

The Antiseptic

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(Index to Advertisements on page 4)

CONTENTS

Page 161 to 240

ORIGINAL ARTICLES:—

PAGE

PAGE

Hæmoptysis in Pulmonary Tuberculosis and its Treatment.—Dr. M. A. Shukoor, Bangalore. . . 161

Method of Testing an Eye (Oculist).—Capt. L. P. Kapur, Samalkha, District Karnal. . . 185

Tissue Transplantation (Skin Grafting)—R. J. Maneksha, F.R.C.S., (Eng.), Bombay. . . 173

Preparation of Liquid Plasma.—Dr. P. C. Das, Calcutta. . . 196

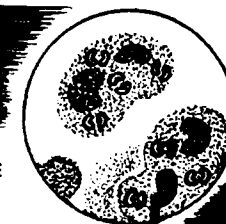
The Role of Isotopes in Medicine.—Ahibhusan Bera, L.M.F., L.T.M., Midnapore (W. Bengal) . . 178

Congenital Pyloric Stenosis.—M. A. P. Goonetilleke, O.L.C., Ceylon 199

(Continued on Advt. page 2)

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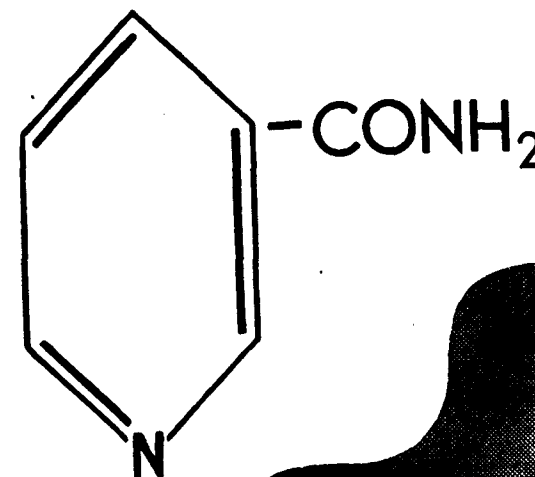
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CONTENTS—(Contd. from Front Cover)

CASES AND COMMENTS:—

	PAGE
Report on two Cases of Prostate with Special Reference to Acid Serum Phosphatase and After-care in Suprapubic Operations.—Major Khan Bahadur Ahmed Bakhsh, O.B.E., I.S.O., Bhopal, C.I.	202
A Case of Amyotrophic Lateral Sclerosis.—K. Rajagopalan, M.B., B.S., Madurai.	210
A Case of Tiger Bite.—B. M. Sinha, L.M.P., L.T.M., Madras.	213
Few Interesting Cases of Delivery.—R. S. Lall, L.M.F., A.M.O., Kairagarh Division, C.P.	215
EDITORIALS:—	
The Synthesis Plea	217
Rural Medical Relief	221
GLEANINGS FROM MEDICAL PRESS:—	
Obstetrics and Gynaecology:—	
Uterine inertia in the first stage of labour.	223
Medicine:—	
The role of the liver in renal sulphonamide complications	201
Results of thoracoplasty in pulmonary tuberculosis	209

	PAGE
Oral penicillin treatment of pneumonia in the adult	224
The use of vitamin E in heart disease	224
Sulphaguanidine in cholera	224
Folic acid therapy	224
Single injection treatment of gonorrhoea.	224
Streptomycin dermatitis in nurses	225
Anti-coagulants for thrombotic condition.	225
Dicumarol therapy in acute coronary occlusion with myocardial infarction.	225
Intra-articular alkali therapy in chronic joint diseases	225
Chemotherapy of leprosy	226
Deodorization of Shark liver oil	226
Treatment of angina by reducing basal metabolism	226
Penicillin in the treatment of diphtheria.	226
Bleeding peptic ulcer	226
Acute laryngotracheobronchitis	227
The treatment of granuloma inguinale with streptomycin	227
Chopra Committee's Recommendations	229
Capt. G. Srinivasamurthy's Memorandum	232
Corrigendum	240

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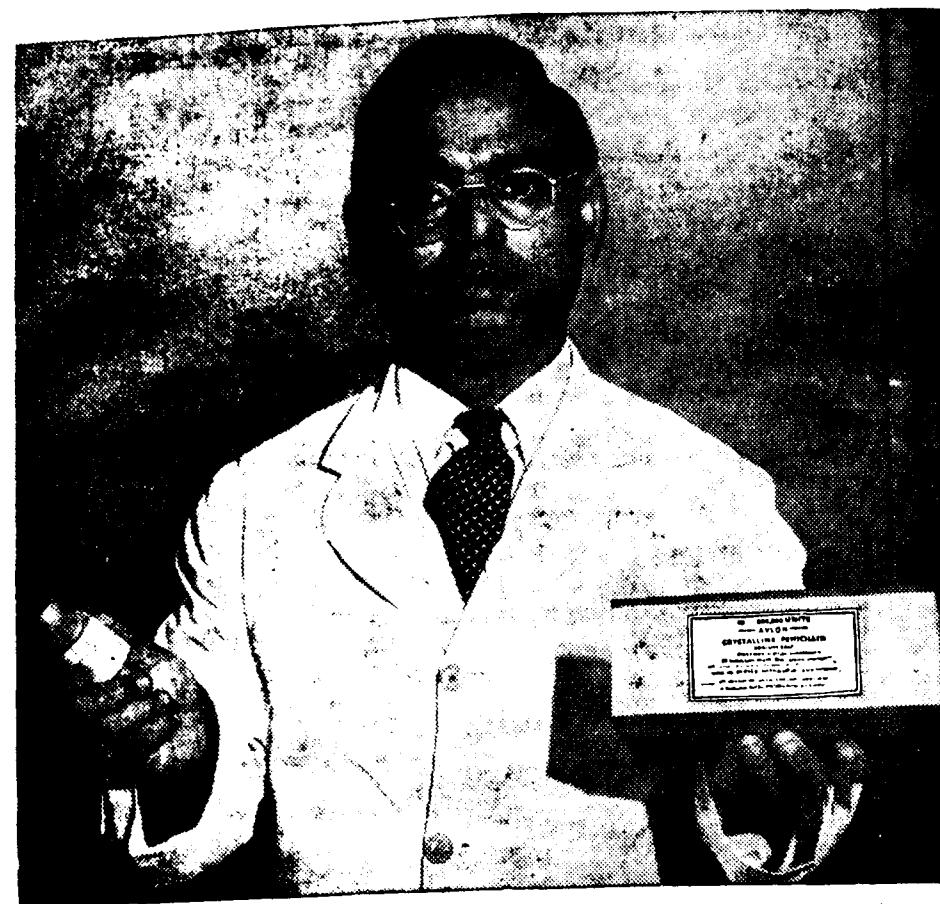
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	PAGE		PAGE
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Anglo-French Drug Co. (Estn.), Ltd.	71	Mandoss & Co., Ltd.	13, 58
Antiseptic	84	Marmite Food Extract Co., Ltd.	52
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Behar Chemical Works	51	Modern Drug House	17
Bengal Chemical	Inside of Back Cover	Monks of Buckfast Abbey	50
Bengal Modern Drug House	56	Morison, Son & Jones (India) Ltd., J.L.	33
Boots Pure Drug Co.	48, 54	Mukerji & Banerjee Surgical Ltd., H.	51
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Calcutta Surgical Co.	10	Oriental Research & Chemical Lab., Ltd.	17, 58
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Ciba Pharma Ltd.	41, 68	Parnell & Co. Ltd.	Outside of Back Cover
Cipla Laboratories	25, 34	Philips Electrical Co.	57
Continental Laboratories Ltd.	74	Phoenix Drug House	14, 65
Cossor & Son (Surgical) Ltd., A.C.	81	Polyclinical Laboratory Ltd., The	59, 64
Crookes Laboratories Ltd.	28	Prabhudas & Co.	63
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Hanovia Ltd.	77	Standard Medical Research Institute, Ltd.	55
Health	82	Suren & Co., Ltd., W.T.	53
Hering & Kent	62	Swastik T. B. Sanatorium	42, 43
Herts Pharmaceuticals Ltd.	73	Tablets Limited	51
Himalaya Drug Co.	52	Union Drug Co., Ltd.	16
Howards & Sons Ltd.	21	Universal Pharmaceutical Works Ltd.	13
Idomox Chemicals	64	Victory Chemical & Phar. Works Ltd.	16
Imperial Chemical Industries (India) Ltd.	5, 27	Vyas Bros.	11
I.M.S. Laboratory Ltd.	22	Volkart Bros.	20
Indian Schering Limited	46	Wander Pharmaceutical Department	72
Indoco Remedies Ltd.	64	William R. Warner & Co. Ltd.	1
Indo-Pharma Pharmaceutical Works	66	Zandu Pharmaceutical Works Ltd.	20, 23, 75
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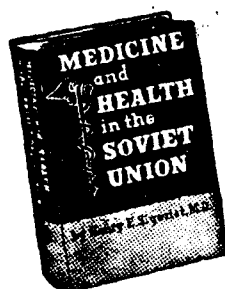
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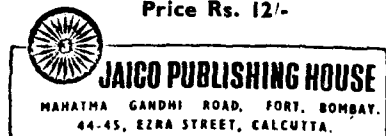
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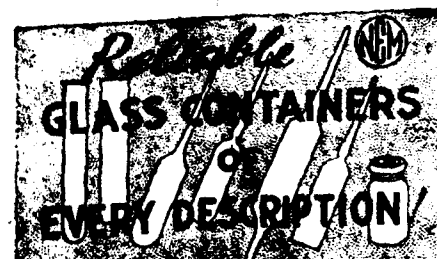
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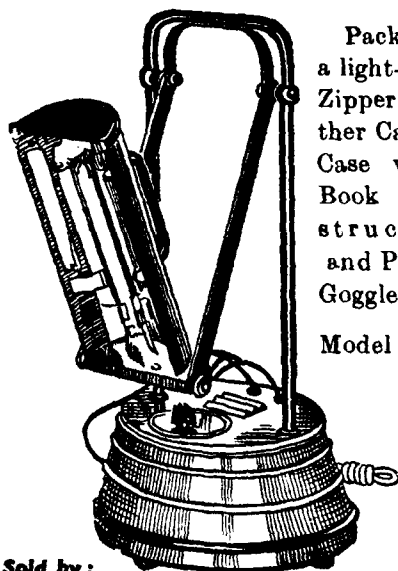
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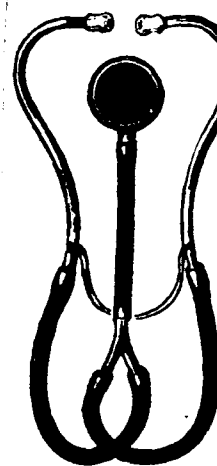
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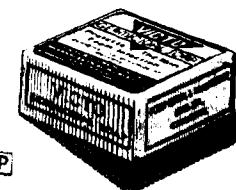
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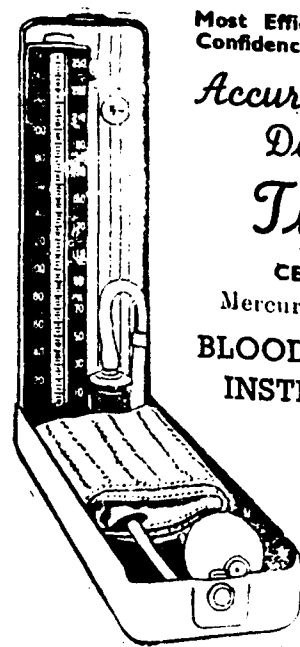
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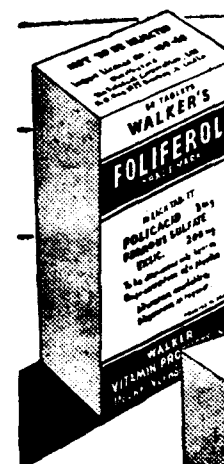
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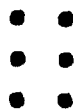
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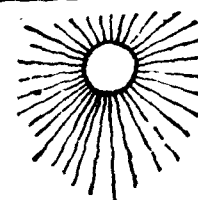
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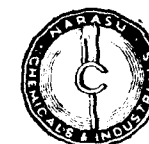
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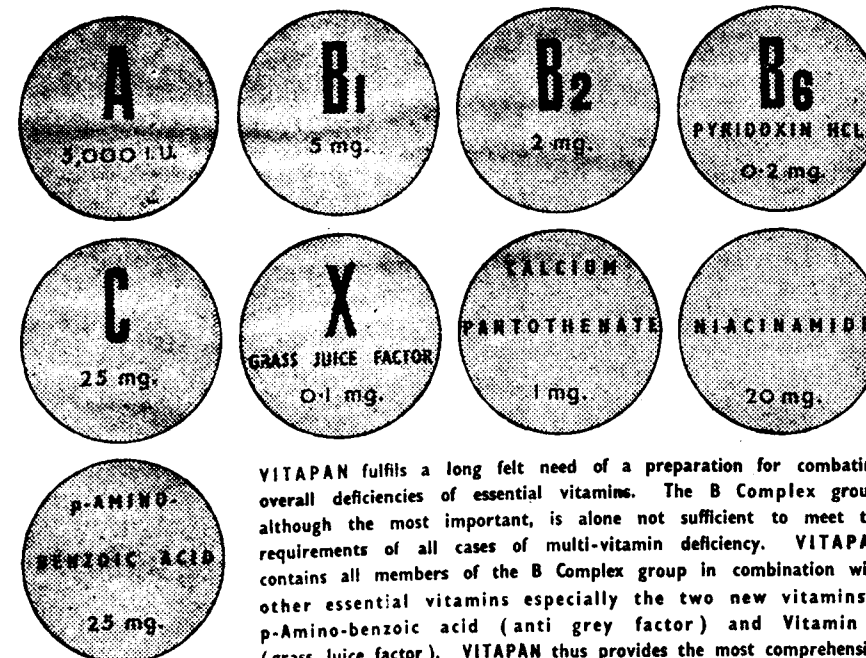
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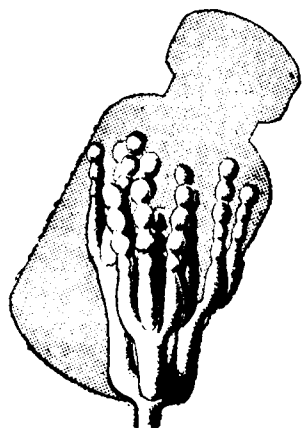
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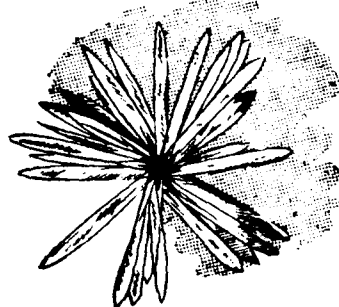
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Original Articles

HÆMOPTYSIS IN PULMONARY TUBERCULOSIS AND ITS TREATMENT*

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HÆMOPTYSIS is only a symptom and not a disease. It is in a great majority of cases a symptom of pulmonary tuberculosis. The term hæmoptysis embraces all degrees of "Blood spitting" from a slight flecking of sputum to massive bleeding. This may occur at any time in any case, thereby not depending upon the age or the extent of the disease. No symptom in tuberculosis causes more concern on the part of the patient than hæmoptysis.

Hæmoptysis may be of a very slight degree in the form of coloured sputum, flecking or streaking of sputum, or in the form of a profuse frank hæmorrhage amounting to several ounces of bright red blood; expectorated by the patient. In the majority of cases hæmoptysis begins while the patient is lying down or resting, so that exercise or work are not frequent exciting causes.

Attack

"Patients very often experience a tickling in the throat, followed by a gush into the mouth, with a "salt-taste" and on spitting notice "blood." In slighter degree of hæmoptysis, there may be only streaks, small clots, or liquid blood mixed up with sputum. Further, after a frank hæmoptysis has been suitably controlled, the patient may have blood-stained sputum for a couple of days.

*Specially contributed to THE ANTISEPTIC.

While again, hæmoptysis may be profuse, when copious quantity of blood is coughed out to the extent of 20 to 50 ozs. in a few hours. This bleeding may occur repeatedly for several days until the patient is blanched, weak and syncopal. This type of hæmorrhage is not very frequent but when it does occur occasionally instantaneous death may result. In the presence of caseous tuberculosis, hæmoptysis is particularly dangerous because it favours spread of the disease to uninvolved parts of the lungs.

Symptomatology.—The patients look greatly upset, alarmed flushed and sweating. The alarm and anxiety thus occasioned leads to restlessness. Tachycardia frequently seen may be due partly to nervousness and partly to active disease. Blood pressure is usually low during activity but later gradually improves, which is a favourable sign. Colour index is low. Cystological examination shows leucocytosis in the early stages.

Further, eliciting of true symptomatology is always difficult as the details furnished by the patient are very vague and ill-defined due to their being backward economically, socially and medically.

As is more often seen the patient has his own explanation to flecking or streaking of blood or blood mixed up in sputum expectorated by him. He thinks that he is working too hard or that he is smoking too much. He is apt to feel that these complaints are too trivial for a visit to his doctor.

Moreover, some physicians, unfortunately, when consulted confirms the patient in his belief. They very often consider the patient's estimate of the amount of blood expectorated is exaggerated and the medical attendant too often calms his fears by making light of it or attributing it to the condition of the throat, like a bursting of a small blood vessel since his examination reveals no positive evidence of pulmonary tuberculosis. The patient thus carries on with the usual mode of life at the doctor's assurance thinking that the condition is not serious. The result is that these patients return for treatment after a couple of months with extensive disease and cavitation. It is therefore suicidal to wait for the appearance of the signs and delay in treatment will surely prolong the disability.

Age incidence.—As far as the age incidence is concerned hæmoptysis is more common in old age group, particularly men. It is rare in children and infrequent in adolescents. Profuse recurring hæmoptysis is more common in older individuals with fibroid tuberculosis associated with bronchiectasis and rigid lung.

Pathology.—The intimate contact of the capillary circulation with the alveoli and the external communication of the bronchi provide an ideal arrangement for blood-spitting.

The smaller blood vessels in the neighbourhood of the lesion undergo endarteritis obliterans, but this is not always complete. Copious hæmoptysis in apparently healthy persons is due to the eroded blood vessels involved in an exceedingly active disease process.

Massive hæmorrhage occurs when cavitation is established and a large vein in the wall of the cavity is ulcerated. Dilated bronchi or rigid cavities traversed by partially thrombosed blood vessels which have lost their support of the contractile elements of the lung are the sites of bleeding.

Further, due to a disease process, an aneurysm develops in the weakened wall of a branch of pulmonary artery, crossing the cavity only to rupture it at a later date if left unaided by therapeutic measures. In an aneurysmal bulge which, if thrombosis does not occur within it, will sooner or later rupture and cause profuse and possibly a fatal hæmorrhage. More frequently hæmoptysis is a feature of well established disease, although it is by no means a universal feature.

Furthermore hæmoptysis is not invariably an indication that there is activity within the lung tissue, since it may occur when the only lesion present is healed and fibrotic.

Effect of acetone free fat of tuberculosis:—According to Smithburn and Sabin "the acetone soluble fat of the tubercle bacillus induces proliferation of all connective tissue cells and of blood vessels and cause hæmorrhage."

The disease processes and the injured blood vessels which are negatively charged bring about an effect of increased stimulation upon the vessels and thus increase the permeability of their walls, thus favouring a leak of blood-hæmorrhage.

Increased permeability of the vessel wall:—The small hæmorrhage is caused by the increased permeability of the vessel wall due to toxic substances in concentrated form.

Toxic products and hypersensitivity:—The concentrated toxic products in the course of tuberculosis will cause hæmorrhage in other tissues as well as in the bronchi. Blood-spitting in early lesion may be the result of hypersensitivity of the tissues to "Tuberculin Antigen." Perifocal hæmorrhage may be initiated by toxic alterations of the walls of the blood vessels in the inflamed parenchyma.

Some workers have described patients, "dying of internal drowning" caused by the blood filling the air passages without visible signs of blood externally.

Characteristics of the expectoration:—The patient coughs the blood mixed up in sputum and the expectoration in general is

frothy, alkaline in reaction, and may contain tubercle bacilli or elastic fibers detected microscopically.

Due to diapedesis:—Small hæmorrhages may arise from diapedesis through a congested mucosa and the hæmoglobin may stain the sputum pink or red—"rusty." Hæmorrhage incidence shows an increase with weather changes and these are invariably due to changes in the barometric pressure.

Investigation

As has been already pointed out the cause of pulmonary hæmorrhage cannot be detected by a physical examination. Time must not be lost in waiting till definite signs of the disease fully develop. Furthermore, hæmoptysis occurs even before there is any X-ray evidence of a lesion or long before tubercle bacilli are discovered in the sputum. Therefore every case of hæmoptysis must be carefully investigated and the patient should be regarded as suffering from tuberculosis, until the contrary is proved. Repeated sputum and radiological examinations must be undertaken periodically after the first hæmoptysis so that the disease is identified in its earliest stages.

