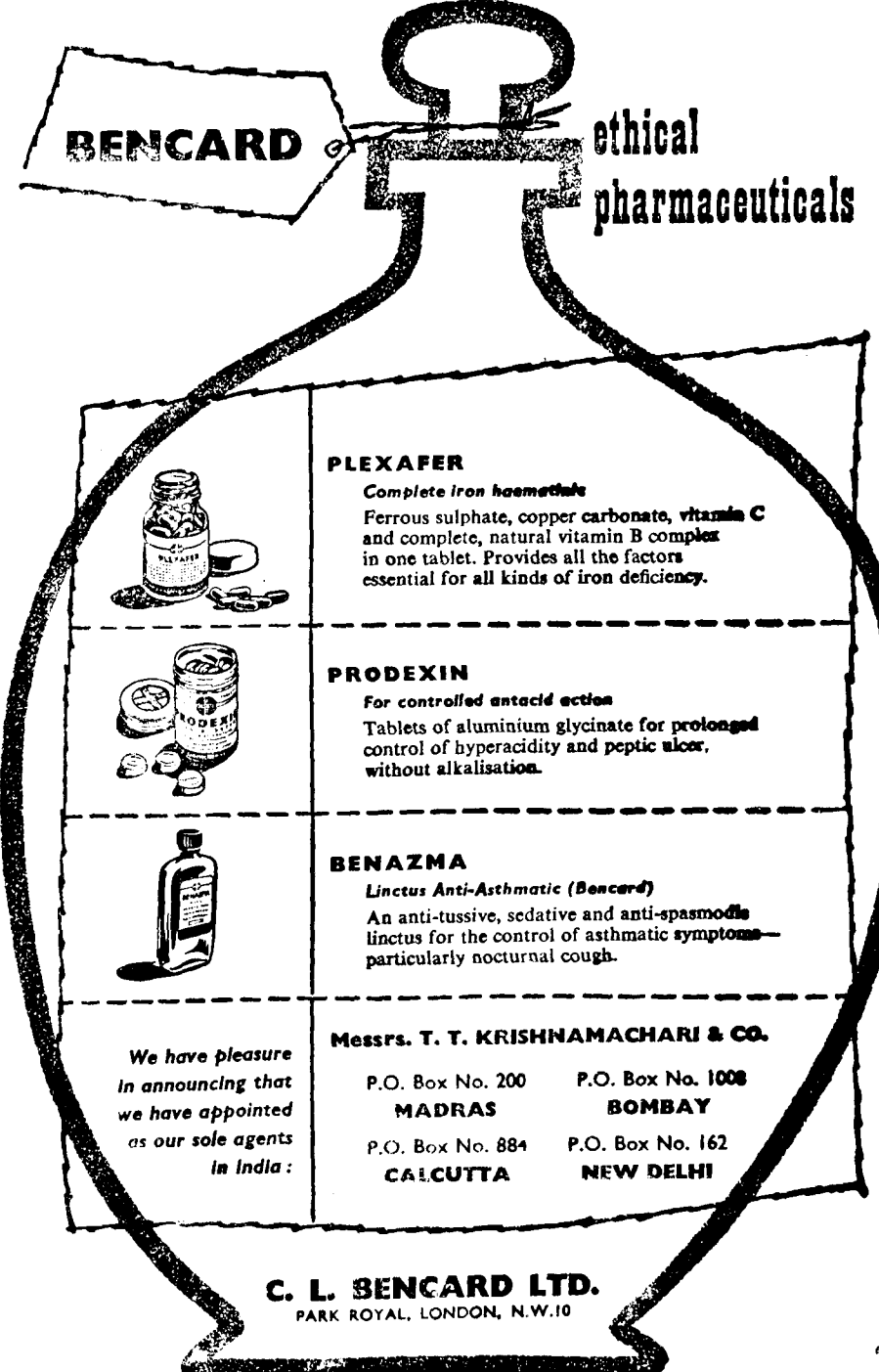
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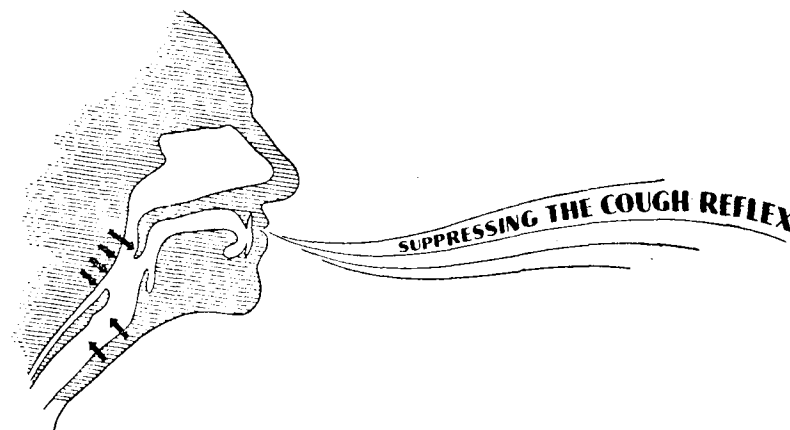
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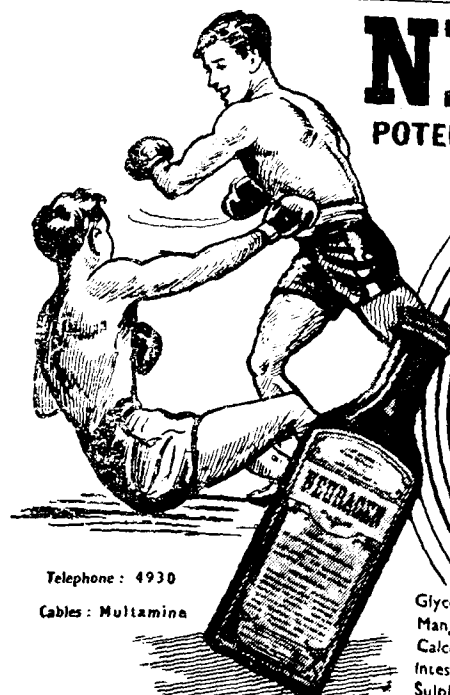
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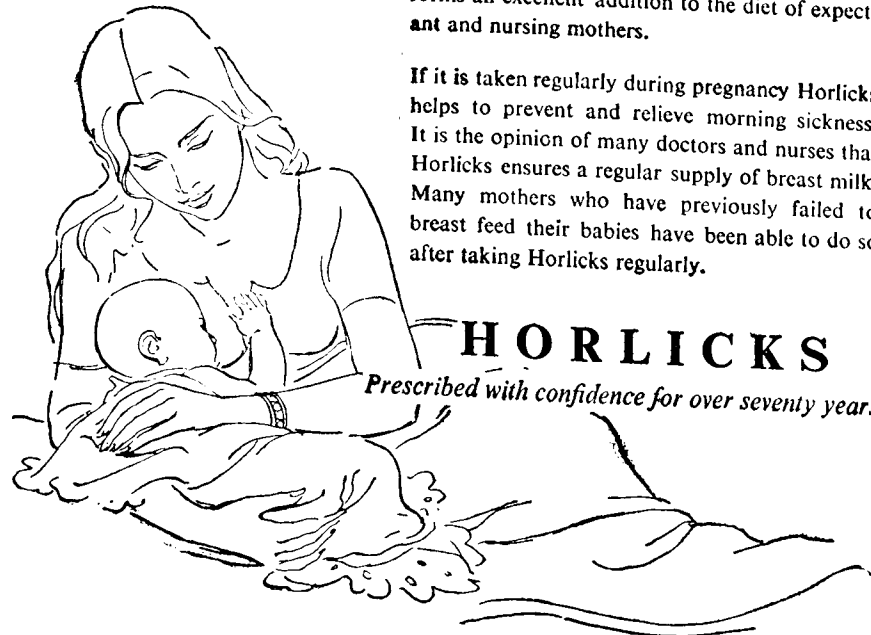
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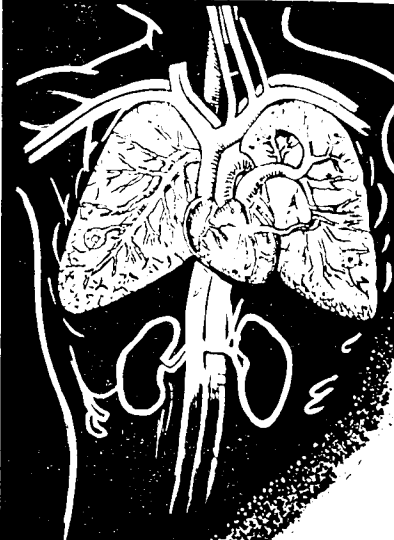
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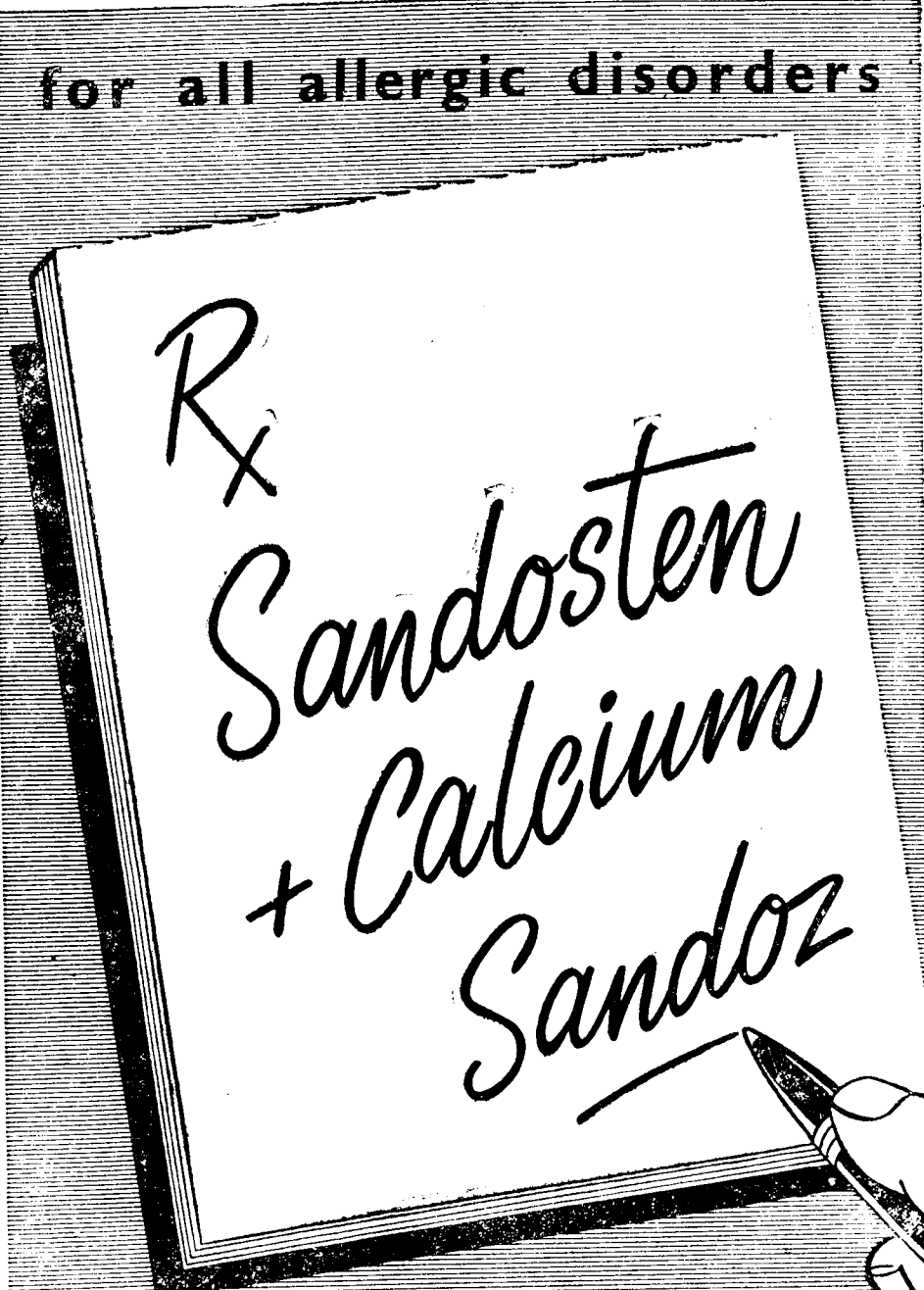
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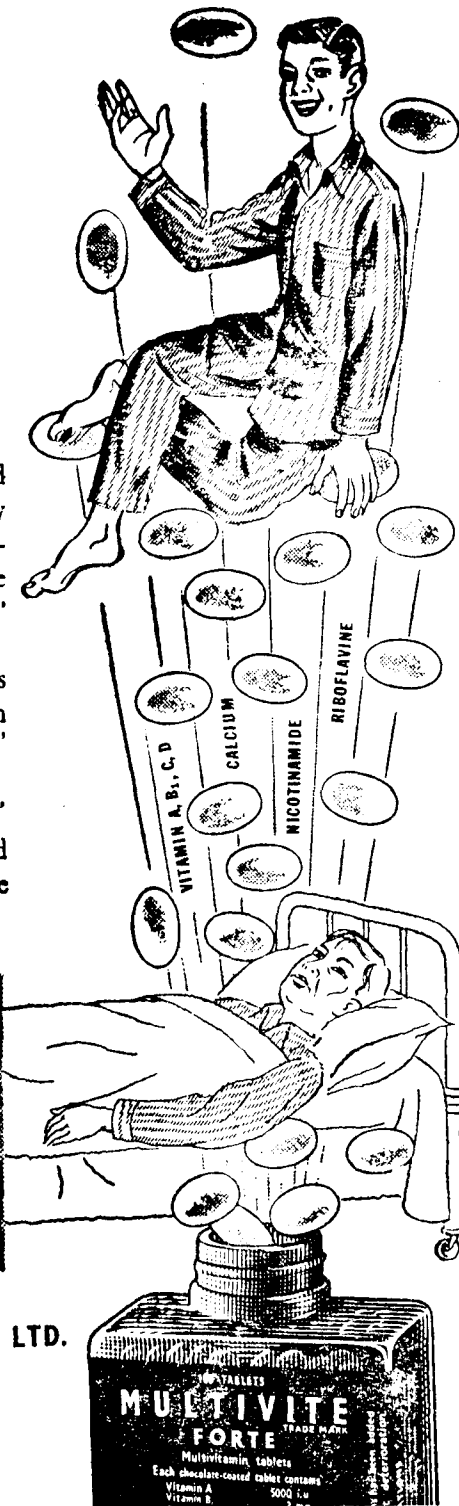
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Original Articles

STIFF SHOULDER *

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PAINFUL or stiff shoulder in people above 40 is a very common complaint met with in general practice. Although it is not a disease of the serious category, the disability is so great as to incapacitate the patient from pursuing his occupation and hobbies. Many cases are labelled osteo-arthritis of the shoulder and subjected to every non-specific therapy available for treating osteo-arthritis in general. An understanding of the pathology is essential for the rational management of such cases.

Pain around the shoulder may result from lesion of a gross nature like fractures, tuberculosis or infective arthritis or may be due to conditions in the cervical spine or thoracic inlet and sometimes from visceral lesions particularly from the heart and gall-bladder. When all these conditions are excluded, there remains a distinct group of cases where there is a characteristic symptom complex in the shoulder and it is this group which is the subject matter of the present paper.

Anatomical facts.—The shoulder is a shallow ball and socket joint having no weight-bearing function. The muscles acting on the shoulder may be divided into two groups—the superficial deltoid and a deep set consisting of supra-spinatus, infra-spinatus, teres minor and sub-scapularis. The two are separated by the sub-deltoid bursa. The deep muscles are all rotators of the shoulder in addition to their function of tensing, fixing and pressing the humeral head against the glenoid cavity so that the deltoid can effect elevation of

*Specially contributed to the ANTISEPTIC.

the humerus against a stable hinge. One set is useless without the other. If the hinge is unstable as in ruptures of supra-spinatus, the deltoid cannot elevate the humerus. If the hinge is 'stuck-up' by inflammation or adhesions in the deep tendons abduction is again impossible no matter how powerful the deltoid may be. The tendons of these four deep muscles fuse with the capsule of the shoulder joint, one inch proximal to their insertion into the tuberosities. This combined structure is called the musculo-tendinous or Rotator-Cuff of the shoulder. The sub-deltoid bursa is situated just above the cuff with its floor adherent and moving with the cuff.

PATHOLOGY:—As the shoulder is a non-weight-bearing joint, primary osteo-arthritis in the shoulder is very rarely seen. As age advances the musculo-tendinous cuff undergoes degenerative changes. Above 45 years, the cuff shows degenerative changes due to circulatory deficiencies and attrition by repeated minor trauma. A degenerated cuff is very susceptible to tears; these tears cause a pericapsular effusion which produces adhesions. The cuff is also a site for calcification in patches. The calcified area may get adherent to the floor of the sub-deltoid bursa and sometimes bursts into the bursa. In such cases, amorphous calcium lies in the bursa. The bursa gets secondarily inflamed (sub-deltoid bursitis) causing acute symptoms of pain and muscle spasm.

Clinical features.—The patients are usually above 40 and the condition is slightly more common in females than in males. The right shoulder is more commonly affected than the left. There is often a history of a slight trauma, like fall on the hand or a catch while lifting a weight. Sometimes the patient says that he noticed pain and stiffness on getting up from his sleep.

Clinically three groups can be recognised all painful, each with a characteristic symptom complex. The three groups are really in individual cases one or the other stage may arrest the attention most.

I. Acutely painful shoulder.—The patient complains of severe pain in the shoulder, inability to move actively in any direction. He is unable to sleep on the affected side and sleep is disturbed due to the pain.

On examination there is an acutely tender spot in the lateral aspect of the shoulder just below the acromion process. Abduction of the shoulder is painful and limited but passive flexion-extension is painless. When the patient is assisted to do abduction it will be noticed that there is a painful arc of abduction between 60° and 90°. This is due to the impinging of the tender area of the supra-spinatus tendon against the acromion process. This in turn, is due to tendinitis of the supra-spinatus tendon.

An X-ray picture is usually negative but some cases show a calcification in the supra-spinatus tendon near its insertion into the greater tuberosity.

TREATMENT:—In this acutely painful condition the first essential is to rest the shoulder. A collar and cuff bandage with another bandage to fix the arm to the chest is applied. It is very important that this rest is not too prolonged as the tendency to stiffening is very great. The pain must be relieved as quickly as possible. Radiant heat or short-wave diathermy helps to relieve the pain and salicylates by mouth are also given. After a few days of this regime which should not last more than 4 or 5 days, vigorous active movements of the shoulder must be encouraged. If the pain still tends to persist, it should be relieved by injecting 3 to 5 cc. of 1% novocain into the tendon inserting the needle just below the tip of the acromion process. The shoulder is rested for a day after the injection and then vigorous active abduction movements must be started. With this regime complete relief is obtained in 2 or 3 weeks' time.

In cases with calcareous deposit in the tendon, the symptoms and signs are not proportionate to the size and density of the deposit. Large deposits may be almost symptomless while small ones may cause considerable pain.

Conservative treatment as indicated above will relieve most cases. Injecting 1% novocain around the calcareous mass, causes hyperamia and helps in the re-absorption of the mass. If the symptoms persist, a surgical excision of the acromion process relieves the pain even if the calcified mass itself is left alone.

II. Periarthritis of shoulder.—The second group comprises those cases where the patient has some pain which is not very acute but is of a nagging type. He is unable to put on his coat or if it is a woman she is unable to do her hair up. These patients come to the doctor because of the disability to perform certain movements rather than that due to the pain. The pain may radiate down the arm as well as up along the nape of the neck.

Some of these patients would have had an acute phase as described above but may say that it came on gradually. The pathology here is a peri-arthritis affecting only a portion of the rotator cuff. A degenerated cuff with deficient blood supply has had minor traumata and produced an exudation which has got organised. The resulting fibrous adhesions outside the capsule cause the limitation of particular movements.

On examination there is usually some slight wasting of the supra and infra-spinatus muscles. There is a tender area on deep pressure just below and anterior to the acromion. The movements of external rotation and abduction are markedly limited. The flexion and extension are free and painless. In testing for external rotation the elbows must be kept close to the body and the patient made to stand

with his back against a wall and the outward movement compared with that in the normal shoulder. Abduction must be tested with the scapula fixed to the thoracic wall. The degree of external rotation and abduction movements must be recorded for future comparison.

The treatment of this condition needs patience and perseverance and it takes four to six weeks before good functional recovery is complete. The result depends more on the patient's efforts guided by the medical attendant rather than on drugs and local applications. Before starting treatment the exact amount of limitation of external rotation and abduction are measured and demonstrated to the patient.

As the limitation of movements is due to pericapsular adhesions, the rationale of treatment consists in gradually stretching and breaking down these adhesions. The patient is put on 20 gr. of salicylates or succinyl salicylate three times a day, and taught to do active vigorous external rotation and abduction exercises. If short-wave diathermy is available, a 15 minutes' exposure before the exercises, increases deep vascularity and facilitates the stretching of adhesions. Local application of liniments with massage to the deltoid and spinati muscles, improves circulation and muscle tone and also helps in the movements.

Exercise.—Recovery of external rotation is essential before full abduction is possible as in the normal full abduction, the humerus must externally rotate if abduction above 90° has to take place. The patient is made to stand with the back close to a wall, the elbows are flexed to 90° kept close to the body, the forearms pointing forwards and the patient is asked to touch the wall with the thumb. For abduction 'climbing the wall' with the hand is a very good exercise. Such a regime of diathermy—massage and active exercises lasting for 45 minutes twice a day will show definite increase in the shoulder movements in a week's time although full recovery of all movements may take about three to four weeks.

Manipulation under anaesthesia.—In cases which show improvement in the range of movements, recovery can be hastened by manipulating the shoulder under general anaesthesia. The anaesthesia must be deep to relax all muscles, and after some traction, slow external rotation is done. Crepitations due to breaking of adhesions may be heard and felt during this manoeuvre. After full external rotation is achieved the arm is forced into full abduction. Care must be taken not to use jerky or excessive violence as it will result in fracture or dislocation. The patient must do active movements from the next day itself to maintain and improve the movement.

Special drugs.—As the disease is a fibrosing condition, cortisone has been recently used in its treatment. A short course of cortisone 50 to 75 mg. a day in divided doses for 6 to 10 days, loosens the fibrous

adhesions and also relieves the pain. The programme of exercises is started as soon as the pain is diminished. This shortens the period of disability. Cortisone therapy even in these small doses must be under full laboratory control in regard to the sodium and potassium balance.

Another drug which helps in the loosening of adhesions is Vitamin E, which causes increased capillary circulation in the fibrous tissue. A massive dose of 300 mg. of Vitamin E twice a week by injection, together with the exercises, hastens recovery.

Frozen-shoulder.—The third group of cases consists really of those in the second group that have not been properly treated. If the shoulder-joint is immobilized for a long time the stiffening increases. Ultimately the peri-articular adhesions spread all round the joint resulting in loss of all movements. This is what is called the 'frozen-shoulder.' In this stage the patient has very little pain in the shoulder but all movements are markedly limited.

The treatment of this condition is more difficult and the result is less satisfactory. Improvement depends on the nature of the adhesions. If they are fine, they yield to treatment. Dense adhesions need treatment; ultimately some recovery occurs in these prolonged movements. The treatment here also consists of the same measures as those adopted in the previous group of cases. Repeated manipulations may be needed and each may improve the condition only by stages.

It must be emphasised that the most important part of the treatment is the active exercise performed by the patient himself. All other measures except the manipulation under anaesthesia are only adjuvants in the treatment. Active co-operation of the patient is therefore, very essential. A good physiotherapy department where regular massage and diathermy can be given and where groups of such patients can be made to do the exercise together will yield very good results.

THE PLACE OF SURGERY IN THE TREATMENT OF CANCER

A plenary session was held on the subject of 'Cancer' during the Australian Medical Congress of the B.M.A., at Sydney in August 1955. Sir Stanford Cade spoke on 'The Place of Surgery in the Treatment of Cancer' and said that the place of surgery was manifold. The ideal—the complete removal of the tumour resulting in the eradication of the disease—was achieved in only a minority of cases, but surgery could play a useful part in many other ways; diagnostic biopsy, palliative control, alteration of anatomical, physiological and hormonal states, relief of pain and prophylaxis. A better understanding of the natural history of cancer had allowed a more accurate assessment of both the usefulness and the limitations of surgery. Stricter selection had brought not only improved results (a smaller operative mortality and a longer survival rate), but also technical improvements and abandonment of surgery for certain types of tumour. Brain tumours and testicular neoplasms provided illustrations of those points. In certain stages of cancer (for example, in stage III cancer of the breast) surgery was actually harmful. Combination of surgery and radiotherapy also altered the extent and timing of the surgical act.

Sir Stanford then referred to physiological advances leading to surgery designed to alter function (orchidectomy for prostatic cancer, oophorectomy and adrenalectomy for breast cancer, and hypophysectomy for both those conditions) and to advances in technique, particularly in anaesthesia, antibiotic therapy, ancillary diagnostic aids, and control of blood loss and shock.

Referring to biopsy, he said that the associated risk of disseminating cancer was now considered to be negligible and probably mythical. The establishment of a definite diagnosis was more important.

Sir Stanford Cade defended radical surgery against current criticism; but agreed that such major procedures as radical mastectomy, colectomy, excision of the rectum, block dissection of the neck, gastrectomy, pneumonectomy and wide ablation of limbs should be undertaken only in well-selected cases, strictly limited by accurate assessment of operability and in the light of the natural history of the particular tumour. A modern conception of the value and limitation of surgery taken in conjunction with the results achieved in certain sites by accurate and adequate radiotherapy had led to a better selection of patients for surgery and of the timing of the surgical act. Thus in certain sites the early, small, favourable lesions should be treated preferably by radiation, and the late lesions or those that were radioresistant should be treated surgically. At the other end of the scale, surgery was now applicable to advanced local disease previously considered inoperable. Pelvic viscerectomy, total laryngo-pharyngectomy with immediate reconstruction, and multi-visceral resection were the newer methods of surgery.

Turning to palliative surgery, palliation aimed at relief of symptoms and prolongation of life and occasionally gave many years of survival. It could be achieved, for example, by removal of fungating bleeding masses of tumours or of bowel, pyloric or oesophageal carcinoma causing obstruction, by short-circuiting operations to relieve jaundice caused by cancer of the pancreas or by transplantation of ureters into the bowel or an artificial bladder for inoperable carcinoma of the bladder or involvement of the ureters in pelvic cancer. Adrenalectomy and hypophysectomy were of value in about one-third of the cases of hormonally dependent cancers of the prostate and breast; the main effect was relief from pain from skeletal metastases.

Finally, Sir Stanford Cade referring to the prophylactic role of surgery in the prevention of cancer said that conditions which could lead on to cancer were leucoplakia of the mouth or vulva, benign melanoma, areas of chronic skin diseases such as Bowen's disease, congenital polyposis of the rectum, localised thyroid swellings, the benign adenoma or cyst of the thyroid, the nodular goitre, cholecystitis with gall-stones and chronic gastric ulcer. Surgical removal of the diseased area would prevent the development of cancer.

In conclusion Sir Stanford Cade said that although surgery was no longer the only means available for the treatment of cancer, it remained a living virtue, the practice of which brought hope to the patient and spiritual satisfaction to the surgeon.—(From *Med. J. Austral*, Oct. 1, 1955).

