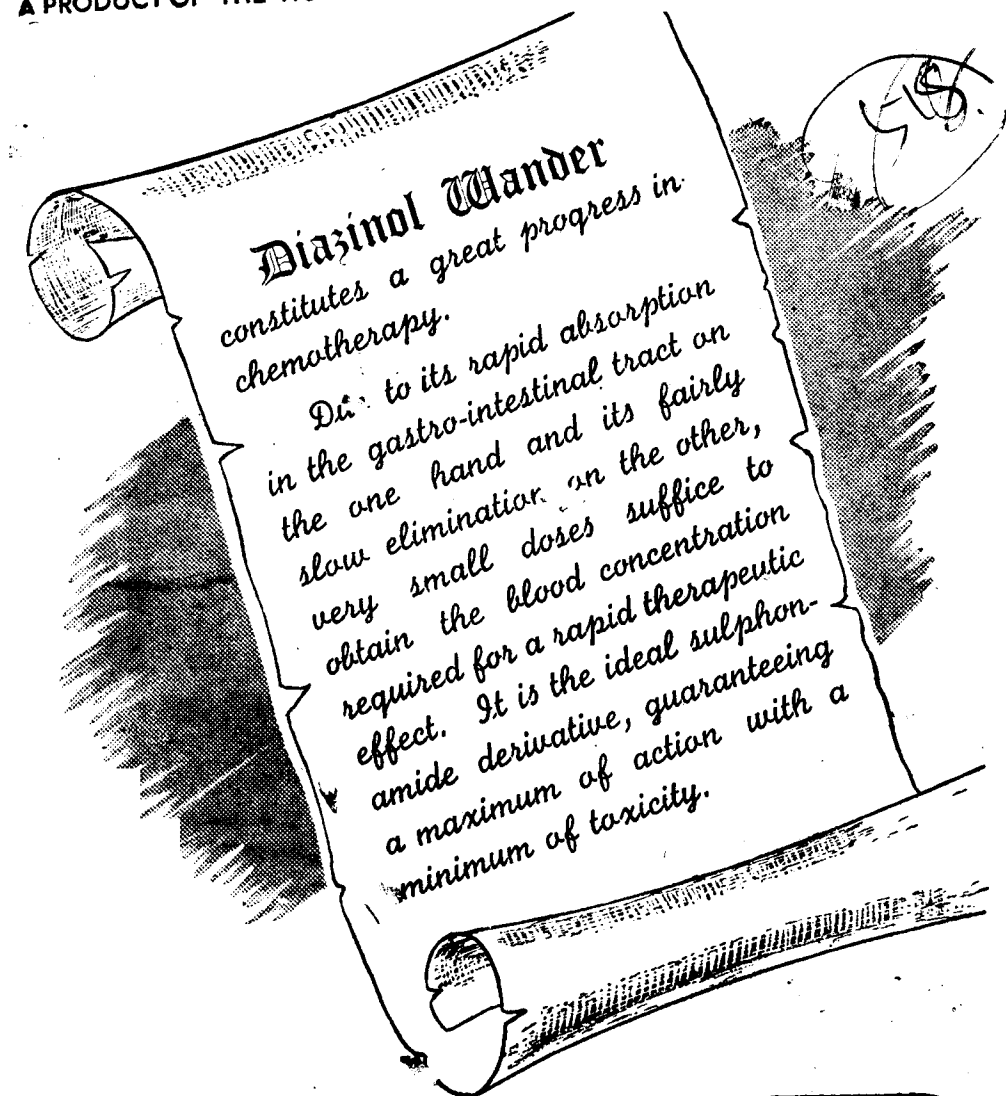


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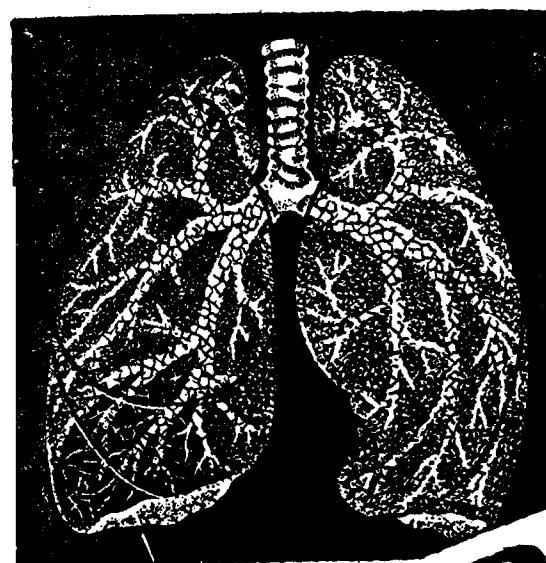
CONTENTS

ORIGINAL ARTICLES:

Complications in Diabetes us.—U. Mohan Rau, M.S., F.R.C.S., , Hony. Surgeon, Govt. General pital, Madras. ...	469
An Village Obstetric Emergencies. R.W. Kinhead Allen, Master in the Art of Obstetrics and Doctor in Medicine of the University of Dublin, —(Contd.) ...	479
Treatment of Burns.—Lt. B. Misra, ...	488
Trachoma.—C. K. Bhalerao, M.B., B.S., L.O., Hon. Ophthalmic Surgeon, Silver Jubilee Hospital, Raipur, C. P. ...	491
United Nations Conference on Food and Agriculture—(A Critical Review).— Major V. Krishna Row, I.M.S., (E.C.), Indian General Hospital, Fd., (Ex- Medical Officer, Presidency College, Madras). ...	494
Oxaluria.—M. P. Ranjan, I.M.F., For- merly House Physician and Surgeon, Darbhanga Medical School Hospital, Hospital Road, Laheria-Sarai. ...	512
Local Sulphathiozole Therapy.—Dr. B. M. Kothary, M.B.B.S., Windham Hospi- tal, Jodhpur. ...	514

CASES and COMMENTS:

Naga-Sore—(14 ulcers in the same indi- vidual).—D. N. Debsarma, F.M.B., Malarologist, A.M.O., Koilamari T.E. Hospital, Jokai (Assam), Tea Co., Ltd., North Lakshimpur, Assam. ...	515
An Unusual Case of Hyper-Acidity.— Santosh Kumar Mukherji, M.B., (CAL.), Midnapore. ...	517
A Case of Quinine Idiosyncrasy.—Dr. Manoranjan Chanda, Manikanj, Dacca. ...	517
Ascariasis—(A Case Note).—D. N. Deb- sarma, F.M.B., A.M.O. Koilamari T.E. Jokai (Assam) Tea Co. Ltd., North Lakhimpur, Assam. ...	518
EDITORIAL:	
The Cancer Problem ...	519
GLEANINGS from MEDICAL PRESS:	
Medicine and Therapeutics ...	521
Dermatology ...	524
Surgery ...	525
Obstetrics and Gynaecology ...	527
Book Reviews. ...	528
Reviews of Reports of Association and Hospitals ...	529
The Question of Amalgamation ...	531
Preparations & Inventions ...	532
Notices ...	532
Corrigenda ...	532



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	PAGE		PAGE
Alembic Chemical Works Co., Ltd.	9, 34, 35	India Syringe Works	23
Allied Drug Industries Ltd.	62	Indo-Pharma Phar. Works Front Cover &	37
Andhra Pharmaceutical Works Ltd.	53	Jai Singh & Co., Dr.	58
Anglo-French Drug Co., (Estn.) Ltd.	15	James & Davison	51
Asia Drug Co., Ltd.	17	Jammi Venkataramanayya & Sons	47
Associated Drugs & Chemical Concern Ltd.	21	Jaswant Singh & Co. Dr.	47
Babbla Bros., Ltd.	48	John Wyeth & Brother Ltd.	30, 38, 39
Bengal Chemical & Pharmaceutical Works		Jubilee Trading Company	41, 59
Inside of Back cover		Liverites Co.	50
Bengal Immunity Co., Ltd.	45	May & Baker (India) Ltd.	3, 32
Bhalchandra Laboratory Dr.	60	Medical Review of Reviews	51
Birla Laboratories	34	Medical Supply Concern Ltd.	47
Bombay Drug House Ltd.	41	Menley & James Ltd.	22
Bombay Pharmaceutical Works	57	Modern Drug House	46
Boots Pure Drug Co., Ltd.	44	Morison Son & Jones (India) Ltd.	49
Brand & Co. Ltd.	22	Mukerji & Co., Ltd., H.	8
British Drug Houses Ltd.	55	Navaratna Pharmaceutical Labs.	28
Burroughs Wellcome & Co.	31	New Surgical Trading Co.	19
Calcutta Clinical Research	46	Nestle's Milk Products	6
Calcutta Polyclinic Ltd.	50	Nonglay Modern Virtues	50
Chemo-Pharma Laboratories Ltd.	61	Orient Laboratory Ltd.	10
Ciba (India) Ltd.	42	Paramjit Chemical & General Industries	48
Cipla Laboratories	33	Parekh Trading Co.	57
Continental Drug Co.	23	Parke Davis & Co.	47
Corn Products Co., (India) Ltd.	35	Parry Tosh & Co.	57
Coscor & Son, A. C., Ltd.	20	Pearl Chemical Industries	58
Davis & Lawrence Co.	54	Pharmaceutical Laboratories of India	51
Deodhar Bros.	24	Premier Drug Co.	46
Devsons Products (India) Co.	46	Primeco Ltd.	46
Director General, I.M.S.	7	Purohit's Pharmacy, Dr.	18
Dysentone Pharmacy, The	47	Ranbaxy & Co.	26
Eastern Drugs & Synthetics	52	Reckitt & Sons (Dettol)	12
East India Pharl. Works Ltd.	52	Scientific Indian Glass Co., Ltd.	49
Eli Lilly & Co.		Smith Stanistreet & Co. Ltd.	19, 60
Inside of Front Cover		South Indian Eye Laboratory	27
Fairdeal Corporation Ltd.	5	Squibb & Sons, E. R.	36, 40
Glaxo Laboratories Ltd.	56	Standard Pharmaceutical Works Ltd.	24
Globe Research Institute	2	Suren & Co., W. T.	13
Godrej Soaps Ltd.	27	Swastik Rubber Products	53
Great Bengal Pharmacy	46	Swastik Oil Mills Ltd.	59
Great India Industrial & Pharma. Lab.	47	Syntetic (India) Ltd.	14
Hall & Kay	18	Union Drug Co., Ltd.	25
Hanovia Ltd.	43	Unique Drug House Ltd.	26
Hering & Kent	17	United Pharmaceutical Co.	49
Himalaya Drug Co.	54	Volkart Bros.	4
Hind Chemicals Ltd.	11	Wander (India) Ltd., Dr. A.	29
Horlicks Malted Milk Co.	63	Waterbury Chemical Co.	1
Immuno Chemical Laboratory	46	William R. Warner & Co., Ltd.	20
Imperial Chemical Industries (India) Ltd	16	Zill & Co.	21
Indian Health Institute & Lab. Ltd.	51	Zone Chemical Co.	64
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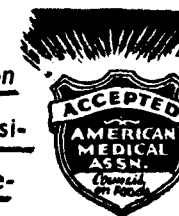
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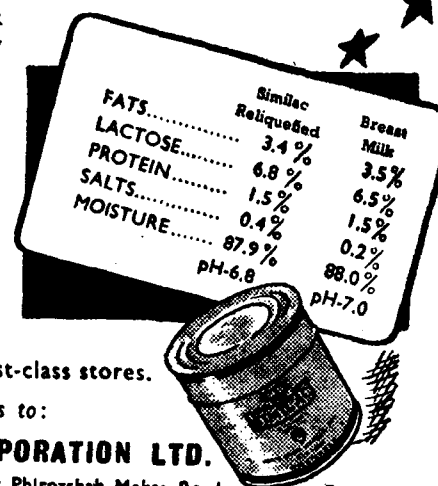
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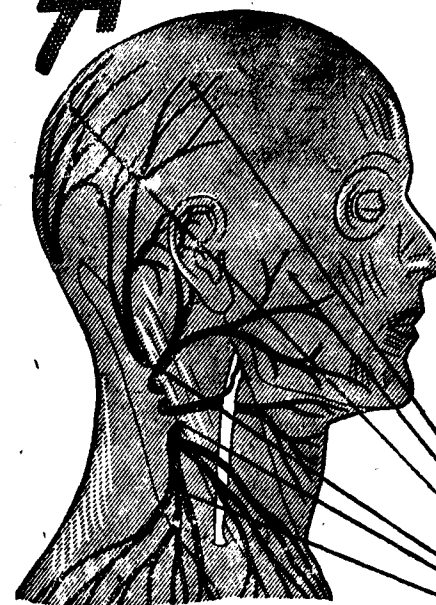
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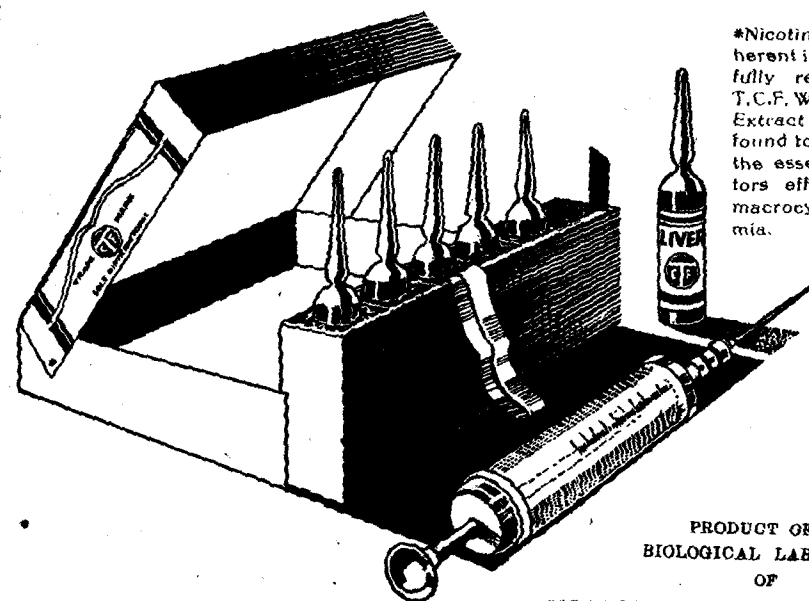
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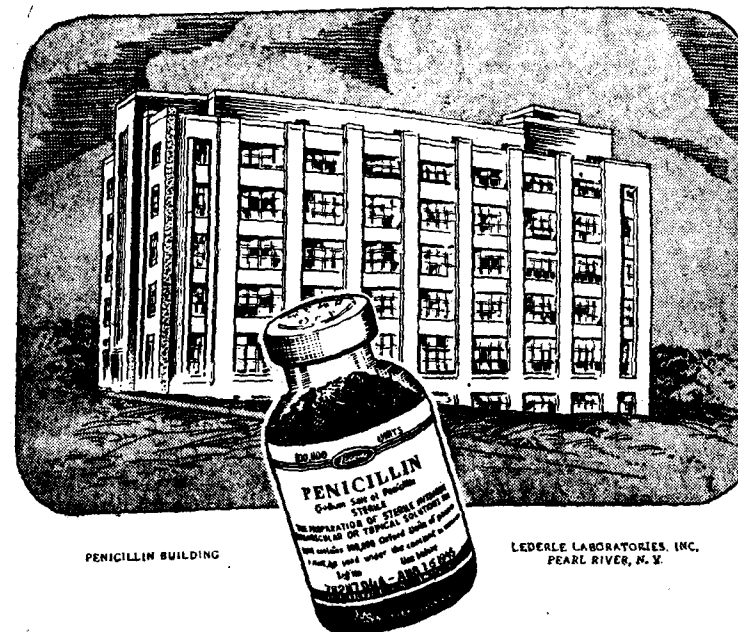
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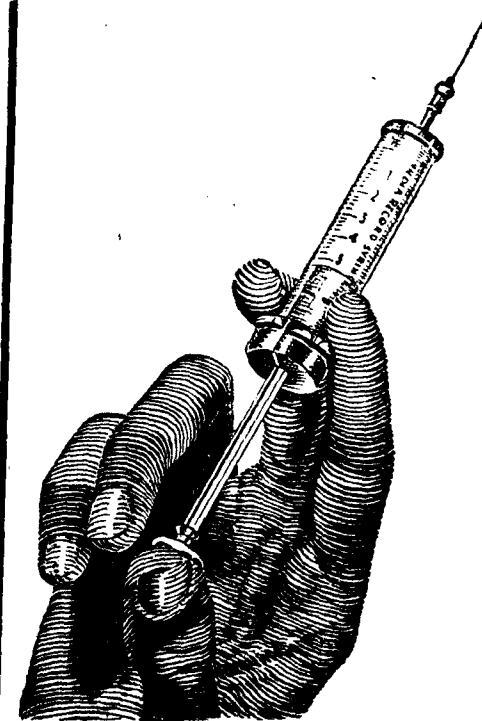
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Original Articles

Surgical Complications in Diabetes Mellitus*

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

Hony. Surgeon, Govt. General Hospital, Madras.

I do not propose in this paper to deal in great detail with the ætiology, pathology, diagnosis and the treatment of all surgical complications that we come across with any diabetic, because this would mean more time than what is at my disposal, and more patience than what, I am sure, the majority of you possess. It is my intention to deal with some of those methods which I and some of my colleagues in the wards of the Government General Hospital, Madras, have found useful.

The surgical complications can be discussed under two main heads:—

I. Inflammatory lesions. II. Vascular lesions.

I. **The inflammatory lesions** are mainly, (1) Carbuncle; (2) Infections of the hand; (3) Cellulitis of the face; (4) Cellulitis of the foot; and (5) Abscess.

II. **The vascular lesion** that will be discussed is, "Diabetic Gangrene."

Carbuncle.—A carbuncle which is raised above the general surface, which is indurated in the periphery and soft in the centre with a number of openings discharging pus, is never clinically missed. But the type where there is only dense induration with no opening or softening anywhere, is sometimes not diagnosed. This is the earliest stage and it is in this stage that measures like X-ray exposures, ultra-short wave therapy or even drugs like Penicillin may completely abort the carbuncle.

Sites of occurrence of carbuncles:—Though we all know that the common sites for diabetic carbuncle are in the nape of the neck and in the back, we have seen carbuncles in practically any part in the body, even in parts which are extremely vascular like the face or lip and in parts like the forearm and leg where there is not much of subcutaneous fat.

* A paper read before the annual meeting of Tanjore District Medical Association recently and specially sent to THE ANTISEPTIC for publication.

[469]

Pathology.—A brief consideration of the pathology of a diabetic carbuncle is necessary at this stage to understand the principles underlying the treatment of carbuncle. A carbuncle consists of a central area containing a small amount of liquid pus; surrounding this, is the area which is mainly formed of necrotic semi-solid tissue and around this is the area of induration which consists mainly of granulation tissue. It is this layer of granulation tissue that is most important because this is mainly responsible for limiting the spread of a carbuncle and our incisions must stop within the line of granulation tissue because, if it goes beyond this area of granulation tissue, there is the danger of precipitating pyæmia.

Treatment.—In discussing the treatment of this condition, let us consider a carbuncle as it occurs in a favourite site, *e.g.*, back. The treatment can be discussed under the following heads:

- (1) General treatment. (2) Specific treatment. (3) Local treatment.

The major portion of what I am going to mention under general treatment and specific treatment for carbuncles, will apply with equal emphasis to the other diabetic lesions to be discussed later.

1. **GENERAL TREATMENT:**—(a) *Rest in bed:*—I am firmly convinced that all diabetics with surgical complications, however minor it may appear to be, must have rest in bed. They must continue this rest till they are well on the road to recovery from this complication which has forced them to take rest.

(b) *Fluids.*—To facilitate the elimination of toxins, I generally advise them to drink large amounts of fluids by mouth and request them to note on a piece of paper the number of bucketfuls of water that they have taken and not tumblerfuls!

(c) *Diet:*—There is always the danger of ketosis in these patients. I generally give them liberal quantities of carbohydrates in the form of barley water, glucose, sugarcubes, rice congee, ragi congee etc. In addition to carbohydrates, as these patients lose a lot of proteins as pus and as some of these patients later on develop œdema of the feet due to hypo-proteinæmia, they are advised to eat easily assimilable proteins like egg-albumin, patented preparations like "chicken essence" that are sold in ampoules for oral use, diluted non-vegetarian soup etc. Incidentally some of these patients have developed such a great degree of hypo-proteinæmia in spite of this diet that on a few occasions we have even given transfusions of blood plasma to increase their blood proteins. The only thing that we moderately restrict is fat and fat preparations. I must confess here, that owing to the cost and labour involved and partly owing to lack of facilities, I have never prescribed any meticulously calculated diet for these diabetics and confidentially, I do not think I have regretted it very much.

(d) *Drugs:*—Apart from the drugs that are specific for diabetes, which I shall consider a little later, there are a few drugs that must be prescribed to help the patient to combat the infection and make him or her convalesce faster and better. These drugs are:

(i) *Iron and liver extract:*—Due to their toxic state and prolonged illness these diabetics with carbuncles become very anæmic within a short period after the onset of the complication. To combat this, iron as Ferri-et-ammonium Citras 30 to 60 gr. per dose is given as a routine. In those cases where the response to iron alone has not been satisfactory, I have

never hesitated to administer, in addition, injections of crude liver extract either daily or on alternate days and the response has invariably been good. In very severe and refractory anæmias during treatment, I have even been forced to administer one or two transfusions of blood.

(ii) *Vitamins:*—As vitamin B is excreted unusually rapidly in diabetics, I have always put them on Vitamin B complex tablets or Brewer's Yeast by mouth. This seems to improve their appetite and their general condition and to mitigate their constipation from which a majority of them seem to suffer. In addition to these, vitamins A and D which probably help them in combating the infection and vitamin C which helps in the rapid granulation and epithelialisation have also been administered as a routine.

(iii) *Sedatives* to relieve pain and induce sleep have not been spared in these cases.

2. **SPECIFIC TREATMENT:**—(a) *Specific treatment of Diabetes mellitus:*—By Insulin—I commonly use for these cases Zinc Protomine Insulin. For the first few days that the patient is under my treatment, I give him plain Insulin to gauge his sensitivity to Insulin and, later on, if he is not abnormally sensitive, I switch on to Z. P. I. I use this latter preparation because the fluctuations in the blood sugar are not so violent as they are with ordinary Insulin and thus, because the control of hyper-glycæmia is more or less uniform for a period of 12 to 24 hours with Z. P. I., the patient is able to combat the infection better. The dose that we have commonly used is about $1\frac{1}{2}$ to 2 times the dose commonly recommended for plain Insulin. A rough and ready though not a very scientific dose recommended for plain Insulin is 10 units for every 1 per cent. of sugar in the urine and 10 units extra for every 1 + acetone. Though some of you here may criticise this as unscientific, I am sure that as practising surgeons, there are a few instances when we cannot afford to be very scientific. This is one such instance. In a diabetic with an infective lesion like carbuncle the fluctuations of blood and urine sugar are so gross in some circumstance that we cannot be always guided by highly technical labour-involving laboratory data. In fact, though we aim at keeping the sugar as low as is possible, we never attempt to completely abolish the glycosuria as these patients sometimes suddenly develop hypo-glycæmia.

When do we use plain Insulin?—(1) In the early days soon after a patient comes under treatment to gauge his sensitiveness to Insulin. If he is not abnormally sensitive, we give the dosage already recommended. But if he happens to be one who is abnormally sensitive we give much smaller doses than the ones recommended, a few minutes ago.

(2) The second indication for plain Insulin is in a case as follows:—A patient is given—say 40 units of Z. P. I. in the morning. The urine sugar is estimated in the evening. If there is hyperglycæmia we make a note of it. Next morning the Z. P. I. is repeated and the next, *i.e.* the 2nd, evening, we again examine the urine for sugar. If even this contains sugar, on the third morning in addition to giving Z. P. I. we administer plain Insulin.

(3) In cases where there is a large amount of acetone in the urine and the patient is bordering on coma, I generally use only plain Insulin, giving it at intervals of 6 hours to control the severe ketosis. A mere trace of acetone, however, should not deter us from using only Z. P. I.

2 or 3 weeks of treatment. In them, we have to abandon the strapping and proceed with the crucial incision straightaway.

There is another variety of carbuncle which, in spite of this treatment, goes on spreading, either before or after incision. These are the carbuncles that are sometimes, with justification, called "*malignant carbuncles*." Attempts have been made to stop this spread by injection of the patient's own citrated blood around the carbuncle, or by excising the carbuncle, if it is small, or by excising only that portion of the edge of the carbuncle that spreads, but so far with no striking success. These carbuncles do have a bad prognosis.

A question that often comes up to our mind is the place of the Sulphathiazole powder in dressing carbuncles. As this drug and its relatives fail to act in the presence of pus and sloughs, it is irrational to use them in the early stages. But once the wound of the carbuncle, after incision, starts granulating, this powder can be used to facilitate the bacteriological cleansing of the wound. This is important because, mild infection in the wound sometimes interferes with its healing in good time.

Besides the strapping of carbuncles, already mentioned, I have resorted to dry fomentations as radiant heat, etc., or ultra-short wave therapy or X-rays to help in the localisation and the softening of the carbuncles. These have probably helped us in a few cases. On the whole, I have not been satisfied with the results of X-ray therapy. Probably, if our cases had come to us earlier for treatment, the X-rays might have aborted the lesion.

A word about prognosis in carbuncles:—I am fairly convinced that the following are the worst types:

- (1) Carbuncles of the nape of the neck.
- (2) "A 'malignant,' spreading carbuncle."
- (3) Cases with albumin in the urine.
- (4) Those with hypertension, particularly if the patient is just beyond middle age.
- (5) Carbuncles where the sloughs take a long time to separate and the granulations left behind are pale and flabby.
- (6) Carbuncles with super-added pyæmic abscesses. This reminds me that in these cases repeated fresh blood transfusions sometimes help in the recovery.

Infections of the hand.—It is impossible for me to-day to go into all the details of treatment, incisions, etc., for the different infections in the hand. I intend stressing only those points in the treatment which I and some of my colleagues have found useful.

1. *Rest to the person*, soon after the diagnosis is made. I insist on this even in very minor infections, because on more than one occasion, what started as a minute collection of pus near the tip of one finger has ended up ultimately in the loss of a limb or a life. These cases must be treated as serious lesions, till localisation is definite and healing has progressed well.

2. *Rest to the part* soon after the diagnosis. The method that I use is, to give the patient a plaster slab. This must extend from the tips of the fingers, which are kept semi-flexed, to well above the wrist joint.

3. *Sulphanamide group of drugs*, particularly Sulphathiazole and Sulphadiazine, which are not very effective in the treatment of carbuncles, have been life-saving and limb-saving in these cases of infections of the hand.

4. *Incisions:*—Once pus forms, this should receive energetic surgical treatment in as early a stage as is possible. Damage may be done both by undue delay and by too vigorous and extensive initial treatment, but there can be no doubt that the commoner errors are those of delayed and timid surgery. An early infection is sometimes wrongly dealt with by a minute incision under a local Ethyl Chloride spray; this incision lets out a bead of pus, but fails to arrest spread at the periphery. The doctor probably thinks that a larger incision will take a long time to heal, forgetting that a widespread infection inadequately treated, will take much longer still and may lead to greater disability. Nowhere is the surgical aphorism that "*a large incision heals quicker than a small incision*" more true than in the treatment of suppurative infections of the hand. It must be stressed that all operations of this type should be performed deliberately under full general anaesthesia with good illumination. Local anaesthesia is to be used only for the infections of the terminal pulp space of the fingers, where anaesthesia may be produced by circumferential infiltration of Novocaine solution (without Adrenalin) at the base of the digit.

5. *Use of blood pressure apparatus as a tourniquet:*—With the help of a B. P. apparatus, which is used as a tourniquet, an a-vascular field can be obtained and adequate incisions can be made after fully realising the anatomical details of the part. The value of this is realised most for instance, when we operate for subcutaneous collection of pus, in front of the proximal or middle phalanx. In these cases if we operate without a tourniquet, we may injure the tendon sheath, but with a tourniquet in place, we can first make an incision into the subcutaneous tissue, let out the pus and then examine whether the underlying tendon sheath has been affected or not. This method certainly prevents conversion of superficial infections into deeper ones by incisions made in a bleeding area without the help of a tourniquet.

6. *Rest to the part and the patient* which is so important before the operation must be continued for a few days after the operation till the local inflammation has, to a very large extent, receded.

7. *Active movements of the fingers* should be started after all evidences of active infection have disappeared. The use of radiant heat or the use of concentrated Saline baths has, in the majority of cases, facilitated the recovery of the movement of the fingers. It is sometimes very surprising to see the infected fingers within 3 to 4 months after treatment—the surprise being due to the range of movement that has been recovered in the diseased limb.

8. In addition to this, general and specific treatment already mentioned for diabetic carbuncles should be carried out.

Cellulitis of the face.—1. General treatment and special treatment are same as before with one exception and that is: I prescribe as a routine 12 tablets of Sulphathiazole or Sulphadiazine for these cases. In some of these cases who have come rather late with oedema of the eye-lids, etc., I have started them off on intravenous Sulphanilamide injections. (Soluseptase 20% solution 5 c.c. every 6 hours or more recently Sulphadiazine solution every 12 hours). The advantage of intravenous technique is that you are absolutely sure of the drug getting into the system. You need not rely on any overworked nursing staff, etc., for the administration of the drug in a condition which should be treated as urgently as possible and which should be considered as a very grave surgical condition.

As regards local treatment, I have used 12% Soda Sulph or concentrated Mag. Sulph for fomenting the diseased area, every 4 hours for 10 minutes. But the most important thing for these cases is rest to the inflamed face. You will realise how difficult it is to achieve this, when movements of the eyelids in the natural act of winking, movements of the mouth, lips, etc., in speaking and masticating all cause movement of the muscles of facial expression and this is inimical to the welfare of the patient. The everyday necessities of seeing, eating and talking are suicidal so far as the diabetic patient with cellulitis of the face, is concerned. The greater the movement the greater is the tendency to spread. To obviate all these, I put the patient to bed and keep his eyes covered with cotton and bandage. He is prohibited from speaking, except for the bare everyday necessities of the sick man. He is given only liquids, to avoid mastication. Every four hours when the bandage is removed for the fomentation, the nurse irrigates the eyes with warm Boric lotion and applies either a weak Cibazol eye ointment or the time-honoured Plasma ointment. We generally keep the eyelids covered and prohibit speech till the temperature has almost settled down and the cellulitis is showing definite signs of having been arrested. Sometimes as a residual phenomenon, we get abscesses in the face. Once these abscesses become very soft and fluctuant, I have never hesitated to open nor felt sorry for having opened these abscesses. I generally make a small opening and allow the pus to flow out by itself.

A word about ligature of the angular vein:—I have given up this method. I feel that in the early stages when cellulitis is just starting, a majority of us are unwilling to interfere with the angular vein, as we are hopeful of aborting the cellulitis. Later on, when the cellulitis has spread, we are afraid that interference with this vein may precipitate pyæmia by liberating infected blood clots in our attempts to get at and ligate this vein.

Cellulitis of the foot.—The local treatment of this condition is exactly the same as cellulitis of the hand. We give 4th hourly fomentations and give absolute rest to the part. But as stiff toes do not cause such great discomfort and disability as stiff fingers do, we leave the splintage of the foot and toes a little longer. The splint must extend from the tips of the toes to well above the ankle joint. In those cases where owing to abscesses or ulcers on the posterior and inferior aspect of the heel, the patient finds the wearing of posterior splint uncomfortable, we have given an anterior plaster splint. The danger of a neglected infection going on to gangrene is greater in the lower limb than in the upper and hence, all active measures, already detailed for cellulitis of the hand and some of the measures to be detailed later to improve the blood supply of the part, must be carried out.

Abscesses in the diabetic.—Ischio-rectal and peri-anal abscesses are as common in the diabetic as in the non-diabetic and in our experience, the treatment that is commonly adopted for non-diabetic abscesses has given equally good results in the diabetic. For these abscesses, under general anaesthesia, I make crucial incisions and cut off the tip of the four flaps. This leaves a large raw surface; but it ensures that the abscess cavity heals by granulation from the bottom and does not result in a fistula-in-ano.

Abscesses elsewhere are treated along general surgical lines.

LASTLY, LET ME CONSIDER THE SUBJECT OF GANGRENE:—There are two main clinical variants of gangrene in diabetes:

(a) The first type, where gangrene takes place in the presence of fairly good blood supply to the limb.

(b) The second type, where gangrene occurs in the presence of poor blood supply to the limb.

What is the essential difference in pathology between these two conditions?—In the first type, gangrene sets in in a limb where either the main arteries are patent and not narrowed or in a limb in which even though the main arteries have been narrowed, a good collateral circulation has been established. In this type of case, gangrene sets in even in spite of good circulation, generally because of some very severe infection locally, like a virulent cellulitis.

In the second type, gangrene sets in in a limb where the main arteries have been grossly narrowed and the collateral circulation has not formed well. In these, the gangrene is generally brought about by minor trauma, and even moderate infection.

It is important to clinically identify these two varieties of gangrene, because the treatment of gangrene varies in these two types.

In the first type, where the circulation is good, the gangrene generally gets localised well, conservative procedures will succeed and delay in treating the local condition will not matter. The patient may get off with the loss of only the gangrenous patch or toe.

On the other hand, in the second type where the circulation is not good and gangrene sets in, conservative treatment like local excision of the gangrenous area, will fail and the patient ultimately, within a short time, will have to submit to a high amputation either through the site of election in the leg or through the thigh. Clinically, this is the type with the worse prognosis.

Such being the case, how are we to clinically differentiate these two varieties in a limb, in which there is gangrene already? The following facts have generally helped us:

1. *History of intermittent claudication:*—I am sure you all know what intermittent claudication means. The patients will generally say that soon after walking a short distance they develop very severe cramps in the muscles of the leg which are sometimes so severe as to prevent them from walking. They are forced to take rest, and after taking rest for a short time they find that they are able to walk another short distance again. This is produced by inadequate blood supply to the calf muscles and the shorter the distance that they are able to walk without pain the greater is the amount of deficiency of blood supply to that limb. The patients with gangrene may give two different varieties of history:

TYPE 1:—They may say that they had intermittent claudication 2 or 3 years ago, which had subsequently disappeared. This means that a good collateral circulation has formed in the limb and that is why intermittent claudication disappeared. The patient's limb has a good blood supply.

TYPE 2:—They may give a history of intermittent claudication a short time before the onset of actual gangrene. This means that the main arterial channels are getting obstructed and the collaterals have not started functioning properly yet. Such a history will place the patient's limb in the second category of limbs with poor blood supply.

2. *Pain:*—When the patient is first seen by the doctor. If the patient complains of a steady throbbing pain which is in keeping with the

extent of the local lesion, then the gangrene is in a limb with a good blood supply.

On the other hand, if the pain is of a severe burning or shooting nature, out of all proportion to the local lesion, then probably the vascular supply of the limb is in a precarious state.

3. *Pulsations of the peripheral vessels*:—If the pulsations of the peripheral vessels like the dorsalis pedis, posterior tibial and popliteal are good, then, obviously, the limb is having a good blood supply; whereas, if the dorsalis pedis or posterior tibial or popliteal are not pulsating, then the vascular supply of the limb is very poor.

4. *Local temperature*:—The temperature of the two limbs, from the mid-thigh downwards to the toes, must be compared. A sufficiently accurate indicator for clinical use is the palm of the hand. Starting at the mid-thigh we carefully pass the hand down towards the toes. In a limb with a good blood supply, though there is bound to be some difference between the middle of the thigh and the tips of the toes, the change is very gradual, there being no point at which the change is evident. But in the presence of arterial occlusion and a poor collateral circulation there will be an almost abrupt change in temperature, at the point and below the point where the circulation ceases to be adequate.

Summarising what I have just said, if there is a history of intermittent claudication 2 or 3 years ago, which has now disappeared, if the pain is not very severe, if the pulsations of the peripheral arteries are present, and if there is no abrupt change in temperature of the limb, then the limb has a good blood supply and conservative measures in the treatment of gangrene may succeed. But if there is a history of recent intermittent claudication, if the local pain is out of all proportion to the local lesion, if the peripheral vessels are not pulsating, and if there is a point below which there is an abrupt change of temperature, then the blood supply of that limb is in a poor state and conservative measures are valueless.

Having thus decided upon the adequacy or not of the vascular supply of the limb, what is the line of treatment?

If the patient's leg or foot has a good blood supply, then the objects of our conservative treatment are mainly three:

- (1) Removal of extensive local infection;
- (2) Removal of the gangrenous area; and
- (3) The stimulation of circulation to the part and also stimulation of granulation tissue formation and growth of new epithelium.

Considering these three a little more in detail—

1. *Removal of the extensive local infection* is achieved by rest in bed with the foot on a level with the rest of the body (and not elevated) and irrigation with Eusol lotion, Dakin's solution or any other hypochlorite solution like Milton's etc. We then keep the part covered with sterile gauze. In the presence of sloughs, local application of Cibazol is not of much use, though we used to use it a few years ago, labouring under the fond hope that it will prevent the increase in the bacterial contamination of the gangrenous area.

2. *Removal of the gangrenous area*:—This is a very tedious process. *Excision, though tempting, is rarely, if ever indicated.* As the margins of the slough begin to separate, very gentle traction is applied and as much

of the slough as will separate is removed. Complete separation may occur in several days or it may take even weeks. It must be remembered specially that the circulation is not quite good and mechanical or even drastic chemical attempts to hasten the process of separation may be disastrous—the gangrene may spread.

3. *Stimulation of circulation and of growth of granulation tissue and new epithelium*:—Among a host of remedies that we have tried in order to bring about a vaso-dilatation and thus improve the circulation in the limb, the three available drugs that have sometimes produced some improvement without any harmful side-effects have been—

(a) Massive doses (600–800 mgm.) of Nicotinic acid tablets by mouth per day.

(b) Priscol (a patent preparation of Ciba) given either as oral tablets or I.M. injections twice a day.

(c) I. V. injections of hypertonic saline 100 c.c. of 5% saline, daily.

My experience with Buerger's passive exercises for the stimulation of the circulation of the limb, and with para-vertebral novocaine block of lumbar sympathetics is too limited for me to pronounce any definite or useful verdict on the matter.

In the later stages of the infection, U. V. Rays exposure to the wound has definitely expedited the granulation tissue formation and the epithelialisation of the wound.

If this is the line of treatment for a gangrene in a limb with a fairly good circulation what is the line of treatment in a limb with a poor circulation?—In these cases, in addition to gangrene, the pain and the co-existing spreading infection will endanger the patient's life and hence, drastic procedures like major amputations through the leg or through the lower part of the thigh are generally necessary. The earlier this is done, I feel that the better are the results.

Indian Village Obstetric Emergencies

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(Continued from page 431 of August issue).

Chapter XX—(Contd.)

Operative Delivery—Obstetric Forceps in Cephalic Presentations—(Contd.)

For (r), (s) and (t) see at end of (4) below.

“R.O.A.”—(a) In your free hand, pick up the right half of the forceps by the lock and hold it almost vertical with the grip you use for a pen when about to write, the tip or apex of the blade corresponding to the point of the nib. (If you have a Milne-Murray type of traction rod keep it on the front of the handle).

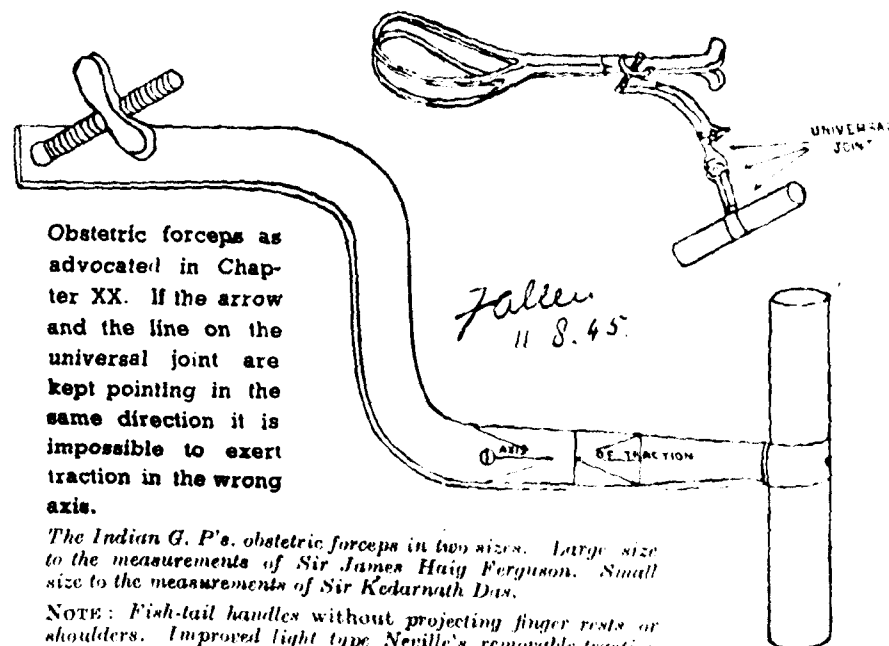
(b) Glide the apex of the blade, with the concavity of the cephalic curve facing the mother's pubes, through the vulval ring in the direction of the coccyx, along the palmar surface of your vaginal hand, keeping the line of the application handle and the shank parallel to the “A. P.” diameter of the pelvic outlet.

(c) As you advance the apex of the blade by pushing on the lock your vaginal fingers must guide it into following the natural curve of the sacral hollow.

(d) Keep the apex of the blade in close contact with the head to obviate the inclusion of the funis and to enable the tip to pass *within the membranes and external "os."* But at the same time avoid letting the blade tip impinge on the head at nearly a right angle, for it will raise up the scalp in a fold which will arrest the advance of the blade and any force employed to overcome this obstruction will cause the head to recede and increase your difficulties.

(e) As the fenestrum disappears inside the vulva, gently and gradually depress the lock.

(f) Visualise the position of the foetal head, its posterior (right) ear lies in the neighbourhood of the mother's right sacro-iliac synchondrosis. The window of the right blade is to enclose the posterior right



parietal boss with the anterior rim over the ear and the apex in the region of the mandible.

(g) As soon as the whole of the cephalic curve has passed in through the vulval ring make it move clockwise round the curvature of the head in the right posterior quadrant of the mother's pelvis, guided by the finger tips in the vagina (without including the cord) *within the membranes and the external "os,"* by gently rotating the lock clockwise and simultaneously moving it first slightly to your right and then slightly to your left.

(h) The lock must be held very lightly and resistance overcome by change of direction and *not* by force. As the lock sinks towards the perineal body you may, if you like, slide back your hold and grasp the handle like a scalpel.

(i) When the blade has been inserted and applied properly without enclosing the rim of the external "os" it will remain securely in position,

the shank resting on the perineal body and the front of the lock (see (II) (4) above) facing the mother's right groin.

(j) Partially, or if you desire to change hands wholly, withdraw the vaginal hand until two fingers can be introduced into the left posterior quadrant of the pelvis, but not too deeply.

(k) With your disengaged hand pick up the left half of the forceps and in a similar manner introduce the apex of the blade (but above the right shank) until the tip reaches the level of the mandible and the lock is at the same level as the lock of the right half.

(l) By depressing and rotating the handle anti-clockwise make the blade pass round between the head and the left side of the pelvis until the window encloses the anterior (left) parietal boss with the anterior rim of the fenestrum covering the ear, which is lying in the neighbourhood of the mother's left ilio-pectineal eminence.

(m) The left shank will be found to be lying in front of the right shank in which position the locks will not articulate. You must work the left handle to your right around the right handle in a clockwise direction until the left shank lies behind the right shank in which position, with a little manoeuvring, the locks should be in position to articulate *without the use of force.*

(n) If the application has been correct and the two locks are pressed well posteriorly against the perineal body they will slip into each other (articulate) and the flat medial surfaces of the handles will come together along their whole length, though to bring this about slight manoeuvring of the handles may be necessary. Bear in mind that it is the left lock which must be brought into apposition with the right lock because the left blade has a tendency to gravitate posteriorly into the space opposite the mother's left sacro-iliac synchondrosis and, unless accurately placed along the occipito-mental diameter of the head, the flat medial surface of the handle will face the mother's left buttock, instead of, as it should do, her left groin.

(o) If the locks fail to articulate *no force* may be used. Withdraw the forceps and start again.

(p) Serious injury to the infant's head or avulsion of the cervix are likely to result from forcibly locking the forceps.

(q) Inability to articulate the locks *without force* is usually due to—

(i) Failure to apply the blades, especially the left blade, along the occipito-mental diameters of the head (reapply the blades).

(ii) Failure to pass the apex of the left blade to the same level as the apex of the right blade (reapply the blades).

(iii) The apex of one or both blades having been passed outside the external "os," (reapply the blades).

(iv) A mistaken diagnosis of the position of the head. The occiput being posterior and/or incompletely flexed (for treatment see Chapter XVII) the parietal bosses being still above the pelvic brim (treatment should be version or craniotomy).

(v) The child has a hydrocephalus.

For (r), (s) and (t) see at end of (4) below.

4. *Internal rotation achieved. Occiput behind symphysis pubis:—*
(a) Introduce the tips of two fingers, palmar surface facing the pubes, into the vagina. The fingers depress the perineal body and advance until they

rest inside the external "os" on the head in the *left* posterior quadrant of the pelvis. Where the external "os" has been drawn over the head they should rest where the head meets the pelvic wall.

Failure to feel the external "os" or to ensure that it is retracted above the greatest diameter of the head may result in grave injury to the mother.

(b) Rupture the membranes if they are still intact.

(c) Keep your finger tips (i) within the membranes and (ii) within the external "os," or if the "os" has retracted on the head where it meets the pelvic wall.

(d) In your hand pick up the left half of the forceps by the lock and hold it almost vertical with the grip you use for a pen when about to write, the tip or apex of the blade corresponding to the point of the nib. (If you have Milne-Murray type of traction rod keep it on the front of the handle).

(e) Glide the apex of the blade, with the concavity of the cephalic curve facing the mother's pubes, through the vulval ring, in the direction of the mother's left sacro-iliac synchondrosis, along the palmar surface of your vaginal fingers, keeping the line of the application handle and of the shank parallel with the "A.P." diameter of the pelvic outlet.

(f) As you advance the apex of the blade by pushing on the lock your vaginal fingers must guide it into following the natural curve of the sacral hollow.

(g) Keep the apex of the blade in close contact with the head to obviate the inclusion of the funis and to enable the tip to *pass within the membranes and external "os"*. But, at the same time, avoid letting the blade tip impinge on the head at nearly a right angle for it will raise up the scalp in a fold which will arrest the advance of the blade and any force employed to overcome this obstruction will cause the head to recede and increase your difficulties.

(h) As the fenestrum disappears inside the vulva gradually and gently depress the lock.

(i) Without using any force, as the blade penetrates deeper, make it glide round the curve of the head towards the left side of the mother's pelvis by rotating the lock anti-clockwise. Hold the lock very lightly and overcome resistance by change of direction slightly to your left and then to your right. Guide the blade with the tips of your vaginal fingers (*within the membranes and external "os"* but without including the cord) into position along the left occipito-mental diameter of the foetal head with the apex at the mandible, the window enclosing the parietal boss and the anterior rim of the fenestrum covering the ear.

(j) When the blade has been inserted and applied properly without enclosing the rim of the external "os" it will remain securely in position, the shank resting on the perineal body and the front of the lock (see (11) (4) above) facing the mother's symphysis pubis.

(k) Partially, or if you are going to change hands wholly, withdraw the vaginal hand until two fingers can be introduced into the right posterior quadrant of the pelvis, but not too deeply.

(l) With your disengaged hand pick up the right half of the forceps and in a similar manner introduce the apex of the blade (but above the

left shank) until the tip reaches the level of the mandible and the lock is at the same level as the lock of the left half.

(m) By depressing and rotating the handle clockwise make the blade pass round between the head and the right side of the pelvis until the window encloses the parietal boss with the anterior rim of the fenestrum covering the ear.

(n) If the application has been correct and the two locks are pressed well posteriorly against the perineal body they will slip into each other (articulate) and the flat medial surfaces of the handles will come together along their whole length, though to bring this about slight rotation of the handles may be necessary.

(o) If the locks fail to articulate *no* force may be used. Withdraw the forceps and recommence the application.

(p) Serious injury to the infant's head or avulsion of the cervix are likely to result from forcibly locking the forceps.

(q) Inability to articulate the locks *without force* is usually due to—

(i) Failure to apply the blades along the occipito-mental diameters of the head (reapply the blades).

(ii) Failure to pass the apex of the right blade to the same level as the apex of the left blade (reapply the blades).

(iii) The apex of one or both blades having been passed outside the external "os" (reapply the blades).