Radiology is undoubtedly the most valuable means at our disposal for making a diagnosis of the existence of a tuberculous lesion in the lung. But, however, "until radiography is applied universally and periodically a proper evaluation of symptoms will remain one of the 'keystones' of diagnosis." (Keers and Young).

Physical examination.—During hæmoptysis, it is preferable to postpone a thorough examination of the chest. At least, the findings are inconclusive, if not misleading, because of the presence of aspirated blood in distant parts of the lungs. The signs elicited at this stage are not very characteristic. The changes in the lung are so much varied and numerous, that it is not wrong to say that there are no pathognomonic signs of a pulmonary hæmorrhage.

The diagnosis usually rests on a complete examination, including sputum tests, X-ray and in some cases bronchoscopy and laryngoscopy. According to Osborn, hæmoptysis is a positive indication for bronchoscopy, but delayed should the hæmorrhage be profuse. But a mirror laryngoscopy should be done as soon as possible after the hæmorrhage to ascertain whether the blood came from below the larynx or from the œsophagus.

Differential diagnosis.—It was formerly thought that hæmoptysis was almost a symptom of pulmonary tuberculosis. But our knowledge on this subject has increased considerably in the light of ever-advancing medical science. Hæmoptysis has been also the symptom in such diseases as pneumonia, bronchiectasis, lung abscess, pulmonary malignancy and heart diseases, while small quantities of

blood in sputum could be due to pyorrhœa, stomatitis and infected sinuses, blood dyscrasias and vitaminic deficiencies which cause alteration either in the constituents of the blood or the structure of the vessels may also cause blood-spitting.

Obvious conditions causing hæmorrhage such as foreign bodies and chest trauma must be kept in mind while the case of hæmoptysis is taken up for investigation.

All the same, there is hardly a disease affecting the respiratory system directly or indirectly which may not cause "blood-spitting."

Treatment.—So far as the treatment of this condition is concerned, every physician must be always prepared to tackle it since it comes as an emergency. This is one condition where willing co-operation among the patient, his relations and the family physician is desired. It is most often seen that the patient growing nervous at the sight of blood resorts to undesirable measures and the relations make good the opportunity, of course, at the cost of another's life and start experimenting with fictitious remedies. The patient is taken to places of worship, sacrifices are made, bathing insisted in sacred waters, sheep's brain tied on the scalp and animal blood sipped to make good the quantity of blood lost. Some Unani and Ayurvedic preparations are given internally and local applications suggested for the soles of the feet. Vigorous rubbing of ashes to the extremities and stimulating drinks are recommended. On some occasions, patients are made to inhale the smoke by burning pieces of paper containing sacred enchantments and mantras.

The popular belief among them is that the hæmorrhage gives exit to the poisonous blood and they do not realise the gravity of the situation which is truly due to a breach in the blood vessel. Instead of perfect quietude for the patient his house becomes a place of considerable activity. From the time the blood is expectorated until it altogether disappears, a train of physicians are brought to see the patient one after the other, according to the whims and fancies of every relation who wishes to impress upon the patient that he is doing his bit for him. This leads to imperfect employment of the remedies suggested by any one of the so-called "reputed" personalities of the time, thus making the lot of the poor patient more miserable. It must be the duty of every physician to follow the usual ethics of medical science and to uphold the medical etiquette! Next, attention should be paid to measures to take the patient and his relations into confidence and undertake to do some thing, which is of value and forget the personal gains and avoid unnecessary expensive remedies—deliberate frauds in most cases.

I therefore would like to take one by one the several remedies that have been employed from time to time and discuss their usefulness in the treatment of pulmonary hæmorrhage.

Environment

Let me make this point clear that the line of treatment depends upon the place where the patient is seen with an attack of hæmoptysis, whether the patient is in his home, or in hospital.

The environment of the patient at the time of hæmorrhage also plays a great part in the treatment of this condition. The treatment would be far more easier if the patient is in hospital where special equipment and trained assistance are available and the physician could exercise his authority within, of course, reasonable limits, to quieten the patient and avoid the nuisance of the patient's relations. While, on the other hand, if the patient is at home, there cannot be any restriction on the patient or his relations and the medical aid to obtain will be most difficult. However all this, could only be thought of if the hæmorrhage is of a mild degree, or else if it were to be severe, as more often happens, the patient probably will be dead by the time the physician arrives to treat his condition. It is the experience of every one of us that such hæmorrhages are very few and are estimated to be about 1% to 2% only, thus providing full opportunity for all of us concerned to play our part and be satisfied, irrespective of the consequences to the patient.

Rest.—Complete bed rest is essential for a case of hæmoptysis, whether mild or severe. To accord perfect "bed rest and lower the metabolic demands on all organs, to reduce the circulatory and respiratory demands to minimise the lung activity." In so doing, attention must be paid to physical rest and nervous and emotional quietude is of utmost importance.

An attempt must be made to obtain a most comfortable position for the patient. The best position seems to be semi-recumbent, lying on the back with one or two pillows under the shoulders and head, little higher or little lower to influence bleeding is rather doubtful. However, if the bleedingside is known, it should preferably be placed down, to reduce the effect of gravity. This position should be maintained for two or three days and later the patient is allowed to move in his bed and if there is no return of bleeding, he may be permitted to go to the bath-room and thereafter gradually permitted to increase his activities.

Reassurance.—Due attention should also be paid to the nervous temperaments of the patients and also to calm the temperaments of the friends and relations who may help or harm the patient in their anxiety.

Reassurance of the patient is by no means easy. Expectoration of large quantities of blood will "shake the nerve of the most "phlegmatic." Reassurance and encouragement play an important part in alleviating anxiety and reducing palpitation. A cheerful nurse or attendant is a great help and visitors must be kept away at all cost. The attending physician should do everything

in his power to allay the fears of the patient and give him confidence in order to restrain restlessness and nervousness. In a majority of cases, reassurance from a doctor and kind and gentle management by a nurse are sufficient to tackle all grades of cases.

As a word of caution, I may add that in a large majority of cases, it has been seen that these patients do not die of hæmoptysis but die after it, since an uncleared bronchial tube increases the danger of broncho-pneumonia which is a common cause of death.

Sedatives.—To obtain sufficient rest and quietitude, some simple sedatives may well be used with advantage. Sedatives like Bromide gr. x, Chloral Hydras gr. x, Phenobarbital gr. i, two or three times a day. If the patient has nauseating feeling these could be administered rectally as these act efficiently and quickly.

R	Pot. Bromide	..	gr. x
	Cal. Lact	..	gr. xx
	Glykeron	..	3p
	Hazaline	..	gr. xx
	Syr Rose	..	3 i
	Aqua Chloroform ad	..	3 vi T.D.S.

Linctus.—Most cases of hæmorrhage are arrested by the process of coagulation and clot formation. Any exertion and excessive cough may help in dislodging the clot out of the injured vessel. Therefore attention should be given to his cough by a linctus containing Codeine, which is very efficacious in relieving "cough."

1. R	Oxymellis	..	3 ss
	Acid Hydrocyanic Dil	..	m ii
	Morphin Acetat	..	gr. 1/10
	Aqua ad	..	3 ss
2. R	Spr. Codeine Phosph	..	m xx
	Glycerine	..	m xx
	Succi Limonis	..	m xvii
	Spt. Chloroform	..	m ii
	Aqua ad	..	3 ss
3. R	DiMorphin Hydrochloride	..	gr. 1/16
	Glycerine	..	m x
	Syr. Picis Liquid	..	3 i
	Aqua ad	..	3 ss

However, this is to be employed when absolutely necessary to relieve a very irritating type of cough. No attempt must be made by the patient to forcibly clear the bronchi by severe coughing for the danger of dislodging a clot, undoing a friendly act.

Ice.—During active bleeding, sucking and chewing of ice should not be permitted. This will make for the rapidity of swallowing. Ice held in the mouth lessens the throat irritation and an

ice bag "over the heart, on thirty minutes and off thirty minutes," has a quietening effect.

Drugs.—For arresting a hæmorrhage from a congested mucosa, some of these undermentioned drugs may be of some value. Methods employed should be to quieten the circulation and to reduce the amount of blood going through the diseased area. A large number of remedies have been suggested. Hæmostatic Sera, Calcium in its various forms, Pituitrin, Emetine and Congo-Red have been in use in the treatment of hæmoptysis.

Increasing the coagulability of blood.—*Calcium*:—Calcium, in one form or other, is the only harmless drug universally employed in the treatment of hæmoptysis.

Calcium is in vogue for the treatment of tuberculosis from the days of Ayurveda. The use of lime water (Defontenay, 1846), oyster shells (Hahnemann 1870) and the other Calcium salts have been frequently advocated. Corals and pearls have long been used in Ayurvedic medicine. Klostermeyer (1937) has showed that Calcium has a tendency to heal and is beneficial in tuberculosis.

Half a drachm doses of Calcium Gluconate or Lactate with or without Parathyroid $\frac{1}{4}$ gr. tablets has been used orally two or three times a day as this assists in Calcium metabolism. Injection of Calcium Gluconate or Cal. Chloride 5 to 10% solutions administered intravenously two or three times a week in mild cases and once a day in severe cases till the hæmoptysis is brought under control.

Moreover, after an intravenous injection of Calcium, it is found that ordinarily in the adult 65 to 75% of the Calcium passes out in the urine, 25 to 35% in the fæces although much greater variations may occur (Telfer 1922-'23). According to one another's estimation more than 50% of the Calcium injected intravenously is excreted in the urine within the first three hours and the remainder excreted within the first three days. However, Calcium seems to have some effect on the temperature toxæmia and exudative tendency of the lesions. Colloidal Calcium with vitamin D has been given intramuscularly as well as intravenously.

Further according to Denis and Minot (1920), it is impossible to raise the blood calcium above the normal level by oral administration.

It has been verified that the blood calcium level and other factors of clotting are unchanged in tuberculous individuals and these coagulants are seldom required. Therefore the curative value of calcium is doubtful.

Vitamin K:—The discovery of vitamin K has thrown open a new avenue in the treatment of hæmorrhages wherein the plasma prothrombin level is low.

Deficiency of 'K' in the body leads to a fall in plasma prothrombin and when this falls to about 50% of the normal, dangerous hæmorrhages are likely. In hæmophilia, purpura, hæmatemesis, hæmoptysis, and hæmaturia, the prothrombin level in the blood is normal and therefore vitamin 'K' is of no use. But by giving large doses of 'K' the prothrombin level is raised in blood far above normal and provides a complete failure.

The preparations commonly in use are the two synthetic compounds, Kapilin (Galxo Lab.) and Synkavit (Rochæ).

Kapilin is available for intramuscular therapy dissolved in Arachis oil and every c.c. contains 5 mgs. of the synthetic product and also in tablets form (10 mg.) and in oily liquid for oral use.

Synkavit (Rochæ) 10 to 20 mgs. can be given intravenously as it is soluble in water but "less sustained than that of Kapilin." When injections are refused by nervous patients Synkavit tablets could be used with advantage.

Congo-Red:—Good results have been claimed by some workers for the intravenous injection of 10 c.c. of 1% solution of Congo-red, which is said to increase the fibrin content of the blood and blood platelets and reduce the clotting time.

However it is good to remember that in certain cases it is liable to be followed by moderately severe reactions, "with rigor, fever and vomiting" and this fact requires to be considered when the question of its employment arises.

Hæmoplastic Sera:—Those that are commonly used are Neo-Hæmoplastic, and Coagulin Ciba. These are only serviceable in checking hæmorrhages which are of slight degree.

Anti-streptococcus Serum:—The case of recurrent hæmoptysis, resistant to usual treatment, should raise suspicion of secondary Streptococcus-Hæmolyticus infection and if promptly dealt with it would save many lives.

Injections of Anti-streptococcus Serum $\frac{1}{2}$ Polyvalent 25 c.c. (B.I.) are very useful in these types of cases.

Lower the pulmonary blood-pressure.—*Pituitary*:—Pituitary extract (Post Lobe) is said to raise the general but lower the pulmonary blood-pressure.

Pituitrin 0.5 to 1 c.c. doses diluted in 10 c.c. of Saline solution given four or six hourly has distinct value in arresting pulmonary hæmorrhage.

A word about the clinical findings is worthwhile remembering when Pituitrin is employed. Pituitrin injection should be made very slowly taking full five minutes. "Some patients may experience a feeling of faintness, palpitation, peristaltic movements of the abdomen and a desire to urinate or defecate." Since the patient is

already in the anxiety state unless the physician wins his confidence, some of these feelings will greatly upset the patient. This treatment has been tried in Montefiori Country Sanatorium and reported efficacious.

Amylnitrites:—This is available in containers and in capsules. This, it is thought, reduces the systemic blood pressure and constricts the pulmonary vessels and reduces the pulmonary hæmorrhage. When available in containers three to five drops are sprinkled on a piece of cloth or crushing a capsule in a handkerchief may be inhaled.

Nitroglycerine:—2 to 3 minims of 1% solution or $\frac{1}{100}$ gr. tablets, allowed to be dissolved in the mouth. This also acts similar to Amylnitrites.

Tincture Veratrum Viride:—Some others prescribe Tincture Veratrum Viride, 5 drops, 3 hourly until the pulse slows. This is especially useful in oozing of the toxic or allergic type.

Adrenaline Hydrochloride and Ergot are being employed in the treatment of pulmonary hæmorrhage, but their effect is doubtful.

Opiates:—Although opium and its derivatives meet the requirements of treatment yet they should not be used indiscriminately.

“They will quiet nervousness, remove fear, quiet the circulation and respiration, relieve the fatigue caused by the enforced quietitude and allay the cough.” But there is the danger of suppressing the cough reflex by their use and thus favour pneumonia. But this view is not accepted.

The retention pneumonia is now recognised as being an allergic or tuberculin reaction due to focal contents acting upon the hypersensitive fixed cells. As such, a small dose of $\frac{1}{2}$ gr. of Codeine Sulph. given hyperdermically is useful. Although there are advocates for either sides, however, small quantities occasionally used with good judgement has been found very efficacious in some instances. All the same its use is forcefully forbidden by standing orders in some institutions.

Reduction of blood supply to the lung.—A simple procedure of increasing the “thrombokinase” is to bind the thighs in order to stop the venous circulation and reduce the passing of blood through the lungs. The thighs are kept bandaged for two hours and then a bandage is put round one arm and one thigh is unbound. A certain amount of œdema is produced by this procedure.

Employment of Tr. Veratrum Viride is also to reduce the blood supply to the pulmonary field by slowing down the pumping action of the heart.

Surgical Measures

Artificial Pneumothorax.—In hæmorrhage from the lung, pressure could be applied by means of Artificial Pneumothorax and this is really the only practical method of treatment. This procedure could only be applied, if one is sure of the side from which the bleeding is coming. In acute cases 200 to 300 c.c. of air has been found sufficient to arrest the hæmorrhage or else refills could be given a few hours later if the necessary collapse has not been accomplished.

This treatment of arresting pulmonary hæmorrhage by Pneumothorax, especially in early cases, is often “dramatic.” This method could be resorted more often in a Sanatorium where good technical assistance and equipment are freely available.

Thoracoplasty.—In chronic fibroid cases where collapse of the lung may not be possible because of the fibrous tissue and of pleural adhesions, a thoracoplasty is recommended, “although a first stage thoroacoplasty is usually without much influence upon cavities even if apically located.”

Phrenic evulsion and pneumoperitoneum.—Where Pneumothorax is not possible due to pleural adhesions, phrenic evulsion or pneumoperitoneum or both are practised in some cases by means of which tension due to pleural adhesions is reduced. Occasionally good results are the outcome of a fairly well established pneumoperitoneum by producing a diaphragm lift, thus diminishing the risk of hæmorrhage.

All the same, a large fatal hæmoptysis is rare, but when it does occur death may be almost instantaneous. Moreover in such cases no treatment is of any avail. Yet in a few other cases hæmorrhages have a tendency to stop of their own accord regardless of anything done by the physician.

Operation on phrenic nerve and thoracoplasty although considered life-saving measures, yet the amount of “shock” of these surgical procedures do not justify their utilization, for in severe hæmorrhages death would ensue before any of these measures could be resorted.

Subcutaneous emphysema.—Gonzalez-de-vega and Perez (1935) report successful treatment of tuberculosis hæmoptysis by subcutaneous injections of air varying from 200 to 300 c.c. at the postero-axillary line at the level of the 8th, 10th or 11th ribs by a Pneumothorax Apparatus.

Dr. Basu, Professor of Calcutta Medical College in his article “Treatment of Tuberculous Hæmoptysis” reports of admirable results with the employment of subcutaneous emphysema as a means of treatment.

Diet.—The diet should be quite simple and light. Plain milk will be sufficient to start with but later other articles like bread,

butter, and eggs may be added on gradually. Fluid-in-take should be restricted to a pint and a half daily and should not be hot or too cold. Cold drinks seem to dilate the pulmonary vessels and hot drinks should be avoided on account of their stimulating effect on the heart.

Liberal supply of Vitamin C helps in increasing the calcium metabolism. Further, except in cases of very severe hæmorrhage, there is little cause to restrict the diet. 'Gelatin' has been recommended for the effect of increasing the clotting power of the blood. However, as liberal a diet as possible should be maintained.

Bowels.—Constipation complicates the course of a case of hæmorrhage and any violent attempts made at defecation may bring about recurrence of bleeding.

To relieve it saturated Epsom Salt, one teaspoonful every hour until the bowels move, Milk of Magnesia, Reho. pill are of value when the patient feels a desire to defecate. Straining could be eliminated by the use of a soap water or turpentine enema. It would have been experienced by the physician that the patient more often wishes to feel that something is being done and under these circumstances there is a field for everyone to prove superior to his predecessor in resorting to relief measures.

If the patient's morale is at such a low level that "treatment" seems called for, then Calcium may be administered as a psychological stimulant, the syringe occasionally has its place.

In brief, by this discussion, an attempt has been made to throw light on all the aspects of pulmonary hæmorrhage and its treatment. It is now an accepted truth that the several therapeutic measures resorted to are not useful in arresting with confidence the pulmonary hæmorrhage whether slight or serious. The chief agency that is really responsible to stop the hæmorrhage is the "body mechanism" itself, that comes to its rescue and the elaborate measures of the physician form only an eye-wash for the patient and a consolation to his wife and children.

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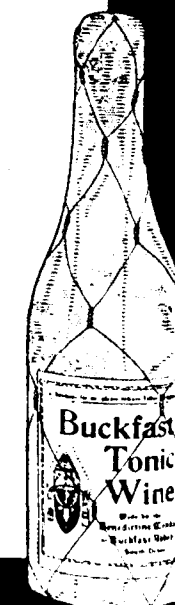
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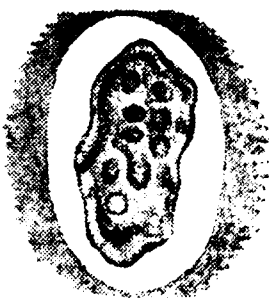
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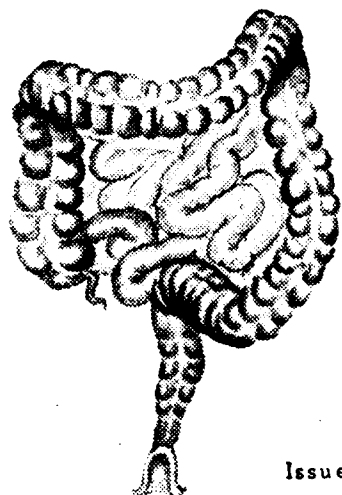


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TISSUE TRANSPLANTATION (SKIN GRAFTING)*

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Hon. Surgeon, Podar Hospital,

Hon. Assoc. Surgeon, Parsee General Hospital, Bombay.

THE art of tissue transplantation has been practised since the ages. The Egyptians as far back as 1500 B.C., and the Hindus knew the value of the forehead flap often called the Indian forehead flap. From these places the knowledge spread to Persia, Arabia, Greece and finally penetrated into Italy—in the first century Rome became the medical centre with primitive surgery where Celsus and Galen (a Greek physician) practised the art of surgery.

After the fall of the Roman Empire came the dark ages when the light of science grew dim till again in the middle ages, one doctor named Branca, a "wound doctor" from Catania, reintroduced the ancient Indian art of using skin flaps. Finally in 1869, Reverdin, a Swiss surgeon working in Paris, demonstrated the successful transplantation of epidermal grafts on granulating tissues. Pollock in London learning of Reverdin's discovery put it into successful use and demonstrated it to the medical fraternity in London.

Ollier and Thiersch in 1872-1874 introduced the large thin razor graft while Wolfe in 1875 introduced the method of full thickness graft. Maas in 1884 described the technique, indications and possibilities of the original Indian flap method. The tubed flap method described by Fitalov and Gillies is one of the outstanding advances of plastic surgery. With the termination of the two World Wars plastic surgery has come into its own and special centers with competent surgeons and good equipment have produced excellent work so as to restore the injured to full citizenship. There is no end to the structures that can be transplanted—skin cornea, bone, nerves, tendons—and lately stored blood vessels from cases of accidental deaths have been utilised very usefully in arterial anastomosis in children with congenital defects in the circulatory system. The domain of tissue transplantation is unlimited and fascinating.