TREATMENT OF OCULAR TUBERCULOSIS WITH ISONIAZID

The ophthalmologist of a tuberculosis sanitarium located in a mountainous part of Czechoslovakia (elevation about 3000 ft.) attempts evaluation of the results of isoniazid treatment (5 mg. per kg. of body-weight per day for 50 to 70 days) in 30 cases of granulomatous, solitary or disseminated choroiditis, 14 cases of periphlebitis and 16 cases of anterior uveitis or sclerokeratitis. Definite improvement, seemingly attributable to the chemotherapy, occurred in a very considerable percentage of the cases of choroiditis but not in any of the other groups. In cases of periphlebitis with severe haemorrhages the author has seen a number of acute exacerbations following streptomycin or isoniazid therapy and therefore, prefers "climato-hygienic" treatment, that is complete rest with dietetic supportive measures.—(*Am. J. of Ophthalmology*).

ALAVANDAR MURDER CASE AND THE PROBLEM OF IDENTITY*

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IN murder cases, the importance of establishing the personal identity of the deceased is universally conceded. This is often made impossible or difficult by advanced putrefaction, by destruction caused by birds and beasts of prey and by wilful segmentation and deliberate mutilation of the dead-bodies. Decapitation, followed by disposal of the head and trunk in different places is done intentionally by some murderers with a view to making identification difficult. This has been practised in some districts of the Madras State with some measure of success. But even in such cases, it should be possible to collect valuable information provided careful scrutiny is made of some parts of the skeleton, inspite of the non-availability of the entire skeleton or any soft tissues. The following case illustrates certain methods of approach to the solution of the problem of identity in such cases.

Summary of the case.—On 29-8-52 at about 11-45 A.M., the passengers in a third class compartment of the Indo-Ceylon Express complained to a travelling ticket-examiner about a terrible stench in their compartment, whereupon an unclaimed green steel trunk was discovered under the seat. The Station Master at Manamadura detached the compartment and on arrival of the Police Sub-Inspector from Dhanuskodi, the box was opened, when a headless trunk with arms and legs was found inside. The Assistant Surgeon at Manamadura conducted a *post mortem* examination and the findings were (1) body length 4'9". (2) Penis circumcised. (3) Left leg attached by a little soft tissue to the trunk, other limbs being separated. (4) One incised wound in the abdomen and one punctured wound on the left chest involving the lung and liver.

A pair of socks from the feet, a waist thread and the upper vertebrae were preserved. Finger impressions were taken. Subsequently, on 12-9-52, the body was exhumed for collecting materials for chemical examination and on 26-10-52, again exhumed for taking some bones for X-ray examination.

Meanwhile, at the instance of one of the partners of Messrs. Gem & Co., Madras, a report was made to the Law College Police Station, Madras, at about 5 P.M. on 29-8-52 that one Mr. Alavandar, who used to do business in the same premises was missing from about noon of the previous day. This person who was born on 12-5-1910 was a Vaisya merchant and a graduate. He was employed as a sub-divisional officer in the Military Department, at Avadi

*Specially contributed to the ANTISEPTIC.

during war-time and afterwards, he set up trade in the verandah of Gem & Co., dealing in cheap pens and plastics. "He seems to have been a kind of Don Juan contracting intimacies with inexperienced girls who crowded his shop, by offering them concessions in his cheap fountain pens. Some 11 years before, he contracted venereal disease as a result of his immoral operations with such girls and had got himself circumcised."

On 30-8-'52, the missing man's case was taken up for investigation by Police Inspector Ramanatha Iyer. He saw in the morning papers on 31-8-'52 an account of the headless trunk found in the train. After some preliminary enquiries and getting some helpful information, he took some policemen at 1-30 p.m. on 1-9-'52 to the desolate Bowerkuppam Beach, Royapuram, for combing it and at about 4-15 p.m., a head-constable saw a big wave dashing against the shore bringing a human head along with it. This was examined in my presence by Dr. Gopalakrishna, the chief findings being: (1) a male skull; (2) some peculiarities in the teeth; (3) ear lobes bored with 2 holes in the right and one in the left; and (4) certain injuries. Further detailed examination of this and the upper vertebrae from the trunk (asked for) received from the Sub-Magistrate at Sivaganga, enabled us to give more information especially that (i) both belonged to the same person; (ii) the age of the head was between 40 and 50 years.

The first accused in this case, Prabhakara Menon (A-1) was formally arrested at Bombay on 10-9-'52 and on information furnished by him, a fountain pen and also a wrist watch (later proved to have belonged to Alavandar) were recovered from the midst of files in the office of the British Insulated Calendar Cables Co., at Bombay. Next day, the second accused, Devaki (A-2), who was found in a house nearby, was also arrested and both were brought to Madras. On the 13th, A-1 took the Inspector to Royapuram where he showed a bundle of clothes under a boulder which included blood-stained clothes belonging to the deceased (a kerchief and an underwear).

Devaki, was unmarried in 1951. She was doing social work, including Hindi Prachar work in Madras. She is the eldest daughter of one Raman Menon, a retired official living in Royapuram. She went to the deceased Alavandar in August, or September, 1951 to buy a fountain pen. In his usual way, Alavandar is said to have struck an acquaintance with her, taken her address and continued his contact with her. In October, 1951, he is said to have taken her to a room in Crown Hotel, Madras, and then suddenly seduced her there. He had posed himself to her as a rich unmarried man deeply in love with her and as a partner of Gem & Co. Later on, she discovered that he was a married man with children, when he unwittingly mentioned the name of his wife to her. Thereafter, she discovered that he was a man in the habit of seducing inexperienced

girls by offering concessions in his inexpensive pens and so she avoided him.

In May 1952, she met the first accused, Prabhakara Menon in connection with a request to him to subscribe or become a life member of some philanthropic association. They fell violently in love with each other. Her father advised them to marry at once, which they did on 5-6-'52. Menon was then employed in the Premier Insurance Co. as a clerk (according to the Deputy Manager of the Company) and as a Manager of the Motor Insurance Department of that Company (according to himself). Whatever that may be, the Deputy Manager started a magazine called "*Freedom*," (now extinct) in June 1952, and appointed Menon as Advertisement Manager, for which he was paid Rs. 100/- per month as salary and was also eligible for travelling allowance when he went round to secure advertisements. Both the accused lived happily for two months, with occasional quarrels incidental to ordinary married life.

But as ill-luck would have it, A-1 went to the deceased for advertisement for "*Freedom*" and was told by him that he could not give any advertisement, but would recommend them to others. Incidentally, the deceased also congratulated him for marrying a nice girl like Devaki. "The seed was thus sown for subsequent suspicions of A-1 regarding A-2, for compliments about one's wife by a stranger of doubtful repute do not find a ready welcome in the minds of Hindu husbands."

For a month after the marriage both the accused lived with Raman Menon in his house. But about the middle of July, they rented a house, No. 62, Cemetery Road, Royapuram, on Rs. 50 per month. The living portion of this house was upstairs and consisted of a hall led by a staircase from below, kitchen to the west of the hall, a small lumber room to the west of the kitchen and a bed room to the east of the hall. A Malayalee servant boy, named Narayanan, aged 14 years was employed to fetch water upstairs and for other odd jobs, for which services he was given board and lodging.

On 25-8-'52, Devaki returned home only at 7-50 p.m., while Menon had returned earlier. He asked her why she was late and with which male friend she had gone. She replied that she had not gone with any male friend but had only been giving tuition to a girl. Menon was not convinced. Then he turned to a general topic and asked her whether she had had male friends before she married him. She denied it. During the night, she burst into tears, apparently as a result of his persistent questioning. On the morning of 27-8-'52, Menon changed his tactics and used a device used by psychologists all the world over. He told her that before his marriage with her, he had intercourse with several other women and asked her to tell him whether she had intercourse with other men, promising to forget and forgive. Even then, she denied. Again he changed his tactics.

That night he told her that he had a mesmerist friend who could easily find out what kind of sexual life a person had led and that he had told him that she had had sexual intercourse with another man before. Unable to stand the strain of this any longer, she is said to have told him at 11 P.M. on 27-8-52 at the Minerva Theatre, during the course of a picture, that she had sexual intercourse with Alavandar in October 1951. Suddenly Menon became enraged, left the theatre immediately with Devaki and returned home. There was exchange of angry words that night and the servant boy overheard him telling A-2 "you must bring him home tomorrow. I shall finish him off" (in Malayalam) and her replying "I shall do so."

Next day, A-1 did not go to his "*Freedom*" office. A chopper was procured from a neighbouring person. At about 10 A.M., Devaki was seen going out dressed well. A little later, the servant boy was asked by Menon to go and enjoy himself for the day and to return only in the evening. He was also given 4 annas for his expenses.

At about 11 A.M., the owners of Gem & Co., saw Devaki talking to the deceased intimately at his desk in the verandah. Mr. Venkatarangam of Gem & Co., was standing as a candidate to the election for the Madras Corporation from the Andhra Chamber of Commerce and badly needed the help of the vivacious deceased. So, when he saw A-2 leaving his shop at about noon, the deceased following her, some 2 or 3 minutes later, he asked the deceased "why are you going? you have to help me in the election" and the deceased replied, "I'll return in an hour or two" and Mr. Venkatarangam laughed and said, "yes, but come back at least at 2 P.M. without fail." Obviously knowing the deceased's philandering habits and the venereal disease contracted earlier by such erotic adventures, he thought that the deceased was only following A-2 for his own immoral purposes. Any way, Devaki returned to her house at noon and tapped at the street door which was opened by A-1. Both husband and wife went in bolting the door after them and then at 12-15 P.M., the deceased went there in an autorickshaw, smartly dressed and tapped at the door. A-2 opened the door and let him in, bolting the door once again.

What occurred later on in the house, nobody saw except the deceased and the two accused and the prosecution story is largely based on the confessional statement given by A-2. According to that statement, A-1 was hiding in the kitchen to the west of the hall. Devaki received the guest who had rushed to the house on an amorous errand and seated him on a chair in the hall. Then, the infatuated deceased asked her to send word to him if she was alone that night so that he might spend the night with her. Menon, on hearing this, rushed to the hall and asked the deceased whether he knew that A-2 was a married woman and whether it was a fact that he had seduced her and had intercourse with her. The deceased told him "yes, but you are jealous" and a quarrel ensued which

resulted in the death of Alavandar after receiving fatal injuries on his head and chest. Then A-1 dragged the body of the deceased to the kitchen to the west of the hall and there cut off the head and began systematically dismembering his limbs. He wrapped the head first in a piece of cloth and then with a piece of brown paper into a pumpkin shaped bundle. Then he put the headless trunk, etc. into a green box, in order to send it away by train, without address and thereby screen the offence. A-2 pointed out to A-1 that blood was leaking from the box and then he wrapped it in a saree of hers.

At about 4 P.M., on the same day, A-1 was seen going in a rickshaw towards Royapuram Beach to a lonely place and was later seen returning home at 5 P.M. When the servant boy returned at 5-30 P.M., he found A-2 with wet clothes washing something near the tap downstairs. He offered to assist but his offer was declined. A-1 had shouted to him from upstairs not to go up, till called. Then, A-1 hired a rickshaw puller and brought him to the house and loaded the green trunk in the rickshaw at about 6 P.M. and went to Egmore Station. A-1 and the rickshaw puller carried the box into the platform after purchasing two platform tickets. Then A-1 put it into a third class compartment in the Indo-Ceylon Express and pushed it underneath a seat at about 7-30 P.M.

Later in the night A-1 is said to have gone out and shaved off his moustache. The next morning he returned the chopper to the owner and at about 9 A.M., bought a trunk for Rs. 13. At 10 A.M., both A-1 and A-2 packed up the furniture and put in a hand cart and took it to Raman Menon's house. That afternoon, they went in the office car, made some purchases like hold-all, took some money from a bank, had some dealings in a jeweller's shop and then went to the Central Station, left the servant boy in charge of the luggage, returned to the house, locked it up and returned the key to the owner and left for Bombay, where both were arrested. The accused were tried in the 1st Criminal Sessions of 1953, A-1 on the first charge of having committed murder, and A-2 on the second charge of having conspired with and abetted her husband in the commission of the murder and the third charge to the effect that both of them caused the evidence of the said offence to disappear with the intention of screening themselves from legal punishment.

The Jury returned an unanimous verdict that A-1 was guilty under section 304, paragraph (1) I.P.C. and not guilty under section 302 I.P.C. under the first charge and that he was guilty under section 201, I.P.C. under the third charge. He was sentenced to undergo rigorous imprisonment for 7 years under the first charge and to undergo rigorous imprisonment for 1 year under the third charge.

The Jury returned an unanimous verdict that A-2 was guilty under section 304 paragraph (1) I.P.C. read with section 114 I.P.C. in respect of the 2nd charge and that she was guilty under section

201 I.P.C. on the third charge. She was sentenced to undergo rigorous imprisonment for 3 years for the offence on the second charge and one year for the offence in respect of the 3rd charge.

Various steps towards establishing identity—I. FINDINGS PROVING THAT THE TRUNK WAS THAT OF ALAVANDAR:—(a) Finger print impressions were taken and fortunately the military records (service book etc.) provided Alavandar's finger impressions for comparison and it was proved to the satisfaction of the Court (12 points of identity and no point of difference) that the impressions were taken from the same person. It may be mentioned that there was no doubt at all that the upper extremities from which the impressions were taken belonged to the main trunk though they were separated before putting into the steel trunk. In addition to this scientific evidence, the following afforded additional support:—(b) Circumcised penis: Alavandar had circumcision done to him. (c) Green socks and waist thread were identified as those of Alavandar by his wife and corroborated by other prosecution witnesses.

II. FINDINGS PROVING THAT THE HEAD WAS THAT OF ALAVANDAR:—(a) Certain peculiarities in the teeth were of definite help. The presence of overriding canine teeth in the upper jaw (Fig. 1),



Legend for the photographs

Fig. 1. Photograph of the head of Alavandar showing: (a) Over-riding canine tooth in the upper jaw right side. (b) Perfect reciprocal appearance at the site of decapitation. The upper neck vertebrae attached to the skull and the lower vertebrae attached to the trunk recovered from two different places are seen here in good anatomical position.

III. FINDINGS PROVING THAT THE HEAD AND THE TRUNK BELONGED TO THE SAME PERSON:—(a) There were unmistakable reciprocal appearances at the site of the decapitation observed on

was sufficiently peculiar to identify the head as that of Alavandar by his relations and close friends. The non-eruption of the wisdom tooth in the left upper jaw and caries of the first right molar tooth of the lower jaw were not of use in this case due to want of recorded dental data of Alavandar for comparison. (b) The peculiarity of having two small holes in the right ear lobe and only one in the left was testified to by Alavandar's wife (Fig. 2, see page 91).

comparing the lower part of the vertebra attached to the head and the upper part of the vertebral column attached to the trunk. (Fig. 1). In addition to this convincing evidence, the following also supported it. (b) Both the head and the trunk examined independently showed definite male features.

IV. OTHER FINDINGS SUPPORTING THE IDENTIFICATION:—(a) The age estimated after careful examination of the skull and some of the bones of the trunk was consistent with that of Alavandar. It was estimated that the age of the skull was between 40 and 50 years and the radiologist's opinion after examining some bones of the trunk was that the age must have been above 24 years (only fixing the lower limit). In regard to certain observations made by the Hon'ble Judge referring to this opinion of the radiologist, forensic experts are agreed that only the lower limit can be fixed accurately from the examination of long bones after the fusion of the epiphyses with the shafts and that estimation of age from the entire skeleton, above 25 years



Fig. 2. Photograph of the head of Alavandar showing the holes in the right ear lobe.

of age has to be made with a margin of about 10 years. There was no inconsistency in this case since the age of Alavandar was 42 years at the time of his death. (b) The time of death estimated from the separate examination of the head and the trunk was consistent with the actual time of death. (c) The detection of a small quantity of opium from the stomach contents is consistent with the history of Alavandar's taking opium for his asthmatic complaints and probably also for its aphrodisiac properties. (d) The height of Alavandar is given as 5 feet 4½" in his service register. From the actual measurements made the total length works out to 5 feet 5 inches (the trunk 4 feet 9" and head 8¼") which shows a close correspondence between the two measurements.

The findings enumerated above were so overwhelmingly convincing regarding the identity in this case that the defence counsel did not question it during the course of the Sessions trial.

One of the modern techniques for establishing identity consists in comparing the dimensions of the skull of the deceased person with those of the head of the missing person as measured on a life size

enlargement of the photograph. In this case, a photograph of Alavandar was available; but it is regretted that on account of paucity of technical staff specially trained in photography, etc. this method could not be made use of in this case.

Acknowledgement.—I am deeply indebted to the Judgement of the Hon'ble Justice who presided over the High Court Sessions for the lavish reproduction I have made of his charge to the Jury on 13-3-53.

MANAGEMENT OF PNEUMONIA

Specific therapy.—With pneumococcal pneumonia, penicillin is preferred unless the patient is hypersensitive to the drug. Dosage is 300,000 units of procaine penicillin intramuscularly once daily for at least seven to ten days regardless of response. Severely ill patients require higher dosages. With meningitis, intramuscular administration of 1,000,000 units of penicillin in aqueous solution every two hours and 500 mg. of dihydrostreptomycin every twelve hours until improvement occurs is recommended. The tetracyclines and erythromycin are also effective for treatment of pneumococcal pneumonia.

Friedlander's (Klebsella) pneumonia is treated with 750 mg. terramycin orally every six hours and 500 mg. of dihydrostreptomycin intramuscularly every twelve hours.

The preferred treatment for pneumonia caused by *Micrococcus pyogenes* (staphylococcus) seems to be erythromycin orally in doses of 300 to 400 mg. every six hours. However, *in vitro* sensitivity tests should be made before treatment and when progress is unsatisfactory, a tetracycline is the second choice.

Efficacy of antibiotics for primary atypical pneumonia is questionable. However, treatment with one of the tetracyclines is justified because of the difficulty of distinguishing early between primary atypical pneumonia and psittacosis or ornithosis. Also, nonbacterial and bacterial pneumonia often cannot be differentiated early.

Supportive measures.—Sleep of a person with pneumonia should be disturbed only when necessary. Oxygen by means of a tent or BLB mask should be administered for cyanosis or dyspnoea. If abdominal distention occurs despite adequate oxygen, measures to avoid constipation are used.

Cough resulting in excessive fatigue should be partially suppressed with codeine. Complete suppression should be avoided. Oral potassium iodide parenterally if oral intake is inadequate.—(*Med. Clin. N. Am.*, 38: 1954, via *Mod. Med.*, 1-10-54).

VASODEPRESSOR DRUGS IN TOXAEMIA OF PREGNANCY

Toxaemia of pregnancy is a disease peculiar to pregnant women characterised by hypertension, albuminuria and oedema. It appears usually after the 24th week of gestation. Soon after delivery the signs disappear, although permanent vascular and renal damage may persist.

Prevention and treatment of pre-eclampsia—by means of adequate fluid, high protein, low sodium-intake restriction, of excessive weight-gain, become quite universal. Control of eclampsia and convulsions, by magnesium sulphate and sedatives has resulted in a maternal mortality rate above 7% in the U.S. (Dieckmann). With magnesium sulphate, no sedatives and veratrum and/or Apresoline, beginning in 1930, until the present, a period of 24 years, 3 of 216 consecutive eclamptic patients have died, a gross maternal mortality rate of 1.3%.—(*West. Journ. Surg. Obst. and Gynec.*, April '55).

ANTRENYL—ITS USE IN THE TREATMENT OF SPASMODIC CONDITIONS*

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ANTRENYL† is a new synthetic antispasmodic agent which has been recently shown to have a widespread, long-acting, vago-inhibitory spasmolytic action. The purpose of this paper is to report the results obtained with Antrenyl in the treatment of 10 patients with various spasmodic conditions of the gastro-intestinal tract.

The pharmacology of Antrenyl has been worked out in various animal experiments (H. J. Bein, F. Gross, W. Schuler and J. Tripod, 1952). Antrenyl shows pronounced antagonism towards acetylcholine and other substances exhibiting parasympathomimetic activity. In the intestine, the drug not only relieves spasms caused by acetylcholine but also inhibits, spontaneous motility. The influence of Antrenyl on secretory functions is obvious in the inhibition of the cholinergic effect.

Of the 10 patients who were put on this drug 9 responded favourably, while one showed poor response without any relief of symptoms. Of these patients, 4 were suffering from peptic ulcer, confirmed by X-ray, two from vague intestinal colic, one from oesophageal spasm, one from angina of effort with hypertension and two from amoebic colitis. The only untoward reaction seen was flushing of the face (atropine-like effect) in one patient. It has been claimed that the lowering of the blood-pressure occurring after acetylcholine or vagal excitation is prevented by this drug (Bein, Gross, Schuler and Tripod, 1952), but I observed a welcome fall of blood-pressure in one of the hypertensives. The results of this study which were encouraging are summarised in the statement overleaf.

Case reports.—CASE No. 7:—A doctor, aged 35, consulted me for his epigastric pain, which was not related to food and which had persisted for the past 15 years. He admitted that he used to take alcohol now and then but there were no acid eructations. First, thinking that it could be due to alcoholic hepatitis, the patient was put on methionine and choline. But the pain did not abate. So I put him on Antrenyl, and within 4 days his pain disappeared entirely and he is even now free from pain. I believe that this patient was suffering from oesophageal spasm secondary to oesophagitis.

CASE No. 10:—Patient, aged 50, was admitted with a history of severe precordial pain which was bad enough to lead one to make a

*Specially contributed to the ANTISEPTIC.

† Antrenyl was supplied to us by Messrs. Ciba Pharma Limited, Bombay.

diagnosis of coronary thrombosis. His blood-pressure, to start with, was 205/135 mm. His E.C.G. showed a persistent depression of the S.T. segments with evidence of left ventricular hypertrophy. His

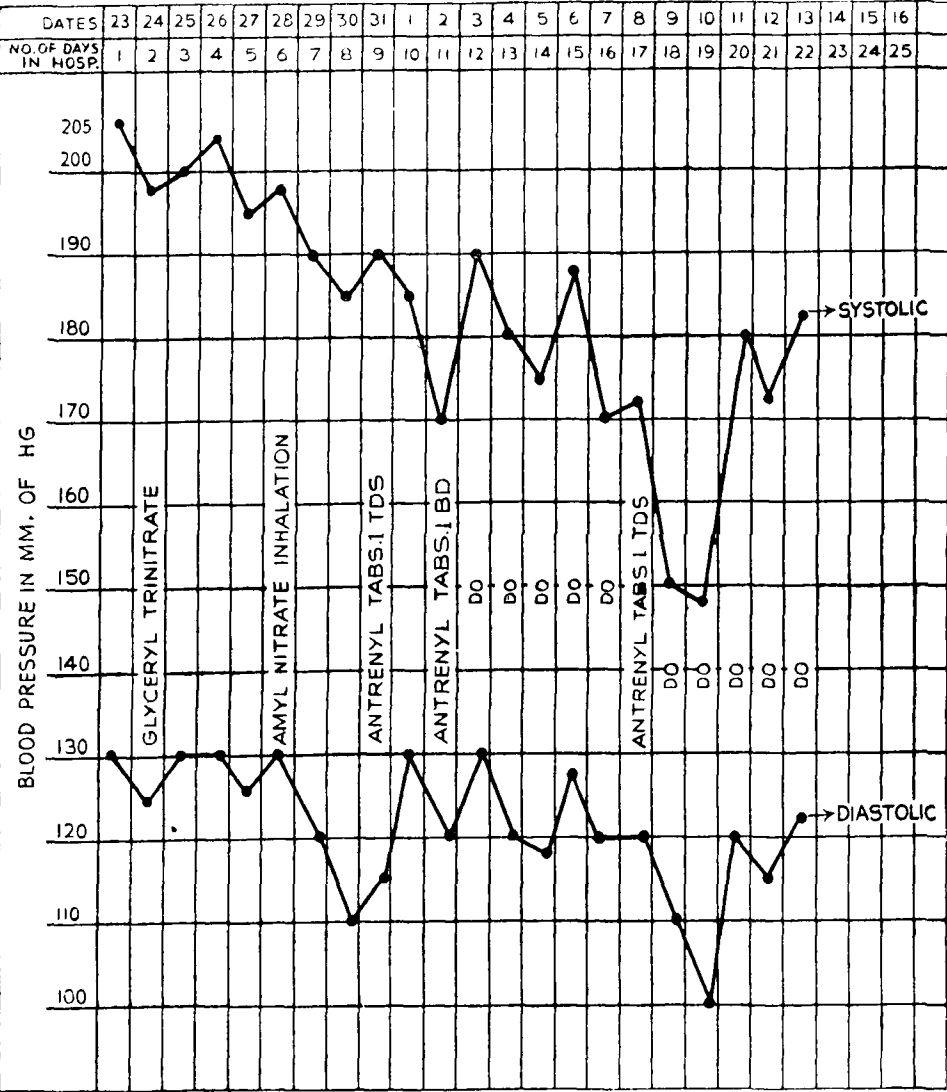
TABLE I

Case	Age & sex	Diagnosis	Clinical result	Dosage	Comment
1	32, male	Peptic ulcer	Improved	Antrenyl 1 tab. t.d.s.	Discharged with relief of symptoms after a week.
2	25, male	Duodenitis	Do.	Antrenyl 1 tab. t.d.s.	The patient, on admission was having incessant vomiting which was effectively controlled by Antrenyl and the patient was discharged free of symptoms 15 days later.
3	28, female	Peptic ulcer with haematemesis	Do.	Antrenyl 1 tab. t.d.s.	The patient was rolling in the bed with severe pain and the haematemesis and pain disappeared with the administration of this drug. Duration of treatment was one week.
4	40, male	Duodenal ulcer	Pain got aggravated	Antrenyl 1 tab. t.d.s.	Since the pain got aggravated the patient refused to continue the drug.
5	25, female	Vague intestinal colic	Improved	Antrenyl 1 tab. t.d.s.	The pain did not respond to carminatives and belladonna. The response to Antrenyl was immediate and complete. Duration of treatment was 3 days.
6	35, female	Severe intestinal colic with constipation	Improved, but the discomfort recurred on stopping the drug	Antrenyl 1 tab. t.d.s.	The pain in this case was so severe that coronary thrombosis was suspected. The pain was relieved with Antrenyl within 3 days but recurred on stopping. Treatment again started on 6th day. Patient is continuing Antrenyl.
7	35, male	Oesophageal spasm	Improved	Antrenyl 1 tab. t.d.s.	This case is reported in detail in this article.
8	48, male	Amoebic colitis with hepatitis	Improved	Antrenyl 1 tab. t.d.s.	Signs and symptoms disappeared when the patient was put on anti-amoebic drugs with Antrenyl. Duration of treatment with Antrenyl 15 days.
9	47, male	Do.	Do.	Do.	Do.
10	50, male	Status anginosus with hypertension	Do.	See chart	This case is also reported in detail in the body of the article.

sedimentation rate was normal. The pain did not respond to Trinitrin tablets, so he was put on amyl-nitrite inhalations which reduced the pain, but later on, even amyl-nitrite did not avail. So the

patient was put on Antrenyl, and surprisingly enough, his blood-pressure recorded a fall and the pain disappeared. After a few days, the patient began to get pain even with Antrenyl, but not of the same severity. From the above findings one may conclude that Antrenyl has a hypotensive effect, at least in some hypertensives, and that it has a coronary vasodilator effect. The blood-pressure chart of the patient is given below :—

Blood-pressure Chart of N., aged 50 years
Month—May. Year 1955.