(iv) A mistaken diagnosis of the position of the head. Internal rotation may be incomplete or the occiput may be posterior and/or incompletely flexed.

The parietal bosses may be still above the pelvic brim.

(v) The child has a hydrocephalus.

(r) When the locks have been articulated *without force* pass the tips of the two fingers of one hand along each blade to ensure that neither the external "os" nor the cord has been caught in the grip of the blades. If either has been included the blades *must* be removed.

(s) (i) If the rim of the external "os" can be felt *outside* the grip of the blades it must be pushed back above the head to avoid compressing its anterior lip against the posterior surface of the pubes or its posterior lip against the promontary of the sacrum.

(ii) If the external "os" cannot be pushed above the head it is not yet fully dilated and the forceps *must* be taken off.

(t) Not more than about $1/3$ of the fenestræ should be felt empty below the head and if the head is much elongated by moulding or caput nearly the whole of the windows may be in contact with the head. If too much empty window can be felt the forceps will slip off the head when traction is applied or else the apices of the blades will injure the infant's head.

5. *Face presentations*:—The application for "L.M.A." is similar to the application for "L.O.A." and the application for "R.M.A." is similar to that for "R.O.A." When the chin is under the symphysis application is as for an occiput after internal rotation is completed,

But when you come to articulate the locks, instead of depressing them against the perineum, you will have to elevate them towards the pubes to some extent before the slots will engage easily.

Having locked the forceps depress the handles towards the perineal body to extend the chin and bring it down under the pubic arch.

6. *Smellie's double application of the obstetric forceps*:—In this method of delivering the head in occipito-posterior positions terrible damage can be done to the mother's uterus, vagina, rectum, bladder and pelvic floor unless the operator understands what he is doing and does it with extreme gentleness. The axis traction attachment is a safeguard that should not be neglected.

"R.O.P." and "R.M.P." positions: The forceps are applied as described for an "L.O.A." position except that in order to bring the tips of the blades to the infant's mandible or occiput the shanks, locks and handles must be depressed much more posteriorly against the perineal body of the mother.

But when traction is made there is an essential difference.

The forceps and the head must be permitted to rotate clockwise and when the head reaches the "R.O.A." or "R.M.A." position the forceps, having become almost reversed, must be taken off and reapplied (and the extraction completed) as for an "R.O.A." or "R.M.A." position.

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XIII. Extraction of the head.—1. *Maxims*:—(a) Only the minimum amount of force may be used and, unless the woman is deeply anaesthetised, a shrewd operator will induce the uterus to accomplish most of the labour.

(b) The weight of the operator's body *must never be used*. It is indefensible to brace the feet against the bed or table. Keep the elbows flexed and the arms adducted.

(c) Traction must be intermittent to permit of retraction:

(i) Coincident with the contractions of the uterus.

(ii) Where contractions are absent at intervals of *two full minutes*.

(d) When traction is intermittent the head recedes slightly as in a natural delivery, during each interval.

(e) Each pull should be—

(i) Smooth and progressive upto; (ii) a climax where it is held for a few seconds; and then (iii) gradually relaxed.

(f) During the intervals of traction the fixation screw must be eased off slightly to release the pressure of the blades on the infant's brain. In



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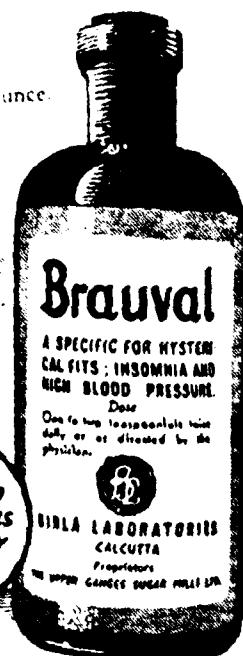
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the absence of an axis traction attachment allow the application handles to separate slightly.

(g) Until internal rotation has taken place and the occiput has come to lie under the symphysis pubis traction is always more accurate and easier if the axis traction attachment is employed because spontaneous rotation, flexion or extension can take place.

Where an axis traction attachment is not available its benefits may be approximated by the Saxtorph-Galabin method of traction.

(h) If the forceps is felt to slip, even slightly, during traction, it must be taken off and reapplied.

(i) It is advisable during traction to re-examine the lie of the blades on the head several times to obviate slipping.

(j) The time required for extraction may vary from a few minutes to half an hour or more according to the resistance encountered. In a primipara the perineum cannot be satisfactorily dilated in less than 15 minutes. If rapid delivery becomes imperative a deep medio-lateral episiotomy must be made to avoid extensive tearing of the outlet, but this will not obviate damage to the supports of the uterus and bladder.

2. *Preliminaries*:—(a) Verify that the lock has not enclosed any vaginal mucous membrane.

(b) Pass two finger tips all round the foetal head as high as you can reach and especially behind the pubes to ensure that neither the cord nor the external "os" is in the grip of the blades. The external "os" must, if felt, be pushed above the greatest diameter of the head to avert compressing the anterior lip against the back of the pubes or the posterior lip against the promontary of the sacrum.

(c) With these fingers still touching the head use your free hand to pull on the handles and locks of the forceps for a few seconds. This trial traction enables you to feel whether the blades are slipping off the head. If an increasing area of empty fenestræ space can be felt below the head the blades are obviously slipping.

4. *Using the axis traction attachment*:—(a) In the Tarnier or Milne-Murray instrument couple the transverse handle bar to the traction rods. If Neville's detachable traction rod is being used couple it to the application handles. Tighten the fixation screw.

(b) Remember you may only pull upon the transverse handle bar. You must not touch the application handles.

(c) With Neville's removable traction rod in position watch the arrow head and the line stamped on the universal joint and make traction in the direction indicated by the line when the arrow points along it. As the direction of the line changes the point of the arrow must be kept pointing along the line, thus ensuring that traction continues always in the axis of the birth canal.

(d) When Tarnier's or Milne-Murray's type of traction attachment is employed the pull on the transverse handle bar must be made in such a manner that the traction rods remain continuously parallel to and closely applied to the back of the shanks while the application handles of the forceps must, without being touched, remain free to choose their own direction.

(e) The final emergence of the head must be managed with extreme slowness, gentleness and care. Continue traction as described above until the head is delivered allowing rotation and extension to take place, which will happen under the influence of traction alone because of the universal joint on the traction bar.

5. *The Saxtorph-Galabin method of traction*:—(a) When the fetal head is in the "L.O.A." or "L.M.A." position and the mother is in the dorsal posture, pass your right forefinger from the back of the forceps, between the shanks, and hook it over the locks, for which purpose your right hand must be supinated. Pronate your left hand to grip the front of the application handles, thumb to the right, fingers to the left.

With your right hand exert a pull in line with the mother's anus in the dorsal direction while your left hand draws the handles in the ventral direction around the circumference of a circle (the centre of which is the pubis) towards the abdomen of the mother. In "L.M.A." pull more towards the mother's coccyx until the infant's chin appears under the symphysis pubis.

The blades are thus, as they are drawn down, made to follow the curve of the pelvis. You must allow your hands to follow their natural inclination to resume positions midway between supination and pronation and thus aid the occiput or chin to rotate in an anti-clockwise direction under the pubic symphysis during descent.

(b) With the mother in the dorsal posture and the head in the "R.O.A." or "R.M.A." position, introduce the forefinger of your supinated left hand, from the back of the forceps, between the shanks and hook it over the lock while you pronate your right hand and grip the front of the handles, thumb to the left, fingers to the right.

With your left hand make dorsal traction in line with the mother's anus while your right hand draws the handles ventrally around the circumference of a circle (the centre of which is the pubis) towards the mother's abdomen. In "R.M.A." pull more in the direction of the mother's coccyx until the infant's chin appears from under the symphysis.

In this manner the blades are made to follow the curve of the pelvis in their descent and rotation is encouraged.

The natural inclination of the hands to resume positions midway between pronation and supination must be permitted to operate and thus aid the occiput or chin to rotate clockwise as it is drawn down behind the symphysis pubis.

(c) With the woman in the left lateral posture it is only possible to pass the left forefinger between the shanks from the dorsal aspect and over the locks, whatever may be the position of the head. It follows that in this posture rotation cannot be aided by the natural inclination of the forearms to resume the semi-prone position.

The left hand must exert dorsal traction in the direction of the operator's left elbow.

The right hand must grip the ventral surface of the handles and draw them in the direction of the operator's right elbow thus bringing the handles ventrally below the woman's pubes towards her abdomen around the circumference of a circle.

Rotation in the correct direction must be encouraged gently.

(d) The head can only be delivered through the vulval ring without rupture of the perineal body, provided the head makes a wheel in the ventral direction around some point which becomes fixed under the pubic symphysis and provided the smallest diameter of the head performs the wheel.

These conditions are fulfilled:—

- (i) In occipito-anterior positions when the occiput:
- (ii) In face presentations when the thyroid cartilage; fix under the symphysis pubis.

If in a face presentation the head is permitted to flex slightly the chin itself is liable to fix under the pubes and tremendous unnecessary strain will be laid upon the perineal body so that in the absence of a deep episiotomy a complete tear involving the anal sphincter is almost certain to occur.

(e) As soon as:—

- (i) In occipito-anterior positions the occiput,
- (ii) In face presentations the thyroid cartilage, impinge upon the lower margin of the pubic symphysis your grip upon the handles of the forceps must be changed. Your third and fourth and possibly the fifth fingers of the right hand must be passed between the shanks of the forceps to draw the handles ventrally under the symphysis towards the mother's abdomen. When the parietal bosses are emerging the handles of the forceps should be almost in contact with the mother's abdomen.

(f) The final emergence of the head must be managed with extreme slowness, gentleness and care. The maximum tension in vertex presentations is reached as the forehead passes the anterior margin of the perineal body (the fourchette) but in face presentations the maximum tension is produced by the bregma.

XIV. Removal of the forceps.—As soon as the head has been delivered uncouple the axis traction attachment and then remove the right half of the forceps followed by the left half.

XV. Forceps on the after-coming head.—Do not attempt to apply forceps to the after-coming head until the parietal bosses have passed the pelvic brim. The axis traction attachment is not necessary.

Where the occiput is anterior and the head is flexed and of normal size the operation is extremely simple and yields results satisfactory to all concerned. Either before the application of the blades or after their application, as soon as the mouth of the infant is low enough, draw back the perineal body of the mother and permit the child to breathe, (clear its throat of mucus, if necessary), thus avoiding all need for haste in delivery of the head. Indeed if the infant is apnoeic or asphyxiated it may even be revived by intra-muscular or intra-cardiac cardiazol-ephe-drine while in this position. Have the infant's body held forward over the mother's abdomen, but without injuring or breaking its neck.

The application of the blades to the head is carried out in exactly the same manner as for a vertex presentation with the exception that the blades are applied along the mento-occipital diameter from chin to occiput, the tips of the blades lying in the region of the occiput. The application is made the easier because the body of the child has dilated the birth canal and from the position of the infant's spine the exact position of the occiput is revealed.

Extract the head by raising the handles of the forceps along the infant's chest and around the mother's pubes.

Where the occiput is posterior you will not be able to deliver the child alive with forceps and in the attempt the mother's perineum will be extensively damaged. Therefore perforate and crush the head.

XVI. Forceps on the breech.—An attempt may be made to apply the forceps over the trochanters where the breech has become impacted with the legs extended. But the obstetric forceps are ill-suited for this purpose and where a blunt hook is available they should not be used. [See Chapter XIX (III) (6)].

Treatment of Burns*

LT. B. MISRA

TAKING into account the present war situation, hospitals and private practitioners are very likely to meet burn cases recovered from wrecked ships or burnt by the effect of oil-bombs.

This article is only meant for giving expression to some facts that will refresh the memory of my fellow doctors.

Definition of burns and scalds:—Burn is the lesion produced by dry heat and hot iron. Scalds, on the other hand, are produced by moist heat, as boiling water.

Classification of burns.—DEPUTYREN classified burns exhaustively which is not very easy to remember.

Deputyren's classification—	►Superficial	Minor
(1) Erythema (1st degree).		Burnt area is less than the size of palm or less than the area 3" x 3".
(2) Vesication (2nd degree).		
(3) Destruction of epidermis (3rd degree).		
(4) Destruction of whole skin (4th degree).	►Deep	Major
(5) Destruction of muscle (5th degree).		
(6) Destruction of bone also (6th degree).		
		Burnt area more than the size 3" x 3" in diameter.

Clinical stages.—1. *Stage of shock*:—This stage is neuralgic in nature—produced due to response of the vital centres to the painful stimuli: for the fact that nerve endings of skin (specially in 3rd degree) are exposed. As a result of this there is profound nervous prostration, metabolic disorder, and circulatory collapse induced by trauma and aggravated by contributory factors as exposure. This stage usually remains for 24 hours.

2. *Stage of acute toxæmia*:—This appears between 36 to 48 hours, the cause of this stage as it appears is due to absorption of autolytic toxins. So the mortality is 70%.

(a) Post-mortem shows cloudy swelling, fatty degeneration of vital organs as liver, kidney and suprarenals.

(b) There is usually pyrexia as a result of reaction of body to the foreign matter absorbed in the circulation.

* Specially contributed to THE ANTISEPTIC.

(c) Cardio-vascular disturbances—Low B. P., quick and feeble pulse, dusky coloration of the skin, hæmo-concentration are usually the signs.

(d) Gastro-intestinal—Usually effortless vomiting, acting as a contributing factor to dehydration and circulatory failure.

(e) Nervous—Delirium, coma and death.

3. If the patient survives then there is another peril awaiting. There is the *stage of sepsis* which usually occurs from the 7th day onwards. Avoiding sepsis is a great measure to lower the mortality due to burns.

4. Then the body goes to the process of repair. As a result of extensive death of tissue there is no process as healing by 1st intention but only possibility by granulation tissue. So we call this stage as the *stage of granulation*. It usually occurs from the 14th day onwards.

Complications and sequelæ.—1. *Respiratory*:—Bronchitis, broncho-pneumonia, œdema glottitis, the last sometimes necessitates tracheotomy, which makes the condition of the patient still worse.

2. *Toxic jaundice*:—The liver cannot keep pace with the detoxicating function, due to the heavy absorption of toxic matter. As a result of this the vital organ goes to the stage of parenchymatous necrosis.

3. *Curling's ulcer*:—This is an ulcer produced at the 1st and 2nd part of duodenum being in contact with the poured-out toxic bile. This ulcer spreads and sometimes perforates giving rise to peritonitis.

Prognosis.—In case of a burn it should be always guarded. A patient recovered from shock, showing signs of recovery, may succumb to death within an hour. So we should gauge the gravity of the condition considering the following points:

1. *Site*:—The proximal the part of the body affected specially the thorax and abdomen, more serious it is.

2. *Size*:—Burn of 1/8 of the body surface of a child and 1/3 of body surface of an adult is fatal.

3. *Sepsis*:—Aggravates toxæmia and makes the patient to struggle hard for final recovery.

Treatment.—We should divide the treatment into the following headings: (1) First-aid treatment. (2) Treatment in hospital, which will include the following:

(a) General treatment—(i) Maintaining body temperature; (ii) forcing fluids to recoupe the water loss; (iii) controlling pain by Morphine gr. ¼ or repeated if required; (iv) keeping the patient quiet at bed; (v) raising the foot end of the bed, to supply the vital organs as brain with nourishment at the expense of less vital parts; (vi) if the patient is unconscious then intravenous Glucose Saline to be given with 10 units of Insulin.

(b) Routine plasma transfusion—Due to the invention of *dry plasma* which is free from agglutinins and agglutinogens it can be given with success without blood being matched.

A graphic diagram of indications and amount is given below—

BLOOD.	LABORATORY FINDINGS.	TREATMENT AND INDICATIONS.
Volume reduced ...	Hb reduced	... Blood transfusion.
Do. ...	Hb normal	... Saline and Glucose.
Do. ...	Hb increased	... Saline by Rectum & I.V.
Do. ...	Plasma protein normal...	Do.
Do. ...	Plasma protein increased.	Do.
Do. ...	Plasma protein reduced.	Plasma.

So there is great necessity of maintaining a *shock chart*, hourly, by a skilful nurse.

This chart should include: (1) Clinical features; (2) pulse; (3) blood-pressure; (4) cell plasma ratio; and (5) Hb concentration.

Initial amount of plasma to be administered is 1,000 c.c. and repeated, if necessary.

(c) Prophylactic Sulphonamides:—Sulphonamides are bacteriostatic, so should be given early. Dosage should be sufficient to have a high concentration in the blood. 4 grms. initially and 2 grms. every 4 hourly till temperature is normal for 24 hours.

(d) Diet:—Should be rich in Glucose, Protein, Salts and Vitamins.

3. Burn treatment methods—(1) Coagulation methods; (2) Sterilisation methods; (3) Close treatment methods; and (4) Irrigation methods.

Now let us come to the first aid treatment which is very beneficial to keep the patient alive, enabling him to fight out the disease.

First aid methods:—Cases may come with woollen garments still attached, or some one has applied Carron oil, some might come after consulting a village quack who has advised to put cowdung which is a good culture media for spore-forming organisms. If nothing is available clean piece of cloth soaked in infusion of tea leaves is very helpful.

1. Treat for shock as stated above.
2. Under general anaesthesia cleanse the part with soap lather and then by sterile normal saline.
3. Snip away the blisters and dab the part with Bin-Iodide of Mercury 1 in 1000 solution.
4. Apply dye solution or dye jelly as Acriflavine jelly or triple dye jelly.
5. To avoid gas gangrene and tetanus give prophylactic A.G.G. and A.T.S.

NOW LET US TURN TO BURN TREATMENT METHODS:—

Coagulation methods:—Indication is for this to prevent the exposures of raw areas from external infection and cold air. This step also keeps the part at rest to assist in repair.

Many coagulants are being used among which are Tannic Acid 10% with 0.1% Acriflavine or Silver Nitrate 10% with 0.1% Acriflavine or Dye solutions or dye-jelly.

Silver nitrate is a local coagulant as its penetrating power is arrested by normal saline of body with the formation of silver chloride.

Tannic acid method:—(1) General anaesthesia preferably gas and O_2 ; (2) Toilet the part as said before; (3) Apply a weak solution of $AgNO_3$ usually 2%; (4) Apply Tannic Acid sol. 10% with 0.1% of Acriflavine; (5) Dry the part with a fan or preferably by a hair dresser's electric blower; (6) Paint the skin margins with tincture of Iodine; (7) Keep the tanned areas dry by exposure to air or in an electric cradle; (8) Patient to be made to change the positions to avoid hypostatic congestion of the lungs; (9) Be on the lookout while you are proceeding to deal with a burnt face and fingers. If the tan is done completely encircling the fingers then there is the danger of occlusion of phalangeal blood vessels leading to gangrene. Besides it is an offence to disfigure the face of the patient, specially if the patient is an unmarried girl.

Sometimes it is necessary to moisten the tan to allow the young budding blood vessels to sprout out.

Sterilization method:—By applying Sulphonamide dust or jelly or Penicillin (Wonder drug) locally you can prevent sepsis and induce early repair.

Close treatment method:—Usually done by enclosing in P. O. P. But this method is very helpful if the patient is received very early. But in our country no patient comes without consulting the village quack.

In Morris Institute this method was tried on the burnt pilots who were picked up very early.

Before enclosing in the P.O.P. certain preliminary steps are required: (1) General anaesthesia; (2) Toilet the part as before; (3) Dust the part with Sulphonamides; (4) Apply thin layers of sterilized gauze and then Tollygrass (wide-meshed gauze impregnated with vaseline); (5) Apply P.O.P. and keep for 10 days.

After 10-15 days the granulation has formed. So we proceed to the treatment of granulation tissue with great respect.

Treatment of granulation tissue:—1. Normal Saline bath for 5 days continuously, to condition the granulation after the tan is moistened.

2. Bacteriological examination of the surface is very, very essential, otherwise there will be a mere waste of skin of the patient and he shall have to depend upon another donor's skin. Smear should be taken by a sterile swab and being stained by Methylene Blue should not show more than 3 organisms per one high power field. The culture should be sterile repeatedly. Specially it should exclude *B. Pyocyanus* and *B. Proteus*. If *B. Pyocyanus* is there apply 2% Acetic Acid.

Before applying graft take care that: (1) The wound is sterile; (2) Toilet of the surrounding skin and covering of the burnt area by saline pack; (3) Shave off 1/10 of the superficial granulation tissue, and ensure haemostasis by warm saline pack; (4) Rub slightly Sulphonamide dust, then apply the skin graft hoping the best to come.

Irrigation method:—Repeated saline baths or covering with silk envelops (Bunigian bags).

Burn cases are serious and should be treated seriously.

Trachoma*

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TRACHOMA is a very common disease, affecting both the eyes, and is specially prevalent amongst certain races, viz., Sikhs, the Punjabis, Baluchis, Maharashtrians, and to some extent amongst Madrasis. It is an extremely common disease of the eye in Egypt and South Arabia, while it is quite a rare disease in England.

Trachoma has been defined differently by different people. FUCHS refers to typical 'trachoma granules' or 'granulations' explaining that these should not be confused with the granulation tissue, as their structure is entirely different. SWANZY, however, regards them as 'trachoma bodies'; while CUENOD and NATAF regard them as 'granular follicles'.

* Specially contributed to THE ANTISEPTIC.

These multiple terms tend to lead to much clinical confusion; for depending upon the stage of the disease, the appearance of the conjunctiva may present a very varied picture. In the early stage of the disease when there is a lymphoid proliferation, number of follicles appear on the conjunctiva giving rise to 'sago grain' appearance.

Later on, when these follicles rupture and an attempt at healing is taking place an appearance remarkably like true granulation tissue is given, by the combination of papillæ, scar tissue, and ulcerated follicles. This varied picture of the conjunctiva in the different stages of the disease, puts the inexperienced in a difficult position so as to judge as to the course of the disease or to the line of treatment to be adopted. STROTHER SMITH's advice "do not diagnose a case as trachoma simply because he has granular lids" is valuable, for, in India, as in other Eastern countries, there is a vast amount of chronic conjunctivitis due to the local irritants peculiar to the East—dust, smoke, sand, etc. Unfortunately the term "granular lid" is applied to all these conditions, whether accompanied by granules or not, with the result that not only are the vast numbers of innocent conjunctivitis cases diagnosed as, and wrongly treated for, trachoma, but proper advance in the clinical knowledge of the trachomatous process is greatly impeded.

From the study of the histo-pathology, one finds that compound follicles, similar to lymphoid follicle elsewhere, is the essential lesion in the disease process, and according to these changes, MACCALLAN has classified trachoma in the following stages:

Stage I.—This is the early stage of trachoma where the papillæ and follicles appear on the bulbar conjunctiva, the tarsus remaining quite free. These follicles are surrounded by engorged areas of minute hæmorrhages.

Stage II.—In this stage the follicles and papillæ grow in size and become large and gelatinous.

Stage III.—This is the stage when the process of cicatrisation begins and it is in this stage when the tarsus plate is involved and gets thickened.

Stage IV.—Here the process of cicatrisation is complete. The whole of the tarsal plate is completely cicatrised with one or two bands of scar tissue e.g.—"*Arts sulcus*."

These are the main landmarks in the course of the disease, though sometimes it may be difficult to separate them in practice.

Trachoma is a very chronic disease, associated with the following subjective symptoms like irritation and photophobia, with some muco-purulent discharge. The disease is a very contagious one and spreads through towels and handkerchieves, infected with conjunctival discharge.

Trachoma, if not properly treated or neglected, is often associated with certain complications like—ptosis, pannus and corneal ulcer.

The ptosis in trachoma occurs in the third stage and is due to the result of chronic tarsitis, causing hypertrophy and thickening of the tarsal plate. In this stage one also notices a condition of "sinuous lid border" as first demonstrated by HERBERT. It is nearly always bilateral. It gives a sleepy appearance to the patient.

Trachomatous pannus is now regarded as a true extension of the trachomatous process over the cornea, resulting in the follicular ulceration on that surface.

It is characteristic in its position, as it is found only in the upper half of the cornea, thus differing from pannus resulting from other causes,

where it appears at any place over the cornea. The blood vessels of the pannus are superficial in nature and they seem to lie at first between Bowman's membrane and the epithelium. The pannus may be progressive or regressive, depending upon the stage of the disease.

Corneal ulcer in trachoma is commonly seen at the advancing edge of the pannus. The ulcers are shallow and extremely irritable causing much lachrymation and photophobia.

Trachoma has to be diagnosed from conditions like simple follicular conjunctivitis. Points of differences are:

TRACHOMA	SIMPLE FOLLICULAR CONJUNCTIVITIS
1. Follicles embedded in the conjunctiva.	1. Follicles appear to be sitting over conjunctiva surface.
2. Follicles appear on an inflamed surface.	2. Follicles seen on normal surface.
3. Small areas of hæmorrhage round the follicles.	3. No such areas of hæmorrhage seen.
4. Follicles more marked in the upper lid.	4. Follicles more marked in the lower lid.
5. Follicles encroach the tarsal area.	5. Follicles confined to fornices.

But inspite of having discussed the points of differences between the two conditions, cases do occur where a mistake in diagnosis is likely to occur due to similarity in resemblance of the two conditions. Unfortunately there is no laboratory or serological test to settle the diagnosis, hence one has to be very careful in differentiating one from the other.

Coming to the line of treatment to be adopted, one has to be guided according to the stage of the disease as it differs in different stages.

Stage I.—The best line of treatment that I have found so far in my practice in this stage is as follows:

Application of Silver Nitrate solution 2% to the everted lids, twice a week, followed by washing out the conjunctival sac with Hydrarg. Perchlor. solution 1 in 4,000.

On rest of the days in the week, instillation of weaker solution of Silver Nitrate say $\frac{1}{2}$ % twice a day, followed by application of yellow oxide of Mercury ointment 1% to 2% twice a day is quite sufficient.

This line of treatment has to be continued for a pretty long time, say about 2-4 months, according to the severity of the condition. At the end of this period it is advisable to use Copper Sulphate stick once a week or else, an ointment like Ung. Cuprie Argentum may be used daily.

The patient has to be kept under observation and treatment has to be restarted at the onset of the original symptoms. Any error of refraction has to be corrected.

Many other lines of treatment have been advocated by various workers in the field but none of them have proved so efficacious as the combined treatment with Silver Nitrate and Copper Sulphate which appear to be rather specific for trachoma.

Thus DELANOE and GUBBAY first advocated the use of oil of Chalmogra to be painted over the everted lids instead of Silver Nitrate. Some cases do get benefit by this but I think it has a limited value.

Sulphonamides have now recently come into the field and many enthusiastic workers have reported good results with Sulphonamide ointment like Eyelex, Anti-Bacterial ointment, etc. But, here again, I would like to say that the Sulphonamide ointment only helps to remove the secondary infection, which is often associated with trachoma, but has no specific effect on the primary cause, and as such, though such ointments could be used with benefit in the early stage, it cannot entirely replace the use of Silver Nitrate.

Ultra violet ray irradiation by Kromayer's lamp has been advocated by some authors like Dr. N. K. BIDYADHAR in the treatment of trachoma. I cannot vouchsafe any opinion on this as I have not yet given it a clinical trial.

Stage II.—Here, as we know, the follicles and papillæ grow in size and become gelatinous. Hence the line of treatment in this stage consists in first crushing the follicles mechanically by a roller forceps and then the treatment suggested in Stage I has to be carried out. Application of Copper Sulphate stick is of more value in this stage than before as it helps to bring about cicatrization early.

Stages III and IV.—The treatment to be adopted in this stage is mostly a surgical one as we find that in this stage there is cicatrization of the tarsus which ultimately gives rise to complications like Ptosis, Entropion, Trachiasis, etc.

Hence tarsectomy is the operation of choice in this stage, and it has given satisfactory results. I do not intend to go in detail into the technique of the operation as it could be found in any text book on the subject.

This brings us to the end of the subject leaving aside the treatment of complications and sequelæ of trachoma which is beyond the scope of this article.

United Nations Conference on Food and Agriculture (A Critical Review)

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Indian General Hospital, Fd., (Ex-Medical Officer, Presidency College, Madras).

(Continued from page 448 of August issue).

Agriculture Policy.—That nutrition is closely connected with agriculture is well stressed by the Government of India, in defining its nutrition policy as :—

“the pursuit of the question of co-ordination of agricultural and nutritional studies for the improvement of human nutrition”¹⁷.

Two reports were drawn under the instructions of the Agriculture, Forestry, and Fisheries Departments of the Government of India for the Reconstruction Committee of Council, in May 1943. One report—the “Economic background of post-war agricultural policy” was prepared by Sir THEODORE GREGORY and the other—“Technological possibilities of agricultural development in India” by DR. W. BURNS.* The two reports together will form the basis of an All-India policy for post-war agriculture. The

17. Government of India: “Indian Information Series,” September 1938.

* Dr. W. Burns is the officer on special duty, of the Departments of Education, Health and Lands, Government of India, in 1943, who submitted this valuable report. Published by the Government Printing Press, the Punjab in 1944.

GREGORY report deals with the foodgrains, which is referred later in this article. DR. BURNS' report considers the present yields of the land and the methods of improving the quantity and quality of the yields. This report is divided into 4 chapters, dealing with :—

(1) Progress of farming in India, as a whole—trends and tendencies in regard to acreage and production over the last 30 years by graphs and statements ;

(2) Grow more food campaign ;

(3) Assessment of crops, in the light of yields per acre ; and

(4) Shape of things to come—regarding.

(i) abolition of poverty of cultivator ; and (ii) abolition of the poverty of the soil.

The agriculture policy must be so directed and adjusted that—

“the great wealth of food which we have or can produce will be brought within the purchasing power of the poorest ; and also, that the food supply is sufficient for the Nation's health”¹⁸.

The agriculture policy of England, America, Russia, Germany, and other European advanced countries are all based on the knowledge that—

“all raw products and foodstuffs must be produced with full consciousness, to answer the call of the Nation”¹⁹.

That there must be a close co-operation between agriculture and other departments connected with food supply was stressed long ago by the Far Eastern Countries Conference on Rural Hygiene (1938). The same objective has been voiced by the United Nations Food Conference in 1943. DR. AYKROYD has also remarked that the *agricultural policy must be planned to correct the deficiencies in the diet of the population*²⁰. All these enunciations only reveal that there has been no appreciation of this vital aspect of agricultural policy, in the body-politic of our country.

In framing an agricultural policy (where there is none at the moment), with the sole aim of serving the food and health interests of the people, a number of factors will have to be taken into account, viz., lands available for utilisation ; the agricultural yields ; the population ; the consumption of food supply *per capita* ; cattle supply ; food trade trends ; the financial position of the agriculturist ; and lastly, the psychology of the agriculturist, who produces the food supply (quick yields, quicker profits, to make himself happy and prosperous).

Without this background of the agricultural policy, the tinkering with the food problem here and there, are bound to lead to failure only. That is why, the present *grow more food* campaign has not borne the desired result. It is (as DR. BURNS has aptly remarked) an improvised and un-co-ordinated campaign. It is expected that due to this campaign the increased production over 1941-42 figures will be—

Rice	... 818,000 tons.
Wheat	... 948,000 „
Millets and Maize	... 3,726,000 tons.

This increased production is not enough, when the deficit is over 4.3 million tons (Rice). Naturally, the people look upon it with suspicion.

18. J. B. Orr: “Food, Health and Income,” 1936.

19. London Times: “National Health Supplement,” September 1937.

20. Dr. Aykroyd: Nutrition, No. 21, p. 89.

Therefore, it may be asserted that the campaign has proved a *misfire* in the country.

The uses of land in India²¹ are—

(1) Area under crops	... 42.0%
(2) Current fallows	... 10.0%
(3) Forests	... 13.0%
(4) Unavailable for agriculture	... 18.0%
(5) Cultivable waste	... 17.0%

The lands utilisation in the different provinces are tabulated in Appendix VIII.

It has been pointed out that the forests in India cannot suffer any further diminution, as these are absolutely necessary for the protection of the fertility of the soil, of the water supply, and for the prevention of soil erosion. It is only that—

“some 110 millions acres of culturable waste that have to be considered for the projects of land reclamation, engineering, and irrigation. On the whole, it is from an increase in the yields rather than from an expansion of rice-acreage that the chronic food deficit of about 250 million rice-eaters can be solved.”

The continuous deficit of rice position in relation to the increase of population is shown below:—

Rice production and consumption in India²².

In terms of cleaned rice, million metric tons.

Years.	Production.	Imports.	Exports.	Available supplies.	Population (millions).	Percentage utilisation (Kgm).
1916-'20	... 28.11	1.20	0.34	28.97	308.2	94.0
1921-'25	... 26.67	0.89	0.29	27.27	311.2	88.0
1926-'30	... 25.87	1.20	0.31	26.66	328.6	81.0
1931-'35	... 27.13	1.48	0.26	28.35	346.4	82.0
1936-'40	... 25.77	1.73	0.33	27.17	363.5	75.0

The acreage per person under food crops²³—including food grains, sugar cane, vegetables, fruits, condiments, and spices is—

1911	... 0.83 acres.	1931	... 0.79 acres.
1921	... 0.86 „	1941	... 0.67 „

This shows that the acreage of yields of food supply has been diminishing, while the population has been steadily growing.

The steady and serious decline of the yields in India as compared with Japan, China, and other countries, must make us think furiously:—

Crop yields in different countries²⁴—lbs. per acre.

	India.	China.	Japan.	U.S.A.	World yield.
Rice	... 983.0	2,433.0	3,070.0	1,680.0	1,440.0
Wheat	... 811.0	989.0	1,350.0	990.0	840.0

21. Radhakamal Mukerjee: "Population and Food Supply," No. 1, All-India Nutrition Board, Pamphlet, p. 12.

22. Radhakamal Mukerjee: "Population and Food Supply," Pamphlet, No. 1, p. 15.

23. Ibid, p. 16.

24. Dr. Burns' note—"Technological Possibilities of Agricultural Development in India," 1944.

25. Radhakamal Mukerjee: "Population and Food Supply," No. 1 Pamphlet, p. 16.

The approximate yields of rice in important countries of the world (lbs. per acre) are²⁵ :—

Averages for	1909-'13.	1932-'36.	1938-'39.
India including Burma...	982	829	728
Burma	...	845	959
Indo-China	... 928	637	...
Siam	...	961	943
U. S. A.	... 1,000	1,413	1,469
Italy	... 1,952	2,963	2,903
Spain	... 2,969	3,709	...
Egypt	... 2,119	1,799	2,153
Japan	... 1,827	2,053	2,276

N.B.—It will be noticed that while other countries increased their production of rice, during the last 35 years, India has decreased in its yield.

All-India rice acreage: 76,300,000 acres.

All-India rice production: 28,000,000 tons. This works out at 0.48 tons of rice per acre.

The following table²⁷ showing the rice area production in million acres, in the rice-eating provinces, reveals its own story:—

	1907-'12.	1921-'26.	1933-'38.	1938-'39.	1939-'40.
Bengal	... 20.40	21.18	21.5	21.99	22.29
Bihar and Orissa.	... 16.80	14.63	14.2	14.7	14.6
Madras	... 10.40	11.06	10.5	9.84	9.61
U. P.	... 6.02	7.06	6.66	5.33	7.67
Assam	... 4.38	4.60	5.31	...	5.04

The increase of population in the rice-eating Provinces, with reference to the above rice-production table is in millions:—

	1911.	1921.	1931.	1941.	Percentage increase.
Bengal	... 45.4	46.7	50.2	60.3	24.7
Bihar and Orissa.	... 34.4	33.9	37.6	45.0	23.55
Madras	... 39.1	40.1	44.2	49.3	26.1
U. P.	... 46.8	45.3	48.4	55.0	17.5
Assam	... 6.5	7.4	8.6	10.2	57.0

The decline of rice production per capita in lbs., corresponding with the above increase of population is shown below:—

	1910-'15	1920-'25	1930-'35	1936-'40
Bengal	... 518	398.0	402	313.7 lbs.
Bihar & Orissa	... 472	398.8	291.8	223.1 „
Madras	... 252.1	290.5	268.6	209.0 „
U. P.	... 86.16	101.9	80.52	85.51 „
Assam	... 634.0	442.0	401.0	373.3 „

It will be seen from the above data, that while the population in Bengal and Bihar has increased the rice production has decreased. These are the two worst places in India, affected by the famine conditions.

India not only shows a definite deficit in the quantity of food production in relation to population increase, but also, steady deterioration in the

26. Dr. Burns' note on "Technological Possibilities," previously referred to, 1944 publication.

27. Ibid, pp. 17-18.

quality of her foodgrains. There has been continuous increase in the production of inferior cereals (jowar, barley, bajra, etc.) at the expense of the superior cereals (rice and wheat), as the crops report reveal.

The reasons for the above situation are:—

(1) Poverty of the agriculturist; (2) the uneconomic character of the small-holdings that can no longer withstand the cultivation of exhausting crops, such as wheat, rice, and sugarcane; (3) the agriculturist's ignorance, as he will not respond to the scientific advances and improved methods of agriculture; (4) the agriculturist grows *what it pays*, without any thought on the effects of the foodgrains on the health of the consumer; that is he is not *health-minded* of the community; and (5) the laziness of the agriculturist, as the inferior cereals are cheaper to grow with less labour and love, than the superior ones.

Therefore, intensive education and propaganda are essential among the rural population, and especially in connection with the future trade trends of foodstuffs—"for the best use of these resources on a world scale, based on better diets for their own people and on the international demand for nutritionally better food" (p. 18. Report). The United Nations Food Conference have recommended that competent research work should be conducted "to ascertain as definitely as possible what the effective capacity of the World to consume specific products is likely to be, in the years ahead" (p. 51. Report).

It has been estimated that 45 million out of 150 million agricultural workers, live in idleness, for 2 to 5 months in a year, in the different parts of India. With regard to the solution of agricultural over-population, the United Nations are firmly of the opinion that the way lies in industrialisation.

Animal husbandry.—No agricultural policy which is to serve the nutrition policy can be successful without the consideration of the cattle live-stock. The present statistics²⁸ reveal, that in British India, there are:

Cows: 37 millions, yielding 18,036 million lbs. of milk.

Buffaloes: 15 millions, yielding 18,896 million lbs. of milk. Buffaloes yield milk only.

Bullocks: 49 million bullocks cultivate 264 million acres of land; and their capacity for work varies from 7.6 acres to 19.2 acres per pair of bullocks. This is hardly adequate for intensive farming.

Goats: 38 millions, but 15% only give milk.

Sheep: 47 millions, produce 85 million lbs. of hair and wool.

Poultry: Fowls—74 millions.

Ducks—74 millions.

They produce 1844 millions of eggs per annum, or 7.209 eggs per year per head of human population.

The milk production is:—

Cows: 3.09 ozs. per head of human population.

Buffaloes: 3.12 ozs. " "

Goats: 0.20 ozs. " "

28. Dr. W. Burns' note on "Technological Possibilities of Agricultural Improvement." The Punjab Printing Press, 1944, previously referred to.

The accompanying table illustrates the disparity between the cattle-stock and the amount of milk available per head of the population, in the various Provinces²⁹:—

Provinces.	No. of cattle per 100 acres sown area.	Estimated daily production of milk per head (in ozs.).	Estimated daily consumption per man in (ozs.).
The Punjab ...	58	18.3	9.9
Bihar and Orissa.	83	6.4	8.2
C.P. ...	50	6.1	0.8
U.P. ...	90	4.7	5.0
Bombay ...	35	4.7	4.0
Madras ...	75	3.6	1.6
Bengal ...	112	3.1	1.9
Assam ...	94	1.4	2.2

The Government of India have pointed out, under the caption—*more efficient, more economical*, that—

"the milk of the Indian cows is much richer than that of European breeds. The average percentage of butter-fat in the milk of the Indian cows is about 4.8%, while that of cows in Europe and America averages about 3.7%³⁰.

This means that India has enough potential resources in her cattle-stock and milk supply, which must be tapped to advantage, as a self-sufficient policy, for milk and its products. These points should be carefully noted by the Indians who advocate and go in for foreign milk and its products. In this respect, I desire to draw the attention of the reader to my criticism of *skimmed milk powder*, in this article. Milk is the most single food and there is no substitute to it. As Dr. Burns has pointed out in his valuable note, milk production can be definitely increased by the following methods, viz:—

By feeding	... 30%
By breeding	... 15%
By management	... 15%, and by
Disease control	... 15%.

It is high time that Indians woke up to the milk supply problem and adopt beneficial measures, instead of merely resorting to milk control and legislative measures, as in Bombay and Madras. This will not bring the expected results *but, on the other hand, will increase people's suspicion*, for not being able to tackle the problem in right earnest and in the correct way.

Public Health Services and Health of Indians.—The high rates of infantile and maternal mortality, the low average life of Indian (22–39 yrs.), the low level of health, as revealed by public health reports and the poor physical fitness, as revealed by research-work data are well-known³¹. These are anything but complimentary to the existing Medical and Public Health Services. Beyond spectacular inoculations and vaccinations, and the grandeur of monumental hospitals to treat those, who *actually* fall ill (I am repeating what I said and wrote as early as 1938), the Public Health

29. Radhakamal Mukerjee: Food Supply, Oxford Pamphlet, No. 8, p. 20.

30. Govt. of India: Indian Information Series, September 1, 1938.

31. My Special Article: Health of University Students in India. Antiseptic, Feb. '45,

and Medical Services, have not yet so far touched the crux of the health problem, namely, to raise their low health standard, and impaired physical fitness sufficiently and forcibly, to make a healthy Nation. They have been meeting the emergencies, as these have been cropping, in endemic and epidemic forms. This indicates that we have a short-sighted policy and programme, having forgotten the preventive aspect of medicine and its programmes, in the body-politic of our country. We have been guided by the motto—*sufficient unto the day, the evils thereof, let future take care of itself*. The reason is that India has no Health Policy, with a well-planned Health Programme³².

The Skeene Committee on Indian Military training (1927) recommended the framing of a health policy for India :—

“to make every Indian healthy and physically fit.”

This still to-day remains a wishful thinking. H. E. LORD WAVELL stressed the importance of this road to health, in his message to the Health Survey and Development Committee, when it was inaugurated in 1943³³.

The aims and objects of a national health policy, in all advanced countries are :—

“to improve the individual or the community life of the future, to insure a better second generation, and a still better third generation, and to promote a healthier and fitter Nation and race”³⁴.

The plans to carry out this major national health policy are :—

(1) Regular and compulsory medical examination of all school children, with the aim of insuring their health³⁵.

(2) Regular and compulsory physical training of children, as suits their individual capacity, with the objective of improving their physical fitness³⁶.

(3) Nutrition policy for children³⁷.

The medical inspection scheme is the cheap ounce of medicine to prevent the costly pound of cure. All Nations are re-organising the Public Health departments, so as to make the people not only healthy but also physically fit. Even in her chaotic condition of civil war, Spain was carrying on a raging physical fitness campaign—“for the strength of our children, of our community, and for the humanity.” With regard to the physical training schemes even in England, it has been adversely commented upon by the late LORD BADEN-POWELL that—

“it is only a veneer to cover the defects in the State, in not attending to child welfare, anti-natal clinics, and the health of school-children”³⁸.

It is needless to comment on the Indian conditions of life, which are anything but complimentary. I will refer the reader to my special articles on (a) *Physical Educational Policy and Training*³⁶ and (b) *Trends in Physical Education in India* (“South Indian Teacher,” Madras, June 1937).

32. My special article: “Well-planned Health Programme.” Antiseptic, June, 1944.
33. Govt. India: Indian Information, November, 1943.
34. Approved by both British and American Medl. Associations.
35. Journal of Madras University, July 1938: My Special Article.
36. Ibid. Jan. 1939: My Special Article.
37. Ind. Medl. Journal. Decr. 1938: My Special Article.
38. London Times: “National Health Supplement,” September, 1937.

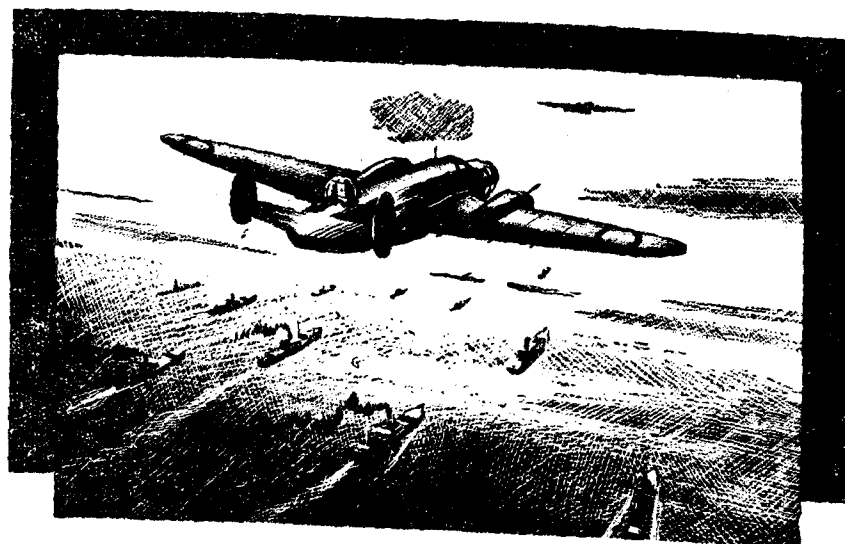


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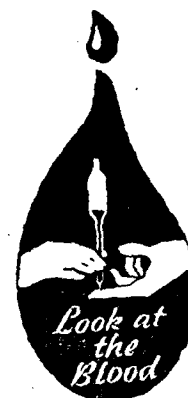
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In this connection, it is well to bear in mind, the saying the *onward march of a nation depends upon the feet of little children*. It is here the Health Survey and Development Committee should exert itself to its utmost capacity. Otherwise, its name becomes a misnomer.

The modern *idea* is to insure that every child should grow up as healthy as possible. The *motto* in all advanced countries is—"to cure is the voice of the past, to prevent the divine whisper of to-day." The medical profession will in future be more concerned with the *preventive* aspect of medicine, rather than with its *curative* side. Our Health departments stand in need of drastic re-organisation. The Madras Health Act (1939), the first of its kind in India, has failed to tackle these beneficial health reforms. What I feel is (from my experience of researchwork in health, physical fitness, and dietetics), that there must be an All-India Health Act, on the model of all other advanced countries. The subject should not have been transferred to the Provincial Governments, under the Indian Constitution Act (1935). No other Province, except Madras, has woken up to tackle this primary health reform, even though perfunctorily. There is no uniform health policy throughout India. It could be safely mentioned that except Madras and the Punjab, other Provinces are lacking behind in public health organisations and activities. These two Provinces do not make the sub-continent of India.

The Central Nutrition Advisory Board and the Imperial Council of Agriculture in India have been in existence for a long time, to make their pressure felt on the general population. These two bodies have been controlling the whole nutritional and agricultural fields. But from the foregoing paragraphs, it is obvious that they have *not* been an effective force in the Indian life. Otherwise, we should not have been in the present quandry of ill-health and insufficient food supply and production. Therefore, I feel that these two bodies have outlived their usefulness. New wine will have to be poured into these old bottles, if India is to keep abreast of modern world progress and also be in the vanguard of leading Nations. LORD WAVELL has rightly stressed the road to health and stepped in, at this opportune moment, with his Health Survey and Development Committee. Needless to point out, this Committee will be the *pivot*, on which future healthy India will move and must move too.

Government of India activities.—To solve the food distress, which has been created partly by the War and partly by the profiteer, the Government of India appointed a Foodgrains Policy Committee in 1943, under the Chairmanship of Sir THEODORE GREGORY, Kt., this Committee's function was

"to recommend plan and measures for the *deviation* of the war, maximum supply, equitable distribution, and proper control of prices, in relation to foodgrains."

The above GREGORY Committee recommended—

- (1) control of foodgrains in each Province;
- (2) rationing in every town with a population of one lakh and over;
- (3) building of provincial food reserves, in each Province; and
- (4) for every surplus Province, quotas were fixed which were to be collected in each Province, and to be delivered to the deficit Province; It envisaged price control as well as stock-control, hoping to get the co-operation of the honest businessmen and agriculturists. But the whole

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question hinged on the procurement of the foodgrains. Who is to do it? The Central Government left it to the discretion of the Provincial Governments, who in turn left it to *normal trade channels and trade interests*. The result has been that the hoarder and the profiteer got on best with both the surplus and deficit Provinces. Thus the good recommendations of Sir THEODORE GREGORY and of his committee were torpedoed, with no benefit to the consumers. Hoarding and Profiteering Ordinances have been passed, and heavy fines have been imposed on those anti-social merchants; but these have only eased the situation and not solved the problem. The Central Government must come out with more drastic and stringent orders, under the present Indian conditions, which will surely continue, for sometime, even after the war comes to a close.