Skin grafting.—This method is the most commonly used and a useful anatomical classification of skin grafts is :

- A. Thin razor grafts includes the epidermis only.
 - (1) Small thin razor grafts (Reverdin).
 - (2) Large thin razor grafts (Ollier-Thiersch).
- B. Thick razor grafts (Blair's split skin or intermediate skin grafts) includes part of the dermis.

* Specially contributed to THE ANTISEPTIC.

C. Fully dissected skin grafts—includes the dermis.

(1) Small deep grafts (Davis).

(2) Large full thickness grafts (Wolfe-Krause).

Before a grafting operation is undertaken there are many factors which will influence the final result and the surgeon has to decide from experience regarding most of them. Constitutional faults when present should be treated and it will be noticed that there is a remarkable improvement in the local condition of the part to be grafted. If the recipient area is definitely infected all grafting operations should be postponed except in urgent cases when the thin razor or the small deep graft is resorted to to tide over a difficult period. The cosmetic result and the restoration of function are the two main considerations. The cosmetic result is good when the skin from the adjoining part is taken as it matches the colour, texture and hairiness of the part—this is very important on the exposed parts of the body like the face. From the functional point of view the tissue replaced must be similar—if a weight bearing area is to be covered then the graft must be able to serve to that purpose, similarly the loss of conjunctiva must be replaced only by mucous membrane and not the thinnest skin graft as it is bound to fail in the final result.

Regarding the optimal time of grafting—fresh defects can be immediately grafted, this holds good for 6-8 hours only. After that if the wound is dirty it is desirable to clear the infection with local and systemic chemotherapy and then do the resurfing operation. The recipient area is ready for grafting (over a granulating area) when there is no discharge, absence of marginal inflammation and when clean, firm and flat granulations appear with a pink rose colour. At this stage all antiseptic dressings are discontinued and normal salt solution compresses applied for 48 hours before operation. On the night of the operation the granulations are doused with ether. At operation the recipient area is first prepared—hæmostasis must be perfect to avoid hæmatoma formation, yet too many ligatures should be avoided, spontaneous hæmostasis by pressure is to be relied upon. Hæmostatic solutions like topical thrombin may be profitably applied on this surface and also helps in firmly holding the graft. If there are any exposed views traversing the field they are best resected to avoid thrombosis of these after the graft is put. If the granulations are heavy they are sliced off with a sharp knife or razor and bleeding controlled as stated above. Scraping of the granulation is to be avoided.

The donor area is suitably selected and on the eve of the operation washed with soap and water, washed with 70% alcohol and rinsed with normal salt solution. No strong antiseptic application is allowed. In the theatre it is again cleaned with alcohol followed by ether. Either local or block anæsthesia should be used and the graft transferred with the least delay to the recipient site. The

dressing to be applied must be nonadherent, protective, absorptive, capable of exerting firm even pressure and of immobilising the graft. The first layer may be perforated cellophane, rubber tissue "tube grass" or even wide meshed paraffined gauze. Marginal sutures or mastisol cement may be used for better immobilising. The second layer is a pad of gauze wrung dry of normal salt solution. It is laid carefully to avoid creation of wrinkles. This layer absorbs the secretion. The dressing is now built up, each layer being larger than the underlying one so as to focus the pressure on the graft. The dressings are maintained for 2 to 3 weeks but if much exudate is expected due to the infected surface, then the dressings are changed after the first 24 hours. After the dressings are discontinued the grafted area is protected from mechanical or thermal injury for a month or two. After that gentle massage with a bland ointment would be beneficial.

The following is a brief description of the various methods of skin grafting and the important points in each method.

A. Reverdin's small thin razor grafts (pinch grafts)

This is a simple procedure which can be done even in the presence of some infection on the recipient area. If some of the grafts don't take the operation may be repeated without undue pain to the patient. Since it produces a mosaic appearance and the recipient area tends to contract its use is limited to cases where rapid resurfing is desired in spite of the degree of infection although never during the stage of acute inflammation. The graft is obtained by passing a straight needle through the epidermis to raise an island of tissue which is cut with a sharp knife. The assistant is handed over the needle with the graft which is then pressed on the recipient area. The graft should not be cut at a deep level as scars will be left on the donor area. If the operation is done in stages the periphery should be grafted first. This method is not very often used due to its disadvantages in the cosmetic result. In non-exposed areas it may be utilised in cases of emergency.

B. Large thin graft of Ollier-Thiersch

Due to their thinness and comparative avascularity the graft obtains its nourishment by direct osmosis from the surrounding lymph spaces. This is a simple and rapid method and any area can be covered when there is available donor skin, the bare area also heals without scarring. It is unable to stand slight trauma and is inapplicable around joints. It is not good for exposed areas due to the discoloration that occurs. To take the graft the skin should be properly stretched and the knife used, really sharp. The Blair's knife is placed flatwise and with sawing movement a uniform graft of sufficient length is cut. The surface exposed should present minute, punctiform hæmorrhages from the tops of the cut papillae if the graft is of proper thickness. The grafts should slightly overlap

the wound edges and may also be immobilised with a few marginal stitches. A single long graft is better than many small grafts. The dressings are applied on the same principle as mentioned previously and if all go well they can be changed after 2 weeks when the graft would have already taken. If much discharge is expected the dressings are changed earlier but at the same time the chances of success are also less. This method of grafting is the most often utilised. Its results are quite good and extensive areas can be grafted. It is important to bear this method of treatment in mind when there are big raw areas as it avoids daily dressings, the economic and other disadvantages both to the patient, the physician and the institution where he is receiving treatment. Areas which would have taken 4 to 6 months to completely heal up can be restored to normality within a month.

C. The thick razor grafts (Blair's split-skin grafts)

The disadvantages of the Ollier-Thiersch are the advantages of this method as the graft retains its natural colour, affords better protection and is less liable to trauma. The graft includes $\frac{1}{3}$ to $\frac{3}{4}$ of the full thickness of the skin and is taken by the Blair's knife working at the slightly lower level than in the previous method. The donor area heals up without scarring.

D. Large full thickness graft of Wolfe-Krause

This does not include the subcutaneous fat. It does not succeed except on a clean wound. It is useful for facial defects as the cosmetic result is good. It also gives good protection and is indicated for pressure-bearing areas. The donor area requires either direct closure if the graft is small or a large thin graft may be necessary. The necessary graft is removed either with or without the subcutaneous fat with a procedure similar to removing the skin in a dissection, but scissors are best avoided in the dissection and skin edges are held with dural hooks or a fine Nylon traction suture. If it is removed with the fatty layer then it requires trimming off of the fat. Since the graft shrinks it is advisable to take it of greater size than the recipient area. This is useful for grafting over joint areas and for exposed parts like the face.

E. Small deep grafts of Davis.

This method has gained popularity as it requires a small donor area and can be laid on intact granulations with a high percentage of "takes." Since the grafted area presents a pitted appearance it is not indicated on exposed areas. It serves the purpose of a temporary graft in urgent cases. The graft is obtained in the same way as the Reverdin's pinch graft except that the scalpel penetrates the skin obliquely downwards to the apex of the cone lifted up and the procedure repeated on the opposite side. The graft

should not be bigger than 5 cm. in diameter—larger ones will lead to scarring on both the donor and recipient areas. The grafts may be taken from an elliptical area the whole of which can then be excised and the wound margins sutured hence avoiding any defect in the donor area (Goode).

F. Dermal grafts.

This is a full thickness graft but de-epithelised and hence consisting only of the corium. Recently gaining favour in the repair of hernias where the gap is a fairly large one and in recurrent hernias of the abdominal wall, it is also used to fill up depressions beneath the skin. The graft is taken in different ways.

(1) A full thickness graft is excised and the epidermis sliced off with a knife.

(2) The epidermis is removed with Blair's knife and the corium excised for the graft.

(3) The epidermis is raised but kept attached at one end and after the corium is removed, it is replaced.

The graft is placed deep surface upwards and is sutured to the margins of the gap. This method is worth a trial in recurrent hernias.

To summarise the article the history of plastic surgery is discussed in brief while the different methods of skin grafting are described in some detail so that a proper perspective of the wide field of plastic repair can be had. Every surgeon must be an artist first and surgeon second as there are occasions in every operation when he has to use his judgment and employ the fundamental principles of plastic surgery—from the moment he makes the skin incision till such time as he stitches the skin. There are many situations when there is a large breach of the skin surface either from traumatic, infective or neoplastic causes and it is in such cases that the aid of plastic surgery is such a boon to the patient. Many cases of extensive ulceration are treated day in and day out with a large variety of antiseptics—the fresh and delicate capillaries are severed as each dressing is changed and naturally the ulcer takes months to heal—instead of that if the appropriate tissue transplantation be thought of and duly carried out it would relieve the economic strain on the institution as well as the patient.

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THE ROLE OF ISOTOPES IN MEDICINE*

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PART I.

The discovery of isotopes and their properties

THOUGH the study of atomic structure and its electrical behaviour commenced long ago, it is only after the devastations in Japan during the last Great War, that our attention has been drawn towards the immense possibilities of atomic energy. Since the time of Dalton, an atom was generally accepted to be the smallest indivisible particle of an element, taking part in all sorts of physical and chemical processes. But, the researches of Thompson and Rutherford brought a new era in atomic physics.

According to the modern theory, an atom consists of a nucleus and a number of electrons. The nucleus, though at first thought to be a single unit, is now known to be formed of protons and electrons, bound together by enormous electric force. A proton carries an unit of positive electric charge, equivalent to the negative charge of an electron, and is much bigger in size than the electron, which has the size of 1/1830th part of an atom of hydrogen. More recently, during the study of cosmic radiation by the cloud-chamber method, Anderson showed that a proton consists of two particles, the neutron and the positron; the former forms the greater part of the mass of the proton and is electrically neutral; whereas, the latter, almost equal in size to the electron, bears the unit of positive charge as already stated.

In the formation of the nucleus of an atom, the protons are in excess of the electrons, thus imparting a nett positive charge to the nucleus; and, the electrons thus fixed to the protons in the nucleus, are called nuclear electrons. Outside the nucleus, there is another group of electrons, exactly equal in number to the excess of protons in the nucleus, thus establishing a state of electrical equilibrium in the atomic system. These extra-nuclear or planetary electrons are arranged in groups owing to the influence of the nuclear attraction and their own mutual repulsion; and they revolve swiftly in orbits around the nucleus. The number of these extranuclear electrons in the atom of an element determines its atomic number, and, consequently, its place in the periodic table; and, the atomic number, in its turn, represents the numerical value of the positive charge on the nucleus. The chemical properties of an element depends almost entirely on the extra-nuclear electrons; and the nucleus is responsible for its physical properties.

Though the nucleus is composed of protons and electrons, its volume is slightly less than the sum of the masses of its constituents. This is due to 'close-packing', which is not the same in all

elements. Hence, it has been necessary to find out the 'packing-fraction' in order to measure the forces which keep the constituents of the nucleus bound together. The higher the packing-fraction, the less is the affinity in between the protons and electrons, and the less stable is the atom.

These facts about the structure of an atom were found out from the study of certain heavy elements, called radio-active elements, radium being the first known among them. They are found to undergo spontaneous disintegration with the liberation of protons and electrons from the nuclei of their atoms, and consequent emanation of one or more of three radiations, known as the α , β and γ -rays. α -rays are positively charged particles, projected from the atom with great velocity, one α -particle being equivalent to a couple of protons. β -rays are negatively charged, each β -particle being an electron itself. When the β -rays pass through the rings of planetary electrons around the nucleus, collisions are likely to occur; these collisions are the source of the hard γ -rays (X-rays), of very short wave-length. Thus we see that the nuclei of radio-active elements are unstable and are undergoing continual structural changes under normal conditions.

From the studies of such radio-active disintegrations by Thompson, Dempster, Aston and others, it was found that when the nucleus of the atom of a radio-active element loses one α -particle, sooner or later it will part with two of its nuclear electrons, so as to leave the nucleus in its former electrical state. In its present state, though the volume and weight of the nucleus will be four units less, the atomic number of the new element will be the same as that of the original one. Hence, we have now two elements occupying the same place in the periodic table, and having the same chemical properties, but differing in their physical properties. Such substances are known as isotopes of the element concerned.

These findings about the radio-active elements led workers in the field to search for artificial devices for altering the structure of the nucleus. Such processes are known as bombardment of the nucleus; and the bombarding agents used are the α -particles or accelerated protons, hard γ -rays, cosmic radiation etc. It is this bombardment of the nucleus, that causes liberation of atomic energy, which forms the basis of the most powerful destructive weapon yet known—the Atom Bomb. As Uranium possesses the most complicated nucleus, it serves the purpose best. And as a result of such artificial alteration of the nucleus, it has been found that almost all the elements have isotopic forms; and more than one isotope may be derived from the same element. The isotopes may be either stable or radio-active, depending on the nature of their nuclear change. Iron is known to possess at least 7 isotopes, three of which are radio-active; lead has 4 stable and 5 radio-active

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isotopes; uranium gives 2 isotopes of each type; and so on. But it is only radium that possesses natural radio-active isotopes, no stable form being yet known.

As already mentioned, the nuclei of the isotopic forms of an element, though differing in their number of protons and electrons, are in the same electrical state as the original element, and can, therefore, hold the same number of the extra nuclear electrons in position. This is why the isotopes possess the same chemical properties, but differ in their physical properties—*e.g.* atomic weight, solubility, spectra, etc. Thus, we see that the whole number rule for atomic weight, as recognised in Chemistry, is not valid. The physical value of atomic weight depends on the 'packing-fraction', and the proportion of isotopes in the element. The atomic weight of a mass of element, consisting of atoms with similar nuclei, indicates the number of protons in its nucleus. One curious fact may be added here that whenever an element is prepared chemically in the laboratory by any process, the proportion of the isotopes present in it is always constant. But, naturally occurring elements and compounds show variations in the proportion of isotopes according to the source they are obtained from.

As it was possible to alter the structure of the nucleus artificially, attempts were made to convert one element into another. Thus, Lawrence, Livingstone and Lewis in America succeeded in transforming Lithium into Helium ($\text{Li}_6 + \text{H}_2 = 2 \text{He}_4$), and Nitrogen into Carbon ($\text{N}_{14} + \text{H}_2 = \text{C}_{12} + \text{He}_4$), by using the nucleus of the Hydrogen-isotope H_2 as the firing agent.

These modern views about the structure of atoms and atomic transmutation are going to shake the very foundation of Physics and Chemistry, studied as they were so long. Now it may be possible to build up precious metals like gold or platinum for some cheaper elements. The discovery of the four isotopes of Carbon— C_{11} , C_{12} , C_{13} and C_{14} , and the two isotopes of Hydrogen— H_1 and H_2 , the properties of which are different from each other, has set up the probability of a new Organic Chemistry. And, further to our surprise, we are now getting radio-active isotopes from some elements which were so long regarded as stable, *e.g.*, Sodium, Carbon, Calcium, Iron, Lead, Bismuth, etc. Thus, it is not far beyond expectation to avail of these radio-active isotopes as cheaper substitutes for radium in radio-therapy. Cobalt has already shown brighter prospects in this respect. Moreover, we can guess the probability of building up radio-active compounds with the help of such radio-isotopes; *e.g.*—Radio-sodium and Radio-iodine in the synthesis of Sodium Iodide, Radio-sodium and Radio-bromide for Sodium Bromide, and so on. Such radio-active compounds, too, may serve the purpose of radium.

PART II.

The application of Isotopes in Medicine and further probabilities

As regards the application of isotopes in Medicine, we see that, they have already occupied an important place in research work, as well as in therapeutics. Being chemically indistinguishable, the different isotopic forms of an element are utilised in the same manner in the various biological processes within the body. But their journey through the system can be differentiated by physical methods. In the field of research, they have been extensively used as tracer-substances, in the study of absorption and metabolism of different elements in the body in health and in diseased conditions. Both the stable and the radio-active isotopes have been used for the purpose.

In the case of the stable or heavy isotopes, they have been incorporated into various compounds in abnormal amounts to build up so-called 'labelled' substances, *e.g.*, Glycine containing 35 per cent Nitrogen as N_{15} in contrast with the usual Glycine containing 0.4 per cent N_{15} , and administered to rats. A few hours later, the animal is killed, and the proportion of N_{15} in the Nitrogen from various proteins of the body is studied by means of Aston's Mass Spectrograph. The presence of this isotope in the body proteins proves that these are constantly being re-formed at the expense of ingested Glycine or its products. Moreover, with the discovery of the different isotopic forms of Carbon, Hydrogen, and Nitrogen, it has been possible to follow the steps by which amino-acids are utilised in the body. Such precise knowledge of normal metabolism and its alterations in disease may, in course of time, bring about revolutionary changes in pathology and therapeutics.

The radio-active isotopes used as tracer-substances, serve a much wider range of purpose and give more accurate results. The radio-active disintegrations of such isotopes per second can be counted with a Gieger Counter. The amount of the isotope present in a sample can also be determined from the frequency of such disintegration, which is proportional only to the remaining number of atoms of the isotope. The high sensitivity of the Gieger Counter makes it possible to use the radio-isotopes in such small dosage, which is not likely to have any toxic radiation-effect on the body as a whole, nor any local effect on any part of the body in which it may be concentrated to any extent, nor alter by its radio-activity, the metabolism of the tissue studied. Thus, in certain instances, the radiation of the isotope itself has been used to detect, in the living subject, the position and distribution of the element through the body, or to map out its location accurately within the tissues in histological specimens.

The radio-active isotopes have been applied for studying the radiation-effects on living cells. As a result of such internal irradiation, after a short latent period, there is active mitotic division in the cells under observation. But, later on, these radiations produce a nucleo-toxic effect, which causes nucleus pycnosis with the formation of part-nuclei during cell-division, and brings about retardation of cell-proliferation. These phenomena are similar to the effects of roentgen rays on tissue-culture, first investigated by W. Alberti and G. Politzer, and are recorded as the Alberti-Politzer Law. The greater the intensity of growth of the cells, the more sensitive they are to the effects of irradiation.

The radiations from a radio-isotope being recordable on an X-ray plate, exposure of thin sections of tissues containing such isotopes against suitable plates will bring out their exact location. The distribution of Calcium and other elements in the developing or diseased bones has been found out by this method, applied on a macroscopic scale. Such auto-radiographs taken after administration of 'labelled' iodine have been of great help to estimate the function of the thyroid gland and to differentiate hypertrophic thyro-toxicosis from thyroid carcinoma, the iodine-metabolism in the gland being generally reduced in the latter condition.

They have also been employed for studying the rate of diffusion of many substances through various membranes of the body, and the rate of attainment of equilibria of such substances in the different body fluids. The rate of absorption and utilisation of iron in the body has been determined in this way; and it has been shown that its absorption from the gut is hastened by the depletion of body-iron store, rather than in anæmia. The rate of metabolic turn-over of many substances, *e.g.*, Iodine metabolism in thyroid, phosphorus metabolism in parathyroid, etc., and the replacement rate of many normal tissue components, *e.g.*, the water-molecules of the plasma, deposited fat-molecules of the body, etc., have been studied in this way; and, these have been found to be renewed much more frequently than had been thought. The radio-active Sodium (Na_{22}) in the form of Sodium Chloride has been administered to evaluate the circulation in the extremities in peripheral vascular diseases. The radio-active forms of Krypton or Xenon administered in gaseous form by inhalation have been a great help to further our knowledge of the physiology of respiration and circulation. Survival of red blood-corpuscles after transfusion has been determined by feeding the donor with radio-active Iron or Phosphorus, which takes part in the synthesis of hæmoglobin, and thereby labels the red cells. Absorption of certain drugs after subcutaneous injection, *e.g.*, Insulin, has also been studied by labelling them with known isotopes. The isotopes have been so extensively applied in various fields of research, that it is not possible to deal with all the problems in this small article.

Next coming to the therapeutic application of the radio-active isotopes, we see that they have been used as curative agents in a number of diseases, hitherto regarded as incurable. Though it is too early to estimate their value at present, the results obtained are very promising. They have been used both externally and internally. In order that a radio-isotope can be administered safely for therapeutic purposes, the following points require careful consideration:—(1) the nature and properties of the radiations, emitted by the isotope; (2) the protection needed for those who work with them; (3) dosage-rate, expressed in the millicurie standard. Though the dose must be sufficient for optimum therapeutic effect, it should produce no systemic irradiation effect, which may be harmful to the body-cells; (4) selective areas of concentration of the element administered; and (5) main channels of excretion of the isotope, and necessary precautions for avoiding damage to the excretory organ.