Conclusions.—From the above discussion it will be seen that Antrenyl has a strong spasmolytic action and is worth a trial in cases

of peptic ulcer and severe colics. The observations regarding its hypotensive and coronary dilator effects are interesting.

I must here record with thanks the assistance given to me by my ward Assistants. I thank the Dean of the Government Stanley Hospital, Madras, for permitting me to publish the case records.

REFERENCES:

1. Arenz, H. (1954)—Munch. Med. Wschr., 96: 296.
2. Barrett, W. E., Rutledge, R., Plummer, A. J. and Yonkman, F. F. (1953)—J. Pharmacol., 108: 305.
3. Bein, H. J., Gross, F., Schuld, W. and Tripod, J. (1952)—Schweiz. Med. Wschr., 82: 1143.
4. Brocher, H. (1954)—Schweiz. Med. Wschr., 84: 303.
5. Holtzern, M. J. (1954)—Praxis, 43: 390.
6. Juchem, A. (1953)—Med. Klin., 48: 1587.
7. Mattman, P. E. and Strubner, L. (1953)—Amer. J. Dig. Dis., 20: 126.
8. Plummer, A. J., Barrett, W. E., Rutledge, R. and Yonkman, F. F. (1953)—J. Pharmacol., 108: 292.
9. Rogers, M. P. and Barrett, W. (1953)—Amer. Surgeon, 19: 896.
10. Rogers, M. P. and Gray, C. L. (1952)—Amer. J. Dig. Dis., 19: 180.
11. Rowen, B. R., Bachrach, W. H., Halsted, J. A. and Schapiro, H. (1953)—Gastroenterology, 24: 86.
12. Schaub, K. (1952)—Praxis (Switz.), 41: 1073.
13. Shay, H., Komarov, S. A., Fels, S. S., Meranze, D., Gruenstein, M. and Siple, H. (1945)—Gastroenterology, 5: 43.

RECURRENT PEPTIC ULCER

Persistent or recurrent ulceration following primary or secondary operations for the ulcer diathesis are due, in most instances, to the inadequacy of the extent of gastric resection or incompleteness of vagotomy, according to a recent article by Everson and Allen. These authors have studied a group of 90 patients with gastrojejunal ulceration among whom 11 developed persistent or recurrent ulceration following secondary operations. Thirty-eight operations were performed upon these 11 patients.

Although vagotomy was carried out nine times, only twice was it proven complete by the postoperative insulin test. Among the patients treated by gastric resection, only about half had 75 per cent or more of the stomach resected. In the great majority of patients who had either 75 per cent of the stomach resected or an effective vagotomy, permanent cure was obtained.

The authors recommended that some definite method be used to determine how much of the stomach is removed. Comparing the length of the lesser and greater curvatures of the original and residual stomach, use of a polar planimeter method to determine the amount of stomach remaining or estimating the extent of resection by weighing the resected specimen, all are useful procedures.

If vagotomy is employed, better results will be obtained by the transthoracic approach. If the abdominal approach is used, the vagus nerve should be divided as high as possible after the lower portion of the oesophagus has been mobilized from the diaphragm. In a large majority of cases, if 75 per cent of the stomach is resected, control of the diathesis will be obtained.

Those who develop recurrent or persistent ulcer symptoms will usually respond to complete vagotomy. Should ulceration occur following gastric resection and complete vagotomy, nearly total gastric resection or perhaps extensive medical therapy may be effective.—(Am. Surgeon, 21: 130, 1955, via G.P., xii: 2., Aug. 1955).

ALCOHOLISM -ITS DYNAMICS AND TREATMENT*

With Special Reference to Antabuse†

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ALCOHOLISM has always been and continues to be a medical as well as a social problem all over the world. Chronic alcoholics lose their reputation, self-respect and often become a public nuisance. Alcoholism in so far as it is a social problem has been understood by social workers but it would be interesting to know and understand how the psychiatrist regards him, and analyses his mind, the uncontrollable urge in him to drink and what types of mental state can induce it. The psychiatrist has the responsibility of guiding and co-operating with the social workers in curing these 'difficult' patients, who are hopeless addicts to drink which spells ruin mentally, physically and economically.

Psychological knowledge and experience show that the use of alcohol, which has been so universal, must exist because it satisfies some deep-seated psychological need. This need, it often appears, is for the relief of tensions induced by anxiety, frustrations and mental conflicts. Anxiety is a constant and universal experience of mankind and alcohol has an illusionary effect in alleviating it so that its use has become very wide. If the individual is emotionally immature, and unstable and if his problems causing tensions are extreme or if his tolerance for anxiety and frustration is low, he may either develop a neurotic reaction or resort to excessive drinking to achieve a 'blotting-out' of reality through intoxication, so as to secure relief and he tends to become a *habitué*. Most frequently, therefore, the use of alcohol as a means of narcotizing anxiety becomes habitual. The strength of the habit depends upon the degree of anxiety which prompts it; and on other environmental factors. Yet, as it usually happens, instead of achieving the goal for which it is taken, alcohol lowers the ability for repression, retards and destroys the power of inhibition. As a result, the alcoholic addict develops aggressive tendencies and resentments for excessive indulgence; and thus, alcohol creates a vicious circle which aids in fixing the habit.

Why, with so many easily available neurotic, psychosomatic and psychotic methods of defence or escape the individual turns to alcohol for an escape, has not been determined. A person who lacks automatic protection, by means of development of character-traits or other internal operation against anxiety, turns to alcoholism.

*A paper read at the 8th Gujarat-Saurashtra Provincial Medical Conference, 1955, held at Patan (N.G.).

†Antabuse is now available in India with Dumex Limited, Wavell House, Ballard Estate, Bombay-1.

Social and cultural factors influence the extent of alcoholism. If an individual with low anxiety tolerance lives in a social set which demands heavy social penalties, he is liable to get intoxicated in order to have recourse to other forms of neurotic escapes. In general, anxiety, frustration, rigid restrictions in psychosexual development, prolonged strain from environmental circumstances are mainsprings of unconscious motivation for alcoholism.

Essentially alcoholism is a mental syndrome without any personality structure of specific dynamic constellation. While alcoholism is symptomatic of psychopathology, it is a symptom which has become a disease. It is a functional mental syndrome and the underlying personality is the result of developmental fixation. Yet in general alcoholics may be divided into three groups from the underlying personality and dynamic characteristic.

(1) *The psychopathic personalities*:—The addictive drinker may be psychologically traumatised very early in life, his personality remaining fixated at an early stage of development.

(2) *Neurotic*:—Lacking in responsibility and ego-strength, they are closely allied to the character-neurotic.

(3) *The schizophrenics*:—The periodic drinker seems to be seeking for relief from an overly strict super-ego.

The outstanding symptom of this syndrome is excessive compulsive drinking. It is not due to a physical need of the body but to the psychological needs as determined by the underlying personality structure and emotional conflicts.

There are four functions of the symptom which form the dynamics:

(1) The alcoholic symptom represents both self-punishment and satisfaction of instinctual drives. The sober alcoholic suffers on the one hand from a strict, harsh and very punitive super-ego and on the other from a severe inhibition of instinctual drives. He is not able to express either love or hostility. The counter-catharsis required to check the instinctual drives impoverishes and weakens the individual's ego. It is for this reason that the alcoholic is tense, and withdrawn during the period of sobriety.

The social disgrace brought on by the excessive drinking, the physical suffering during the hang-overs and the financial losses are the price the alcoholic pays in order to give free vent to his sexual desire and fantasies and especially to his hostile impulses.

(2) The second is to provide an aggressive and hostile weapon against society in general and against significant people in particular.

(3) The third function is to preserve or gain self-esteem. The alcoholic's self-esteem is extremely low and fragile. He suffers from feelings of unworthiness, inadequacy and unacceptability. It can be said that the alcoholic spends a great part, if not the major part of

his energy, in avoiding loss of self-esteem, in preserving it or gaining it. Any time his self-esteem is threatened, he is seized with severe anxiety and drinking is a defence against anxiety.

(4) The fourth function is to satisfy the narcissistic dependency-needs of the alcoholic. This personality, is pathologically passive and dependent, characterized by unreasonable demands for attention, recognition and affection. Frustration of these demands and pressure exercised by reality to meet the social, vocational and other responsibilities generate, rage and destructive impulses, with severe guilt and remorse, which have to be drowned by alcohol.

All the above psychodynamic elements have a common denominator in the personality structure, namely:—Pathological competitiveness which pervades most of his inter-personal relationships. This competitiveness has its roots in the unresolved oedipus-complex: in the childhood the competition with "cold, aloof, exacting father." The attitude of surrender to the father with a tendency to defy and to rebel against him, leads him to display strong ambivalent feelings towards people in general. He is both competitive and submissive towards males. The conflict pervades the alcoholic's sado-masochistic personality and is the source of his anxiety, low esteem, passivity, dependency, hostility, helplessness and hopelessness. Samuel Johnson was correct when he said, "In the bottle discontent seeks for comfort, cowardice for courage and bashfulness for confidence."

Having considered the psychological causes of alcoholism, we shall discuss the problem of helping the alcoholics by psychotherapy. Since alcoholism has no single cause, and since it may be symptomatic of many underlying pathological conditions—psychological, physiological or social and quite often all the three combined, therapy can be expected to succeed only if each case is studied individually in its varied aspects; yet a group therapy with alcoholics is possible along the lines of *alcoholic anonymous*.

What is *alcoholic anonymous*? It is a fellowship of men and women who share their experience, strength and hope with each other that they may solve their common problem and help others to recover from alcoholism. The only requirement for membership is an honest desire to stop drinking. A. A. has no dues or fees. It is not allied with any sect, denomination, politics, organization or institution; does not wish to engage in any controversy, neither does it endorse or oppose any cause. Its primary purpose is to stay sober and help all alcoholics to achieve sobriety.

Group-therapy with alcoholics. *Organization of group*:—Every patient is to be interviewed in regard to his drinking problem, and a complete physical examination including laboratory tests and electrocardiogram, and psychological work-up is made.

The group consists of 5 to 8 members, all alcoholics. Status is also ignored. However, if the conditions of organizing the groups permit, it is advisable to avoid extremes, i.e. not to have extreme difference in age, education and socio-economic status.

TECHNIQUE:—The aim is not to concentrate on the alcoholic symptom, but to analyse the total personality of each member, with his unconscious motivation, attitude and reaction. To achieve this the member's free association to each other, frank confessions are encouraged, their fantasies and dreams are analysed and resistances, transference and counter-transference phenomena are interpreted.

The therapist plays the role of participant-observer with relatively more active participation in the initial phase of the therapy. The therapist spends most of his activity in educating the members, a few basic concepts of theory and technique of group-therapy—not in the form of abstract lecture, but in the course of handling the verbal communications of the patients.

In the first session, the therapist introduces all members and gives brief explanations regarding the meaning of excessive drinking in terms of psychotherapy. He points out that although all members are troubled by exaggerated compulsive drinking, their real problems lie in the personality structure with its unconscious conflicts from which the alcoholic symptoms spring. The purpose of the therapy is to explore the personality-structure of each member. To accomplish this, each member has to play a double role: (a) as a patient; and (b) as an adjunct-therapist.

(a) As a patient he is encouraged to talk spontaneously and without reservation about all his problems and especially about those problems he was usually ashamed to discuss with other people. He is also encouraged to associate freely to the verbal communications of other members and to bring his dreams and fantasies to the group.

(b) In the second role of adjunct-therapist, he is encouraged to recognize and interpret in the form of speculation the unconscious meaning of the other members' verbal productions and reactions to the group situation.

The alcoholic has a tendency to magical expectations and for this reason they are repeatedly told from the beginning and during the course of the therapy that increased understanding of one's self does not automatically bring about a change in the personality, but that it only creates favourable conditions for a change. To achieve personality changes, the members should be aware of the need to make a conscious effort to apply the insight they have gained.

After the first session, the therapist tries to cover up the mutual distrust by discussions about drinking sprees along the lines of A. A. meetings. After two or three sessions, these discussions take a more meaningful character and free association begins to operate, leading to transference relationships among the group members. This gives

opportunity to the therapist to explain transference phenomena. The group is encouraged to uncover and interpret all manifestations of resistance to therapy, especially these manifestations due to transference.

Most of the alcoholic's interpersonal relationships have a negative quality. Alcoholics usually act out the transference relationship with a feeling that their hostile reactions are justified by other people's hostile attitudes. During the therapy the members have an opportunity to recognize the irrational, inappropriate, unpleasant and repetitive nature of their transference-relationship. This recognition helps the patient immensely. The alcoholic does not know how to handle his intensely hostile impulses. Excessive drinking and unsocial behaviour is an acting-out of hostility. During the therapy the alcoholic learns to recognize that most of his inner tensions while sober, are due to suppressed hostility. He learns to verbalise his hostility without feeling guilty. Verbalization is an adequate substitute for psychomotor discharge of hostile impulses.

In addition to psychotherapy various drugs have been tried to treat alcoholics. Amongst these are Ipecac, Emetics, Apomorphine¹ and Cyanamide.² Some measure of success has been achieved in clinical trials given to the administration of the fungus *Coprinus atramentarius*.³ Treatments with the above mentioned drugs have given varied—hopeful as well as infructuous—results, the most successful being the treatment with apomorphine which is based on the principle of "aversion" treatment. Despite all this, psychotherapy has remained the treatment of choice. However, the conclusive experimental and clinical trials by Hald and Jacobsen,⁴ relating to the administration of tetraethylthiuram disulphide, prior to the consumption of alcohol, sensitizes the human body to even moderate doses of alcohol, have recently made it possible to use the drug as an effective supportive treatment in psychotherapy.

Antabuse therapy.—In 1948, Hald and Jacobsen⁴ reported the results of experiments with Antabuse, chemically known as tetraethylthiuram disulphide or TETD, in which they found that persons who had ingested this substance and then consumed alcohol showed the sequence of symptoms known as "the acetaldehyde syndrome." This syndrome consists of symptoms mainly involving the circulatory systems.⁵ They include a feeling of warmth in the face followed by intense flushing localised chiefly in the face, but spreading in some cases to the neck and upper part of the chest and arms and even to the abdomen. The skin temperature increases, the sclera become characteristically injected and slight oedema under the lower eyelids may be noted, making the person appear "bull-eyed." During this period, there is no marked change in the blood pressure, but there is an increase in the pulse-rate. After, say half an hour or so, both systolic and diastolic pressures fall. The intense flushing is replaced by marked pallor and mild cyanosis. The patient complains of

dyspnea, sensations of constriction in the throat, tightness and discomfort in the chest and nausea. This is the peak reaction. Profuse vomiting and often severe retching usually terminate this syndrome and the patient returns to a normal state within an hour or two.

It has been observed that the minimum time necessary for Antabuse to go into action is approximately six hours⁴, because it is absorbed very slowly. Antabuse is eliminated from the human organism also very slowly, so a single dose of it has prolonged effect. According to Hald, Jacobson⁴ and Kauders and his colleagues⁵, the action of 0.5 g. of Antabuse lasts for 3 to 4 days, 1 g. for 5 to 6 days and 1.5 g. for 7 to 8 days, if the increase in skin temperature, after the of 40 cc. of gin, is taken as an indicator.

Hald, Jacobson and Larsen⁴ believe that the toxic effects of the acetaldehyde concentration in the blood are independent of the route by which alcohol is administered.

Mode of action. Various workers⁷ in the field have shown that the acetaldehyde content of the blood is very much higher in a person who has consumed alcohol after the administration of Antabuse than in a person who has consumed the same amount of alcohol without previously taking this drug. Asmussen⁸ *et al* on the basis of their animal experiments attribute the above symptoms to an increase in the acetaldehyde concentration of the blood of the alcoholer; they found that considerable amounts of acetaldehyde were formed in the liver lobes of the alcohol-administered rabbits treated with Antabuse and that it was all due to the delayed acetaldehyde metabolism. Kauders and his colleagues⁵ have shown that Antabuse does not raise the alcohol content of the blood but is responsible for increasing the acetaldehyde concentration in the blood of a person who has taken alcohol. These results were confirmed by Kyeldgaard⁹ who showed that Antabuse possesses an inhibitory effect on liver acetaldehyde oxidase in a concentration of 0.1 mcg. per cc. Giving graphica illustration to exhibit the effects of 40 cc. of gin on the pulse-rate, ventilation, temperature, and blood concentration of alcohol and acetaldehyde in persons with and without Antabuse treatment, Hald and Jacobson⁴ have shown that with the increase in the acetaldehyde content of the blood in the alcoholic which is due to Antabuse administration, the characteristic symptoms become pronounced.

From the above discussion it will be clear that Antabuse treatment is not the solution to the problem of alcoholism; alcoholism is essentially and basically a psychiatric problem. It only helps to impress on the patient the realization that he is physiologically intolerant to alcohol, thus taking the problem of abstinence entirely out of the realm of temptation and will-power. Sensitivity to alcohol lasts for 4 to 5 days after the drug is discontinued. So during the cooling-off period, the patient is influenced against drinking and is induced to continue the treatment with the drug.

Dosage scheme.—The patient must have abstained from alcohol for at least 7 days before the treatment is started. The drug is given in the following schedule at bed-time. First day 2 g., 2nd day 1.5 g., 3rd day 1 g. and 4th day 0.5 g. After that the patients are given a first drinking trial. Half an ounce of pure whiskey is given, to develop their primary intolerance. It is an educational experience, when they feel the disagreeable symptoms of the acetaldehyde syndrome. Following recovery from the first drinking trial, the patients are maintained on a dosage of 0.5 g. of Antabuse daily for 7 days. On the 8th day a second and final drinking trial is given with a smaller dose of whiskey. Each patient is given an one week's supply of Antabuse on a maintenance dose of 0.5 g. daily. He is instructed to report to the hospital at weekly intervals for a follow-up interview.

Contraindications.—Antabuse is contraindicated in patients with myocardial failure, coronary disease, epilepsy, cirrhosis of the liver, diabetes mellitus, thyroid dysfunction, chronic or acute nephritis, pregnancy or asthma.

A complete laboratory investigation of the patient should be made before he is given Antabuse therapy. Any condition which results in general dysfunction or which has left the patient in a generally debilitated state, should be considered carefully.

Side-reactions. The drug, Antabuse, as such, when administered in therapeutic doses, is far from toxic. Animal experiments conducted by Hanzlet and Irvine¹⁰, have revealed that the lethal dose for animals is 3 g. or more per kg. of body weight. No subjective or objective symptoms, apart from those following ingestion of alcohol, have been met with in the clinical trials⁵ in which Antabuse was administered in single doses up to 6 g. and daily doses of 0.25 g. to 0.6 g. for several months.

Clinical reports¹¹ are available wherein claims have been made that Antabuse therapy has led, in rare instances, to mild side-reactions such as nausea, mild gastro-intestinal disturbance, headache, dizziness, sleepiness, reduction in libido, fatigue, skin rashes, and with very large doses a psychotic phenomenon. No deaths have been reported¹² which can, with certainty, be attributed to the toxic effect of Antabuse *per se*.

Conclusion.—Alcoholism is basically a psychiatric problem, but the psychiatrist alone cannot handle the problem on his own. He requires the co-operation of social workers, of the patient's family and of the patient himself. The most important factor is an honest and sincere desire on the part of the alcoholic to rid himself of the vice, which has overpowered him. Psychotherapy is essentially the main line of treatment, which very often necessitates a supportive treatment to treat alcoholism for obvious reasons; one could solely depend upon Antabuse for adjunct-therapy. The result

of such combined treatment is a somewhat slow process but almost a sure one. Antabuse, when administered in adequate doses, is a safe drug which helps even the heavy chronic drinker to abstain from alcohol. It is not habit-forming and the treatment is free from any serious side-reactions; but to get the most satisfactory results out of the treatment a close liaison between the patient, his family, his friends and his physician is essential. Further trials are in progress the results of which will be published in due course.

REFERENCES:

- Voegtlin, W. L., Lemer, F., Broz, W. R. and O'Hollaren, P., (1942)—*Am. J. Med. Sc.*, 203: 525.
- (i) Gartner, H., (1939)—*Munch. Med. Wschr.*, 86: 1745.
(ii) Thiery, N., (1942)—*Arch. Maladies Profess.*, 4: 132.
(iii) Koolsch, F., (1944)—*Munch. Med. Wschr.*, 61: 1869.
- Fischer, J., (1945)—*Svenska Lakartidn.*, 42: 2485.
- Hald, J. and Jacobsen, E., (1948)—*Lancet*, ii: 1001.
- Kanders, O., Schiller, O., and Solms, W., (1949)—*Wiener Klinische Wochenschrift*, 61: 1.
- Hald, J., Jacobsen, E. and Larsen, V., (1948)—*Acta Pharmacol.*, 4: 305.
- (i) Hald, J. and Jacobsen, E., (1948)—*Acta Pharmacol. et Toxicol.*, 4: 285.
(ii) Hald, J., Jacobsen, E., and Larsen, V., (1949)—*Acta Pharmacol.*, 5: 179.
- (iii) Jacobsen, E., (1950)—*Ann. Med. Expt. et Biol. Fenn.*, 28: 89. 1950.
(iv) (i).
- Asmussen, E., Hald, J., Jacobsen, E., and Jorgensen, G., (1948)—*Acta Pharmacol.*, 4: 297.
- Kjeldgaard, N. O., (1949)—*Acta Pharmacol. et Toxicol.*, 5: 397.
- Henzlet, P. S. and Irvine, A., (1941)—*J. Pharmacol.*, 17: 349.
- (i) Gelbman, E. and Epstein, N. B., (1949)—*Canad. Med. Assoc. J.*, 60: 549.
(ii) Solms, W., (1950)—*Medizinische Wochenschrift*, 100: 589.
(iii) Martensen-Larsen, O., (1951)—*Quart. J. of Studies on Alcohol*, 12: 206.
(iv) Gottesfeld, B. H., Lasser, L. M., Conway, E. J., and Mann, N. M. (1951)—12: 181.
(v) Krause, G., (1952)—Report at the Conf. held at Brunswick on 8th Jan.
- Jacobsen, E., (1952)—*Quart. J. of Studies on Alcohol*, 13: 16.

SUPPORTIVE LITERATURE

Henry Greenbaum, (1954)—*Int. J. Gr. Psychotherap.*, 4: No. 1, The Psycho-analysis of total Personality, by Alexander, F.; Knight, R. P., (1949)—*J. Nerv. and Ment. Dis.* 86: Modern Clinical Psychiatry by Noyes, Chapter XII; The Conceptions of Modern Psychiatry by Stack, S. H.; Alexander, W., *Am. J. Psychotherap.*, October 1949, January 1950; Brown, C., (1951)—*U.S. Armed Forces Medical Journal*, 2: 2, February; Specialised Technique in Psychotherapy by Fox, R. Basic Books, New York.

SYME'S AMPUTATION

The author discusses the controversy that has existed as to the merits of the Syme amputation since its introduction in 1843. The paper is a statistical report of results.

Of over 25,000 amputations, Syme amputation accounted for 534, or 2 per cent. Of these, 302 patients had undergone 305 amputations that were sufficiently old for follow-up study; that is, they were performed prior to the period from 1935 to 1939.

The indications for amputation were routine, largely war and civilian injuries. There were 28 immediate failures, largely due to infection. This left 277 amputations for study, all fifteen or more years old.

Of the 277 amputations 45 became unsatisfactory, and reamputation was necessary. Vascular insufficiency was the main cause and came on with remarkable regularity after some twenty years. After elimination of the immediate fractures there was a 16.4 per cent reamputation rate. Sixty-six per cent had satisfactory Syme stumps. It was not considered a satisfactory procedure for the female patient.—(*Lancet*, 2: 1296, 1955; via *J. of Int. College of Surgeons*).

INFLUENCE OF BODY WEIGHT AND HEIGHT ON DISEASES, ACCIDENTS AND MORTALITY (PART II)

(Continued from page 34 of Jan. '56 issue)

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THE influence of body-weight on mortality based on the records of the Union Central Life Insurance Company from 1887 to 1921 both inclusive, has been studied analytically by the Metropolitan Life Insurance Company of New York; and their findings which are embodied in the tabular statements given below would serve as a reliable guide to medical practitioners and life assessors in life assurance work.

Influence of body weight on mortality, subsequent mortality among men, according to build classes

Expressed as percentages of death-rate of normal weight men

TABLE 5		TABLE 8	
All classes of deaths		Lobar pneumonia	Per cent actual of expected death
Body-build group	Per cent actual of expected death	Underweight	... 111 %
Underweight (%)		Normal	... 100 "
15-34	108 %	Overweight	... 94 "
5-14	99 "		
Normal weight	100 "	TABLE 9	
Overweight (%)		Pulmonary tuberculosis	Per cent actual of expected death
5-14	122 "	Underweight	... 202 %
15-24	144 "	Normal	... 100 "
25 and over	174 "	Overweight	... 46 "
TABLE 6		TABLE 10	
Cardiovascular renal diseases	Per cent actual of expected death	Cancer	Per cent actual of expected death
Underweight	... 77 %	Underweight	... 102 %
Normal	... 100 "	Normal	... 100 "
Overweight	... 162 "	Overweight	... 111 "
TABLE 7		TABLE 11	
Diabetes	Per cent actual of expected death	Accidents	Per cent actual of expected death
Underweight	... 64 %	Underweight	... 92 %
Normal	... 100 "	Normal	... 100 "
Overweight	... 257 "	Overweight	... 112 "

NOTE: From L. I. Dublin and H. H. Marks, *Influence of Weight on certain causes of death: Human Biology*, May 1930, p. 159.

Table 12 gives the relation of male mortality to body build.

TABLE 12

Mortality of men according to body-build : experience of 32 American Life Insurance Companies, standard and sub-standard cases combined

Period of investigation, 1909 to 1928 (inclusive) by ages at issue of Insurance
death-rate of all standard risks equal 100%

Body-build group	Age group	Actual %age of expected deaths	Body-build group	Age group	Actual %age of expected deaths
Underweight (%)			Overweight (%)		
15/or more	20-29 yrs.	115 %	5 to 14 %	20-29 yrs.	99 %
	30-39 "	103 "		30-39 "	90 "
	40-49 "	85 "		40-49 "	97 "
	50-59 "	73 "		50-59 "	91 "
5 to 14 %	20-29 "	101 "	15 to 24 %	20-29 "	107 "
	30-39 "	95 "		30-39 "	120 "
	40-49 "	77 "		40-49 "	117 "
	50-59 "	82 "		50-59 "	118 "
Average weight	20-29 "	93 "	25 to 34 %	20-29 "	134 "
	30-39 "	84 "		30-39 "	137 "
	40-49 "	86 "		40-49 "	141 "
	50-59 "	93 "		50-59 "	122 "
			35 % and over	20-29 "	163 "
				30-39 "	137 "
				40-49 "	141 "
				50-59 "	143 "

[N.B.—These data relate to men whose heights ranged from 5ft. 3" to 6ft. 2"].

It is well-known that in India and Pakistan, underweights in both sexes run greater risks, from pulmonary tuberculosis and to some extent, from pneumonia, but the extra-mortality from these diseases is outweighed by their low mortality from degenerative and metabolic diseases.