Lately, the Government of India inaugurated a Food Conference, the last fifth one was held between January 29 and February 3, 1945. The Hon'ble Food Member (Sir J. P. SRIVASTAVA) in his opening address remarked:—

“we have a long way to go before we can be satisfied that the food available to the people in all parts of India, conforms in quantity and quality, to what we should wish. On the question of nutrition and *protective foods*, that we at the centre hope to learn what your plans are for the future, what your difficulties are..... and the means of getting the protective foods into consumption in adequate quantities must be an important consideration” (A. P. Report).

This is a confession of having *not* done the right thing, in spite of all the nutrition research work in the country, for so many years. This Fifth Food Conference had at its disposal the Report of the United Nations Conference on Food and Agriculture (1943), as well as the GREGORY report, and the BUTLER report on the monopoly of purchases of foodstuffs by the Government, in the interests of the masses. The Conference passed resolutions regarding the movement of foodgrains. The monopoly purchase question was the apple of discord among the Provincial and States delegates to this Conference. On this vital issue, with the parade of differences of opinion by the different delegates, the Conference dispersed without coming to any conclusion. This is indeed regrettable.

Therefore, this Conference held at a time of India's food shortage failed in tackling the food problem difficulties. This once again reveals the attitude of lip-sympathy (not service) to the food distress in the country. The Punjab (a surplus Province in foodgrains) wants to make undue profit at the expense of the deficit Provinces. The discussions (as reported in the daily press) reveal an interesting but sad story. It is no wonder then, that the improvised and un-co-ordinated Grow More Food Campaign has fizzled out, serving nobody any good, except the hoarders and the profiteers (namely the *rich*). It is the rich that have become richer, the poor the poorer, during this war period. To protect the interests of the masses and to give them adequate food, so that they may be healthy and physically efficient, the Government must come out with some more form of *direct action* (an action, which is approved by the United Nations Food Conference, on which India is also represented). The Health Survey and Development Committee must goad the food member to tackle this

primary food problem, both in war and peace time ahead. Otherwise, it will be failing in its duty to its august author.

Difficulties.—India is a big sub-continent, inhabited by different people, and different communities. The difficulties are—poverty, ignorance, indifference to their own health and food problems, lack of financial support, *laissez-faire* attitude of the leaders towards the primary health and nation-building activities, and lastly political interference.

The present angle of vision must be abandoned and changed into a robust, optimistic, and practical outlook. In no country is the motto of the *three musketeers*—“all for the State and the State for all”—more needed than in India of to-day. I venture to submit with all earnestness that it is here, that the Health Survey and Development Committee must justify its existence, if it is not to die unborn, during the present period of Indian renaissance.

Post-war economics.—Big post-war plans have been drafted, involving crores of rupees, in the fields of education, industry, engineering, etc. The Health Committee report is awaited to know the estimated expenditure. The Madras Government have proposed to spend about Rs. 154 crores for post-war plans. The Indian National Congress have their own Planning Committee, under the chairmanship of PANDIT JAWAHARLAL NEHRU—the full report is yet to see the light of day. One has heard of ‘Bombay Plan’ of industrialisation, and the Gandhian plan of economic improvement. The public is deluged with so many plans, that they are practically bewildered. One will not be surprised to know that they look upon all these with a certain amount of suspicion.

One apprehends that the post-war period may not only be unhappy but also be in the throes of economic distress and depression too. There will be plenty of goods, due to the salvage of war surpluses of materials, and due to the economic competitions to capture foreign markets, by well-to-do nations, or those in an advantageous position over others. Every nation will exert itself to its utmost capacity to become self-sufficient. India should not lag behind in this race of world progress, in all walks of life.

To sum up, the chronic under-feeding of at least one-third of the population is at the root of India's low standard of health and physical efficiency in any field of activity. Her population is growing to an alarming extent. This has led some publicists to the advocacy of *birth-control* by contraceptives. The use of contraceptives is in an initial stage in the Indian Society, that is, it is confined to the few rich and the immorals. So far so good. The use of contraceptives will not bring the desired result, but, on the other hand, will end only in the misapplication of the principles, for which the contraceptives are rightly advocated, under proper medical supervision. The use or abuse of contraceptives will lead to:—

(1) The impoverishment of the already degenerated health and efficiency; and

(2) The psycho-neurosis of the people will be greatly increased (another problem for India, when her main health problem is still unsolved and unattended).

In America, it has been estimated by the sociological research workers that 32% of the population are already suffering from psychic ailments

(Film—"March of Time"). Among the recruits to the American Army who considered themselves healthy and physically fit (ages 18-35), it was found that 23·8% of them had to be rejected for *nervous and mental* diseases. The causes are not known for this high percentage. During my health examination of the students of the Presidency College, Madras (ages 16-21) I have noted that the percentage of *excitable temperament* has been on the increase :—⁽³⁹⁾.

Disorders.	1937-'38.	1938-'39.	1939-'40.
Heart weakness ...	12	10	24 Nos. out of 400 students.
Lung weakness ...	9	2	5
Excitable temperament ...	8	8	32
Poor physique ...	9	18	28

These excitable temperament cases are the precursors of mental conditions, at later advanced life. Whether these disorders are due to masturbation or due to some other causes, is not the theme of this article.

I have found the increase of excitable temperament cases in those students who practise excessive masturbation. It is known that masturbation is of a secret nature, in a highly strung nervous condition, both of body and mind. The same mentality of seclusive nature will be carried later into adult life with contraceptives. This will surely make the individuals poor wrecks. Whether he or she, who use the contraceptives, will not be able to enjoy the fruits of the fullness of life. One cannot and will not enjoy the true pleasures of married life with the contraceptives. It has also been shown that the contraceptives are not effective; cause frequent abortions among women and girls; health is ruined; and lastly, leads to sterility, and its attendant evils of unhappy mental states. From my long professional experience of 20 years I may inform the reader that the contraceptives will neither do good to the innocent and ignorant (gullible) masses, nor to the profligates of society. It is only a method of undermining the morality of the Indian society. It is cowardice—unwilling to assume responsibility for one's own actions. Coitus is a normal physiological function or a process, having an enervating effect on the mind and body of the man or woman. This balance is tried to be upset by the use of contraceptives. I do not like to discuss sex-psychology and sexology in this article. But reference has to be made here, for the increase of population and the food supply have been considered in this review,

But how to control population increase? It is nothing but absolute self-control and God's infinite Mercy to save us from over-population. These are the only two healthy remedies, as it will be admitted by even those, who are using contraceptives for their own personal gains. They are the disappointed men.

Regarding agriculture, there is enough culturable waste and usable forest lands, which may be availed of, for the expansion of agriculture and increased food supply. Dr. BURNS in his note on the "Technological Possibilities of Improvement in Agriculture" (previously referred to) has remarked that—

"there is absolutely no reason why India should not aim at an average yield of 1,000 lbs. of cleaned rice per acre or a total production of 34 millions tons."

39. My special article: "A Well-planned Health Programme," Antiseptic, June, 1944.

The increase in the yields is only upto 30%, which is due to :—

- | | |
|--|----------|
| (1) Increased manuring | ... 20%. |
| (2) Use of improved variety, | ... 5%. |
| (3) Protection from certain pests and diseases | ... 5%. |

The United Nations Conference on Food and Agriculture has pointed out that a possible solution is "more efficient agricultural technique and a shifting from extensive to intensive agriculture" (p. 55). The agriculturist is the backbone of the Army and the society. He must be made to produce the foodstuffs which will help the Nation to get its required adequate diet, to improve its health and physical efficiency. An agricultural policy must be enunciated in India, on the lines suggested above.

Regarding nutrition, it has been amply discussed here. The fad about a balanced diet must be given up, especially by the research workers. The following figures will show the enormous cost, in getting a balanced diet in a poor country like India ⁽⁴⁰⁾ :—

Foodstuffs.	Ounces per diem per capita (consumption unit).		Total quantities in millions.	
	Required for a balanced diet.	Available.	Required.	Available.
Cereals	... 16	1·8	48·0	55·5
Pulses	... 3	2·5	9·0	7·5
Sugar	... 2	1·8	6·0	5·3
Vegetables	... 6	3·0	18·0	9·0
Fruits	... 2	2·0	6·0	6·0
Fats and oils	... 1·5	0·6	4·5	1·9
Whole milk	... 8	1·5	32·0	6·3
Butter-milk	... Per capita.	3·0	...	12·5
Meat, fish and eggs	... 2·3	0·5	6·0 to 9·0	1·5

The above are the figures showing the deficiency of the Indian food resources, on the basis of a nutrition standard of 2,600 calories submitted to the United Nations Food Conference on Food and Agriculture, by the Indian delegation in 1943. An adequate and satisfactory diet is the best, which is recommended by both the League of Nations in 1937 and the United Nations in 1943. India must inaugurate a bold *national nutrition policy*, with the object of building health and efficiency, as adumbrated in this article.

India's health conditions are anything but pleasant (Appendix IX). A widely recognised *health policy*, implemented with a well-planned health programme, must be chalked out, with the aim of insuring the health of the Nation—"to stand the tests of peace and tasks of war."

The angle of health problem will have to be changed from its present state of secondary social question (a *laissez-faire* attitude towards health reforms) to that of primary nation-building activity (a pucca socio-political reform). Without this much-needed change in mental outlook and our readiness to sacrifice our inertia, our ignorance, and our complacency, I submit most seriously that no health problem can be solved, much less, any improvement effected in the country. Everyone must seize this health problem of maintaining good health and stick to it, individually and collectively. Otherwise, we cannot rise as a Nation and be in the vanguard of World progress. I earnestly appeal to the Central Government to take

40. Radhakamal Mukerjee: "Population Problem in South East Asia," Ind. Institute of International Affairs, New Delhi, p. 6.

some form of direct action, and compel the Provincial Governments to do the needful. India will be certainly grateful to His Majesty's Government for this healthy action. The Health Survey and Development Committee is drafting its report to-day. Let it rise to the expectations of the Indian public, in chalking out a bold *Health Policy*, for the good of the whole country. Otherwise, its report and its activities will have been in the wilderness.

It must be remembered that health is the *basic* to all other skills, the foundation stone of the individual, the community or the Nation at large, on which any kind of superstructure can be erected, *truly and well laid*. This has been repeatedly stressed by the United Nations Conference (under review), during all its discussions on freedom from want and hunger, as pointed out earlier. There is no cause more important than the health, happiness, and well-being of the children, the leaders of the future generation, treading on LORD WAVELL'S road to the health. The poetic saying, *The child is the father of the man*—is worth quoting. It is the Government's responsibility to chalk out these essential health reforms.

The primary health and food problems transcend all politics, castes and creeds. As money has been found for War, Hospitals, the Services, Education and Agriculture, the Bombay plan of 15 crores of rupees for industrialisation, so it will not be difficult to find money for this primary and pressing *major* health problem. If the entire population of a town or city is affected by an epidemic, or, if there is a cut in the public expenditure on education or agriculture, or if there is a political crisis, or again of fresh taxation, the whole country is up in arms as one man and demands that something must be done. Why not rise up as one man and demand treatment and improvement of health, and kill the hoarder and the profiteer and adopt measures to raise the level of physical efficiency and fitness from C-3 to A-1 status? All the doctors, nutritional experts, the agriculturists, and the people must co-operate and ever be in the *eternal triangle of love* with one another, to improve the health and efficiency of the Nation, for a world, free from hunger, free from want, and free from insecurity. "Where there is no vision, the people perish."

Foot-note:—The author feels that the Indian Medical Profession is not fully conversant with the various aspects of nutrition, beyond the selected band of workers; and also with the United Nations Conference report on food and agriculture. Hence, this article has been deliberately made long and exhaustive.

Appendix I

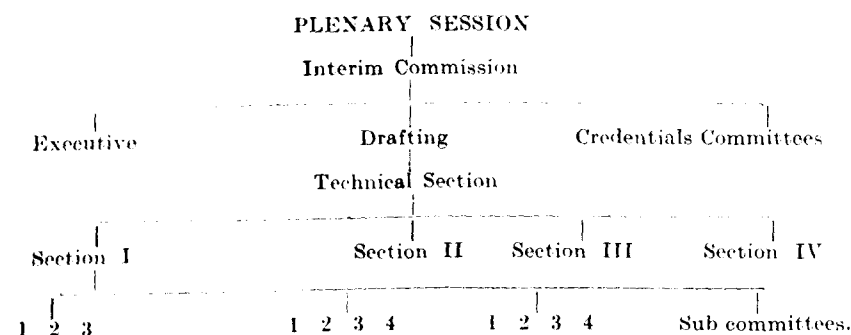
The 44 countries (Governments) represented by their accredited delegates (number in brackets) attended the United Nations Conference on Food and Agriculture, held at Hotsprings, U.S.A. in July, 1943. They are:

Australia ... 5	Ethiopia ... 3	Nicaragua ... 2
Belgium ... 3	French Delegation ... 3	Norway ... 5
Bolivia ... 4	Great Britain ... 9	Panama ... 1
Brazil ... 8	Greece ... 1	Paraguay ... 1
Canada ... 6	Guatemala ... 3	Peru ... 1
Chile ... 3	Haiti ... 3	Phillipine Commonwealth ... 3
China ... 10	Honduras ... 3	Poland ... 3
Columbia ... 3	Iceland ... 3	Union of South Africa ... 5
Costa Rica ... 1	India ... 5	Union of Soviet Socialist Republics ... 6
Cuba ... 5	Iraq ... 1	United States of America ... 6
Czechoslovakia ... 2	Liberia ... 3	Uruguay ... 2
Dominican Republic ... 7	Luxembourg ... 2	Venezuela ... 3
Ecuador ... 4	Mexico ... 5	Yugoslavia ... 2
Egypt ... 2	Netherlands ... 6	
El Salvador ... 3	New Zealand ... 6	

Total 163 delegates.

N. B.: The big sub-continent of India had only a small number of 5 delegates, when compared to the smaller countries, which are weighted with a greater number of delegates. It may be argued that no value need be attached to the numbers!

Appendix II (Scheme of the Conference)



N. B.: India had 3 seats out of a total of 78 seats in the sub-committees. India had a seat in the executive committee of the Conference, and also in Sections I and 2.

Appendix III

Recommended Dietary Allowance (tentative goal toward which to aim in planning practical dietaries; can be met by a good diet of natural foods. Such a diet will also provide other minerals and vitamins, the requirements for which are less well known. Food and Nutritional Board, National Research Council, U.S.A.

	Calories.	Protein grams.	Calcium grams.	Iron mg.	Vitamin A I. U.	Thiamin (B1) mg.	Riboflavin mg.	Niacin (nicotinic acid) mg.	Ascorbic acid (Vit. C) mg.	Vit. D I. U.
Man (70 kg.):										
Sedentary	2,500	70	0.8	12	5,000	1.5	2.2	15	75	(6)
Moderately active	3,000					1.8	2.7	18		
Very active	4,500					2.3	3.3	23		
Woman (50 kg.):										
Sedentary	2,100	60	0.8	12	5,000	1.2	1.8	12	70	(6)
Moderately active	2,500					1.5	2.2	15		
Very active	3,000					1.8	2.7	18		
Pregnancy (Latter half)	2,500	100	2.0	15	8,000	1.8	2.5	18	100	400 to 800
Lactation	3,000					2.3	3.0	23	150	400 to 800
Children upto 12 years:										
Under 1 year	100/kg	3 to 4/Kg	1.0	6	1,500	0.4	0.6	4	30	400 to 800
1-3 years	1,200	40	1.0	7	2,000	0.6	0.9	6	35	(6)
4-6 years	1,600	50	1.0	8	2,500	0.8	1.2	8	50	
7-9 years	2,000	60	1.0	10	3,500	1.0	1.5	10	60	
10-12 years	2,500	70	1.2	12	4,500	1.2	1.8	12	75	(6)
Children over 12 years:										
Girls:										
13-15 years	2,800	80	1.3	15	5,000	1.4	2.0	14	80	(6)
16-20 years	2,400	75	1.0	15	5,000	1.2	1.8	12	80	
Boys:										(6)
13-15 years	3,200	85	1.4	15	5,000	1.6	2.4	16	90	
16-20 years	3,800	100	1.4	15	6,000	2.0	3.0	20	100	

Appendix IV

1. Caloric requirements for different occupations—

Occupations	Energy required	Food required (Cals.)	Occupations	Energy required	Food required (Cals.)
Tailor ...	2,500	2,750	Painter ...	3,250	3,600
Book-binder ...	2,800	3,100	Carpenter ...	3,200	3,500
Shoe-maker ...	2,850	3,150	Stone mason ...	4,400	4,850
Metal-worker ...	3,200	3,500	Wood-cutter ...	5,000	5,500

2. Caloric requirements for different races—

Race	Weight (Kgms.)	Proteins (gms.)	Carbohydrates (gms.)	Fats (gms.)	Total calories.
Eskimo ...	65	282	52	141	2,604
Bengali ...	50	52	484	27	2,390
European ...	70	118	512	65	3,055
American ...	79	100	400	100	2,900
South Indian peasant	(not determined)	—	—	—	2,600
Roumanian ...	do.	—	—	—	3,000
Javanese ...	do.	—	—	—	2,116
Ceylonese ...	do.	—	—	—	1,940

3. Caloric requirements for Indians (by different workers)—

League of Nations standard	Calories	Capt. V. Krishna Row (the writer)	Calories
Dr. Aykroyd ...	2,600	Prof. Burridge, Lucknow University	1,250
Col. McCarrison ...	2,500-3,000	(Climate and Labour).	—
Sir Alfred Chatterton ...	1,800	—	—

4. Cost of daily diets in South India (my own figures)—

	Rs. A. P.		Rs. A. P.
* Tamil Nad village diet ...	0 0 9	Public Meals hotels	0 5 4
† Well-to-do students' hostels ...	0 5 6	* Bistal School diets	0 2 0
‡ Poor students' hostels ...	0 2 6	§ Indian Army diet	0 3 6

Appendix V

The daily diet of a students' hostel in South India, consumption per head, in ounces. This is the average daily food, consumed in South India by the middle-class family, earning an income from Rs. 150/- to Rs. 500/- per month. These data are part of my research work, in the diet survey of the South Indian student population, which has not yet been completed, on account of my absence on active service. Final report of my figures for a satisfactory diet card for each community, based on the health and physical fitness of the individual, is under draft.

	Ozs.	Calories		Ozs.	Calories
Milled rice ...	12.04	1,191.96	Gingely oil ...	1.286	205.76
Thor dhal ...	1.36	133.28	Ghee ...	0.555	not known
Yellow gram ...	0.305	28.97	Milk (cow's) ...	8.015	144.0
Black gram ...	0.823	81.48	Curd (Buffaloe's milk) ...	5.000	165.0
Bengal gram ...	0.277	28.53	Coffee seeds ...	0.370	not known
Common salt ...	1.072	not known	Vegetables 0-0.5 pies	—	—
Tamarind ...	0.400	32.8	Appalams No. 1 (This is made out of black gram, salt, a little pepper or chillies, with the vegetable juice perandai).	—	—
Red chillies (dry) ...	0.138	11.45	Pickles of lime, mango, gooseberry, or of some sour fruit.	—	—
Asafoetida ...	0.010	0.84			
Venthium (fenegreek) ...	0.014	1.33			
Cumin seeds ...	0.006	0.61			
Pepper ...	0.007	0.61			
Coriander seeds ...	0.047	3.85			
Turneric ...	0.151	14.95			
Java sugar ...	1.153	27.67			
American flour ...	1.103	104.78			
			Total ...		2182.64

* All-India Spinners' Association Report, 1939.

† My own collected data, on which I have worked out the diet contents.

‡ Ibid. § Ibid.

§ Mr. L. S. Amery, Secretary of State for India, Parliament Speech, 1938.

N. B.: This roughly gives a total caloric value of 2182, without taking into account the value of ghee, coffee seeds, and salt. The Health Bulletin No. 23 (1941-revised) of the Government of India has been referred to, in calculating the caloric values per ounce. It does not give out the values for ghee and coffee, in the tables appended. Here is a snag for research workers. This 2182 calories more or less coinciding with the amount of calories required by the South Indian of 2350, has been worked out with the help of Aub-Dubois' chart for metabolism.

It should be noted also, that the above figures are only tentative, and the final figure is yet to be struck.

Appendix VI

Production of principal food grains and total cereals and pulses in the Punjab* (in 100' Tons.)

Year	Wheat	Barley	Gram	Rice	Jowar	Bajra	Maize	Total principal food grains	Total cereals and pulses
1937-38 ...	3,723.9	206.3	640.3	546.0	88.8	293.3	406.4	5,851.0	6,183.0
1938-39 ...	3,235.4	150.7	375.0	466.3	69.2	218.1	383.9	4,898.6	6,200.6
1939-40 ...	3,260.7	196.5	498.5	441.3	63.6	244.2	405.3	5,610.6	5,936.6
1940-41 ...	3,338.9	219.3	699.7	462.7	98.1	477.4	447.8	5,743.9	6,088.9
1941-42 ...	3,873.0	226.6	648.7	457.8	94.3	442.6	463.4	6,206.4	6,560.0
1942-43 ...	4,175.1	280.6	1,095.7	600.3	113.2	711.1	465.4	7,441.4	7,854.1
Increase in 1942-43 over 1941-42 ...	302.1	54.0	447.0	142.5	18.9	268.5	2.0	1,235.0	1,294.1

*G. ADHIKARI: Food in the Punjab—People's Publishing House, Bombay, June 1944 P. 33.

Appendix VII. Food shortage in war-time.

TABLE I

Rice Surplus or deficit in the Major provinces, (1941-42), in 1,000 tons.

Provinces.	Normal production.	Surplus or Deficit.	Normal Imports and Exports.	
			Imports.	Exports.
Bengal ...	10,217	1,351	499	314 (Bihar 55%; U. P. 30%; Assam 15%).
Bihar ...	2,747	-496	217	26
Orissa ...	1,380	39	1	187 (Bengal 40%; Madras 30%; and Bihar 20%).
U. P. ...	1,581	-635	227	22
Madras ...	5,080	-279	1,038	163 (Hyderabad 70%; Bombay 20%).
The Punjab ...	299	-19	55	57
C. P. and Berar ...	875	-818	5	197 (U. P. 40%; Madras 30%; Bihar 20%).
Bombay ...	789	-723	510	22
Assam ...	1,466	-324	27	34
Sind ...	292	60	10	125 (U. P. 40%; Punjab 40%; and Rajputana 15%).

TABLE II

Wheat: Surplus or deficit in the major provinces (1941-42) in 1,000 tons.

Provinces.	Production.	Surplus or Deficit.	Normal Imports and Exports.	
			Imports.	Exports.
Bengal	45	-215	220	10
Bihar	480	39	35	12
U. P.	2,500	-75	47	122 (Bihar 49%; Bengal 25%; Rajputana 6%).
The Punjab	3,162	296	5	550 (Sind 26%; Rajputana 24%; Bengal 23%; U. P. 11%; and Bombay 5%).
C. P. and Berar	408	-217	20	43 (U. P. 11%; Bombay 5%).
Bombay	310	-236	260	24
Sind	417	136	311	378

N.B.—These two tables are based on the figures supplied to the Food Production Conference in April 1942 and referred to in the opening address of the Hon'ble Mr. N. R. Sarkar. Quoted by Prof. Radhakamal Mukerjee in his "Food Supply": No. 8. Oxford Pamphlets on Ind. Affairs, p. 23.

FOOTNOTE:—I am personally indebted to Prof. Radhakamal Mukerjee, Lucknow University, for the free use of his statistical data, published and unpublished.

Appendix VIII

Land utilization in India. (Different Provinces)

	Co-efficient of over population*	Net area sown (Million acres)	Area sown more than once	Culturable waste (Million acres)	Cattle per 100 acres of crop area	Forests (Sq. Miles)		% Land area under forest
						Usable	Non-usable or inaccessible	
Bengal	2.1	24.7	4.9	5.7	102	8,972	3,466	16
Bihar	1.58	19.3	4.4	5.1	83	8,802	747	13.8
Orissa		6.4	0.5	3.5		1,519	2,159	11.2
United Provinces	1.35	36	8.6	9.9	90	5,412	11,960	16.3
Madras	1.35	32	4.8	10.5	73	16,573	16,694	23.2
The Punjab	0.89	27.2	4.2	4.1	58	1,872	4,120	4.1
Central Provinces & Berar	0.63	24.5	2.7	13.9	51	33,521	14,022	47.5
Bombay	0.62	28.7	0.9	0.8	35	7,840	5,306	10.6
Assam	...	6.2	0.7	18.8	...	†	21,307	31.6
Sind	...	5.1	0.5	5.8	51	1,154	...	2.4

*The co-efficient of over population is worked out on the assumption that five acres is a subsistence holding for the average family in India numbering 4.2 persons. Thus one acre of land per CAPITA is regarded as indispensable for the support of man in agriculture. Dividing one acre by the crop area per CAPITA of each province we get its co-efficient of over population. Intensive farming is indicated in column 3. 25 cattle per 100 acres of sown area would meet the requirements of farming and rural transport in India, if we adopt the standard of Egypt where conditions are similar to those for large parts of India. Cattle population in excess of 25 per 100 acres of sown area should be regarded as uneconomical and superfluous and could safely be reduced. For the needs of agriculture 20 per cent. of the land area is usually considered as the proper amount of forest. The areas of usable and non-usable forests are roughly reckoned by Mr. S. H. HOWARD.

† Details not given.

Appendix IX—Health Statistics

It is well known that Madras Province is the most advanced province in the whole of India, in regard to health programmes and activities. Therefore, I am giving out the statistics of the Madras province (whose statistical records are up-to-date, which will help to appreciate the health conditions in the other less advanced provinces.

1. *Madras Corporation Health Report (1938-'39).* (a) Percentage of defectives among the school-children:

Total percentage of	1938	1937	Total percentage of lung	1938	1937
defectives	67.01	48.56	diseases	1.95	1.30
cleanliness	8.56	7.18	abdominal defects	1.14	0.69
malnutrition	13.64	12.45	and organs	2.42	1.79
dental defects	15.41	9.31	bones and joints	0.11	0.08
nasal	17.59	17.00	nervous and psych	0.11	0.08
eye	4.07	2.00	chic system	12.37	8.52
defective vision	0.88	0.52	infectious dis-	5.61	3.95
ear diseases	2.61	1.32	eases	0.24	0.09
hearing defects	0.03	0.03	other diseases		
circulatory system	1.09	0.52	and defects		
tuberculosis	0.12	0.04	deformities		

Infantile mortality rate: 222.1 (gradual increase during the last three years).

Maternal mortality rate: 9.2 (greater than the Presidency average of 8.9).

N. B.: The above indicates the seriously deteriorating condition of the scholastic population, the future leaders.

2. *Maternal deaths (Madras Presidency, 1938):*

Women deaths due to child-birth	15,398.
still-birth	25,607.
Infant deaths due to other causes	289,390.

N. B.: The mortality rates have been rising during the last two years. Not only this, the death-rate of women, between the ages 15—40, is higher than that of the males, due to the risks of pregnancy. This death-rate reflects on the economic wastage of the Indian manhood and resources of man-power.

3. *Malnutrition: (below 10 years):*

English children	18 %	English students	18.8 %	ages
Madras	46.61 %	Madras	53.0 %	16 to 20

4. *Mortality rates: (below 10 years):*

England	12.0 %	India	49.0 %
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5. *Number of doctors:* In Madras, it has been estimated that there are 6,000 allopathic doctors, and 20,000 other doctors, practising indigenous system of medicine, for a population of 47 millions. This works out at the rate of 1 doctor for every 18,000 of the population.

Russia had only 16,000 doctors before the present war started, but within two years they scored the limit of 42,000 doctors to serve the emergency.

6. *Assessment of nutrition and physical fitness.**

(a) *Livi's index of nutrition*†—

Madras Corporation boys	2.11	New York Corporation boys	2.21
Bombay	2.15	Mahratta boys in an Indian	
Bengal	2.23	Military training centre	2.21

(b) *State of nutrition (English standard)—students.*

	Indian (16-20 yrs.)	English (below 18 yrs.)
Excellent	8.7 %	14.6 %
Normal	60.0 %	74.1 %
Sub-normal	24.2 %	10.6 %
Bad	7.1 %	0.7 %

* My special article "Studies on Nutrition", Antiseptic, July, 1941 and also Antiseptic, Feb. '45, "Health of the University Students in India."

† My own researchwork figures.

Oxaluria*

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Definition.—It is a common condition when crystals of calcium oxalate appear as a deposit in the urine and the clinical picture of which closely simulates renal colic.

Etiology.—1. Common in young people.

2. People of nervous temperament are more prone to the disease—usually pallid and constipated.

3. (a) Exogenous in origin derived from ingested oxalates as from various kinds of food and vegetables in diet such as spinach, tomatoes, rhubarb, pine-apple, strawberries, apples, asparagus, sorrel, tea, coffee, etc. (b) Excessive formation of oxalates in urine—symptoms of rapid emaciation and pain in the loins and back.

4. Hypochondriasis.

5. Atonic dyspepsia.

6. Insomnia.

7. Chronic pancreatitis.

8. Achlorhydria—permitting abnormal fermentation of sugar—urates also precipitated.

9. Hyperchlorhydria—promoting absorption from oxalic acid.

10. Dilatation of stomach producing fermentation leading to unnatural protein decomposition.

11. Mental depression: Concurrent dyspepsia and pains.

12. Paroxysmal hæmoglobinuria causing hæmaturia and albuminuria.

13. In crises of neuresthenics with irritability, lassitude and neuralgic pains without any discoverable cause.

Pathology.—1. *Crystals*:—Calcium oxalate crystals are scanty crystal-line deposit of small, colourless, transparent octahedra appearing under the microscope like tiny envelopes—hence the name 'envelope crystals.' They sometimes rest like fine powder about a cloud of mucous and have been therefore described as the 'powdered wig' deposit. They may also appear in dumb-bell shaped masses and as a rule found in acid urine. They are soluble in hydrochloric acid, insoluble in acetic acid or caustic potash. The crystals are much clearer and highly refractile than any other and atypical forms may be recognised by this feature. The presence of calcium oxalate crystals is not necessarily indicative of an excess but their presence is suggestive of the nature of a calculus. Transient oxaluria was no significance.

2. *Calculus*:—Pure oxalate stones are black, dark brown or purple in colour, knobby and opaque to X-rays. They are the commonest of all the stones may have a concentric laminated appearance. On section, the known as mulberry calculi stained by altered blood and varies in size from that of a mere granule to that of a walnut. They give rise to more acute symptoms for each bristles with sharp pointed crystals, causes bleeding and colour the calculus. If they are encrusted with uric acid, they become

brown and form coral-shaped masses representing a cast of renal pelvis and calices.

Clinical manifestations.—Persons so affected are usually 'below par' but others passing such crystals are apparently in good health and sleepiness in the day may be the only complaint.

Symptoms closely simulate those of renal calculus and may be enumerated as under: (a) Severe paroxysms of lancinating pain starting in one loin down to the front of the thigh or testicle or vulva on that side; (b) Retraction of testicle. (c) Frequent and painful micturition. (d) Vomiting. (e) Shivering, sweating and pallor—a certain amount of collapse. (f) Hæmaturia. (g) Sometimes signs of general disturbance such as headache, lassitude, dyspepsia. (h) Mucopurulent urethral discharge giving rise to the suspicion of gonorrhœa.

Diagnosis.—1. *Examination of urine*:—The diagnosis mainly depends on this. Blood and pus cells may be present but no casts—characteristic crystals may be present and reveal the nature of the stone.

2. *X-ray examination*:—Oxalate stones cast a dense shadow even when they are small and hence easiest to be detected by this method.

Treatment.—1. *GENERAL*:—(a) Ample bland fluid or barley water with gr. xx of Pot. Citras every 4 hours; (b) Nourishing, easily assimilable diet; (c) Tonics to improve general health; (d) Freedom from brain work; (e) Avoid as far as practicable—(i) Violent exercise, (ii) Hard labour, (iii) Jolting, riding on horses or driving of motor cycles, especially on rough roads.

2. *MEDICINAL*:—(1) *General*:—(a) Bishop's effervescent citrate of magnesia—2 teaspoonfuls in half tumblerful of water with m xv of Spt. Ammon. Aromat one hour after breakfast once daily.

(b) Acid Sodium Phosphate gr. xxx, one powder thrice daily after food (to enhance the acidity of urine which favours Solution of Cal. oxalate crystals.) or, Ammon Chloride—gr. xxx t.d.

(c) Pot. Citras gr. 30 t.d. or, Mag. Carb. gr. 30 t.d. (To produce salts more soluble than Cal. Oxalate).

(d) Mag. Sulph 3ii t.d. (A very good solvent: changes Cal. oxalate to Mag. oxalate).

(2) *Symptomatic*:—(a) Chronic gastritis, (i) Gastric lavage, (ii) R Acid Hydrochlor. Dil, m xv, Tr. Nux Vomica m x, Aqua ad 3 i immediately after food.

(b) Renal irritation.—(i) Milk of Magnesia ½ oz., (ii) R Pot. Citras gr. xv, Pot. Bromide gr. viip, Tr. Belladonna m x, Syrup Rose 3 i, Aqua Anethi dest ad 3 i, t.d.

(c) Indigestion—Agarol or Petrolagar 2 teaspoonfuls in a cup of lukewarm milk at bedtime daily.

3. *DIETETIC*:—(1) Restriction of all articles of diet rich in oxalates.

(2) Plenty of fluid or diuretic mineral water to be taken.

(3) Regulate diet to prevent food fermentation inside stomach by giving frequent small meals.

(4) Base the diet on meat, fish, bread, butter, milk puddings, cereals, beans, peas, farinaceous food generally.

(5) Adequate supply of vitamins especially A must be ensured.

(6) Milk, eggs, sugar, butter, wheatbread and rice may be allowed with safety.

(7) Peas, rich in magnesia, should be given in large quantities.

* Specially contributed to THE ANTISEPTIC.

(8) Avoid excess of milk and eggs.

(9) Avoid food with high oxalic content :—(a) Sorrel [2000]; (b) Tea [1380]; (c) Spinach [830]; (d) Cocoa powder [640]; (e) Rhubarb [410]; (f) Dry figs [100]; (g) Chocolate [90]; (h) Red and black currants [70]; (i) Spring onions [55]; (j) Potatoes and beetroot [40]; (k) Parsnips [39]; (l) Billberries and Raspberries [42].

(10) Take sparingly : (a) Broad beans [39]; (b) Green beans [36]; (c) Lettuce [30]; (d) Gooseberries [27]; (e) Oranges [28]; (f) French beans [20].

N.B.—The figures in brackets indicate the oxalic acid content in mgm. per cent.

(11) Trace found in endive :—(a) Tomatoes, (b) Cucumber, (c) Strawberries, (d) Plums, (e) Carrots and (f) Beetroots.

N.B.—It is also advisable to avoid food with high purin content.

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Local Sulphathiozole Therapy*

DR. B. M. KOTHARY, M.B.B.S.,
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A NEW chapter in Sulpha-therapy was turned in the last few years with the institution of local application of Sulpha-drugs to wounds and dermatological conditions. Oral and parenteral administration had proved very useful in many diseases by maintaining a particular concentration of the drug in blood to combat infective processes in the body. Later on, it was suggested that its intimate contact with the invading micro-organisms in the wound may also prevent the occurrence of new infection or abort, localize and cure the existing infection. It was found that local application of these drugs was sometimes more effective than the use of other known antiseptics, but their local action was uncertain in the presence of pus, exudation and degenerative products. Therefore, preliminary cleanliness of the wound is very essential and that an intimate contact of the drug right down into the crevices must be assured to achieve good results. Very encouraging results have been reported, but some observers pointed out that local application of Sulpha drugs may produce sensitivity (in the form of severe dermatitis) which may render future administration of the drug difficult in those diseases which are only amenable to this drug.

After heavy rains last and this year, we had an unprecedented rush of infected cases in the skin department. Scabies was rampant and the secondary infection was universal. Oriental sores were mostly septic and impetigo was overwhelming. We had also quite a good number of cases of sycosis and infected ringworm. We decided to try the local application of Sulphathiazole and compare its result with that of antiseptics and the other usual methods of treatment. Though it was impossible to check all cases by laboratory investigation and control, yet we were convinced that topical application of Sulpha drugs is the method of choice for clearing the

* Specially contributed to THE ANTISEPTIC.

secondary infection. Scabies, *per se*, is not cured by such application, but the infective condition is soon controlled and the specific drugs, then, have much better chance of curing the disease. Many septic oriental sores were healed much sooner than by usual methods of treatment including scraping and antiseptic dressings. The results in impetigo cases were most outstanding. The lesions were cleaned and healed with only a few applications. Sycosis cases improved, though to expect a cure was expecting too much.

Sulphathiozole was either used in the form of sterilized powder, aqueous suspension or 2 to 5 per cent. ointment. An oil-water cream has been very favourably reported. Histological evidence suggests that local application to clean wound may have adverse effect on healing, but in infected wounds, its bacteriostatic and bactericidal influence is far more desirable than and even outweighs its bad effects on healing.

Many laboratory tested cases of Staphylococcal albus infection rapidly healed with the local use of this drug; but one case deserves fuller comment. Mr. G. K., an old man of 45 years, was admitted for multiple ulcerations on his body. His tongue, lips and palate were ulcerated; so also the skin in practically all the flexures. The ulcers were very septic and darkly pigmented suggesting gangrenous condition of the skin. K.T. was negative and he did not improve on ordinary antiseptic lines of treatment. He also developed cellulitis of scalp. The culture from the wound revealed the presence of Staphylococcus aureus, which has the property of necrotising the tissues. With internal administration and local application of Sulphathiozole, the wounds improved excellently, so much so that all were healed up in a fortnight. The present literature on penicillin makes out a clear indication for Penicillin therapy in Staphylococcal aureus infection, but as it was not available we tried Sulphathiozole and the result has been very successful.

We had only two cases of drug sensitivity in the whole series. A carbuncle was being dressed with the drug when he developed dermatitis and eczematous lesion all over the body. His blood sugar was normal and urine sugar-free. With routine treatment, he improved satisfactorily. Another child developed maculo-papular rash all over the body, while his impetigo was being treated with local Sulphathiozole.

Lastly, my thanks are due to DR. J. N. MADAN for permission to publish this report and to MESSRS MAY & BAKER for a liberal supply of their preparation M.B. 760 (Thiazamide) for trial in these cases.

Cases and Comments

Naga-Sore

(14 ulcers in the same individual)

D. N. DEBSARMA, F.M.B.,
Malariologist, A.M.O., Koilamari T. E. Hospital,
Jokai (Assam), Tea Co., Ltd., North Lakshimpur, Assam.

DURING the latter half of the rains in 1943 I had an occasion to treat a number of cases of Naga-sore. Amongst them the following one deserves mention.

One morning a Naga youth came limping to me for treatment of some ulcers on both the upper and the lower extremities, of several weeks'

duration. On enquiry he told me that some of the ulcers started from injuries by stubble and leech-bite, and in the case of the other ulcers he did not notice any such apparent injuries. In the latter case the infecting micro-organisms entered the body probably through some most superficial abrasions which he did not notice. He also narrated that the ulcers began as some small painful pustules which rapidly developed into sloughing ulcers within a few days. I saw the case when the sores were all well developed, and found the following features on examination :

(1) The ulcers were situated over the knee, leg, ankle, foot, and hand. The limbs of both the sides were affected, and the man had, in all, 14 ulcers—the greatest number of ulcers I have ever since seen in the same patient.

(2) The ulcers varied in size and shape. Some ulcers were more or less circular and the others, irregular in shape, and the size varied from $\frac{1}{2}$ to $2\frac{1}{2}$ inches in diameter approximately. The larger ones had also greater depth and it showed that the sores spread equally both in extent and depth. Muscular tissues were not however involved.

(3) The ulcers had the characteristic undermined and indurated margins, and were thickly covered with greyish yellow foul smelling purulent sloughs, and the bases were granular.

(4) The ulcers were very painful, and the surrounding tissues were oedematous but the regional lymph glands were not involved. The patient felt feverish off and on during the period of treatment. This might be due to some other cause. Excepting this he had no other constitutional disorder.

Treatment.—The ulcers were flushed with Acriflavine lotion (1 in 1000) after removing the sloughs and crusts thoroughly, and then dressed either with Unguentum Hydrarg Ammoniata (5%) or with Sulphanilamide powder. These two preparations were alternated frequently. *Dressing was done daily.*

The man was under treatment for about 3 weeks and then he left the place with incomplete recovery of one or two ulcers. The other ulcers healed up by that time.

In this case, the following features are worthy of note :—

(1) Bilateral multiple ulcers, though not unknown, are not very common. (I have seen ulcers also on the thigh in one case).

(2) The number of ulcers is also a striking feature here.

(3) Only local treatment brought about a cure in this case of multiple ulcers. No particular attention was paid to his diet, and no rest was given to the affected parts. The chap used to come daily for treatment from a distance of about a mile.

Only the clinical description of the case has been given, laboratory examinations were not possible for want of facilities.

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An Unusual Case of Hyper-Acidity

SANTOSH KUMAR MUKHERJI, M.B. (CAL.),

Midnapore.

I WAS called in to see a lady of about 75 years on 13-8-'45 at 10 a.m. She complained of acidity on the previous night and also on the morning. She was a chronic sufferer from acidity. In the morning, she took a cup of tea and *pan*. She complained of vertigo. She suddenly became unconscious at 9-30 a.m. First aid was given to her but of no avail. On careful examination I found the pulse rate-120 p.m., irregular, volume and tension moderately high. There was no lock jaw. Froth was coming from her mouth. The respiration was regular but stertorous. There was occasional spasmodic contraction of the right hand and the right leg. At one time the contraction was so severe and painful that the pulse was almost imperceptible and the patient became completely cyanosed. One Coramine ampoule was immediately injected to the patient after which the pulse became perceptible and volume and tension became moderate. The B.P. was taken and it was S/D 180/105 m.m. Hg. The pupil was normal and the reaction to light was very sluggish. Nothing could be given by the mouth, even a drop of water she could not swallow. After the injection the contraction minimised and ultimately subsided but the condition of the patient was not improved. Ice was applied over her head. We all thought that her end is near. But to our utter surprise at 12-30 a.m. the patient became conscious and began to improve. At 6 p.m. I was again called in to see her and I found her fully conscious but still complaining of acidity. I gave her Sodium Bi-carbonate dr 1 every 4 hours and she became completely cured next day.

Now the patient is all right and is attending her normal routine of life.

I must thank Dr. K. C. SARBADHIKARY, M.B., whom I had consulted in this case.

A Case of Quinine Idiosyncrasy

DR. MANORANJAN CHANDA,

Manikganj, Dacca.

N., a Hindu restaurant keeper of Manikganj, 30 years of age, of strong build, had a severe attack of malarial fever about 3 years back. He told me that he took Quinine Sulph and later tasteless Quinine (Ethyl Carbonate of Quinine gr. 11) previously. His condition, however, became very serious. He was therefore apathetic to taking Quinine any more. Atebrin (Bayer) or Quinaerine (M & B) was not at all available in the local markets. I was thus left with no other alternative than to push Quinine. Quinine Hydrobrom dram 1 was somehow procured. I thought of desensitising the patient by continued administration of Quinine in very small quantity—gradually increasing the dose at regular intervals. Dose of Quinine was first gr. 1/12, then 1/8, 1/6, $\frac{1}{4}$, and so on. When we reached the fifth dose i.e., about gr. 1 (total) the patient developed violent convulsions. Urticarial rash appeared all over the body which appeared swollen all through. Eyes were very much congested and he felt difficulty in breathing. He was almost in a state of unconsciousness and restlessness, occasionally uttering cries of severe pain in the head. Veins in the neck and in the forehead were full. And there was foam in the mouth. Temperature was subnormal and

pulse was quick. He was in that state for more than two hours. Gradually, however, all the symptoms subsided. During convulsions symptomatic treatment was given. Later he took Kaviraji medicines, but to no effect. At length Atebrin was procured from Bombay and the patient was cured.

Ascariasis

(A Case Note)

D. N. DEBSARMA,

A. M. O. Koilamari T. E.

Jokai (Assam) Tea Co. Ltd., North Lakhimpur, Assam.

ROUND worm infection is indeed a very common ailment especially among the children of our country but its dangers as well as its deteriorating effect upon the growing children are not often sufficiently realised. The ascariis complicates diseases and causes fatal terminations in many a case and sometimes even stimulates graver conditions like acute appendicitis, typhoid, and cholera. The following case resembled a relapse of malaria and presented a few points of interest.

A girl of about 11 years of age was once under my treatment for an attack of fever. She had had several attacks of malarial fever before she came to me for treatment. The girl was weak and anæmic and had fever of moderate severity, enlarged spleen, torpid liver, poor appetite, bad digestion and low percentage of hæmoglobin. Aldehyde test was negative, and the case was clinically diagnosed as a relapse of malaria, and was treated with Quinine (both orally and parenterally), and alkalies. Liq. Arsenic Hydrochlor., Ferri Sulph., and Mag. Sulph. were also added to the Quinine mixture. This line of treatment was continued for more than a week but her fever with slight remission in the morning used to come daily till then as before. In the second week of her present condition she developed broncho-pneumonia and I put her immediately on M&B 693, having stopped the Quinine mixture. I gave her 3 tabs of Sulphapyridine (0.5 gm. x3) daily and after administration of 4.5 gms of the drug she passed a few round worms including one or two dead worms and vomited one. To my utter satisfaction, her temperature came down to normal and she got relieved of all her acute distresses shortly after expulsion of these loathsome creatures. Now the poor girl had no fever although her other complaints such as splenic enlargement, anæmia, and debility still persisted. However, slight shrinkage of the spleen, and a little improvement in her digestion and appetite were noticed.

Discussion and points of interest :—

(1) The fever in this case was probably due to ascariis infection although it seemed, at first sight, to be a relapse of malaria.

(2) The expulsion of the worms without exhibition of any anthelmintic might be the effect of Sulphapyridine. DR. AMRIT NARAYAN, M.B., B.S. also has recently alluded to this property of the drug in his case notes published in the Dec. '44 issue of the 'ANTISEPTIC'.

I shall be thankful for comments on this note.

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The Cancer Problem

CANCER in its clinical manifestations is a disease of cells and not of the body as a whole. These cells when they assume the malignant state begin to grow independently of body needs, and continue to grow, in spite of any growth restraints of the body itself. Metastases may occur in different parts of the body and these grow independently of the original tumour and of any remote cause which may have caused the original cells to assume the malignant state. Experiments have also clearly shown that the stimulus to growth resides in the cancer cell itself, and that the growth, once started, is not self-limited. There is no doubt that cancer grows at the expense of the body and that cancerous growth is limited only by the life of the host, and in these respects cancerous growth differs from physiological growth. "It is in this respect that cancer is unique," says PROF. W. G. GYE in a brilliant article in the July issue of our distinguished contemporary, the *Practitioner*, and "it is not surprising that the majority of workers in cancer research look upon cancer as a single disease process, ultimately explicable as a consequence of a universal cause." This opinion is evidently the working hypothesis of cancer research. It, however, relates only to the intra-cellular or proximate causation of the disease. It is not related in any manner to the many remote causes which may operate before a tumour actually starts. Causation of cancer is therefore divisible into two parts—first, the causes which operate on normal tissues precedent to the formation or evolution of true cancer cells, and, second, the intra-cellular causes which operate within the cancer cell itself and which force the cell to divide and multiply beyond the needs and against the physiological integrity of the body. If this distinction is recognised, PROF. GYE is of opinion that it can explain all the apparent lack of significance in the enormous number of papers on the subject now being published. The chemist, the physicist, the pathologist, the geneticist and bacteriologist view recent advances from their own specialist angle without correlating the various aspects of these discoveries. The learned Professor reviews recent advances in the knowledge of malignant disease with this background and under the above mentioned two main headings.

Under the heading remote causes may be considered the chemical carcinogenic substances.

In this connection experiments have proved that extensive general irritation of any kind is not necessary to the formation of tumours and that this irritation need only be microscopic. It has been clearly proved that this irritation is provided only by certain compounds and is dependent on their chemical structure. Even here the threads are not complete. While originally the phenanthrene group were considered to be very carcinogenic and thus gave hopes of a solution of this problem, now many other compounds including Azo dyes and even simple substances like acids, alkalies and sugar have been considered to be carcinogens and have thus complicated the matter. All these, however, provide the means by which the genesis of a tumour can be studied both chemically and histologically.

It has been shown in recent years that the process of cancer induction is extremely complex and yet little understood. Originally the warts which appeared on the skin on the application of a carcinogenic agent received attention. But they were later dropped from importance because they disappeared if the irritation were withdrawn and hence were not irreversibly different from normal epithelium. This was however explained by the theory that there was a sharp distinction between inception and formation of tumour, between factors which rendered cells neoplastic and factors which affected their subsequent behaviour. The last word on the subject has not yet been said. Biochemical investigations have aimed at trying to discover how the numerous and various causes of cancer act and whether there is a common mode of action. Even on this theme there are various opinions given and so far no satisfactory solution acceptable to all has been put forward.