Externally, in the treatment of some skin-diseases, *e.g.*, hyperkeratosis, warts, basal-cell carcinoma, and hæmangioma, the radio-active Phosphorus (P_{32}) has proved to be quite efficient. It emits only β -rays, and can easily be used for superficial irradiation, as an aqueous solution absorbed on thin blotting-paper. The dosage ranges from 34 microcurie hours per centimetre square, the erythema dose, to 4400 microcurie hours per centimetre square, required to produce bullous epidermitis. Solutions of radio-active Gold (Au_{198}) have been injected locally into tumour masses, *e.g.*, lymphosarcoma, squamous-celled carcinoma of the nose and eye-lid, Hodgkin's disease, and lymphatic leukæmia, with encouraging results; the healthy tissues around the tumour are but little damaged, owing to the short path of the β -rays, emitted by the radio-active gold; it has also been injected intraperitoneally for abdominal Hodgkin's disease. The radio-active form of carbon (C_{14}) shows better probabilities on these lines. As an artificial radio-active substance, Thorium-X, emitting alpha particles, may, also, be useful in the treatment of superficial affections.

The radio-isotopes of some elements have been given internally in some diseases. From our common knowledge of pharmacology, we know that certain substances when administered in therapeutic doses have a selective tendency to accumulate in certain organs and tissues. So, also, is the case with the radio-active forms of these substances, as these are chemically indistinguishable; for example, Radio-iodine (I_{131}) accumulates in the acini of the thyroid gland; chromic phosphate containing radio-phosphorus accumulates in the liver, spleen, bone, reticulo-endothelial system, and in the actively growing tissues; radio-brominated dyes accumulate in the reticulo-endothelial system. Hence, by administering the radio-active isotopes of such substances, either by mouth or parenterally, it may be possible to irradiate particular areas of the body,

in which they accumulate in sufficient concentration, while avoiding the systemic effects of such radiations.

In fact, administration of radio-active Iodine has become a standard method of treatment in thyrotoxicosis, and gives results just comparable with those of Thiouracil. It has also been found to be useful in those cases of thyroid carcinoma and its metastases, which show the tendency of concentrating Iodine. Attempts with radio-phosphorus in the treatment of polycythæmia, myelogenous and lymphatic leukæmia, and multiple myelomatosis, have met with notable success. So, in the near future, along with the progress of our knowledge about selective absorption of different substances, it may be possible for us to fight against neoplasms, and, even localised infections like tuberculosis, leprosy, etc. by such internal selective irradiation-therapy.

Another important outcome of the recent progress in nuclear physics is the construction of the electron-microscope, which gives 20-30,000 times magnification of the object seen. Though the electron rays are not visible to the eye, they give photographic pictures of objects on sensitive plates. With the help of this ultra-microscope, it has been possible to photograph the structure of pathogenic virus, which so long escaped identification by the ordinary microscope. Thus a new path has been opened up in the field of virus-research.

In conclusion, a few words may be added to draw the attention of scientists to our old Ayurvedic system of Medicine. In Ayurveda, we often see the use of the same element derived from different sources, and the preparation of the oxide of an element by different processes. Particularly calcium may be cited as an example. Now, in the new light of our knowledge in Physical Chemistry, we should proceed to find out whether such attempts have been made to avail of the different isotopic forms of the element concerned, and to maintain their integrity during oxidation. But, unfortunately, we are yet ignorant of any difference in the rate of absorption, selective accumulation or pharmacological action of the different isotopic forms of an element. Let us wait and see what we derive from the Uranium Pile of the Manhattan Project.

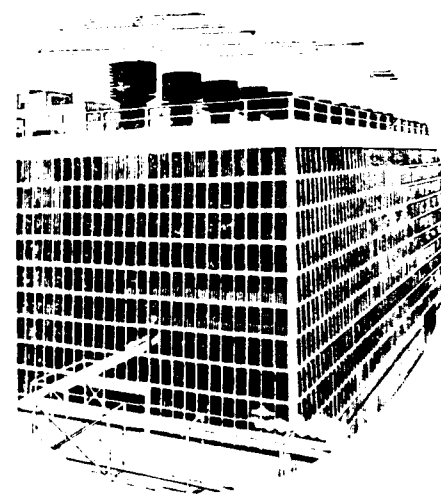
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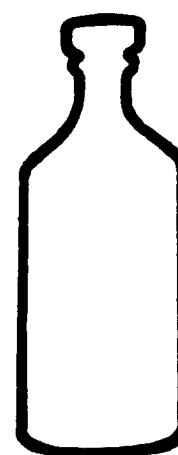
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METHOD OF TESTING AN EYE (OCULIST) *

CAPTAIN L. P. KAPUR,
Medical Officer, in-charge Eye Centre, Samalkha, District Karnal.

VALUE—DIOPTRE (D) & X & —Signs.

Focal Distance or Length

RAYs from 20 feet and beyond are supposed to be parallel. They are converged upon a single point (in convex lens) on the other side of the lens and image will be formed at that point. This point is called Principal Focal and the distance from the lens is called Focal length or distance. This is one half of the radius of curvature of the lens. This is convenient standard for measuring refractive power. Focal distance of one metre is taken as unit and a length of one metre-focal distance is called 1 D. Stronger lenses will have greater refractive power and so focal distance shorter. So a lens of 2 D will have focal distance .5 metre.

RULES:—The strength in diopetre is the reciprocal of the focal length expressed in metres.

Convex lenses focussing parallel rays on the other side of the lens have $\frac{+}{x}$ symbols whereas concave ones having virtual focus on the same side of incident rays have — symbol.

Reversal of diopetre gives focal distance and *vice versa* for diopetre.

Diseases of the Eyes.

- | | |
|--------------------|-----------------|
| (1) Hypermetropia. | (5) Presbyopia. |
| (2) Myopia. | (6) Cataract. |
| (3) Astigmatism. | (7) Squint. |
| (4) Asthenopia. | |

1. *Hypermetropia (long sightedness).*—In this disease near objects are not clearly seen as the eye lens is smaller than normal. Image forms behind the retina. To bring it to the retina convex lenses will be required which will converge the parallel rays more.

GENERAL POINTS:—(a) In a new born normal child 2 to 3 D of hypermetropia is present which goes off as growth proceeds till at puberty patient is normal sighted.

(b) Hypermetropic eyes are typically small in all directions.

(c) Cornea is small, anterior chamber shallow.

(d) In children below 7 years some degree of hypermetropia is physiological and correction is only given if it is high or if strabismus is present.

*Specially contributed to THE ANTISEPTIC.

[185]

(e) In boys between 7 and 16 years when they are studying small error should be corrected.

(f) For error above 3 D advise constant wear of glasses and if below advise use for near work only or under circumstances where eyes would be straining.

(g) For boys playing violent games advise them to play without glasses to avoid danger of breaking or injury to the eye provided they do not feel difficulty in playing.

(h) One D to be reduced for the objective findings for the tone of ciliary muscle but not applied in strabismus cases. In that case 5 D to be reduced.

(i) Children to be examined once a year.

(j) It should be understood that the glasses should compound manifest. Hypermetropia and $\frac{1}{2}$ HL. (Latent hypermetropia).

2. *Myopia (short sightedness)*:—In this distant objects are not clear due to either elongation of eye-ball or lens too convergent. Parallel rays are focussed in front of retina. Concave lenses of proper power will bring image on the retina.

GENERAL POINTS :—(a) Myopia is rare at birth.

(b) Starts during third or fourth year of life.

(c) It is a progressive disease.

(d) In very high myopia under-correction is necessary.

3. *Astigmatism*:—In this there are different refractive powers in different meridians due to irregularity in the curvature of cornea. Cylindrical lenses are used.

THREE DIVISIONS.—(a) Simple astigmatism.—In this one of the foci falls upon the retina and the other focus in front or behind the retina. If in front it is simple myopic astigmatism and if behind it is simple hypermetropic astigmatism. Plano cylinders are required to correct this error.

(b) Compound astigmatism.—When both the foci fall either in the front or behind the retina we call it compound astigmatism. If behind it is compound hypermetropic astigmatism and if in front it is compound myopic astigmatism. Convex or concave spherocylinders are required.

(c) Mixed astigmatism.—In this one focus is in front and the other behind the retina. Therefore the refraction is hypermetropic in one direction and myopic in the other. The defect is removed by spherocylinders of opposite signs i.e. if spherical is minus then cylindrical will be plus and *vice versa*.

GENERAL POINT.—Correct the cylindrical defect fully to avoid eye strain.

4. *Asthenopia (or weak sightedness)*.—In this patient complains of tiredness of the eyes. When eyes are sensitive to strong light or where there is inflammation, tinted glasses of some power if there be defect should be prescribed. If patient complains of headache and biliousness test him properly. If both distant and near are normal he needs plus lenses of very low power i.e. 0.25 D or 0.5 D to correct his vision.

Approximate scale for Asthenopia

If patient gets tired in ten minutes of reading give plus 1 D.	
" " " " " 30 " " " " " .7 D.	
" " " " " 1 hour " " " " " .5 D.	

5. *Presbyopia (or old age sight)*:—With advance of age the eye lens gets more hard and sclerosed and so power of accommodation becomes progressively smaller and a time comes that near point recedes further. To do his near work clearly therefore patient needs an aid to his accommodation by convex lenses. After thirty-five years of age a hypermetrope will need more plus for his reading than for his distant vision, a myopeless. Generally 2 D is added in hypermetropia and subtracted in distant glasses not so in astigmatism.

6. *Cataract*.—If the patient is unable to read the first line of distant test type by plus, minus or cylinder lenses examine him by pin-hole disc. If vision improves by pin-hole disc, the case is a case of refraction otherwise of some organic disease of the eyes. No glasses cure cataract case except operation and then plus 10 D to plus 12 D for distant and plus 12 D to plus 14 D for reading. Generally a patient having myopia prior to cataract, will need less convex or not at all after the operation, according to the degree of myopia, and more course in Hm.

GENERAL POINTS.—(a) Never prescribe bi-focal lenses for cataract patients as accommodation is not there.

(b) Cataract operation generally gives some astigmatism, a +1.00 D cyl. 180° is generally the rule.

7. *Squint*:—Rare, generally corrected by convex spherical and prisms. Never with concave.

General method of testing eyes.—Glasses must not be prescribed till you exclude disease by routine general examination. This must not be overlooked as irreparable amount of damage is sure to occur besides timely delay in the treatment of the disease.

Never miss taking the history of the patient and attending to his complaints which will serve you as an important guide.

Habits of the patients and general state should not also be neglected as visual upset is frequently the indication of a general disturbance and it is useless to correct the visual and ocular error alone and leave the underlying cause of overstrain unattended.

Patient may be temporarily relieved but ultimately can result into further and more serious disturbance if not tackled in time. Note the general aspect of the face and eyes, position of head and symmetry of the face, shape of the orbits and size of the eyes.

GENERAL POINTS.—(a) Flat face is suggestive of hypermetropia and head elongated anteroposteriorly is of myopia. Asymmetrical face indicates astigmatism.

(b) Small eyes are hypermetropic, large ones myopic.

(c) Small pupil hypermetropic, large one myopic.

(d) Anterior chamber shallow—hypermetropic.

Procedure.—First of all determine his acuteness of vision which is the function of dioptric apparatus of the eye, retina, nerve paths and central nervous system. To find out as to whether there is a refractive error or some structural or organic disease, *we do pin hole test*. The opaque disc with a pin-hole in the centre is placed before an eye. A small pencil of rays gets into the eye which passes through the axis of dioptric system and is not affected by it. A clear image is formed as is seen in a pin-hole camera. So with the blank disc in front of one eye and a pin-hole on the other, patient looking at a distant test eye, if the vision of the patient improves, it is error of refraction otherwise some organic defect, as opacities in refractive media, diseases of retina and central nervous system.

The following points to be remembered in testing the eyes for above:

(1) Illumination should be good and uniform.

(2) Pin-hole should be opposite the centre of the pupil.

(3) Test type should be clearly printed and legible and well uniformly illuminated. The normal illumination is 25 volts bulb at 16" from the chart and 12" from the centre. For the sake of uniformity of testing, vision should be tested in artificial light and type illuminated by brilliant electric lights shining directly on the type and at the same time shaded from the patient's eyes.

4. The distance of the test type from the patient is 6 metres or 20 feet. Short-test is 5 metres that is allowed. Reading distance is 10 to 12 to 14 inches.

Process.—After the patient is seated at the required distance the trial frame is fitted over the patient's face and so placed that the centre of the lenses placed in the frame falls in front of the pupil. This can be judged by inspection.

1. Place black opaque disc in front of one eye in the trial frame and ask the patient to read the distant test type (Snellens) with the naked eye. If he reads upto the 7th line of the chart distinctly, then close this eye by changing the disc from the other eye and ask him to read as before. If he reads the same line as read with the first one, his distant vision is normal. He does not require any glasses for the distance. Then examine his near vision. If he reads the smallest type of the reading test type (Jaeger) J-1 from 12 inches distance with each eye separately his near vision is also good. Patient therefore does not need any spectacles at all.

2. If the patient cannot read till 7th line of distant test type, then his vision is defective. Place plus 0.50 D Sph. in front of one eye, the other being closed. If he reads better or letters are clear and distinct with plus 0.50 D Sph., then go on further and increase by 0.25 D Sph., and so on till he reads the 7th line clearly with that eye. This is a case of hypermetropia. Test the other eye similarly. Then both open and tested with the selected lenses. If strain is felt reduce by half or so. He needs glasses for distance and reading. Test him for near now each eye separately and let him read the reading test type from 12 inches with the same lens already found for distant. If he can see the smallest type of the reading type distinctly with both eyes the lens for distant and near will be the same and he will use them constantly. If he cannot read the smallest type of reading with the distant glasses then increase gradually as for distant. If the patient takes plus 2.0 D Sph. for distant then try him by plus 2.50 D Sph. and then go on increasing by 0.25 D Sph. till he reads the reading type clearly. Man under 40, if he is unable to read with spectacles which he takes for distance, generally requires a 0.5 D Sph. extra for near vision unless his hypermetropia is not fully corrected by distance spectacles.

3. If with plus 0.5 D he cannot read as much as he reads without it, then he is *myopic*. He needs concave lenses to correct his vision. Close patient's one eye (left) and place x minus 0.5 D. Sph. And ask him to read the distant type. If he sees clearer, continue increasing by minus 0.25 D Sph. till he reads the seventh line. Try similarly the other eye. Then try him with the both eyes with the lenses selected separately. If patients reads clearly distant type to the required line note down this number. If patient states that with both the eyes he feels some strain and does not see clearly, the lenses selected are strong ones, and so reduce by 0.50 D Sph., or 0.5 D. Sph., as in hypermetropia. Now examine him for near. If patient uses minus 3.0 D. for distant and his age is below 40 years he does not require any more edition for reading, distant lenses will do for reading too. If he is over 40 years he should be examined for reading and prescribed separately for near. He will have to keep two pairs of spectacles (for distant and reading).

4. If the patient is not corrected by plus 0.50 D. Sph., and minus 0.50 D. Sph., (in Nos. 2 & 3) then he may be suffering from plain astigmatism. Put astigmatic charge at 6 metres, and ask him to see the lines. If patient is astigmatic he will see the horizontal lines more clearly and blacker than vertical ones. Close his one eye as usual and place plus 0.25 D. cyl. vertically then rotate slowly till he sees clearly through it. Increase it gradually by plus 0.25 D. cyl. and so on till he reads the seventh line. If his vision does not get clear with plus 0.25 D. cyl. placed in the beginning, use minus 0.25 D. cyl. and increase gradually by minus 0.25 D. cyl. and so on till he sees the seventh line. Then test him for reading keeping the same lens in front of the eyes. If with plus cylinders (plus 0.25 D. cyl. or above) he reads clearly prescribe him only one spectacle for constant use, otherwise test his near vision too. If his distant vision has been improved by minus cylinder lenses (minus 0.25 D. cyl. or above) he need not be prescribed any separate lens for reading, his distant glasses will do for constant use.

5. (a) If patient's eyes are not corrected by No. 4 test and he does not read clearly the last line as tried in No. 2, he is having hypermetropic astigmatism to be remedied by convex Sphero cyls. Let the convex Sph. lens already corrected in one eye of the patient remain in the trial frame and use plus 0.25 D. cyl. and ask the patient to look at the astigmatic chart and rotate the lens slowly till he is able to see better. Gradually increase the cyl. till his distant vision is corrected. Always test the right and left eyes separately. The axis of the cylinder should be carefully made out. After distant correction, correct him for reading. Keep on sphero cyl. and ask him to read the reading type. If he reads smallest type clearly he needs only one pair of spectacles for constant use. If he cannot read the near test type clearly, remove the spherical lenses and put stronger ones till he reads clearly.

Note.—The cyl. lenses and the axis for distant and reading remains the same.

5. (b) If the patient's vision is not fully corrected by minus lenses (as in No. 3 and patient still complains that he cannot read seventh line of distant type clearly and letters appear to him mixed together suspect myopic astigmatism which can be cured by minus sphero cyls. Keep spherical lenses in the trial frame as they are and start with minus 0.25 D. cyl. placing horizontally in front of Sph. lens already in the trial frame, ask him to read astigmatic charts. Slowly rotate the cyl. till he sees the lines even. Now increase the cyl. gradually till he reads all the letters clearly and sees the lines clearly. Test each eye separately. Now test him for reading keeping cyls. as they are in the same axis as for distant. If he reads clearly prescribe him only cylindrical for near and Sphero cylinder for distant. If he cannot read, place — 0.25 D. Sph. in front of the cylinder and go on increasing till he is able to read the near test

type clearly. Prescribe him then two pairs of spectacles one for reading and one for distant.

6. If patient's vision is not corrected by Sphero cyl. Convex and Sphero cyl. Concave as in No. 5 (a) and (b) we have to suspect mixed astigmatism. In such cases we try convex spherical and concave cylinder or concave spherical and convex cylinder as:—

Plus 2.0 D Sph.— and —2.0 D Sph.
—0.25 Cyl. Plus. 0.25 Cyl

Testing of eyes is not very difficult. It requires experience. Read the instructions several times and thoroughly.

Use of Retinoscope and Ophthalmoscope

Retinoscope is the most useful, accurate and popular method. The accuracy is up to 0.25 D in experienced hand. Very useful for mild astigmatism which could be escaped otherwise. Also very useful in children.

1. We need a dark room as dark as possible, a double retinoscope (Plane and concave mirrors) of 3.5 cm. with an aperture of 3 mm.

2. Examiner's error of refraction must be corrected or known, to be deducted from the result obtained.

Accommodation of both patient and examiner must be relaxed. For this purpose home-atropin lotion 2% or atropin 1% is used. There is one view that the examiner's accommodation does not affect at all and so need not be relaxed. Some also do not relax the patient's accommodation even. This is all upon practice. A beginner must act upon the very first view of relaxation of accommodation of both.

3. Distance between patient and examiner should not be less than one metre (39.37") nor more than this. The far point of the patient must be one metre away and therefore he must have —1 D of Myopia. If the distance be 2 metres the point of reversal would be when patient had —0.5 D Myopia. If there were only half metre distance, the point of reversal would be —2 D and so on.

4. Light should be good at least 15 C.P. or 18 C.P. and should come from above and behind the patient's head. It can come from the side and behind the patient's head also. Eyes should be in darkness, preferably the light should be at the side close to patient's head.

When the light from the retinoscopic mirror is reflected into the patient's eyes the examiner sees a red glow while looking through the hole of retinoscope. If now the mirror is rotated from side to side or from above downwards the glow appears to move either with the movements of the mirror or against. Some look to the shadow which follows the glow and take the result from its reversion. But there are two sorts of shadows, one central and the other

peripheral. Our results must be with either and not with both. One sees other reflexes also called corneal reflexes which can be overcome by practice. For retinoscopy some ask the patient to look at examiner's forehead whereas others ask him to look a little medially. When patient looks at the forehead it is the centre shadow that accounts and for looking medially the peripheral shadow. If the mirror is rotated from right to left and the movements of the shadow are in the same direction we say the shadow moves with and if it goes from left to right it is called against. The movements are rapid in low degree of error whereas slow in high degrees.

RULE.—With a plain mirror shadow moves with *i.e.* in the same direction as the mirror, in myopia of less than one degree, normal or in hypermetropia of more than 1D.

If against there is myopia of more than 1D.

The results are opposite in concave mirror, also if your distance is more than one metre the shadow gives opposite results.

2. The horizontal meridian is tested first and then vertical.
3. Each eye is tested separately, the other eye being covered.
4. We have to know the point of reversal of shadow. If the movements of the shadow are with the mirror we put on convex lenses and go on changing till no shadow is seen and a slightly stronger lens than that causes the reversal of shadow. This shows that the error has been over corrected and so gives us the point of neutralization. When points of reversion in both the meridians (horizontal and vertical) are the same the refractive error is spherical. In astigmatism the shadows of two meridians will differ and will not be corrected by one and the same lens but with different lenses the difference being the number of cylinder.

5. Always subtract 1D from the value of the lens in the trial frame to get refractive value in the meridian which we are testing.

The retinoscopy needs practice. Some reflections are easy but some are very difficult. It is the practice only that makes the man perfect.