In considering the influence of height and weight upon life assurance mortality, Rabagliati's paper read before the Assurance Medical Society in 1915 furnishes interesting information, based on figures gathered by the Actuarial Society of America from 8,12,221 policies, which showed that underweight has graver consequences in early than in late life, when it may be rather an advantage than otherwise. Those insuring at ages 20 to 24, who were 25 to 45 lb. underweight showed an actual mortality of 134 per cent and among those insuring at ages 25 to 29 years, the actual mortality was 116 per cent. In later life, on the other hand, among those with the same underweight, entering at ages 50 to 55, the actual mortality was only 91 per cent of the expected, and of those at ages 57 to 62 it was only 81 per cent. Overweight had quite a different influence is however, less marked at the earlier than in the later ages. With regard to height, Rabagliati found that at younger ages tall men proved to be less desirable risks than short men, whereas at older ages short and medium height men were slightly worse risks.

The majority of Indians are between 5ft. 3" and 5ft. 10" in height. The Europeans measure 5ft. 6" to 5ft. 11" and Americans between 5ft. 7" and 6ft. 4". Indians are therefore by and large, shorter and this important fact must be taken into account while applying American and European tables and statistics to Indian lives. In my experience increased heights over 5ft. 10" in Indians and Pakistanis are unfavourable, more particularly when the proposer is below 25 years of age and underweight with poor respiratory capacity and hypotension. These people are very susceptible to respiratory diseases. There is considerable strain on the hearts of abnormally tall men. Houseman considers that young Europeans who are exceptionally tall are not good risks, as they frequently do not acclimatize well and have often to be sent home, as physically unfit to live in the tropics.

Being interested in the longevity of tall man or men who were well above the average height, the Metropolitan Life Insurance Company of New York, studied more than 20,000 tall men 6ft. 2" in height or more, who were insured in the ordinary department of the Company. The tallest man was 7ft. 1". As a group these men showed a practically normal mortality. The death rate was somewhat in excess of the normal for younger men, but at ages past 40, it was as good as, if not slightly better than that for shorter men. The group of tall men was also analysed in separate height classes from 6ft. 2" to 6ft. 4" inch by inch and those who were 6ft. 5" and over combined. This combination was necessary because the materials were too scanty for further sub-division at the tallest heights. It was found that tall men 6ft. 2" in height, who constituted the bulk in this study showed normal mortality for their age. This was likewise true for those 6ft. 3" in height. A somewhat higher, but not excessive, mortality was found among those who were 6ft. 4" and over. Further investigations revealed in the grouping according to height, that these men followed pretty much the normal pattern, i.e., the highest death rate,—age considered—was found among the young underweights generally, and more particularly in the older underweights.

The causes of death in these tall men likewise followed the usual pattern. The death-rate from tuberculosis, was found to be low. Influenza and pneumonia, on the other hand showed an above-average mortality among the tall underweights, but not seriously so. The mortality from degenerative diseases was high only among the overweights, a condition common in overweight men of lesser heights. An interesting feature of this investigation was that these tall men showed relatively less variability in weight than men of lesser heights. Moreover, while the average weight usually tended to increase with height, it was found that in men taller than 6ft. 4" the average weight increased very little with height. Likewise while average weights usually increase steadily with age up to 50 years, little, if any increase in weight was found after 35, among these very

tall men, especially among the tallest. The natural conclusion from the investigation was that practically all these exceptionally tall men were physically normal persons. They merely represent the upper limit of height distribution. The causes of their extreme height was probably only in a few instances, pathologic, and that too only in the very tallest.

During the past ten years a large number of women are taking to life assurance protection in India, and the volume of business relating to female lives has increased at a very fast rate. One should therefore, know more about overweight women as well. In 1938, the Metropolitan Life Insurance Company of New York, published the mortality experience based on 1,21,248 policies of women issued at its substandard branches during the period 1922 to 1934 and carried to the policy anniversary in 1936. The mortality among the women insured as substandard risks was distinctly higher than that of the standard risks for the experience as a whole and in practically every division, by height, weight and age groups.

As in the standard experience, significant and interesting variations were found in the cause of mortality in the women of various weight classes, though the generally high level of mortality among these substandard risks tended to obscure some results. Respiratory diseases, and tuberculosis caused the highest mortality among the underweights. Diseases of the cardiovascular and renal systems were most frequent among overweights, also diabetes, biliary tract disease and a few others. In several cases, no definite relation between build and mortality was found. The mortality ratios from tuberculosis were highest among the underweights and average weights, but distinctly low among the overweights, specially among the obese. This is also the experience of Indian Life Offices—in their limited experience. This tendency was apparent at every age. The mortality from tuberculosis was high, as compared with the standard risks, and the ratios advanced sharply with age.

Influenza and pneumonia together caused a distinctly high mortality among those who were 15 per cent or more underweight. The general level of mortality from these causes was high among the standard risks. Women 15 per cent or more underweight had a high mortality in both the age-groups.....under and over 40, but this was true also of some overweights. In the case of lobar pneumonia the variations were similar to those for influenza and pneumonia as a whole. For influenza separately, the most favourable mortality was among women distinctly overweight, but in the other weight-groups the ratios varied appreciably and the differences were not significant. For broncho-pneumonia the mortality was distinctly high among women who were 15 per cent or more underweight and among the obese.

Chronic cardiovascular and renal conditions which were by far the most important numerically, showed a distinct trend in mortality according to weight. With but unimportant exceptions, there is a fairly steady progression from low ratios at the lighter weights to maximum ratios at the higher weights. This tendency was somewhat more significant among those under 50 at issue than in risks over that age. The general level of mortality from these causes was high in this investigation. Acute endocarditis and myocarditis showed no distinct trend among overweights, but their mortality was appreciably higher than that for the underweights. The mortality from this cause was on a much higher level among the substandard women than among the standard group. Cancer, on the whole, showed no definite variation in mortality, according to weight. Cancer of the liver and gallbladder alone showed a distinctly high mortality among overweights, as compared with average and underweight women considered as a group. The mortality from cancer among substandard women was on the same level as in the standard experience.

Benign tumours of the uterus presented a distinct tendency to increase in frequency with increase in weight. Obese women had a mortality twice that for the underweight and average-weight women taken together. For diabetes there was the usual heavy mortality among the extreme overweights and a very low mortality among women of average weight or less. Because of the relatively small number of deaths in some of the groups, the trend among the overweight was not so clear-cut, as might be expected, but the highest rates were recorded for the obese. The general level of mortality from diabetes was high among the substandard women, as compared with the standard, specially for those moderately overweight.

Diseases of the gall-bladder and biliary passages, particularly gallstones, showed a distinct tendency to increase with weight. For biliary tract diseases the tendency was somewhat more marked at ages under 40 at issue than at older ages. Cirrhosis of the liver also caused a high mortality among overweights, as compared with underweights and average-weight women. Appendicitis likewise presented a distinct tendency towards a higher mortality among overweight women than among those of lighter build. The level of mortality from these conditions is generally much higher among women insured in the substandard branch than in the standard group. Puerperal diseases exhibited a rather irregular trend in the mortality rates according to weight, but on the whole, the mortality was more favourable for underweights than for average weight or overweight women and the overweight women fared worse than those of average weight. The trend was more marked among those between 30 and 39 years at issue. Data for the individual conditions in the puerperal group throw no clear light on the reason for these differences.

Pelvic diseases in women showed a distinct tendency to increase with increasing weight. The underweight and average-weight women as a group had a mortality less than that of the average-weight women, and the mortality among the obese was appreciably higher than among those moderately overweight. The mortality from toxic goitre showed no distinct relation to weight. The general level of mortality was distinctly high, as compared with the standard experience. For accidental causes the curve of mortality according to weight was very irregular. The most notable feature was the high level of mortality for women insured as substandard risks, as compared with the standard. The mortality from suicide also showed no relation to weight. It is worthy of note that tall women, except those under 30, had a lower mortality than those of medium or short height. Their superiority to the other height group did not extend to the obese, who, in all height groups, had approximately the same mortality, nor to tall young underweights whose mortality was less than that for other young risks.

From the twelve tabular statements reproduced in this paper, it will be seen that both over and underweights are dangerous from the life-assurance point of view. What is the maximum allowance that may be made for over- and under-weight is indeed a perennial problem to those who have to assess lives medically. Some regard a deviation of from 15 to 20 per cent as maximum. Mr. L. P. Orr, considers that 16.66 per cent or one-sixth of the normal weight might serve as a general but not autocratic guide. The American and English standard practice is to ignore overweight less than 30 lb. above the average weight for the age and height, but if it is more, an extra weightage of one year for each 10 lb. in excess, is imposed. Mr. A. A. Welch, a well-known American actuary suggests an underwriting rule for overweight, somewhat on the following basis:—Divide the pounds overweight by 7 and subtract 1. The result will be the number of years by which the age should be advanced, making no advance in age, unless the result is 3 or more.

For well-over twenty years I am making a maximum allowance of 30 lb. for over-weight and 20 lb. for under-weight, provided the family and personal histories are above reproach and the endowment is to mature at an age not exceeding 55 years. These appear to yield satisfactory results, as the mortality ratios have been less than 45 per cent of these expected under Oriental Ultimate Expectation Table. However, after a careful study of the latest American experience detailed in this paper, I have revised my procedure, and make a maximum allowance of $12\frac{1}{2}$ per cent for under-weight and 14 per cent for over-weight. If the over- and under-weights are more marked, I impose an extra of one year for each 10 lb. in excess or defect as the case may be. These allowances must be considered equitable and will reduce the mortality strain from over- or under-weight to the minimum.

It is a matter for regret that in India sufficient interest has not been bestowed on the over-weight problem and no attempt has so far been directed towards weight reduction. In America and England satisfactory results have been achieved in this direction through Government and private enterprise and campaigning.

Life offices have also started a vigorous campaign against over-weight through regular effective publicity at an enormous cost. They have also readily responded to the weight reduction campaign by removing the extra or lien imposed upon overweight policy holders, with the evidence of weight reduction and the mortality from diseases peculiar to obesity is also improving appreciably. On a rough calculation it appears that 5 per cent of the overweight individuals are so, because of physical, organic or functional deviations requiring medical treatment, but in the remaining 95 per cent of over-weight persons, over-eating is the most common cause of obesity.

Before starting weight-reduction, the patient should consult a specialist, who alone has the knowledge and skill to assess both the physical and emotional status of the individual, and his condition of overweight, and who will advise, how quickly and under what regimen, weight can be reduced. Dr. Howard A. Rusk truly said that "no easy way to reduce is safe and no safe way to reduce is easy." The over-weight person must learn that only a permanent change in his eating habits will bring about abiding results.

In India the time has come for a concerted attack on obesity as a public health problem of great importance. Governments, both Central and States, Life Assurance Companies and medical practitioners should educate the public on the dangers of overweight and on the rational approach to proper weight control. The public must be taught that obesity impairs health and the expectancy of life; and that weight control will prevent some of the diseases peculiar to middle and later life, which are responsible for heavy mortality.

In conclusion, I wish to suggest that the Indian Life Assurance Offices Association should promptly undertake an investigation into the problem of obesity-mortality, in co-operation with all the member companies. This is essential in the interest of the Indian Life Assurance Industry. It will necessarily take some time to achieve this goal and so medical practitioners and actuaries will do well in the meanwhile, to benefit by the experience of the Metropolitan Life Insurance Company of New York, and the Union Central Life Insurance Company detailed in this paper.

I wish in conclusion to express my grateful thanks to Mr. Edward A. Lew, Actuary and Statistician of the Metropolitan Life Insurance Company of New York, for his generous help in placing various publications relating to the subject of Life Assurance at my disposal.

REFERENCES :

1. Dotto, B. B., (1941)—*Insurance Herald*, 10 : 12, June 28.
2. *Ibid*, (1941)—*Insurance Review*, 15 : 15, August 11.
3. *Ibid*, (1942)—*Insurance Bulletin*, 1 : 3, March.
4. *Ibid*, (1953)—*Medical Digest*, 21 : 2, February.
5. *Ibid*, (1953)—*Insurance Underwriter*, 3 : 5, May.
6. *Ibid*, (1953)—*Ibid*, 3 : 9, September.
7. Master, A. M., Dublin, L. I. and Marks, H. H., (1950)—*J.A.M.A.*, 143 : 1464, Aug. 26.
8. Levy, R. L., White, P. D., Stroud, W. D., and Hillman, C. C., (1946)—*J.A.M.A.*, 131 : 951, (July 20).
9. Dublin, L. I., Jimenis, A. O. and Marks, H. H., (1934)—*Proceedings of the Association of Life Insurance Medical Directors of America*, 21 : 34.
10. Moss, W. T., (1947)—*American Journal*, Roentgenol, 53 : 203, August.
11. Britten, R. H., (1933)—*Public Health Report*, 43 : 926, August.
12. Harmon, P. H., (1942)—*Pennsylvania Medical Journal*, 45 : 948, June.
13. Dublin, L. I., Fisk, E. L. and Kopf, E. W., (1925)—*American Journal of Medical Science*, 170 : 576, October.
14. Odell, L. D., and Mengert, W. F., (1945)—*J.A.M.A.*, 128 : 87, 12th May.
15. Mathews, H. B. and Der Brucke, M. G., (1933)—*J.A.M.A.*, 110 : 554, 19th Feb.
16. Sheldon, J. H., (1949)—*Lancet*, 2 : 869, 12th Nov.
17. Chesley, L. C., Somers, W. H. and Vann, F. H., (1948)—*American Journal of Obstetrics and Gynecology*, 56 : 409, September.
18. Barker, N. W., Nygaard, K. K., Walters, W. and Priestly, J. T., (1941)—*Proceedings Staff Meet.*, Mayo Clinic, 16 : 1, 2nd January.
19. Marble, A., Joslin, E. P., Dublin, L. I. and Marks, H. H., (1939)—*Am. J. M. Science*, 197 : 533, April.
20. Dublin, L. I. and Marks, H. H., (1933)—*Proceedings of the Association of Insurance Medical Directors of America*, 20 : 191.
21. Christiernin, C. L., Dublin, L. I. and Marks, H. H., (1933)—*Ibid*, 26 : 160.
22. Jimenis, A. O., Marks, H. H., Finegan, R. W. and Blatherwick, N. R., (1947)—*Ibid*, 31 : 5.
23. Houseman, Edward, (1926)—*Ind. Med. Gazette*, Vol. lxi, No. 6, June.
24. Chopra, Sir R. N., (1942) *Ibid*, Vol. lxxvi, No. 1, January.
25. Dotto, B. B., (1948)—*Ibid*, Vol. lxxxiii, No. 2, February.
26. *Ibid* (1949)—*Ibid*, Vol. lxxxiv, No. 6, June.
27. Dublin, Louis I. and Marks, Herbert H.—*The Build of Women and its Relation to their Mortality*.
28. *Ibid*—*Mortality of Women According to Build : Experience on Substandard Issues*.
29. *Ibid*—*Mortality Among Insured Overweights in Recent Years*.
30. *Statistical Bulletin of the Metropolitan Life Insurance Company*, (1937)—Vol. xviii, No. 7, July.
31. *Desirable Weight for Men*, Published by the Metropolitan Life Insurance Company.
32. *Ibid*—*Desirable Weight for Women* : Published by M.L.I. Co.
33. *Statistical Bulletin of the Metropolitan Life Insurance Company*, (1951)—Vol. xxxii, No. 10, October.
34. *Obesity and its Relation to Health and Diseases*, by Donald B. Armstrong, Louis I. Dublin, George Wheatley and Herbert H. Marks.
35. *Influence of Overweight on Health and Diseases*, published by the Metropolitan Life Insurance Company.
36. *Hints on the Assessment of Substandard Risks in Life Assurance*, by B. B. Dotto.
37. *Diabetes Mellitus and Obesity* by C. C. Dunkan.
38. *High Blood Pressure : Its Variation and Control* by J. F. Halls-Dally.
39. *Low Blood Pressure : Its Causes and Significance* by *Ibid*.
40. *Transactions of the Faculty of Actuaries of Scotland*, Vol. xiii, Part iv, No. 120.

CURETTAGE OF PLANTAR WARTS is a simple, relatively painless, and effective procedure which can be done in the clinic, report Seale, and Richardson, of Houston. The area is cleansed with 70% alcohol and sprayed with ethyl chloride. Then, 2 cc. of 1% solution of procaine without epinephrine is slowly injected under the lesion through a $\frac{1}{8}$ -in., 26-gauge needle. The keratinized surface is removed, and the verrucous tissue is shelled out with a small curet. Overhanging edges are trimmed with curved scissors, the wound is filled with 5% Mercurochrome, and a pressure dressing is secured by adhesive tape which completely encircles the foot. An antibiotic ointment and a simple dressing are applied twice daily until healing of the site is complete.—(South. M.J. via *Modern Medicine*, 15-9-'55).

ARSPHENAMINE REACTION *

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DEVELOPMENT of untoward symptoms, as an after-effect in certain cases of injection-therapy causes annoyance to the medical practitioner, who is called upon sometimes to deal with the side-effects of the drug rather than to treat the disease itself. Prompt and skilful attention thus become necessary in such cases. The results of our experience during the last ten years in Nepal Terai in cases of arspenamine reactions are given below :—

The human system responds variously to the same or different stimuli at different times. It is not therefore, possible to predict as to when and what side-effect will occur after an arsenical injection.

Recent advances in the manufacture of injectable arsenical compounds have greatly reduced the hazards of arspenamine, though not eliminated altogether.

The common arsenical toxic reactions, are fortunately mild in character; but serious manifestations *e.g.*, nitritoid crisis, hæmorrhagic encephalitis, exfoliative dermatitis may also arise ultimately ending even fatally.

The cause of arsenical toxæmic reactions may be expressed in one word, as intolerance which may be natural or acquired.

Disease causing psychical or organic changes, previous injections of arsenical compounds, faulty habits or incoordination of the patient may make him acquire susceptibility to the specific drug.

The reasons for natural intolerance may be attributed to endocrine sources, allergy, lowered body-resistance and unknown factors *e.g.*, peculiar susceptibility to a particular arsenical preparation. It has been observed that a person susceptible to a particular arsenical preparation is able to tolerate a different one. Further, the injudicious administration of the drug may also cause reactions, *e.g.*, speed-shock from too rapid I.V. infusion, lack of adequate care in making the solution etc.

Symptomatically many reactions appear as local, focal and general in character. But on the basis of time of onset these may be (i) immediate or (ii) delayed.

I. IMMEDIATE REACTION :—This may occur during the injection or within a few minutes thereafter, may be as negligible as a smell of garlic or as grave as a nitritoid crisis. Other reactions are a flushing of the face, headache, nausea, vomiting, syncope, metallic-taste, pain in the gums and teeth, urticaria, rigor with a rise of temperature.

*Specially contributed to the ANTISEPTIC.

Nitritoid crisis is a vasomotor disturbance simulating anaphylactic shock; probably the drug causes agglutination of red blood cells and capillary thrombosis. The phenomenon is manifested by short dry cough, dyspnoea, a sense of suffocation, rapid feeble and irregular pulse, apprehension, convulsion, unconsciousness, coma, loss of control over the sphincter, dilatation of the pupils, conjunctival congestion, and oedema of lips, face and even of the entire body as in generalised hives. Recovery starts within a couple of hours or death draws the curtain over the scene. This crisis is liable to occur more often with intravenous than with intramuscular administration of a concentrated solution of the drug.

II. DELAYED REACTION:—This appears an hour, a day, or a week or even more after the injection and expresses itself in headaches, nausea, vomiting, diarrhoea, phlebitis, vertigo, rigor, fever, neuritis, jaundice, herpes, stomatitis, albuminuria, dermatitis, exfoliative dermatitis, or hæmorrhagic encephalitis. The last of these two reactions are of a serious nature with an uncertain prognosis and so will bear detailing:

(1) *Exfoliative dermatitis*:—Starting as an erythema, it spreads rapidly over the whole body with intense itching; exfoliation soon begins with fever of a remittent or intermittent character, sleeplessness, headache, loss of appetite, constipation, occasionally vomiting and diarrhoea, pain in the limbs and body, stomatitis reaching the throat or further, down, swollen eye-lids, congestion of the conjunctivæ, lacrimation, serous exudation from abrasions caused during itching leading even to formation of ulcers and secondary infection; the lesion may extend from the scalp down to the soles of the feet.

(2) *Hæmorrhagic encephalitis*:—Generally develops 2 to 5 days after the 2nd or 3rd injection especially when the dosage is large and the interval between injections short. Sometimes an attack of this is greater in women, particularly during pregnancy. It is manifested by prostration, headache, vomiting, dyspnoea, constipation, suppression of urine, unconsciousness, delirium, stiffness of the neck, loss of deep reflexes, and coma. Autopsy would reveal hæmorrhages in the brain.

(3) *Jarisch-Herxheimer's reaction*:—It is a temporary flaring up of the signs and symptoms, especially the skin lesions of syphilis after an injection of the specific drug. The reaction may be local, focal and/or general, characterised by aggravation of the sores or skin rash, erythema, pain and swelling in the lymph nodes, malaise and fever. This is due to a sudden destruction of the spirilla liberating luetic toxin, which is likely to occur when the initial dose of the drug is large.

(4) Local reaction from extravasation of the solution of the drug exclusively indicated for intravenous injection results in pain,

redness and swelling, abscess formation, suppuration and sloughing which may lead even to stiffness of the nearest joint owing to prolonged immobility and subsequent cicatricial contracture when the ulcer has healed up.

Treatment.—PRECAUTIONARY:—(1) Examine the patient thoroughly, particularly his eyes, ears, liver, urine and record his pulse and temperature before starting arsenotherapy and also before each injection. (2) Advise rest on the day of injection. Keeping the patient lying and on empty stomach during injection; no solid food to be given for at least 3 hours before and 2 hours after the injection. A drink of glucose with a pinch of sodii citras and citrous fruit juice alone may be allowed, 2 to 3 hours before the injection. (3) Prescribe alkalies, calcium, Vitamins C and B-complex with glucose and advise plenty of water to drink during the course of injections. (4) The initial dose of the drug should be small so as to test the patient's tolerance and then the successive doses may then be gradually increased. (5) Select a standard preparation, see that the ampoule is not cracked and the colour of the solution is not altered. (6) Make the solution aseptically and with due care; do not shake the ampoule while making the solution to avoid oxidation and formation of toxic oxides; the solvent may be put into the ampoule and drawn out through a syringe several times, but this should be done very gently so that squirting or bubbling does not occur. (7) Inject as soon as the solution is ready. (8) In syphilis, a few injections of bismuth preceding the arsenic treatment reduce the risk of Herxheimer reaction. (9) Keep analeptics *e.g.*, ephedrine, adrenaline sol. etc. ready at hand for use in an emergency. (10) Contra-indications should never be overlooked. These are nephritis, disease of the liver *e.g.*, jaundice, hepatitis, cirrhosis; advanced cardiovascular disease, diabetes, pulmonary tuberculosis, extreme weakness with hypotension, eye or ear troubles, obstinate skin diseases, alcoholic patients who will not abstain from drink during the course of injections.

CURATIVE:—The cardinal points to be observed in curative treatment are:—(1) Combat shock if it develops; (2) help elimination and (3) maintain the body strength.

A general outline of the treatment and the remedies found effective for particular phenomena are given below.

General considerations:—(1) Rest in bed. (2) Plenty of fluids by mouth. (3) Evacuation of the bowels by saline cathartics. (4) Alkalies, glucose, Vitamins C and B-complex including methionine and choline in adequate doses. (5) Sodium or calcium thio-sulphate grs. 5 to grs. 10 in a 10% solution I.V. or I.M. daily for 3 to 6 days and then on alternate days up to a total of about 12 injections. (6) Contramine 0.25 g. in 2 cc. sol. I.M. every 3rd to 5th day to make an average total of six. (7) B.A.L. (British Anti-Lewisite)

2 cc. I.M. four times on the first day at four hourly intervals; the same quantity morning and evening on the 2nd to the 4th day, and once daily on the 5th and 6th days. It is said to be useful in all forms of arsphenamine reactions except hepatitis. (8) Calcium gluconate (5 to 10 cc. of a 10% solution I.V. or I.M.) daily or on alternate days to a total 6 injections. (9) Antihistaminics (*e.g.*, Benadryl, Histantin, Histaclopane, or Phenergen) both orally and externally, and liver extract injections may be of service. But antihistaminics should not be given when coma is present or when a sedative has been administered. (10) The diet should be light, easily digestible and nourishing.

TREATMENT:—*Diarrhoea* should not be checked if not exhausting. Bromides or barbiturates should be given in full doses and also cold head-washes in nervous symptoms, *e.g.* restlessness, insomnia, delirium etc.; Calamine lotion for itching and urticaria; antacids like Mag. carb., Cal. carb. Aluminium hydroxide gel and belladonna for gastric irritation; Tr. Iodi mitis in minim doses or Ceri oxalas or chlorbutol for vomiting; alkaline mouth wash with Pot. chloras and borax in glycerine for stomatitis; by enema or hypertonic glucose sol. I.V.; to relieve headache due to intra-cranial pressure mag. sulph. by mouth or neuritis yields to Vitamin B₁, Pyridoxine, and Vitamin B₁₂ injections, and agranulocytosis to penta-nucleotide and pyridoxine.

Nitritoid crisis:—20 to 30 minims of Spt. ammon. aromaticus in water given orally a few minutes before the injection may be effective as a preventive. Make a dilute solution and inject slowly. Stop injection immediately on the appearance of any symptom. Put the patient in a comfortable posture. Inject $\frac{1}{2}$ to 1 cc. adrenaline chloride sol. (1:1000) I.M., better adrenaline and ephedrine combined. Pituitrin $\frac{1}{2}$ cc. to 1 cc. *s.c.* or I.M. Atropine sulph. gr. 1/100 *s.c.* relaxes the bronchii and relieves dyspnoea. Hot water bottle under the head and feet; and application of cold to the head.

Hæmorrhagic encephalitis:—Besides the measures discussed under general consideration, cold head-wash or ice bag to the head should be advised. Calcium bromide (Calcibronat) 10 cc. with glucose sol. 25 cc. to 50 cc. of a 50% sol. or 25% sol. and Vitamin C 500 mg. in sol. are injected I.V. as well as Vitamin K 10 mg. in sol. I.M. Combat dehydration by glucose saline transfusion to which Sod. acetate 20 grs. in 10 cc. or Sodii bicarb sol. 7½% 10 to 25 cc. may be added. Pyridoxine hydrochloride 50 mg. and Vitamin B₁₂ 50 to 100 mg. I.M. may be of use. Lumbar puncture, venesection and oxygen inhalation may be required.

Exfoliative dermatitis:—The suggestions made under general consideration apply here also. In addition, Calamine lotion, is a time-honoured remedy for irritation of the body surface. When itching is intense, phenol in a 2% solution may be added to calamine lotion. Where pyogenic infection has set in, acriflavin mixed with

calamine lotion in a dilution of 1 in 1000 may be useful, and sometimes the question of sulphonamides or antibiotics or both internally and externally may have to be considered. Antihistaminic cream externally may sometimes give relief. Atropine sulphate gr. 1/100 *s.c.* may be found helpful in alleviating itching. When the ulcers begin to dry up, the skin should be kept soft by the application of olive oil. The eyes should be frequently washed with normal saline and then an antiseptic eye-drop instilled.