We shall now consider the proximate or intra-cellular causes of cancer. There is a theory that cancer cells are mutants of normal cells and that the power to proliferate autonomously is an expression of this mutation. There is no evidence to support this theory. So far the only proximate cause for which, it may be considered, there is evidence, is a virus. Rous demonstrated that a sarcoma of the domestic hen can be propagated by injection of a cell-free filtrate. The agent in the filtrate comes from the tumour cells and possesses all the properties by which a virus is described. SHOPE later proved that a papilloma of the skin of a wild rabbit was transmissible with cell-free filtrates. This papilloma, though not malignant, after months becomes a squamous carcinoma which metastasizes and kills the host. This skin cancer however failed to give a virus. The dilemma therefore exists to be fully solved. One is forced to come to the conclusion that the virus itself is inactive and non-infective and that it causes tumour formation only under special conditions.

Recent work has proved beyond doubt that heredity may form a principal if not the sole cause of cancer. The work of MURRAY may be mentioned as being the outstanding one in this aspect. The hormonal factor has not been forgotten and LATHROP and LOEB's contribution to this aspect of research has been outstanding. It is not possible in a short article like this to describe in detail all the work which has been done on this important subject. The Imperial Cancer Research Fund of which PROF. GYE is the director and many other associations and individuals have been doing excellent work in this field. The problem is world wide, the conditions complex, the results puzzling, but we hope the endeavours of all such individuals and associations will bear fruit and help in the solution of this problem and eradicate one of the horrible diseases of the world.

Gleanings From Medical Press

MEDICINE and THERAPEUTICS

Treatment of agranulocytosis.—The usually accepted treatment for agranulocytosis includes the use of multiple whole blood transfusions, particularly if the patient has any degree of anemia, large doses of pentose nucleotide intramuscularly, liver extract intramuscularly and yellow bone marrow by mouth. Most patients with the disease have been treated by one or more of these four agents. More recently there have been reports of the successful treatment of the disease by one of the sulphonamide compounds or by penicillin, particularly in patients who show clinical evidence of sepsis. This treatment is based on the concept that the infectious state that usually accompanies or follows the disease is a more important therapeutic problem than the bone marrow suppression *per se*. One of the most important measures of treatment in the establishment of the cause of the disease, if possible, and the taking of precautions that the patient does not come in contact with the causative agent. If the causative agent should be one of the sulphonamide drugs, then other sulphonamide drugs can be used in treatment.—J.A.M.A.

Acute aspirin poisoning.—The symptoms of acute aspirin poisoning are those of salicylism. Deafness and headache occur first, and if the drug is continued or larger doses are given the patient suffers from vomiting, unconsciousness, delirium, dyspnoea, and deepened respiration. The pulse weakens and becomes irregular, epistaxis is common, and hemorrhage may occur from other parts of the body, such as hematuria and retinal hemorrhage. Idiosyncratic reactions may occur such as urticaria, erythema, or purpura. About 10% of asthmatics are aspirin-sensitive and develop violent paroxysms of asthma after taking the drug. A local gastric reaction may give rise to hematemesis. Aspirin is not cumulative in the ordinary sense but it may produce a cumulative effect by its action on the prothrombin of the plasma. Salicylic acid is related to the anti-coagulant substance dicumarol, and it is possible that continued dosage with aspirin might lower the prothrombin level to a hemorrhagic level.—B.M.J.

Drugs causing broncho-dilation.—There is no drug which causes dilatation of the bronchioles without having some effect, however slight, on the heart at the same time. For practical purposes, the only useful drugs for causing broncho-dilation are adrenaline, ephedrine, and theophylline (or substances related to it). Adrenaline is well-known to cause increased force and rate of heart-beat and is disagreeable to some patients for this reason. Ephedrine has a similar, though much less violent, action on the heart, and when used in the correct dose

(which differs from one patient to another) should have very little cardiac effect. By reducing the rate at which the patient's own adrenaline is destroyed, it maintains vasodilatation in the bronchioles. Theophylline with ethyline dismine, given intravenously, is found by some to be of value in the most severe asthmatic attacks which are not relieved by the injection of adrenaline. Theophylline causes a dilatation of the coronary vessels and slight augmentation of the force of the heart beat, but this effect on the heart is rarely evident even to the patient.—B.M.J.

Medical progress: The differential diagnosis of chickenpox and smallpox. Conrad Wesselhoft, New England, J. Med. 230: 15 (Jan. 6) 1944.

An attack of chickenpox or smallpox tends to confer a lasting immunity. In general it may be stated that prodromal symptoms are absent or slight in chickenpox and severe in smallpox. The fact is that since chickenpox usually occurs in childhood and is generally mild, prodromes are rarely present. The prodromal symptoms of a severe form of smallpox may begin three days before the eruption. The outstanding complaint is backache, which is usually lumbar in children; it is an excruciating agony, accompanied with fever, chills, sweats and vomiting. Hoynes has noted salivation, especially in Negroes.

The eruptive stage in both these diseases is probably the result of a violent antigen-antibody reaction in the skin. The inflammatory reaction may spread beyond the edge of the vesicle in the form of an erythematous area at the base. This is much more conspicuous in chickenpox than it is in smallpox and affords an important point in differentiation. The irregularity of the corona in the lesion of chickenpox is often reflected in the shape of the vesicle itself. The vesicle of smallpox tends to remain round, but sometimes as these lesions run together their edges have a crenated appearance.

For chickenpox the temperature curve reaches its highest point as the eruption comes into full bloom, on or about the second day, after which it tends to fall to normal, either abruptly or within about forty-eight hours. The temperature curve for smallpox is quite different. In the first place, it is diphasic, and, in the second, it is protracted. As the eruption appears or is about to appear, the patient experiences a short phase of apparent improvement. Then the temperature begins to rise gradually, rarely abruptly, through the vesicular stage, with a sharp increase marking the onset of the pustular stage. From that time there is a long, high plateau, lasting two or three weeks. In chickenpox the first vesicles

appear suddenly—within two or three hours—and these are followed by others cropping out here and there in an irregular manner. Thus, at the end of twenty-four hours there are often lesions in all stages of development over a given area. This condition becomes more prominent at the end of forty-eight hours. Itching of the lesions of the skin may be severe.

The protracted course of events in smallpox begins with the severe and prolonged prodromal period and is followed by a brief period of lowered temperature and relative comfort. The first signs of the eruption then appear, usually during the third or fourth day of the acute illness. In general, all the lesions can be said to come out together, and they thus tend to be at the same stage.—A.J.D.C.

Spontaneous pneumothorax.—Kuchler states in *Praxis* (Basel) that within a comparatively short time spontaneous pneumothorax may produce threatening symptoms such as piercing thoracic pain, angor, severe dyspnoea, cough, pain in the epigastric region and cyanosis. In other cases pneumothorax is hardly noticeable; the patient is at the most somewhat dyspnoeic. Sometimes spontaneous pneumothorax is discovered accidentally in the course of a roentgenoscopy, and in other cases it may remain unrecognized. Diagnosis can be based on the loud percussion sound, greatly decreased or completely lacking respiratory sounds, enlargement of the involved half of the chest, smoothing over of the intercostal spaces, differences in form and movement of the two halves of the thorax and lessening of the voice fremitus over the pneumothorax. Percussion often reveals shifting of the heart and mediastinum. The percussion sound has a decidedly tympanitic overtone as long as the air in the pneumothorax is not under great pressure. As the pressure increases, the percussion sound becomes more like that over a normal lung. Respiratory and heart sounds are usually weak. Amphoric respiratory sounds are often typical of pneumothorax, but they occur also in the presence of large cavities. Metallic sounds are likewise frequent in pneumothorax. Roentgenoscopy gives the most conclusive evidence of pneumothorax. If severe dyspnoea and cyanosis exist, relief must be provided at once by insertion of a hollow needle anteriorly into the first or second intercostal space. If dyspnoea recurs soon, the needle must be left in situ. A valve that permits escape but prevents external intake of air can be improvised from a rubber finger-stall. The patient should be hospitalized as soon as it is possible to transport him. If dyspnoea continues to return after repeated withdrawal of air, it is best to introduce a permanent cannula with valve. Dyspnoea as well as cough must be suppressed by medication with a combination of morphine and atropine. The patient should be kept in the prone, sitting posture, and roentgenologic observation should be continued. It has been advised that the pneumothorax be con-

tinued for from six to nine months after closure of the pleuro-pulmonary fistula. After the pneumothorax has been absorbed, the patient should be advised to avoid sudden movement and the lifting of heavy loads. In case of spontaneous pneumothorax on a tuberculous basis, a prolonged pneumothorax treatment becomes necessary so that the sub-pleural tuberculous changes may have a chance to heal. Emphysema blisters may be treated by touching them with cautery under thoracoscopic guidance. Traumatic pneumothorax in the war wounded demands that the wound be closed in order to avoid further inrush of air.—G.P.

Physiologic principles of heat and cold.—The physiologic responses to heat and cold are the same, although for opposite reasons. A hot water bottle on the abdomen shortly produces an area of hyperemia beneath it. An ice bag on the abdomen produces first an area of pallor, with constriction of the capillaries, followed shortly by an area of hyperemia which is as distinct as that produced by the hot water bottle. The surface reaction is, in both cases, the same. In one its object is to pick up heat, carry it away from the heated area, and distribute it over the body so that it cannot accumulate locally and cause damage to the tissues. In the other case, the hyperemia serves to bring in heat to the chilled tissue from distant parts of the body so that no local damage will result from freezing. It has been demonstrated experimentally that temperature changes in either direction penetrate the tissues to only a small extent. The changes $\frac{1}{2}$ inch beneath the surface are registered only in small fractions of a degree. The hyperemia which tends to equalize the temperature in either direction explains the failure of the temperature changes to extend deeper into the tissues.

It formerly was believed important to use ice in inflammatory conditions and heat in conditions that resulted from trauma or spasm. The reasons for these rather specific instructions lay in a misunderstanding of the depth to which the temperature changes penetrate. Ice was prescribed for infectious processes on the theory that there was less bacterial growth in the cold and that the application of heat might promote bacterial growth and aggravate the condition. In respect to heat treatment of infections in the depths of the pelvis, if we think of the affected uterus or tubes as being several inches below the surface from whatever direction they are approached, it is evident that the surface application of heat will produce no thermal changes in these areas and consequently the choice of hot or cold applications to the abdomen may be determined by the amount of comfort they give the patient.—JANNEY, J. C.: *Medical Gynecology*. W. B. Saunders Co., Philadelphia, 1945. Chapter 41, pp. 255-256.—*Na. Med. Bull.*

Penicillin in stomatitis.—Severe cases of Vincent's angina are not uncommon; even coma and death have occurred. In large

military groups, where there is a surprising amount of oral uncleanness, there is usually an embarrassing incidence of Vincent's stomatitis. Primarily because of the oral uncleanness, this infection is rather difficult to clear up expeditiously. Its treatment with intramuscular injections of penicillin is noteworthy.

One hundred thousand units of penicillin were given intramuscularly (20,000 units every three hours) to a young male complaining of a throat infection. On inspection the nasal mucosa was infected; there was a postnasal drip; the mucous membrane of mouth and soft palate was involved; the throat was completely covered with patches; the gingiva was ulcerative, and there were numerous small ulcers on the sides and tip of the tongue.

A dramatic improvement occurred after 80,000 units of the penicillin had been administered, and 24 hours after the first injection the patient felt normal. His gums were not as tender, and he was able to eat solid food. Forty-eight hours after the first injection, the patches on the throat and the postnasal drip had disappeared. By the fourth day the ulcers on the tongue had almost gone, and but for the repair of the sloughed gingiva, the patient's oral condition appeared almost normal and he was discharged on the fifth day. A complete prophylactic treatment and other dental needs were taken care of five days later.—BETHELL, R. H. Lieutenant Commander (DC) U. S. N. R.—*Na. Med. Bull.*

Protamine zinc insulin, globin zinc insulin and insulin mixtures.—These Washington University School of Medicine investigators found that in 16 direct comparative case studies, modified protamine zinc insulin gave better control in 13 patients than globin zinc insulin, while only three diabetic patients were equally well controlled. In no case did globin zinc insulin establish better regulation than modified protamine zinc insulin. Globin zinc insulin failed to prevent after-breakfast hyperglycemia in 12 of the 16 cases and caused afternoon hypoglycemia in 9 of the 16. Fasting blood sugars were higher in 13 of 16 cases when globin zinc insulin was used. Even when special diets were employed, allowing a smaller breakfast and a larger lunch, the same defects in control were observed with globin zinc insulin. A mid-afternoon feeding was not given in any of these studies because it was considered illogical and impractical. In 10 direct comparative studies with an extemporaneous mixture made with two parts of crystalline insulin and one part of protamine zinc insulin, modified protamine zinc insulin gave better control in all cases. Irregular results were obtained with the mixture, with failure to duplicate 24-hour curves. In general the rise in blood sugar after breakfast was poorly controlled with the mixture and there was a tendency to hypoglycemia at mid-afternoon or mid-night. In a total of 110 case studies con-

ducted over a four-year period, good regulation was established in 98 patients (90 percent) with a single injection of MPZ insulin daily. Severe as well as mild cases were well controlled, 64 per cent of the well regulated cases requiring over 40 units daily some as high as 120 units (average 73 units).

It was concluded that the use of multiple forms of insulin should be discouraged. Good therapy of diabetes requires simplicity. Globin zinc insulin does not satisfy the requirements for an insulin of intermediate activity and its introduction on the market has unfortunately added to the confusion in this field. The use of variable extemporaneous mixtures, perhaps a necessary step in furthering our knowledge, has also added to the confusion. Since 90 percent of a series of 110 diabetic patients were well regulated with modified protamine zinc insulin, there seems to be no necessity for prescription of individual insulin mixtures. The 2:1 crystalline PZI mixture failed to give a good, predictable, intermediate type of response. Two forms of insulin should be sufficient: (a) modified protamine zinc insulin such as that used in those studies which might well be substituted on the market for standard protamine zinc insulin since it will control a very much larger percentage of patients with uncomplicated diabetes; and (b) regular (or crystalline) insulin for use in diabetic emergencies and whenever supplementary insulin is required.—(MacBryde, C.M. and Reiss, B.S.: *Journal of Clinical Endocrinology* 4: 469, October, 1944.)—U.S.O.W.I.

Clinical experience with dicumarol.—This report is based on the study of 30 patients with thrombo-embolic disease. There were 14 cases of peripheral arterial occlusion (six femoral, two popliteal, two axillary, one brachial, two thromboangiitis obliterans, one arteriosclerosis obliterans); one case of coronary artery occlusion; four cases of cerebral artery occlusion; two cases of sub-acute bacterial endocarditis; four cases of pulmonary artery occlusion; one case of retinal vein thrombosis; three cases of thrombophlebitis; and one case of what was probably hepatic vein thrombosis. Twenty-five of the patients received 300 mg. of dicumarol orally on each of the first two days and 50 mg. daily thereafter. The drug was discontinued when the first indication of hemorrhage appeared. Five patients received 200 mg. every other day; the intervals were prolonged when the prothrombin was considered to be dangerously low. This therapy produced no observable changes in the leucocyte count, hemoglobin, blood sugar, blood urea nitrogen, van den Bergh, icterus index, brom-sulfalein retention, and urine specific gravity, albumin, sugar and formed elements. On the dosage schedule of 300 mg. orally for two days and 50 mg. daily thereafter, the plasma prothrombin fell rapidly from 80 percent to 25 percent of normal in three days, was 20 percent or less from the fourth to ninth days, and then rose slowly to a level of 50 percent in four weeks, where

it was subsequently maintained. Coincidentally, the clotting time rose from four minutes to a level of six minutes in three days, was six minutes or more from three to ten days, and then fell slowly to a level slightly greater than normal in four weeks. The bleeding time was uninfluenced. Of the 30 patients, seven died and 23 recovered. Improvement in the peripheral vascular circulation was demonstrated in six of eight cases studied. Hemorrhage, the sole manifestation of toxicity, was observed in five cases, in all of which the patient recovered.

The only reliable method of ascertaining the proper dose of dicumarol, it was concluded, is by frequent plasma prothrombin determinations. Dicumarol is contra-indicated in subacute bacterial endocarditis, renal insufficiency, blood dyscrasia, liver damage with vitamin K deficiency, when the prothrombin concentration is already reduced, and in ulcerating or granulating lesions. It is indicated in post-operative thrombosis, and to prevent extension of a thrombus already formed. Among its disadvantages are the fact that the start of its action is delayed for 24 hours or more, an increased clotting time persists several days after cessation of dicumarol therapy, the factor of capillary dilatation, and the fact that prothrombin must be dangerously low before the clotting time is sufficiently altered. The advantages of dicumarol over heparin are that the former is more effective when given by mouth, it has a more prolonged action and a lower cost.—(Gofter, W. I. et al.: *American Heart Journal* 28: 321 (September, 1944).—)

Uses of penicillin in pediatrics.—At the time of preparing this report, penicillin had been used in the pediatric service at the Mayo Clinic (Rochester, Minnesota) in the treatment of 54 patients suffering with various types of bacterial infections in which the use of this agent was indicated. For the treatment of most bacterial infections of infants a total daily dose of 20,000 to 40,000 units of either the sodium or the calcium salt of penicillin appeared to be adequate. For larger children a total daily

dose of 60,000 to 80,000 units was satisfactory, as a rule, although in occasional cases it was desirable to use as much as 100,000 to 150,000 units. There were 9 cases of bacteremia, 2 of subacute bacterial endocarditis, 9 of cellulitis without bacteremia, 8 of osteomyelitis, 3 of meningitis, 8 of primary suppurative disease, 3 of infections of the skin, 5 cases of otitis media, 1 of actinomycosis, and 7 of miscellaneous diseases (one patient had both bacteremia and meningitis). Good results were obtained in all but 10 patients, 1 with bacteremia, 1 with meningitis, 1 with otitis media, and one with a miscellaneous disease, was a failure. The two patients with endocarditis gave a doubtful response, as did the 3 with chronic osteomyelitis and one in the miscellaneous group. It was concluded that the results of penicillin obtained among children are as good, if not somewhat better, than those obtained in a comparable group of infections in adults.

On the basis of present knowledge, penicillin appears to be of little or no value in the treatment of gram-negative bacillary infections including undulant fever, tularemia, influenza or infections owing to the colon-typhoid dysentery group or organisms or to Friedlander's bacillus. Infections of the urinary tract due to the gram-negative organisms mentioned do not respond to penicillin therapy. Penicillin is of little or no value in the treatment of infections of the urinary tract owing to streptococcus faecalis. It is of no value in the treatment of tuberculosis, acute rheumatic fever, rheumatoid arthritis, ulcerative colitis, malaria, or blastomycosis. Penicillin is likewise of no value in the treatment of leukemia as well as certain skin diseases including lupus erythematosus. It possesses a distinct advantage over sulfonamide therapy in the treatment of infections of infants and children not only because of its greater antibacterial powers but also because of extremely low incidence of toxic manifestations resulting from its use.—(Herroll, W. E. and Kennedy, R. L. J.: *Journal of Pediatrics* 25: 505, December, 1944).—

DERMATOLOGY

Colloidal aluminum hydroxide gel in tropical skin diseases.—Almost all skin conditions in the tropics are made worse by continuous perspiration. Many times the usual preparations used in non-tropical climates actually adversely affect the patient. Colloidal aluminum hydroxide in the form of the ordinary commercial gel offers an excellent, finely dispersed, tenaciously adherent, astringent, acid neutralizing, moisture protective preparation which helps in quieting the acute manifestations of certain skin diseases.

These include miliaria rubra, tinea cruris, tinea circinata, weeping eczematous lesions, impetigo and epidermophytosis.

There is almost immediate relief of the distressing symptoms of miliaria on first

application of the gel. Its action is quick and prolonged. Patients who worked in the hot part of the ship and who perspired freely would suffer recurrence of symptoms but after a shower at the end of the day and reapplication of the gel, relief would be experienced, the rash meanwhile becoming progressively better as the applications were continued. Colloidal aluminum hydroxide gel is the most useful and helpful of any drug or preparation employed in the management of this almost universal affliction of military personnel in the tropics.—HOWARD, C. K., Lieutenant (MC) U.S.N.R.—*Na. Med. Bull.*

Dermatophytosis.—Dermatophytosis is a prevalent mycotic infection. Trichophyton

gypseum causes an acute inflammatory type of dermatophytosis in which vesiculation is the main feature. Its infection of the nail plate is usually superficial and is manifested by scaling or small irregular white areas. Trichophyton purpureum produces a non-inflammatory dermatophytosis characterized by fine branny scaling and an absence of vesiculation. In nail infection this fungus invades the under portion of the nail, causing yellow undermined areas. The nail plate may be broken off or destroyed. Monilia albicans infections of the feet are characterized by red and macerated areas usually involving all the interdigital webs. Nails show a paronychia swelling, with the lateral borders of the nail plate ridged and undermined. Epidermophyton inguinale infection of the feet shows maceration and severe scaling on the toe web and flaky scales on the sole.

The basic principle of treatment in dermatophytosis of the feet is the use of soothing wet dressings or pastes in the vesicular stage and of fungicidal remedies after the acute phase has subsided. In the case of infection with trichophyton purpureum, strong fungicides must be used. In invasions with monilia albicans mercurials, silver nitrate, or gentian violet is preferred. In onychomycosis it is important to remove an infected nail tissue mechanically before applying fungicides.—J.A.M.A.

Life cycle of fungi can be broken.—Fungus infections are so prevalent and frequently so severe that any suggestions on treatment should be reported. The acute dermatitis frequently observed and termed fungus infection should be treated like an infected second-degree burn and the fungus disregarded in this stage of its cyclic growth. The same sterile technique and drugs which are used in infected burns have a place at this time in the course of the disease.

The treatment is rest, hot compresses of boric acid in the daytime and at night 5 per cent sulfathiazole ointment or sterile petrolatum, repeated daily until all redness and weeping disappears. The symbiosis of the gram-positive cocci and fungi must be destroyed. If cultures show streptococci, a course of sulfathiazole, 15 grains thrice daily for 5 days, is necessary. If the patient shows allergic response to the sulfonamide drugs, calamine ointment with zinc oxide

10 per cent, is used on the feet and sulfonamide orally discontinued. When the redness subsides the boric compresses are discontinued but the damaged skin is protected with the calamine ointment and 10 per cent zinc oxide for 2 weeks.

The chronic stage is the only time to break in upon the life cycle of the fungus. After washing the feet, dry them thoroughly and immerse them in a solution of 25 per cent ether in a 5 per cent salicylic acid solution of merthiolate, covering in depth only the toes. The solution dries in from 3 to 5 minutes and socks and shoes are put on. Desquamation follows in 7 days and continues for about 7 days. Apply once a month thereafter. No recrudescence is found after 12 months. One case has remained well after 26 years' previous duration.—LORANCE, L.M., Lieutenant Commander (MC) U.S.N.R.—*U.S. Na. Med. Bull.*

Sodium penicillin cream for impetigo.—Sodium penicillin cream consisting of equal parts of lanolin, codliver oil, and water, to which was added enough sodium penicillin to make a cream of 500 Oxford units per gram, was applied thinly twice daily (after de-scaling with warm eusol) to a patient having a widespread intractable facial impetigo. The treatment was repeated for three days. On the second day of treatment there was a vast improvement, with at least 50 percent reduction of the lesions, the remaining areas being dry and showing signs of healing. On the third day of treatment all the smaller spots were healed and the larger ones were 25 percent of their original size. The spots on the pinnae were much slower in healing than those on the cheeks or neck. On the fourth day all areas except the lower part of the right ear were healed. Two days after this the spot on the ear showed no change. Treatment was altered to Ung. hydrarg. ammon. dil. and this spot cleared 10 days after penicillin treatment had been started.

In all, 10 gm. of cream was used, each gram containing 500 Oxford units: total local dosage 5,000 Oxford units. No parenteral treatment was given. The cream has also been employed with equal success on septic burn cases. As a face cream it is too soft, tending to run downward.—GOLD, J. M. Impetigo treated with sodium penicillin cream. *Brit. M. J.* 1: 152-153, February 3, 1945.—*Na. Med. Bull.*

SURGERY

Diabetic gangrene.—Diabetic gangrene is usually a moist, septic spreading gangrene tending to cause death in coma. A line of demarcation rarely forms, so that in the established condition the only hope of relief lies in amputation. This should be done at a level at which the blood supply is adequate for healing and where the tissues are not grossly infected, after a preliminary period of treatment directed to carbohydrate, insulin, and fluid requirements. Conservative treatment should be reserved

for those in whom, by reason of poor general condition, the risks of an operation are thought to be prohibitive. Many of this class, however, can be made relatively safe for amputation by first regulating their metabolism and occasionally by incision and drainage of superficial abscesses. Avoidance of amputation at all costs is an extreme view which will cost many lives.

In deciding on the level of the amputation the primary consideration is the ability of the tissues at a given level to heal, having

regard to the local circulation; the suitability of the stump for an artificial limb is of comparatively small importance. Arteriosclerosis is practically always present and is a hazard which must be faced; it has a decisive bearing on the amputation level. Where gangrene is limited to a toe or toes, local amputation is sufficient provided there is a good circulation in the foot. Where gangrene or deep infection has extended above the toes, a thigh amputation is best. An upper leg amputation is permissible if the popliteal artery pulsates and if the leg is uninfected, but generally this is an unsafe amputation for arteriosclerotic patients. Any amputation below the knee may later need re-amputation through the thigh.

Local application of heat is the worst kind of treatment. It increases tissue metabolism, creating an increased demand for oxygen which cannot be met by the depleted blood supply; and it also encourages bacterial growth. The effect is spread of gangrene and of infection. Application of cold has the opposite effect and is obviously sound therapy; it also tends to diminish pain. It is sufficient to keep the limb exposed at room temperature. Actual refrigeration has been used as a preliminary to amputation. By effecting a physiological amputation it produces a great improvement in the general condition so that this form of treatment probably has a considerable future. The rest of the body should be kept warm but not over-heated. Reflex vasodilatation of the affected limb is a rational procedure, but its value is limited by the poor capacity of sclerosed vessels to dilate. Following amputation, however, it might make just the difference between success and failure.—*B.M.J.*

Chronic ulcerative colitis.—A chronic infection subject to acute and subacute exacerbations. Clinically, its main feature is diarrhoea and the stools contain not only blood and mucus but also pus. A secondary anaemia is always present and there is a loss of weight, with fever. This is frequently followed by periods of remission and there is a tendency to complications. The X-ray appearances show an irritated hyperactive colon with loss of normal haustrations and constant narrowing, the appearance often being described as "pipestem". Sigmoidoscopy is essential in establishing an accurate diagnosis. First the bowel is seen to be hyperæmic, and later, there is oedema and thickening of the mucous membrane, which bleeds easily. A further stage is the formation of milium abscesses in the mucosa which rupture and result in ulcers, resembling yellow spots scattered all over the wall of the gut. Finally the muscular coat is exposed and the ulceration extends so that only islets of mucous membrane are left.

The causation of the disease is not known. It is characterized by a varied clinical and pathological course. It is subject to exacerbations and periods of remission and complications are very likely to occur. It is a

disease in which emotional upset may be an important factor in the aetiology.

Adequate and complete medical treatment must be persevered with before any form of surgery is undertaken. The indications for surgical treatment are confined to a small group. In those patients (1) where the disease is progressive and endangers life in spite of adequate medical treatment; (2) who show relapses or recurrences following an initial course of successful medical treatment; (3) who develop complications associated with the disease; (4) in some patients who have a severe fulminating type of disease; early operation is not justifiable in this disease as a rule; (5) the type of operation that will give the best results in the majority of patients depends on the production of absolute rest to the disease colon. This is best effected by means of an ileostomy. The response to ileostomy in the immediate post operative period is remarkably good; (6) ileostomy appears to be more efficient in arresting the disease than appendicostomy, or colostomy. Irrigation of the bowel appears to be of no great value and has fallen into disrepute. The value of the sulphonamides has not been proved; (7) in a small proportion of cases, an ileostomy is associated with complications. If these develop, or the signs of the disease in the colon persist, it is wise to proceed to colectomy; (8) ileosigmoidostomy is dangerous and uncertain in its results and depends entirely on the condition of the sigmoid and rectal wall though ideal from the patient's point of view; (9) once an ileostomy always an ileostomy is the safest dictum for the majority.—*Proceedings of Royal Soc. of Medicine.*

Fractures and urinary calculi.—The special factors in the formation of recumbency urinary calculi are decalcification of bone and urinary stasis. Generalised decalcification has been explained on the basis of relative hyperæmia of bone, the result of muscular inactivity. In addition to this, with compound fractures large amounts of calcium may be mobilized locally through inflammatory hyperæmia. Thus the blood calcium is raised, leading in turn to a raised urinary calcium, a major factor, in stone formation. Urinary stasis is the result of long continued decubitus. It is obvious that in this position any solid particles must tend to be deposited in the renal calices and pelvis, and to remain there, forming the nuclei of future stones; this effect will be increased, when the foot of the bed is raised, as in the traction treatment of certain lower limbs.

The most important general factors probably are an alkaline urine. The commonest recumbency stone is composed chiefly of calcium phosphate, which is precipitated only in an alkaline urine. The reaction is influenced by diet and drugs and also by infection. High concentration is chiefly caused by low fluid intake, but prolonged exposure of the body to the hot sun may have the same effect through excessive

perspiration. Among aetiological factors may be mentioned Vitamins A and D; there is a fair amount of evidence, that excess of Vitamin D or deficiency of vitamin A may cause stone formation.

Much can be done to prevent this complication. Disease decalcification can be minimized by encouraging active movements of the un-injured parts. To facilitate urinary drainage the patient's position should when possible be changed at regular intervals by turning him on to this side or into the prone position, and by raising the head—end of the bed on blocks. Plenty of fluids should be given and excessive exposure to the sun avoided. The urine, if alkaline, should be made acid by diet and possibly by drugs. The latter should rarely be necessary with an uninfected urine unless calculus is actually present. Finally there is sufficient evidence to justify the use of vitamin A as a prophylactic, and the possible danger of vitamin D should be remembered.—*B. M. J.*

Treatment of sprains with ethyl chloride spray.—Treatment of sprains and minor injuries in which the skin is not broken, by means of surface anesthesia combined with

active motion, is an effective method of therapy. The ethyl chloride spray is more advantageous than injection of procaine hydrochloride. The technic is simpler and requires no special instruments, sterilization or special surgical skill. There are no systemic after-effects and no danger of introducing infection into the injured area from the middle or skin. Large painful areas can be treated. The one possible complication is frostbite, which can be prevented by application of camphor ointment to the skin after spraying. A mild reactive hyperæmia seems to improve the local circulation and is followed by a decrease in the swelling of the joint. The patients secure symptomatic relief and a return of useful function to the injured part. The immediate recovery varies from 60 to 90 per cent. depending on the severity and duration of the injury. Disability averages less than three days. No strapping with adhesive tape or the application of plaster casts is required. The treatment will not mask fractures, severe deep tissue injury or disease. In this respect it is superior to the injection of a local anesthetic. The treatment is simple and not expensive, and disability and hospitalization are reduced.—*J. B. M. J.*

OBSTETRICS and GYNÆCOLOGY

Prolactin.—There is a lactogenic hormone, usually called prolactin, secreted by the anterior lobe of the pituitary, and it is in large measure responsible for the initiations of lactation after parturition. It is available for clinical use and is administered by intramuscular injection to stimulate lactation. Treatment should be begun within a few hours after delivery rather than during labour, and a total of at least, 1,000 I. U. should be given in divided doses during the first forty-eight to seventy-two hours—say five injections of 200 I. U. each. The effect of such treatment is extremely variable and is, in any case, difficult to users.—*B. M. J.*

A study of 250 cases of placenta prævia.—A total of 31,996 deliveries occurring during a ten year period was analysed by the author. Among these cases placenta prævia was encountered in 250—an incidence of 1 in 128. The high percentage of cases (54 per cent.) occurring in the age group 25 to 34 bears out the commonly made observation that placenta prævia occurs most in the middle child-bearing period. This material shows that it takes place about five times as often in multiparae as in primiparae.

While every means advisable is used to make a correct diagnosis of the location of the placenta, the author believes that the amount of blood lost, or being lost when the patient is first seen, should be a better guide to treatment than the amount of os covered by the placenta. Of paramount importance in treatment and prognosis is the condition of the patient when first seen. The writer does not believe it necessary or advisable to confirm a diagnosis of placenta prævia in all cases by vaginal examination;

and particularly in those in which delivery by Caesarean section is contemplated. A sufficiently accurate working diagnosis can be made in many instances by other means. Two aids to diagnosis are found to be of considerable help, viz., the location of the placental souffle and the use of the X-ray. If heard best low in the abdomen above the symphysis, in cases with suspected placenta prævia, the author thinks the location of the placental souffle to be of considerable significance.

X-ray diagnosis was attempted in 32 cases proved to be placenta prævia, by the use of an opaque medium in the bladder, or by the soft tissue technique. In 24, a positive confirmatory diagnosis was made, in three the diagnosis was questionable, and in five negative. A correct diagnosis was made in 75 per cent. of the patients.

Patients of private physicians, who have had adequate pre-natal care, and who are seen with the first bleeding, are much more likely to be candidates for section, than non-paying patients who frequently enter in a serious condition.

Preference for the low cervical operation is marked. 44 out of 59 Caesarean sections being of this type. There have been no serious technical difficulties and the author agrees with Greenhill and others that, at times, the low incision is of distinct advantage in the control of bleeding from the placental site.

In delivery by the vaginal route "expectancy" was chosen as the most appropriate for 58 mothers and 59 babies. By expectancy the author means that no active treatment aimed at delivery was instituted, and labour was allowed to continue under

close observation until complete dilatation of the cervix. From then on labour was terminated according to indication. Thus, spontaneous delivery occurred in 40, forceps in 10, version and extraction in five, and breech extraction in four cases. Of 26 patients in whom rupture of the membranes was the only active treatment in the stage of dilatation, labour terminated spontaneously in 11, forceps were used in two, version and extraction in eight, and breech extraction in five.

The insertion of a dilatable bag for control of hæmorrhage and to aid in dilatation was thought to be the best treatment for 105 women and 110 babies; after this delivery was spontaneous in 64, forceps delivery was done in nine, version and extraction in 14, and breech extraction in 18. A total of seven cases died, six after vaginal delivery,

and one after low cervical Cæsarean (2.8 per cent.).

Of the total of 250 cases delivered, 263 babies were born. There were 13 twin pregnancies and four malformations incompatible with life—a high incidence, confirming the experience of most writers; 91 babies did not survive, a gross mortality rate of 34.6 per cent.

No discussion of placenta prævia in modern times is complete without reference to blood transfusion and the use of blood plasma. Their use by the author is so common as to be routine in all but the mildest cases of bleeding. Patients have received at times, before, during and after delivery, as much as 3,000 to 3,500 c.c. of blood. (Seeley: *American Journal of Obstetrics and Gynecology*, January, 1945).—*Medical World*.

Book Reviews

A Textbook of Pathology:—(General and Special).—By J.M. BEATTIE & W.E.C. DICKSON, with the collaboration of A. M. Drennon and J. O. Oliver, 1943, 4th edition, 1,368 pages; 828 illustrations, London, W. Heinemann (Medical Books).

The book last appeared in 1926, and it was then very popular with all students of medicine. The present edition, though delayed in its appearance owing to various factors, maintains its excellence and thoroughness. In this 4th edition subjects such as, Virus Diseases, Disorders of the Female Reproductive Organs, and the Avitaminoses have been newly introduced. The chapter on Nervous System has been completely recast and re-written; that on Diseases of the Blood and Blood-forming Organs has been extensively revised, as have also the sections dealing with the Diseases of the Kidneys and Endocrine Organs. The chapter on Granulomata has been re-arranged. Though bacteriology is excluded, a section is devoted to animal parasites. The book includes a large number of illustrations—many in colour and all of high standard and excellence. The printing and general get-up are very good. The subject matter has been well treated and reflects credit to the various authors who have collaborated in the production of this standard text-book. We have no hesitation in recommending this book as a textbook of Pathology to students and practitioners.

Textbook of Surgical Treatment, including Operative Surgery:—Edited by C.F.W. ILLINGSWORTH, Edinburgh, E. & S. Livingstone Ltd., 1944, 2nd edition, 564 pages; 230 illustrations.

Surgical treatment, according to the author, implies very much more than the performance of surgical operation. Success or failure of the operation depends to a large extent upon the ancillary measures of preparation and after care. The author has, therefore, in this book, approached the sub-

ject from this angle. It is devoted primarily to full accounts of pre and post-operative methods. As it is mainly intended for senior students, particular emphasis has been laid upon the treatment of common diseases and the details of technique of minor and emergency operations. Special attention has been devoted to the choice of methods of treatment, to the indications for and against operation, and the selection of a particular type of operation, and to the dangers and complications that might arise. A special chapter is devoted to radiotherapy.

The first edition published in 1943 was well received. The second edition appearing so soon after the first, shows that the book has met with very good response, and in this second edition a most notable change has been made in the chapter on the Treatment of Burns, which has been completely re-written by Thomas Gibson. The book is well got up, the illustrations are very good and, in our opinion, reflects considerable experience of the 19 contributors who have helped in the compilation of this volume. We whole-heartedly recommend this book.

Recent advances in Anaesthesia and Analgesia by C. LANGSON HEWER, M.B., B.S., (Lond.), D. A. (Eng.), Senior Anaesthetist, St. Bart's Hospital, Brompton Chest Hospital, & E.M.S., 1944, 5th edition, 343 pages (J. & A. Churchill, Ltd., London).

Since the publication of the last edition in 1943, though conditions for research have not been very favourable, much new work has been done in this speciality. In this book additional information will be found on anaesthesia for thymectomy, general analgesia with ethyl chloride and trichloethylene, intravenous general anaesthesia with procaine, pethidine analgesia in obstetrics, etc. More drugs used in anaesthesia have either been incorporated into the B. P. or have been given official names and these

have been mentioned in the book. The arrangement of chapters are the same, but an additional one on anaesthetic charts and records has been added at the end of the book. Among the old chapters those on pre-medication, recent work on the ethers, endotracheal anaesthesia, intravenous anaesthesia, spinal analgesia, collapse and resuscitation contain useful information. There are many new illustrations. For workers in the field of anaesthetics, this is a very useful volume.

Ophthalmic Surgery and Sight Testing by M. A. KAMATH, M.B. & C.M., Madras Medical Service (Retired). For many years Ophthalmic Surgeon, Government Eye Hospital and Lecturer, Medical School, Tanjore.

Dr. KAMATH, who is a very well known ophthalmic surgeon, has, in this book discussed the standard methods of diagnosis and treatment of diseases of the eye mostly from the practitioner's point of view. His desire is to convey to the practitioner even in the remotest village adequate knowledge of this speciality to enable him to give relief to the suffering villager and to prevent by prompt medical attention, the appalling blindness in this country. After a perusal of the book we can confidently say that Dr. KAMATH has done a good work with this ambitious ideal. The sections on regional anaesthesia, the newer eye therapy, cataract, glaucoma and refraction are well

written. Appendix mentioning common ocular therapy and other useful matter is a feature. The illustrations, printing, and general get up are very satisfactory. The book will be very useful to general practitioners.

Common Skin and Venereal Diseases of India by K. D. LAHIRI, M.B., B.S., Senior Hony. Medical Officer in Venereal and Skin Department, Patna Medical College Hospital, Bihar, 1945, 302 pages, illustrated, available at Kamala Book Stores, Patna, E.I.Ry. Price, Rs. 9.

There are many excellent books on dermatology and venereal diseases but most of them are voluminous and too detailed to be of much use to the student who is going to qualify in the near future and set up practice. Dr. Lahiri's idea is to present to these people in a nutshell, as it were, the essentials of the common types of skin and venereal diseases in India and their treatment. In this book he has avoided much discussion and has given only salient points. The printing, paper and illustrations could have been better, but knowing, as we do, the difficulty in getting good printing or art paper, these defects should be excused. However printing mistakes and mistakes in proof reading which are plenty could be avoided in subsequent editions. The subject matter however is very useful and students and general practitioners will get much help from this book in their daily practice.

Reviews of Reports of Associations and Hospitals

The Tuberculosis Association of India—Sixth Annual Report, 1944.

We have before us the 6th Annual Report (1944) of the Tuberculosis Association of India. Despite the restrictive effect of the war upon the work of such associations, progress has been made in the year under report and it is satisfactory to note that there has not only been no decrease in the momentum of the Tuberculosis movement but that an actual increase in activities has been reported. In addition to the 30 affiliated associations with their ramifications all over India 2 more are in formation and another 1 at least is in contemplation. The existing malnutrition which is widespread, and the possibility of undermining of the standard of health and powers of resistance of large sections of the community as a result of famine conditions, and the concentration in centres of industry, and civil and military administration of large numbers of people far in excess of their accommodation capacity, have resulted in more favourable conditions being present for the development of diseases like Tuberculosis, and it is the duty of the Association to see that these unfavourable conditions do not have any adverse effect on the health of the country. Tribute, in this connection, must be paid to the very keen interest taken by Her Excellency Lady Linlithgow in the past years.

and to Her Excellency Lady Wavell who is now the President of the Association. The report gives us details of the training of Tuberculosis workers, and the Publicity and Propaganda work done by the Association. The Association has been lucky to get the services of Dr. P. V. Benjamin of the U.M. T. Sanatorium, Arogyavaram, as its Technical Adviser.

The Appendix contains reports of the working of Lady Linlithgow Sanatorium, Kasuli and the New Delhi Tuberculosis Clinic and also gives summaries and reports of the Provincial State Tuberculosis Associations. We have one suggestion to make. We find from the activities of the Association that it is dominated by officialdom to a very great extent both in its technical and non-technical Advisory Committees. If movements of the type for which the Association stands is to succeed to a remarkable extent, non-official public opinion must be respected and leaders in the country who have a pull and whose voice will be heard, must be included and their support obtained. Otherwise, it is doubtful if mere officialdom can take the preaching of the Association to the remotest corners of the country. This is only a suggestion. We however, congratulate the Association and its office-bearers on the very excellent work that they have done and are doing.

Tata Memorial Hospital for the Treatment of Cancer and Allied Diseases: First Triennial Report—1941—1942—1943.

The report before us covers the work of the Tata Memorial Hospital in the first three years of its existence 1941-43. At the opening ceremony of the Hospital Sir Sorab Saklatvala, the Chairman, had stated that the hospital would be devoted not only to the relief of those afflicted by cancer but he hoped that it would be a place where doctors and research students will work to wrest from this dreaded scourge some of its terrible secrets. The report endeavours to show how far the hospital has fulfilled this aim. It was unfortunate that the hospital had to commence its work at a time when the war was developing into a global war and when normal channels of commerce and an interchange of ideas with similar institutions abroad have been blocked, and when the army had prior claim on medical and nursing personnel. But, still, good work has been done in this hospital. Since the inauguration of the hospital, 6,900 suspended cancer cases have been seen. Out of these, 1,100 have been non-cancer problems. The report gives us details with regard to the varieties of cancer in the head and neck, breast, stomach, colon, rectum, female and male genital organs, urinary system, bones etc. Under the guidance of Mr. Paymaster, the Chief Surgeon, good work has been done. The department of anaesthesia has been working in close collaboration with the department of surgery. As in U.S.A. and Europe a complete anaesthetic chart of each part is kept giving a record of pre-medication, the anaesthetic agents and technique used and containing a record of the B.P., pulse and respiration. The X-ray department is also fully equipped. The diagnostic section has attended to 5,457 examinations. In the deep therapy section during the 34 months ending with December 1943, 1,794 were treated. The Physics Department under Mr. Naidu is responsible for the provision of precise measurement and calibration of radiation, etc., necessary for the treatment of cancer. The range and abundance of radiation available in this hospital is probably the most extensive in India. There is a Radium Laboratory which is completely installed and in full operation. The report also gives an account of the excellent work done by the Department of Pathology under Prof. V. R. Khanolkar. Diagnosis, biopsy examination, special investigations like B. M. R. kidney and liver function tests, sugar curves, study of pathological material, autopsy records, have all been done in this hospital under his guidance. The report gives an account of the publications of the staff of the hospital in the various journals in India and abroad. The report, on the whole, shows very good work and credit must go to the staff of this hospital. The Indian public owe a deep debt of gratitude to

the Sir Dorabji Tata Trust, which has spared no pains and money in making this hospital what it is to-day. From its inception to the close of 1943, the trust has expended for capital and current expenditure a sum of Rs. 4,000,000 which speaks volumes of the generosity of the trust.

Administration Report of the K. E. M. Hospital and Seth G. S. Medical College.

We have before us the Administration Report of the above hospital and college. This 456 bed hospital has catered to the citizens of Bombay. It has attended to, on an average, 333 new out-patients per day, 481 in-patients per day and in the hospital about 5,960 operations on in-patients and 12,067 on out-patients have been done during the year under review. The total expenditure incurred on the maintenance of the hospital during the year amounted to Rs. 9,24,096. The average cost per in-patient per day worked out to Rs. 3-15-0 and the average cost of an out-patient at 0-7-2. A total number of 587 motor accidents and 3,298 mill accidents were treated in the Casualty Department of this hospital. It is also interesting to note that 4,414 certificates under the Workmen's Compensation Act and 730 certificates with medical opinion were issued during the year. 153 cases were treated in the Hospital for poisoning and 89 for animal bites. The hospital has trained 52 Nurses during the year out of whom 39 have passed. The cost of the Nursing establishment worked out at 108-2-0 per nurse per mensem as against Rs. 85-10-0 in the preceding year. This increase is due to the increase in the rates in the supply of provision on account of the war. A large number of mill-owners and philanthropists have given large and small donations for the maintenance of this hospital.

With regard to the College, 84 fresh admissions were made in June. The total cost of expenditure on the College including the cost of hospital came to Rs. 2,66,386 as against 2,75,115 in the previous year. The revenue of the college in the form of fees, hospital rent &c., amounted to Rs. 1,31,367/- as against 1,24,030 during the previous year. During the year, 174 new books were added to the college Library. The different departments of the College and Hospital have, during the course of the year, investigated a number of diseases and have given their reports. The use of bacteriophage in typhoid fever, enquiry on "Aerobic Wound Infections," Enquiry on Indigenous Drugs, Experiments on Rats, Biological value of Soya Bean and other Pulse Proteins, have been some of the investigations done. The College staff have published in the various journals in India a number of useful papers.

The useful work done by this hospital reflects great credit to the Dean and his able College and Hospital staff.

THE QUESTION OF AMALGAMATION

What happened at the Calcutta Conference?

Dr. Manoharlal Kapur, President, All-India Medical Licentiates' Conference writes as follows:—

The true facts regarding the question of amalgamation, as discussed in our last conference, are:

"In the sub-committee meeting held on 31st March '45 at 10 p.m. Dr. Hanumantha Rao of Guntur moved the resolution on amalgamation. It was opposed by Dr. K.C. Wohra on the ground that the resolution in question would affect the constitution of the association and as no notice of this resolution had been given nor it was published in the *Indian Medical Journal* as per rules of the Association, it could not be moved.

As President, I requested the mover of the resolution to withdraw its first part to enable this House to allow him to move the remaining portion of the resolution. He accepted my advice and withdrew the part in question. On moving the resolution now before the House it was unanimously resolved to form a sub-committee to consider the question of amalgamation or otherwise, but there were two camps in the House—one headed by Dr. A.D. Mukherjee who wanted that the House should select the sub-committee and the other headed by Dr. S. A. Bukhary who wanted that the President should nominate the sub-committee. After a heated discussion lasting for several hours the sub-committee decided by a majority of votes that the President should nominate the sub-committee. When this question was placed before the House in the open Conference on 2nd April '45, I made a speech in favour of authorising the President to nominate a sub-committee, followed by Dr. A. D. Mukherjee in support of his previous views on the subject.