Ophthalmoscopy

It is not used for the detection and estimation of errors of refraction but the fundus picture may be so modified or interfered with by ametropia that it is well to know the effects of such errors of refraction upon the appearance of the fundus with ophthalmoscope.

In ophthalmoscopy at a distance no details of the fundus are seen in the normal eye. If some part of disc or vessels is seen, the eye is ametropic. When the vessels so seen move in the same direction in which the patient moves his head the case is a case of

hypermetropia. If against it is a case of myopia and if only vessels of one meridian are seen, it is astigmatism.

There are two methods of finding out the error of refraction with ophthalmoscope : Direct and Indirect.

Direct method.—If there is fair amount of error of refraction, it will interfere with satisfactory view of fundus unless correcting lens is related into the sight hole of the ophthalmoscope provided that examiner's error is also corrected by suitable glasses. The lens in the sight hole clearing the fundus is the measure of error of refraction.

In normal the fundus picture is clear.

In hypermetropia the disc looks small and fundus blurred but will look clear by rotating convex lenses into the sight hole.

In myopia the image of disc appears large and blurred to a normal eye and will be rendered distinct with concave lenses.

In astigmatism there is very little change in the picture of the fundus but in moderate astigmatism the disc looks oval with its long axis corresponding with the axis required in the correcting cylinder.

The accommodation of the examiner and examinee should be relaxed in this test.

Indirect method.—In this method we interpose a lens of some power and if no change takes place in indirect method in the shape and size of the image of the disc when we withdraw the lens, the eye is normal.

If the shape remains the same but the image become smaller it indicates hypermetropia.

If shape remains the same but image larger on withdrawing lens that is myopia.

In astigmatism the disc appears oval and the shape of its image changes in withdrawing the lens. One diameter decreases or increases and the other remains stationary in simple astigmatism. Both increase or decrease unequally in compound astigmatism. One increases and the other decreases in mixed astigmatism.

Note:—Some take the view of disc in indirect ophthalmoscopy. *Disc larger than normal in hypermetropia. Disc smaller than normal in myopia.*

When the lens is kept close to the eye and gradually withdrawn, an inverted image of the disc is kept in view and we note the rapidity with which any increase or decrease takes place in the size of the image.

If image goes small it is hypermetropia, greater the size is diminished the higher is hypermetropia.

In myopia image is larger and greater the image higher the myopia.

Important instructions.—1. Eyes must be retested after every three years but a case of presbyopia may be tested after 5 years, provided there is no complaint of any kind during this period.

2. If a case of presbyopia attends you frequently, say six monthly or in a year complaining of defective vision with prescribed glasses and number changes at his every visit suspect glaucoma.

3. Cylindrical convex and concave, sphero-cylindrical convex and concave, toric cylindrical concave and convex are used for astigmatism.

4. Prismatic lenses are used for squints.

5. Spherical convex and concave periscopic convex and concave, meniscus convex and concave are used in all other cases.

Note :—1. Lens with a base of 1.2 D is called periscopic lens.

2. A lens with base of 6 D is called deep meniscus lens.

3. For plus lenses a negative base curve is used and for negative lenses a positive base curve and in fitting of the glasses the concave surface is always next to the eyes.

4. Toric lens is a meniscus lens with a cylindrical curve ground on the spherical surface of one side.

Bifocals

1. *Split bifocals* :—That is two pieces of lenses made by two equal halves and fixed together: Prescribed for hypermetropia and presbyopia.

2. *Perfection or moon bifocal* are made into two pieces distant larger than the reading. Not prescribed for squint and cataract cases.

3. *Cement bifocal* are made in one lens, a piece of thin segment cemented on the reading portion, distant larger than reading. Not prescribed for squint and cataract.

4. *Solid bifocals* are made in one piece lens. Distant smaller than reading. Not to be generally prescribed.

5. *Ease bifocals* :—Prepared in one lens, distant portion bigger than reading. Prescribed generally and preferred than all other varieties.

6. *Kryptox or fortyfive bifocals* are made in one piece, distant bigger than reading. Very expensive.

Approximate Scale for Myopic Cases

If the patient can read the reading chart from :—

12"	Give him for distant—	3.50	Reading—	0.50
10"	"	— 5.0	"	— 1.50
8"	"	— 6.0	"	— 3.50
6"	"	— 8.0	"	— 5.0
4"	"	—10.0	"	— 7.0
2"	"	—12.0	"	— 9.0
1"	"	—14.0	"	—10.0

Note :— Not for astigmatic cases.

Approximate Scale for Hypermetropic Cases

If the patient is 35 years of age give Plus 0.75 D.

"	40	"	"	1.25 D.
"	45	"	"	1.5 D.
"	50	"	"	2.5 D.
"	55	"	"	3.0 D.
"	60	"	"	3.5 D.

Approximate Scale for a Healthy Emmetropic English Man

If the patient is 45 years of age give him Plus 1.0 D.

"	50	"	"	1.5 D. to 1.75 D.
"	55	"	"	2.25 D.
"	60	"	"	2.75 to 3.0 D.
"	65 and over	"	"	2.75 to 3.5 D.

Notes :—1. A tall, upright person requires a smaller presbyopic correction than a short person or one who stoops.

2. Distances.—Reading, writing, and sewing 13" Music 20" to 25"

3. If patient is hypermetropic he will need lenses for reading early and number will be combination of near and distance lenses.

4. If the patient is myopic his near number will be less and a result of combination of near and distant which will be a difference in myopia.

5. -1.0 D for distant in myopia will cancel Plus 1.0 D. of presbyopia and hence no glasses for reading at forty or fortyfive years.

PREPARATION OF LIQUID PLASMA*

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BLOOD transfusion in World War of 1914-18 was rather inadequate as the method of stored whole blood and its employment met with numerous difficulties in some way or other which with the outbreak of War in 1939 developed tremendously and reached to a reasonable perfection. During this period the idea of blood substitute predominated in the minds of the medical scientists and suitable blood substitutes acceptable were blood serum and plasma both in liquid and dry form and the experiments followed by clinical evidence proved to be of immense value in the field of treatment both in war and peace. Continued experimental studies and the remarkable contributions on serum and plasma by various research workers proved the therapeutic value and its use in surgical, medical and gynaecological practice particularly in the treatment of hæmorrhage and specially in shock was almost indispensable.

This communication deals with the method of processing the liquid plasma. In spite of the fact that several workers have described the procedure of plasma preparation and that practically there is not much of a difference in the technique still the procedure advocated and followed after Shrivastava's modification by the Calcutta Blood Bank might be of interest.

Technique.—The technique is divided into three sections *viz.*

- (1) Sterilisation of apparatus.
- (2) Sterilisation of laboratory.
- (3) Sterilisation of worker's dress.

Sterilisation of apparatus:—The apparatus consists of rubber tubings, glass wares, pilot filter, the M.R.C. bottles with metal caps, rubber washers, 10 litres Winchester bottles, pinch corks and air filter.

New rubber tubings when boiled in 5% caustic soda solution for 20 minutes are washed thoroughly in tap water followed by distilled water until the tubes are absolutely alkali free. It may be noted, caustic soda solution is used once only in the case of new rubber tubings and not in subsequent sterilisation. Cotton tape is passed through every piece of rubber tubing with the help of a long metallic stilet for cleaning. The glass tubes are dipped in equal volume of 12.5% Pot. Dichromate solution and 12.5% commercial Sulphuric Acid solution and kept overnight. Subsequently the glass tubes are washed in tap water and later by distilled water until they are acid free. The rubber tubings if used once are boiled in 2% Sodium Carbonate solution and then in tap water and finally in distilled water. The pilot filter is cleaned with Vim powder and

* Specially contributed to THE ANTISEPTIC.

very briskly washed in tap water and then with distilled water. When all the component parts of the apparatus necessary for plasma filtration is thoroughly cleaned and prepared, they are assembled and just before sending out for sterilisation fresh distilled water is passed through every piece of glass and rubber tubings and after necessary fittings the whole apparatus is boiled in distilled water; it is then put in a galvanised trunk ready for sterilisation. The pilot filter is also fitted with necessary number of clarifying pads (K_7 or K_8) and sterilising pads S_1 (8" x 8"). They are loosely assembled so that there can be free passage of steam between the pads and the plates during sterilisation. The galvanised trunk loaded with all the equipments is put in a Velox steriliser and is sterilised for 30 minutes at a pressure between 18 to 20 lbs. This process is continued twice, once on the previous day of filtration and once again on the day of filtration. The pilot filter pads and plates which so long were loose are tightened and aseptically made ready for filtration and the other attachments are fitted in proper order.

Sterilisation of laboratory:—The processing laboratory is air-conditioned. 2% Dettol solution is sprayed every morning and afternoon with the help of a spray gun at 10 lb. pressure. Spindle oil is spread on the floor of the laboratory to avoid dirt and dust, if any, on the day previous to filtration. The day before filtration the bottling chamber is sterilised by steaming distilled water kept in a copper chamber with a nozzle as an outlet affixed to it. The same copper chamber is used as a repository for pooled plasma during filtration.

Sterilisation of workers' dress:—The apron, mask head cover, shoecover of the worker are put in a 'surgical' drum and sterilised for 30 minutes at 15 lbs. pressure whereas the gloves are sterilised for 15 minutes at 5 lbs. pressure. With all equipments sterilised the processing laboratory technicians with proper dress, putting on sterile mask, apron, head-cover, shoe-cover and gloves, enter the filtration room and once they are in are not allowed to come out till the final bottling of plasma is over. No worker is allowed to talk or gossip inside the laboratory during the process of filtration.

Pooling.—The bottles containing 3% Sodium citrated donor's blood are stored in the cold room and used for whole blood transfusion. Each and every sample is tested before use and must be free from transmissible diseases particularly syphilis and other protozoal infection. For plasma more than ten days old stored citrated blood is used. On the previous day of filtration the date expired blood bottles are taken out of the cold room and allowed to stand in room temperature for about six hours and then pooled. Bottles showing breakage, hæmolysis, contamination and lipoids are discharged. Blood of all four groups are pooled together in five litre sterile

Winchester bottles. The detailed methods of pooling are not described here.

Filtration.—First ten litres of Normal Saline is used to wash the pads and then two litres of plasma is allowed to filter. Next about three or four litres of N/30 NaOH solution is allowed to pass through the pads to debar the clotting and clearing and then about five litres of Normal Saline is passed to wash thoroughly the NaOH solution. The rest of the plasma is then filtered. More than five litres of plasma is not filtered during each filtration.

From each batch of filtered plasma three samples are taken for sterility test. 10 c.c. of plasma is used for each sample and tested both aerobically and anaerobically using Glucose broth and cooked meat media, which are kept at 37°C for 7 days and the reading is subsequently recorded. If the brew passes the sterility test the bottled plasma is allowed to stand at room temperature for 21 days when it is transferred to cold storage and ready for use. It has been observed that if liquid plasma is allowed to stand for some days precipitation of fibrinogen may occur and re-filtration becomes necessary. In spite of repeated filtration clotting of fibrinogen has been observed and to prevent this some workers have advocated and practised diluting the plasma with 50% Normal Saline solution. This procedure is not followed by the processing laboratory of the Calcutta Blood Bank. No preservative is also used for storing liquid plasma.

The therapeutic use of plasma varies widely in shock whether neurogenic or haematogenic in origin. In wounds such as trauma and fractures, dehydrations due to various factors, conditions due to bacterial toxins, surgical procedures and in burns it is of singular importance. In Calcutta hospitals the use of plasma is very extensive and the results are very encouraging. Plasma meets the emergency whereas the whole blood is an agent of choice.

I am grateful to my co-workers Sri Nani Bhusan Ghosh, the Chief Technician of the Processing Laboratory without whose help it would not have been possible to write the paper.

Reference :

1. Shrivastava, D. L.—Processing of Liquid Serum, I.M.G., Vol. lxxviii, Dec. 1943.

CONGENITAL PYLORIC STENOSIS *

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In daily practice, one may come across cases of persistent vomiting in infants, which do not respond to routine treatment. Such cases are, at times, found to be those of pyloric stenosis and are often diagnosed too late for any medical aid.

A disease of the early infancy, pyloric stenosis, is observed to begin about the second, third or even fifth week after birth. Some authorities are of the opinion that only the first born in a family and that too a boy is usually the victim to this disease. But by experience it has been proved that no such hard and fast rule can be established, as both male and female children have been found to be suffering from it.

However, there is a certain amount of difficulty in detecting cases of pyloric stenosis at the onset of the disease. This is all the more difficult in the absence of a good and a proper history from the mother or the nurse. Symptoms are often unobserved in the beginning and thereby medical advice is sought only after the infant is too weak and badly wasted as rapid wasting is very prominent in this condition. Vomiting being the most noticeable symptom of the disease, any mother would first get the impression that the milk that the baby is fed on, is not agreeable to it. A change in the diet is naturally resorted to. Failing an improvement, a hunt after other brands of milk is made and finally the child is brought to the doctor in desperation.

“How pyloric stenosis is caused” and “what is responsible for it”? are the questions which have been attracting the attention of medical authorities for a very long time and even at the present day opinions differ as to the pathology of it.

Pathology.—The stenosis of pylorus may be either partial or complete. In cases of complete and typical stenosis, a condition of hypertrophy of the muscular tissue of the pylorus is found to be present at operations and post-mortem examinations, while such a change is not evident in partial form.

Some authorities consider that this hypertrophy is due to a congenital hyperplasia of the pyloric muscle. Others are of the opinion that it is the result of persistent spasms.

Pylorospasms in both partial and complete pyloric stenosis, should be regarded as the chief factor from the clinical point of view as it is due to these that food does not pass through the pylorus. A hypertrophied pylorus tends to induce spasms more rapidly and persistently than a normal one. Stomach is at times found to be

* Specially contributed to THE ANTISEPTIC.

dilated in these conditions, due to food being driven forcibly through a constricted pylorus by persistent spasms.

If the hypertrophy is a congenital condition as some authorities seem to consider, one would expect symptoms of the disease from birth. The fact that they are delayed is clear proof that this condition should not necessarily be the immediate cause of the disease.

On the other hand, instances have been recorded where this condition of hypertrophy has been noticed long after spasms and other symptoms of the disease have subsided. It is, therefore, more safe to think that the disease is due to persistent pylorospasms.

When one goes minutely into the history of a case of pyloric stenosis, it will be seen that the disease usually starts after some form of indigestion. How careful the mother or the nurse may be in feeding the baby, occasions may arise when some sort of gastric disturbance will occur. Such an occasion is invariably the starting point of the disease. One could, therefore, conclude that gastric irritation is responsible for pylorospasms and persistent spasms for the hypertrophy of the muscular tissue of the pylorus and dilatation of the stomach. When the stomach gets dilated a large quantity of food will naturally accumulate there. In the circumstances, it is plain that vomiting in these cases, which is the most prominent symptom, is induced by the irritation caused by stagnant stomach contents.

Signs and Symptoms.—History is very important in diagnosing cases of stenosis of the pylorus. The usual history is that the infant was quite healthy at birth and continued to be so until the first or the second week or even later.

One fine day some gastric upset with slight vomiting was noticed. This was nothing much to think of medical aid. A change in the milk seemed to give relief at first, but it was only for a day or two. Vomiting was occasional and slight at first, without effort or any sign of nausea or acute illness. This gradually becomes more frequent and the quantity larger. The vomit consists of partly digested food only. The quantity gradually becomes so large that one could hardly imagine that the stomach at such an age contained so much of food. Although the vomiting is effortless to begin with it soon becomes so violent that it shoots out through the mouth and the nose. This is quite characteristic of pyloric stenosis and is termed "Projectile" vomiting. As pointed out earlier vomiting is the most prominent symptom in this condition, but this does not distress the patient. On the other hand, it seems to relieve him and in fact the child is ready for another feed afterwards. Constipation is a marked feature and so is scanty urine. Wasting is very rapid in this condition.

Most important sign in the diagnosis of this, is the appearance of peristaltic waves. When the abdomen of the infant is examined soon after a feed one could see a succession of peristaltic waves passing from left to the right side. On palpitation a tumour as big as a small lime fruit will be noticed. This is due to the muscular contraction of the stomach wall. Although much stress was laid in the past on this as a diagnostic aid, the present trend of thought is that it is not so very important to arrive at a diagnosis. Order of importance of diagnostic points is as follows:—

Diagnosis.—(1) History; (2) vomiting and abnormal gastric retention; (3) peristaltic waves; (4) presence of palpable tumour; and (5) wasting, constipation, scanty urine etc.

Medical and Surgical

Treatment.—*Medical* treatment consists of regulating the feeding and stomach lavage. Breast milk is the best food and in its absence, milk not rich in fat may be substituted. Gastric lavage should be done once or twice a day with warm Normal Saline.

Dehydration should be corrected by giving Saline freely by mouth and parenterally. An antispasmodic drug should be given to prevent pylorospasms.

Eumydrine (Atropine Methylnitrate) is considered to be the best and it should be given in doses of 2.5 to 5 cc. of a 1 in 10000 solution. This treatment should be continued for a long time.

Surgical.—In typical cases of pyloric stenosis infant thrives very well when surgical interference is resorted to. It should be undertaken before the patient becomes too weak by wasting. The Rammstedt's operation is the most favoured one.

The Role of the Liver in Renal Sulphonamide Complications.—*Amer. Jour. Med. Sciences*, Dec. 1947.

Drs. Kusma and Polley had previously reported 14 fatal cases and now add five more to the list of renal complications following Sulphonamide therapy. 7 of the 19 had liver disease, in 4 pre-existing and in 3 induced by Sulphonamide therapy. They are of the opinion (from a study of the clinical data and the pathological findings) that the liver is more readily damaged by Sulphonamide therapy in cirrhosis and in conditions of vitamin deficiencies. The presence of hepatic disease increases the liability to renal complications from Sulphonamide therapy and the lesions produced in the liver by the administered Sulphonamide increased the risk of renal complications.

T. N. S. R.

REPORT ON TWO CASES OF PROSTATE WITH SPECIAL REFERENCE TO ACID SERUM PHOSPHATASE AND AFTER-CARE IN SUPRAPUBIC OPERATIONS

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THE value of Acid Serum Phosphatase was first realized in 1934.

It was later found out that the Acid Phosphatase contents of the prostate was in a way a measure of its activity. The range of activity of Alkaline Phosphatase is between pH. 8.5 to 10 and that of Acid Phosphatase between 0.5 to 3 Bodansky units. The Acid Phosphatase is present in prostate, spleen and in circulating erythrocyte, and in a variable amount in liver and kidneys. The units for estimating these are various, according to various authors, but here Bodansky's unit is estimated, hence this is followed. As Acid Serum Phosphatase is increased in carcinoma of the prostate, this estimation is of great significance. This test has aroused immense interest in the profession and specially in the genito-urinary surgeons. Previous to this the diagnosis of malignant disease of the prostate in its early stage was in abeyance until enucleation of the gland and subjecting it to laboratory findings. This often placed prostatectomy in a very awkward position. In spite of this many such prostates have been enucleated and those that were pronounced to be malignant were later on subjected to radiological treatment etc. including Radium and Radon seeds. In India we have for the present very little scope for such treatment and attainments, but hope in course of time specialities will attract a large number of students, who will be able to cope with the problem successfully. My attention was drawn towards this in 1946 *B.M.G.* But as I have had no such facility for carrying out this technique, my efforts were confined to the old procedure in vogue *i.e.* to enucleate the prostate without subjecting the case to Acid Serum Phosphatase test. I now have all such facilities of carrying out such examinations, and I now invariably submit all prostate cases to this test. My experience of this test is very meagre and is confined only to two cases, one an advanced seminalis, and the other, an ordinary benign hypertrophic enlargement of the prostate. The test in the malignant case was pH 4.0 Bodansky's unit and in the benign it was 2.0U. The normal Bodansky's unit limit is said to be 0.5 to 3U. In the malignant case it was increased by 1U whilst in the benign case it was within normal limit. These tests were carried before the operation and were subsequently confirmed at the operation. Though the number of cases subjected to this test is only two, one malignant and the other

nonmalignant for comparison it carries a great weight in deciding whether a case is benign or malignant. Whether this test has led to the confirmation or otherwise of malignancy in this series requires further elucidation in a fairly large number of cases before its positive value is confirmed. I apologise to the profession for having rushed in suddenly on a very limited number of cases and meagre experience, but as the findings have been beyond my expectations, I thought it worthwhile to bring it before the profession and would like to have further views on the subject. I will now mention the two cases where this test has been applied:

Malignant prostate:—Brief resume of the case by the doctor who sent the case to me: Mr. . . . , aged 60 years, was admitted to this hospital on 14-1-'48. He had a suprapubic wound discharging urine and pus, self retaining *i.e.*, malecot catheter was tied in. He was given Cibazol tablets, Alkaline mixture, and bladder was washed out daily.

Urine report:—Specific gravity 1010, reaction alkaline, pus cells present, fair number, red cells a few, no casts, triple phosphates + +.