Jaundice:—Internally, alkalies, ammon. chlor. and sodii phosphate and saline cathartics are prescribed as a routine and also preparations of bile like Desicol, Felamine, Cholectrin Cholectrina, Dehydrochlorin, veracholate, etc. Methionin and Choline are helpful adjuncts and also protein hydrolysates. Good result has been recorded with I.V. injections of glucose, Vitamin B₁ and C solutions; Calcium gluconate solution and Cylotropine or Salitropin alternately may be added to glucose injection. Vitamin K, has been given I.M. Fat-poor diet is advised.

Local reaction following extravasation:—Inject immediately sterilized distilled water or normal saline 2 to 5 cc. at the site of extravasation and massage gently for some time to help dilution of the solution extravasated and so make it less irritant. Also inject locally sodium thiosulphate (10% sol.) 2 to 5 cc. *s.c.* and then massage. Sodium thiosulphate together with glucose solution I.V. is of use. Apply Goulard's lotion over the affected part for 6 to 12 hours or more. Apply hot moist compress on the part immediately or after day or two if Goulard's lotion has been applied. Free incision may be made if suppuration takes place and cover with antiseptic dressing. Encourage early movements of the affected joint.

Conclusion:—The character and treatment of arsphenamine reactions, are discussed. There are departures: *e.g.* authoritative reports to establish that administration of arsenic is contraindicated and as such harmful in the presence of albuminuria and enlarged and tender liver, was found to give promising results not only in eradicating tropical eosinophilia but also in the other two associated abnormalities. Each case should be treated on its own merits.

REFERENCES:

1. Sajou's Analytic Cyclopaedia of Practical Medicine, Supplement: Vol. 25.
2. Murphy, F. D.—Acute Medical Disorders.
3. Chopra, R. N.—Tropical Therapeutics.
4. Dhar, D. R.—Medical Treatment in General Practice, 2nd Ed.
5. McCrae, T.—The Principles and Practice of Medicine, Osler's, 11th Ed.
6. Price, F. W.—The Practice of Medicine, 8th Ed.
7. Beaumont, G. E. and Dodds E. C.—Recent Advances in Medicine, 11th Ed.
8. Majumdar, A. R.—Pharmacology and Therapeutic Guide, 8th Ed.
9. Ghose, B. N.—Pharmacology, Materia-medica and Therapeutics, 17th Ed.
10. Marshall, J. (1947)—Modern Treatment Year Book.
11. Chawla, G. S. (1951)—Congenital Syphilis, Antiseptic, Aug.
12. Reeve, J. L. (1948)—Arsenical Dermatitis. B.M.J., ii.
13. Dale, H. H. (1947)—Antihistamine Substances, B.M.J., ii.
14. The Rapid Treatment of Syphilis, Current Topics, etc., I.M.G., December, 1947.
15. Choudhuri, R. N. (1954)—Tropical Eosinophilia, I.M.J., Feb.

PSYCHOLOGICAL RESPONSES TO ACTH AND CORTISONE

A study of the clinical effects of ACTH and cortisone affords a means of elucidating the biochemical sources of instinctual tension. Psychologically there are widespread metabolic changes following the administration of pharmacological doses of these drugs, necessitating the establishment of a new dynamic equilibrium. Such an equilibrium may occur if, (1) the quantity of ACTH and cortisone given does not exceed the homeostatic capacity, (2) internal metabolic stores are adequate, or (3) the intake of exogenous supplies is not restricted. In the absence of these conditions a disequilibrium develops and the organism begins to break down. Since ACTH and cortisone result in an acceleration of the rate of biochemical interchange and promote catabolism, they tend to bring about a disturbance in homeostatic equilibrium that provides the physiological basis for a condition of increased instinctual tension. This tends to increase those drives related to discharge of energy and the obtaining of instinctual satisfaction, such as increased food intake, acceleration in motor activity, and a generalized restlessness.

A psychological study of 98 patients receiving ACTH or cortisone was undertaken, with a view to correlating the clinical effects with the postulated biochemical alterations. Of all the changes associated with variations in psyche equilibrium, the three most consistent findings were alterations in appetite, sleep and motor activity. It was also observed that there were changes in intellectual alertness and mood as well as improvement or regression in the more highly complex activities. Most of the responses were in the direction of euphoria and a heightened alertness, with discontinuance of the drug leading to a sense of emptiness and depression. In some patients the behavioural changes were more intense, almost bordering on hypomania, while occasional negative reactions, a psychotic derangement and unexpected complications following the sudden improvement in long-standing disease process also occurred.

The clinical patterns of response to the drug may be thought of as a summation of three principal factors: (1) the pharmacological effect of the drug upon the whole organism; (2) the significance to the patient of an alteration in the symptoms of the disease for which he was being treated; and (3) the nature of the patient's fantasies about the effect of the substance administered. From the evidence which is presently available the following statements may be averred:

(1) There is a threshold of tolerance for these drugs beyond which either metabolic or instinctual needs cannot be realized. (2) Severely regressed individuals demonstrate a low tolerance for increased instinctual tension. (3) Immobilized, starved or emotionally deprived patients may become depressed. (4) Sudden improvements in chronic conditions may generate anxiety. (5) In the case of a marked neurosis concerning a specific activity, the response to drug therapy may be an increase in the inhibitions against carrying out this activity. "Thus far almost all of the observations concerning the psychological response to these substances have been made after their administration in pharmacological doses. Recent biochemical advances.....now bring the opportunity to begin the much more fundamental studies of the physiological variations in pituitary and adrenal cortical activity as they reflect and influence psychological behaviour."—(Panel Discussion: reported in *Am. J. Psychotherapy*, pp. 135-144, Jan. 1955).

TREATMENT OF PLANTAR WARTS with a 30% solution of euphorbium resin in alcohol is efficacious. Wright pares the wart, applies the medicament, and covers the area with adhesive tape for 48 hours. It is repeated, until the verruca can be shelled out. Carbon dioxide snow is satisfactory if sufficient pressure is applied for two minutes. Roentgen therapy is very successful but should be used only when other measures fail.—(*Calif. Med.*, 82, 1955; via *Mod. Med.*, 15-9-'55).

CRAMPS AND THEIR MANAGEMENT *

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CASES of cramps may not be numerous in ordinary daily practice but an industrial medical practitioner will come across several cases of cramps of varying types. The causes require to be carefully studied, for giving suitable treatment.

Cramps are subjective symptoms of a disease or they may be non-specific in nature caused by one's occupation. Cramp is an involuntary and painful contraction of a voluntary muscle or group of muscles and the sufferer is therefore afraid of an attack. It occurs either when the person is at work like manual labourer or when an athlete is playing or swimming or when a pregnant lady is asleep getting cramps in calf muscles: The attack is sudden and gives no warning; the sufferer may not know when it would come on and how long the severity of the spasm would last.

Cramps also occur in the limbs when one is suffering from acute gastro-intestinal disturbance; during this attack severe dehydration occurs and also insufficient nutrition of the tissues due to improper circulation caused by the loss of the body-fluid, and a lowered sodium content of the blood. Hence the tissues enter into spasms due to want of the sodium salt. Such a deficiency may be usually overcome by administering sodium chloride in water or in any beverage. In addition, infusion of saline or intravenous glucose saline in large doses of 400 cc. to 500 cc. at a time will, help the patient.

The affected parts are usually the calf muscles, the muscles of the arms and the abdominal muscles. The painful spasm may last from a few minutes to several hours depending on the promptness of medical aid during the attack. The residual result of a cramp is soreness and weakness of the affected part; which renders the person unfit for his occupation or for earning and further leads to chronic suffering and invalidism.

The causation of cramps depends on one's occupation or general condition of health, wherein several salts like calcium, sodium and other minerals and vitamins, especially B complex factors are deficient. Weather also plays an important part in the causation of cramps in some individuals. According to the weather condition of cold or heat, cramp is produced; owing to defective peripheral circulation during the cold season, especially winter and rainy season cramps appear and a deficiency of sodium salt which is excreted during summer through sweat from blood, is the reason for the occurrence of cramps in summer.

* Specially contributed to the ANTISEPTIC

In the case of acute gastro-enteritis or dysentery, or of food and arsenical poisonings, the body tissues, specially of the limbs and abdomen suffer from acute dehydration; severe cramps therefore, develop in those parts. Want of sodium in the blood and poor circulation in the tissues, cause severe spasms in the muscles. Some pregnant ladies suffer from acute attacks of cramps in their calves during nights. It is attributed to want of calcium and Vitamin B factors; the presence of varicose veins in their legs may also cause such symptoms.

Fatal cases due to severe attacks of cramps have been recorded among persons swimming in cold water. It is also common among persons who are exposed to open flames or bare ovens. Because of their hard labour, heat cramps seem to occur in them. Thus stokers, men working on board ships, furnace workers and engine firemen are often subject to attacks. Professional dancers are reported to have got the attack in the midst of their performance. Musicians playing on the piano, violin or any other musical instrument may also get the attacks.

Among cramps, occupational cramps are of interest to the industrial medical practitioner since it involves the question of compensation under the Workmen's Compensation Act, for loss of earning capacity resulting from the disability.

Thus writer's, telegraphist's and typist's cramps should be studied in detail. Telegraphist's cramp is less important nowadays owing to the use of improved instruments and writer's cramp is also not so commonly recorded after the advent of typewriters. A continuous and prolonged use of typewriters may cause cramps at present. In order to understand the exact damage caused in these occupations, writer's cramp is taken as an example, to describe the various stages of development of the cramp.

Writer's cramp.—The majority of sufferers from writer's cramp are usually middle-aged clerks. While writing, the hand performs two acts *viz.*, "pen-holding" and "pen-moving." The intrinsic muscles of the hand hold the pen by the inter-ossei and thenar muscles. These also partly help in pen-moving and in conjoint with flexors and extensors of the index; middle and thumb fingers also help "pen-moving," the arm remaining fixed. It is also possible to perform the action of writing in a free style by moving the whole hand from the shoulder downward. In the act of pen-moving in the latter way, the action appears to spread and involve a larger set of muscles and the pen-holding muscles are kept in constant tension, which ultimately causes fatigue; cramp and spasm in the fingers then result.

Hence in writer's cramp the first group of muscles to be affected are the pen-holding muscles. If a person suffering from writer's cramp, is asked to write with a piece of chalk on a black-board at

face level, he is forced to use the whole hand in writing, the cramp seems to be less marked or markedly absent. The action of the thenar and inter-osseous muscles which are responsible for "holding" and partly "moving" are said to be overburdened and writer's cramp is really fatigue due to over-use.

It is also possible that difficulty in writing may result from local causes in the arm due either to trauma or organic nervous diseases.

The subjective symptoms in writer's cramp are acute pain in the fingers; the pen gets out of control and the handwriting is completely changed. The sufferer is fully unable to drive the pen further and the nib almost punctures the paper, if he persists in the act of writing.

The same complaint used to be made by the telegraphists; but is seldom observed now since modification of telegraph instruments has minimised the trouble. But on the contrary, it is seen nowadays among typists.

DIAGNOSIS:—The diagnosis of writer's cramp can be easily distinguished from the local or peripheral lesions like teno-synovitis, arthritis or any other painful condition arising from local contusion, a local neuritis or muscular paresis. In the case of central nervous causes we should distinguish paralysis agitans, slight hemiplegia, ataxia of movement due to cerebellar or sensory disorders.

Writer's cramp exhibits a characteristic subjective symptom like physical fatigue in the fingers, definite change in writing as the patient tries to write and it is purely a case of occupational hazard. Therefore, its diagnosis cannot be complete until a careful examination of the muscles, joints and tendons are made and organic disease of the nervous system is fully excluded.

TREATMENT:—Whatever the kind of cramp, absolute rest and freedom from the particular occupation are the fundamental factors required to overcome the chronic fatigue of the affected part or limb. A complete abstention from or avoidance of the same job may relieve the trouble. Further local gentle massage with some embrocation or with cod-liver oil and warm fomentation will allay the pain and improve the local circulation of blood in the tissues. For this physiotherapy is also advised. In cases of acute dehydration saline infusion, intravenous glucose saline of 400 cc. to 500 cc. at a time relieves the spasm immediately. Sodium salts dissolved in water or in any beverage is a very good drink to the patient.

In cases of general debility in pregnant women and easily tired persons, calcium and Vitamin B-complex either parenteral or oral, will be very useful and a general tonic which contains minerals and vitamins will also ensure a permanent cure.

Cases of writer's, telegraphist's and typist's cramps are treated on the above lines, in addition to abstention from their routine occupation. Such persons may also be advised to practise writing

with the other hand so that the affected hand may get rested from the provoking movement.

The above procedures have been found effective in treating a few cases of simple cramps and in two cases of writer's and typist's cramps.

REFERENCES:

1. Price, Frederick W. (1944)—A Text Book of the Practice of Medicine.
2. Walshe, F.M.R.—Diseases of the Nervous System, III Edn.

MUSCLE RECOVERY IN POLIOMYELITIS

The problem of predicting the degree or rate of muscle recovery in poliomyelitis is an important one, and one upon which major considerations of treatment hinge. The author has very closely analyzed the condition of 142 patients with poliomyelitis over a 3 year period, and in the process of this study has observed recovery of the muscles in 3,033 lower extremities and 1,905 upper extremities. The intention of this period of observation was to form an opinion of the potential ability of any given muscle to recover, if once its power was measured by an accepted method of muscle-testing. For purposes of this article the author devised his own method of muscle-testing, which is a slight modification of the method proposed by the Medical Research Council of Great Britain.

The rate of recovery in muscles of the lower extremities followed a fairly set pattern, provided those muscles permanently paralyzed were excluded. Starting out at a high initial figure, the rate of recovery falls steadily until, at the twelfth month, less than 5 per cent of the muscles show any further recovery. No increase in strength was seen after the twenty-fourth month, except in rare instances. The most interesting finding was that all the muscles of the lower limb showed almost identical rates of recovery. When the same analysis was done on muscles of the upper extremity, similar findings were noted except that the rate of recovery in these muscles was roughly 5 per cent higher per month than in muscles of the lower limb.

These rates of recovery were projected against the age of the individual patient, and it was seen that the muscles of those of the older group progressed with less speed than did the muscles of those in the youngest, with muscles of patients in the middle-age ranges showing a rate of recovery falling between these two extremes. This observation was constant also in the infants, even though they were unable to co-operate in the treatment.

The author believes that the uniform rate of recovery in either limb is such as to make prediction of the final strength of any given muscle possible. Thus, the author has perfected a formula by which eventual strength may be calculated if one month or more has elapsed since the acute phase of the disease. These formulas vary only slightly for the lower or upper limb. Also, 90 per cent of muscles completely paralyzed at 6 months will remain completely paralyzed. In all the muscles tested, only three muscles showed permanent deterioration of power. In each instance an especially powerful antagonist was the cause.—(*J. Bone Surg.*, 1955, 37-B: 63, via *Int. Abst. of Surgery*).

ESSENTIAL ENDEAVOUR

If medicine is not to disintegrate into a series of isolated specialities and its organization into a collection of bodies representing simply sectional concerns, then its traditional institutions must ensure that they remain as ever the focus of its manifold interests.—(*Sir Harold Himsworth*).

THE STATUS OF HORMONES IN DERMATOLOGICAL PRACTICE *

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IN recent years our Materia Medica has been enriched by four great groups of drugs:—antibacterial chemotherapeutic drugs, the vitamins, the antibiotics and the hormones. Hormones are often invested with a certain mystical aura in lay circles as well as in professional quarters. The status of the hormones in dermatology is one that has to be approached with hesitation and diffidence due to the interrelationship of glands, their mode of action, their linkage with the autonomic nervous system, the continual isolation of new hormones, the problem of antihormones and different susceptibilities of different tissues; there are however, some clear-cut indications for their use in certain specific conditions of the skin. Moreover synthesis of hormones by laboratory workers has made it possible for dermatologists to attempt their use in treatment.

Generally speaking the relationship existing between the hormones and skin conditions is fairly well-known. At the time of puberty, the androgen level rises in acne vulgaris which is more common in males than in females. It is never found in eunuchs but can be produced in them by injection of male hormones. The fall of the oestrogen level at the time of menstruation, gives rise to some suffering in women but is not necessarily accompanied by any menstrual disorder. Virilism in children may be associated with marked acne.

Certain skin conditions appear during pregnancy in some women while in others skin troubles improve and the condition disappears in pregnancy. During the climacteric some skin troubles occur both in the male and the female. In old age or premature old age certain characteristic skin changes occur. These are all due to hormone imbalance and not due to any simple deficiency of one or the excess of another hormone. The bisexuality of all of us, although variable in degree, is concerned in the effect produced by sex hormones on the skin. The relative increase of androgens that appear to circulate in the blood of the modern woman and her desire for a wider participation in public affairs, are responsible for the rarity of the ideal woman, devoted by nature to her home, her husband and her children. This psychological evidence of bisexuality and the relative increase of androgens are manifested in changes occurring in the skin.

Moreover, the tissue receptor mechanism is responsible for the varying sensitivity of tissues to endocrines e.g., severe acne of face

*Specially contributed to the ANTISEPTIC.

is by no means always accompanied by acne of back; seborrhœa of the body may be intense without affection of the scalp; the sex hormones therefore, play their part in the so-called seborrhœic eruptions. Oestrogens may be of value in the treatment of seborrhœic eruptions in women, rarely in men and of certain conditions arising at or near the menopause.

The various conditions requiring hormone therapy are briefly discussed below:—

There is an independent and intermediary carbohydrate metabolism in the skin. In eczema, pruritus, chronic furunculosis, although the glucose tolerance test of blood might be normal, the skin sugar test might show high levels; skin-sugar level above 68 mg./100 g. of skin is considered pathological. When a low carbohydrate diet is advised improvement is greatly hastened.

In some cases of pyoderma where there is no evidence of diabetes, the injection of 5 units of insulin immediately before breakfast or dinner is followed by marked improvement; efficiency is noted when there is relapse of eruption with the discontinuance of treatment. Glucose tolerance test in some elderly and middle aged persons suffering from intractable intertriginous and eczematous eruptions shows an abnormal carbohydrate metabolism although glycosuria is not noted and the eruptions will not disappear until a full diabetic regime is prescribed.

Acne.—Acne vulgaris:—Whatever may be the cause and at whatever period of life it may occur, it is certain that androgens predispose to acne and oestrogens inhibit it, though there is no definite evidence to show that all forms of acne are caused by an excessive secretion of androgenic substances. The patulous sebaceous follicles and the muddy complexion which often accompany acne as a result of increased keratinisation are all due to increased androgen stimulation.

Treatment should be directed towards secondary factors like diet and infection and only when these measures fail, oestrogens and corpus luteum hormones are advocated for treatment of acne vulgaris; 5 to 7 mg. daily for several weeks, though it is unjustifiable to prescribe oestrogens as a routine treatment for this malady. In males, the topical application of oestrogenic substances as creams or lotions may reduce the normal sebaceous activity with acne vulgaris. In the female, oestrogens and thyroid should be judiciously prescribed. Local treatment seems to be more promising though small quantities only will be absorbed through the skin. Young men with acne respond to oestrogenic substances in an average total dose of 88 mg. for 50 days.

Suppression of urinary 17-ketosteroids is observed in some patients and gynomastia in some patients, which disappear 2 to 3 weeks after withdrawal of the oestrogens.

Acne conglobata:—In this form of acne large plaques develop and break down. They form oily abscesses and burrowing sinuses. It is a severe debilitating and chronic condition and the use of oestrogens in large doses are justifiable in males.

Acne rosacea:—Its aetiology is not clear, but among others an endocrine factor is suggested. If history would suggest an endocrine factor then oestrogens are indicated if other lines of treatment fail.

Juvenile acne is of particular interest as an endocrine dermatosis. By administering hormones, acne can be produced in infantile males simultaneously with other signs of puberty. Subsequently this acne will disappear with further treatment.

Menopausal conditions.—Verrucae seniles:—Also called seborrhœic warts are flat-topped circumscribed, greyish or brownish papules or little tumours with adherent oily scales appearing on the trunk found among the middle-aged or old people. Oestrogens in women and androgens in men will bring involution in all lesions.

Keratoderma climactericum:—Is a condition showing hyperkeratosis arising at the time of menopause and involves mainly the pressure points on the soles and the palms. Oestrogens give excellent results.

Other menopausal conditions:—Urticaria, pruritus vulvæ, senile pruritus and kraurosis vulvæ are due to oestrogen deficiency and are relieved by the administration of oestrogens. Local application of an oestrogen ointment is often more successful than oral or parenteral treatment.

Senile male skin:—In itching conditions and degenerative skins of men in whom pubic hairs are straight and lifeless, androgens will restore the texture of the skin and produce a sense of well-being. The indications for androgen therapy of the skin are confined entirely to senile changes of the skin in the male.

Seborrhœic eruptions:—The oestrogen-androgen imbalance produces skin changes 'allowing' organisms like the pityrosporum, to develop and permit invasion by other bacteria, (*micrococcus cutis communis*, *staphylococcus* and *micrococcus*); dietetic errors, metabolic disorders and psychological disturbances are also important factors. When other treatments fail, oestrogens may be tried in these conditions.

Pityriasis capitis:—It is an integral part in acne vulgaris and seborrhœic eruptions. It is associated sometimes in menopausal women with a male type of alopecia. Local inunction of 2½ to 5% oestrogen ointment is very useful.

Hyperpigmentation of the skin and mucosa of Addison's disease:—Hyperpigmentation usually involving the mucous membrane as well as the skin is usually a classical sign. The pigment deposit is melanin. A leucodermic pattern of pigmentation is quite suggestive.

Desoxycorticosterone acetate which is insoluble in water but easily soluble in sesame oil, is safe for treatment and relatively rapidly eliminates the symptoms of Addison's disease. Hyperpigmentation of the skin and mucosa diminishes. Percorton can be given intramuscularly and may be maintained by subcutaneous implants.

Psoriasis and psoriasis arthropathica :—The skin lesions of psoriasis improve with ACTH. Psoriasis arthropathica responds to corticotrophins better than to cortisone. Chronic cases of psoriasis respond to corticotrophin. Total dose may go up to 3450 mg. ACTH is of little value in psoriasis, especially in long standing cases. The use of ACTH and cortisone has succeeded in bringing about a temporary arrest in some cases of psoriasis of the nails, though there is a tendency to relapse.

Dermatomyositis :—Its etiology is not known and is generally believed to be a neurotrophic disturbance. In acute and subacute inflammation there is fibrosis and a board-like rigidity of the voluntary muscles resulting in complete loss of contractile function and ankylosis with secondary cutaneous involvement at the onset of scleroderma. Treatment is by giving 25 mg. of Testosterone propionate twice weekly by intramuscular injection together with the application of heat. ACTH and cortisone constitute the best treatment available in dermatomyositis.

Scleroderma :—ACTH and cortisone are of some help in scleroderma. Most cases of the acrosclerotic type should receive cortisone in repeated courses, 100 mg. per day for 42 days decreased to 50 mg. daily in the latter part when the course is a prolonged one. A subjective sense of improvement is noticeable but objective improvement is invariably slight. Cortisone produces greater and quicker improvement resulting in a sense of well being with better appetite and elimination of pain, discomfort and soreness.

Sarcoidosis :—ACTH and cortisone are used in exceptional cases of chronic and nonserious dermatoses. The effect is transient and the disease usually recurs immediately the treatment is stopped.

Malignant and benign pemphigus :—Patients with malignant and benign pemphigus respond to adrenocorticotrophic hormone and cortisone. Complete healing of cutaneous lesions is secured and the lesions of the mouth either heal or get reduced in size and extent permitting food to be taken into the mouth without discomfort. In the malignant form of pemphigus there is loss of plasma proteins and electrolytes and eventual circulatory failure. ACTH and cortisone have been credited with saving the lives of such patients. A daily dose of 200 to 300 mg. of ACTH in four divided doses should be given. The duration of therapy is from 20 to 45 days with a total dose per patient of from 3 to 8 g. In the bullous cases about the same effective dose of ACTH is required for remission as in the malignant cases but in exfoliative cases there is satisfactory resolution of

lesions with both ACTH and cortisone in about the same dosages as used in malignant and benign bullous pemphigus.

Allergic skin conditions:—Therapy with cortisone often exerts a definite and at times spectacular ameliorative effect in a number of allergic disorders including serum sickness, drug sensitivity, angio-neurotic oedema, atopic dermatitis, allergic dermatitis and certain cases of exfoliative dermatitis. Adrenocorticotrophic hormone and cortisone have some real value in amelioration temporary of the above conditions which are often relieved during oral cortisone therapy.

Erythema nodosum:—ACTH or cortisone yields rapid involution of painful joints, tender cutaneous nodules and decrease of fever but the elevated sedimentation rate remains unchanged.

Lupus erythematosus:—ACTH and cortisone are definitely indicated as offering the best treatment possible, and yield gratifying results with 25 mg. given intramuscularly every six hours for two weeks, a low salt and high protein diet being prescribed along with additional potassium chloride orally. Cortisone 37.5 to 75 mg. daily in divided doses should be given orally. In acute systemic lupus erythematosus, ACTH and cortisone have been found to produce dramatic improvement in the symptoms of even seriously ill-patients. A sense of well-being and an increase in the patient's weight occur. Remission may last for 2 to 8 weeks with a relapse after termination of a course of treatment. In lupus erythematosus disseminatus, temporary beneficial effect is brought about in most cases. The temperature comes down and the sedimentation rate is lowered, joint symptoms are lessened and skin lesions in certain cases are alleviated.

These effects last from a few days to a few weeks and perhaps even longer in some cases. The general condition improves but there is usually no beneficial effect in the renal status. Favourable response cannot be expected in late cases with advanced renal involvement, azotæmia, hypoproteinæmia, retinal hæmorrhage and cachexia. Because of the frequent involvement of sodium and water retention in this disease, evidence of aggravation should be watched for, particularly and congestive heart failure should be watched for, particularly during cortisone therapy. Pruritus, pruritus ani and eczema often react extremely well to male-hormone treatment. It is worth while trying testosterone in troublesome cases of eczema in men.

Dermatographism:—Testosterone by its vasomotor action is able to improve the blood supply and turgor of the skin. This explains the shortening of the time-lag in the appearance of a wheal in dermatographism.

Eczema:—It responds to ACTH or cortisone and its effect is dramatic except in infective cases. In eczema of the nipple, endocrine factors play a prominent part in the early menstruation, during pregnancy and lactation, at and following the menopause. Rapid recovery follows the application of an ointment containing

2 mg. of stilboestrol in 25 g. of lanovaseline. In cases which do not respond completely to local treatment an oestrone preparation should be given intramuscularly every fourth day and in cases occurring at the menstrual life of the patient a stronger local application is required i.e. 250 mg. in 125 g. of vaseline. Cases occurring during pregnancy and lactation are usually highly resistant to treatment.

Atopic dermatitis:—The use of adrenocorticotrophic hormone in atopic dermatitis and generalised atopic eczema brings about nearly or wholly complete remission after short courses. The prompt clearing of skin lesions and relief of itching are considered together with the recurrence that follows cessation of therapy.

Acute complications of leprosy and their treatment with ACTH and cortisone:—Leprosy reaction in the lepromatous type of leprosy can be successfully treated with ACTH in doses of 40 to 80 mg./day for a maximum period of seven days. Rapid regression of the reaction symptoms occur and in most cases the temperature comes down to normal within 24 hours.

Iridocyclitis and peripheral neuritis if present are rapidly benefited. Most of the symptoms return in a few days after the cessation of therapy. Subconjunctival injection is beneficial. Acute complications of leprosy, like sulphone dermatitis, acute neuritis, acute leprosy eye inflammation, lepromatous reaction, tuberculoid reaction, leprosy elephantiasis, acute leprosy arthritis, acute febrile reaction in the form of erythema nodosum nodules, and acute iritis without fever are greatly benefited by ACTH and cortisone.