Dr. A. N. Roy the newly elected General Secretary of the A. I. M. L. A. and several other delegates strongly appealed to the House to authorise the President to nominate the sub-committee. The whole House appeared to be satisfied on this decision when Dr. Gian Chand Blaggana of Amritsar with a forceful speech and with strong arguments against amalgamation, moved an amendment to the original resolution appealing thereby to throw out the resolution. The whole House with perhaps four or five exceptions threw out the resolution and it was evident to all that the fate of the resolution had been sealed. After a little silence Dr. A. Viswanathan of Madras got up to speak on the resolution but was opposed by the House on the ground that the resolution had been decided. However, against great opposition I allowed Dr. A. Viswanathan to speak on the resolution. He appealed to the House only on one ground and it was that as the sub-committee of our Association had decided in favour of forming the sub-committee to discuss the question of amalgamation or

otherwise with a similar sub-committee of the I.M.A. and as the I.M.A. in its Central Council Meeting held in Calcutta had just formed a sub-committee to meet our sub-committee, it would be a statesmanlike spirit, if the resolution authorizing the President to nominate the sub-committee be accepted, but as the whole House was not in a mood to hear any speaker in favour of the original proposal I had to get up and make an earnest appeal to the House lasting for about 20 minutes to authorise the President to form a sub-committee. Thanks to the House which unanimously accepted my advice and allowed me to pass this resolution unanimously.

Dr. Annagarachariar's Statement.

Dr. P. B. Anagarachariar, President, Madras Branch of the All-India Licentiates' Association, writes:—

I have been all along, since the Calcutta Conference, silently following the controversial editorials appearing in the various magazines in this province and I have also read very carefully the article, in the correspondence columns of the I. M. J., by the President, Rai Sahib Dr. Manoharlal Kapur, roughly surveying the activities of the Association during the Conference.

I wanted to write to you a letter to be published in your esteemed journal to acquaint the readers with what happened in the Conference. But I refrained from doing so, for fear, that my joining the fray would only further complicate the controversy. The letter which has appeared in the *Indian Medical Journal* from the pen of the President, I believe, was intended to be a sort of reply to the series of editorials that appeared in the *Miscellany*, the official organ of the Indian Medical Association, Trichy Branch. Yet, it is not convincing, though the writer has taken into his head to describe what, according to him, happened in the Subjects Committee. Even there, the President has completely erred in reporting the same. By no stretch of imagination does this imply that I am casting aspersions on, or questioning the validity of, the statement of our worthy President.

As one who attended the Calcutta Conference, I feel it my duty to the profession to point out some of the gross omissions in recording the minutes of the Conference:

No mention has been made of the walk-out of the Madras delegates to the Conference. One fails to understand how this fact could be ignored when one describes the activities of the Conference, especially when the President had to go to each representative of the Madras Province in the delegates' camp and request him to attend the open Conference next day, for, many of them had packed to return to their places. I don't want to enter into the controversy which led to such a procedure adopted by the Madras delegates,

But one thing is clear: neither the President nor the accredited Editor of the I. M. J. has mentioned these happenings behind the scenes in their official organ. How they missed such a significant event, I cannot understand. One possible reason may be that the office-bearers were anxious to keep the members of the Association who have not attended the Calcutta Conference in the dark. On top of it I cannot understand how it is justifiable to attack a journal which has correctly described the events.

Similar incidents of the quarrel in the delegates' camp on the night of the 30th March, 1945, between the office-bearers and the Calcutta delegates, when the validity of the President's election was questioned, is also not reported. I ask "why"? The omission should have been due either to the fear of causing disruption in the Licentiate's Association or due to the conveniently weak memory of our leaders. I don't accuse anybody for this omission, for, there was no stenographer to take down notes as and when the discussions took place.

When the President tries to impose the wilful hollowness of the arguments of the contemporary journals like the *Miscellany* and the *Antiseptic*, he ought to have placed all the cards above board before the profession in his own interest. Such suppression of important events will really arouse doubts as to the honesty of our leaders in the minds of the members.

Preparations and Inventions

Messrs. Union Drug Co., Ltd., Calcutta, take pleasure to announce the introduction of their latest therapeutic agent **Urea Sulphazide Ointment**. The preparation presents the anti-bacterial properties of Sulphanilamide,

It is the duty of the Editor of the *Indian Medical Journal* to clarify the above issues and justify the attitude which he and the President alike took in the eyes of the world.

What is the use of fuming and fretting against contemporary journals when they thrust the hard and indisputable facts on to the public gaze and scrutiny by the profession!

Though the pandemonium over the amalgamation issue in the open session is twisted to suit the President and those few handful of his supporters, it was made plain as pike-staff that only the President was anxious to avert the division of the House. No amount of white-washing will alter this issue. I understood that it was the fear of the President of his own defeat which compelled him to request Dr. A. D. Mukherji to come to his aid and close up the session for the day. These discrepancies—to put it charitably—arise because the A. I. M. L. A. had not kept a stenographer to report verbatim the whole proceedings.

I leave it to the profession to judge for themselves and I call upon the President to justify his stand and request him to find a ready solution to these controversies, as our motto is "United we stand, Divided we fall."

[Note:—We have given above both sides of the case and leave it to the readers to judge for themselves. As we do not like this unsavoury controversy to be pursued, further correspondence on the subject shall cease.—Eds.]

Notices

The IV All India Obstetrical and Gynaecological Congress, 1945. This will be held in the end of December this year. The subjects fixed for discussion are:

- 'Puerperal Sepsis',
- 'Pelvic Inflammation',
- 'Ante-natal Care'.

But you are welcome to speak on any other subject you desire. The Secretary desires to know at your earliest convenience the name of the subject you would like to express your views upon.

Address:—39, Chamberlain Road, Lahore.

Summary of the Precept.

Attention of all registered medical practitioners included in the constituency described by Section 2 (2) (c) of the Bombay

Urea and Azo dye chemical compound in a non-irritating base. Clinical trials have confirmed that it is of exceptional value in infected wounds, ulcers, eczema, etc., and has proved to be an advance in topical therapy.

Medical Act, 1912, whose names are borne on the Medical Register on 30-8-1945 is invited to the notification regarding election of a member to the Bombay Medical Council in the vacancy caused by the death of Dr. Sir Mangaldas V. Mehta—published in the *Bombay Government Gazette* and the *Sind Government Gazette* of 30th August 1945. Thursday, the 20th September 1945, is the last date for receiving nominations of candidates. Copies of the notification and other necessary information in respect of the bye-election can be had from the office of the Council.

Swadeshi Mills Estate, } B. M. SIDHAYE.
New Queen's Road, }
Post No. 4, Bombay. } Registrar and
30th August 1945. } Returning Officer.

Corrigenda

In the correspondence on sulphonamide and chronic malaria, published on page 268 in the May, 1945, issue of the journal, the quantity of M & B 693 given therein should be 11 grammes (eleven grammes) and not 11 grains.

In line 1, p. 146 of March 1945 of THE ANTISEPTIC, please read "Sulphaguanidine 10 grams" instead of "Sulphaguanidine 10 grams I.V."

FOOD and DIGESTION

NATURE PROVIDES

FERMENTS

for

DIGESTION

of

STARCHY FOODS

IF NATURE FAILS
BENGAL IMMUNITY

offers

BI-DIASTASE

for

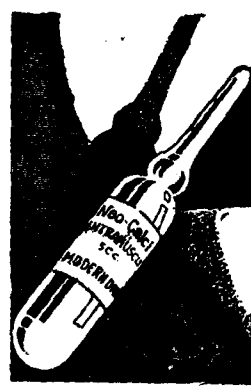
DIGESTION

of

YOUR FOODS

BI-DIASTASE PREPARED FROM
PURE VEGETABLE
SOURCES

LIQUEFIES THE FOOD-STUFF TO A DIGESTIBLE
FORM AND CURES INDIGESTION, DYSPEPSIA,
FLATULENCE, HYPER-ACIDITY, HEART-BURN.



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Demand more result in all calcium treatment.

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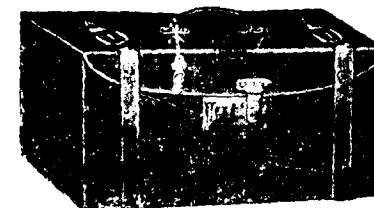
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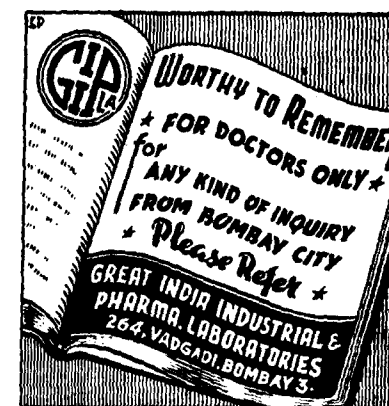
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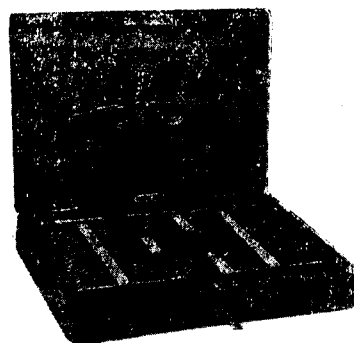
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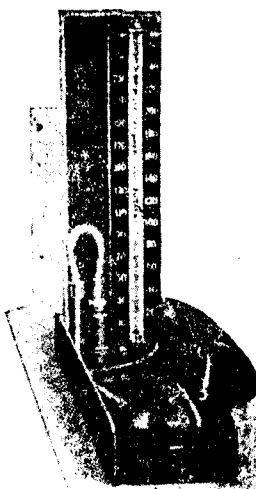
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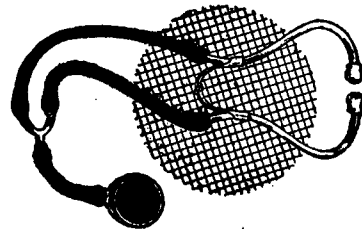
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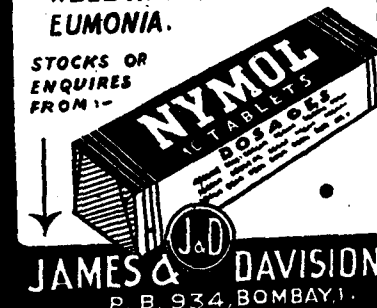
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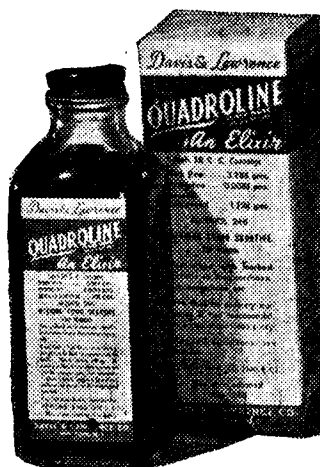


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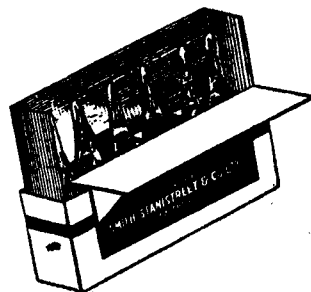
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CONTENTS

ORIGINAL ARTICLES:

- The so-called Tropical Eosinophilia is a mere Modality of Loeffler's Syndrome.** Col. I. Froilano de Mello Nova-Goa. ... 533
- Hepatic Amoebiasis.**—K. U. Jhatakia, M.D., Hon. Asst. Physician, Sir J. J. Hospital, & Tutor in Medicine, Grant Medical College, Bombay. ... 544
- Indian Village Obstetric Emergencies.** F.R.W. Kinkead Allen, Master in the Art of Obstetrics and Doctor in Medicine of the University of Dublin, —(Contd.) ... 554
- The Food Deficiency and Intestinal Parasitosis—Anquilostoma and Amoeba) in the Aetiology of the Duodenal Ulcer.**—Prof. J. M. Pacheco de Figueiredo, Medical College, Nova Goa. ... 561
- Use of Magnesium Sulphate in Unhealthy Ulcers and Sores.**—Hari. I. Raisinghani, L.C.P.S., (Bom.) Physician and Surgeon, Halani, District Nawabshah, Sind. ... 565
- Ozoena.**—M. P. Ranjan, L.M.P., Formerly House Physician & Surgeon, Dharbanga Medical School Hospital, Hospital Rd., Laheria Sarai. ... 566
- The Origin of the Madras General Hospital.**—How and when the nucleus of the Hospital was built on the present site.—Dr. D. V. S. Reddy, Medical College, Madras. ... 569

PAGE

CASES and COMMENTS:

- An Undiagnosed Case.**—D. G. Chourikar Regd. Medical Practitioner, Wun (Berar) ... 575
- A Case of Cerebrospinal Meningitis.**—P. C. Dakshinamurthi, L.M.P., Rural Medical Practitioner, Timiri (via.) Arcot, N. A. Dt. ... 576
- Rat-Bite Fever.**—Revshanker P. Kamdar, Sub-Asst. Surgeon Gondal, Kathiawar. ... 577
- Bubonic Plague.**—Puran Chandera Bausal, L.S.M.F., (Pb.), Medical Officer Sarasvathi Sugar Mills Ltd., Abdullapar (Ambala) ... 578
- Penicillin in Corneal Ulcers.**—Dr. K. Krishnamurthy, Ophthalmic Surgeon, Chodavaram. ... 580
- EDITORIAL:**
- The War Is Over.** ... 581
- GLEANINGS from MEDICAL PRESS:**
- Medicine & Therapeutics** ... 585
- Surgery** ... 589
- Obstetrics & Gynaecology** ... 591
- Dermatology** ... 592
- Proceedings of Association** ... 592
- Book Reviews** ... 595
- Correspondence** ... 595
- Victory Preparations** ... 596

PAGE

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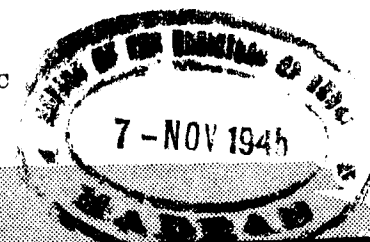
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INDEX TO ADVERTISERS

	PAGE		PAGE
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Alembic Chemical Works Co., Ltd.	42, 47	James & Davison	51
Allied Drug Industries Ltd.	14	James & Wright Ltd.	60
Anglo-French Drug Co., (Estn.) Ltd.	16	Jammi Venkataramanayya & Sons	46
Associated Drugs & Chemical Concern Ltd.	20	John Wyeth & Brother Ltd.	6, 7, 8
Babbila Bros., Ltd.	62	Jubilee Trading Company	2
Bengal Chemical & Pharmaceutical Works		Liverites Co.	49
Inside of Back cover		May & Baker (India) Ltd.	3
Bengal Immunity Co., Ltd.	37	Meclec Nutriment & Pharmaceuticals Ltd.	39
Bhalchandra Laboratory Dr.	39	Medical Review of Reviews	51
Birla Laboratories	60	Mukerji & Co., Ltd., H.	53
Bombay Drug House Ltd.	36	Navaratna Pharmaceutical Labs.	56
Bombay Surgico Medical Agency	50	New Surgical Trading Co.	18
Boots Pure Drug Co., Ltd.	44	Nonglay Modern Virtues	51
Brand & Co. Ltd.	61	Oakley, Bowden & Co. (Madras) Ltd.	23
British Drug Houses Ltd.	25	Orient Laboratory Ltd.	10
Brothers, V. M.	50	Orthopaedic Appliances Stores	20
Burroughs Wellcome & Co.	31	Parekh Trading Co.	52
Calcutta Clinical Research	46	Parke Davis & Co. Outside of Back Cover	52
Chemo-Pharma Laboratories Ltd.	28	Pearl Chemical Industries	63
Chemo-Therapeutics (India) Ltd.	27	Polyclinical Laboratory	50
Ciba (India) Ltd.	45	Premier Drug Co.	46
Cipla Laboratories	22	Primco Ltd.	58
Continental Drug Co.	61	Ranbaxy & Co.	59
Corn Products Co., (India) Ltd.	19	Reckitt & Sons (Dettol)	49
Cossor & Son, A. C., Ltd.	26	Scientific Indian Glass Co., Ltd.	54
Crookes Laboratories	49	Smith Stanistreet & Co. Ltd.	18, 21, 54
Deb Nanda Laboratory	58, 64	Smith T. J. & Nephew Ltd.	32
Deodhar Bros.	46	South Indian Eye Laboratory	24
Devsons Products (India) Co.	63	Squibb & Sons, E. R.	33, 40
Drug House (India) Ltd.	62	Standard Pharmaceutical Works Ltd.	64
East India Pharl. Works Ltd.	57	Subbaroy Pharmaceuticals	19
Eli Lilly & Co. Inside of Front Cover	22	Suren & Co., W. T.	35
Evans Sons Lescher & Webb Ltd.	43	Syntetic (India) Ltd.	48
Fairdeal Corporation Ltd.	24	Tablets Limited	55
Glaxo Laboratories Ltd.	17	Tripathi N. M., Ltd.	54
Globe Research Institute	38	Union Drug Co., Ltd. Front Cover &	34
Hall & Kay	51	Unique Drug House Ltd.	23
Hering & Kent	12	Unique Trading Corporation	64
Himalaya Drug Co.	17	United Pharmaceutical Co.	4
Hind Agencies	29	Victory Chemical & Pharma Works Ltd.	52
Hind Chemicals Ltd.	52	Victor X-Ray Corporation (India) Ltd.	13
Imperial Chemical Industries (India) Ltd	46	Volkart Bros.	15
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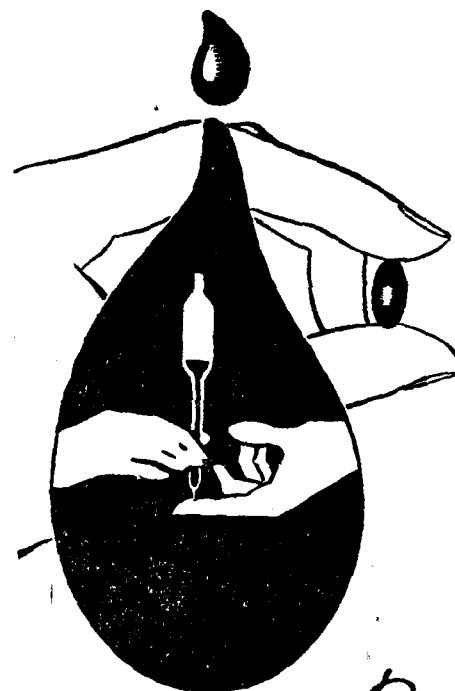
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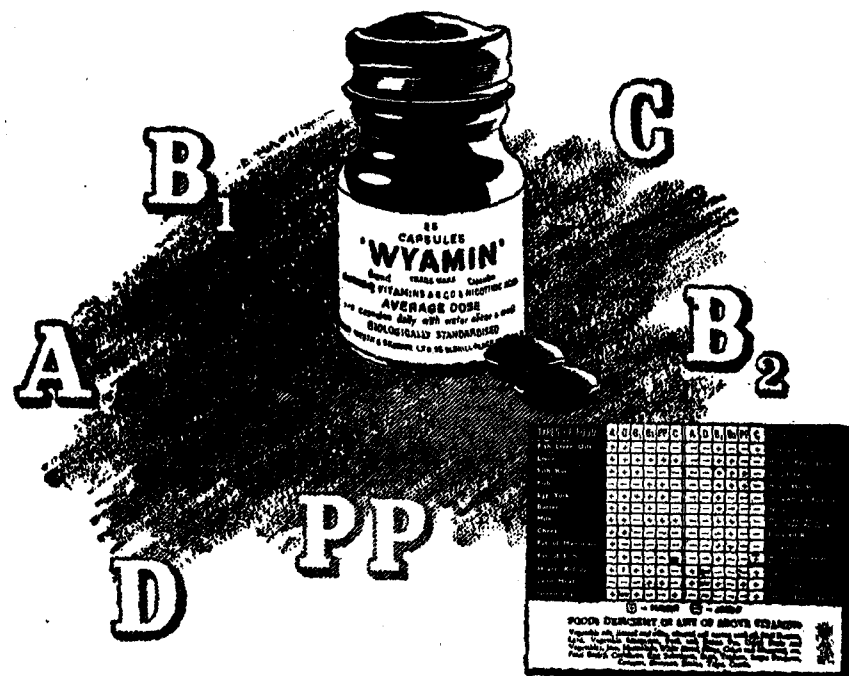
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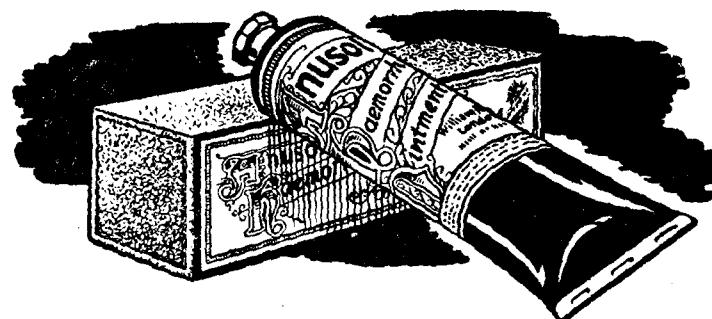
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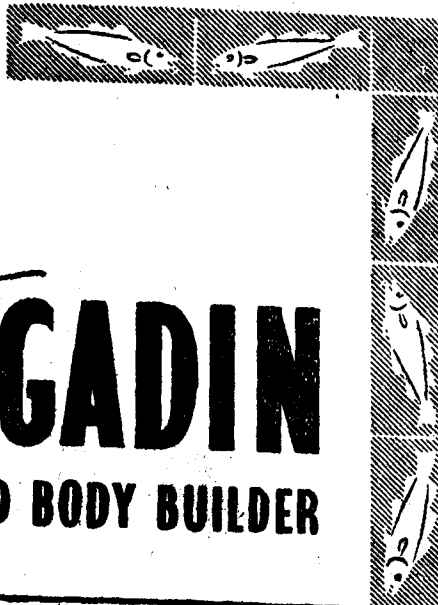
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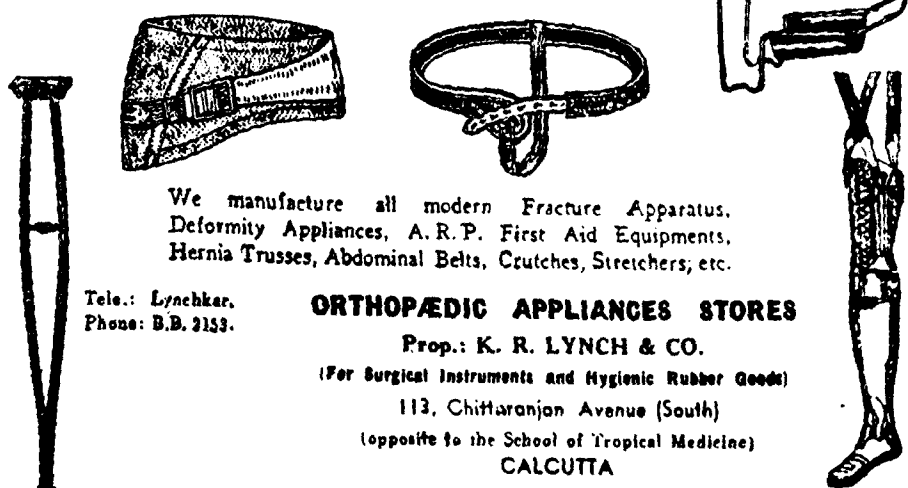
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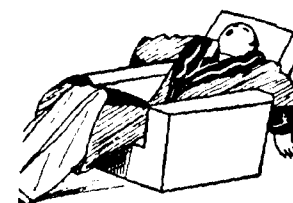
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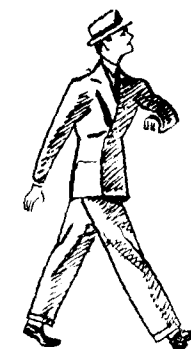
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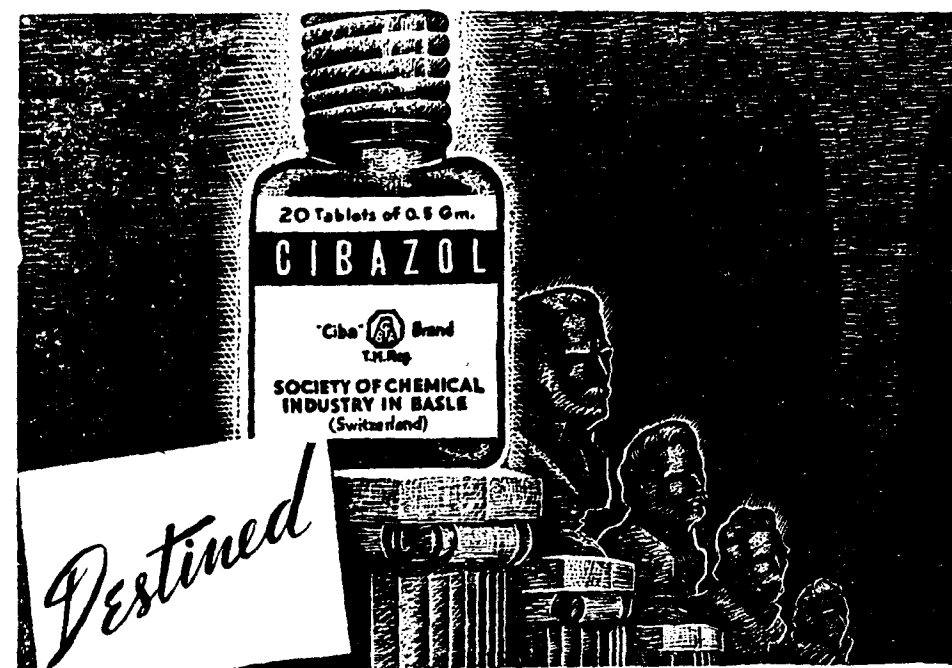
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Original Articles

The so-called Tropical Eosinophilia is a mere Modality of Loeffler's Syndrome*

COL. I. FROILANO de MELLO,
Nova Goa.

Introduction.—In 1934, if I am not wrong, DR. SIMEON, a clinician practising in Bombay, informed me on a curious case, occurring in one of the best known surgeons of that town and presenting curious lung pictures—undoubtedly not due to tuberculosis—and a strong eosinophilia.

We say that there is eosinophilia when the eosinophil cells reach over 250 per m.m.c. and more than 3 or 4 per cent. in the differential count.

Strong eosinophilia has been found in many conditions: helminthiasis, allergic troubles (seric disease, asthma, urticaria, angioneurotic oedema), dermatoses, convalescence of acute infections, Hodgkin's ovary and spleen tumours, cancer metastasis, chronic myeloid leukaemia and in the course of hepatotherapy for pernicious anaemia, constituting here rather a sign of favourable prognosis.

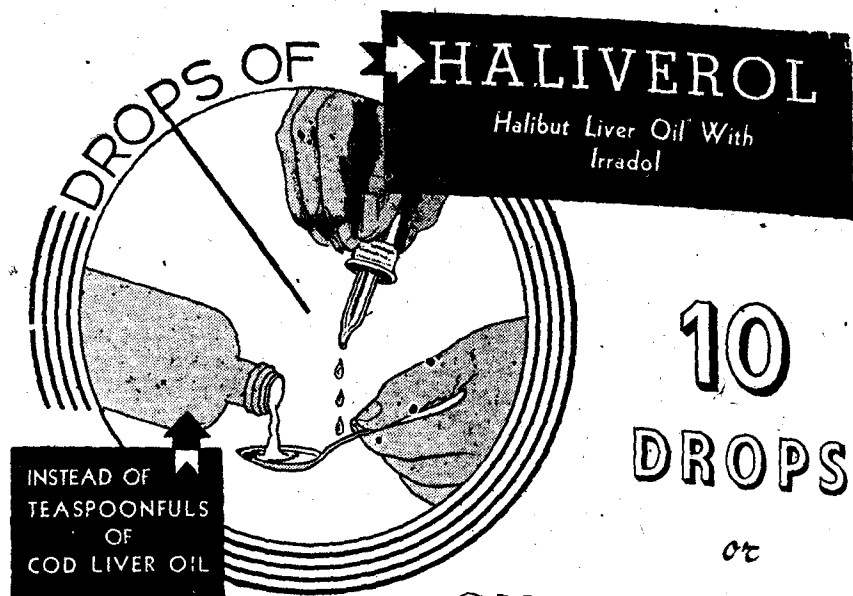
But, besides these more or less correctly established aetiologies we find in the literature some cases where the cause of eosinophilia is more or less mysterious. If the *bronchitis with eosinophilia of Hoffman* may be identified now-a-days with *Loeffler's syndrome* the same cannot be said of the *splenic eosinophilic insufficiency of Chalier Levrat* (1933) which was checked by a Bismuth treatment.

The same obscurity surrounds, for instance, the case which under the title of a *spontaneous and cryptogenetic case of persistent and excessive blood eosinophilia* was described by DOBREFF and TOSCHEFF in 1936.

It is stated that some diseases of the lungs and heart, especially asystolia, are able to produce strong blood eosinophilias.

Eosinophilia in India.—In India, at least, as well as in countries where there is a high degree of helminthic parasitism, it is rather difficult

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patients have been found during a X-ray mass detection among contacts of tuberculous patients, many of them who would never think to consult *motu proprio* a physician on this account.

SVERRE STRAND (1943)² reports three cases whose lesions are: (1) Bilateral pulmonary infiltration.—Emphysema; (2) Parenchymous consolidation on right apex, disappearing after 3 weeks; (3) (I am deliberately reporting it in 3rd place as it is the only case where there was an autopsy, the patient having died suddenly after an inhalation of Adrenaline) Interstitial interalveolar tissue thickened, showing infiltration by lymphocytes and plasma zellen. Partial obliteration with the same cells and eosinophile granulocytes. Abundant epithelial macrophages exfoliated. Some bronchioli distended by mucus and intense leucocytic infiltration. No abnormality in the epithelium. Intense eosinophilia. The histo-pathological diagnosis, therefore, is, in short: *pulmonary tissue with subacute inflammation and intense eosinophilia*.

The pathological picture of Loeffler's syndrome is therefore an allergic pneumonia and most noteworthy, especially for radiologists, its resemblance with the *tuberculous infiltration of the lungs*. Cases of this nature have already been found in tuberculosis (LEITNER), acute infectious diseases (Magnussen), in persons *soidisant* normal (LOEFFLER), in allergic diseases, particularly asthma (GRAVESSEN, JUBILIN, DAOMFELT) and in ascardiasis (WILD and LOERTSCHER). They may be found in any age, as TONNESSEN saw one case occurring in a baby 3 months old. Often their cause is due to certain pollens, giving rise to true epidemics (ADLERENTZ), and ENGEL believes that in Shanghai they are originated by the pollen of *Ligustrum Sineuse* and *L. Lucidum*. This author defines anatomo-pathologically the disease as *Oedema pulmonis allergicum vernale*.

On account of the importance attributed nowadays to the *precocious infiltrate* in the early diagnosis of tuberculosis, the existence of *pulmonary non-tuberculous infiltrations* has a particular interest for radiologists. J. N. LORENZEN (1932)⁶ states that in asthmatic patients 8% of such lesions are *non-specific* and in 170 cases of emphysema and bronchitis has found 14% of *tuberculous infiltrations* and 86% where such infiltrations were surely *non-tuberculous*.

Similar cases have been described all over the world.

The malady is not confined either to tropics or to a certain continent. We find it everywhere: Switzerland, France, England, Holland, Turkey, Denmark, Norway, Sweden, Canada, Uruguay, Argentine. It was dealt with in a memorable session of the Med. Soc. of Zurich in 1936 where GEIGER reported 15 cases (9 between 6—16 years, the others between 22—23) and among which, at least, 4 children were totally negative to tuberculin. OERI, in his turn, reported these 5 cases occurring in cavitary patients, the reason why he believes that, in some cases at least, there is a strong connection between tuberculosis and Loeffler's syndrome. ROHNER in the same session gives the results of his auto-observation: Sputum yellowish, fluid, later on mucus, glassy. No pneumococcus, no Koch. General condition slightly altered in the first days. Pulmonary signs changing rapidly and disappearing within 14 days. Eosinophilia at the rate of 42.5%.

This malady is, therefore, found frequently, almost daily, in the consulting rooms of specialists in lung diseases: slight alterations recognizable

at X-ray film, with practically no diagnostic difficulties. But the case is different when the alterations seen at the ecran are extensive, as they can give rise to confusions with tuberculosis and neoplasias, which only further evolution may be able to exclude with certainty.

For a better illustration of the above statements, we will summarise 4 cases of HEDWALD:

(1) Woman, 35 years, normal, X-ray normal till 1937. Since then asthmatic accesses here and again. Suddenly fever 40, cough, sputum. General condition excellent. Film: Opacity between the left infraclavicular region and the 4th intercostal space. Dullness, to auscultation. Some days after, the lung picture is entirely different: opacity disappeared, but a new one is noticed between the left hilus and the apex. Twenty days after, all normal again. White cells 8,600; eos. 37%. All tests for tuberculosis negative, including cultures and inoculations.

(2) Male, 44 years, asthmatic-bronchitis since 4 years. In September, 1939, seriously ill. Film: extensive bilateral lesions which are considered tuberculous. Soon the aspect changes: there is a massif collapse of the lung. And all becomes again normal after 3½ months. A slight relapse. Eosi. 25%, just when the lung was returning to normal.

(3) Male, 66 years, neither tuberculosis nor asthma in his past history. Suddenly cough, sputum, dyspnoea, which are considered by the assistant doctor as broncho-pneumonia with cardiac troubles. Rapid cure. A new access with unilateral alterations, on the left side, regressing slowly. General condition excellent. White cells 16,200, eos. 30% just when the lesions had almost disappeared.

(4) Male, 31 years old, asthmatic, urticaria twice. In August, 1938 cough, dyspnoea, but the general condition excellent. Rapid cure. Film: extensive lesions especially on the left lung, disappeared after 11 days, but followed by large opacities on the right lung. In December complete recovery. Eosi. 66% in full activity of the pulmonary lesions.

The problem of the etiology of the Loeffler's Syndrome.—It will be interesting to know the various stages through which has passed this problem.

1. *Tuberculous theory.* It is the theory of LOEFFLER, who considers the lesions as either a *precocious infiltrate*, or as *nonspecific pneumonia* and compares these pulmonary infiltrations to the eruptions of *erythema nodosum*, not possessing however a tuberculoid structure. Despite the fact that, at least, one third of the cases were negative to tuberculin, LOEFFLER continues to think that tuberculosis is the most frequent cause of these lesions which are tuberculides, extremely benign, developed in an allergic soil.

2. Almost all authors, however, reject the *tuberculous theory* (GEIGER, WIELAND, ENGEL, BUSCHE, MAGNUSSEN). STAU points out the differences between the infiltrations of LOEFFLER, the nodule of ASSMANN and the *precocious infiltrate*: the latter tends to be liquified and become cavitary. It does not mean, indeed, that both kinds of lesions may not co-exist as in the cases of Oeri.

3. Between these both extremes, there are the eclectics. LEITNER, while admitting the possibility of a nontuberculous etiology, thinks that it is safer to think always firstly in tuberculosis and after in other causes, only when the tubercular hypothesis can be definitely discarded. GSELL, considering that in the clinic in Zurich, 10% of pulmonary affections show a high degree of eosinophilia, tries to draw the following scheme: (a) infiltrations, with high temperature, and transitory eosinophilia, fever of short duration. No Koch. Allergic antecedents (urticaria, hay fever, eczema, gastro-intestinal troubles—mostly, *non-tuberculous nature*; (b) sub-febrile or apyretic, eosinophilia moderate (8–25%) slight symptoms. Mantoux strongly positive. Personal or family antecedent tuberculous—mostly, *tuberculo-toxic nature*; (c) persistent eosinophilia, independent of the acuity of the pulmonary process, in contrast with the precedent groups—*helminthiasis, asthma, etc.*

4. The theory which counts more partisans and is founded in a more solid base is the *allergic theory*. ENGEL calls the malady "*A unique anaphylactic disease of the lungs, caused by the pollen of ligustrum.*" MAYER points out the co-existence of the LOEFFLER's syndrome, hay fever, and attributes it to the pollen of *convallaria magalis*. NORDWARD, GRAVESEN, NEERGAARD, DONADY AND COHEN, GSELL state the co-existence of the other allergic troubles. For BUSCHE it is a case of local hyperergia: the allergid, acting on the vasomotor nerves of the terminal and preterminal capillaries, would produce a constriction and the consequent slowing of the blood current. SCHULZE, treating one of his cases with Torantil, a gastro-intestinal protein—has seen new pulmonary infiltrations to appear in his patient treated by this drug.

It is in this last group that must be placed the *ascaridian theory*, in which the authors attribute the pulmonary troubles to lesions caused in the lung by the passage of ascaris embryos. The ascaridian theory as the primary and single cause of Loeffler's syndrome can hardly be accepted: (a) because eosinophilia is found even in helminthiasis which have no pulmonary cycle in human host; (b) because the experimental infestation done by KONIO on himself and his brother through ascarid eggs, provoked a *pneumonia* and not a *transitory infiltration*; (c) ascaridiasis is so largely spread in India that one may ask why the pulmonary complex is not found here more frequently.

I rally myself willingly to the opinion of HEDWALD: Loeffler's syndrome recognizes as primary factor an allergic state which gives in the blood an eosinophilia and in the lung a transitory infiltration which may or may not be accompanied by other allergic manifestations. Loeffler's syndrome may be caused by various allergens—pollinic, bacteriotoxic, proteino-toxic. And it is among the last ones that one must include the helmintho-toxins.

Supplementary information.—It is not possible to summarize the vast amount of literature dealing with the Loeffler's syndrome. I will however take some complementary information from ancient and modern publications which I was able to consult, in these times of scarcity of international literature.

In 1938 RENE COHEN (1938)⁷ insists on the transitory character of the radiological shadows in the lungs, which do not last more than 3–8 days, seldom 3–4 weeks. The eosinophilia is constant. However, TRIBOULET has seen a typical case in which the blood formula was normal.

Constant relapses, localised in various zones of the lungs: Another characteristic: the absolute benignity of the disease, ending by the *restitutio ad integrum*. It is an allergic disease, due to multiple causes, among which tuberculosis can be mentioned too.

BENZANCON, JAEQUELIN, JOLY and MONCHARMONT (1939)⁸ give a remarkable study in which we must emphasize the clearness of the concept of the French authors. The radiological lung shadows, ephemeral, transitory may be classified in the following groups:

(a) Appearing in the course of a collapsed tuberculosis—fluxionary processes, often hemoptoic, either in the diseased lung, or in full contralateral sound parenchyme. Pathogeny: *epituberculous condensation* at the periphery of, often, asthmato-genous foci.

(b) Accompanied by eosinophilia—*signs of pulmonary hyperergia* or *colloidoclassic shock*, not due to tuberculous etiology. Pathogeny: abnormal alveolar localisation of allergic, congestive phenomena at the level not of the bronchi as in asthma, but in full pulmonary parenchyme.

(c) In association with asthma or with an equivalent of asthma. Pathogeny: *transitory atelectasia* caused by a mucous bouchon or by a neuro-vegetative dystonia, localised in more or less extensive zones.

The transitory radiological manifestations are therefore: (1) fluxionary processes developed around ancient fibrocretaceous nodules or around foci of tuberculosis fibrosa. It must be noted that precisely the hemoptoic forms of tuberculosis are more asthmato-genous; (2) or allergias whose incidence occurs not in the bronchioli, as in common asthma, but at the level of the alveolar terminations.

Loeffler's syndrome appears therefore as the radiological manifestation of a deep localisation of allergic troubles on the respiratory apparatus, producing a true oedematous intra-alveolar infiltration, able to give radiological regressive shadows which may be caused by all the varieties of local colloidoclassic shock—essential asthma, pollinic asthma, seric malady, Quincke's oedema, helminthiasis.

It was too natural that modern medicine, especially English and more particularly medicine in India, would have to deal largely in recent times with the so-called *tropical eosinophilia*.

PARSON SMITH (1944)⁹ reports a case in an European in Egypt. Cure by Neoarsphenamine. SOMMER (1943)¹⁰ insists on the shifting to the left of the Arneth's image, and he considers it an important sign for the differential diagnosis. The morbid process he believes to be due to *atypic pneumonias* such as those caused by Bang's bacillus, some viruses and the asthmatic accesses due to ascarid toxins. They occur generally in predisposed persons; on the same ground as the skin develops an urticaria the lung originates an infiltration.

In India PATEL (1945)¹¹ states that *massive eosinophilia* is very frequent in Bombay. The etiology is obscure. Uncontestable and uniform response to aromatic arsenicals, but frequent relapses, especially if the treatment is sufficient.

S. P. GUPTA (1945)¹² says: the type of the infiltration is, radiologically, similar to tubercular infiltration, sometimes in initial sometimes in advanced stage. Wassermann often positive, but Kahn negative. Cure by N. A. B. or other arsenicals.

H. B. LAL (1945)^{1,3} ends his excellent report with the following statement: 11 persons treated by N.A.B., 9 with excellent result and total regression of the lung and blood abnormalities. In 2, however, the signs showed an exacerbation and disappeared by a dramatic form after the administration of Sulphapyridin (M & B 693). This seems therefore a new therapeutic weapon to be added to the arsenical arsenal as a curative means of this disease.

Personal observations.—Obs. I. Clinical report of Prof. PACHECO de FIGUEIREDO. Radiological report of PROF. SOARES da VEIGA. Analyses by myself and my pupils XANTARAMA CURCHORCAR and CUSHA CURUHORCAR, the latter being himself the patient in question.

History:—Persistent accesses of asthma, with the sounds audible at a distance. Father died with 80 years. Mother with asthma. Two sisters with asthma. One brother with asthma in infancy. Maternal grand-mother with asthma. Two nephews, sons of one of the brothers, asthmatic too. The patient himself had asthma in childhood till 8 years old. Past diseases: Varicella, measles, verminosis.

The actual disease began in 1942 with a grippe-like fever 101°—102°F., having lasted one week and accompanied by a strong laryngitis. After two weeks cough, dyspnoea, asthma with accesses appearing at 4 a. m. and ending in the morning after abundant expectoration. The crises are constant, more pronounced in full moon nights and during rains, preceded then by a true roaring of sneezes. The thorax is typically asthmaticiform—Asthma. In April 1943, cortico-pleuritis with persistent cough and fever having lasted 9 days.

Examination: *Digest and nerv. app.* normal. *Resp. app.* rhonchii and sibilant sounds all over the chest, the typical *music* of the asthmatic patients. *Resp. mov.* 20. *Circulat. app.* Heart's point in the 5th interc. esp. mamillary line. Sounds normal. Pulse 80 M T 120 m.m. 80. *Lymphoid organs:* both tonsils enlarged. *Urine* normal; some biliary pigments; *Sputum* salivary, aerated, some mucus. Rare bronchic cells. Eosi. cells. Crystals of Charcot Leyden. No Koch. Secondary rare. *Stools* protozoa nihil. Crystals of Charcot Leyden. Eggs of Necator. *Blood* Hemogb. 75%. Red cells 4,800,000. White cells 25,000 with 17,000 eosi. Differential count E 70, N 8, L 22. Arneith (neutrophyl) I 0; II 12.5; III 37.5; IV 37.5; V 12.5; Arneith (eosinophyl) I 2.8; II 65.7; III 25.7; IV 5.8.

Radiological report:—Thorax of emphysematous type, symmetrical, with large intercostal spaces, especially on the right, where there is a scissuritis and a congestion, tumefied shadow with irregular outline. From this region start fibrous cords directed towards the 2nd and 3rd intercostal spaces on the same right side.

Treatment.—Began with Sulpharsenol for trying his sensibility to As. (8, 12 ctgs.) No medication. Blood E 67; N 10; L 22. Arneith (eosi.) I 4.4; II 52.2; III 38.8; IV 4.6.

On 30/IX/, Injection of Neoarsphenamine, every week, in small doses (15 ctgr.). After 5 injections the following clinical report is given by PROF. P. de FIGUEIREDO: immediately after the 2nd injection the daily nocturnal crisis of cough and expectoration, which used not to allow the patient a quiet sleep, ceased completely. The sleep is now

tranquil in any decubitus. The pulmonary *music* disappeared, as well as the crisis of sneezing and the constant colds. Since three days a slight access of suffocation every day, forcing the patient to deep respiration. No rhonchii; no sibilant sounds.

Radiological report:—Slight classification of the lesions reported before. The thickness of the right sup. interlob. scimeo continues still.

Two more injections of Neoarsphenamine are given (O, 3).

Blood in the course of treatment

Date		Clinical considerations	E.	N.	L.	B.	M.	E I	E II	E III	E IV	E V
20-10	...	Better	49	22	28	1	0	2	48	35	13	2
14-11	...	Cured	23	19	58	—	—	—	—	—	—	—

In this last analysis white cells 9,200. Red cells 4,500,000.

The treatment is suspended as the patient is clinically cured. A cure by tetrachlore of carbon to get rid of his necator. Radioscopy (no films available for taking pictures) shows the pulmonary image normal. General appearance splendid. The student appears for his exams.

In July 1945 I examined him again. Normal. No necator. Blood:

Date	Wh. C.	Red C.	N.	E.	L.	M.	Ab- nor- mal	E I	E II	E III	E IV	
1-7	...	3,900	5,300,000	44	17	37	1	1	0	60	30	10
17-7	...	6,700	—	32	32	35	1	—	—	—	—	—

Summary.—We are dealing with an interesting case; blood eosinophilia, hereditary, apparently primitive and whose cause cannot be attributed to necator, as it continues after the patient is cured from his helminthiasis. The eosinophilia—whose genesis is for us unknown—reason why we call it *primitive*—is accompanied by hyperleucocytosis. Through a mechanism which is also surrounded by mystery—to follow the medical terminology we will classify it as *allergic*—this eosinophilia provokes in the lung of the patient fluxionary reactions, fully demonstrated by X-ray pictures, and manifested clinically by daily asthmatic accesses. And Neoarsphenamine cures the pulmonary lesions and symptoms, reduces progressively the hyperleucocytosis, without however bringing the eosinophilia to their normal rate. Such a cure will hence be a transitory one. The slightest cause which may provoke a reaction, so called *allergic*, will give rise to new asthmatic accesses. It is not, indeed, impossible, but the future will show it. Anyhow the patient is aware now of the wonderful results of Neoarsphenamine which did what no other medication had been able to do formerly.

Obs. II Dionisia M., 12 years. Clinical history of DR. A. CASIMIRO LOBO, Radiological report by PROF. S. da VEIGA. Analysis by the same as in Obs. I.

Hereditary antecedence of no importance in person. **History:** coquelucha, gastro-intestinal troubles with tendency to vomiting. Constant

ascariasis with expulsion of numerous worms. Since one month and after a good dose of Santonine, no more adult worms in the stools. Her assistant has noticed that Santonine attenuates to a certain extent the severity of her asthmatic accesses.

Actual disease.—Every night, from midnight to 4 or 5 a.m., an access of asthma, typical, with the characteristic *music* audible at a distance. If the access is slight, the sleep is not interrupted; but when accompanied by intercostal and suprasternal tirade, the child cannot sleep at all. The access ends after an uninterrupted succession of sneezings. The crisis used to cease at once after an inhalation of adrenaline at 1/20 in saline, soaking a cotton plug; but this panacea does not give result any more, since some 20 days.

Stovarsol was tried, 12 decgr. in 2 daily doses, during 10 days with no result. On account of the periodicity, Quinine was given, considering also that the child lives in a somewhat malarious village. The only drug which seems to be somewhat beneficial is the *tincture of penny-royal* (anti-helminthic) which attenuates the access during some 5 days.

The actual disease (asthma) began two years ago by a vomiting occurring in full good health. Four days after, the accesses of asthma began, accompanied at first by convulsions during some minutes.

Examinations: *Stools*:—*Ascaris* and *Tricocephalus* in abundance. *Blood*: white cells 17,000. *Differential count*: E 37, N 40, L 23.

We advise the assistant to continue the anti-helminthic treatment, meanwhile we start with As.; firstly through Sulpharsenol, and after with Neoarsphenamine (small doses). The treatment is not followed *à la rigueur*, the patient missing now and then the injection. Anyhow there is a clinical amelioration after the 3rd Neo. injection. But suddenly the amelioration does not only stop, but a new crisis, with accesses every night, discourages the patient and her parents not to follow the treatment with regularity.

Radiological report before the treatment:—The opacity on the left hilar region, from where fibrous shadows irradiate towards the corresponding infraclavicular region. On the right fibrous shadows too irradiating from the hilar region to the periphery of the pulmonary field.

Ulterior Analysis

Date	E.	N.	M.	L.	Wh. C.	CLINICAL CONDITION
18-12 ...	25	40	1	34	17,000	Idem.
6-1 ...	12	58	4	26	Idem	Much better.
27-1 ...	30	35	1	34	8,000	The new crisis reported supra began on 18-1 and ceased now. Clinically the child is cured from her pulmonary symptoms.

A new examination, radiosopic now, as we do not possess more films, shows a clarification of the opaque zones. But as the father of the child reports me some slight accesses, here and again, I advise him to let the child get rid of her tonsils which were hypertrophied and badly infected. I am informed that having consulted a local surgeon for these tonsils, he refused to operate on account of the bad condition of the patient's lungs.