Blood report:—14-1-'48: Hg. 75%, total red blood cells 3,400,000 total white cells 10,000, Poly. 76%, Large Monos 2%, Lymphocytes 2%, Eosino 2%, cystitis continued. Urine culture was done, and the report is as follows: *B. coli*, streptococci, staphylococci, etc. are present. A course of Penicillin was given. In spite of this, Sulpha drugs and irrigation of the bladder cystitis persisted. The suprapubic wound had healed, remained so for a week, but it opened up again discharging urine and pus. Radiogram reveals calculi (urinary) within prostate and bladder. The patient has become more weak and anæmic, blood pressure not taken.

History of the case:—This patient came to me on 10-2-'48 with a foul smelling suprapubic wound, duration six months. He went to Bombay in June 1947, was operated there for stone in bladder, by suprapubic route. He has been ailing off and on for nearly ten years. His chief complaints were occasional burning in urine. Six years back he had a slight attack of hæmaturia lasting nearly two days. This was so trifling that it did not attract his notice but drew the attention of his wife. He was operated for stone in bladder in August 1947 by suprapubic route and since then the wound has not healed, except once as mentioned before. X-ray taken on 11-2-'48 reveals a stone in the prostate of the size of a marble, and few more (small) in the prostate. Blood pressure 70-110 mm. Hg. by auscultation. Rectal examination: rectum full of fæces as he has had no motion for four days. After an enema rectal examination reveals median ridge obliterated, rectal mucosa not free, left lobe of the prostate feels hard. He is anæmic and presents anæmic appearance. Cystoscopy was once attempted as there was

much bleeding and as the patient was averse to it, it was not attempted again. Further examinations on 11-2-'48.

(a) Blood Report: Total W.B.C. 13750, Poly. 84%, Lympho. 14%, Transitional 1%, total Red Cells 3,600,000, Hæmoglobin 66%, Anisocytosis fairly marked, Poikilocytosis slight, Polychromatophil present a few, punctate basophiles nil,

(b) Discharge from the wound: Gram staining staphylococci present, very many. Leucocytes very many.

(c) Bleeding time 5 minutes (reading at room temperature).

(d) Coagulation time: Four minutes and forty seconds.

(e) Blood for acid phosphatase: (Fasting sample) Serum Acid Phosphatase estimated and found to be 4.0 (four) B. U. normal, is said to be 0.5 to 3BU. (Bodansky's units).

(f) Urine: Urea clearance test: 1st hour: total volume of urine 50cc. Excretion per minute 0.83 cc., urine urea nitrogen 234 mgs. per 100cc. of urine. 2nd hour: total volume of urine 65 cc. Excretion per minute 1.08cc of urine. Urine urea nitrogen 317 mgrs. per 100cc. of urine.

(g) Blood urea nitrogen: Sample taken after 1st hour collection of urine and with administration of a glass of water, blood urea nitrogen estimated and found to be 21mgrs. per 100cc. of blood. Standard urea clearance is 29 of normal function (normal standard clearance is above 70%).

(h) Blood grouping belongs to 'B' group.

(i) Malarial parasites not found (dehæmoglobinization method).

(j) Blood for differential count and for abnormal cells: Poly 83%, Lympho 15%, Large Monos 1%, Eosinophiles 1%, Anisocytosis present, moderate, Poikilocytosis slight, Normoblast nil, Megaloblast nil.

(k) Urine sediment with shreds of tissue for examination of cancer cells. Urine sediment hæmotoxiline Eosin staining: Leucocytes present, fair number, some degenerated squamous cells (epithelial) present and a few round cells seen. No evidence of malignancy found.

He has been X-rayed four times: (1) June 1947: in the region of the prostate a dense shadow is seen.

(2) September 1947: Multiple concretions seen in the prostatic region in addition to the above.

(3) February 1948 by a portable apparatus in RNH: Bones do not show marked abnormality, stone pushed on in urethra; shadow of prostatic calculi obliterated by the presence of malecot catheter in the bladder *via* urethra.

(4) 24-2-1948 another X-ray photo taken left lateral position. Radiologist says: the prostatic calculi has shifted into the

bladder and other prostatic calculi were in the same place. From 11-2-'48 till 24-2-'48 treatment was symptomatic with the addition of small doses of Clenestrol and the bladder was washed out twice a day with Acriflavine Sol. 1 in 10,000. Penicillin was also used 10,00,000U in 20 thousand units doses every three hours which helped him a good deal in combating secondary infection and thereby relieving septic temperature, but his general condition went downhill gradually as can be seen by the blood count again on 24-2-'48, which is as follows: Total W.B.C. 15,000, Poly 87%, Lympho 31%, Large Hayline 1%, Hæmoglobin 47%, (Hellege) Anisocytosis present, moderate, Poikilocytosis present, slight, Polychromatophil present, few. With this condition and as he was in great agony owing to free calculus present in the bladder, it was decided to relieve him at least of the irritation and pain due to the presence of a free stone in the bladder, and thus relieve him to a certain extent of his sufferings. Hence it was necessary to improve his general condition by blood transfusion. Two donors came forward to give their blood to the patient.

1. Dr. Miss Peters, 2. Mr. P. L. Rewadikar, a medical student, both of whom belonged to 'B' group. It was very charitable and philanthropic of them to help the poor man in need, and they deserve all commendation. The patient's blood also cross matches with the donors. It was not worthwhile to wait, so on 25-2-'48 one pint of citrated blood from Dr. Miss Peter was given by drip method with $\frac{1}{2}$ cc. Sol. Adrenalin Chloride. The patient stood the transfusion well. On 26-2-'48, he was operated under spinal anæsthesia. Bladder was opened by suprapubic route. It was adherent to the anterior abdominal wall owing to previous cystotomy, there was a small sinus in the track of the wound owing to previous operation. This was enlarged, the bladder was explored with the finger. To my surprise I discovered an excavating mass in the prostate in which the calculi were lying. The cavity looked like a diverticulum in the prostate. The large stone was removed with a lithotomy forceps, and the smaller ones were scooped out with a lithotomy scoop. The excavating ulcer bled profusely and presented all the appearance of malignancy. There was a nodular growth on the bladder wall also above the left ureteral orifice. The bladder was adherent to rectum and pelvic colon involving vesicula seminalis of the left side. A malecot catheter was put into the bladder through this wound and the bladder was stitched around this to make it water-tight. The rest of the wound was closed in layers. A glove drain was put in cave of Retzius and No. 12 rubber catheter was passed through the urethra in the bladder in order to drain in both ways. Intravenous glucose and Saline was started during operation and it was continued throughout. The bladder was drained both ways by attaching long rubber tubes to both the catheters leading to a bottle containing

some antiseptic below the bed of the patient and a penile jacket tied over the glans penis to prevent infection. Drainage of the bladder has been very satisfactory, and the patient was very comfortable and remained quite dry. The glove drain was removed after 24 hours and the suprapubic malecot catheter on 29-2-'48, i.e., after 3 days. The bladder was later on drained through the rubber catheter only which worked very satisfactorily till the patient was discharged for further radiological treatment. His treatment was symptomatic with small doses of Clenestrol. He left the home on 13-3-'48. The suprapubic wound was healing but his general condition was deteriorating due to malignancy. The bladder was still drained by the catheter in the urethra. Later on I learnt he died a month after he left the nursing home.

Interesting factors concerning the case and pointing it to be a malignant prostate

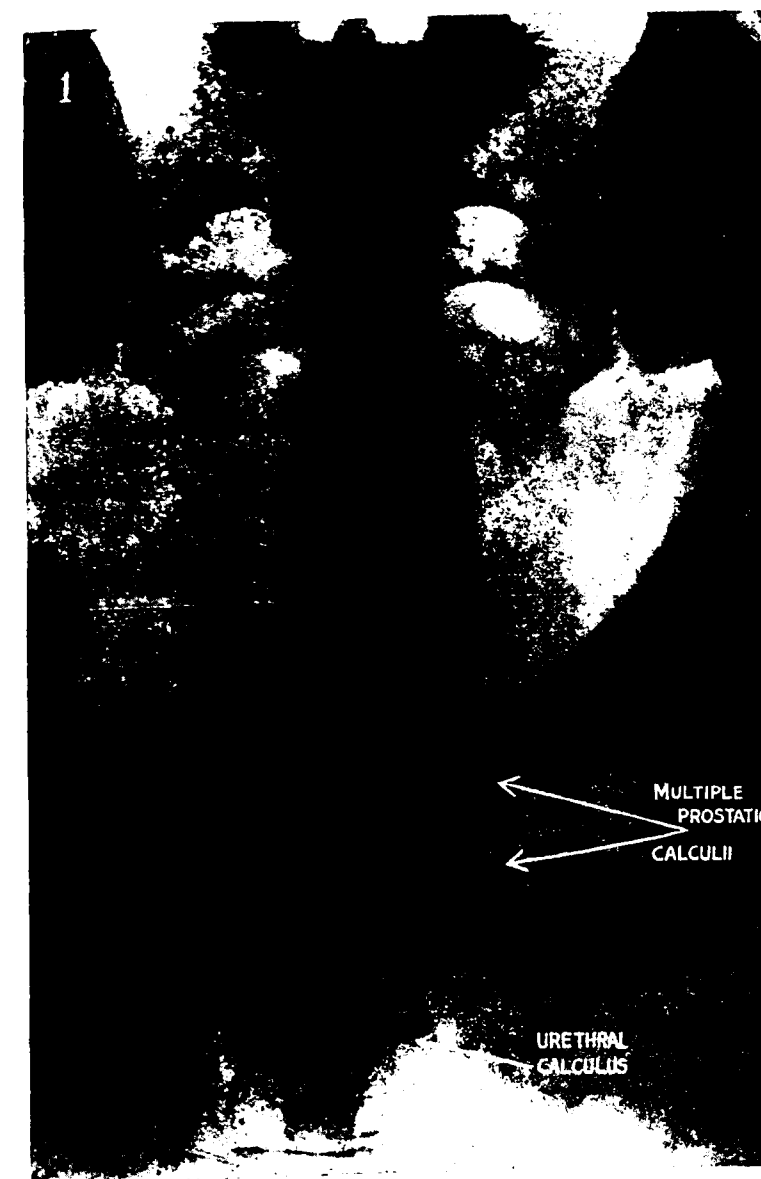
- (1) Early symptom was difficulty in micturition.
- (2) Age incidence about 60 years.
- (3) Hæmaturia about 6 years back once only and that also very slight. It was not taken notice of. It was not very frequent and profuse as in vesical growth.
- (4) Frequency of micturition not marked, a dull pain in the perineum and neck of the bladder.
- (5) Even after micturition a sense of heaviness and weight in the hypogastrium and a feeling as if the bladder was not emptied properly.
- (6) On sounding the bladder the instrument went in with a little resistance at the neck of the bladder until the handle was depressed, when it slipped into the bladder and gave the characteristic grating as it was passing over a stone. There was no free calculus felt in the bladder.
- (7) Rectal examination reveals a nodular and hard prostate involving the left lobe and indurated vesiculæ seminalis of the same side. The right lobe also is harder but not so as the left lobe.
- (8) He was having lower abdominal pain with constipation and difficulty in passing wind. He says, he feels relief if the wind is passed freely. If he was given a laxative he would pass motions involuntarily, indicating extension of the growth into pelvic colon. And lastly increase in the Acid Serum Phosphatase.

Reference: three negatives sent herewith:—(1) Taken in June 1947: shows multiple prostatic calculi and one in the urethra, as if in the membranous portion. The pelvic bones are quite clear and do not show metastasis.

(2) 11-2 '48: A malecot catheter is seen passed through the urethra into the bladder showing a shadow of a urethral calculus.

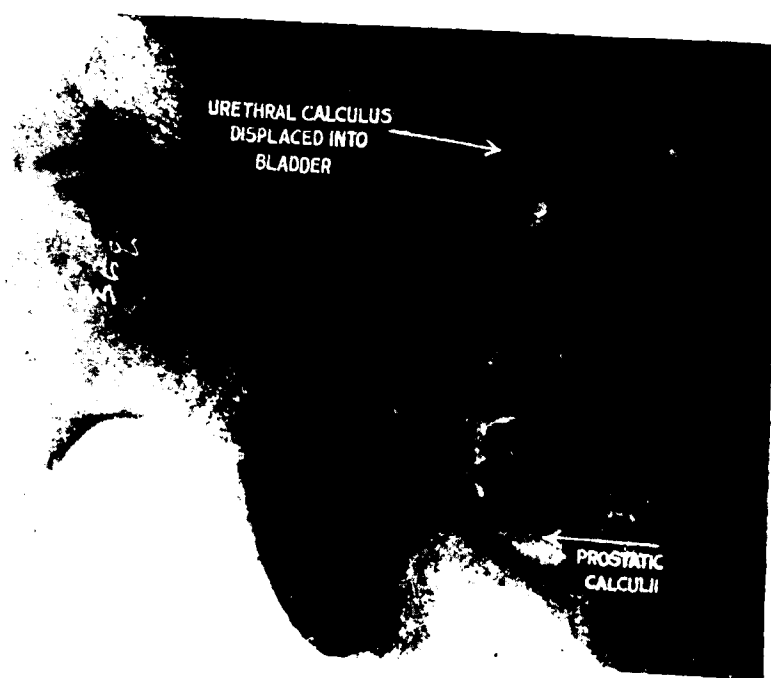
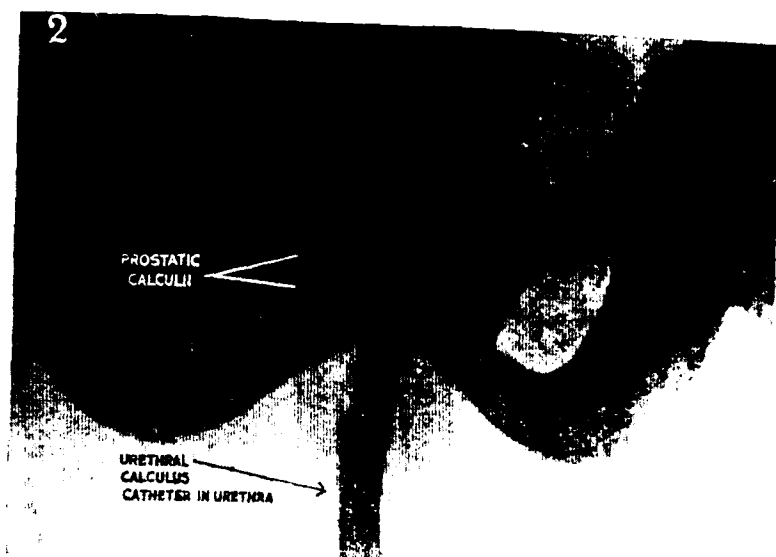
Report on Two Cases of Prostate with Special Reference to Acid Serum Phosphatase and After-care in Suprapubic Operations

Majid Khaw Bahadur Ahmed Bakhsh.



Report on Two Cases of Prostate with Special Reference to Acid Serum
Phosphatase and After care in Suprapubic Operations

Major Khan Bahadur Akbar Bakhs.



Vol. Page 207.

behind the catheter. The calculus is said to be still lower down than in Figure 1 photo. (*vide picture*).

(3) Malecot catheter removed and another X-ray taken in left lateral position with knees flexed. It shows the urethral calculus is displaced in the bladder. This was subsequently removed at operation.

It is very interesting to see Figure 2 photograph (*vide picture*) showing a malecot catheter passing the calculus in urethra without dislodging it either into the bladder or causing obstruction to its passage. Radiologists here view it with suspicion and say it must be in a urethral poucher diverticulum, but clinically there was no such indication either in the perineum or urethral floor. The size of this calculus when removed was as big as a marble. It weighed two drams and four grains and was a mixture of phosphates and uric acid, the former predominating. Multiple calculi seen in the shadow were in crustations of urinary deposits on the growth. Figure 2: The explanation advanced in this case is, there was excavation in the prostate, as was noticed at operation, like diverticulitis of the prostate, due to malignant growth, forming a cavity in which the calculus lay free and which presented this shadow i.e. a rubber catheter passing over a calculus. As the calculus was free, the change of position of the patient i.e. the left lateral in radiography caused the stone to fall out of the cavity into the bladder as in Figure 3 (*vide picture*).

2nd case for comparison of chronic hypertrophic enlargement of prostate

A., aged 76 years, came in with difficulty in micturition. He often has had retention of urine which was relieved by catheter. He was operated for reducible right inguinal hernia in 1910. It recurred after a month, as he said. He could not rest. He uses a truss for it. General condition good; Pulse 65 p.m., heart sounds normal, B. P. 60-116 p.m. by auscultation. Rectal examination reveals a large prostate, which can be felt bimanually also through the hypogastrium, residual urine 5 ounces. He passed two pints of urine in 24 hours. The result of other examinations is as: 19-2-'48 Stool examination: colour-brown, consistency—semisolid, and unformed, mucus—a trace, reaction—alkaline, parasites—nil, microscopic examination: muscle fibres few, vegetable cells—a few, erythrocytes—not found, leucocytes a few degenerated, microphages—nil, entamoeba histolytica—nil, its cysts present, flagellates—nil, ova of worms by concentration test—nil, bacterial contents—heavy, starch granules—many, fat globules—nil, crystals—nil, occult, blood—a trace.

Urine Examination:—Colour pale yellow, appearance turbid, specific gravity 1010, reaction acid, phosphates and urates nil, albumin a distinct trace, sugar, acetone bile salts, D acid, bile pigment nil, Indican nil, occult blood present, microscopic blood cells present,

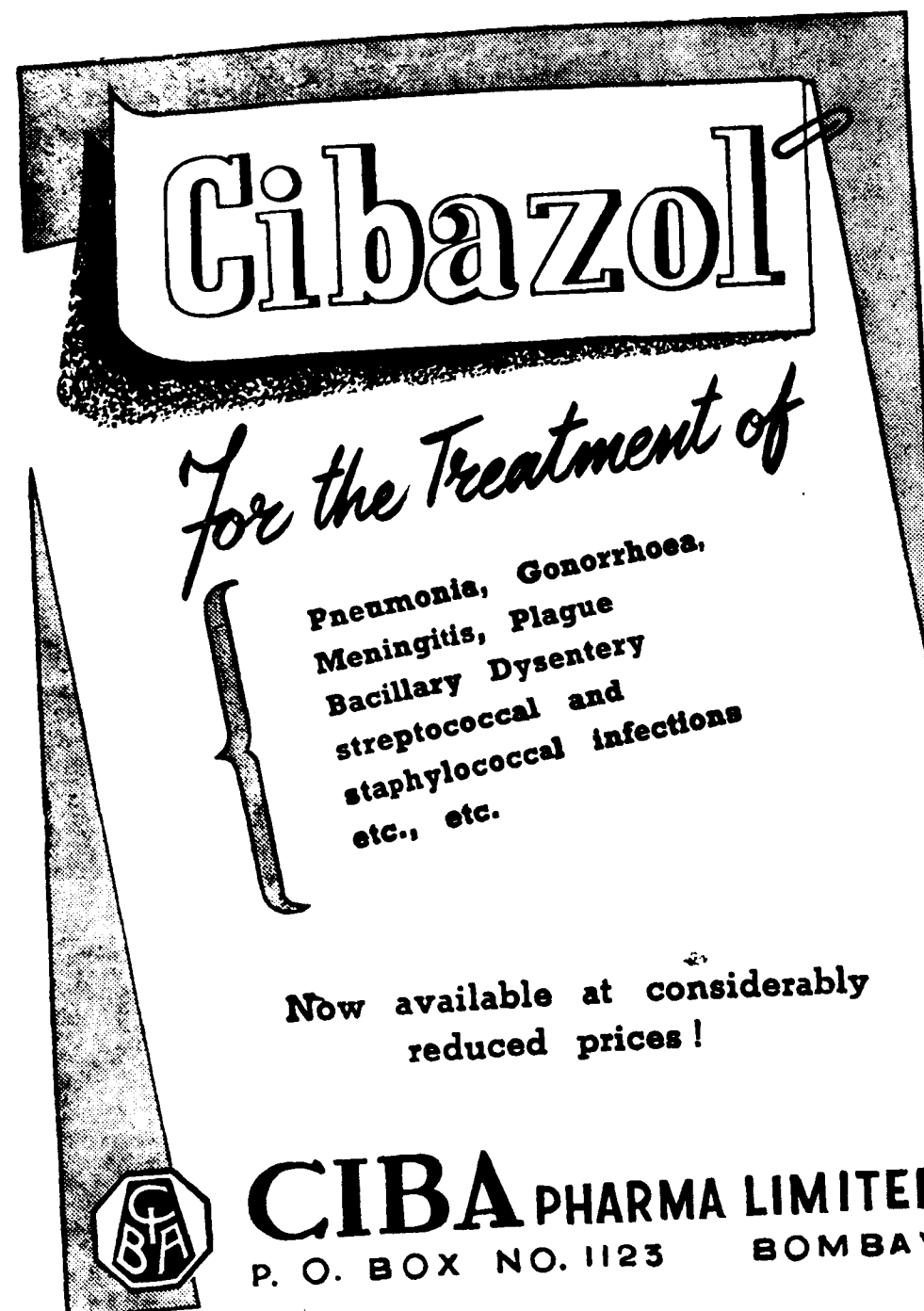
a few, pus cells abundant, epithelial cells a few, casts not-found, crystals amorphous, a few.