The acute febrile reaction in lepromatous cases respond very readily and very quickly to ACTH with immediate relief of pain and temperature and in the next two days neuritis and iritis respond.

ACTH must be used with caution as they may mask symptoms and lower resistance to infection. Treatment should not be prolonged and only the minimal effective dose should be used, because will lead to hypertension.

REFERENCES:

1. Barber, H. W.—"Modern Trends in Dermatology," London, p. 106.
2. Bourne, B. A. (1947)—Brit. J. Derm. Syph., 43: 61.
3. Hamilton, J. B. (1941)—J. Clin. Endocrinol., 1: 570.
4. Haxthausen, H. (1934)—Brit. J. Derm. Syph., 46: 161.
5. Keuper, C. S., Frazier (1951)—Ame. J. of Med. Sc., 222: 308-312, Sep.
6. Nelson, W. E. and Digeorge, A. (1951)—Jour. Ped., U.S.A., 38: 164-168, Feb.
7. Spies, T. D. and Stone, R. E. (1950)—South M. J., 43: 871.
8. West, M. Beale (1952)—A. M. A. Derm. and Syph., 65: 57-58.

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RURAL HEALTH AND SANITATION *

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As nearly 95% of India's population lives in villages, under very unsatisfactory conditions of sanitation and in a very poor hygienic environment, rural uplift is a vital problem of the first magnitude. Improvements effected in a few towns and cities cannot be taken as the true index of the nation's prosperity in this direction.

Now let us consider the present deplorable condition of rural health in general and sanitation in particular.

I. The chief sanitary defects and problems in the order of their gravity are:—(1) Bad-housing; (2) lack of drinking water supply; (3) indiscriminate defaecation; (4) lack of village roads and drainage systems; and (5) a complete lack of the knowledge of healthful living and of personal hygiene.

II. The problems relating to health are:—The prevalence of (1) malaria; (2) malnutrition; (3) small-pox; (4) cholera; (5) gastro-intestinal diseases, ankylostomiasis in particular; (6) leprosy; (7) tuberculosis; and (8) also the absence of maternity and child welfare centres.

In dealing with these problems the active and whole-hearted co-operation of the people is most important. It is common knowledge that the average villager seldom looks to the cleanliness of the street in front of his house but throws refuse anywhere in the street or even in front of his neighbour's house, when he is not observed. He is seldom neat and clean. He deliberately omits to reveal any communicable disease to the Choukidar or to the Health Staff, and attempts to hide cases of T.B. or leprosy occurring in his family. This apathy and conservatism stand as insurmountable barriers in the way of bettering rural health and sanitation. The active opposition of parents and guardians to vaccination and inoculations constitutes a great obstacle to active public health service.

I. Sanitary problems.—(1) *Housing*:—Houses should be spacious, well-ventilated and lighted. People should avail themselves of the co-operative housing schemes to the maximum extent. Government may be requested to provide an expert adviser for each village or area with a population of 10,000 to advise on the proper method of house building. Drainage and provision of latrines should receive due attention. House refuse should be taken to the dust-bins and cattle-sheds should be hygienically built, well away from the residential portion of the house. 1000 c.ft. of circulating air is required as minimum for each individual per hour. For a room to be called

* The lecture was delivered to students in the labour camp of the Junagarh Community Project.

well-ventilated, it should not be stuffy on entering. A minimum of one hundred sq. ft. of floor space is required for each individual. The height of rooms should be at least 10 ft. A garden is essential to keep rooms cool and provide fresh air. Doors and windows should be so placed as to allow cross ventilation and should form about a fourth of the area of the walls.

(2) *Water supply*:—A safe and plentiful supply of water is the most urgent problem in villages. The provision of tube wells in requisite number would be ideal, failing which *pucca* sanitary wells with hand pumps and good drainage facilities should be provided. The wells should be periodically disinfected, or all drinking water boiled during outbreaks of water-borne epidemics. A protected rural water supply will solve the problem of rural health, to a very large extent.

For chlorination of water supplies the formula given below may be adopted. Ordinarily 1 part of chlorine will suffice for a million parts of the water to be treated and the calculation may be made as follows: Volume of water = $5 \times d^2 \times W \frac{2}{3}$ water in gallons in cases of round wells. Roughly 30 grains of *good quality* bleaching powder will be required for 100 gallons of water. (1 gallon = 10 lbs 1 c.ft. of water = $6\frac{1}{2}$ gallons.) (d = stands for diameter of well and W for depth of water in feet).

(3) *Indiscriminate defæcation*:—People should be encouraged to use bored hole or trench latrine where *pucca* sanitary latrines are not possible. Indiscriminate defæcation will spread hookworm disease and pollute water sources causing water-borne diseases like cholera, dysentery and diarrhoea.

(4) *Village streets and drainage*:—These are very defective as a result of which water stagnates during rains, making the houses damp and becoming breeding grounds for mosquitoes, and other insects. Improving the roads and drainage and keeping houses clean and sanitary will result in the improvement of rural health.

(5) *Lack of knowledge of healthful living and personal hygiene*:—This can be combated by magic lantern lectures and cinema shows to groups of villagers and by dissemination of such knowledge by the students who should themselves have a clear knowledge about healthful living. During vacation time the students should cooperate with the Public Health Staff in persuading parents and guardians to get their children vaccinated and inoculated whenever necessary and advising people use boiled water for drinking during epidemics of cholera, typhoid or dysentery, they should also advise people to renovate wells, to keep the houses and streets clean and not to indulge in promiscuous defæcation in fields and roads. Attention to personal hygiene will avoid skin disease, caries of the teeth, septic tonsils, pediculosis. Even the poorest of men can keep clean and practise hygienic habits if he so desires.

II. Problems of health.—(1) *Malaria*:—It is a world problem of very great economic importance for it invalidates, people permanently or temporarily, particularly during harvest seasons. All the toil of our farmers will go to waste if he falls sick with malaria at the time of the harvest. Villagers can help antimalarial drives by clearing swamps and improving faulty drainage system. The use of mosquito nets and of antimalarial drugs prophylactically must be encouraged.

(2) *Malnutrition*.—This is an economic problem, rather than a public health one; with an increase in the standard of national income it will improve. Villagers should have some knowledge of what a balanced diet should be. A specimen of a balanced-diet, for an adult is given below.

(A) *VEGETARIAN*:—(i) Rice 8 oz.; (ii) Atta 6 oz.; (iii) Dal 4 oz.; (iv) Ghee or oil 3 oz.; (v) Milk or curd 12 oz.; (vi) Fresh and leafy vegetables.

(B) *NON-VEGETARIAN*:—(i) Rice 8 oz.; (ii) Atta 6 oz.; (iii) Dal 4 oz.; (iv) Ghee 3 oz.; (v) Green leafy vegetables 6 oz.; (vi) Meat or fish 4 oz.

The above is designed to provide about 3,000 calories from 65 g. of protein, 100 g. of fat and the rest of about 450 g. of carbohydrate. Children and pregnant women require relatively more of protein and vitamins.

(3) *Small-pox*:—Compulsory vaccination, prompt notification and isolation will prevent the spread of the disease in a community.

(4) *Cholera*:—A good water-supply, prompt anticholera inoculation, and measures to control fly nuisance together with prompt isolation, and treatment of actual cases are essential measures of control.

(5) *Ankylostomiasis* and other gastro-intestinal diseases. A good water-supply and preventing indiscriminate defæcation liable to pollute water sources and the use of shoes or chappals while walking in roads or fields are some of the measures that would safeguard against these diseases.

(6) *Leprosy*:—A thorough survey of the villages and the establishment of leprosy clinics in all hospitals, and separate exclusive clinics in high incidence areas are essential. Rehabilitation centres, say, one in each district is desirable to house the non-infective and cured patients. If a patient cannot be treated as an in-door patient, his isolation in a separate room in the house is indispensable and practicable.

(7) *Tuberculosis*:—An adequate number of chest clinics, sanatoria, and rehabilitation centres is necessary. Early detection and treatment, with strict isolation of suspects are necessary.

Compulsory mass B.C.G. vaccination must be practised with all earnestness. Good housing, and a balanced diet are also necessary. Industrial workers should have their chest X-rayed every 6 months in order to detect the earliest signs of T.B.

(8) *Maternity and Child Welfare Centres*:—State or private enterprise should provide every village having a population of two to five hundred people with two trained *dais* or midwives who should conduct all labour cases free of cost and also give antenatal and postnatal advice. A Maternity and Child Welfare Centre, for every 10,000 of the population should be established—centrally located and adequately staffed, with at least 10 beds—wherein regular antenatal, postnatal, and family planning advice will be given and difficult labours conducted. The Centre should have two mobile vans to transport emergent cases and the health staff should tour their area from time to time. Barber midwives should be liquidated.

(9) Our health problems are many and State resources are limited. People's whole-hearted co-operation in the form of princely donations, will go a long way to solve our health problems. Ignorance and superstition in public health matters must be dispelled by organised propaganda, by the rising generation of students who must actively co-operate with the public health personnel.

CORTISONE AND HYDROCORTISONE GIVEN PARENTERALLY AND ORALLY IN SEVERE TETANUS

Dr. Lewis of the WHO, and Drs. Satoskar, Joag, Dave and Patel of the G. S. Medical College of Bombay selected for study, forty patients with severe tetanus, on the basis of trismus, convulsions, fever, and a short period of incubation or onset. The average period of onset was less than 22 hours. Basic therapy given to all patients included two intramuscular injections of 120,000 units of antitetanus serum, daily injection of 400,000 units of penicillin, intramuscular administration of paraldehyde and in addition such supportive measures as were indicated. Half of the patients were also treated with adrenal hormone. Cortisone was injected in 5 patients and given orally to 10, while hydrocortisone was given orally to 5 others. The administration of adrenal hormone was usually correlated with a drop in temperature and a fall in the pulse was reduced, and in some cases the fever did not respond to the dosage used. When cortisone was given intramuscularly, there seemed to be an aggravation of muscular spasms, but, when cortisone or hydrocortisone was given orally, there was a diminution in the intensity and severity of the convulsions. Among the 20 controls there were 3 survivors. None of the patients receiving injections of cortisone recovered, while 2 out of 5 patients getting hydro-cortisone and 6 out of 10 patients getting cortisone by mouth recovered. Results obtained with cortisone administered orally are statistically significant and consistent with clinical observations as well as with previously reported beneficial effects obtained with corticotropin.—(*J. Am. Med. Assoc.*, 163 : 5., 1954).

TUBERCULOSIS AND THE GENERAL PRACTITIONER*

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THE average private practitioner is apt to lose interest in any particular disease if he is not allowed to share actively in the tackling of the problems relating to it. In the case of tuberculosis, for instance, the diagnosis and treatment of which are taken over by different Governmental, quasi-governmental and public bodies, the G. P., may and probably does feel neglected and even needless, in its prevention and treatment. He is however, a very important link in the chain. The private medical practitioner is really the largest feeder of new cases to sanatoria and hospitals in the United States and Canada; next comes the contact-group. These two are more productive sources than mass surveys of whole communities.

Another reason for the lack of interest shown by many general practitioners in the problem of tuberculosis is a lack of knowledge and specialised training in the diagnosis and treatment of tuberculosis and other pulmonary diseases. Examination of the chest is a difficult procedure and unless made interesting, it can be boring during the under-graduate years. Refresher courses in tuberculosis and diseases of the chest should be made more readily and widely available to general practitioners.

A third reason for the lack of interest on the part of the general practitioner perhaps lies in the fact that the treatment of this disease is a prolonged affair and not sufficiently paying to the physician. Why should he spend considerable time in diagnosing a case of tuberculosis, for a nominal routine fee, when the patient would probably pass on to a tuberculosis clinic or a sanatorium? There can be no doubt that the general practitioner feels a sense of responsibility and altruism and will be ready to play an important role in every phase of the campaign against tuberculosis, be it prevention, detection, treatment or rehabilitation. In India particularly the physician in private practice is in a strategic position owing to the great shortage of hospital beds. He can take an important part in the Home-Care programme when he diagnoses active tuberculosis in patients. After suitable study of the patient and consultations when needed, he can be responsible for the medical supervision of the patients who must remain and get treated at home because of his inability to secure a bed in the hospital. He has also a role to play in the prevention and detection of the disease in contacts of patients, and later in the rehabilitation of the patients themselves, on their return from hospital.

Prevention.—Three factors are concerned in the prevention of any communicable disease *viz.*, (1) The elimination of the reservoir

*Specially contributed to the Golden Jubilee issue of the ANTISEPTIC.

of infection. (2) Measures to prevent the transmission of infection from the reservoir to other susceptible individuals. (3) Measures aimed to increase the resistance of the individual so that he will not become infected even though exposed, or if he becomes infected is less liable to develop clinical disease.

1. *Elimination of the reservoir*:—This is achieved in three ways:—(i) Detecting cases as soon as possible after they become infected; (ii) prompt segregation of the patient; and (iii) institution of suitable and adequate treatment to render him non-infectious.

2. *Transmission of infection*:—As the infection is air-borne all promiscuous spitting by the patient should be forbidden. He should be instructed to cover his mouth and nose with a handkerchief while talking, sneezing or coughing. The patient who knows how to cough properly will greatly minimize the risk of spreading the disease. If the cough is productive the sputum must be collected in a sputum cup or a cheap (cigarette) tin with a lid, which should always hold some antiseptic lotion and the entire collection should be boiled or burned at the end of each day. The patient's utensils and linen should also be disinfected, cleaned and washed separately and dried. Such precautions alone will greatly diminish the risk of infection.

3. *Increasing body-resistance*:—This may be achieved by (i) adequate nutrition to the contacts, by ensuring general vitamin supplements to their diet, (ii) or adopting such specific measures as BCG-vaccination. While the former is of limited value because of the economic factors involved, the latter is the more practical method and is of much wider application. BCG vaccination has come to be adopted in different parts of the world. This vaccine is made of living tuberculosis germs of the bovine variety that have been so attenuated that they cannot ordinarily give a person tuberculous disease. It is given only to those people who show a negative reaction to tuberculin, in order to raise his resistance to tuberculosis. Robert Koch, postulated in the latter part of the 19th century and then also proved, that once a body is infected with tuberculosis a second infection is not easy. However, it is during that first infection that a person develops tuberculosis if the natural body defences cannot overpower the bacilli. This is where BCG vaccine enters the picture. If we first infect a person with the tuberculosis germ, it will not give him the tuberculous disease, but will enable him to resist more readily and rapidly subsequent invasions by tuberculous germs that he may meet with in his every-day life. The vaccine is injected into the skin over the left shoulder and the resulting reaction is not unlike that which occurs after small-pox vaccination except that the BCG reaction takes much longer to develop; changes occur on the skin at the site of the vaccination, similar to what occur in the lungs, when a very small number of bacilli enter them. It is not known what takes place in the blood, except that the person becomes allergic to tubercle bacilli. The

body defences then respond more promptly and more actively to any subsequent infection with tubercle bacilli.

DIAGNOSIS:—(1) *Among contacts*:—The family physician should examine all contacts of an active case of tuberculosis. All children should be Mantoux-tested and all positive reactors X-rayed. A positive reactor is a person who has had sufficient contact with the source of infection. The negative reactors alone are vaccinated with BCG vaccine. Mantoux test is simple to perform as the technique can be easily learnt at any tuberculosis clinic. Private practitioners should be given facilities to learn the technique of tuberculin-testing. X-raying is superfluous when there is no reaction to tuberculin, except in very rare cases.

(2) *In others*:—It is the physician's responsibility to see that amongst the many patients attending his clinic for different ailments, there is none suffering from unsuspected tuberculosis. It is important to realise that every case of tuberculosis has a stage in which no clinical symptoms or signs are present. The physician must suspect and take positive action to rule out pulmonary tuberculosis in patients with an "idiopathic" pleurisy with or without effusion, erythema-nodosum, tuberculous adenitis, ischio-rectal-abscess, epididymitis, etc. When a primary infection is suspected in a child, a painstaking search should be made for the "spreader." A "spreader" in tuberculosis is not the same as a "carrier" in typhoid. If any one is a "spreader" of tuberculosis he needs treatment, for whether he admits he is ill or not, his disease is on the rampage and sooner or later would cause him to fall sick. If bacilli are present in his sputum he is not free from tuberculosis, no matter how well he may feel physically and mentally.

In children, the onset of the disease is heralded by fever—rarely over 102°F and lasting approximately for three to ten days. Except for the anorexia or lassitude which may accompany the fever, there are usually no physical signs. Sometimes the onset of tuberculosis is more dramatic and simulates the clinical picture of lobar pneumonia with physical signs of a consolidated pulmonary area, including rales, rapid respiration and the appearance of an acutely-ill child. Often the tuberculous nature of the disease is not discovered until it is found that the X-ray picture, taken after the fever and symptoms have subsided, shows an "unresolved" pneumonia. Bronchial obstruction resulting from lymph-node-enlargement gives rise to harsh, repeated expiratory cough which may become so severe as to become brassy in character. Wheezing respirations are often present at this stage and rhonchi are frequently heard. A wrong diagnosis, therefore, of asthma or whooping cough is often made. When hæmatogenous dissemination of the disease takes place, a general enlargement of all superficial lymph nodes may be noticed. Phlyctenular conjunctivitis in a child may be a manifestation of blood-stream-invasion in the tuberculous process. When the blood stream

is invaded by a large number of tubercle bacilli, meningeal and miliary tuberculosis will result. These two conditions usually manifest themselves in the first six months after the development of the first infection with tuberculosis. (Lincoln, 1950).

The following conditions observed in day to day practice should warn the physician and make him look for pulmonary tuberculosis:—

I. Diabetes.—All diabetics should be examined for tuberculosis. The association of boils, carbuncles and gangrene with diabetes has long been kept in mind by every physician treating cases of diabetes. He will do well to search for the presence of tuberculosis also. It is wise to X-ray routinely all cases of diabetes every six months. It is also important to X-ray diabetics after respiratory infections. The symptomatology of both tuberculosis and diabetes has a great deal in common—weight-loss, fatigue, weakness. Because of this and because of the increased prevalence of tuberculosis amongst diabetics, individuals presenting these symptoms should be studied for both diseases.

II. Pleurisy.—As many as 25% of cases of idiopathic pleurisy with effusion, relapse with visible tuberculosis within five years. Idiopathic pleurisy with effusion may occur at any age but is most frequently found in the 15 to 29 age group and should always be regarded as tuberculous until proved otherwise, and treated accordingly. Two errors are frequently made, *namely*, dealing with such effusions as associated with unproved pneumonia, and secondly overlooking the fact that these effusions are often secondary manifestations of a masked tuberculosis which *per se* requires adequate rest and time to heal.

III. Typhoid.—Patients with pulmonary tuberculosis often have, in the earlier stages, their unexplained continuous fever treated as typhoid, with or without chloramphenicol, but often with starvation diet which is fraught with disastrous results. The modern trend in the treatment of typhoid and other fevers is to ensure adequate nourishment to the patient. If the disease later turns out to be tuberculosis, not much harm would have been done if the patient had adequate nourishment in the earlier stages. Pulmonary tuberculosis and idiopathic pleurisy with effusion often exhibit a typhoid-like temperature and an error in diagnosis is therefore, quite possible.

IV. Bronchial asthma and chronic bronchitis.—A chest X-ray is always desirable in all cases of asthma. In elderly asthmatics there is often a history of chronic bronchitis of many years' duration, and not infrequently the bronchitis is tuberculous in nature, but unsuspected. Such chronic coughers should always be investigated as to the reason for their persistent cough. In fact it should be a general rule that every patient, young or old, who has unexplained cough, with sputum, for three weeks or more must have his sputum examined or the person investigated.

A physician must consider pulmonary tuberculosis in the differential diagnosis of many of the conditions which he is called upon to treat, and the following signs and symptoms warrant an early X-ray:—

Cough	} even in senile patients	Influenza
Bronchitis		Febrile chill
Dyspnoea		Pyrexia of unknown origin
Laryngitis		Pleurisy, pleurodynia or pain in chest
Hæmoptysis		Loss of weight
Lassitude		Anorexia
Bronchial catarrh		Anæmia and debility
Ischio-rectal abscess		
Erythema nodosum		
		Amenorrhœa

particularly in females between 15 and 30 years of age (Unexplained)

The patient who suffers from one or more of the ailments mentioned above is definitely out of condition and should be investigated in order to ascertain the cause.

First, the chest is carefully examined. In really early cases nothing abnormal is likely to be detected and a negative stethacoustic examination is therefore, not sufficient to exclude the possibility of pulmonary tuberculosis. In fact when physical signs are present, the disease should no longer be classed as "early." The sputum must next be examined for tubercle bacilli. Omission to carry out this test is the commonest cause of failure to make an early diagnosis. The next procedure is to take an X-ray of the chest. It may happen that the clinician is confronted with the problem of a patient who has an X-ray opacity in the lung fields, but with completely negative physical and bacteriological findings. He is then faced with deciding whether or not it is tuberculous, and if it is tuberculous whether the process is active, quiescent or healed. In such cases, repeated careful physical examinations must be made while the patient stays in bed and keeps a record of his pulse and temperature daily and of his weight weekly. At no longer than a month, a repeat-chest-X-ray-film should be made. If the original opacity has disappeared or markedly regressed, it is probably due to a non-tuberculous infection. If it is unchanged or has increased in size, it is more likely due to tuberculosis or to a neoplasm. It is well to remember that bronchogenic carcinomas, increasingly common in middle-aged men, may cause symptoms which closely simulate pulmonary tuberculosis. Chest films may show no abnormality until a bronchus is occluded by the tumour.

The fact that much of the direction for treatment is nowadays assumed by recognized agencies and financed by the States, does not absolve the private practitioner from his responsibility and obligations to be fully acquainted with all aspects of diagnosis. A proper patient-physician relationship can be maintained by every general practitioner who considers these facilities, ancillary aids and agencies only as auxiliary to competent and efficient work on his part. It must, however, be admitted that in our country the Government and

quasi-government agencies that run tuberculosis clinics and hospitals have let slip a good opportunity for becoming an effective link between the practising physician and his patient, and that the former is justifiably concerned about losing a patient when the latter is referred to those agencies for diagnosis and treatment.

When diagnosis has been made, the referring physician can still help with his kindly directions and encouragement to the patient. It is with great concern, and often in dismay, that the tuberculosis patient first learns of his illness. He will then have at least three emotional hurdles to get over: those of accepting the diagnosis, of adjusting himself to a handicap and of accommodating himself to the loneliness and boredom of a protracted illness. At this juncture the time and energy spent by his physician to deal in an understanding and sympathetic manner with the patient's personal and family problems will pay handsome dividends.

TREATMENT:—When a private physician takes up the responsibility of treating a case of tuberculosis he should remember that bed-rest will still be the most important part of the treatment. Just as we cannot live without adequate blood circulation, so also we cannot live without efficient and adequate oxygenation of the circulating blood in the lungs. Therefore, the more active a person the more oxygen his body needs and the more frequently he will have to breathe. It logically follows that the more rest that a person takes, the less work there will be for the lungs and the greater will be the chance for the diseased lung to heal. The newer antibiotics and chemotherapeutic agents are certainly not the "cure-all" for the disease; they have not brought the disease within the scope of general practice to the same extent as penicillin has done in respect of venereal diseases.

Bed-rest, collapse measures and surgery continue to be the mainstay in the treatment of tuberculosis and the newer drugs are very useful auxiliaries in making the bed-rest less prolonged and collapse measures and surgery more efficient and safe. The drugs are bacteriostatic so far as the tubercle bacilli are concerned and not bactericidal and so their indiscriminate use should be avoided for fear of drug-fastness. Acute pneumonic tuberculosis perhaps can be treated with streptomycin, PAS and INAH just as cases of septic pneumonia are treated with penicillin, provided the physician bears in mind the tuberculous aetiology of the disease and adopts the proper attitude, relating thereto. He should not rest content with the immediate good results, which are obtained as a rule in the treatment of tuberculous pneumonia with these drugs, but should think also of the future of the patient. Many cases of this type may still, need rest in bed or collapse or surgical measures, in spite of the very gratifying immediate results obtained with these drugs.

(1) When collapse by means of artificial pneumothorax is considered necessary, the patient must be told that the treatment is for

the purpose of resting the sick lung; that it does not usually hurt much; that it closes cavities, reduces the amount of sputum, and usually converts it from positive to negative, that air will have to be re-injected from time to time to keep the patient's lung at rest; that the patient may be able to resume some form of light work several months after the sputum has become negative; that the collapse of the lung is often continued for two or three years and that re-expansion is gradual.

(2) When *thoracoplasty* is advised, the patient should be told that, it is not only safe, but also offers the patient an excellent prospect of complete recovery; that it is an operation designed to relax, rest and compress the diseased area of the lung, to accomplish which the ribs over the diseased area of the lung are removed, usually in two stages or three; and that the deformity resulting from the modern type of this operation is so slight that it will be hardly noticeable when the patient is fully clothed.

(3) When *lobectomy* or *pneumonectomy* is advised the explanation would be that these operations are used only in those cases which cannot be controlled by the simpler collapse measures; that the operation consists of removal of a part of a lung (lobectomy) or the entire lung on one side (pneumonectomy) and that these are not as simple as thoracoplasty but are very safe in expert hands.

In addition to the specific treatment of the disease the physician has often to treat many minor symptoms connected with the main disease. The following are a few important ones among them:—

1. *Cough*:—Cough is only a symptom. If the cough is effective it will serve the useful purpose of getting rid of the sputum. It is undesirable for the sputum to be retained, for it is a kind of pus containing tubercle bacilli which may cause spread of the disease. A cough medicine which unduly suppresses the desire to cough works against keeping things clear inside. And cough medicines have no healing power against tuberculosis. As improvement occurs in the disease, the cough lessens. Occasionally when the cough is harassing it is desirable to give the patient some medicine to "take the edge off" the cough. The patient should, however, be instructed to control his cough; about half of the coughing is needless and hinders the treatment, which primarily is physical rest. It is unwise to cough in order to clear the lungs of sputum. When sufficient sputum has accumulated and needs removal, the necessary cough will automatically occur. Violent coughing creates a certain amount of danger of spreading the germ about the lungs. Occasionally when the sputum is very thick it may be necessary to give medicines that would liquefy the sputum; but the liquefying agent should not be 'iodide' in the exudative types of the disease.

2. *Hæmoptysis*:—Severe hæmoptysis occasionally presents a difficult problem. Many drugs have been used with doubtful results. To enable the patient to expectorate blood with least effort he should

be placed in a semi-recumbent position. Apprehensive individuals require sedation but opiates are withheld, lest the blood be retained and give rise to new tuberculous foci. In patients with fibroid tuberculosis and emphysema, a further depression of the respiratory centre by morphine may precipitate anoxia and circulatory failure. Further, blood retention may give rise to atelectasis. It is advisable to apply conventional placebos such as an ice-bag to the chest, give cracked ice by mouth, avoiding hot drinks; these give the patient an added sense of security. If the condition of the patient warrants collapse treatment, an attempt at induction of pneumothorax (Rubin, 1947) is indicated. If the side that is bleeding cannot be determined, a big fill of air in the peritoneal cavity (pneumoperitoneum) often helps in arresting the bleeding.