The operation is now performed by Dr. EVANS from Vengurla Mission Hospital, who prescribes, moreover, Ca. and vitamin C and curiously enough, immediately after operation, the asthmatic accesses ceased completely! The child continues to take every month a dose of antihelminthic. The asthma is no more; only when the child is too tired, a slight access comes again, but without the terrible suffocation which did not allow, in former times, the child to sleep!

I examined her on 30th July '45, four months after the operation. Excellent aspect, lungs normal without the slightest trace of rhonchii or sibilant sounds. *Blood*: Wh. C. 10,4000, E 27, N 27, L 41, M3, B2.

Summary.—Primitive blood eosinophilia, in whose genesis, there are probably many causes, besides that mysterious factor included in this complex *allergia*: verminosis, for the administration of antihelminthics attenuates to a certain extent the asthmatic accesses and—why not?—a bacterio-toxic action due to her hypertrophied and infected tonsils. The arsenic medication had a transitory effect both on lung and blood complex, but the surgical intervention on tonsils had a much more rapid and decisive effect! And in spite of the fact that the child is not cured of her eosinophilia, her asthma ceased, reappearing here and now by slight abortive accesses. If it will again relapse with all the former afflictive symptomatology, only future will be able to say.

Concluding remarks.—Publishing to-day these two observations—and only two because in spite of the fact that everything was free, analyses, X-ray, and treatment, more cases were not sent for my study which had no other aim but to help the clinicians with a thorough research on this question. I will formulate the following conclusions:

(1) *On pathogeny and nomenclature*:—The so-called *tropical eosinophilia* is not confined to tropics. It is found everywhere, is much more frequent than is generally believed either in tropics or in other climates.

(2) It is not a new disease. Its primary factor is the blood eosinophilia and its pulmonary reaction, with fugacious, transitory shadows of varying duration, is but a modality of *Loeffler's syndrome*, due to allergens of various origin—pollinic, bacterial, proteinic, helminthic.

(3) *On the point of view of radiology*:—In view of the importance attributed now-a-days to the *precocious infiltrate* for the early detection of pulmonary tuberculosis and considering the confusion to which the shadows of the Loeffler's syndrome may give rise—shadows whose fugacity and transitoriness can scarcely be appreciated by a single examination—it is advisable to recommend to the radiologists great care in the interpretation of such pictures, which may coexist and be even produced in the course of tuberculosis by fluxionary processes, originated by the tuberculous toxin itself, but without having, by this fact, neither the nature nor the structure of a specific process.

(4) *On clinical point of view*:—The most important contribution of Indian Medicine to the study of this disease is the discovery of a quasi specific action of the arsenical therapeutic: its use is indicated every time that an access of asthma denotes a high eosinophilia, absolute and relative, and particularly if the study of the patient is completed with the radiological picture showing the characteristic images of the Loeffler's syndrome.

(5) Till further information or more research, scientifically performed, is available the brilliant action of Sulphapyridine reported by LAL can be *a priori* understood: it is a kind of *complementary action* called probably to check the secondary infections which may interfere with the regression of the pulmonary lesions caused by the allergic phenomena.

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Hepatic Amoebiasis*

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I. **Introduction.**—Hepatic amoebiasis must have often troubled the talents of most experienced physicians and surgeons. It is a disease usually easy to diagnose, but it is the most difficult one. At times even highly experienced persons get worried. Hepatic amoebiasis includes—

(1) Amoebic hepatitis, and (2) amoebic abscess of liver.

The last one is also known as tropical abscess of the liver. The word 'tropical' is by no means now justifiable as *Entamoeba histolytica* is ubiquitous and has been detected in all parts of the world. Hepatic amoebiasis is usually a complication resulting from amoebic dysentery. Abscess usually follows hepatitis, when the latter condition is not properly treated. Out of these two, I intend to deal only with the amoebic abscess of the liver, as this condition is now-a-days frequently met with in practice.

II. **Etiology.**—It is usually related to previous amoebic dysentery, which might have occurred even 20 years ago. About 5 to 7% of all intestinal amoebiasis cases develop this complication. It is widely distributed all over the world now. About 80% are males and it is common between 20 and 40 years of age.

Chronic alcoholism is an important predisposing factor.

III. **Pathology.**—Amoebae reach the liver from primary focus in the intestines through the portal vein. They lodge there in small portal radicles where they produce thrombosis with infarction and consequent necrosis. These areas characteristically appear in the portal spaces and extend peripherally towards the capsule, thus paving the way for cytolytic activity of the amoebae, to produce lysis and destruction of the involved hepatic parenchyma.

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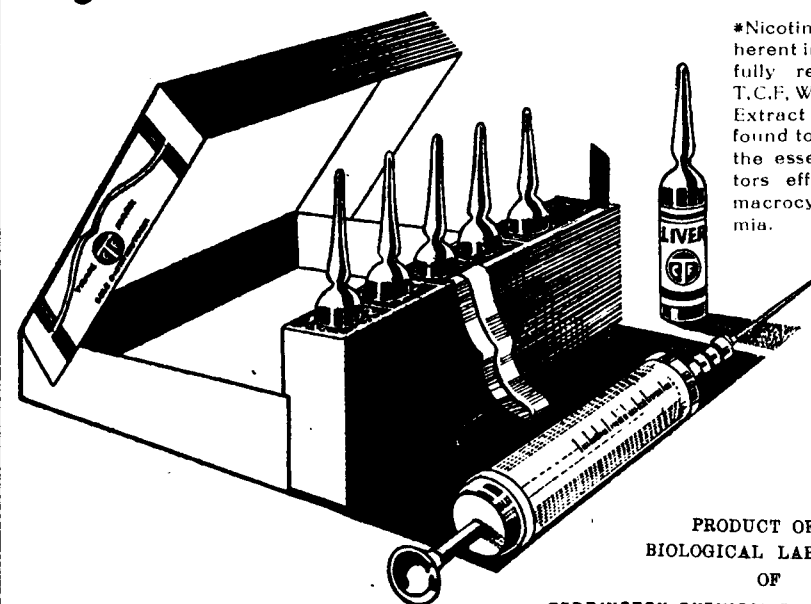
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In this early stage of amœbic hepatitis, a balance exists between regression towards healing with replacement by scar tissues and progression towards suppuration and abscess formation. The balance between the two is determined by resistance of host and virulence and number of amœbæ present. Presence of pathogenic bacteria, alcohol, trauma and other such factors also contribute to the formation of an abscess.

The wall of the abscess is at first formed by necrotic liver tissues, but the cavity gradually becomes limited by a fibrous capsule produced by the inflammatory reaction. In about 70% cases a single abscess is present and in about 15% of cases, there are two abscesses, while in the rest there may be more. Because of the venous drainage from the cæcum and ascending colon to the right side of the liver through superior mesenteric veins, the abscess in a majority of cases is in the right side of lobe.

The contents of the abscess consist of necrosed liver cells, leucocytes, red corpuscles, fat droplets, and generally amœba but no bacteria.

IV. Clinical findings.—1. *Symptoms*:—Symptoms are so variable that the picture often is very easy and at times very difficult. There may be many typical symptoms and in some there may be none—sometimes the features are missed for some other entity. The usual common features are:

- (1) Sense of weight and fulness in liver area with pain in that area.
- (2) Irregular-intermittent type of fever.

Fever may be of any type, it may be high, continuous, hectic-remittent, or intermittent. It may be associated with rigors and sweats; while in some cases, there might not be any fever.

(3) Referred pain to right shoulder joint, localised around acromial region. If left lobe is involved, pain may be referred to left shoulder joint.

(4) Patient may complain of loss of weight and loss of appetite. He may also feel uneasy and feel as if he is gradually pulled down. Some may get diarrhoea.

(5) Some patients may show jaundice while in some there is nausea and vomiting.

(6) Some patients may come with respiratory symptoms, such as cough with or without expectoration.

(7) Some patients complain of only vague pain in the chest or abdomen.

2. *Physical signs*:—With some of the above symptoms, the presence of the following signs may be helpful to arrive at the correct diagnosis.

Liver:—There is an upward and downward enlargement of liver which can be detected by palpation and percussion. The area is tender on pressure. The lower ribs bulge and intercostal spaces become wider. In some cases skin may be œdematous.

Lungs:—On examining the right side chest, the base of the right lung may show deficient movement, impaired note and deficient air entry with or without some moist sounds. V. R. is also diminished. In some cases one may hear a pleural rub.

Abdomen:—The abdominal muscles often show rigidity in right hypochondrium and tenderness and liver cannot be palpated in such cases.

Some patient may come with a tumour in axillary space, or in right hypochondrium or in epigastrium according to the site of abscess in liver.

In such cases, skin is usually edematous and fluctuation is positive in some cases. Spleen is usually not enlarged. Tongue in such cases is coated rough and furred, pulse rate is raised.

Apart from the above clinical features, often patient presents himself with some complicated picture, either as acute abdomen, generalised peritonitis, empyema thoracis, pneumonia or as a continuous fever case. In all these a correct history, careful examination and necessary investigations will lead to a correct diagnosis.

3. *Further investigations*:—To arrive at a definite diagnosis or to confirm the proposed diagnosis, the following investigations will be of much help.

I. *Blood examinations*.—It shows leucocytosis in majority of cases with polymorphs as predominant cells. There may be secondary anaemia and when there is marked damage to liver, picture may resemble that of pernicious anaemia.

II. *Stools examination*.—In only about 36% of cases amœbic cysts are found in the stools, so absence of cyst has no value.

III. *Screening and X-ray examination*.—This is the most reliable test for confirming the disease. Here one finds two important data on screening, one, that diaphragm is raised, and second, that its movements are much restricted. This sign is positive in 60 to 90% of all cases.

IV. *Liver function tests*.—These tests are not done as a routine and unless there are gross involvements, which can encroach over the reserve capacity of liver, the tests have no value in diagnosis.

Once the abscess is diagnosed, the following examinations are sometimes done to find out the exact size of the abscess. They are:

(1) *Hepatography*:—This is done by using Colloidal thorium dioxide. This gives a fine picture of liver abscess.

(2) *Lipiodol and air*:—10 to 20 c.c. of lipiodol and few cos of air are injected into the cavity after giving aspiration, and patient is then screened. This is also useful to follow up the cases for their subsequent progress of lesion.

(3) *Collargol or Tenebryl*:—These are also injected into the abscess cavity for the same purpose as above.

(4) *Air only*:—Only air injection, after cavity is aspirated and if patient is soon X-rayed, is also of much help in detecting the size.

(5) *Thorotrast injection* is also useful for the same purpose.

Although the foregoing is a fairly common picture in a typical liver abscess, there are many cases in which the initial features are very urgent and disease progresses rapidly. In other group of cases the subjective symptoms are almost absent or so trifling, that true nature of the case may be entirely misapprehended, until the abscess becomes more prominent. Sometimes there might be high hectic pyrexia, while in some there might not be any. In short, there is not a single cardinal sign which may not be absent in hepatic abscess; and so the possibility of amœbic hepatitis or abscess should be considered whenever an individual is suffering from progressive deterioration in health with more or less pyrexia, especially if the latter is intermittent and accompanied by chills and sweats along with obscure abdominal discomfort.

I had the chance to have a close study of some of the liver abscess cases and I herewith give the collected data in the following paragraph. These cases were seen by me during these last 4 years at Sasoon Hospitals, Poona, and some at Bombay. The following is the analysis of 50 liver abscess cases, which I could collect in some detail.

1. *Age*:—Maximum cases between 20 and 40 years.

TABLE I

Age	9 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 onwards
No. of cases	...	16	24	4	4	2	...
Percentage	...	32%	48%	8%	8%	4%	...

Youngest patient in my series was of 22 years and oldest of 65 years.

2. *Sex*:—80% cases were males while 20% cases were females.

3. *History of previous dysentery*: Present in 72%.

4. *History of alcoholism*: Present in 20%.

5. *Fever*:—(a) Continuous type 8% cases; (b) remittent type 4% cases; (c) intermittent type 74% cases; and (d) no fever 14% cases.

6. *Interval between the attack of dysentery and formation of the abscess*—History was positive in 36 cases, i.e. 72% cases.

TABLE II

Interval	Within 1 year	1 to 2 years	2 & 3	3 & 5	5 & 10	10 & 15	15 upwards
Cases total 36	2	2	8	6	12	4	2
Percentage	4%	4%	16%	12%	24%	8%	4%

7. *Presence of the findings were as follows*:—

(1) Shoulder pain—right sided 8 per cent. and left sided 4 per cent.

(2) Night sweats ... 72 "

(3) Pain and tenderness on liver area ... 60 "

(4) Enlargement of liver: Total 76%—only upwards 12 per cent.; only downwards 44 per cent; both ways 20 per cent.; as epigastric tumours 20 per cent.; as thoracic 4 per cent.

(5) Jaundice ... 8 "

(6) Displacement of heart ... 8 "

(7) Signs in right lung ... 60 "

(8) Palpable cold and cæcum ... 24 "

(9) Diaphragm raised with restricted movements (40 cases were screened and 34 cases showed this) ... 85 "

(10) Blood—Leucocytosis 72 per cent.; normal 24 per cent.; leucopenia 4 per cent.; maximum W.B.C. count was 18,000 per c.m. of blood.

(11) Stools examination: done in 40 cases—entamoeba histolytica 20 per cent.; amœbic cysts 40 per cent.

- (12) Abscess pus examined for amœba—present in ... 0 per cent.
 (13) Rupture of abscess into—(a) pleura and lung
 12 per cent.; (b) peritoneum 8 per cent.; (c)
 chestwall 4 per cent.
 (14) Tachycardia ... 80 "
 (15) Site of abscess right lobe 96 per cent.; left lobe... 4 "

VII. *Mode of admission in the wards as:—*

- (1) For fever, malaise, pain in liver area and with
 enlarged liver ... 36 "
 (2) Jaundice with fever and tender enlarged liver ... 8 "
 (3) Epigastric tumour ... 20 "
 (4) Chest wall tumour ... 4 "
 (5) Empyema thoracis ... 12 "
 (6) Continuous pyrexia ... 8 "
 (7) Diagnosed as congestive cardiac failure first ... 4 "
 (8) Acute abdomen ... 4 "
 (9) Generalised peritonitis ... 4 "

I have avoided further statistical information, as the chief and important data has been discussed above and it gives the idea how variable are the features of this disease. The number of cases reported is too small to form any opinion. I have mentioned these cases, just for the sake of interest. Most of the cases were from villages and in much advanced stage.

V. **Differential diagnosis.**—This depends entirely upon with what features a patient comes to the doctor. The patient may seek advice either for the disease itself or for its complications. The chief features with which patient first sees a doctor are already told in former pages and it is no good to repeat again. From that list it will be seen that patient may come with very variable picture and differential diagnosis will have to be arrived after thorough examination and investigation. Out of all those chief features, commonest features with which patient presents himself are either:—

1. Irregular fever and pain in liver area—and enlarged liver.
 2. Fever with rigors and sweats.
 3. Fever with lung signs—cough etc.
 4. Fever with jaundice.
 5. Lump in epigastrium.
 6. Acute abdominal pain with tenderness in hypochondrium.
 7. Enlargement of liver only with or without tenderness and fever.
- Or the patient may come with any other abnormal findings.

The picture is often so vague, that errors in judgment are frequent. I have seen the best physicians and surgeons often baffled for the appropriate conclusion in an atypical case of a liver abscess. Often cases are treated as typhoid or tuberculosis, till further developments change the picture. Concurrent or past illness like malaria, etc., makes the picture still more complex as the previously enlarged spleen along with recently enlarged liver and history of irregular pyrexia will lead the doctor to think of either malaria, kalaazar, or Banti's, etc. Blood examination may be helpful here.

The complexity of the presentation of the disease is very complicated at times and one has to judge the possibilities considering all the available

data. I had two cases admitted as generalised peritonitis with a history of irregular fever for 3 weeks, admitted in the wards of Sasoon Hospitals, Poona, where I was working then as Assistant to Surgeon and Tutor in Surgery. I operated on these cases and found that the root cause of this peritonitis was rupture of the liver abscess, of amœbic origin and not enteric, etc. It is therefore necessary to go in detail about the history, features, and carefully examine and investigate to arrive at correct diagnosis. The common conditions which are likely to be missed for the liver abscess are:

1. *Liver conditions*:—(a) Non-suppurating hepatitis-congestive and others; (b) Syphilitic disease of the liver; (c) Softening gumma attended with fever; (d) Pyelephlebitis—portal system; (e) Suppurating hydatid cyst of the liver; (f) Cholecystitis; (g) Malignancy of liver; (h) Acute atrophy of the liver etc., etc.

2. *Diaphragmatic*:—(a) Diaphragmatic pleurisy right side; (b) Sub-diaphragmatic abscess; (c) Right sided diaphragmatic inflammation.

3. *Lungs*:—(a) Pneumonia right base; (b) Empyema right side; (c) Tuberculosis basal lesion with pleural involvement on right side, etc.

4. *Blood diseases* and other conditions associated with spleen and liver enlargement and fever—i.e., kala-azar, chronic malaria, leukæmia, acholuric jaundice-Banti's, etc., etc.

Without discussing all other possibilities arising from such permutations and combinations, I stop short here and leave to the readers to judge according to individual merits and findings of a particular case. It will be useful to note that the most common mistakes here in diagnosis are due to:

- (1) Failure to recognise the presence of disease of any description.
- (2) Misinterpretation of the significance and nature of right sided basal pneumonia which often accompanies hepatic abscess.
- (3) Missing abscess fever as malaria etc.
- (4) Mistaking the other diseases for abscess of the liver and *vice-versa*.

MANSON BARR rightily mentions that "of all the grave tropical diseases, none is so frequently overlooked as abscess of the liver. Acute sthenic cases are readily enough recognised; not so the insidious asthenic cases."

When the pus is detected in the liver on aspiration the other causes of intrahepatic suppuration should be excluded. The characteristic chocolate pus confirms the diagnosis but when the pus is not characteristic in early stage, difficulty may arise. In such cases the following causes of intrahepatic suppuration must be thought of:—(1) in the melioidosis; (2) as a result of ascending pyelephlebitis; (3) ascariasis infection; (4) rarely by hæmolytic staphylococcus aureus; (5) suppurating abscess secondary to duodenal ulceration; (6) suppurating gumma.

The detailed examination of the pus from the abscess and other respective investigations will be useful to solve the difficulty.

VI. **Complications.**—Chief complication locally is rupture of the abscess in adjacent organs. It may rupture in the following ways:—

- (1) Ruptures through diaphragm into lung causing pneumonia or forming amœbic abscess of lung.
- (2) Ruptures into pleura causing empyema thoracis.
- (3) May rupture into peritoneum and produce generalised peritonitis.

- (4) It may rupture into pericardium, stomach, duodenum or colon.
- (5) The abscess may burst through either abdominal wall or chest wall and amœbiasis of skin may occur.
- (6) The abscess may get localised in form of either sub-diaphragmatic or subhepatic abscess.
- (7) Rarely it may burst into retroperitoneal tissues.
- (8) Metastatic complications from hepatic abscess includes amœbic abscess of brain, pulmonary amœbiasis and amœbic abscess of the spleen, and epididymus. Incidence of amœbic cystitis has also been reported but whether it is a complication of hepatic abscess or not, is not definite.
- (9) Severe damage to the liver may lead to pernicious type of anæmia and patient may die of accumulated toxins, as liver is much damaged.

VII. Course and prognosis.—Prognosis in early abscess is good if there is no other complication. If there are more than one abscess, prognosis is bad. Prognosis depends on the extent of damage, age of the patient, his resistance, and effect of treatment. Mortality in Indian army was about 12% while mortality in Indo-China was reported to be 80%. This shows that there must be some factor like susceptibility or immunity in such cases. Mortality also depends on the method of treatment. It has been reported as 40% in open method while it was only 6% by closed aspiration method.

Course of the disease depends on resistance of patient, virulence of the organisms and effect of the treatment, and so each case is to be considered according to individual merits. As I could not follow all of my cases reported here, I am not in a position to give the exact figures about cures and mortality in this series of cases.

VIII. Treatment of amœbic abscess of liver.—Before discussing the modern treatment for this, it will not be out of place if I just summarise the treatment in the past.

First period:—Medical only. During this period evacuation of purulent collection was allowed to take place spontaneously. This was in the 18th century up to 1860. Mortality in this period was about 80%.

Second period:—1860 to 1870. During this period early explorations with trochar and cannula were done. Exact results are not known.

Third period:—1870 onwards. With Listerian discovery of antiseptics, surgeons became more bold and opened these abscesses with knife through either pleura or peritoneum. Mortality was about 43%.

Fourth period:—Then comes the present day treatment with Emetine injections and pus aspirations, inaugurating the fourth period in the treatment of amœbic hepatic abscess.

As soon as the abscess is suspected, measures should be taken to locate it by means of aspirating needle.

Before this procedure, a course of 6 to 8 grs. of Emetine Hydrochloride is advised by injections, as it localises the hepatic infection and so spread is controlled when exploration is done.

1. *Aspiration*:—Aspiration should be done with a wide bore needle. Space selected is 8th interspace in a midaxillary line on the right side. This space is anaesthetised by local infiltration of Novocaine 2% solution. Needle is then pushed in liver tissue, with least to and fro movement of the needle. The abscess cavity is detected and pus is aspirated by syringe.

Pus is often too thick and so it should be diluted with Eusol injection into the cavity. Eusol used here is diluted in equal amount of Saline. Often Saline infection alone is enough for this purpose. Pus should be gently aspirated. It is essential to eradicate the intestinal amœbic infection and here Emetine injections are of no better service. A course of Emetine Bismuth Iodide gr. iii daily in capsule for 20 days along with Chiniofon (Yatren) oral 9.5 gm. daily for 10 days, is much useful in such cases. Yatren enema will also serve a good deal of purpose. I do not think Carbarsone, Stovarsol, etc., any way superior to the above drugs in chronic intestinal amœbiasis, but are useful in many cases. Diodoquin in 9 grs. three times a day dose for 20 days is also very effective in chronic intestinal amœbiasis.

Many drugs are tried for injecting them into the abscess cavity at the end of aspiration. They are:—

(1) *Emetine*:—One gr. Emetine dissolved in one ounce of distilled water, is injected into the abscess cavity. The cavity prior to this must be emptied. The solution is to be retained inside. This method is very useful if amœbæ are detected in the pus, otherwise it will not be much useful as Emetine cannot get access to amœba fixed in abscess wall.

(2) *Quinine*:—Hydrochloride solution 1%. About one ounce of the above solution was formerly used but I have not achieved any good result with this.

(3) Whenever there is some secondary infection, solution of Sulphathiazole, or Sulphadiazine 10 to 20 c.c. of 5% solution is injected into the abscess cavity. The results are encouraging and no toxicity is observed but it is useless in severe secondary infection.

(4) Recently good results have been obtained by injecting 'Penicillin' 20,000 to 40,000 units dissolved in 10 to 20 c.c. Saline, into the abscess cavity. This is repeated once daily and Penicillin is useful only if secondary infection with Penicillin sensitive organisms is present.

Mortality with this closed drainage is only about 6% while with open drainage it is about 40%.

I had no chance to try Penicillin by systemic administration, neither I have still known it being used successfully in such cases in the absence of secondary infection.

2. *Open-drainage*:—This treatment is indicated only in those cases where—

(1) There is marked secondary infection uncontrollable by chemotherapy and aspiration.

(2) Huge size of abscess, threatening rupture into peritoneum, or in any of the adjacent viscera.

(3) When one fails to aspirate the abscess adequately, either due to: (a) very thick pus; (b) abscess too far from the reach of the needle from axillary space; (c) awkward site of the abscess, where aspiration cannot be done with safety, e.g., abscess of left lobe, abscess pointing in epigastrium, etc.

(4) In cases where it has already burst or when one wants adequate and rapid drainage of pus, so as to minimise the spread of infection. Before doing open-drainage, one has to first locate the site of abscess. This is done by an aspiration needle. The clinical sign such as tender

spot, local pain, local edema crepitus, pleuritic rub, etc., may help to localise the spot but they are by no means final. Localising the abscess site by an aspiration needle is final.

Routes for opening the abscess, are: (1) Transpleural; and (2) Trans-peritoneal. This depends on the situation of the abscess.

1. *Transpleural route*:—This method is to be adopted in all cases where right lobe abscess either threatens to rupture into lung, pleura, etc., or has already done so. The procedure is as follows:—

Under local Novocaine (1 to 2%) infiltration about 1 to 2 inches of rib is resected out. The site is 8th rib in midaxillary space on right side. Before opening the abscess it is advisable to suture up the diaphragm and pleura with thoracic wall above and below to the site of opening, to prevent the infection spreading to pleural cavity and lung. At this stage of the abscess, adhesions between peritoneum, diaphragm and pleura are always present and so the abscess can be opened at the same time without risk of peritoneal spread; but in case no adhesions are detected, then pack the surrounding area with gauze and abscess may be opened after 2 days. Abscess is to be opened with blunt sinus forceps or artery forceps and wide bore drainage tube to be kept for a few days till it serves its function. I had to do the rib-resection and drainage in 8 cases in this series and in all, adhesions were well formed, so that I could open the abscess at the same time.

Simple intercostal drainage is not suitable in these cases, as it fails to drain them adequately.

2. *Trans-peritoneal route*:—This method is adopted when the abscess is pointing in epigastrium or in any place which is too far from right side. Under local infiltration with Novocaine, skin over abscess site is incised for about an inch in longitudinal direction. The abdomen muscles and peritoneum are opened. If there are good adhesions all round the abscess site with liner and parietal peritoneum the abscess may be opened by the usual method, keeping gauze all round and taking utmost precautions to prevent pus spreading all round. If no adhesions are detected, then the area is packed with gauze pieces, keeping a small wide bored tube in the centre, which just touches the liner surface. Within two days adhesions will be formed all round and then abscess may be opened and drainage tube kept. In my series, I have always followed the two stage method, just for the sake of more safety and I could wait for 48 hours more in all as the abscesses were not threatening sudden rupture. I had to resort to this method in 10 cases in this series. All the operative work in these cases was done at Sasoon Hospitals, Poona.

Post-operative care and precautions.—If the discharge is too profuse, the drainage tube may be attached to a sterile bottle with some antiseptic lotion inside. If the abscess is very septic, the cavity may be irrigated with mild Mercurial Antiseptic H. P. lotion 1: 5000; Pencillin 20,000 to 40,000 in an ounce of Saline, put into the cavity, also does much good. In some cases Sulphadiazine solution is also effective, when injected inside the cavity.

When the pus is too thick due to a thick necrotic zone, delimiting the abscess, irrigation should be continued and a ferment known as "Enzymol" one dram in one ounce should be injected inside the cavity to dissolve the thick pus.

After opening the abscess, temperature must fall in few days. If fever persists then think of either multiplicity of abscess, inefficient drainage, severe secondary infection or something concurrent as a complication. Besides this, a course of few I. V. Glucose injections 12½% 50 to 100 c.c. daily along with oral Calcium, Iron, Glucose, Vitamins, etc., is useful to shorten the convalescence. The aim of treatment is chiefly to prevent further damage and complications and to repair the damages that have occurred in the body, due to the disease.

It is advisable to have one more course of Emetine Strychnine in this post-operative period, provided the condition permits.

If patient shows signs of acidosis, Sodabicarb gr. xxx t.d.s. is advised. Liver extract with Vitamin B complex injections daily will be useful to improve the anæmic state of the patient.

Emetine is a protoplasmic poison to the muscles and chiefly to cardiac muscles and so utmost care should be taken when it is being advised. The maximum dose to be given is 1/12 grs. per lb. of wt. During the Emetine treatment, one must keep watch on its toxic symptoms. The toxic effects of Emetine are:—

- (1) Alimentary: (a) nausea; (b) vomiting; and (c) diarrhoea.
- (2) Cardiac: (a) cardio-vascular depression showing low-blood pressure; (b) patient may develop tachycardia, extra systoles, auricular fibrillation; and (c) anginal pains.
- (3) Central N. System:—(a) generalised asthenic; (b) fatigue; (c) extreme muscular weakness; (d) vertigo-giddiness; (e) muscular cramps; (f) paresis of limbs and also of respiratory muscles; and (g) neuritis.
- (4) Kidney:—(a) Scanty urine; and (b) albuminuria, etc.

Treatment of abscess discharging pus through the lung.—The question arises when the case does not improve well inspite of a full course of Emetine, surgical interference is indicated if (1) continued discharge of pus and blood with or without fever; (2) associated with secondary pulmonary complications, e.g., lung abscess; (3) when any cerebral complication is threatening.

In all such cases a watch on body temperature, daily amount of expectoration, and weekly weight should be kept. If the progress is not satisfactory, abscess of liver must be drained from outside.

Treatment of abscess which has ruptured into either peritoneum, pleura or pericardium:—In such cases, particular serous cavity involved must be opened at once and must be treated on general surgical principles.

Merits of treatment methods:—The aspiration method supported with Emetine injections, and Emetine Bismuth Iodide orally, cures majority of patients permanently and without recurrence, provided it is not too late. About 50% cases come in this category. Other early cases may resolve even without frequent aspirations. This constitutes about 25% of the cases. The remaining 25% need operative drainage, and many cases of this group are too late for any other choice. Some have severe secondary infection in addition. We can avoid this surgical procedure provided the cases are detected and diagnosed earlier. Prevention is better than cure and so if all the cases of intestinal amoebiasis undergo adequate treatment, the incidence of this nasty disease will definitely fall. The responsibility lies on the shoulders of general practitioners to convince their

patients about this naked truth but more fault lies with our patients partly due to ignorance and partly due to their economic state. I wish a better outlook in future.

I here take the opportunity to thank the chiefs of my units at Poona and Bombay, and also thank the chiefs of the respective hospitals for the facilities they gave me in all aspects.

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Indian Village Obstetric Emergencies

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(Continued from page 488 of September issue).

Chapter XXI.

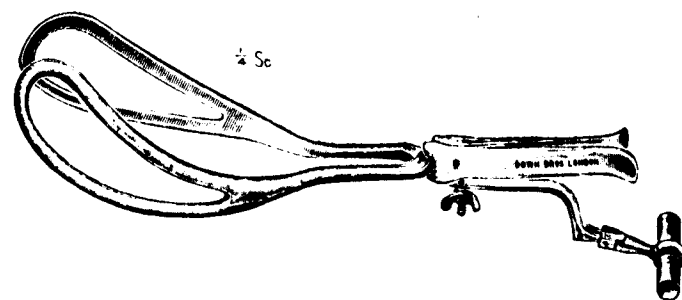
Operations for reducing the size of the foetus.

I. **Maxims.**—1. The use of force to extract an infant by means of the obstetric forceps is equivalent, as far as the child is concerned, to a craniotomy without the advantage of sparing the mother from serious and often fatal damage.

2. Craniotomy is less dangerous than forceps delivery where the soft parts are unprepared, the pelvis is small or the child is large.

3. (a) Where the soft parts are undilated the delivery must be as slow as natural expulsion would be.

(b) It is often possible, with advantage, to perforate the head or eviscerate the trunk and evacuate a large part of the contents or to cut



Forceps described in Chapter XX.

—Courtesy to Messrs. Down Bros,
23 Park Hill Rise, Croydon, Surrey, England.

ceps may be utilised with which to apply light weight traction.

(d) Slow extraction may also be obtained by applying a cranioclast cephalotribe or the three-bladed combined instrument and after it has been successfully locked in position light weight traction is applied by means of a cord from the handles to a weight over the end of the bed.

(e) In the case of an after coming head traction on the trunk is usually sufficient to secure rapid delivery.

(f) Where the pelvis is not contracted slow extraction may be obtained by the application of the obstetric forceps after the perforation of the head.

4. In the absence of a perforator make an opening through a suture or fontanelle with the point of a pair of scissors or a knife. Pressure on the fundus will keep the parts within your reach. Break up the brain matter and septa with any pointed wire or stick you have boiled up and by means of careful suprapubic pressure squeeze out the brain matter until the obstetric forceps will secure easy delivery.

5. Lacking any suitable forceps for traction you may have to risk version so that the legs and trunk may form tractors. You can then perforate the after coming head with any sharp instrument. After breaking up the brain and septa the contents of the skull can be expressed by gentle suprapubic pressure. This suprapubic pressure aided by traction on the trunk may suffice to effect delivery of the head. If it fails bend a suitable length of stout wire into a crook round two fingers, boil it up or flame it and then work the crook through the perforation and hook it into the foramen magnum which will give you means of traction. It may be necessary to make a wide crook for a handle at the other end (see below).

II. **Craniotomy.**—1. *Instruments:*—A perforator or a trephine, if available a three bladed skull crushing forceps, failing this a cranioclast or cephalotribe, embryotomy scissors and the instruments used in the application of the obstetric forceps.

2. *Indications:*—(a) A dead child where forceps extraction or version would be more difficult such as "P.O.P." or "P.M.P." in the hollow of the sacrum.

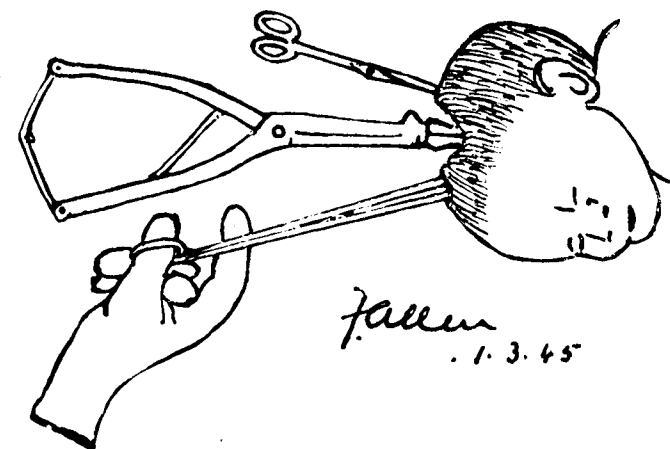
(b) A hydrocephalic infant.

(c) A monster.

(d) When attempts at delivery would risk the death of the mother as well as of the foetus owing to disproportion, tumours and/or prolonged and neglected labour.

3. *Contra indications:*—A conjugate vera under 6.25 cm. (2½ inches). In a pelvis as small as this the operation is one of great difficulty.

A. *Head presentation:*—(a) **CONDITIONS.**—(i) The cervix dilated sufficiently to admit three fingers or else it must be perforated (Chapter XV (III)).



Perforating the Head.

(b) Before commencing work investigate your instruments and articulate the three bladed cranioclast. There should be a mark on the handle of the centre blade to show which way the convexity faces; you must know this since the convexity fits towards the face.

(c) Steps in the operation after the usual preliminaries.

(i) Perforation of the head. The points of the perforator blades must be sharp. Lock the cross bar of the perforator if it has one. Get an assistant to steady the head from above the pubes. Sometimes if the cervix is fully dilated and the head is low it is easy to steady the head by applying the obstetric forceps or where forceps have been applied and fail to aid delivery to leave the forceps applied. Introduce two fingers of your left hand through the cervix up to the head. Pick up the perforator (or in its absence a pair of large sharp pointed long scissors) in your right hand and introduce the points upto the skull along the palmar surface of your left hand and fingers. Some prefer to pass a speculum and do this by sight.

It is better to make the hole in the skull as near the large fontanelle as possible, but in face presentations it may be necessary to perforate through an orbit. It does not matter whether the perforation is through bone or fontanelle but a hole made in bone remains open better. To avoid the risk of the points slipping off the skull and injuring the soft parts of the mother push the point of the instrument, or by a rotary movement bore, through the skull at *right angles* to the surface of the head. The internal fingers must guard the cervix from damage by the blades. Pass the blades of the perforator upto the shoulders. Unlock the cross bar and squeeze the handles together to make a long tear in the skull. Turn the instrument round and make another long tear at right angles to the first. Close the cross bar again and push the blades deep into the skull. Break up all the brain matter and septa by working the blades in all directions inside the skull especially at the base of the skull, to reach which the tough tentorium cerebelli must be pierced. Still protected by the fingers of the left hand withdraw the blades of the perforator from the vagina.

It is not absolutely necessary to douche out the broken-up brain matter. It can be expressed to a great extent by careful supra pubic pressure.

Sometimes perforation alone is sufficient if the head is low and has been held in position by forceps. *Indeed after an unsuccessful attempt at forceps delivery, perforation should be performed before the forceps are removed.*

(ii) (a) Application of the three bladed Cranioclast cum Cephalotribe. On account of the narrowness and weight of the blades great care must be taken that the internal fingers guide the blades to their proper positions and keep them there to avoid slipping.

The head must still be steadied by an assistant and the tips of the fingers of your left hand must be on the head with the dorsum of your hand strongly depressing the perineal body.

Introduce the middle blade through the opening in the skull and push the point into the foramen magnum feeling with the tip of the blade at the base of the skull until it engages, then screw it into the foramen magnum and leave it with the convexity towards the face of the foetus. An assistant must now hold the handle to keep the blade in position.

Select the blade which when in position will fit over the face. Introduce this blade along the palmar surface of the fingers of your left hand to one side of the sacral promontory, being careful that it passes *inside the external "os"* and rotate it into position over the face or chin. Articulate the locks of the 2 blades and tighten the screw after ensuring that only the face is held in the blades. Note that if a good grasp has been obtained on the face by the blade there is considerable resistance to the tightening of the screw.

If there is no resistance take off and reapply the blade over the face and make sure the convexity of the centre blade is towards it.

When the screw has been sufficiently tightened the latch on the handle of the middle blade can be slipped over the stud on the other handle thus securing the lock from opening.

An assistant must now hold the two handles which are already in position.

With the same precautions introduce the third blade on the opposite side of the sacral promontory and rotate it into position over the occiput.

There may be more room laterally for the third blade and then it is sometimes easier to rotate the head on to the blade rather than rotate the blade on to the head.

Articulate the locks and after assuring yourself that nothing except the head is caught in the blades tighten the screw until the latch falls into position over the stud.

Before commencing traction turn the flaps of skin over the edges of bone to avoid the danger of lacerating the vagina.

Beware of twisting the head too much. The uterine lower segment is probably devitalised and will follow the head. Work with care and deliberation. Do not become excited.

If a good grip has been obtained with both external blades the instrument will not slip. It is safer to keep the tips of the index and middle fingers on the skull to ensure that the maternal soft parts are not damaged during the extraction. The direction of traction should be the same as was described for forceps extraction and as far as possible your right hand in making dorsal and downward traction when the head is high must permit natural rotation to take place. If difficulty is encountered when the head is high the grip of the hands on the handles of cranioclast may be as described under the Saxtorph-Galabin method for forceps traction. If the instrument is found to be slipping off the head it must be taken off and reapplied.

After the head is delivered the shoulders may be arrested. Do not use forceful traction. Perform cleidotomy.

(b) *The two bladed cranioclast*:—The two bladed cranioclast is not primarily designed for crushing the foetal head. It is for traction. After you have perforated the head and removed most of the brain matter introduce, through the hole in the skull, the solid blade, guided by the index and middle fingers of your vaginal hand, until its tip reaches the base of the skull. The convexity should be directed towards the face of the foetus if a crushing action is desired. An assistant must hold the handle to keep the blade in position while you introduce the fenestrated blade so that its concavity comes to lie over the convexity of the other blade, care being taken that it passes inside the external "os."

Articulate the locks and screw the handles together. Before commencing traction turn the skin flaps over the bone edges of the perforation.

Make traction in the axis of the pelvic curve while your vaginal fingers guard the mother's soft parts and give timely warning if the blades begin to slip off the head. Allow natural rotation to occur as you pull.

After the head is delivered the shoulders may be arrested. Perform cleidotomy rather than use forceful traction.

Where the pelvis is moderately contracted you will have to tilt the base of the skull forwards or backwards in order to draw it through the brim and a slight twisting motion may help, but beware of twisting the lower uterine segment and vagina.

Where the pelvis is much contracted you will find it necessary to break up the cranial vault. You do this by keeping the solid (*i.e.*, non-fenestrated) blade inside the skull and pushing the fenestrated blade between the bone and the scalp. Lock the blades, screw them tight, twist sharply clockwise and anti-clockwise to break off the piece of bone in the grasp of the blades. Guarded by the vaginal fingers withdraw the blades and release the screw. Repeat this procedure until you have removed sufficient bone for the vault to lie flat against the base of the skull. Your internal hand aided by your external hand must now manoeuvre the face over the brim. You may be able to draw the face through the pelvis after you have hooked the crochet into the foramen magnum. If not apply the cranioclast to the face with the fenestrated blade under the chin, screw up tightly and, with the usual precautions against enclosing the soft parts and slipping, extract.

(c) *The two bladed cephalotribe*:—(Both blades are alike, examine the locks so that you will understand how to obtain articulation).

The object of this instrument is to crush the base of the skull and thus reduce its size.

Introduce the index and middle fingers of one hand into the vagina and guide in one blade, preferably over the face, until the tip of the blade is well home to the base of the skull, *without* including the external "os."

The handle of this first blade must be held in position by an assistant while the second blade is being introduced. To obviate the blades slipping off the head try and apply the blades around the widest circumference of the head, within the external "os."

When both blades are in position articulate the locks and screw the handles together. While this screwing is taking place the blades are liable to slip off the head unless you are vigilant. If the amount of resistance encountered by the screw is small the blades are slipping and the head is not being properly crushed. Take the instrument off and reapply it.

EXTRACTION:—The pelvis likely to call for cephalotripsy is either the flat pelvis due to rickets or the crumpling pelvis due to osteomalacia. Try to ascertain the diameter of greatest narrowing. Turn the handles of the cephalotribe so that the crushed part of the head will fit into the narrowest diameter of the brim.

Before commencing traction turn the skin flaps over the edges of the bone of the perforation.

Traction must be made in the axis of the pelvic curve and your fingers in the vagina must guard the soft parts and warn you if the blades are slipping off the head.

Natural rotation must be allowed to take place as you exert traction.

After you have delivered the head you may have to deal with arrested shoulders. Do not exert powerful traction but have recourse to cleidotomy.

III. The extremely contracted pelvis.—In an extreme case of osteomalacia which cannot be got to hospital you may have to break up the foetal head with scissors or any available instrument and pull out the pieces after tearing them loose. The trunk and limbs will have to be dealt with in a similar manner.

The greatest care and gentleness are required in performing such a dangerous and difficult operation.

IV. The after coming head.—After evisceration, cleidotomy or embryotomy as the case may require, deliver the legs, trunk and shoulders of the child. Have an assistant steady the head by holding the infant's legs or arms, or by supra pubic pressure if decapitation has been performed. Where the head is low it may be held by the obstetric forceps.

Introduce the index and middle fingers of your left hand upto the skull and, protected by these fingers, introduce the points of the perforator.

It is preferable to perforate the vault behind the lowest ear keeping the points at right angles to the skull.

Sometimes it is easier to perforate through the hard plate. If decapitation has been performed it may be easier to turn round the head until the vertex presents. Hold it in position by supra pubic pressure and perforate it as for a head presentation. Open the perforator in one direction to make a long cut and then close and rotate it to make a long cut at right angles to the first cut. Break up the brain matter. If forceps are holding the head extraction may now be possible. If not introduce the hook of the crochet, guarded by the fingers of your left hand, through the hole in the skull, turn the point towards the foramen magnum and aided by very gentle supra pubic pressure draw out the head by combined traction on the limbs or trunk and on the handle of the crochet.

V. Crushing the after coming head.—1. Where perforation as described in IV above is insufficient for delivery insert the central blade of the three bladed crushing forceps or the solid blade of the two bladed cranioclast forceps through the perforation. Turn the convexity towards the infant's face and then insert the appropriate second blade over the face. With due precautions to avoid the inclusion of the mother's soft parts, articulate the lock and tighten the screw. Try extraction with the two blades. If extraction fails divide the soft tissues at the base of the child's neck near the sternum and then sever the vertebral column as near the base of the skull as possible. You have now access for the application of the third blade. Avoid enclosing any of the mother's birth canal within the blades or locks. If you have no third blade break up the vault as described in II (3) (ii b) above.

2. *Where you only possess the two bladed cephalotribe*—After decapitation and extraction of the body and legs by traction on an arm or leg:

Introduce two or more finger tips, as may be required, into the mother's vagina. Place your other hand on her abdomen. By combined manipulations of the two hands turn the foetal head until the face is looking caudally. Hook the crochet behind the child's palate or lower jaw inside its mouth. You have now got the head fixed. Apply the cephalotribe and screw the handles together tightly as described in II (3) (ii-c) above and extract with the precaution mentioned.

VI. Decapitation.—*Instruments*:—A Jardine's hook or long, strong, round pointed scissors.

This is a useful operation in some cases of impacted transverse or shoulder presentation locked twins or double headed monstrosities.

It has the disadvantage that there is no tractor left for the head such as obtains after embryotomy when one arm and shoulder is left attached to the head.

Where there is tonic contraction of the uterus or a marked retraction ring even decapitation is dangerous and evisceration must be substituted. A decapitation hook with guarded point is the safest for the mother but a strong pair of scissors may be used. Curved scissors are preferable.

Sharp projections of bone may cause maternal injury:—If possible bring down an arm with which to draw the neck of the child low into the birth canal.

Introduce the index and middle fingers of one hand into the vagina to protect the external "os" and determine the exact position of the neck. If possible encircle the neck by finger and thumb.

Insinuate the hook along the fingers of the internal hand and protected by these fingers turn the point over the neck. Pass the internal fingers up across the neck and to protect the maternal soft parts from injury. Work the hook to and fro with a sawing motion until the neck is cut through or pull and twist the handle to break the spine and sever the muscles.

If scissors only are available guard the cervix with the fingers of your vaginal hand while you cut through the neck. After using the hook you may have to complete the division of the skin with scissors.

Extract the trunk by traction on an arm or leg if already prolapsed or, where the condition of the uterus makes the search for an arm or leg dangerous, draw the trunk down by inserting a hook into a vertebra.

With your fingers cover the neck to save the vagina from damage by spicules of bone.

To get the body out cleidotomy and possibly evisceration may be called for.

When traction on the lower jaw with a finger in the mouth is not sufficient to deliver the head, gentle supra pubic pressure will be required to steady the head for the application of obstetric forceps or the crushing forceps.

The cranial contents can escape through the vertebral canal. When the two bladed cephalotribe is used perforation is not necessary. Unless you possess the De Lee modification of the three bladed crushing forceps, whereby a washer takes the place of the centre blade, perforation is necessary where you intend using the three bladed instrument, to permit the introduction of the centre blade (see (II) (3) (A) (c) (ii-a) above).

VII. Evisceration (Exenteration).—*Indications*:—1. Transverse and shoulder presentations when the uterus is too tightly contracted to enable an ankle to be drawn out without danger of rupture.

2. Where there are tumours of the thorax or abdomen.

The vagina and the external "os" being guarded by fingers in the vagina, with the perforator or scissors make a large opening in the abdominal or thoracic wall of the infant. You may resect several ribs with advantage. Break up the viscera with your fingers and scoop out the pieces after boring through the diaphragm.

It is often necessary to divide the vertebral column. The extraction of the lower portion of the trunk is easy if an ankle or knee can be reached. Failing which ring forceps must be used to grip the bones of the vertebra. Draw the head down by traction on an arm and if necessary perforate it to facilitate extraction.

VIII. Cleidotomy.—*Indications*:—After craniotomy or evisceration or in breech extraction or with anencephalic monsters when the shoulders are too broad for the pelvis or external "os."

Introduce the index and middle fingers of one hand upto or through the external "os" to protect it where it is not retracted. Get an assistant either to press the child down into the pelvis from above or to pull on the cranioclast or limbs from below.

Search for the more accessible clavicle with your vaginal finger tips. Hold the scissors or the knife in the other hand and, guarded by the fingers in the vagina, introduce the point. With small careful cuts push the points through the skin and soft tissues of the neck until you reach and cut the clavicle. Repeat the operation on the other clavicle. In an exceptional case you will have to bisect the sternum and empty the thorax of its contents. If you have difficulty in the delivery of the trunk bring down an arm on which to pull or pass a hook into one foetal axilla.

IX. Bisection of the foetus in breech labour.—1. Protect the birth canal from injury.

2. Remove one foetal leg by disarticulating it at the hip.
3. Exert traction strongly on the remaining leg.
4. Split the pelvis in half through the pubes and sacrum and remove the legless half.
5. Continue traction on the remaining leg and remove the contents of the abdominal cavity.
6. Perforate the diaphragm and empty the thorax.
7. Bisect the chest and amputate the legless half at the neck.
8. Perforate and crush the head as described in IV and V above.
9. If traction on the leg is ineffectual decapitate to enable the third blade of the crushing forceps to be applied.

(To be continued).