Blood examination :—Malarial parasites nil, total W.B.C. 10,937, Poly 55%, Lymphos 33%, Large Hyaline transitional 1%, Eosino 7% total R.B.C. 410,000; Hæmoglobin 85%, (Hellege), colour index 1.03, Anisocytosis present, moderate, Poikilocytosis slight, Megaloblast nil, Polychromatophil present, a few, punctate basophile nil, blood coagulation time 3 minutes and thirty seconds, bleeding time is 4.30 minutes, blood grouping belongs to 'B' group.

Acid serum phosphatase estimated and found to be 2.7 Bodansky unit. (Normal limit 0.5 to 3 units).

Blood for urea estimation :—48 mg. per 100cc. of blood. Urine urea estimated found to be 0.6%, X-rays of lungs : lung markings plus plus. No lung lesion is seen.

23-3-'48 under spinal anæsthesia suprapubic cystotomy 1st stage, and closed suprapubic drainage by a malecot catheter. From 23 to 29 February he did well, but on 1-3-'48 he had pain and swelling of right metatarsophalangeal joint and swelling and œdema of right leg and foot (slight). He was given Penicillin, Vinum Colcheci, Salicylates mixture and Wyamin capsules. 3-3-'48 swelling and pain etc. of the foot and leg was less, and he was better. He continued to improve, so on 6-3-'48, under Neupercain spinal anæsthesia, I enucleated the prostate through the suprapubic wound. It had very much shrivelled except the middle lobe which was as big as a marble. It was detached from the rest of the prostate. Both the lateral lobes came out attached together and the middle lobe was removed afterwards as it was separate. There was little hæmorrhage due to fall of blood pressure, which was combated by continuous Glucose and Saline drip. Rubber catheter was passed into the bladder through the urethra and was fixed by adhesive plaster. The glans penis was covered with a penile jacket. A malecot catheter was put in the bladder through the suprapubic wound thus draining the bladder both ways. The prostatic cavity was packed with vaseline gauze ribbon and retropubic space was drained with a gauge drain which was removed after 24 hours. On 8-3-'48 gauze packing from the prostatic cavity was removed, no evidence of bleeding. The prostatic cavity was irrigated *via* the urethral catheter and the fluid returned through the suprapubic malecot drain with no leakage from the suprapubic wound. On 11-3-'48 malecot suprapubic catheter also was removed, and the bladder was now drained by the urethral catheter, and even then there was no leakage from the suprapubic wound. All the urine is now coming through the catheter and the suprapubic wound has healed. On 17-3-'48 urethral catheter was also removed, and the patient passed all urine through the urethra without any difficulty. On 19-3-'48 he was discharged as cured.



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As regards ligaturing ductus deferens in all cases of prostatectomies, my experience in a limited number of cases is, it is not essential to ligature these in each and every case except those with septic bladder. My record shows only one case where extension of sepsis along this route had occurred and that also in a case with septic bladder. As regards the choice of operation for prostatectomy either suprapubic or perineal route, each has its own advocates, and supremacy of one over the other depends according to the practice and experience of a surgeon practising it. Personally I am familiar with it and am a strong advocate for it. In my opinion a closed suprapubic drainage combined with urethral drainage, obviates all the drawbacks of a suprapubic route, keeps the patient quite dry, comfortable and clean. The closed suprapubic drain is removed on the 4th day, but the urethral catheter is left in the bladder with a penile jacket as designed by Hamilton Baily for a week, when this also is dispensed with. The patient is discharged as cured on the 11th day with the suprapubic wound quite healed.

Open suprapubic drain, no doubt, entails a lot of worry, care and anxiety on the part of the nursing staff. Convalescence is protracted with a lot of expense and worry to the patient. But with closed drainage, all these troubles are curtailed. The results have been more gratifying, patients have been quite dry, clean and comfortable and the nursing staff expressed their appreciation and a feeling of relief.

References :

1. Hamilton Baily—Emergency Surgery, 1944.
2. British Medical Journal, Dec., 1947.
3. King Edward Medical School Journal, Dec., 1947.

Results of Thoracoplasty in Pulmonary Tuberculosis.—*Abst. World Medicine, Sept. 1948.*

Dr. Sellors performed thoracoplasty for pulmonary tuberculosis in 633 patients between 1935 and 1946 and has presented the results of his follow-up conducted in 1947. The operation was performed for several types of tuberculous diseases. In some patients Monaldi drainage of cavities was used as an adjuvant procedure. Of the 633 patients 588 were traced 17 had died within 4 months after operation and 55 later. 375 of the 588 traced, were fit for full work in July 1947, 35 for light work and 53 unfit for work. In 53 no information regarding fitness for work was forthcoming. Reports on recent sputum examination were available in 457 cases; 384 (84%) were totally negative and 73 (10%) were positive. Radiographic evidence was had in 424 cases; in 387 of these (91%) the cavities appeared to be closed, and in 37 (9%) they were still open.

T.N.S.R.

A CASE OF AMYOTROPIC LATERAL SCLEROSIS

K. RAJAGOPALAN, M.B., B.S.,
Assistant Medical Officer, Govt. Erskine Hospital, Madura.

Name: Poornachari, aged 38 years, Purohit by profession was admitted on 14-9-'48 in the South Medical Ward, Government Erskine Hospital, Madura.

Complaint:—Atrophy of muscles of hand and arms with consequent weakness of upper limbs and inability to use lower limbs well and frequent fibrillary twitchings of both hands. Duration four months.

Previous illness:—Appendicitis seven years back; got cured by conservative treatment. Habits—vegetarian; not addicted to alcohol or tobacco.

Family history:—None in his family has similar complaint.

History of present illness:—Four months back, patient had fibrillary twitchings both hands. Since then, progressive wasting of muscles of arms and hands and later ataxic gait while walking. No fever preceding the attack; bowels and micturition were normal.

Laboratory reports:—Urine reaction—acid, Sugar and albumin—nil; Blood—Hb. 70%; B. P. 138/104; Sputum—nil abnormal; Faeces—nil abnormal.

General condition:—Patient, aged 38 years, markedly wasted, anæmic, not jaundiced, teeth dirty, tongue coated and moist, no œdema anywhere in the body, no clubbing of the fingers.

Central nervous system:—Patient conscious, answers questions coherently, speech normal and intelligence average.



CRANIAL NERVES:

- i
- ii
- iii, iv, vi
- v Motor
- Sensory
- vii Motor
- Sensory
- viii
- ix, x, Accessory
- part of xi, Motor
- Sensory
- xi Spinal part
- xii

Normal.

SPINAL MOTOR NERVES:—

- | | Upper extremities. | Lower extremities. |
|--|--|--------------------|
| (1) Power | Markedly diminished in hands, diminished in forearms and arms. | Normal. |
| (2) Wasting | Markedly wasted, especially hands. | Nil. |
| (3) Tone | Flaccidity muscles. | Muscles spastic. |
| (4) Tremors, Fibrillations, Spasms, etc. | Fine tremors both hands on spreading the hands out. | Nil. |

SPINAL SENSORY NERVES:—(1) Tactile discrimination. (2) Muscle sense. (3) Stereognostic sense. (4) Muscle and tendon pressure sense. (5) Joint sense. (6) Vibration sense. (7) Pain, temperature and light touch. (8) Subjective sensation. } Normal.

REFLEXES.—(1) Superficial—(a) Conjunctival (v); (b) palatal (ix and x); (c) pharyngeal (ix); (d) epigastric (Th 7-9); (e) abdominal (Th 9-12); (f) cremasteric (L₁-L₂). } Present.

- (g) plantar (S₁-S₂) .. Extensors both sides.
- (2) Deep—(a) Pupil (ii and iii) .. Present.
- (b) Jaw (v) .. Present.
- (c) Biceps (C₅ and C₆) .. Lost.
- (d) Triceps (C₆ and C₇) .. Lost.
- (e) Supinator (C₇ and C₈) .. Present.
- (f) Knee jerk (L₂ and L₄) .. Exaggerated both sides.
- (g) Ankle jerk and Clonus .. Exaggerated both sides.
- (h) Patellar clonus .. No Clonus.

(3) Visceral—(a) Bladder—normal; (b) rectum—normal.

Co-ordination:—Upper limbs—present; lower limbs—present.

Trophic changes:—(a) Skin—nil; (b) bones and joints—nil.

Gait:—Ataxic gait.

Electrical reaction:—No reaction of degeneration in either upper or lower limb muscles.

Lumbar puncture:—C.S.F. clear and under normal tension. C.S.F. Wassermann reaction—negative. Proteins—80 mgms. %; Chlorides—650 mgms. %; Sugar—glycolysed.

Cardio-vascular system:—Heart sounds feeble, both sounds heard, no murmurs, pulse for volume and tension, regular, rhythmic and 80 per minute. B.P. 138/104.

Respiration:—Breath sounds vesicular, heard well over all areas. No adventitious sounds.

Alimentary.—Nil abnormal. Liver and spleen not palpable.

Diagnosis.—*Amyotrophic lateral sclerosis.*

Diagnosis based on:—(1) Wasting of small muscles of hand with deformities due to contracture producing "Griffin's paw"; wasting of the muscles of arms and forearms.

(2) Spasticity in legs with hypertonus; power is retained and there is no wasting.

(3) Muscles show fibrillary twitchings which could be elicited by tapping over them.

(4) Exaggerated knee and ankle jerks and extensor plantar response.

(5) No sensory loss at all.

Differential diagnosis.—1. *Other causes of wasting of small muscles of the hand viz:—(a) Peripheral neuritis; (b) cervical rib; (c) cervical pachymeningitis; (d) cervical caries; (e) syringomyelia; and (f) rheumatoid arthritis wrist.*

The absence of any sensory loss and absence of any sensory phenomenon like tingling, numbness or anæsthesia rules out all the above.

2. *Other causes of spasticity of leg muscles viz:—(a) Erb's spastic paraplegia; (b) subacute combined degeneration of cord; (c) Freidrich's ataxia; and (d) disseminated sclerosis.*

The absence of any sensory loss rules out all the above.

To recapitulate, several varieties of progressive muscular atrophy are described viz.: (1) Progressive bulbar paralysis; (2) simple progressive muscular atrophy; (3) Arvenne duchenne type of progressive muscular atrophy; (4) amyotrophic lateral sclerosis; (5) facio-scapulo-humeral dystrophy—(Landouzy—Dejerine's dystrophy); (6) peroneal muscular atrophy (Charcot—Marie-Tooth type of atrophy); and (7) progressive spinal muscular atrophy of infants (Werdnig-Hoffmann disease).

Prognosis.—In this case, the disease is only advanced by four months since its onset. This, together with the absence of any reaction of degeneration of the muscles involved, denotes a not unfavourable prognosis, though it is stated that the disease is fatal within four years from its onset.

Treatment is only palliative.

In the above mentioned case, the following regime was adopted.

(a) Vitamin E (pure synthetic and *L*-Tocopherol) in form of tablets mgms. 3, 2 to 3 tablets t.d. was given.

(b) Strychnine 1/120 grain. Vitamin B, 100 mgms. Injected on alternate days for a course of 15 days followed by another course after 15 days' rest.

(c) Faradic massage to the affected muscles.

(d) Hot baths and passive movements to alleviate the spasticity of the leg muscles.

The above mentioned patient was put in a rigorous and regular routine of the above treatment.

Patient discharged at request on 1-10-'48 and was advised to report periodically to ascertain the progress of the disease.

My thanks are due to Dr. T. V. Venkatesan, M.B., B.S., F.D.S., Medical Officer, Nerve Clinic, Erskine Hospital, Madura, for having given me his valuable help and guidance regarding this case and to Dr. K. Raman Menon, F.R.C.S., Superintendent, Erskine Hospital, Madura, for his kind permission to publish this case.

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Medical South Ward, Govt.
Erskine Hospital, Madura.

A CASE OF TIGER BITE

B. M. SINHA, L.M.P., L.T.M.,

Post-Graduate Student, Govt. Ophthalmic Hospital, Madras.

WHEN I was attached to Tilothoo Hospital, Bihar, a few months before, a young man 'T' was brought to me on a crude stretcher from a nearby hilly jungle, being brutally attacked by a tiger.

'T', saw a tiger stretching itself in a paddy field in the early hours of the morning. He quickly went to his house to return with a spear and a number of village people. On getting scent of the approaching people the tiger jumped to a neighbouring cane-sugar field. When the villagers made a noise by beat of drums, the tiger through a corner jumped from the field and pounced on 'T' who aimed with his spear to pierce the frightened animal. The animal attacked the unlucky man probably with its claws and severed the left auricle and laid open the sterno-mastoid muscle of the left side of the neck bruising the neighbouring structures. The wound was gaping and bleeding profusely. Probably one of the fingers of the animal claws got into the external canthus of the left eye and laid open the bony sutures between frontal bone and zygomatic bone. The left eye ball was thrown medially as the rectus lateralis, rectus inferior and obliquus inferior muscles were detached. The skin of the upper lid of the left eye was clearly incised throughout horizontally through the sharp end of the animal's claws. Small abrasions were found on the forehead, cheek and neck. The patient was not speaking, partly due to shock and partly due to mental setback. The pulse was slow and condition low.

Treatment.—The patient was taken to the theatre. The skin of the lid which was looking as if incised by a sharp cutting weapon was sutured. The skin round the external canthus and above the sternocleido-mastoid muscle were brought together and sutured. All the bleeding points were sutured. All surgical aseptic precautions were taken. Other minor bruises were sealed with Tr. Benzoin.

The eye ball which was loosely hanging was then enucleated. The socket was then tightly packed with sterilized ribbon gauze and bandaged. Prophylactic injection of A.T.S. was given in the end. By the evening his whole face became swollen and œdematous and his right eye which was not injured at all became congested and heavy. Penicillin therapy was started, with 20,000 units every 3 hours. On the third day swelling began to subside and the right eye which was suffused and looking angry became clear.

The Penicillin administration was not stopped till 30 lakhs units in all was pushed in. The temp. which was ranging between 101°–103° F. became normal on the fourth day. The excruciating pain felt by the patient was revealed on the second day when the patient spoke for the first time after the tiger's attack, vanished after the completion of 30 lakhs units of Penicillin. The wounds were being dressed with Sulfadiazine ointment. The suture in the orbit was removed on the 10th day and the orbit was clean and the conjunctival flaps which were sutured were healthy and shining. The patient was discharged from the hospital after one and half months.

Indications for enucleation in this case were: (1) Trauma in the eye was so extensive that the form of the eye-ball could not be preserved. Some of the muscles were detached completely.

- (2) Severe pain in the affected eye.
- (3) Sympathetic ophthalmia was prevented.
- (4) Panophthalmitis was expected any moment.

For cosmetic purposes, the patient was given an artificial eye which fitted well in his socket. The artificial eye should be washed frequently and should be removed every night. After a year or so when its surfaces and edges become roughened, it should be replaced by a new one.

Care should always be taken that the other eye should not be strained much. With this instruction the patient was discharged hale and hearty.

FEW INTERESTING CASES OF DELIVERY

R. S. LALL, L.M.F.

A.M.O., Khamaria, Khairagarh Division, C.P.

I. A Case of Elephantiasis Vulvae

S., a primipara, full term, was having labour pains since last 40 hrs. Liqr. Amnii drained after 24 hrs. of labour pain. Labour pain was gradually subsiding but delivery of the foetus was not taking place. I was called to see at this moment. On examination I found nothing abnormal except that she had elephantiasis vulvae. The vagina was not dilating to effect the delivery. Ironing of the vagina and a dose of gr. x Quinine Sulph. mixture produced the desired effect. Puerperium was uneventful.

II. A Case of Generally Contracted Pelvis

Wife of 'J', a constable, primipara, full term. Labour pains started 3 days back and Liqr. Amnii drained on the 2nd day. Local *dhais* had tried their best to deliver the foetus but failed. I was called to see the case on 28-2-'46 at 8 a.m. Pain dull and at long intervals. Os dilated 3 fingers, head presenting, caput-succedaneum present. Foetal heart sounds or foetal movements absent. Uterus seemed to have firm grip of the foetus. The vagina was dry and swollen.

At 8 a.m. I gave one injection of Morphine Sulph. gr. 1/3 and Atropine Sulph. gr. 1/100, and waited to see the result.

At 4 p.m. No pain. Uterus slightly relaxed. Cervix dilatable, foetal heart sounds absent. The patient was taken to the operation room. Under general anaesthesia craniotomy was performed and the foetus was delivered. Placenta together with membranes delivered within 10 minutes. Pituitrin 1 cc. and Ergometrine Citras gr. 1/100 were injected. As the uterus was not contracting readily, hæmorrhage was occurring. A very hot uterine douche was given and Ergometrine Citras gr. 1/100 was repeated. This totally stopped the hæmorrhage. Antiseptic dressing was applied and the patient was removed to the ward.

Prontosil Rubrum tablet 1, thrice daily, and Ergot mixture were continued for few days. Puerperium was normal.

III. A Case of Contracture of Vaginal Orifice

G., aged 25 years, primipara. Labour pains started on 16-11-'46. Liqr. Amnii drained on 18-11-'46. The head had descended down till it was visible through the vaginal orifice. All efforts were made by the village *dhais* but to no effect. At last she was brought here on 21-11-'46 at 3 p.m. On examination the bladder was found distended to its capacity. The head of the foetus with caput succedaneum was resting against the unyielding vaginal orifice. Foetal heart sounds were not audible.

Bladder was relieved with a catheter and about two pints of hæmorrhagic urine escaped.

She was put under general anaesthesia and the vaginal outlet was ironed. With the help of forceps the head was delivered. The foetus was dead. There was slight laceration of the perineum during the procedure which was immediately repaired. Placenta and membranes were delivered within 10 minutes. A hot vaginal douche was given and antiseptic dressing applied.

Puerperium was normal.

IV. A Case of Hydramnios

'T', aged 30, 6th para, was brought to the hospital at 3 a.m. on 4-6-'47. All her previous deliveries were normal.

She started pains 3 days back. Had pain for 40 hours which gradually stopped. She was feeling pain below her costal margins when she was brought to this hospital. No Liqr. Amnii had passed.

On examination the abdomen was abnormally distended. It was very tense. No foetal parts were palpable. No sound was audible. On internal examination (which was painful) os was only slightly dilated which could not admit even two fingers.

A warm soap water enema was given at 4 a.m. which yielded nothing. As she was feeling much exhausted.

Solu Glucose 25 %	50 c.c. I.V.
and	
Morphine Sulph	gr. 1
Atropine Sulph	gr. 1/100

subcutaneously were given and she was removed to the ward.

As any procedure of examination was painful to her, she was removed to the operation theatre and a light CHCl_3 anaesthesia was given. Os was found 3 fingers dilated and bag of Liqr. Amnii was presenting. The bag was punctured and a large quantity of water was allowed to escape to relieve the tension. Pituitrin 1 c.c. was given and she was taken down the table. This gave a good result. The over-stretched uterine muscles began to contract and within 45 minutes she delivered the foetus. A large quantity of fluid escaped after the foetus.

Usual puerperal treatment was done. Nothing unusual was noted during her stay in the hospital.

The husband of Case No. II was advised to get her examined regularly when she next conceived. After 3 months of her next conception, the husband was transferred from this place. Afterwards she was removed to her father's house during the last months where, due to want of any medical help, she died during delivery.

I am obliged to Dr. S. K. Kaul, C.M.O., Khairagarh, for allowing me to publish these Case Notes.



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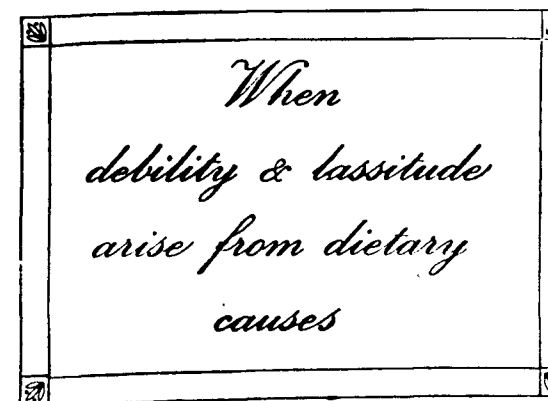
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THE SYNTHESIS PLEA

ELSEWHERE in this issue we publish a summary of the recommendations of the Chopra Committee appointed by the Government of India in December 1946, to report on the Indigenous Systems of Medicine, and extracts from the thoughtful and exhaustive memorandum submitted by Captain G. SRINIVASAMURTHY, M.B. & C.M., ex-Principal of the Indian School of Medicine, Madras, to that Committee on the subject. The Committee, as was to be expected, was composed of experts in the various systems of medicine now practised in this country, and Captain G. SRINIVASAMURTHY is an expert in both the Systems, Allopathic and Indigenous. Their views are therefore entitled to the greatest consideration and respect, and it would have given us the greatest pleasure if it were possible for us to accord our wholehearted support to those recommendations and views. But, unfortunately, we find ourselves unable to do so, not because we have no sympathy with the Indigenous Systems of Medicine—we are really anxious that Indian Medicine which has been "static for many centuries should once again make its contribution to the welfare of the people of this country and of the world" as the observations which we make later will make out—but because in their zeal to bring about a synthesis of the systems of the East and the West for the common good of ailing humanity, they have overlooked many practical difficulties in the way of bringing about that consummation, and the obstacles which the Committee itself has pointed out are not so easily amenable of solution as they fondly hope, conditions being what they are at the moment, and will continue to be for many, many years to come even if fundamental changes are thought of from now, planned at an early date and attempts made to give effect to them without loss of time.