3. *Chest pain*:—While the elimination of chest pain will depend on the removal or successful treatment of the pathology causing it, this pain is only a symptom which can therefore be safely treated. It is undesirable to administer narcotics or immobilize the chest in any case of bronchial or pulmonary pathology, for fear of the tendency for secretions to be retained and thus produce pneumonic infiltrations or patchy atelectasis. In most cases, the anaesthetizing of the "trigger" areas using procaine intracutaneously or ethyl chloride spray will cause immediate relief. In the chest, these "trigger" areas have two main sites. For the inter-costal nerves, they are found in a region in the corresponding segment at about one inch lateral to the dorsal spine. For the precordium, they are in the region of the pectoral muscles. The exact trigger area may frequently be found by palpation which demonstrates an area of recognizable tenderness, probably far-removed from the spot where pain is felt. The second method recommended is even simpler. It consists of the application of heat to the area which is painful, and, in severe cases, to the trigger area as well, and following this with the application of an analgesic rub over these same areas. (Levine, 1953).

4. *Night sweats*:—These are caused by toxins from acute extensive disease. This symptom can be minimised by proper ventilation of the room, by drinking a fair amount of liquids and by keeping the bowels open. The early and proper use of modern antibiotics has considerably alleviated this condition.

5. *Anorexia*:—This is a common complaint in tuberculosis, but with specific treatment the patient quickly recovers his appetite. It is not always necessary to prescribe drugs to stimulate the appetite. A tuberculosis patient must be well-fed, but overfeeding should be avoided. For the average patient, a balanced diet, furnishing from 3000–4000 calories per day suffices. Too much of milk and butter should be avoided. With suitable additions and alteration to meet the individual's requirements, a monotonous menu can be made more acceptable to the patient. A patient with fever is burning up food

supplies in excess of the normal rate, and it is therefore, not good policy to cut down the diet merely because the temperature is raised.

6. *Temperature*:—The patient should be instructed to use a thermometer for full five minutes without talking and long after taking food or drinks. Specific treatment of the disease promptly controls the temperature and so diaphoretics and anti-pyretics are wasteful and useless.

Rehabilitation.—In the rehabilitation of the ex-patient the family physician is in a strategic position to give valuable help by his advice to the patient and his family, whether the patient is returning to the family from the sanatorium, or the "return" is simply from a life of isolation within the home, to a life of convalescence within the home when isolation is no longer considered necessary. The "return" in either case calls for major mental adjustment on the part of the family, while they and the patient must understand the physical limitations imposed by the disease. A person who is forced to be utterly dependent upon others so far, may find the readjustment to a life involving self-sufficiency most difficult. A sympathetic doctor can do much to bring about a normal re-adjustment. He may have to act sometimes as an arbiter between a prospective employer and an ex-tuberculous patient. On the one hand the employer wishes to be assured that the prospective employee is a safe enough person to employ; that he will not be likely to spread infection to other employees, that he will not be absent from work frequently for protracted periods due to sickness, and that his condition will not be a cause of greater accident risk. On the other hand, the ex-patient expects to attain the dignity of self-support. Much more than mere bread and butter is involved. Both the employer and the prospective employee will rely on the doctor for a proper decision. Ex-patients who are physically fit to work, should be given the opportunity to do so. The majority of these who are employed in suitable jobs have given evidence that they are as good as or even better than the average employee. Refusal of employment to a person because he has received treatment for tuberculosis, can damp and shrivel up a man's spirit, make him despondent, drive him back to a state of utter dependency and leave him psychologically a total wreck instead of the former individual who had committed no greater crime than that of having contracted tuberculosis. The private practitioner can prevent a great deal of mental or even physical distress resulting from the above causes, but it will involve careful individual attention to the needs of the person concerned. While chalking out a programme of work and rest for the patient it is desirable to prescribe, to begin with, at least ten hours' stay in bed, and a brief rest-period at mid-day. The importance of frequent check-ups at regular intervals and also when any untoward symptoms develop should be emphasised. An ex-patient should always dispose of his sputum as when it was positive.

Marriage.—Marriage and even procreation of children are safe in a girl who had suffered from tuberculosis, provided her disease has shown no activity during the three years following the time it was pronounced to have been arrested.

In conclusion it may be said that every doctor's office should be a tuberculosis-detecting-centre. The doctor may not have highly specialized and expensive diagnostic equipment, because the most important and most usable tools owned by him are his five senses, his suspicions and his logic. Tuberculosis is a challenging disease. It changes, sometimes rapidly, usually for the better, occasionally for the worse. Virtually every patient can be treated and often with spectacular results. A general practitioner's interest in the disease may not bring him a great financial reward; it brings him satisfaction in other directions. His opportunities are thus legion.

REFERENCES:

1. Levine, Edwin R. (1953)—*Diseases of the Chest*, p. 523, Nov.
2. Lincoln, Edith M. (1950)—*Am. Jour. Med.*, p. 625, Nov.
3. Maxwell, James (1947)—*The Care of Tuberculosis in the Home*, Hodder and Stoughton, London.
4. Rubin, EH H. (1947)—*Diseases of the Chest*, pp. 291-292, W. B. Saunders & Co., Philadelphia.

PROLONGED TREATMENT OF SEVERE ASTHMA WITH CORTISONE IN TABLETS

Of 55 patients with severe continuous asthma with dyspnoea treated with cortisone tablets over a period of two years, 22 were chosen to be reported on because they had had this treatment for a period of at least three months uninterruptedly. The maximum period of uninterrupted treatment among this group of patients was 24 months. Long-standing asthma with continuous dyspnoea, regardless of the length of past duration or the age of the patient, is one of the clearest indications for ambulatory cortisone therapy. The other principal form of severe asthma requiring cortisone treatment is that accompanied by prolonged and easily relapsing states of asthmatic disease. Only patients with asthma that does not yield to the usual forms of therapy are to be treated with cortisone. The action of the hormone is manifested rapidly and emphatically. In about one week freedom of breathing is noted, together with suppression of cough and reduction of expectoration. The proper maintenance dose is the smallest that will relieve the patient's symptoms. This is usually between 50 and 75 mg. per day taken four times in every 24 hours for the first five days of every week. The patients must be on a low sodium, low chloride diet and receive 1.5 to 2 g. daily of potassium chloride. Once a week they are given an intramuscular injection of 40 to 50 mg. of testosterone. They must be under careful surveillance even though they are out-patients, because this treatment has considerable risk. This treatment is perfectly acceptable for continuation over a period of months and probably years. Only one accident occurred among the 55 patients treated; cavitary tuberculosis appeared during the 18th month of therapy. Otherwise, the method was eminently successful, restoring all of the patients back to normal life.—(*La Med. En France—J. Franc. Med. et Chir. Thor.*, 8: 592-616, 1954, (French), *J.A.M.A.*, 2-4-'55).

Cases and Comments

MYOSITIS OSSIFICANS TRAUMATICA AND ITS TREATMENT

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Introduction.—The importance of active exercise has been repeatedly stressed by Watson-Jones (1952) in cases of myositis ossificans traumatica.

Unfortunately the condition, 'myositis ossificans traumatica' has no relation to the exact underlying pathological condition. The fact is that the condition is a misnomer as there is neither myositis nor ossification in the muscles. The condition is characterized by stripping of the periosteum from the surface of the bone with the formation of a subperiosteal hematoma. Ossification or more precisely deposition of the woven bone takes place in the subperiosteal hematoma so formed.

Subperiosteal ossification has been noted in relation to (a) avulsion of the quadriceps, (b) torn anterior capsule of the ankle joint, (c) in relation to the torn medial ligament of the knee when the condition is known as 'Pallegrini Stieda's Disease' (Callen-1937; Brumbaugh-1940) and (d) at the elbow.

The treatment of a case of subperiosteal ossification is of utmost importance as failure to recognize or treat the condition properly will certainly earn a bad name for the surgeon as a stiff joint will almost invariably result.

A case of subperiosteal ossification of the right elbow is described in this report. This patient was satisfactorily treated only by active exercise.

CASE REPORT:—A boy of two sustained an injury to his right elbow on 20-4-'55. He was examined by a local doctor who diagnosed the condition as a simple sprain of the elbow and put the right arm in a plaster of Paris bandage with the elbow flexed at 45°. The elbow was not X-rayed, as the doctor did not suspect a fracture. The plaster of Paris bandage was removed after two weeks and it was found that the elbow had a very limited range of movement. Under the doctor's instructions, the parents of the patient started vigorous passive stretching of the elbow and daily massage of the elbow with oil. The results of passive stretching were disappointing as the elbow was absolutely fixed at 45° of flexion after a few days.

The patient was seen by me for the first time on 21-6-'55, i.e. two months after the original injury. On examination a swelling about the size of a walnut was detected on the anterior aspect of the lower end of the right humerus. The elbow was fixed at 45° flexion

and slight stretching caused much pain. A diagnosis of 'old supra condylar fracture with subperiosteal ossification' was made. This was confirmed by taking an X-ray of the said elbow on the same day. The X-ray revealed a transcondylar fracture with slight posterior



FIG. 1

displacement of the distal fragment and subperiosteal ossification (Fig. 1).

No attempt was made to reduce the slight displacement of the fragments as it would cause fresh hæmorrhage (and growing bones of children straighten up spontaneously as the child grows older). All the passive exercises were stopped and the parents

of the child were warned against passive stretching of the elbow. The child was not allowed to carry any heavy weight (*e.g.*, a bucket of water) nor was he allowed to hang from an overhead beam using the same arm. Active flexion and extension of the elbow were immediately started for five minutes every hour and both the child and his father were taught how to carry out the exercises. It was indeed difficult to teach active exercise to a child of two.

It was interesting to note that when the patient was examined again on 6-8-55, the movements of the right elbow-joint were absolutely normal and almost painless. The patient complained of only slight tenderness over the anterior aspect of the right elbow joint. On examination a small, hard and tender nodule of about the size of a pea could be felt. The patient was subjected to another X-ray examination on the same day. Skia-

graphy revealed a sound union of the fractured fragments and absorption of the subperiosteal bone

(hæmatoma) to a great extent. (Fig. 2). The patient was advised to



FIG. 2

continue the active exercises as usual. When the child was seen by me again after a month no bony nodule could be detected on clinical examination. Movements of the elbow were perfect and painless. The patient was discharged.

Discussion.—The affected elbow had very slight range of movement after the plaster of Paris bandage came off at the end of the second week. The elbow became absolutely stiff after vigorous attempts were made to mobilize the joint by passive stretching. It is obvious that the subperiosteal ossification started after the patient had the elbow passively stretched. Passive stretching initiated fresh hæmorrhage underneath the periosteum and with the subperiosteal bone formation the elbow became absolutely stiff. If passive stretchings had not been tried after removal of the plaster of Paris bandage and the patient had been encouraged to perform active exercises with the elbow joint, the complication of myositis ossificans traumatica would not have occurred. Nevertheless, this condition of subperiosteal bone-formation, unlike myositis ossificans progressiva, is well within the realm of surgical treatment. The treatment is active exercise of the joint for five minutes every hour. There is no need to immobilize the joint and as a matter of fact, immobilization causes more harm than good as prolonged immobilization may leave the joint permanently stiff. Complete immobility causes consolidation of the periarticular adhesions which lead to permanent stiffness and limitation of the extension movement.

There is no need for a physiotherapist to look after the patient (as often they cannot check the temptation to stretch the joint passively) and personally I think, it is the duty of the surgeon to teach the patient how to carry out active exercises. In the case under review, the results of active exercise of the elbow joint were excellent and the elbow regained its full range of flexion and extension movements in the course of four weeks. The second skia-gram revealed rapid absorption of the subperiosteal hæmatoma. It may be mentioned that the prevention of the occurrence of subperiosteal ossification is to protect the joint from passive stretching. If, as a result of passive stretching, the condition has become already established, the only treatment necessary would be to stop passive stretching and encourage active exercise.

REFERENCES:

1. Brumbaugh, H. L. (1940)—*Amer. J. Surg.*, 48: 681.
2. Callen, H. S., (1937)—*Radiology*, 29: 158.
3. Watson-Jones, R. (1952)—*Fractures and Joint-Injuries*, (E. & S. Livingstone Ltd).

INJURIES TO THE THORAX

The basic principles in their management consist of maintenance of adequate circulating blood volume and open air-ways to ensure satisfactory pulmonary ventilation and oxygen exchange.....Tracheostomy is an important adjunct in the management of all severe ventilatory and respiratory problems. —(*J.A.M.A.*, 1-10-55).

A CASE OF TUBERCULOUS MENINGITIS

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Case Report.—S., Hindu, female child, aged 8 years, was admitted to the Children's Ward of the Medical Unit, Erskine Hospital, Madurai, at 11-35 a.m. on 21-4-1955 with the complaint of fever and vomiting of 10 days' duration and convulsions for 2 days. The patient was unconscious 3 days prior to the date of admission.

HISTORY OF PRESENT ILLNESS:—The patient was having cough with expectoration and irregular fever for one month previous to admission. Slowly, she developed difficulty in walking and became drowsy and irritable. She complained of severe frontal headache and vomiting which made her cry often. Ten days later she became unconscious and she was brought to the hospital in that state.



PREVIOUS ILLNESS:—Nil particular.

FAMILY HISTORY:—No other person in the family suffered from tuberculosis.

INVESTIGATIONS:—*Urine*:—Showed nothing abnormal.

C.S.F.:—On admission, the fluid was clear and under tension; cobweb was formed within 24 hours; cobweb—AFB was negative.

Blood:—Hb.: 60% (Sahli).

E.S.R.:—On admission: 45 m.m. in 1 hour; and one month later: 32 m.m. in 1 hour.

D.C.—P. 50%, E. 5%, L. 45%, B. 0%, M. 0%, WBC. 8,800 per c mm.

Chest:—A.P. view: *X-ray report*: Hilar shadows prominent. No other abnormality.

Gastric lavage and sputum:—AFB—Negative.

Condition on admission:—21-4-1955: Patient unconscious; moving away from light; pulse rapid and thready; enlarged posterior cervical glands present. No skin lesion on the scalp. Patient emaciated and debilitated, not jaundiced.

Cardiovascular system:—Pulse: Volume and tension poor, thready; 132 per minute.

Heart:—Boundaries within normal limits; sounds normal in all the four areas, feeble; no murmurs heard.

Respiratory system:—Trachea not deviated; movements equal on both sides; harsh vesicular breath sounds; rales and ronchi heard over both lung fields.

Abdomen:—Soft, no palpable masses felt; liver and spleen not palpable.

Central nervous system:—Patient comatose. Ptosis on both sides.

Pupils:—*Right*: Dilated. Not reacting to light. *Left*: Dilated reacting to light. Strabismus: positive +.

Eye-ball movements:—Could not be tested; there was no evidence of any asymmetry in the face: Other cranial nerves could not be tested.

Neck rigidity: +; *Kernig's sign*: +; *Brudzinsky's sign*: +; *Plantar Extensor*. Other jerks: Normal.

C. S. F. on 21-4-1955:—Proteins: 850 mg. Chloride: 491.9 mg. Sugar: nil. Globulin: + +; Cells: + (lymphocytes).

On 26-4-1955:—The general condition was the same; both pupils dilated; not reacting to light. Strabismus: 2nd L.P. was done. Fluid under tension, clear.

C. S. F. BIO-CHEMICAL ANALYSIS

Date	Nature colour	Tension	Proteins	Chlorides	Sugar	Globulin	Cells
21-4-'55	Clear Cobweb + in 24 hrs.	Under-tension	Mgs. 850	Mgs. 491.9	Nil	+ +	+
26-4-'55	Clear No cobweb	Under-tension	800	491.9	Nil	+ +	+
7-5-'55	Clear	Not under-tension	500	526.6	Nil	+ +	Nil
6-6-'55	Clear	Do.	300	574.4	Nil	+	Nil
22-6-'55	Clear	Do.	150	561.5	Slightly less than 20 mg.	Nil	Nil

Treatment.—*On admission*:—(21-4-'55) (i) Immediate lumbar puncture was done; the fluid was under tension. (ii) Paraldehyde 3 cc. I.M. (iii) Glycerine enema: Result fair.

21-4-'55 to 17-5-'55:—The patient was started on Streptotibine (Lepetit) 0.5 g. on alternate days. (A combination of dihydrostreptomycin and Isonicotyl hydrozone pyruvate).

Patient had seven intrathecal injections of Streptomycin sulphate (25 mg. per sitting). Injections of Berin (50 mg. per cc.) I.M. and Nicotinic acidamide (50 mg. per cc.) I.M. on alternate days.

Repeated:—(1) Lumbar puncture; (2) glycerine enema; and (3) paraldehyde 3 cc. whenever necessary.

With improvement in the clinical symptoms and also in the C.S.F. analysis, Streptotibine was stopped on 19-6-1955.

The patient was put on: INH tablets (50 mg. each) and PAC tablets (25 g. each). Berin and nicotinicamide were continued.

Ophthalmologist's report on 9-7-1955:—(10 days before discharge).

(1) *Right eye*:—Lids, conjunctiva and cornea were normal. *Pupils*: Slightly dilated and reacting sluggishly. *Vision*: Counting fingers at 1 meter only.

(2) *Left eye*:—Lids and conjunctiva were normal. The cornea had a small nebula near the limbus at about 6-0 clock position—due to old phlycten.

Pupils: were dilated and reacting very sluggishly. *Vision*: Counting fingers close to face only.

Fundus both eyes:—Primary optic atrophy; disc pale more on the left side. Disc margins clear. Lamina cribrosa seen and arteries were slightly contracted.

When the patient was discharged at 6 p.m. on 19-7-1955, she was able to sit up in bed and move her limbs easily. Strabismus was slight. Both pupils were sluggishly reacting to light, dilated. No neck rigidity. Kernig's sign was negative. She was complaining of pain in the right knee joint and difficulty in extending it completely. There was however no fluid in the joint. Patellar tap was negative. She was advised to continue INH and PAC tablets along with other general tonics and vitamins.

9-8-1955. The patient reported for a routine check-up. She was advised re-admission for a routine L.P. and check-up. The general condition of the patient had considerably improved; an increase in weight was reported. The pain in the right knee-joint had completely disappeared. Same regime of treatment was advised to be continued.

I thank the Superintendent, Erskine Hospital, for permitting me to report the case.

OEDEMA AND CONGESTIVE FAILURE RELATED TO THE ADMINISTRATION OF RAUWOLFIA SERPENTINA

The association of fluid retention in five patients treated with crude or purified alkaloids of Rauwolfia Serpentina seems to be more than happenstance (chance happening) and may possibly be related to occasional sodium retention. It is difficult to attribute the accumulation of oedema to dietetic changes. Against the possibility of a coincidental cardiac decompensation in these hypertensive subjects are the negative previous histories, the temporary relationship to drug administration, the rapid remission following cessation of therapy and the subsequent course. The minimal urinary findings did not suggest a nephrotic state. In 2 of the 5 cases, the fluid retention was severe enough to cause congestive failure.—(*J.A.M.A.*, p. 439, 1-10-1955).

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Editorials

DEVELOPMENTS IN THE CHEMOTHERAPY OF MALARIA DURING THE LAST FORTY YEARS

(A REVIEW OF THE RECENT LITERATURE ON THE SUBJECT)

MALARIA is no doubt a well-worn subject, but the recent advances in our knowledge have contributed greatly to the banishment of the malady in some regions and its curtailment in others; there has been during recent years a spate of chemotherapeutic literature which may be reviewed and crystallized for the benefit of our readers.

The chemotherapy of Malaria is complicated by the fact that no anti-malarial drug so far discovered is therapeutically effective against all stages of human malaria. Not only do malarial parasites differ in their reactions to drugs at different stages in their complicated life cycles, but different species of parasites at comparable stages of development show different responses, and finally, strains within a given species may show significant differences in susceptibility to treatment.

While the extermination of malaria from endemic areas is the primary concern of the malariologist, the treatment of the patient is a matter of considerable moment to the practising physician. Malaria is 'protean in its manifestations and unpredictable in its termination in untreated cases.' Although not often a spectacular killer, yet in the cerebral and hyperpyrexial forms, malaria may take a heavy toll of life, and only timely and effective treatment can save patients from death. During the last twenty years the wonderful achievements in the field of malariology are perhaps rivalled only by such other stupendous discoveries as the antibiotics, cortisone and Vitamin B₁₂.

The numerous investigations conducted between the two world wars notably those sponsored by the League of Nations Malaria

Commission, together with experience gained during the treatment of neurosyphilis with malaria therapy, resulted in the general adoption of comparatively short courses of treatment for malaria. It was established that any dosage of quinine exceeding 30 grains a day, not only fails to affect the course of the disease, but is also detrimental to the health of the patient; and that to extend the course of treatment beyond seven days has no effect on the relapse rate.

Malaria cycle in man:—There are four human species of malarial parasites namely, *Plasmodium falciparum*, which produces the severe and dangerous malignant tertian malaria; *P. vivax* the parasite of benign tertian malaria; *P. malariae*, producing quartan malaria and *P. ovale* with which is associated the tertian fever resembling that of *vivax* malaria. These parasites follow the general pattern of development, but *P. falciparum* shows certain differences which have an important bearing on treatment.

It seems that with "*P. vivax* and probably also with *P. malariae* and *P. ovale*, some of the pre-erythrocytic parasites persist in an exo-erythrocytic phase forming a reservoir of parasites from which circulating erythrocytes may from time to time become re-infected when immunity is waning and perhaps long after the initial attack, thus giving rise to the relapses which are so characteristic of these infections (Shortt *et al*). With *P. falciparum* it seems that the exo-erythrocytic phase does not continue long beyond the pre-erythrocytic period. Consequently, a recrudescence of fever with *P. falciparum* is probably due to persisting infection of the red blood corpuscles and follows the primary attack at a short interval" (Murgatroyd). These facts have important bearings on the nature and duration of treatment that are required, and on the long-term prognosis in the various types of infection.

The crux of the problem of treatment in malaria is the extirpation of *P. vivax* infection from the system. Boyd pointed out that "the outstanding need in the chemotherapy of malaria is for a non-toxic drug, active against the exo-erythrocytic forms of *P. vivax*, for use both as a causal prophylactic and in preventing relapse." The exo-erythrocytic cycle is longer and more persistent in *P. vivax* infections than that in *P. falciparum*. Infections with *P. vivax* are more commonly encountered than with *P. falciparum* or *P. malariae*. Mixed infections with *P. vivax* and *P. falciparum* are not uncommon. With its shorter incubation period and sharper clinical manifestations, *P. falciparum* may eclipse *P. vivax* in the initial attack, and the latter parasite will then cause recurrences and relapses of malaria.

There is, as already stated, no drug in practical use which alone can with certainty be relied upon to destroy all pre-erythrocytic parasites; proguanil in therapeutic doses destroys the pre-erythrocytic parasites of certain strains of *P. falciparum* but does not destroy all strains, and it is relatively inactive against the pre-erythrocytic forms of the other species.

There are, however, several drugs which, in therapeutic doses, have a very powerful action against erythrocytic trophozoites and schizonts of malaria, and as these stages of the parasites are responsible for the clinical manifestations of malaria, such drugs, commonly known as schizonticides, furnish most powerful weapons for the control of the acute stages of the disease. They do not, however, destroy the exo-erythrocytic forms of *P. vivax*, quartan or *ovale* parasites, and consequently with any of these infections successful treatment of the acute attack does not necessarily mean that relapse may not occur.

Many of the schizonticidal drugs are sufficiently non-toxic to be taken continuously in doses which maintain a schizonticidal concentration in the blood and thereby suppress the initial development of the erythrocytic parasites from the pre-erythrocytic stages. "The suppressive action is greatly used in practice to keep individuals who are exposed to the risk of malaria free from symptoms of the disease. It is obvious, however, that such drugs, acting only on the erythrocytic forms will not prevent delayed primary attacks, arising from a persisting exo-erythrocytic reservoir of infection, from becoming manifest after the suppressive treatment is discontinued." Certain drugs bring about the disappearance of gametocytes or prevent their further development in the mosquito. Because gametocytes as such give rise to no symptoms in man, drugs acting on them are of no direct therapeutic significance, although they may be of some indirect value in limiting the spread of malarial infection.

The evolution of the synthetic remedies which are now so largely used in the treatment and prophylaxis of malaria has been largely determined by conditions brought about by the two world wars and their aftermath. Sustained research by a team of German scientists culminated in the synthesis of Pamaquin, the first synthetic quinoline compound to exhibit effective action against human malarial parasites. "Pamaquin was found to have a powerful destructive action on the gametocytes of *P. falciparum*, a property not possessed by any of the cinchona alkaloids; another quite unexpected development was the demonstration in India by Sinton and Bird that when used in conjunction with quinine, it effected a marked reduction in the relapse rate of *vivax* malaria. In certain respects, however, Pamaquin proved unsuitable as a therapeutic agent, chiefly by reason of its relatively high toxicity and the fact that it has little action on the asexual erythrocytic forms of *P. falciparum*." The Germans therefore, embarked on further studies and in 1930 produced the acridine compound Atebrin, now known as Mepacrine.

Mepacrine proved to have a powerful destructive action on the asexual erythrocytic forms of all species of human malarial parasites "It possesses all the antimalarial properties of quinine, and against certain strains of *P. falciparum* it is considerably more active. It has

however, the disadvantage of turning the skin yellow and of producing in certain individuals undesirable side-effects."

The Germans continued their investigations with the object of producing a drug which would have the same antimalarial properties without its disadvantages and produced Resochin, now known as Chloroquine, a member of the 4-aminoquinoline group of compounds. The Americans found that the early German tests with Chloroquine had created an exaggerated picture of its toxicity; they also found it superior as an antimalarial drug to Sontoquine (which differs from Chloroquine in having an extra methyl group on the quinoline nucleus). Chloroquine has the advantage over Mepacrine of not causing discolouration of the skin; it is on the whole more active than the latter drug and is less likely to produce unpleasant side-effects.

Meanwhile, during the latter half of the war, British chemists adopting a new line of approach, had produced a biguanide compound, Proguanil (*Paludrine*) which proved to have remarkable antimalarial properties. "This drug acts on the pre-erythrocytic forms of *P. falciparum* and is, therefore, a causal prophylactic of infection due to this species of parasite; it is a good suppressive against all forms of malaria; it inhibits the late sporogonic forms of the parasite, so that mosquitoes feeding on a gametocyte carrier receiving therapeutic doses of the drug do not become infective; it has a lower toxicity than any other antimalarial drug known; and it can be produced at very low cost. Its action on the asexual erythrocytic forms of the malarial parasite is not sufficiently rapid to render it suitable for treatment of the clinical attack, and its principal value is in prophylaxis. Proguanil has been used extensively for this purpose among British troops and civilian populations in Malaya and other parts of the Commonwealth during the post-war years with excellent results." (Sir Gordon Covell, *R.S.H.J.*, 75: 10, Oct. 1955).

More recently, another antimalarial drug of value has been placed on the market *viz.*, Pyrimethamine (*Daraprim*) a member of the diaminopyrimidine group. It was synthesized in the United States; but many of the biological tests have been carried out in England. In most respects its action closely resembles that of Proguanil, since its chemical structure is not unlike that of an active metabolite produced in the body by the latter drug. Like Proguanil, it is too slow in action for therapeutic use, and its chief value is likely to be in prophylaxis. It is active in very small doses and can be produced at a relatively low cost. "Proguanil and Pyrimethamine (*Daraprim*) share one grave disadvantage, *viz.*, a tendency to provoke resistance in parasites subjected to prolonged contact with either drug in sub-therapeutic dosage. Cross-resistance between the two drugs has also been shown to exist. It is not possible to forecast at this stage how far this phenomenon will affect their future use. Fortunately, no such tendency has been observed in respect of either Chloroquine, Amodiaquine, Mepacrine or Quinine

Another important new antimalarial drug developed in the United States is Primaquine, one of the 8-aminoquinoline series. The researches which led to its production were inspired, we are told, by the urgent need for preventing relapses of *vivax* malaria in troops returning from Korea.