The Food Deficiency and Intestinal Parasitosis* (Anquilostoma and Amœba) in the Ætiology of the Duodenal Ulcer

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SINCE some years the problem of ætio-pathogenesis of the duodenal ulcer has drawn our attention. Due to radiological examinations of the stomach and duodenum and the microscopical examinations of the stools, requested systematically, before the present war, in our hospital clinic (department of medical clinic), we are able to ascertain that, in Goa, in the affections of the digestive tract cases of duodenitis, duodenal ectasis, periduodenitis and duodenal ulcer are frequent enough to call the attention of the practitioner. It seems what Prof. ANES DIAS has observed in Brazil and summarised in a very happy sentence, "*A duodenite, existe em todos os casos de ulcera; ela e, por assim dizer, o pedestal da ulcera,*" occurs here.

* Specially contributed to THE ANTISEPTIC.

Amongst the causes that originate these lesions, errors of diet and intestinal parasitosis (ankylostomiasis and amoebiasis) seem to occupy an important place. The diet of the Goans has a fundamental characteristic; it is the discordance between the total mass of food, which is high, and its protective components, which are deficient. The vitamin B₁ absent, the vitamin A and the carotene reduced to $\frac{1}{2}$, the vitamin C less than half, only the vitamin B₂ approximates nearly to the minimum required; but to the increase of the consume of the carbohydrates must also follow a parallel increase of this vitamin. So, these are, mainly, two conditions *viz.*, on the one hand, excess of the mass constituted by carbohydrates, especially cereals, imposing on the duodenum a surcharge and hyperfunctioning, and, the other, the food deficiency, that brings as a consequence the ectasis and myopragy of the mucosa and helping the parasitic infestation (ankylostoma and amoeba), produce a series of lesions of which the duodenal ulcer represents the last manifestation. And all practitioners know how in ankylostomiasis and amoebiasis the want of food together with the want of digestion produce sprue-like syndromes so rebel to the treatment. It is also to be considered that the intestinal infestation by the ankylostoma and amoeba is, in Goa, relatively high. According to Prof. F. de MELLO its percentage is 35% for amoeba and 32% for ankylostoma (together with necator). Amongst students, in a study made by us in collaboration with Dr. C. BARBOSA, we found the following percentages: Amoeba histolitica (vegetative form) 4%; Cysts of amoeba 6%; Ankylostoma and Necator 24%.

In conclusion and not to fill too much space of this review:

The observations that follow fully afford enough evidence for the hypothesis that in tropical countries, in the ætiology of the duodenal ulcer, we have to take into due account the food factors and intestinal parasitosis (ankylostoma and amoeba).

Observations I. Duodenitis, periduodenitis and ankylostomiasis.—S. P...., since some time post-prandial pains in the epigastric region, about three hours after the meals. Acid eructations, pyrosis, constipation oedema. Examination of the stools—ova of ankylostoma.

X-ray examination—Duodenal cap irregular but always with different shapes. Ectasia of the second portion of the duodenum which is adherent to the lower shadow of the liver. Duodenitis and periduodenitis.

Obs. II. Periduodenitis, syphilis, ankylostomiasis and chronic amoebiasis.—X. X...., paroxistic painful crisis in the epigastric region. The disease has begun some four years ago. Slight post-prandial pains which vanish after taking hot tea.

Since 8 months back his state has become serious. He has quotidian painful crisis which begins three hours after the mid-day meal, compelling him to bend forward. The pains cease after some hour with spontaneous or provoked vomiting, Acid regurgitations, eructations, obstinate constipation. Pain in the duodenal point. Romberg's and Westphal's signs—negative. Blood: hæmoglobin 60%; differential count: neutrophiles 54%; lymphocytes 38%; eosinophiles 5%; monocytes 3%; number of white cells 9,000; number of red cells 3,500,000; Kahn's Test positive. Stool examination—Ova of ankylostoma and Charcot-Leyden crystals.

X-ray examination:—Retroflected duodenal cap. Its contour is irregular and shows always different shapes. Marked ectasia of the second portion of duodenum.

Obs. III. Periduodenitis and ankylostomiasis.—A. J...., intense debility and feeling of burning in the epigastric region, three or four hours after the meals. Pain in the duodenal point. Anæmia. Stool examination—ova of ankylostoma. X-ray examination—Periduodenitis.

Obs. IV. Duodenal ulcer, periduodenitis and ankylostomiasis.—E. T. V...., pain as if pierced with a dagger from the front in the direction of the back, in the epigastric region, three hours after meals, vomiting and constipation with alternative attacks of diarrhoea. He is ill since three years ago. The pain is so violent that it compels the patient to lie on one side (lateral decubitus) curving the back with the legs and thighs drawn up and with the knees pressing the epigastric region. The quotidian rhythm of the pain is of the three period of Moynihan. The painful crises are periodical. In the beginning the periods of ease lasted for weeks and even months. Presently, painful periods last for 15 to 20 days while the duration of ease period does not go beyond four or five days. Frequent melena. Tenderness in the whole epigastric region. Blood examination: hæmoglobin 60 per cent.; number of white cells 6,300; number of red cells 3,400,000. Differential count: neutrophiles 64 per cent.; lymphocytes 27 per cent.; monocytes 5 per cent.; abnormals 4 per cent.; Kahn's test—negative. Stool examination—ova of ankylostoma. Blood test—positive. X-ray examination—Spasm of pylorus. Niche of the duodenal bulb with aspect of trifoliate leaf (niche of the face). Second portion of duodenum adherent to the lower shadow of the liver. Gall bladder badly visualised, after the ingestion of an opaque substance "oral tetragnot"; duodenal ulcer; periduodenitis; colecystitis and pericolecystitis. (This case was published in detail in the ANTISEPTIC, Dec. '39. (By lapse it was not mentioned there as stool examination report).

Obs. V. Duodenal ulcer and chronic amoebiasis.—R. C. N...., epigastric pains and vomitings. The disease has begun some ten years ago. He had a feeling of burning in the epigastric region, attended by pyrosis eructations, which ceased after the meals. Constipation. As the disorders were slight he never asked for treatment. After passing five years the pains became worse taking a rhythm of 3 periods of Moynihan. He had night pains which were relieved after drinking a cup of water. Its period varied from one and half month, and was followed by ease which lasted for 2 to 4 months. In the last five months he had frequent vomitings from 5 to 6 p. m. Gastric succussions and sigmoid chord are present. Pains in the duodenal and solar points. Blood examination: hæmoglobin 70 per cent.; number of red cells 4,260,000; number of white cells 9,000. Differential count: Neutrophiles 61 per cent.; Lymphocytes 39 per cent.; Eosinophiles 1 per cent.; abnormals 1 per cent.; Kahn's test—negative. Stool examination—vegetative amoeba and cysts. Blood test—positive. X-ray examination—deformity of permanent character and with aspect of trifoliate leaf at the level of the duodenal cap. Duodenal ulcer of the anterior face.

Obs. VI. Duodenal ulcer and ankylostomiasis.—S. T. G...., post-prandial pains, four hours after the meals, pyrosis and acid eructations. He has constipation and sometimes diarrhoea. Tenderness in the whole right superior quadrant. He does not know the precise date of the beginning of his disease. Stool examination—ova of ankylostoma.

X-Ray examination—duodenal cap irregular and tender. Ectasis second portion of the duodenum. Adhesions of the same to the lower

shadow of the liver. The serial radiograms taken for pyloro-duodenal region show a permanent deformity at the level of the cap. Duodenal ulcer.

Obs. VII. Duodenal ulcer, periduodenitis and ankylostomiasis.—R. B. A...., complains of acute pains in the epigastric region and a slight relief after the application of the ice bag. The patient is thin, anæmic, and in an impressive state of denutrition. Since two years he does not take food conveniently on account of pains that appear four hours after the meals. This state has been aggravated during recent times. He is constipated. Marked tenderness in whole right superior quadrant. Blood examination: hæmoglobin—75%; number of white cells 6,800; number of red cells 3,880,000; differential count: Neutrophiles 47%; Lymphocytes 60%; Eos. 2%; Basophiles 1%. Stool examination: Ova of ankylostoma. X-ray examination—duodenal cap irregular. Ectasia second portion of the duodenum which is adherent to the lower shadow of the liver. Serial radiograms of the pyloro-duodenal region show the presence of a niche. Duodenal ulcer. Periduodenitis.

Obs. VIII. Duodenal ulcer? Periduodenitis, ankylostomiasis and chronic amœbiasis.—R. S. B...., has been admitted into the hospital in order to see whether he was cured of the duodenal ulcer of which he was suffering since some time ago. Sick since 1934, with epigastric pains, sometimes acute, three hours after the 14 hour's main meal; these pains are relieved by the ingestion of any food, even with a little of coffee. He got examined by many doctors, but the improvement was temporary. In 1937, he suffered from dysentery which lasted for two months. He is anæmic. Normal appetite; but he takes little food in order to avoid nausea and meteorism. He is constipated. Epigastric region tense. Pain in the solar point. Stool examination done in 1940, at the request of his assistant physician, was positive for amœbæ cysts and Charcot-Leyden crystals. Treated with injections of Emetine, Stovarsol tablets, liver extract and irrigations of Permanganate of Potassium. Pains have vanished and the general condition has been much improved. At that time he was examined by me in conference with Dr. Cosonio, his assistant physician, and I diagnosed it as Duodenal ulcer? ankylostomiasis. A new examination of stools showed ova of ankylostoma. Treated with Emetine, Stovarsol, Chenopodium oil. The pains and the anæmia have vanished. On 6th of August 1941, the pains again appeared and the next day he had a copious mæna and slight hæmatemesis. New period of ease, and at 25-9-1941 he is admitted into the hospital to be X-rayed.

Blood examination—hæmoglobin 75%; No. of white cells 5,400; No. of red cells 4,800,000. Differential count: Neutrophiles 46%; Lymph 41%; Eos. 9%; Monoc 4%.

X-ray examination—pyloro-duodenal region strongly shifted outward of the middle line (megabulb). Ectasia of the second portion of the duodenum with anti-peristaltic movements. Duodenitis, periduodenitis.

Obs. IX. Duodenal ulcer and ankylostomiasis.—N. S. G...., married, aged 28, pains in the right hypochondriac and vomiting. Sick since five years ago. He had pains in the right hypochondrium with a feeling of hunger which vanished after the meals (hunger-pain). The disease was periodical: painful crisis lasting about 15 days and ease during three to four days. He has pains and feeling of tension in the right hypochondrium three hours after the mid-day meal; this state aggravated even more when he takes food at 2 o'clock. He feels himself nauseous and at

about 23 o'clock gets abundant acid vomiting and after that the pain ceases. This quotidian rhythm is nearly infallible excepting when he passes large part of the day fasting. Not constipated. Tenderness in the duodenal and solar points. Blood examination: hæmoglobin 85%; No. of white cells 8,900; No. of red cells 4,600,000; differential count: neutrophiles 44%; lymphocytes 40%; eos. 7%; basoph 2%; abnormals 7%. Stool examination—ova of ankylostoma and ascaris.

X-ray examination—pyloro-duodenal region shifted outward of the middle line, projecting under the hepatic shadow and adherent to the same. Duodenal bulb deformed with its contour irregular and tender. Radiological signs suggest duodenal ulcer of sclerosant type.

Conclusion.—We are convinced, basing on some years' experience, that in tropical countries it is convenient to add to the different causes already suggested by authors as causes of duodenal ulcer, food deficiency and intestinal parasitosis (ankylostoma and amœbiasis). We will be very glad to see further investigations on the same subject confirming our hypothesis.

Use of Magnesium Sulphate in Unhealthy Ulcers and Sores*

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Introduction.—It was last year after heavy rains in the months of June, July and August that I got an opportunity to try the efficacy of Magnesium Sulphate in a very typical and bad type of ulcers like Delhi-sore, which suddenly appeared, so to say, in an epidemic form round about the place of my practice. The peculiarity of the ulcers was that they were well margined, having raised and everted margins and an unhealthy centre, whence came unlimited quantity of rather foul smelling pussy discharge. They were painful to touch and the pain was usually excessive, sometimes even unbearable during still hours of the night, presumably due to calmness. Only a few patients got temperature or suffered from any other constitutional disturbance.

Causes.—The close and detailed study of the history of the cases revealed that the ulcers were common among the poorer classes and, as a rule, confined to children who had exposed themselves to and played about in the rains. Such ulcers in the case of elders were rare. They were generally confined to the maleolar areas, feet and lower one-third portion of legs. Therefore stagnant water and soil contamination were the possible sources of infection.

Old treatment.—My previous line of treatment in the case of such indolent type of ulcers was to scrape the ulcers thoroughly including their margins with a scoop under Ethyl Chloride spray till the ulcer was rid of all the debris and, to some extent, it bled freely. On that day I used to touch the bed and margins of the ulcer with pure Carbolic and dressed it either with Acriflavine or Mercurochrome in spirit. From the next day onwards, I used to dress the ulcer with Sulphanilamide ointment.

New treatment.—But during the period under reference, the children with ulcers came in such large numbers that I felt embarrassed and nervous

* Specially contributed to THE ANTISEPTIC.

and thought it rather cruel, tedious and time-consuming to carry on such a painful and fear-arousing treatment of ulcers as scraping. In the first instance, I therefore dropped altogether the item of scraping from the programme of treatment of ulcers described above. Instead I began to dress the ulcers with Sulphanilamide powder after touching them with Carbolic, Silver Nitrate or Cupprum Sulph (Copper) but to my disappointment and regret, I found that the discharge would not decrease and the pain too did not abate.

It then occurred to me that, like the other systems of human machinery, which, before correction required purging when at fault, *e.g.*, purge for bowel troubles, cholagogue for gall bladder, diuretic for kidneys, castor oil for eyesore, etc., the use of Epsom salt might help me to get rid of the discharge and to clean the ulcer of the unhealthy granulation.

As the cases came to me rather late and their ulcers were often covered with thick crusts, I made it a routine practice to give to patients a poultice comprising borax, charcoal and sugar in equal parts and starch double the quantity of the first three components, which were mixed together in milk and cooked on fire. This poultice was applied fresh each time and while hot to the ulcers morning and evening. The next day, the patients came with open ulcers discharging thick pus freely and profusely. I then cleaned them with Acriflavine in spirit, stuffed them completely with thinly powdered Magnesium Sulphate, and bandaged them. In bad cases I, of course, changed the dressings morning and evening. By this kind of dressing, the patients used to get sound sleep at night time; they however complained of smarting for a few hours after the dressing. I continued the Magnesium Sulphate dressing in this way till the discharge was reduced to the minimum. Afterwards I touched the margins as well as the bed of the ulcers with the saturated solution of Silver Nitrate and dressed them with Magnesium Sulphate and Sulphanilamide powder mixed in equal parts till the wound showed tendency to heal up and margins became flat and began to converge. Excepting an occasional touching with 10% or 20% Silver Nitrate solution, I applied to the ulcers an ointment containing Zinc Oxide, Mercurchrome, Tr. Iodine and Sulphanilamide powder. This kind and method of treatment brought about cure of the ulcers completely and successfully in all the cases under my treatment.

Those cases which ran temperature and presented some small multiple ulcers were kept on Sulphanilamide tablets and Sodibicarb with Milk of Magnesia internally along with the above mentioned line of treatment externally.

Ozæna*

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Synonym.—Chronic atrophic rhinitis.

Definition.—It is a disease characterised by the atrophy of the nasal mucous membrane accompanied by the formation of a crusty discharge possessing characteristic foetid odour.

Etiology.—1. Age—5 to 12 years.

2. Sex—commoner in females than males.

3. Status—commoner in poor class of people.

* Specially contributed to THE ANTISEPTIC.

4. Exciting cause—unknown.

5. Suggestive causes—(a) syphilis; (b) tuberculosis; (c) nasal sinus infection; (d) chronic purulent rhinitis in infancy.

6. Causative organisms—(a) Klebs-Löffler's bacillus; (b) *cocco bacillus foetidus* of Peraz; (c) *cocco bacillus mucosus* of Beeritz.

7. Contagious and hereditary.

8. Peculiar physiognomy: (a) skull brachycephalic; (b) nose wide and flat-nostrils broad and so directed forwards; and (c) usually unilateral—the nasal septum in this case is deflected and the disease occurs on the wider side.

Clinical picture.—1. Foul smelling, purulent crusty discharge.

2. Anosmia.

3. Ill-health due to absorption of toxic materials.

4. The inner side of the nose full of crusts, inferior turbinates reduced to mere ridges, nasal mucosa pale and thin, the crushing discharge causes partial obstruction to respiration, actual nasal cavity much widened owing to the atrophy of the mucous membrane; through the widened nasal passages the body of the sphenoid and the wall of the pharynx are plainly visible.

Pathology.—Due to chronic inflammation, there is sclerosis and atrophy of the nasal mucous membrane, the ciliated epithelium is replaced by the squamous, the glands and the venous sinuses of the mucosa are degenerated and the latter may disappear altogether. These changes are more marked in the inferior turbinates, the middle turbinates being frequently enlarged and oedematous. The offensive discharge is not frank pus but the mucous precipitated by evaporation mixed with shed epithelial cells and teeming with micro-organisms. This collects and dries into the large greenish black crusts which give rise to peculiar sweetish and horribly offensive odour. There is never true ulceration or necrosis of the bone but it may possibly be atrophied. The infection may spread backwards in the naso-pharynx and pharynx and even the trachea may be involved.

Prognosis.—The condition is incurable; if detected earlier and treatment commenced, chances of recovery may be expected. Regular treatment in delayed cases will keep the patient in inoffensive condition.

Complications.—1. aural: (a) tinnitus; and (b) catarrhal and suppurative otitis.

2. Nasal: (a) sinusitis; and (b) suppuration of sphenoidal or posterior ethmoidal cells.

3. Respiratory: (a) laryngitis sicca; (b) chronic tracheitis; and (c) pulmonary tuberculosis.

Treatment.—1. General: (a) Treatment to be carried every day for long periods.

(b) Keep the nose clean and free from crusts.

(c) Tonics, Cod-liver oil, change of air to sea-side to improve general health and anæmia.

2. Local: (a) Regular irrigation of the nose once or twice daily with (bland) Alkaline solution to remove all the crusts; but extensive douching is to be avoided as this may lead to irritation and further discomfort. A weak Boric lotion (1 in 60) or Normal Saline may also be used for the purpose.

(b) Paint 25% Glucose in Glycerine over the nasal mucosa with cotton wool swabs on a probe 5 to 6 times daily. Of the patent preparations Gluco-fedrin, Endrine or Mistol may be used conveniently for the purpose.

(c) Pack the nose for 20 minutes with ribbon gauze soaked in Glycerine (as it provokes the flow of mucous which can be syringed out subsequently). The plugs should be loosely inserted into the anterior nares to be changed twice daily. On removal, many of the crusts will come out, the remaining may be removed under direct vision.

(d) Coarse spray or by irrigating each side of the nostrils with a special glass irrigator.

(e) After cleansing, spray the nasal cavity with an oily solution to protect the mucous membrane and thus delay the crust formation. For this purpose, Liquid Paraffin with Menthol or oil Eucalyptus (m xv to an ounce) will do. The mucous membrane is thus covered with a lubricant which is capable of secreting itself.

(f) Spray the nasal cavity with Oestradiol in oil (O.S.C.C. of a solution containing 5 mg. per c.c.) daily. When improvement is noticed, carry on alternate days and then lengthen the period gradually according to the progress till the spray is used once weekly or fortnightly.

(g) Paraffin wax may be injected under nasal mucosa to narrow the nasal passage but it is liable to slough out and hence a piece of costal cartilage is implanted with the same view.

(h) (i) For nasal douche :

(a) $\mathcal{R}$ Sodii Bicarb ... gr. vi	(b) $\mathcal{R}$ Phenol ... 1
Acid Boric ... gr. vi	Liq. Iodi Mitis ... 1
Phenol ... gr. ii	Acid Boric ... 2
Sucrose ... gr. x	Aqua Camphora to 100
Aqua dest. ... $\frac{3}{4}$ i	

(ii) For nasal spray :

(a) $\mathcal{R}$ Menthol ... gr. v	(b) $\mathcal{R}$ Dichloramine ... T 8
Chlorbutol ... gr. xv	Chlorosane ... 92
Paraffin Liq. ... $\frac{3}{4}$ i	

(iii) For nasal insufflation.

$\mathcal{R}$ Iodoformum ... gr. xxx
Acid Boric ... gr. xxx
Morphine Acetas ... gr. $\frac{1}{4}$

3. Surgical—plastic operation to shift the antero-nasal walls inwards—submucous grafting of a piece of rib cartilage.

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Cases and Comments

An Undiagnosed Case

D. G. CHOURIKAR,

Regd. Medical Practitioner, WUN (Berar).

A MALE patient, aged 32 years, and a relative of mine, came from his village to see his relatives here on the evening of 31st August last. He had absolutely no complaints when he arrived here, except that of pain in his right testicle which was slightly swollen. This, he thought, may be due to the jerks and troubles of the bullock-cart journey of about 15 miles. So he did not mind it and attended to his engagements in the town. He gave also one lecture before one of the Ganapathi festivals at night and while coming back to his resting place at about 11 p.m., he got severe chill on the way. He managed, anyhow, to come to his bed. Soon after this, he got 2 or 3 vomits followed by temperature which according to his version might be between 102°F. and 103°F. He passed the night with this temperature and next morning I was sent for.

When I first examined him at about 9-30 a.m. on the 1st of September I saw the patient in the following condition:—

Temp.—103°F.; patient complaining of pain all over his body, specially marked in the right-scrotum which was tender and swollen; pulse—regular and was keeping with the temperature. Bowels constipated, tongue—coated and furred.

Taking into consideration the present history I put him on Tr. Cinchonna and Sodii. Salicylas mixture. Antiphlogestine was applied to the swollen scrotum. At about 4 p.m. his brother came to me stating that the temp. was 105°F. and that the patient was restless. I gave 3 pints soap water enema with a little castor oil in it and unloaded the bowels. At 7 in the evening the temperature came down to 102°F. I left the patient, thinking the temperature may come down now. At 10 p.m., before going to bed, I went to the patient in order to give instructions to the attendants for the night. But this time to my great surprise I saw the patient taking serious turn all of a sudden. He could not take milk easily and when I called him by his name he could not utter the words distinctly, the tongue showing signs of paralysis. He was on senses. The pulse was small, with low tension. I gave Digitalis 1/100 gr. at once and called for consultation another doctor. He came down at about 11 p.m. and saw the patient with the temperature 103°F.; he was losing the power of articulation, has started watery diarrhoea with great offensive smell. He was not unconscious but was very much restless. 10 grs. of Quinine Bi-Hydrochlor was given intramuscularly at 12-30 (night). The condition remained unchanged throughout the night. He was restless and used to scream with the touch to the affected scrotum. The pulse was slightly improved with the digitaline given before Quinine injection. But in the early morning of 2nd September the condition of the patient became still more worse, the pulse again thready, low tension, temperature 102°F. Diarrhoea less marked but the restlessness was still there; the patient was semi-conscious, the power of speech completely gone. Another physician of the town was called for consultation. At 11 a.m. Hexamine 10 grs. Sodii. Iodide 7½ grs. with Glucose 20 c.c. was given I.V. which was repeated at 2 p.m., but no change for the better was seen. The condition became still worse and

{ 575 }

the patient showed signs of collapse, the temperature remained between 102°F. and 103°F. till the last and the poor young man breathed his last at about 4-30 p.m. after 40 hours of illness.

Points to be marked:—(1) Orchitis marked first time, no such complaints during his life time. (2) Loss of power of articulation within 24 hours of onset. (3) Diarrhoea with very offensive smell. (4) The state of semi-consciousness. (5) No hyperpyrexia. (6) No history of previous attacks of malaria.

A Case of Cerebrospinal Meningitis

P. C. DAKSHINAMURTHI, L.M.P.,
Rural Medical Practitioner, Timiri (Via) Arcot. N. A. Dt.

My elder brother's son named S., aged about 11 years, was having slight fever (ranging from 99° to 100°F.) from 7-3-'45, to 9-3-'45. He was acutely suffering from constipation and stomatitis. So, my elder brother who happens to be a native doctor gave him a purgative on 7-3-'45, after which he had about 3-4 motions, the temperature however was persisting in the same level.

On 11-3-'45, suddenly at about 3 p.m. I was sent for (my place of residence is about 10 miles away from my brother's). Then, I went to the place and found the following clinical picture.

Temp: 102° F.; pulse 110; resp. 20; skin perspiring; eyes-red and reacting to light.

Bowels:—Acutely constipated, as he had no motions after 7-3-45. Acute stomatitis in the mouth; saders on the teeth; tongue was coated; slight vomiting; takes only sips of water with difficulty.

Respiration:—Nothing abnormal.

Circulation:—Pulse is rapid, but normal; heart sounds: no abnormal sound.

Liver and spleen:—Normal.

Urine:—Scanty, yellow coloured.

Nervous symptoms:—Semi-conscious; replying only to few questions; no sleep for the last 32 hours; getting and running about in the room; tearing his clothes; lifting his hand etc. Slight rigidity of the neck.

Reflexes:—All normal.

At once, I gave one S. W. enema, which gave no good result. I tried another one, which also failed. Bladder was empty.

Hot turpentine stupes to the abdomen was given. At 5 p.m. I gave 10 c.c. of 12½% solution of Glucose I. V. + Hexamine.

At 9 p.m. I gave 1/100 gr. of Hyoscine Hydrobromide. No rest, even after ½ hour.

At 12 midnight, I was forced to give a Bromide mixture. He had a slight nap till 3 a.m.; again, everything relapsed as usual and temperature was 101°F.

I gave the following mixture: Diuretica, Am. Chl., Mag. Sulph, Soda Salicylas, Pot-Bromide; with Sulphanilamide tablets—two every 3 hours with each dose of the mixture and Soluseptasine I. M. No effect.

12-3-'45:—No motion. Patient was in the same condition. So, at 9 p.m. I gave another injection of Hyoscine Hydrobrom with Sodium soluble of M. & B 693 (I. M.).

Oct. '45]

13-3-'45:—7 a.m. the boy woke up with bright face, and the temperature was 99°F. Repeated the same mixture, Glucose and Hexamine I. V. and M & B 693 tab. 2 every 4 hours orally. At 6 p.m. he passed two hard scybella.

14-3-'45:—6 a.m. he was given (Mix. Mag. Sulph. + Jalap) and had 4 broad loose motions and temperature normal and gradually the boy improved.

Rat-Bite Fever

REVESHANKER P. KAMDAR,
Sub-Asst. Surgeon Gondal, Kathiawar.

S., aged 23, got fever with swellings on the lower part of right elbow, left scapular region, right buttock and crest of right ileum.

Previous history.—She had a rat-bite nearly ten months ago on the right index finger which was not noticed. During the last ten months she had no complaint.

Present condition.—The present illness started all of a sudden on the 1st of June 1945 with a swelling near the right elbow. During the night she got fever and complained of pain all over the body. She got swelling on the lower part of the right elbow, left scapular region, right buttock and crest of right ileum.

Physical examination.—Temperature 103° to 105°F.; pulse 104 to 110 with slight change during day and night. There were nodular swellings on the lower part of right elbow, left scapular region, right buttock and crest of right ileum. Nothing particular with the heart condition. During the whole illness, pulse was 104 to 110 though the temperature was 105°F. Lungs were normal. Movement was very painful and she could not move without help.

Clinical test.—*Blood examination:*—Total W.B.C. 12,500, Poly Morph. Nuclear 80 %. R.B.C. 4,20,000. Kahn's Test—Negative. No spirillum minus organisms of rat-bite fever was found in blood films also. Urine normal except slight phosphate.

The swelling gradually increased in size. In the beginning they were hard, painful and as big as a small lemon; but in a fortnight they increased in size to that of an orange. Even though Cibazol and Penicillin were given, scapular swelling increased in size and suppurated which was opened and pus was let out. The wound was dressed with Penicillin solution and Cibazol powder and it healed up in a week. Even after opening the abscess, temp. did not come down and remained as high as 103°F.; 104°F. She began to lose strength, pulse became very weak and soft, and she became anæmic. Right shoulder joint, left axilla were swollen after four weeks of illness.

Treatment.—Just from the beginning of the illness, Cibazol (six tablets a day) was given with alkaline mixture. Nearly sixty tablets were given which did no good. After that, total amount of Penicillin 2,30,000 units was injected intramuscularly during three days. It also gave no improvement. Then colossal Iodine intramuscularly and orally was given. For heart, Coramine was given. For swelling, Glycerine Belladonna, Icthyol, Iodex, Antiphlogestine were applied.

I consulted many doctors but they did not agree that it was rat-bite fever as rat-bite was ten months ago. They diagnosed pyæmic abscess or subacute endocarditis due to septic focus somewhere.

Dr. G. A. DOSHI, M.B.B.S., having found nodular swelling near the right elbow, was in favour of rat-bite fever.

As the case was getting very weak and serious, N. A. B. was injected after five weeks of illness. By the end of the week, the temperature dropped to 100 and second injection was given and on the third day, temp. came to normal and all the nodular swellings gradually subsided.

Conclusion.—The case remained undiagnosed. Large quantity of Cibazol and Penicillin did no good. Blood examination gave no light. At last the case becoming very serious, and having tried all the drugs, N. A. B. was injected. The importance of giving the case in the journal is that rat-bite fever occurred ten months after rat-bite and N.A.B. gave her new life.

Bubonic Plague

PURAN CHANDERA BAUSAL, L.S.M.F., (Ph).

Medical Officer Saravathi Sugar Mills Ltd., Abdullapur. (Ambala).

AMONGST the acute infectious diseases plague and smallpox are feared to be very terrible and deadly by laymen. Since the use of the chemo-therapeutics the panic and the outlook on each of the diseases have much favourably improved.

I produce here a short history, signs and symptoms with the routine line of treatment given by me in about 2 doz. of cases in the present plague epidemic during the last two months. I venture to say that I am convinced with the high rate of cure with the present chemo-therapeutics as a sure specific. The cases in the infancy of an epidemic are generally more acute and toxic.

History.—The patient is suddenly taken ill with fever 103-105 ° F.; with the feeling of malaise in the limbs, back; nausea, vomiting; prostration; dryness of mouth; impaired consciousness with inco-ordination of gait and speech.

Within 12-24 hrs. there is feeling of acute severe pain; redness and tenderness in the groin (67%), armpit (22%), neck (11%). In the next 24 hours intensity of pain, redness, subcutaneous oedema, tenderness with the enlarged soft swelling developed (bubo) which attained the height in the next 24 hrs. (72 hrs.)

The degree of toxæmia, unconsciousness and myocardic weakness increases with the increase in the local bubo.

Signs.—Face is dusky, eyes congested (LAYMON recognises this as the cardinal sign of plague onset in the epidemic), expression wild; with alae nasi working; Temp. 103-105°F.; pulse 104-112; low tension frequent; respiration 32-40; bowel constipated; tongue dry; lying prostrated; no. T.L.C. was done as sucking was not liked but there is definite leucocytosis. The D.L.C. averages to 70-80% of the polymorph.

Both sexes are equally affected. My series of cases are adults, youngest being 12 years, and the oldest 54 yrs.

Complications.—Usually none, except myocardial weakness—2 cases showed associated symptoms of lobar pneumonia with hæmoptisis in plenty; (cured) (no sputum for B. Pestis was examined)—1 case showed signs of malaria, was treated on anti-malarial lines along with (cured).

case temperature behaved like paratyphoid coming to normal on the 11th day (para-typhoid infection is present in this part); 1 case after initial bubo in the left axilla developed 5 days after gangrenous septic (both) tonsils, died in 3 hours of examination of cardiac; respiratory failure and dehydration.

Mortality.—The mortality in cases with myocardic failure; toxæmia; dehydration (septicæmic cases) unconsciousness with no opportunity of time to get the bubos except to point the seat of pain (No local signs) is 100% within 12-24 hrs. (within 8 hrs. of examination) The cases who developed definite bubo were diagnosed clinically and were cured even in the presence of above complications.

Treatment.—(1. Initial dose of Castor Oil 1-2 oz. (2) Injection Soluseptasine 10% 10 c.c. deep intra muscular. (3) Coramine 1.5 cc. 1 or 2 amp. mixed with No. 2. (4) Glucose 12½—25%, 25 cc. mixed with No. 3 or plain—only used in three cases. (5) M.B. 760, 4 tab. to start; 2 tab. every 4 hrs. day and night preceded by a powder of Sodi Bicarb gr. 20 with Glucose orange and cal powd gr. 60 (Allenhunbury). (6) Glucose or Dextrosol 4 oz. per day. (7) Orange juice of 4.6 mixed with Glucose and boiled water, munakka water (dried grapes) 15-20 boiled in water and strained mixed with orange juice. (8) Boiled water 2½-4 srs. night and day. (9) Mixture as:—

Pot citras	... gr. 60	Coramine	... m 30-90
Sod. Bicarb	... gr. 60	Syr.	... m 240
Spt. Ammon Arromat	... m 60	Aq desti or camp	... 3 4
Tr Digitalis	... m 30-60	Sig 1 dose 4-6 hourly.	

Next day:—Same treatment as first day. Soluseptasine inj. supplemented only in 50% cases. 2 tab 4 hourly. etc. etc.

3rd day:—Same treatment, no inj., last tab at 10 p.m. & restart at 4-6 a.m. In some cases as on the 2nd day.

4th day:—The treatment carried out according to the temp. cardiac condition, general condition. The chemotherapeutics continued for 3 days after the temp. is normal.

Local treatment with Anti or Biphlogistine locally changed every 8 hrs. till there is temp. Icthyol Belladonna locally after this till there is decrease of fair tenderness; and then Iodine oint. 1% locally and dry fomentation. Suppuration is rare, only 1 case suppurated and 1 case with haphazard irregular treatment also suppurated.

There may be no fall in the temperature or general condition or even the toxicity may increase for the first 24 hrs. Later the temp. begins to fall but very slowly; the general condition begins to improve; patient getting more rational.

The gland generally subsides in 15-20 days; pain first decreases; the redness follows and the swelling gradually subsides.

Most of the cases were treated with M. B. 760; rarely a change to Sul-fadiazine and Prontosil white (original) was made.

There had been no toxic reactions of the drugs except in few cases of retching and vomiting; anuria occurred in a few cases temporarily but could be easily managed with alkalis water and glucose.

Thanks to the chemotherapeutics that the outlook for such a deadly (Blackdeath) disease has become very bright.

Penicillin in Corneal Ulcers

DR. K. KRISHNAMOORTHY,
Ophthalmic Surgeon, Chodavaram.

EXPERIMENTS were conducted with Penicillin alone and with Sulphonamides for various ulcers of the cornea and the following conclusions were arrived at:

Corneal ulcers as a result of foreign bodies.

After the foreign bodies are removed the eye is washed thoroughly with warm Saline, Atrophine 1% is dropped and an ointment consisting of pure Penicillin is applied and bandaged. This is repeated three times a day and a clinical cure is noticed within three days.

Corneal ulcer as a result of catarrhal conjunctivitis:—Frequent warm Saline wash, Atropine drops, Penicillin cum Sulphathiazole eye ointment six times a day will suffice and give a cure within 4 days.

Corneal ulcer due to trachoma:—Silver Nitrate touchings on alternate days. Atropine drops, Penicillin cum Sulphanilamide six times a day will give very good results by the end of a week. Sulphanilamide by mouth is also indicated for a week if the condition is acute.

Corneal ulcer (Chronic)—Atropine drops, Penicillin cum yellow oxide of mercury six times a day will improve the clinical conditions.

Corneal ulcers due to gonococcal and pneumococcal organisms:—Frequent warm saline wash, Atropine drops, Penicillin cum Sulphathiazole or Sulphadiazine ointment applied locally gives very good results.

Penicillin injections, M & B 693 by mouth and milk protein injections are also advised when necessary.

Corneal ulcer with hypopyon:—This is one of the most intractable ulcer diseases which often ends in complete blindness. After the advent of Sulphathiazole, Sulphadiazine and Sulphapyridine results were better but after the advent of Penicillin 75% of the cases were successful.

The following is the method adopted in the L. N. Hospital. After cocaineisation and warm saline wash, inject subconjunctively 1 to 2 c. c. of this for 3 days. You will find dramatically on the 4th day the disappearance of pus in the anterior chamber with less pain and general improvement in the eye. Stop Penicillin injections but put Atropine drops and Penicillin ointment 4 times a day for 4 or 5 days. Later Dionine 5% drops. Atropine and Penicillin cum yellow oxide of mercury is advised for complete disappearance of opacities and the restoration of the normal condition of the eye.

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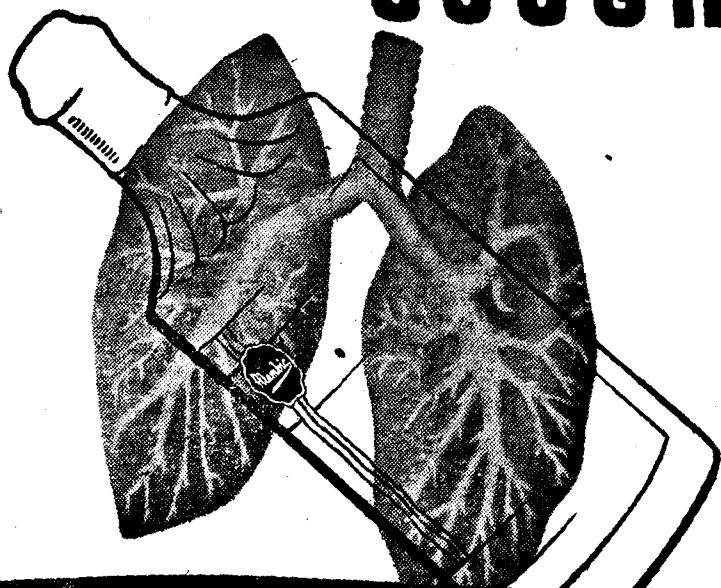
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The War Is Over

WHAT started, in the words of the Japanese militarists, as a small affair in China, culminated, thanks to the various acts of commission and omission on the part of the big powers which controlled the old League of Nations, in a global War, bringing devastation to many parts of the earth and desolation to many a home. There was not a single country, belligerent, non-belligerent or neutral, which did not feel the horrors of this Armageddon. This war is now happily over. Peace is now in the making. One may not agree with the view expressed by an European scientist in the first decade of this century that war is a biologic necessity. But there is some truth in the view held by some people that, looked at from a higher plane, war is not an unmixed curse. We have witnessed with our own eyes and heard with our own ears, the terrible ravages of this war, and suffered in one way or the other from the horrible effects of it; that is to say, we have had enough of the dark side of it. On the other hand, it had been productive of some good at least; it had helped considerably to remove many misapprehensions. The best traits of the people have been brought out by this war; young men from our country have shown to the world that they are second to none in the world from the point of view of military valour, and they have achieved for themselves and their country glories unknown so far. This is especially creditable since a large section of our countrymen have been so far dubbed by the powers-that-be as non-militarists, incapable of defending their country. We have also seen that war is merely a normal reaction to the rottenness which existed in the social structure during peace time. How are we to utilise the talents that have so far been allowed to remain dormant to the best advantage of the country, and how are we to eradicate the evils that have become patent on the surface, are the problems that are now facing the country.

It is an axiom that only a National Government, responsible to the people and enjoying their full confidence and support, can successfully carry through measures of far-reaching importance to make the country take its rightful place among the comity of nations. Even the British Government have been compelled to accept it by force of circumstances, and the Labour Party, which is now installed in power in Britain, has promised to give effect to it at an early date. LORD PETHICK LAWRENCE, the Secretary of State

[581]

for India, it is reported, is contemplating a visit to India to confer with leaders of public opinion with a view to enable the British Government to implement their promises to India. We are not optimists in the sense that we place full trust in every one of the statements or declarations made by the British Government in regard to India as gospels, since our experience in the past had been most painful in this respect. But whatever be the political future of this country, there is no gainsaying the fact that far-reaching reforms in the body politic are immediately and urgently called for to place the country on a sound footing and to prevent serious crises developing in various fields.

We shall confine our remarks to the field of Medicine and Public Health with which we are directly concerned. The demobilisation of the armed forces of the country as a result of the termination of this Great War, will result in a large number of medical men being thrown out of employment. In the past, with a view to recruit large number of medical men to serve the armed forces, the Government of the day offered attractive terms, and a large number of medical men have joined the armed forces in response to this call to serve the country. The high scales of pay and other amenities offered have accustomed them to a high standard of living which it will not be possible for them to maintain when they revert to their original position, or to civil life, unless the Government implement their previous promises. It will be the duty of the Government to absorb all of them in the Civil and Public Health services and to help them maintain the present standards of living to which they have prepared them by paying them in their civil lives a salary which is reasonable and sufficient. To let these medical men shift for themselves, will be cruel. In the last War this catastrophe did take place and to this day there are medical men who, after demobilisation, were allowed to look after their own interests and are even now suffering for their "patriotic services."

There should, however, be no difficulty for the Government in this matter. If India is to maintain her position as a powerful nation in this world, as an equal partner with other nations, and if she is to be able to safeguard herself from attacks from any quarter, her army, navy and airforce should be enormously strengthened. This is the most opportune time to create a National Army composed solely of Indians who have proved their worth in the present war. This National Army, if it is to be created, will require a large number of medical men to look after it. Instead of disbanding the I.A.M.C. and such other organisations, the Government would do well to retain many of these doctors and to transfer them to the regular army. In this way two purposes can be achieved: (1) provision of suitable jobs for the present temporary medical personnel; and (2) the creation of a medical service sufficient to meet the needs of the armed forces.

Many of the post-war reconstruction schemes of the Government may require a large number of medical men for Public Health work. We are sure the Health and Rehabilitation Committee presided over by Sir JOSEPH BHOORE, whose report is eagerly awaited, will make recommendations which will require the services of a large number of medical men for public health work.

We also note that the Government is contemplating starting of post-war industries and also a huge programme of ship-building and aircraft manufacture. These and other industries may require a large number

of medical men to look after the workmen employed in these industries. Up to now, most of the industrial concerns have not paid sufficient attention to the employment of medical men to look after their employees. But the experience gained during the present war in America and England, which were able to double and even treble the efficiency of their workmen by proper medical attention, will surely be an eye-opener to Indian industrialists and Government. Medical men will therefore have a large scope, if they are employed in these industries. It is true that they may require some special training for this work.

Medical education in the future will therefore have to receive considerable attention. Many of the doctors who have volunteered for war service and who have not had much chance for doing post-graduate work, will, when they return to civil life or even otherwise, be benefited by attending post-graduate courses in the various teaching centres of this country. Their experiences of War Surgery and Medicine and Public Health coupled with what they learn in the big teaching centres of this country, will enable them to become capable and efficient doctors. We are sure the Government will make sufficient provision for this training.

We have on many a previous occasion stressed the necessity for increasing the number of medical colleges in this country with a view firstly to enable more medical men to be produced to cope with the increasing demand of the country, and also to remove the extremely unjust and unjustifiable refusal of admissions for many deserving candidates in the medical colleges. There is no doubt that we, in India, have perhaps the largest population head per doctor, in any part of the world, perhaps barring China, and it is high time that the Government pay serious attention to the provision of medical relief to the teeming millions of India.

The question of the kind of medical education that is to be imparted to meet the requirements of this country must also receive due consideration. Even in countries like England, where considerable advance has been made, there is a growing opinion that the education imparted is not of the type that is required to meet the present day needs, and demand is made for a thorough overhaul of the present system of medical education. The recommendations of the Royal College of Physicians on Medical Education (*Goodenough Report*, 1944) are designed to correct throughout the United Kingdom the defects reported. The implementation of the recommendations will make medical education there an organic whole entirely under the University and guided by the same principle of full time teachers in the clinical fields as has already been in force in the pre-clinical subjects. Within these organisational trends are also two trends of significant orientation which are (1) emphasis on prevention of disease in the syllabus, and (2) re-orientation of the syllabus to prepare the doctor or general practitioner to get into a system of collective organisation for provision by the State of preventive and curative medical services, which formerly was considered the private responsibility of the individual to serve for himself. These trends derive from increasing acknowledgment by Government or State of responsibility to provide social security which includes medical protection. In their Interim Report the Royal College of Physicians have also recommended the lines upon which these two trends may be implemented. They envisage the establishment in University Medical Colleges of Departments of Social and Preventive Medicine. The essential features of the curriculum are indicated under three

heads, *i.e.* theoretical, practical, and social aspects, with the end that the aim of instruction should be (a) to indicate to the student some of the personal, industrial and social factors which contribute to the causation of human disease, (b) to demonstrate the structure and working of the preventive and remedial organisations provided by public and voluntary causal factors, and (c) to train him in the practice of social investigation so that he may be able, in the practice of his profession, to use the appropriate social technique to reinforce his therapy. We still await the report of the Bhoré Committee to find if they have made any recommendations in these directions.

Allied to this is the problem of drugs and drug control and the establishment of the pharmaceutical industry in the country on a solid foundation. The war had opened our eyes to the helpless position in which India had been placed in the matter of drugs. We were dependent almost entirely on foreign markets even for our absolute needs, and when imports were stopped or became impossible, people had to suffer for lack of proper drugs. This has necessitated the promulgation of Drug Control Orders on the one side, and starting of Pharmaceutical concerns on the other. During the first World War also the difficulty of getting drugs from foreign countries was felt, though not so acutely as at present, and a number of concerns were started with the support of Government. When the emergency ceased, Government support was withdrawn and the industry had to die a natural death. But we have been assured that such a thing would not be allowed to recur and that the Government would do all in its power to encourage and support the industries already established. In addition to the implementation of this promise we need a body of chemists who will see that the products turned out by our pharmaceutical concerns are upto the standards required by scientific research and that what is given for consumption by the public is nothing but the best stuff. It is unnecessary also to add that the compilation of an Indian Pharmacopœia and extensive research in this direction are equally important and necessary.

To newspapers in general, and to medical journals in particular, the war years have been really trying ones. Difficulty in getting paper, labour &c., and the various conflicting and confusing Control Orders have been problems which have troubled them all these years. Now that the war is over, we hope that, in the near future at least, we shall be able to embark upon many of the schemes which we have before us for improving the journal and for giving our readers still better service and material.

We hope that in the years to come much effort will be made by all concerned to make India occupy its rightful place in the World's League of Nations, and that all will know of India as a land of health, happiness and prosperity.

Cleanings From Medical Press

MEDICINE and THERAPEUTICS

Treatment of subacute bacterial endocarditis.—After an analysis of 250 well-authenticated cases of subacute bacterial endocarditis had been studied by a group of Boston investigators during the years from 1927-1939 and had disclosed the ineffectiveness of all methods of therapy prior to the introduction of the sulfonamide drugs, this report from a U. S. Army general hospital reviews the results of treatment of this disease with sulfonamides.

Sulfanilamide, sulfathiazole and sulfadiazine at times gave transient benefit, but did not result in any recoveries. Sulfapyridine reduced the fever in a majority and frequently rendered blood cultures negative, but cured only four of 197 patients. Neoarsphenamine, the sulfonamides together with intravenous typho-paratyphoid vaccine or with hyperthermia, and various other measures gave no lasting help. Sulfapyridine proved to be the most active of the drugs in lowering the temperature—not a mere "antipyretic" effect—and in rendering blood cultures negative—a sterilization of the blood stream—but its benefits passed off in a few days to two months. The failure of sulfapyridine to cure appear related to complications of the disease, toxic effects of the drug, its bacteriostatic rather than bactericidal mechanism, a low concentration of drug within the vegetations, its ineffectiveness against some strains of nonhemolytic streptococci, and the almost regular development of resistance to its action. Such clinical "escape" from sulfonamide effect after an earlier response has been shown to result from a decreased susceptibility of the bacteria themselves.

Heparin has been beneficial only when sulfapyridine (or a related drug) reduced the temperature to normal or near it and sterilized the blood stream. Decreasing the blood coagulability during a period of such antibacterial effect has almost regularly resulted in recovery. Avoidance of the previous use of sulfapyridine, because of the readiness with which fastness develops, and the persistent continuance of treatment have been the two rules of success with this method. In addition to two in the original series, 10 further apparent recoveries from the disease were noted. Penicillin, effective in vitro against nonhemolytic streptococci, can reduce the temperature and sterilize the blood in cases of subacute bacterial (streptococcal) endocarditis, but on discontinuing the drug, fever and bacteremia have recurred in all but two of such patients reported to date. Lesser effectiveness of penicillin against some strains of the organisms, possible acquired bacterial resistance and inadequate penetration into the vegetations, and the failure of the drug (although bactericidal as well as bacteriostatic) completely to sterilize, appear as factors in its unsuccessful results.

Substituted for sulfapyridine in the heparin-chemotherapy method, penicillin was partially effective in a personally-treated case, but pleomorphic streptococci persisted on the culture plates; these disappeared with supplemental sulfadiazine, and the patient has remained well since completing the 10-day course of treatment in November 1943. Loewe's group has reported six apparent recoveries from streptococcal endocarditis with the use of penicillin and heparin. Penicillin excels sulfapyridine in its low toxicity and lesser tendency to induce drug fastness, but further data are needed to evaluate its effectiveness, to determine the best plan of therapy, and to learn if, unlike penicillin can alone result in a high proportion of success, and if accompanying it also the use of heparin is advantageous. (Kelson, S.R.: *Annals of Internal Medicine*: 27: 75, January 1945).—U.S.O.W.I.

Diabetes mellitus as observed in 100 cases for ten or more years.—These four papers from the University of Pennsylvania present a study of 100 patients seen at the Metabolic Center of the medical clinic who had had diabetes for ten years or more. Observations on these patients showed that diabetes does not always progress to greater severity. After comparing the diet and insulin at the beginning and at the end of a five-year period, it is evident that the diabetes of 45 per cent. of the patients had not advanced. Ten of these patients required less insulin at the end than at the beginning of the period. Of the 55 who required more insulin, a number had also received increases in diet. Acidosis occurred in three of the group during the past ten years. While arteriosclerosis was present in a number of the patients, no amputations were done on any of them. Anemia of a mild degree was present in 26 patients. However, only 3 had less than 4,000,000 R. B. C. and less than 13.5 gm. of hemoglobin per 100 mg. of blood. Chronic or repeated acute infections have been present in 39 patients. Of the former cholecystitis (16 cases), pyelonephritis (9 cases), and tuberculosis (9 cases) were most frequently encountered.

Hypertension (systolic blood pressure 160 m.m. Hg.) was present in 38 per cent. of the cases. All these were past 50 years of age; the incidence increased with each decade and was twice as common in women as men. The incidence of hypertension apparently was not dependent upon duration, control or severity of the diabetes. Only 3 (9.7 per cent.) patients under 50 had abnormalities of the heart which could be attributed to their diabetic state. These were aged 24, 30, 47 years with diabetes of 15, 16 and 15 years respectively. The low incidence of cardiovascular abnormalities in the younger group compared to similar

studies in the literature on a high fat-low carbohydrate diet is suggestive evidence of the value of the high carbohydrate-low fat diet in reducing the incidence of premature cardiovascular abnormalities.

Complicated cataracts were apparently fewer in ten-year treated diabetes than in the untreated. Subcapsular "snow-flake" cataracts were still found in the former. The ten-year treated diabetic has an incidence of sclerosis similar to the non-diabetic and to the diabetic of varying duration and therapy. Deep retinal hemorrhages and exudates increase with the duration of diabetes, and may be slightly decreased by closely observed therapy. Although arteriosclerosis, hypertension, renal disease, sepsis, hyperglycemia, may all influence the incidence of deep punctate hemorrhages and waxy exudates, no one of them is the basic etiologic factor.

Of the 89 patients who were studied from the standpoint of arteriosclerotic occlusive disease in the legs, 3 of those under 50 years of age, and 30 of those over 50 had evidence of peripheral arteriosclerosis. Premature arteriosclerosis (below 50) was, therefore, not common in this group of patients. The severity of the diabetes did not affect the incidence of arteriosclerosis. The adequately controlled patients had a small incidence of arterial disease. Of the females, 42 per cent. had arteriosclerotic occlusive disease, as compared with 23 per cent. of the males. There were no amputations in the entire group. Neuritis in the extremities was present in 31 of the 89, chiefly in those with arteriosclerosis. This much higher incidence in diabetic women than in women without diabetes parallels the greater frequency of coronary vessel disease in diabetic as compared with non-diabetic women. (Richardson, R. and Bovie, M.A., *American Journal Medical Sciences* 209:1, January 1945. Edelken, J.: *American Journal Medical Sciences* 209:8, January 1945. Leopold, I. H.: *American Journal Medical Sciences* 209:16, January 1945 and Naido, M.: *American Journal Medical Sciences* 209:23, January 1945.)—U.S.O.W.I.

Prevention of recurrence of peptic ulcer.

—This is a report of an experimental study. The first portion of the study was on dogs. Ninety-eight per cent. of 114 control Mann-Williamson dogs developed jejunal ulcer in an average of 3.8 months. All of 10 Mann-Williamson dogs treated daily with an extract of hog muscle prepared by the same method as the enterogastrone preparation used in the experiments also developed jejunal ulcer in four months. The development of jejunal ulcer was prevented in 76 per cent. of 25 Mann-Williamson animals which were treated daily for one year with enterogastrone preparation administered intravenously. As a result of these animal experiments, the enterogastrone preparation was tried on human patients with peptic ulcer. Thirty-two patients were observed under enterogastrone treatment for from 6

to 14 months; 9 of them for 10 to 15 months. Ten of the 32 had never been entirely relieved of distress even when kept on a strict ambulatory management. Twelve of the patients had suffered more or less continuous distress for 2 to 20 years. Of the 12 who received enterogastrone treatment, only after initiating this treatment all but 2 were relieved of distress within one week. In spite of these favourable results, Ivy does not believe that enterogastrone therapy, as used in patients, provides as rapid and complete relief from distress as strict ulcer management.

Among the 21 patients who received injections three times weekly for 7 to 12 months, 4 had one period of distress. The average expected recurrence of ulcer distress on the basis of past history was reduced from 21 to 4 for a six-month period. The author concluded that the parenteral administration of a mucosal extract of the upper intestine of swine (the enterogastrone used here) prevents the occurrence of gastro-jejunal ulcer in a high percentage of Mann-Williamson dogs. Furthermore, this protection is not limited to the period during which the extracts are being administered but has been observed to extend for periods as long as three years after cessation of treatment. Preliminary studies on the treatment of patients with peptic ulcer with enterogastrone concentrate are sufficiently encouraging to warrant further study to ascertain its value in the prevention of recurrences. (Ivy, A. C.: *Gastroenterology* 3: 443, December 1944.)—U.S.O.W.I.

Nocturnal cramp in the elderly.—Nocturnal cramp in the elderly is a mysterious phenomenon and the mechanism appears to be unexplained. It is obviously different from intermittent claudication, though similar treatments are often recommended. Warm leg baths twice daily, particularly before retiring at night, nicotinic acid 50 mg. daily, and resting with feet-up were recommended. Dr. Lionel Picton suggested that calomel 1/10 at night was a sovereign remedy, while others have praised copper sulphate 1/10 gr. to 1/6 gr. Another line of treatment is to increase the fluid intake giving a tumblerful of water half an hour before each meal and again before going to bed. Short courses of iodide of potassium have been recommended. On theoretical grounds, Quinine and alcohol might be expected to be effective.—B.M.J.

Hemiballismus.—According to Kelman, hemiballismus is a syndrome characterized by violent uncontrollable, purposeless, per extremity or of the entire half of the body. The lesions in the corpus luyi are mainly due to hemorrhages, softenings or emboli, but they may also be due to infections, toxins and degenerative conditions. The author presents the clinical and pathologic aspects of 2 cases of hemiballismus. The first patient, a man aged 66, died within

three months of the first attack. The episodic nature of the attacks suggests that they were due to an irritative process within the corpus luyi. In this case a destructive lesion was found. The destructive process is evidence of the previous existence of a dysphysiologic state. Such transitory states might occur and lead to attacks of hemiballismus without leaving significant evidence in the form of cellular changes in the corpus luyi or of degeneration in its afferent or efferent tracts. The nature of the attacks, at times involving only the hand, at others including also the face, finally to affect the lower extremity, confirm clinically that somatotopic localization exists in the corpus luyi. The second patient, a man aged 56, lived eight months after the onset of the abnormal movements. It has been stated that volition and psychic factors do not affect the movements. When this man was at rest the movements were least. When he made attempts to use his extremities spontaneously or on command as well as when he became emotionally disturbed, the movements became exaggerated. Neither of the 2 patients could voluntarily control the movements. In the second patient a metastatic nodule invaded and destroyed the tip of the oral pole of the corpus luyi. At necropsy the major lesion was so placed as to affect essentially the subthalamic tegmental fibers. This seems to indicate that a lesion limited to afferent tracts might cause hemiballismus. It also tends to prove the passage of most of the fibers contralaterally but also indicates that some pass homolaterally. The major movements were on the right side, but some were also present on the left.—J.A.M.A.

Causes of deficiency anemias.—Deficiency anemias are caused by a variety of factors: A dietary that is deficient in iron, protein or vitamin B complex; an inadequacy of the gastric juice, which is deficient in either free hydrochloric acid or Castle's enzyme "intrinsic factor"; chronic intestinal malabsorption, as in chronic diarrhoea and sprue; hepatic disease, in which the factor of storage is affected; and multiple pregnancies, in which the developing fetus absorbs an exceptional amount of material from the mother. Single etiologic factors are by no means as important in this regard, however, as multiple causes. Thus a woman on an inadequate intake of iron does not usually develop anemia unless she also has a gastric disturbance (achlorhydria) and either many pregnancies or menorrhagia. And an individual with sprue probably not only has a deficient diet but a chronic intestinal disturbance as well.—Dameshek, W.: *Hematology*, New England J. Med. 232: 250, 255, March 1, 1945.—U.S. Na. Med. Bull.

Synergic action of penicillin and sulphonamides.—The success which has attended the treatment of streptococcal, pneumococcal and gonococcal infections in man with the sulphonamides has not been repeated when the infecting organism is the

staphylococcus. Penicillin is much more potent against staphylococci than is the best of the sulphonamides, but, despite the susceptibility of these organisms to penicillin in vitro, treatment of human infections, even when continued for a relatively long time, often fails to eliminate the bacteria completely from the body. It seems to be almost a universal practice, when penicillin treatment is initiated, to abandon the administration of sulphonamides if they have previously been employed. Biggar records experiments in which the method used has been titration of penicillin, with or without sulphonamide, in broth or serum-saline in 5 cc. amounts, the test organism being usually staphylococcus progenes. The tubes were observed after twenty-four hours or in some cases longer periods of incubation for evidence of growth of the bacteria inoculated. The presence of sulphathiazole in broth greatly increased the dilution at which the inhibitory action of penicillin on staphylococci could be demonstrated. Sulphathiazole was more effective in this respect than either sulphanilamide or sulphapyridine. The same synergic action of sulphathiazole and penicillin can be demonstrated in serum. The action of penicillin against streptococcus pyogenes is similarly reinforced by the presence of sulphathiazole. It is suggested that this synergic action of sulphonamides and penicillin should be employed in the treatment of suitable infections in man.—J. W. Biggar, *Lancet*, July 29, 1944.—G. P.

Headache causes.—Traction displacement, distention, and inflammation of cranial vascular structures are chiefly responsible for headache. Pain referred to the head from disease of tissue not in the head does not occur, with the rare exception of pain in the jaw or neck with angina pectoris. Sepsis or fever of any origin may be associated with headache, but this is not referred pain. The inference is that the mechanism of headache as a symptom of disease outside of the head is dependent upon a vasomotor phenomenon. Brain tumor headache is produced by traction upon intra-cranial pain-sensitive structures, chiefly the large arteries, veins and venous sinuses, and certain cranial nerves.

Observations of the amplitude of pulsations of the cranial arteries during headache associated with experimentally induced fever showed that the spontaneous increase and decrease of intensity of the headache paralleled the changes in amplitude of pulsations in these arteries. The observation was made that increasing the cerebrospinal fluid pressure in the subarachnoid space relieved fever headache.—Bores, L. R.: *The symptom of headache*. *Journal-Lancet* 64: 400-404, December 1944.—U. S. Na. Med. Bull.

Classification of anemias.—The terms "secondary anemia" and "primary anemia" must by now be considered as clearly outmoded. Since anemia is always a symptom of some underlying disorder, all anemias are

necessarily secondary. If this is the case, there is no point in discriminating between primary and secondary cases. The classification of anemia on the basis of color index, cell volume or cell diameter, or all three, has become deservedly popular, chiefly because it gives orientation regarding the possible etiologic and therapeutic factors in a given case. Thus hypochromic microcytic anemia is usually indicative of chronic iron deficiency and of a probable therapeutic response to iron rather than to liver.

For a complete classification, cell size and color index are, however, not enough; the important consideration is the cause of the anemia. In every case it is essential, preferably before therapy is begun, to attempt a definition of etiologic factors. This can generally be done if it is remembered that anemia is usually due to one of three factors: A deficiency of materials requisite for blood formation; a disturbance in the marrow; or an increased loss of the bone-marrow's finished product, the red cell, either through hemorrhage or increased hemolysis.

Thus a given case may be classified as follows: Macrocytic anemia, inadequate intake of protein, gastric achlorhydria—that is, liver-extract deficiency or pernicious anemia; microcytic, hypochromic anemia, inadequate intake of iron, gastric achlorhydria, profuse menses—that is, chronic hypochromic, iron-deficiency anemia; or normochromic, normocytic anemia, benzol-poisoning—that is, aplastic anemia.—DAMESHER, W.: Hematology. New England J. Med. 232: 250-255, March 1, 1945.—U. S. Na. Med. Bull.

Toxic psychoses following atabrine.—

This report concerns the toxic psychoses which occurred in patients with malaria who had been treated with atabrine. The study is based on the first seven months experience at an Army hospital in a highly endemic area to which 7,604 cases of malaria, including 35 persons who developed a toxic psychosis, were admitted. The psychosis begins either during the course of atabrine therapy or shortly after it is concluded. There are two main types of onset. The most frequent (65 per cent) is marked by excitement, hallucinations and delusions. The other (35 per cent) begins with retardation, disorientation and amnesia for recent events, together with confabulation. No constant physical or laboratory findings are present. Aside from supervision, sedation, restraint, and nursing care, no specific therapeutic measures have been found useful. The course of the psychosis has been benign in most instances. Two of these patients developed a second attack of malaria and were re-treated with atabrine within 20 to 28 days after the onset of the psychosis without reproducing a second psychotic episode. Fourteen additional patients, after recovery from this type of psychosis, making a total of 16 cases, were retested with atabrine, and only one case showed any untoward reaction. This was

a mild excitement which cleared within 24 hours.

Whether these psychotic episodes represent a toxic reaction to atabrine or are merely toxic psychoses occurring as a result of the malaria-atabrine insult, with the possible additional factor of subclinical avitaminosis, cannot be stated definitely. There is no evidence to suggest that these men were psychiatrically unstable. It is the author's belief that atabrine is the etiologic agent. They hypothesize an acute, possibly conditioned, sensitivity to atabrine in which the initial attack desensitizes the patient for at least several months. During this period atabrine may be readministered safely to these individuals. They are unable to state, however, that at a later date those patients may not again become sensitive to atabrine. Caution is therefore advised in the treatment with atabrine of malaria relapses of reinfections in patients who have had a toxic psychosis of this type. The total incidence of such psychosis which complicate malarial cases treated with atabrine is extremely small (0.4 per cent) and their course is relatively benign, since 33 of the 35 cases recovered without incident. The two unrecovered cases have developed typical schizophrenic reactions apparently precipitated by the malaria-atabrine episode. Their prepsychotic personality gave no hint of a latent psychosis. The chief concern lies in the early recognition of the condition so that the patient may be adequately cared for during the psychotic period. (Gaskill, Major H. S. and Fitz-Hugh, Lieut. Col. T.: Bulletin U. S. Army Medical Department, March 1945, p. 63).—U.S.O.W.I.

Full diet in diabetes mellitus.—Food conditions in Germany prompted Nonnenbruch to suggest that patients with diabetes mellitus should be granted the same rations as normal persons. According to Banase, change in metabolism for the worse resulted from a full diet consisting of unlimited carbohydrates and of normal small rations of fats and proteins with the addition of sugar and sweet marmalade. Results with limited diet consisting of unlimited carbohydrates without the addition of sugar were on the average satisfactory. Of 1,200 patients with diabetes 228 were given a full or limited full diet. Experiments were carried out on 170 men and on 58 women of various age groups as well as on children. The limited full diet was well tolerated by 136 (114 men and 22 women), i.e. 11.3 per cent of the total of 1,200 patients. Insulin was administered simultaneously to 96 patients (82 men and 14 women), whereas 40 (32 men and 8 women) did not require insulin. These 96 patients had "island diabetes"; they did not present symptoms of severe endocrine disturbances of metabolism. Insulin treatment was effective, the blood pressure was normal and there was no tendency either to obesity or to emaciation. The fasting blood sugar values of the 40 patients not on insulin treatment were up 130 and 140 mg.; there was a mild glycosuria independent of

the food, so that the terms diabetes lenis-simus and diabetes innocens could be applied to them. The dose of insulin required in cases in which a prolonged limited full diet proved satisfactory was no higher than that of patients on a diabetic diet. Normal carbohydrate tolerance could not be produced in patients with diabetes mellitus by the administration of insulin. On

limited full diet the normal work capacity could be maintained and a change of metabolism for the worse could be prevented in only a small portion of men. In all other patients, particularly in women, a sufficient metabolic balance could be maintained only on a diet which took into account the reduced carbohydrate tolerance.

—J. A. M. A.

SURGERY

Trigger finger and snap finger.—Trigger finger, snap finger and spring finger are names given to that condition in which one of the fingers, commonly the right middle finger, cannot be fully extended until by special exertion by external aid full extension is produced with a jerk which is sometimes accompanied by an audible snap or click. It is more often found in women. The condition results from a slight swishing of one of the flexor tendons which finds difficulty in passing through a relative narrowing of the fibrous tendon sheath; or it may result from subacute inflammation stated in some cases to be due to repeated external pressure over the affected site occurring in the course of the patient's occupation. Occasionally, it may occur as the result of a small tumour of the tendon or tendon sheath.

A few cases are said to right themselves after a time. Mild cases due to indirect trauma may sometimes be cured by complete rest of the tendon, which can be procured only by adequate splinting for some weeks. In these cases in which palliative treatment does not cure and the patient experiences serious disability one must advise exploration of the tendon sheath. The lesion is generally at the level of the metacarpo phalangeal joint. Any small and localized lesion of the tendon should be removed; if there be a spindle-shaped enlargement of the tendon, it may be possible to reduce it to normal size by excising a narrow longitudinal strip. If this is considered inadvisable it may be sufficient to provide more room by omitting to suture the incision made into the fibrous sheath at the narrowed site; this will allow sufficient play for the tendon to move easily.—B.M.J.

Honey in treatment of chilblain, ulcers and wounds.—Yang (*Chinese Medical Journal*, Jan.-March, 1944) says that in the dermatologic clinic of the National Medical College at Shanghai cod liver oil ointment has been used in the treatment of chronic leg ulcers and small wounds and has been found to be very effective. This success is attributed to its rich vitamin A content, which has the property of stimulating epithelization and granulation tissue formation. After the medical college was moved to Kunning, in 1939, the difficulty in obtaining cod liver oil prohibited its further use. It occurred to the author that honey might be employed as a substitute, the rationale of such treatment being that,

owing to its high sugar content, it is bacteriostatic; while, owing to its yellow pigment, it might be rich in vitamin A. A honey ointment was made by the addition of 20 per cent. of petrolatum. The ointment was first used with encouraging results in leg ulcer. Later when the medical college was moved from Kunning to Chungking it was decided to resume the honey treatment, but, since petrolatum was not obtainable, lard was used instead. The ointment, composed of 80 per cent. honey and 20 per cent. lard, was used in 50 cases of chilblain, chilblain ulcers, ordinary ulcers and small wounds. Its success in hastening the subsidence of passive hyperemia and edematous swelling, and in stimulating epithelization and granulation tissue formation, was great. Its application is simple and convenient, and its sources of supply are plentiful, thus being especially useful under present wartime conditions.—G.P.

Treatment of low back pain.—The pathogenesis of the low back complex (lumbago, sciatica, protruding disk) is explained on the ground of a primary lumbar kyphosis, a straight lumbar spine preceding all signs and symptoms. The reverse of lumbar lordosis is caused by stooping and sitting occupations. Among the signs accompanying the disappearance of lumbar lordosis attention is called to the spasm of the lateral abdominal muscles and to the lumbar shift of the dorsal kyphosis. In more than 60 cases complete relief from the local and nervous symptoms could be obtained by putting the patient in a bed, the front legs of which were elevated from 12 to 20 inches for from 7 to 14 days. Recurrences were rare and easily handled by the same method. In patients with severe nervous symptoms a short plaster jacket was applied in hyperextension for another two weeks. All patients returned to their former occupations.—Farkas, A., and Easley, G. W.: Quick and simple treatment of low back pain based on new conception of its genesis. West Virginia M. J. 41: 103, 107, April 1945.—U. S. Na. Med. Bull.

The intravenous use of novocaine as a substitute for morphine in postoperative care.—J. A. McLachlin.

Animal experimentation has shown that procaine is rapidly absorbed from the tissues into the blood stream where it is quickly hydrolyzed and detoxified by an enzyme

which breaks it down into para-aminobenzoic acid and diethylaminoethanol. The toxic symptoms decrease even though the blood concentration of these latter two substances rises. The products of detoxification then leave the blood stream rapidly until an equilibrium is reached between the blood and all the other tissues. These products are excreted by the kidney within 10 to 12 hours. Procaine possesses a marked affinity for nerve fibres without injuring other cells. It is also a convulsant and stimulant of the cerebral cortex.

Ten postoperative cases are described in which novocaine intravenously has been substituted for morphine. The results are extremely encouraging.

Novocaine can be given intravenously with safety.

Individual sensitivity is guarded against by employing a skin test in which 1 cc. of 1% novocaine is used to produce an intradermal wheal. In sensitive people there is a marked local reaction with systemic signs of dyspnea and agitation.

Novocaine intravenously has the advantage over morphine in that it allows conscious patients who can assist themselves in precautions against postoperative pulmonary and vascular complications.

The factor of vomiting and malaise due to morphine therapy is eliminated.

The long-standing concern over accidental introduction of local anesthetic into veins during tissue infiltration is apparently unfounded.—*Canad. Med. Assoc. Jour.* 52: 383 (Apr.) 1945.—*Annals of Dentistry.*

Legg-Perthes disease.—This is an osteochondrosis of the head of the femur. It is described by Dr. W. H. Cole (*Journal of the American Medical Association*, February 10, 1945). It is very rare after the age of twelve years. The first symptom is usually a limp which develops as the day goes on, but is absent after rest. This is soon accompanied by tiring and discomfort which may become definite pain with reference to the knee at times. The symptoms gradually become more persistent and constant until definite disability of the hip results. On examination there is limitation of the rotations, especially internally, and also of abduction. Flexion usually remains free, but there may be a slight limitation of hyperextension of the hip, discernible if the test is made with the patient in the prone position. Later on there may be atrophy of the thigh muscles and glutei as well as some shortening. Non-weight bearing is the first requirement in treatment. If the condition is recognised early enough thyroid treatment gives good results.—*Medical World.*

Penicillin in the treatment of early syphilis.—This report is based on a study of six patients with early syphilis, in all of whom the cutaneous and genital lesions had shown either progression or failure to heal while under treatment with adequate amounts of trivalent arsenicals, usually combined with bismuth. The cutaneous lesions in all of

the patients were of the psoriasiform type and spirochetes could be demonstrated in the material from these lesions in five of the six patients. Treatment with penicillin was carried out in a manner similar to those used in patients who had not had arsenotherapy. Dosage schedules varied from a total dose of 60,000 to 2,000,000 Oxford units. The treatment was uniformly successful in destroying surface treponemes and in healing lesions in all of these patients. Cutaneous or febrile Herxheimer reactions were observed within the first 24 hours in two patients. Spirochetes disappeared from all lesions in 10 to 26 hours after onset of treatment. On the basis of available information, it is believed that should be given 2,400,000 units of penicillin intramuscularly in 60 injections of 40,000 units, each given every three to four hours day and night. Nelson, R. A. and Duncan, L.: *American Journal of Syphilis, Gonorrhea and Venereal Diseases* 29: 1, January 1945.—*U.S.O.W.I.*

Dumping syndrome after gastrectomy.

The dumping syndrome consists of profound nausea and weakness, a generalised unpleasant sense of warmth throughout the body, a cold diaphoresis of the face, particularly of the forehead, and cardiac palpitation. Occasionally there is hypermotility of the small bowel with borborygmus ending in explosive diarrhoea. The attack usually lasts from 30 to 60 minutes and is frequently prevented or relieved if the patient assumes a supine position. The cause is believed to be the rapid emptying of the stomach after subtotal gastrectomy, producing sudden distention of the upper portion of the small bowel, which initiates a trigger mechanism producing a widespread enteric influence characterized by excessive peristaltic activity, borborygmus, and in severe cases by violent diarrhoea. It is believed, moreover, that the development of this abnormal reflex is directly related to the size and type of gastroenteric anastomosis, particularly of the Polya type. It occurs in from 5 to 12 per cent of gastric resection cases. When rapid dumping of food from the stomach into the unprepared jejunum has been once established it is apt to be permanent. The results of the operation which narrows the opening of the gastric remnant have been uniformly good; however the series is still too small to insist categorically that this solves the problem.—CUSTER, M. D., Jr.; BUTT, H. R. and WAUGH, J. M.: So-called dumping syndrome after subtotal gastrectomy; clinical study. *Ann. Surg.* (in press).—*U.S. Na. Med. Bull.*

Rectal examination in appendicitis.—Rectal examination should always be performed in suspected appendicitis. The patient is best examined in the left lateral position (Sims) as this tends to bring the appendix downward and over toward the palpating finger. In over 50 patients of patients with acute appendicitis, tenderness

may be elicited high in the right vault of the pelvis. When located low down in the pelvis, the appendix itself may be palpated. The rectal examination is particularly valuable in children in whom the relatively shallow pelvis allows the examining finger to reach a much higher level than is possible in the rectal examination of adults. Bilateral tenderness from acute appendicitis is rare, but may occur if the appendix

is located between the bladder or uterus and the rectum, if there is an appendiceal pelvis abscess, or if peritonitis is present. Careful examination of all the other organs rectally palpable should be carried out at the same time.—BOCKUS, H. L.: *Gastroenterology*, Vol. 2, W. B. Saunders Company Philadelphia, 1944. pp. 858-901.—*U.S. Na. Med. Bull.*

OBSTETRICS and GYNÆCOLOGY

Treatment of the menopause.—In the course of a symposium on problems of the menopause, treatment is discussed from the medical, endocrinological, and psychological aspects, respectively, by C. L. Buxton, E. L. Sevringhaus, and R. G. Hoskins (*Journal of Clinical Endocrinology*, December 1944, 4, 591, 597, 605). All three contributors emphasize the fact that it is the symptoms and signs accompanying the menopause, i.e., the menopausal syndrome, that require treatments, and not the menopause itself. Other points emphasized are the importance of a full examination to exclude such local conditions as malignancy and such general conditions as hypertension or diabetes mellitus, and the important part played by mental and emotional disturbances in producing many of the manifestations of the menopausal syndrome. In a series of 80 cases, Buxton found that 36 were relieved by phenobarbitone, 1 grain t.d.s. half-an-hour after meals and 1 grain at bedtime. The remaining 44 patients were given oestrogens (usually diethyl or methyl stilbestrol), and 20 obtained relief. Of the remaining 24 patients, 7 obtained relief from a combination of oestrogens and sedation treatment. Sevringhaus is of the opinion that "with very rare exceptions it is possible to relieve all the symptoms of the menopause by the use of adequate amounts of oestrogens." He prefers the oral route of administration and discusses the relative merits of the various oestrogens. Dosage varies with the individual patient and is based upon giving the minimum amount that will give relief. It is unwise to give the oestrogens to patients who have, or have had, carcinoma of the breasts or of the pelvic organs. In the present state of knowledge the best clinical guide as to the efficacy of the oestrogens is the extent to which symptoms are relieved. Thyroid is considered to be usually of little value. The use of oestrogens in women with psychotic tendencies may sometimes avert a frank psychosis. From the psychological point of view, the central feature of the menopause is anxiety, and the most potent cause of this anxiety is the threat that the menopause offers to the ego. Hoskins considers that the goal of psychotherapy is to do whatever skill and sympathy direct to allay this anxiety; the methods of achieving this he discusses in considerable detail.—*Practitioner.*

The second stage of labor: The descent phase.—The textbooks give one the im-

pression that descent, while partial in the first stage, is a more or less continuous process during the second stage of labor. In the present series of about 2,400 primiparas and 1,700 multiparas, the authors' findings are not quite in accord with this impression. In something over half (54 per cent) of all patients, the head was definitely on the pelvic floor at the time the cervix receded over the head. It has been the author's custom to say the cervix was completely dilated only when it was also completely retracted. Very frequently there is no descent when the cervix is seemingly dilated but still palpably present around the head. Palpation at the height of the uterine contraction will show this remaining rim of cervix to be tightly clamped against the head and to be preventing descent thereof. As soon as the cervix is retracted, the head will frequently almost fall down through the pelvis to the perineum. Conversely, the head may be on the pelvic floor for a matter of minutes or even hours before dilation is complete. The assumption that the patient is in the second stage of labor merely because the head is on the perineum may well lead to the impression that forceps delivery will be required because of "lack of progress." In these patients in particular it is unsafe to depend upon the findings by rectal examination, and it has been the author's custom for the past few years to do vaginal examinations routinely under these circumstances (i.e., head on the perineum with no progress).

In this group of patients, with the head on the perineum at the time dilatation is complete, the second stage wholly concerned with the negotiation of the pelvic floor. In the remaining patients (less than half of all cases in the present series), the presenting point is at a somewhat higher station at the time dilatation is completed. This station may vary all the way from approximately one centimeter above the pelvic floor to a point well up in the pelvis. In this latter group of patients, descent to the pelvic floor must precede the pelvic floor phase. This descent may require all the way from a very few minutes to as much as an hour or more. After it is completed, there then remains the pelvic floor phase, which is exactly the whole of the second stage in the group of patients. It has seemed advisable referring to the second stage in two groups of patients to speak of the "pelvic floor phase" and the "second stage."

the Bombay Provincial, should have kept mum on this issue without taking the necessary steps. It is significant, on the other hand, that some of the Madras branches of the A.I.M.L.A., (Madras and Vellore) should have been the first to protest against such an injustice. I cannot but strongly condemn the attitude of the Bombay University and I hope and trust the University will soon revise its decision in the interests of the profession. Nearer home the Madras Medical College does not permit Licentiates to take their post graduate course whilst the Stanley Medical College allows them. I am at a loss to understand this discrimination.

DRUGS AND DRUG MANUFACTURERS.—After urging the need for the prevention of any one to practise any system of medicine in which he is not qualified, the President referred to some main items for their information and clarification:—

1. The tendency of manufacturers to introduce trade names to ordinary well-known chemicals and each firm introducing its own pharmacopoeia should be reduced to the absolute minimum.

2. A central authority should be created to look after the standardisation, testing of drugs and biological products so that no spurious drugs will be found in the market.

3. A huge trade is carried on by many firms of questionable reputation by openly advertising and selling abortifacients and all sorts of panaceas. Some of them are supposed to heal from Head-ache to Herpes Zoster and from Impetigo to Impotency etc. Perhaps, the ideal would be to permit the advertisement of the only ordinary household remedies in the lay papers and magazines.

4. Every drug that requires to be used under the care of a qualified practitioner should not be freely sold to any and every one.

5. Protection to the Indigenous manufactures should be given from unhealthy competition by foreign importers.

6. I would emphasise the early introduction of an Indian Pharmacopoeia.

MEDICAL COUNCILS.—I. Barring a few Councils in India the rest have still compartmental registers thus perpetuating differences uncalled for which should be forthwith abolished in the interests and well-being of the profession. Our Province has set the example of democratising the Medical Registration Act.

2. There should be a non-official President on every Council which should enjoy a non-official elected majority.

3. The Indian Medical Council continues to be without a register. The day when the Licentiates will be recognised by this body which has no excuse for its existence and that day is not far off and when such a register comes into being it should be on a democratic basis arranged in an alphabetical order without the stigma of compartments.

ARMY HOSPITALS IN INDIA.—Pandit Jawaharlal Nehru has made a special appeal to the Army authorities and especially to the Americans to hand over the hospitals built by them during the period of the war for civilian use, and says that a large number of them with costly equipment have been built all over India. Now that the war had ended there is no use for them. It would be a tremendous pity if they were dismantled or sold out. "Let them be given over for Civilian use for there is an urgent need for hospitals," so says Pandit Nehru. Dr. B. C. Roy in a statement endorses Pandit Nehru's appeal as a timely one in view of the great need for hospital accommodation in this country. He further says that "in view of the paucity of beds, as far back as October 1943, the Health Survey and Development Committee requested the Government of India to take steps immediately on the cessation of the war to utilise the so called temporary hospitals erected for the military personnel in order that the civilian population of the country might be benefited and the Committee at its sitting had since reiterated the request". It is stated that Dr. Roy proposes to meet the authorities concerned in this connection. I hope and trust that this timely request by two accredited leaders of our country will be appreciated and forthwith granted, if it has not been already done, to serve the most deserving and humanitarian cause.

AMALGAMATION OF THE A.I.M.L.A. WITH THE I.M.A.—I have come to the last but not the least important portion of my address pertaining to the much talked of and discussed question of the union of both these organisations. This has been in the air for the past 12 years and more and the position looked to be vacillating and wanting. It is a matter for pride and gratification that Dr. G. V. Hanumantha Rao, of Guntur, sponsored the resolution on amalgamation which received the whole-hearted support at the last Conference held at Calcutta. After a thorough and frank discussion the principle of amalgamation was conceded unanimously leaving the details to be worked out by a Sub-Committee to be nominated by the President. I hope and trust you will all agree with me when I say, that this Conference entirely supports the move and urges the Sub-Committee to give its findings at an early date.

I am fully aware of the initial and ephemeral difficulties in the way of amalgamation. I would lay stress here on the necessity of the I.M.A., safeguarding the interests of the Licentiates till the last moment. The Licentiate departs from this land for that ranks. Let the I.M.A., put its shoulder to the wheel in wresting recognition for Licentiates in the Indian Medical Council which could not bring out the All-India Register owing to the concerted agitation of ours. If we continue to have two associations it would only show that we, the Licentiates, have not got the grit to mix

with the rest of the profession, move shoulder to shoulder with them—which would mean a true confession on our part that we are suffering from the much-talked of "Inferiority Complex". Therefore, I leave it to you and the Conference to look ahead and seriously view the matter from the standpoint of the organised profession as a whole and the future of this great land. Can we, the members of the profession

which is dubbed noble and the healers of pain and misery rise high in the estimation of our own people and the civilised world by solving our own differences and having one organisation for the whole profession? Will the Conference ponder over this and come to the right decision?

"Honour and shame from no condition rise,
Act well thy part, there all the honour lies."

Book Reviews

Orthopaedic Surgery. by WALTER MERCER, M.B., Ch.B., F.R.C.S. (Edin.), F.R.S. (Edin.), with a foreword by SIR JOHN FRASER. Third edition. 947 pages—illustrated—Edward Arnold & Co., London.

The book before us is the third edition of Mercer's well-known text-book of Orthopaedic Surgery. The War that has just ended has given extra-ordinary fillip to the study and practice of Orthopaedic Surgery. Much new matter has come within the purview and experience of modern Orthopaedic Surgery. The author has carefully gone over the new ideas, and incorporated, in this third edition, matter both from personal experience and from literature of the period. The Chapters on Circulatory Disturbances, Affections of the Back, Knee, Shoulder and Foot, and Infections of the Hand, have been re-written. The Chapters on Congenital Deformities, Tuberculosis of the Spine, Chronic Arthritis, Paralysis, Affections of the Knee Joint and Manipulative Surgery are well-worth reading in a book that is uniformly well-written. The general get-up, printing and illustrations are very good. We recommend the book as a standard text-book for Orthopaedic Surgery.

A Text-Book of Psychiatry, by D. K. HENDERSON, M.D., (Edin.), F.R.C.P.S. (Glas.), F.R.C.P.E., and R. D. GILLESPIE, M.D., (Glas.) F.R.C.P. (Lond.), D.P.M. (Lond.)—1944, Sixth edition, 790 pages. Oxford University Press, London: Humphrey Milford.

Psychiatry is a subject which has assumed important proportions in recent years. Its relation to general medicine and to the

social problems of everyday life are now recognised with more and more importance. The study of mental disorders has now-a-days assumed scientific and human interest. The recent War years have added much stimulus in the study of this important subject. In the sixth edition which is now before us, is incorporated much new material, and the old material is re-arranged. The chapter on psycho-neurotic forms of reaction has now been placed at the beginning of the description of the various reaction-types or syndromes, because they are much more common and come far more often under the care of the general practitioner. Success of methods of physical treatment, such as those conducted by chemically or electrically induced convulsions and by surgical division of the white matter of the frontal lobes, have prompted the authors to add a special chapter on these. Additions have been made to the discussion of epilepsy which, according to the authors, is the nearest approximation to "functional" brain disorder in the strict sense. The section on paranoid states has been moved from the schizophrenic reaction-types to that on paranoic and paranoid reaction-types, thus altering the classification of schizophrenic states, or dementis praecox, as formulated by Krapelin. The social aspect and psychiatry have been dealt with in greater detail in the book. The chapter on war psychiatry has been amplified, giving details with regard to the various problems, as well as more essential details in this branch. The book on the whole is an authoritative treatise on the difficult but important subject of mental disorders. Every medical man should read this book.

Correspondence

Some Observations on the Policy of Medical Education in India

To The Editors, THE ANTISEPTIC, Madras. Sirs,

There are certain facts which have a bearing on Medical Education in this country which have to be taken into account by all those who are engaged in the task of training students for the medical profession and those who are interested in the policy and problems of Medical Education.

First it should be realised that there are 400 million people in British India of which nearly 95 per cent live in villages.

2. There are only 42,000 doctors to serve the medical needs of India's population.

3. There are 10 medical colleges which are affiliated to Indian Universities and 27 Medical Schools, the former turning out Graduates and the latter Licentiates.

4. The annual out-put of doctors is about 1,000 Licentiates from the Medical Schools and 750 Medical Graduates from the Medical Colleges.

5. The present trend of Medical Education is to abolish the Medical Schools and to have one standard of Medical Education of the College type.

There can be no two opinions regarding the necessity for more medical colleges to turn out more doctors to serve the needs of this country. On a population basis of one

doctor to 1,000 of population there should be 10 times as many doctors as there are at present, to cope with the medical needs of such a large population, and there should be not ten but over a hundred medical colleges to provide the required number of doctors.

After all, most persons take to a profession as a career in life by which they want to maintain a standard of living consistent with their professional status and attainments and the value of their services to the community, and the question naturally arises as to whether the existing economic condition of India can afford to pay for a large number of highly trained doctors. The answer is that turning out more doctors from the Medical Colleges and the establishing of more medical colleges of the University standard are an urgent necessity and will certainly prove a profitable national investment, for medical relief and public health and to the wealth of a nation.

According to a non-official post-war national reconstruction scheme at present under consideration 10,000 crores of rupees are to be spent over a period of 15 years of which 450 crores are allotted to Public Health and Medical relief.

If such a scheme is implemented, thousands of doctors will be required and all the doctors produced by the Medical Colleges will be gradually absorbed in national schemes for medical relief, sickness insurance and public health.

The abolition of Medical Schools to maintain a single standard of medical education is a step in the right direction, taken to raise the standard of medical education. Every one interested in the medical progress to be made in this country will welcome this measure, although it means a set-back and an inconvenience to all those who are responsible for the medical schools.

The M.B.B.S. degree or its equivalent should be the minimum medical qualification required of all doctors practising in India and there should be one All-India Medical Register for all qualified doctors.

Every student of medical education recognises that there are two types of medical colleges, one is the University type and the other the vocational type. As suggested by Dr. K. V. Krishnan in his presidential address to the Medical and Veterinary Science Sections of the Indian Science Congress last year, we should have a few university type of medical colleges, one in each of the three capital cities of India as envisaged by him, where research as well as post-graduate and under-graduate teaching can be carried out, and the other medical

colleges should be of the vocational type where general medical practitioners can be turned out.

The university type of medical colleges may require a degree in Arts or Science as an educational minimum for admission to their courses of under-graduate instruction and the vocational type of college may accept candidates who have passed the Intermediate Examination in Arts or Science of the University, taking Physics and Chemistry as two of the optional subjects or an equivalent examination.

Graduates of the medical colleges of the University type being general medical practitioners with a scientific bias will be better fitted to become specialists, research workers or members of the teaching staffs of the Medical colleges of the vocational type. The University Degree of M.B.B.S. should be awarded to the candidates from both types of colleges if they pass the prescribed examinations held by the University.

The running of medical colleges of the vocational type will be less expensive and their chief aim should be to select and train suitable candidates for the M.B.B.S. degree in order that they might produce sound medical practitioners who will engage in the practice of scientific medicine and who will build up a high tradition of medical practice in this country which will be second to none in the world.

Now what of the existing medical schools and their future?

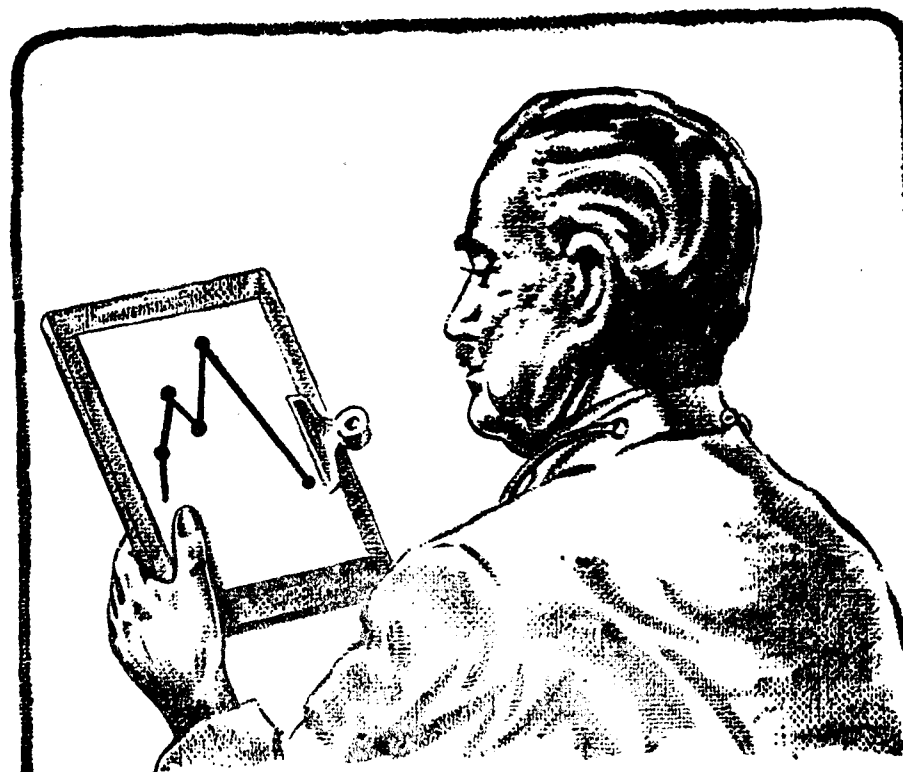
Many medical schools out of the 27 in this country are bound to be affected, if not now but in the near future, by the recent policy of medical education pursued by the Provincial Governments. Such schools would do well with their limited resources, staff and equipment to aim at the development of efficient medical colleges of the vocational type either by re-organisation or amalgamation, where sound medical instruction can be imparted to the future doctors of the country. It is earnestly hoped that Provincial Governments will generously assist these schools in their efforts to adapt themselves to the changed and difficult conditions which confront them and help them to evolve into medical colleges. We may be sure that without Government aid these medical schools will gradually go out of existence in India.

Yours sincerely,
J. T. CORNELIUS,
M.A., M.D., M.P.H., Ph. D.,
Professor of Bacteriology and Hygiene,
Missionary Medical College, Vellore.

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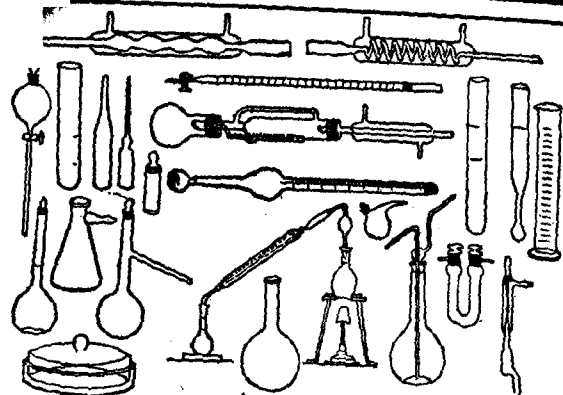
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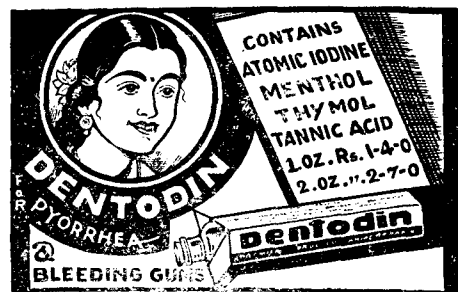
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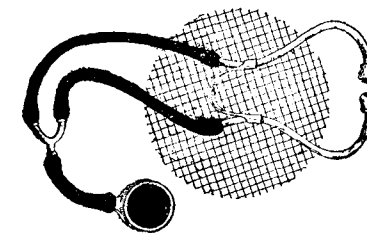
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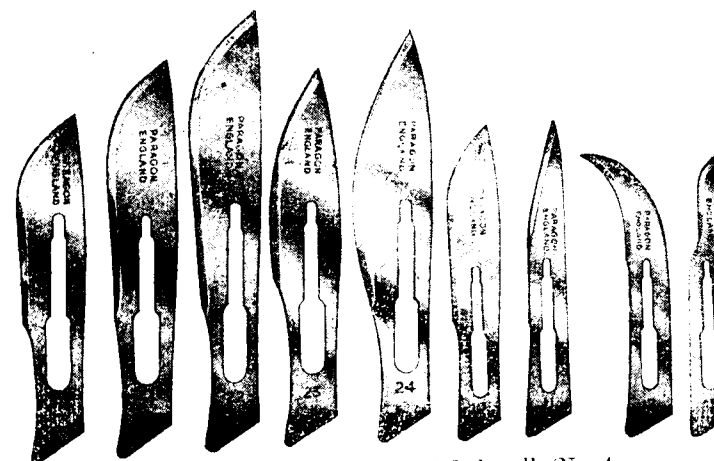
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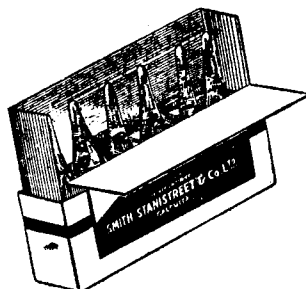
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* *F. Obstet. Gynaec.* 1933, 40, 966.

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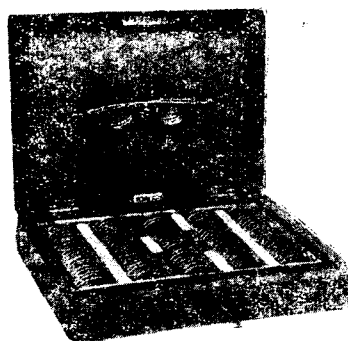
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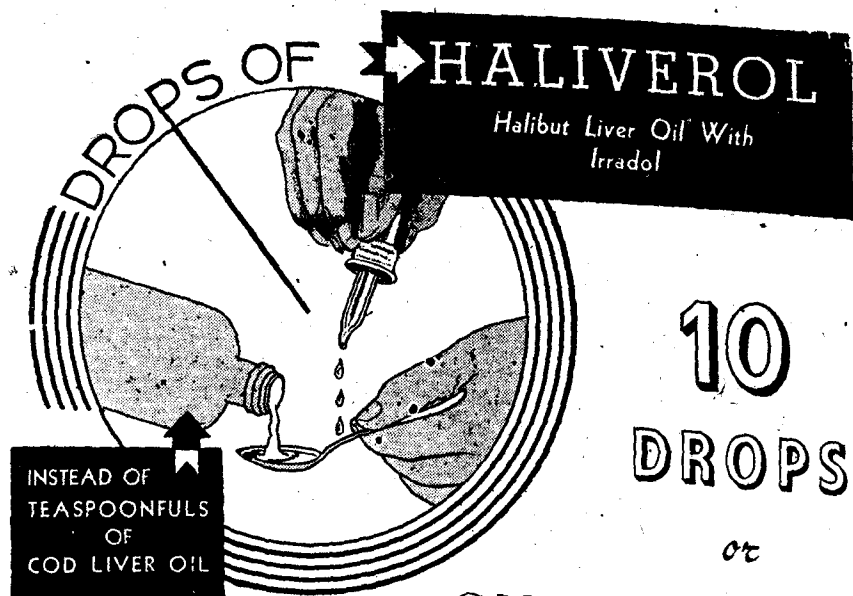
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