Acute *falciparum* malaria is the easiest infection to cure completely. The use of quinine is fast declining. In acute attacks of this type, non-immune persons should be treated by any one of the schizonticidal drugs, *viz.*, Chloroquine, Mepacrine, or Proguanil. The response is rapid.

Acute *vivax*, *quartan* and *ovale*, infections can be controlled by any of the schizonticidal drugs, *e.g.*, Quinine, Mepacrine, Chloroquine or Proguanil, but these infections may relapse, so the above drugs must be reinforced by the additional use of Pamaquin or Pentaquine. Pamaquin is most effective when given with quinine (Murgatroyd).

From the above review it will be seen that the armamentarium of the malariologist as regards "the treatment and prophylaxis of malaria is now reasonably complete." In Chloroquine, Amodiaquine, Mepacrine and Quinine we have effective agents for the treatment of clinical attacks. In Primaquine we have a drug which can effect a marked reduction in the relapse rate without undue risk of toxicity. Proguanil and Pyrimethamine are effective and inexpensive drugs for prophylaxis and suppression though the problem of resistance may eventually lead to the substitution of these two drugs by one or other of the 4-aminoquinolines. (Covell, *R.S.H.J.*, 75: 10, Oct. 1955).

NATIONAL PLAN FOR CONTROL OF T.B.

INAUGURATING the 13th All-India Tuberculosis Workers' Conference at Trivandrum on 5th January 1956, H. H. THE RAJPRAMUKH of Travancore-Cochin, said that the Central and State Governments were doing their best by adopting measures to control this disease and appealed to the people to co-operate with the authorities in this great task.

Dr. T. J. JOSEPH, Superintendent of the Lady Linlithgow Sanatorium, Kasauli, who presided over the Conference, stressed the need for research in tuberculosis control and added that unless the official and voluntary agencies that were engaged in anti-tuberculosis work in India were quick to take note of the changes that were taking place in tuberculosis treatment, 'they are likely to go along old winding paths of defence, rather than along the highway that has been opened for direct attack.'

Referring to the changes that antibiotics had brought about in the character, activities and behaviour of the tubercle bacilli Dr. JOSEPH said that antibiotics had made the tubercle bacilli change

their tactics. Inside the body they were seldom killed outright by the drugs, but they were compelled to lie low, and prevented from multiplying rapidly. Drug resistance of bacilli was another character which had come to the forefront after the discovery of the antibiotics. But the emergence of resistance would be delayed to a great extent by drug-combinations.

Antibiotics had superseded all other medicines for tuberculosis treatment. There was less necessity for prolonged bed-rest for patients. The treatment for tuberculosis was going out of specialized institutions to general hospitals and the homes of patients; it was going out of the hands of tuberculosis specialists into the hands of the general practitioners.

Dr. P. V. BENJAMIN, Tuberculosis Adviser to the Union Government, briefly reviewing the anti-tuberculosis activities in India said: "The Union Government has offered a substantial subsidy to the States for the control of tuberculosis, if they conform to the National Plan which has already been formulated." Some of the States have followed the suggestion embodied in the plan, while others have not done so. The Union Government is, however, convinced that there is need for planning for tuberculosis control on a nation-wide scale, similar to the national plan for the control of malaria, and hence has stipulated this condition for subsidy to the States.

Giving the salient features of the National Plan, Dr. BENJAMIN said 'BCG vaccination, which was in progress, had to be intensified and the mass campaign had to be completed during the second plan period.' The plan also provided for the upgrading of one hundred existing TB clinics and for the starting of 200 new ones so that every district and town in the country would have at least one modern TB clinic with facilities for X-ray and laboratory diagnosis. The Government would also set up about 15 more training and demonstration centres attached to Medical Colleges in the various States. The other targets of the plan were 10,000 additional beds for the isolation of patients living in crowded homes in the cities and 10 work-centres for the rehabilitation of ex-patients.

The plan also envisaged expansion of research. One of the schemes now being finalised, was to find out the efficacy of the new anti-bacterial drugs when they were used for treatment of patients living in their homes. This was proposed to be undertaken by the Indian Council of Medical Research in co-operation with the WHO and the British Medical Research Council. The Union Government had been able to implement the BCG vaccination scheme of the First Five-Year Plan according to schedule. Sixty-five million persons had been tested and over 12,000,000 of them vaccinated. But it had not been possible to develop other schemes in the same way on a national basis.

Enumerating the achievements during the period, he said 70 TB clinics were opened, bringing the total number of such clinics in the

country at present to 200. The three demonstration centres which were planned even before the First Five-Year Plan, had been well established and a fourth one would be opened in a month or two. As regards beds, there had been an increase of about 8,000 during the period.

He was glad to report that there was considerable progress in the field of research. He also referred to some special studies undertaken regarding the factors that influenced the tuberculin reaction and the effect of sunlight on the BCG-vaccinated spot. We are glad to know that a survey to ascertain the real incidence of tuberculosis in the country is also being conducted now, in view of the paucity of accurate statistics regarding the incidence and morbidity of the disease in our country.

The Conference discussed a variety of important subjects which included 'tuberculosis among children,' 'chest surveys,' 'the place of antibiotics in treatment,' 'domiciliary service to TB patients,' etc. The promotion of schemes for the treatment of tuberculous patients in their homes, has great potentialities and we are glad to be told that this will considerably help in the treatment and control of tuberculosis, especially when the number of sanatoria in the country is totally inadequate to accommodate the numerous sufferers from the disease. The Union Health Minister RAJKUMARI AMRIT KAUR in an interview she gave to the Madras pressmen at the Meenambakkam Air Port on the 18th January 1956, stated that 'Government was doing its best to fight tuberculosis.' She also said that the number of TB Sanatoria in the country was not adequate in view of the large number of patients and that the cost of treatment was high; that the Government proposed to open more TB clinics all over the country to enable patients belonging to the middle and poor classes to have treatment at a cheaper cost.

We feel that in addition to the curative aspects of the problem, the Health standards of the people must receive careful consideration and that emphasis should be laid on the question of raising the standard of living amongst the people; we have been hearing a great deal about this in recent years, not only in the local press, on public platforms and through bulletins, but also in nearly every scheme sponsored by the WHO, UNICEF and other organizations.

The emoluments attached to every post, in every profession and in every stratum of society, have been greatly enhanced during the past 15 years, but we regret to find that the additional remuneration which our people get is being spent, as the RAJPRAMUKH of Travancore-Cochin observed the other day, primarily on luxuries and entertainments. Propaganda in anti-tuberculosis campaigns must necessarily therefore, take note of this wasteful trend and impress on wage earners the importance of spending money in the first instance on the betterment of their and their children's healths, without frittering away their earnings and savings on luxuries, cinemas and other such non-essential pursuits.

GLEANINGS FROM THE MEDICAL PRESS

MEDICINE & THERAPEUTICS

The treatment of thyrotoxicosis with radio-iodine.—(*Medical Journal of Austral.*).

Chamberlain, Balls *et al* (*Radio-logy*, June, 1955) report on experience of the treatment of thyrotoxicosis with radio-iodine in a statistically significant group of cases. During the period from November, 1947, to December, 1952, they treated 228 patients by this method, and from these have selected 180 who have been followed for one year or more after treatment and in whom the diagnosis was established beyond reasonable doubt. They state that the principal problem in the treatment of thyrotoxicosis with radio-active iodine is the selection of the dose which offers the maximum prospect of producing a permanent euthyroid state with minimal risk of residual hypothyroidism. They have not been satisfied with mathematical solutions currently used. Their choice of dose is based on rough estimation of the size of the gland and the clinical and tracer evidence of the severity of the disease. They consider treatment with radio-iodine to be the treatment of choice for the following types of patient: (a) those above the age of forty years with demonstrable goitre or with diffuse goitres; (b) those of any age with persistent or recurrent post-operative thyrotoxicosis. Pregnancy is considered a definite contraindication. The authors reject patients under the age of forty years, except in the event of post-operative recurrence or other unusual circumstances. This policy is based on the theoretical hazards of late carcinogenesis or genetic damage. Thyrotoxicosis was relieved after a single treatment in about 80% of cases, and after one or more treatments in 97.2%. A good result was obtained in all of 12 patients with post-operative recurrences. The incidence of protracted post-therapeutic hypothyroidism was 18.3%. The incidence of severe post-therapeutic reactions was low (2.8%).

Shock due to myocardial infarction.—(*Circulation*, 9: 527, 1954, via *G. P.*, Oct. '54).

Griffith and co-workers found that promptness is a key factor in treatment of shock due to myocardial infarction. They defined shock as a condition of severe hypotension, lasting an hour or more, and accompanied by signs of peripheral circulatory collapse.

Their evaluation of various antishock remedies was based on a comparison with similar cases in which such remedies were not employed. The influence of time in treatment was shown by the fact that, of sixty patients who received treatment within three hours, only 13% died.

Basic treatment of shock included proper positioning, oxygen, morphine intravenously, and digitalis (for congestive heart failure). When these measures do not suffice, various other methods were used, including intravenous infusions, retrograde arterial infusions, and sympathomimetic amines.

The results in the treated cases are contrasted with those in the untreated cases in the diagram above.

Toxic effects of citrated blood.—(*Ann. Surg.*, 139: 430).

Cookson and his co-workers have demonstrated that when citrated blood is given rapidly intravenously or intra-arterially, it can exert serious toxic effects. In the presence of falling blood pressure, intra-arterial transfusion suffices the coronary vessels and maintains the normal coronary flow. However, with each downward stage of blood pressure deterioration, the arterial transfusion takes over more and more of the coronary flow. Consequently, toxic effects of the citrated blood on the heart become more pronounced.

Citrated blood consists of venous blood, is less alkaline than arterial blood, and becomes more acid on storage. Furthermore, on storage, there is a rise of plasma potassium ion concentration. The potassium ion produces effects upon the heart similar to those caused by a lack of free calcium ion. In the absence of free calcium the heart soon becomes weak and goes into arrest in diastole. The authors felt that an arterial transfusion often administers

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GLEANINGS FROM THE MEDICAL PRESS

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the "coup de grace" to a moribund patient.

As the result of experimentation, they have found the use of erythrocytes in Ringer galatin solution (ERG solution) to be effective and the material of choice for transfusion in cardiac surgery. An occasional disadvantage is oozing at the operative site. However, serious oozing was not noticed in patients in whom it was used. In cardiac cases, as much as 24 ml./kg. has been administered without harmful effects.

SURGERY

The problem of prognosis in cancer of the breast.—(*Surgery*, 1955, 37: 479, via *Int. Abstracts of Surgery*, Oct. 1955).

The prognosis in breast cancer is influenced by many factors in addition to the type of therapy. However, the effects of these influences are subtle and are often difficult to measure. Yet, if we are to carefully evaluate the best methods of treatment and to assess the survival results with accuracy, it is necessary to consider the natural history of breast cancer and to appraise as best we can the factors which influence its prognosis.

Most present day observers concur in the belief that an interval of time exists between the period of cancer onset and the ravages of cancer metastases. Current surgical strategy is based upon the concept that there is a stage when, apart from a few stray cells which may lie dormant within the embrace of the body defenses, the growth of malignant cells is confined to the breast and accessible regional nodes. The length of this interval of time prior to metastatic spread varies, and the precise period for each patient is, of course, unknown. One can never predict with certainty, therefore, that therapy will be either curative or hopeless.

This article presents a careful review and study of such clinical problems as duration of life in treated and untreated breast cancer, extent and advancement of this malignant disease, histologic grading, age, delay in diagnosis and duration of disease, and tumour size and

site. Yet there still remains no unanimity of opinion regarding the reliability of each of the above factors as a valid index of prognosis. Each factor in prognosis is merely a straw in a wistful wind. Cancer today gives no sure means of cure tomorrow.

Tumours are known to vary greatly in their growth rate and in their tendency to metastasize early. The measure of earliness in time for the purpose of prognosis lies not alone in minutes or months but in malignancy and metastasis. This slender thread of time delayed, therefore, may mean that those patients who lose a day, lose a life. The prognosis is primarily a balance between the malignant potential of the tumour cell and the biologic resistance of the host. Radical mastectomy, or even more extensive radical surgery, promptly performed will be life-saving only in those patients in whom the tumour has not yet spread beyond the confines of the field of operation. Thus, the prognostic significance and importance of axillary metastases (both presence and extent) or metastases to other accessible regional nodes are obvious.

The most important measurable factor in the prognosis of breast cancer is the presence and extent of axillary metastases at the time the patient is first treated. Age, duration of disease, size, and the site and grade of the tumour are all prognostic factors of secondary significance. Trauma, treatment, the effects of biopsy and delayed operation, pregnancy, and lactation have not been considered in this particular survey. The questionable influence of ovarian stromal hyperplasia on survival in both treated and untreated cases of breast cancer has been found to be negligible.

While some of these factors may be related to the alertness and understanding of the patient, and others to the diligence and initiative of the physician, the prognosis is largely dependent upon the rate of growth of the tumour and its tendency toward dissemination.

In the dilemma of prognosis, currents and cross-currents of biologic behaviour flow beneath the surface of unpredictable clinical speculation. The measure of these forces and their influence on survival cannot as yet be calculated with exactitude.

Survival in cases of breast cancer.— (*Medical Journal of Australia.*)

Black, Opler, and Speer (*Surg., Gynec. and Obst.*, May, '55) have studied breast cancer patients in relation to the microscopic structure of the primary tumour and the regional lymph nodes. They state that the data would indicate that excellent survival rates are encountered when the cases are characterized by highly differentiated primary tumours, lymphoid infiltrate in the primary tumour and sinus histiocytic reactions of the regional lymph nodes. In those cases lacking such features a very low rate of five-year survivals exists. These relationships were obtained without regard to the age of the patient or presence or absence of axillary node metastases. The findings are consistent with the hypothesis that the lethal capacity of breast carcinoma varies as a direct function of the growth potential of the primary tumour as reflected in the nuclear structure and inversely as a function of tumour-retarding factors of the host visualized as sinus histiocytosis of the regional lymph nodes and lymphoid infiltrate in the primary tumour.

OBSTETRICS & GYNAECOLOGY

The importance of strictly conservative obstetrics in the management of the third stage of labour.—
(*Wein. med. Wschr.*, 1954, 104: 839, via *Int. Abst. of Surgery*, July 1955).

During the last century the third stage of labour was managed according to two opposite opinions. One school of thought (Crede) advised that the placenta be expressed immediately after delivery of the infant. The other (Ahlfeld) school of thought stated that untimely manipulations of the uterus are the most frequent causes of atonic hæmorrhage.

In modern obstetrics it is widely believed that with oxytocic drugs during or after delivery of the infant the third stage of labour can be shortened by an increase in uterine tonus, blood loss can be decreased and the number of operative procedures can be reduced. These drugs may, on the other hand, interfere with a physiologic rest period

of the uterus, with the automatic adjustment of the genital organ to a much smaller volume, and may lead to its premature exhaustion. It is, further, doubtful whether it is necessary at all to reduce the average amount of bleeding which might only serve to return the physiologically increased blood volume of pregnancy to normal levels. Ergotrate may also produce a paradoxical effect by vasoconstriction of the nutrient vessels of the uterus. Vasodilators (nicotinamid, priscoline) may then be required to get the oxytocics to their site of action. Routine manual removal of the placenta immediately after delivery of the infant, as advocated by some American authors (Cacciarelli *et al.*), should certainly be condemned.

From the files of the Women's University Clinic, Vienna, the author has collected 630 cases of third stage disturbances among nearly 20,000 deliveries in the 12 years ending 1951. This is an incidence of 3.23 per cent. Hæmorrhage was present in 68.2 per cent, delayed separation of the placenta (more than 1 hour) in 40.5 per cent, adherent placenta in 23.6 per cent, incomplete placenta in 9.4 per cent, and placenta accreta in 5.4 per cent of these 630 cases. Hysterectomy was necessary in 3 instances only. It appears significant that in one-third of the cases oxytocics could be blamed for the disturbance. In 27.7 per cent previous operative procedures, and in 24.4 per cent general anaesthesia may have been responsible. Of the total deliveries two comparable groups of 2,900 cases each were selected, and the results of extreme conservatism were compared with those of more active management in the other group. The figures given indicate that hæmorrhage was four times as frequent, and incomplete placenta nearly twice as frequent in the actively treated group. The necessity of operative intervention is consequently significantly decreased by the conservative management.

The author arrives at the conclusion that the rare use of oxytocics combined with the careful observation of labour is the best prophylaxis against third stage complications. Drugs containing ergot and pituitary hormones should be given

in cases in which disturbances can be anticipated from the history and course of the condition. Their routine use is not advisable.

EYE, EAR, NOSE & THROAT

Recent advances in the medical treatment of strabismus.—(Dr. Murray F. McCaslin, *Ophthalmologia Ibero Americana*, 16: p. 199, Fall, 1954, via *Sight Saving Review*).

The use of modern educational psychology in teaching binocular vision was urged by the late Dr. Le Grand Hardy of New York. The basis for developing normal vision lies in repeated situation-response experiences and the most primitive of these responses are at or near the reflex level.

Normally the correct responses are early and are soon formed into an unconscious habit pattern. But if there is an impediment, aberrant reaction patterns are developed. The diplopia which is the result of squint is so distressing that children quickly learn to

suppress the macular function of one eye, and sometimes peripheral vision. In the young this is a quickly developed reaction, as "the easiest way out."

Orthoptics is a learning process, and exercises are the universal means by which one learns. In America, educational psychology has for fifty years moved steadily in the direction of situation-response laws of learning: attention, recognition, response, reward, repetition. In orthoptics "trial and error" should replace many of Pavlov's rigid ideas of reflexes. Habits are formed because certain actions prove to give satisfaction or reduce distress.

The orthoptist should give the patient experience, not verbalization. Most squinters can experience physiologic diplopia if the stimulus is presented inside their angle of squint. To be effective orthoptic procedures must be planned in relation to the patient, his age, temperament, and environment. All conditioning consists in restricting choices and rewarding the right responses, and a gifted technician-teacher can use these methods with results which are often little short of amazing.

News and Notes

Drinking water from the Sea:

A fait accompli

The award of a contract to a Glasgow firm to install apparatus in the Lobitos oilfield in Peru, for converting sea water into drinking water suggests that the time is rapidly approaching when the waterless deserts of the world may become fertile again through the use of distillation plants. It was announced by the Dutch Institute for Applied Physics Research that Great Britain, the Netherlands and South Africa, Australia and Algeria were combining in a scientific attack on the problem. First allocations of finance are for five lakhs of rupees (in Indian money). The first plant for the Lobitos oilfield will provide 270 tons of fresh water per day from sea water and the second plant will have an output of 500 tons. These two plants will supply all the fresh

water needed in the oilfields including water for domestic purpose.

The cost of producing fresh water is only nine annas per ton—less than the price for fresh water charged in many tropical ports. A distillation plant already supplies all the water required in the vast Kuwait oilfields in the Persian Gulf. Another is being erected now in the Netherland East Indies.

Eighth Otolaryngologists' Conference at Trivandrum

The 8th Annual Conference of the All-India Association of Otolaryngologists was inaugurated in Trivandrum in the last week of December 1955 by the Health Minister of Travancore-Cochin State. Dr. Tulsi Das, President of the All-India Association of Otolaryngologists stressed the need for all medical students to study the two specialities,

ophthalmology and oto-rhino-laryngology which dealt with the five senses and which were absolutely essential for the acquisition of knowledge of all branches of medicine. He regretted that while ophthalmology has been allotted three months' training by the Medical Council, ENT was downgraded too much. He said that there should be at least 6 weeks' training in ENT and a separate clinical, practical and theoretical examination combined for both the specialities although taught separately by specialists of their own subject.

Preparation of Polio-vaccine in India

Sir Macfarlane Burnet, the Australian Poliomyelitis expert, who is on a visit to India advised Indian Medical Research workers at the Calcutta School of Tropical Medicine on the 30th December 1955, to prepare polio-vaccines locally which he said could be more effective, cheaper, safer and easy to administer. Vaccines prepared in other countries might not be so effective as it could be when prepared locally. He said that studying the incidence of the disease by the age-groups, six months to two years was the period after which children started imbibing natural immunization. In India as in other countries, he added, 80% cases turned paralytic if attacked particularly with 'Type one' virus.

First Urban Health Unit in India under the Child-Health Project

Rajkumari Amrit Kaur, inaugurated on 31.12.55, the 15-lacs Maternity and Child Health Expansion Project at Calcutta with the object of raising the health-standard of the people. It will be the first of its kind in India. This scheme has been sponsored by the Government of India, UNICEF, WHO, the Calcutta Corporation and, the West Bengal State Government. According to an agreement signed on 16th December 1955 by the West Bengal Government and the Calcutta Corporation, the latter will continue to provide routine health services in two wards (Nos. 71 and 72) and the All-India Institute of Hygiene and Public Health will provide funds for the staff, equipment and other recurring

charges. This will benefit 13,000 families consisting of about 68,000 citizens of that area. There will be clinics for expectant mothers, children, industrial workers and people afflicted with leprosy, V.D. and T.B. The Unit will accommodate all the professional sections of the All-India Institute of Hygiene and Public Health.

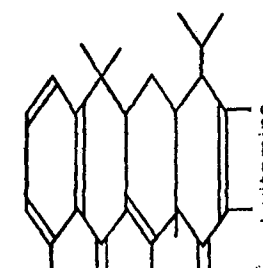
Pharmacy Training in Madras

The Madras State Government has introduced a training course for pharmacists in accordance with the Educational Regulations prescribed by the Central Pharmacy Council of India from the academic year 1955. The training is being given in the various departments of the Madras Medical College. Provision has been made for teaching English and Physics in the Government Arts College. Practical training will be given in the hospitals attached to the medical colleges in the City and other approved dispensaries equipped according to the prescribed regulations. This training is at present given to 15 students and it is expected that 100 students will be taken next year. Of these 50 students will be attached to the Medical College, Madras, an equal number to the Medical College at Mathurai. It is expected that this number would be quite sufficient to meet the demand for pharmacists in this State. If the number has to be increased in future, it can be easily done by increasing the staff at the respective places.

Further the State Government has abolished the old course of training given to students for a Diploma in Pharmacy as it was not in conformity with the Educational Regulations. It has been decided also to abolish after October 1956 the training given at present to compounders in the State at the hospitals located in the headquarters of the districts. Candidates for this course are admitted in the month of October every year and they undergo the training for one year. The students admitted in October 1955 will form the last batch and they will be given two more chances to get through the course before September 1957, when the Educational Regulations of the Central Pharmacy Council will take effect.

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tab. 12; 2lac 1-15; 1 lac. 1-7		5cc 500M 4-12 1000 M 9-0		Re. 1-0 more for side nozzle.
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Lozenges 100 2-2 20 0-13		B ₆ 100 mg 10 cc 5-0		Ind. 1-2 1-10 2-4 2-12 4-10
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Chloromycetin kap 14-0; liq 11-12		Enterovioform 202-0; 100 9-0	4-10	80-0 18-0 15-0 7-12 8-12 13-8
Chloramphenicol 100 46-8 12 5-12		Ephedrine Hyd. 1g 100 0-14 1000 4-14	8-12	Saline app. 300 7-8 500cc 8-8
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Sulp. oz. 3-2; Howard 5-0 oz		Soda Mint 1000 1-8		F.L. or d 1-8 Sup. 3-0 doz.
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Tab 2 gr 2-4 5 gr 4-8 100		Folic Acid 5 mg 100	4-10	Stethoscope B.D. 23-0; Ger 9-8
1000 2 gr. 18-0; 5 gr 38-12		Multivitamin coated 1000 8-12		Wall Thermometer Jap. 1-8
Howard 5gr. x 1400 42-8		Oralin 50 tab 9-4 Merlen AFD 30 3-0		Vit. C 50 mg 1000 9-0; 100 1-8
Bihyd. 2 gr 4-8 5 gr 7-12		Paladurin 1000 1 g 21-4 3 g 48-8		100 mg 100 2-0; 100 15-8
Equinine Germ. 3-12 Java 3-10		Vit. C 100 mg 2cc 10 1-6; 50 5-4		Vit B Complex 100 1-5 1000 5-8
[Howards 4-2; Java 3-10		500 mg 5cc 10 2-8; 50 10-4		B ₁ 10mg. 1000 9-4 100 1-10
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Ind. BDH B.W. EVANS		Phenobarbitin Tab. 1 1/2 gr 100 1-5		Artery Forcep 2-0 Scissors 2-0
12-8 20-15 33-8 23-8		Riboflavin Tab 5mg 100 1-10; 500 6-4		Scalpel 1-0 Probe 0-6
8-8 15-4 5gr x 1cc 100 amp		10mg 100 2-4; 500 9-14		Tongue Depressor 1-0 Solding 2-0
Aminophyllin 10 cc. 50 9-0; 6 1-7		2 ccc 6A 1-14 50 9-0		Tooth Forcep Universal 3-14
Calcium Gluconate 10% 100amp		Resochin 10 1-5; 100 9-8		Ext Et or Liqd 4 oz 2-8 lb 8-4
5cc 7-0 10cc 9-0		Saccharin Tab. 100 0-12 1000 3-0		Aletis rio 10-0 Eng. 2-8
Sandoz 5x10cc 5-4 10x5cc 8-12		Saridon 10 1-2; 250 25-12		Pot. Bromide M&B lb. 8-10
with Vit C 10x5cc 10-8		Sulphanilamide 500 3-8; 1000 6-12		Silver Proteinase 1-0 Vitelin 2-0 oz
5x10 cc 5-12; 50x5cc 47-0		Sulphanilamide Powder 4-14		Aspirin 3-10 Sod Salicylas 3-8
Distill Water 100 amp 2cc 2-8		Guinadine 1000 10-12 500 5-6		Iodoform 2-2; Iodin Cryst 1-8 oz.
5cc 3-4 10cc 4-8		Boots 500 6-2		Calomel oz 2-4
Emetine Hyd 1gr 100A 40-0 12A 5-12		Diazine 100 6-14 500 26-4		Yeastrite Tab. Small 3-0 Large 3-12
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25 mg 2-2		Sulphatriad 100 7-14; 500 35-4		Ring Pessary each 0-8 Vikelp S 3-4
10 x 25 mg 2-2 10 mg 1-10		Santonine & Calomel 100 3-11		Cincophan 100x5 gr. 3-8
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with Vit B ₁₂ & C TCF 3-6		Apiol & Steel Phills 100 1-0		Digitalin 1/100gr 20 0-10
Liver Ext. TOP 2cc 2-8		Yeast Tab. 7gr 100 1-8 1000 4-14		Empty Gelatine Capsules:—
Liver 5USP 1-8; 10 USP 1-12		Vit. K 100A 11-0 10A 1-4		100 1-10 1-10 1-8 1-8
Liver Ext. Fert. Vit B ₁₂ M; 10cc		Vit. K 10mg 100 1-4, 1000 5-4		1000 11-0 10-8 10-4 10-0
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