The Committee have expressed the opinion that the integration of Indian and Western systems of medicine leading to synthesis is not only possible but practicable and they have therefore recommended that immediate steps should be taken in the following directions: (1) The integration of the courses of study by arranging curricula in such a way that whatever is weak in one system is supplemented and strengthened by strong points of the other system or systems; (2) The teaching of each subject by the same teacher instead of by separate teachers as now, giving the students a unified view of the Indian and Western medicine; and (3) Experts of Indian and Western medicine to carry on research work side by side checking and verifying the various hypotheses and theories either rejecting or harmonising them and if theories are such as could neither be rejected nor reconciled, they are to be as parallel hypotheses. Are these so very easy of achievement under existing conditions? The Committee itself feels that for the purpose of facilitating the integration—we need not here enter into the question whether it is integration or wise eclecticism as a prominent Daily has put it—the following steps should be taken simultaneously: (1) a higher standard of basic education among the entrants; (2) compilation of unified text books giving integrated version of Indian and Western medicines; and (3) training of special teachers for integrated studies. And the Committee depends upon the following sources for the supply of teachers for the integrated courses: (1) the present schools and colleges of Indian Medicine; and (2) promising graduates of both systems with proper training to the future colleges.

We have now to consider the question how far the present and prospective demands can be met from the sources mentioned by the Committee on the basis of the following qualifications they themselves consider as necessary: The students should have a working knowledge of Sanskrit or Arabic for Indian Medicine, and sound knowledge of English and basic modern sciences—chemistry, physics and biology before starting professional studies. Since the books on Siddha system of Indian Medicine are in Tamil we can take it that a working knowledge of Tamil also is required of the students. The Committee state that according to the figures collected by them there are more than 2,00,000 practitioners of Indigenous Medicine in India at the present time and out of these it should be possible to get 25,000 to come forward for this training course. So far as the earlier courses are concerned, while there are experts in each system of medicine, it is very doubtful if we have sufficient number of them equipped with the knowledge of the Western and Indian systems of medicine and possessing a working knowledge of the languages mentioned to enable them to inculcate sound knowledge of both the systems of medicine to the students properly. This is the greatest obstacle in the way at the moment. Even assuming

that the required number are available at present, it is extremely doubtful if the students, on the basis of the qualifications now fixed for admission, will be in a position to assimilate the knowledge imparted to them of the two systems by their professors, knowing as we do that a very large majority of them do not possess a working knowledge of the languages required to enable them to acquire the knowledge. The first step therefore will be to get ready a number of professors versed in both the Western and Indian systems, with sufficient working knowledge of the languages in which the texts on the Indian systems of medicine are available to enable them to grasp their real import and impart that knowledge to the students. And the students to be benefited by the instruction in the two systems should not only possess sound basic education, but also possess not merely working knowledge but also understanding knowledge of the languages to enable them not only to acquire a theoretical knowledge from the classical text books proposed to be published but also sufficient knowledge to refer to the original texts in times of need and doubt. Even an working knowledge of these languages is not insisted upon at present in the case of entrants to the Allopathic Colleges and students admitted to the schools or colleges of the Indigenous Systems of Medicine cannot be said to possess sufficient knowledge of basic modern sciences mentioned supra. If, as is suggested by the Committee, an integrated system is to be brought about, the qualifications of the entrants should be thoroughly changed, and it is not a change that can be brought about over-night. We must start at the very beginning and it will take several years before students can be got ready to imbibe a knowledge of the integrated system. Haste will make only waste. It is doubtful if the knowledge of Western Medicine now imparted in the Schools or Colleges of Indian Medicine is sufficient enough to enable the students to have a fair working knowledge of the system. It is equally doubtful if the establishment of chairs in Indian Medicine in the colleges teaching Western medicine will be productive of results, so long as the students studying in those colleges do not possess even a working knowledge of the languages in which the original texts are written. And in spite of all that has been said by the Committee we feel bound to state that the imparting of the knowledge of the two systems whose basic theories are entirely different, one humoral and the other virus, is bound to give rise to mental confusion in the minds of students. May be that there are a number of students who can, by their superior intellect, be benefited by the knowledge of the two systems, but their number will necessarily be very small and we have to take into consideration only average students. And among them mental confusion is bound to arise to the serious detriment of ailing humanity.

We readily grant that the Indian Systems of Medicine are cheaper compared with the Western system of medicine and having been

in vogue for ages is of course popular with a large section of the people who have become used to it. But in these days when science has advanced considerably the Indian systems have, as pointed out by the Committee itself, remained static for many centuries, and however scientific they might have been claimed to be in those days according to the then standards they cannot at the present day stand the test of science with the advancement that has now been made. Besides, knowledge of Pathology, Bacteriology, Preventive Medicine, Surgery, Obstetrics and Gynæcology and Orthopaedics which have made and are making considerable strides in the Allopathic system and which are now considered essential for a perfect knowledge of medical science are entirely absent in the indigenous systems of medicine. And it is for the imparting of the knowledge on these branches of the medical science to the students of the indigenous systems of medicine that chairs have been established in the schools and colleges of Indian Medicine. It cannot be said that the smattering knowledge on these subjects that is imparted to the students is sufficient to equip them for the great task of relieving ailing humanity of its suffering.

We are at one with the Chopra Committee and the Premier of our own Province that the indigenous systems of medicine which are cheap, popular and also considered well suited to the climatic and other conditions prevailing in the country should be given all the help and encouragement that are rightly their due. There have been established a number of colleges and schools of Indian Medicine in India. More can be established. The Governments, both at the Centre and in the Provinces, can allot large sums of money for this purpose and also for the carrying on of research with a view to place these systems on a scientific basis which will be acceptable to the world under present day standards. As recommended by the Chopra Committee, a Central Council of Research composed of eminent practitioners of Indian Medicine, representatives of Scientific Bodies dealing with Indian Medicine and representatives of educational institutions where research in Indian Medicine is being carried out can be appointed for the purpose of conducting research in the fundamental doctrines of Ayurveda, Unani and Siddha systems, and also for carrying on research in the ancient literature on medicine, clinical research, research on drugs—Pharmacological, Pharmaceutical and Botanical, research in nutrition and dietetics and research on psychological aspects of medicine. These will help “clear Indian medicine of centuries of accretions of doubtful value and make its science and art intelligible to the modern mind.” In addition, herbariums of properly identified and preserved specimens of all known plants in Indian Medicine can be established in suitable centres and a proper text book of *Materia Medica* can be compiled, giving necessary particulars of different drugs, by collecting all available information. When all these are

done and Indian Medicine placed on a basis acceptable to the scientific world, there will be no need for any synthesis of the Western and Indian systems and the students graduating from the colleges of Indian Medicine will be in a position to practise the system with all the required knowledge. Instead of attempting a so-called synthesis of the two systems whose fundamental basis are entirely different and manufacturing graduates, who will be fully equipped with the requisite sound knowledge neither in the one nor in the other system, the interest of the country demands that the two systems of Medicine should be developed on their own lines to help suffering humanity. There may be practitioners in either system who have the requisite basic qualifications and aptitude and who desire to acquire knowledge of the other system. For those, post graduate study can be provided for in the colleges of the other system. We are of course painfully aware of the fact that medical relief is very, very limited and if the State is to discharge its responsibility to its citizens it must make medical relief available within their easy reach. The lack of the necessary personnel is now the stumbling block in the way of such extension. To extend medical relief and to ensure medical relief to all those who need it, especially in the rural areas, it is not necessary that only graduates of an integrated system should be provided for. Each system can develop in its own way, and keeping them apart will help create healthy rivalry for advancement for the common good. Instead therefore of attempting a synthesis which under existing conditions is absolutely impossible and which will continue to be impossible of achievement for a considerable length of time, we would appeal to the Governments in the land to help and encourage the advance of each system in its own way. That will be real service to the people and that will be the best service to the Indigenous System of Medicine.

RURAL MEDICAL RELIEF

Too long have the villages in India been neglected in every field, and particularly in the field of medical relief, with the result that many precious lives have been lost for lack of proper facilities. The Bhore Committee drew pointed attention to this most glaring aspect of the problem in its Report. But too long also have the recommendations of that Committee remained mere pious wishes in paper. In laying the foundation stone of the primary health centre in India at Nayafgarh, 20 miles from Delhi, on the 5th instant, the Hon'ble RAJKUMARI AMRIT KAUR, India's Health Minister, made the candid admission that the rural folk had too long been neglected and characterised the event as an epoch-making one in the history of health services in India.

This centre owes its origin to the Report of the Bhore Committee. That Committee has recommended the establishment of

a large number of primary health centres all over the country to cater to the needs of villages. This centre, to begin with, we are told, will be a six-bed hospital and dispensary, with a male and a lady medical officer, nurses, midwives and other medical and public health personnel. The intention, we understand, is to expand and equip this health centre with 40 beds during the next five years so as to be able to serve a population of over 20,000 people living in 26 villages within a radius of two miles. The medical officers and other staff of the health centre will, it is understood, in addition to attending to their duties at the Centre, be asked to render medical and maternity services in the homes of the people and also to educate the public in matters essential for the maintenance and promotion of health.

In our own Province a number of such centres have been established, and in the budget for 1949-50 provision has been made for the opening of 30 new primary and 5 group (combined Medical and Public Health) centres as the second instalment of the much-whittled down post-war reconstruction plan and for the opening of 25 more centres in the selected firkas. But in rural areas the difficulty is always about the required personnel. Dr. K. S. RAY, President, Indian Medical Council, says there should be only one basic medical qualification for allowing people to practise the profession of modern medicine in India and the M.B., B.S. Degree should be the minimum registrable qualification. The medical course is the longest of all professional courses of studies in India, entailing huge expenditure, and those who have graduated in Medicine after undergoing this course at considerable expense find it difficult if not impossible to take to service in rural areas where the honorarium paid is so unattractive and the prospect of making money by private practice so poor due to the poor economic condition of the mass of people in rural areas. The Hon'ble the Minister for Education says that medical education demands the greatest amount of expenditure from the public exchequer under "Education" and therefore it is not a matter of charity but sheer duty on the part of Medical students to devote themselves to the service of the poor. But charity, as the maxim goes, begins at home, and only if medical graduates are placed in a position in which they can keep the wolf from the door, will the service be attractive and medical graduates be drawn to it. The Government have themselves recognised the inadequacy of the subsidy given to rural medical practitioners and have in the budget for 1949-50 enhanced the subsidy from Rs. 600 to 900 per annum. But we ask the Minister for Public Health whether this compares favourably with the pay and allowances drawn by even clerks in the mofussil who are less qualified educationally. And is the pittance of Rs. 75/- a month, we ask, sufficient to keep a family going, prices of foodstuffs and other essentials having gone up by 400% and

further enhancements being made by direct and indirect taxes, Central and Provincial? The original subsidy of Rs. 600 was fixed in the twenties when the establishment of subsidised rural medical dispensaries was decided upon, and while the cost of living has gradually mounted up the subsidy has all along been stationary. No wonder the scheme was not attractive to medical men and women and many dispensaries had to be closed down for want of the necessary personnel. Unless therefore the remuneration of the medicos is placed on a level higher than that paid to people in services with lesser qualifications, the prospect of proper men being attracted to the service in rural areas is remote. The Government will therefore do well to give their earnest attention to this all-important matter since the success of measures for the extension of medical relief to rural areas very largely depends upon the satisfactory solution of this all-important problem.

Gleanings From Medical Press

OBSTETRICS and GYNÆCOLOGY

Uterine inertia in the first stage of labour - *Proc. Royal Society of Medicine*, May, 1948.

A very interesting and informative discussion on the above subject was held in the Section of Obstetrics and Gynaecology on 16th January 1948. The more important points of interest are given below:—

There are *three* main types of primary inertia: *The first* is characterised by ineffectual contractions from the commencement of labour. Pains are poor and may continue for several days. The presenting part is well adjusted to the lower segment and the membranes do not rupture early. Contraction and retraction are feeble. This is *true primary inertia*.

The second is colicky uterus, and the patient has strong painful contractions from the start. The cervix is however slow to dilate, and the membranes rupture early; the onset of foetal and maternal distress is common.

The third type is associated with fear, and from an early stage the patient becomes hysterical and calls out for immediate delivery. There is no relaxation by the patient between pains, and during pains, she uses every voluntary muscle against the uterine forces. Cervical dilatation is inhibited by the higher nerves centres.

Treatment.—*1st type*: Prolonged use of sedatives should be discouraged; patients should be encouraged to be active during the day and a sedative given only at night to ensure sleep. The cervix will dilate gradually and there is no danger as long as the membranes remain intact. If the membrane ruptured intervention will become necessary. Once the cervix is fully dilated, forceps delivery is indicated. Special care must be taken

during the *third stage* as again inertia may be experienced. The placenta should not be allowed to remain *in utero* for more than two hours.

Second type: Sedatives are definitely indicated throughout this stage. A mixture of Pot. Brom. Chloral and Tr. opii every 3 hours would help. Nembutal and other barbiturates may also be used at this stage. When cervix is quarter dilated pethidine with chloral gives good results. If the cervix is half dilated, manual dilation is usually successful. If dilatation does not progress up to half in a reasonable time, then incision of the cervix or caesarean section is indicated.

In the *third type*, if one could detect this from early pregnancy, lessons in relaxation should be given and the patient's confidence secured. This type of patient should receive systematic ante-natal care of the obstetrician, if noted early. This type may come as a complete surprise when labour commences. Treatment is by making the patient understand what is occurring and giving sedatives. Morphine is indicated at night; twilight sleep is a good alternative. On full dilatation early application of the forceps is indicated.

Secondary uterine inertia may occur during the first stage but is almost certain to be due to disproportion and operative interference is necessary.

SEPSIS:—Should be prevented or controlled by giving sulphonamides and penicillin as a routine to all cases of inertia.

PROPHYLACTIC TREATMENT:—Uterine inertia has its highest incidence amongst primiparae. Encouragement, sympathy, explanation and the administration of the proper sedative at the right time will allay fear, and

remove the inhibiting effect this has on the dilatation process.

PITUITARY EXTRACT.—The haphazard use of this drug is to be strongly condemned; it has a place in selected cases of uterine inertia. In the presence of disproportion, malpresentation and excessive parity this drug is dangerous. Eastman (*Amer. Jour. Obst. Gynec.*, Vol. 53) gives pituitary extract (initial dose 1 minim and repeated at half hourly intervals only after labour has been stationary for 18 to 24 hours with the os dilated 3 to 4 cm. Disproportion and multiparity are contraindications.

Operative interference.—Every case in which there has been active labour for 24 hours should be carefully reviewed with regard to

(1) uterine activity, (2) sedation and (3) fluid balance. If a vaginal examination had not already been done, it should be done after the lapse of this time.

Caesarian section.—Much harm has been done from the teaching that delivery must be at all costs PER VAGINAM because the membranes have ruptured. Unnecessary vaginal mutilation (predisposing to genital infection) has resulted from the adoption of this inflexible attitude in obstetric practice. It is safer to do a caesarian section than a vaginal operation accompanied by much tissue damage and tear. Abdominal delivery, when the os is partly dilated, is accompanied with far less trauma than a vaginal associated with multiple incisions of the cervix, vaginal lacerations and an extensive episiotomy. T.N.S.R.

MEDICINE

Oral penicillin treatment of pneumonia in the adult. (*Br. Med. Jour.* Dec. 1947).—Drs. Anderson and Landsman treated alternate cases (45 in each) of pneumonia with (1) intramuscular injections of penicillin 50,000 units followed by 20,000 four hourly for 5 days or with oral penicillin. The latter was given in tablets 20 to 25,000 units of calcium penicillin with 0.5 gm. of Sodii Citras (40,000 to 60,000 units being given 3 hourly and the dose being reduced to 25,000 units after 48 hours). The tablets were always given with 1 to 2 oz. of milk and fluid intake was restricted to 2 pints a day. The oral method was satisfactory and hypochlorhydria reduced the wastage of penicillin in acute infections. The duration of the illness was practically the same in both groups. T.N.S.R.

The use of vitamin E in heart disease. (*Amer. Jour. Med. Sc.*, May 48).—Drs. Baer, Heine and Gelfond of the cardiac department of the Philadelphia Jewish Hospital carried out an investigation, to verify the claim made in 1946 by Vogelsang and Shute for the phenomenally good results following the administration of vitamin E to patients with various forms of heart disease.

300 to 400 mg. doses of vitamin E daily was used in the treatment of 11 patients with congestive heart failure, 5 with angina pectoris and 6 with arteriosclerotic hypertension.

In no case was there any demonstrable effect on the electrocardiogram or blood pressure.

None of the 22 patients was markedly or moderately improved. T.N.S.R.

Sulphaguanidine in cholera. (*Ind. Med. Gazette*, Sep. 1947).—Dr. Pasricha and his co-workers have tried Sulphadiazine and Sulphaguanidine in the treatment of cholera both under-hospitalized and village conditions and have found that Sulphaguanidine is valuable in the treatment of cholera—while Sulphadia-

zine was useless. The dose of Sulphaguanidine found to be efficacious was 3 grammes every 4 hours during the acute stage and thrice daily for 2 days afterwards. T.N.S.R.

Folic acid therapy. (*Amer. Jour. Med. Sciences*, May, 1948).—Drs. Adams and Lawrence of the Rochester University report the results of the administration of folic acid in a variety of hemopoietic disorders, such as Addisonian pernicious anemia, tropical sprue, macrocytic anemias, leukemia, thiouracil intoxication etc. 34 cases in all have been studied. The results show that (1) folic acid will correct the abnormal blood findings in cases of pernicious anemia in relapse.

(2) Neurologic manifestations of pernicious anemia are not corrected by folic acid.

(3) It is probably unwise to combine folic acid and iron in the treatment of pernicious anemia.

(4) Sprue responded favourably to folic acid.

(5) Macrocytic anemias do not all respond to folic acid; favourable results can be expected in those cases in which there is a megaloblastic arrest in the bone-marrow.

(6) Folic acid did not affect the anemia associated with chronic nephritis.

(7) Leukopenias of idiopathic states, and of Addison's disease were not benefited by folic acid.

(8) Leukemias were also unaffected. T.N.S.R.

Single injection treatment of gonorrhoea. (*Jour. Ame. Sciences*, 215, 5, 506-9).—Drs. Cohn and Kornblith of the New York Bureau of Social Hygiene carried out a clinical investigation using a suspension of crystalline Pot. Penicillin-in-oil containing epinephrine.

1. A single injection of 150,000 units intramuscularly or subcutaneously in a total volume of 0.5 c.c. cured 97 out of 100 patients,

The 3 patients who did not respond to the initial injection were promptly cured with a second injection of an identical amount of penicillin.

2. All of 19 patients treated with 200,000 units in 1 cc. intramuscularly were cured.

3. No untoward local or systemic reactions were observed following the subcutaneous or intramuscular injection of the above preparation. The Warner Institute of Therapeutic Research, New York, N. Y. furnished the above material for this study. T.N.S.R.

Streptomycin dermatitis in nurses. (*Brit. Med. Jour.* July 10, 1948).—Drs. Crofton and Foreman of the Brompton Hospital, London, record the observation that dermatitis due to streptomycin was detected in 4 nurses.

Each of these 4 nurses gave 6 to 12 injections daily for periods varying from six weeks to six months. The contact was that involved in mixing the streptomycin powder in the ampoule with triple distilled water, giving the injections, and later washing and cleaning the syringes. There was no previous history of allergy or skin infection in any of these nurses.

People handling streptomycin should wear rubber gloves and avoid soiling their skin with the material. T.N.S.R.

Anti-coagulants for thrombotic condition. (*Amer. Jour. Med. Sciences*, June 1948.)

Drs. Reith and Eisenmenger of the Lennox Hill Hospital of New York have continued their studies (initiated in 1943) on dicumarol and heparin and given their latest results on 300 patients divided into 4 main groups: (1) Post-operative cases receiving anti-coagulant therapy to prevent thrombotic conditions; (2) those with active venous thrombosis; (3) acute pulmonary embolic episodes; and (4) coronary thrombosis. Prothrombin times were regularly performed. Normal values ranged from 12 to 15 seconds.

1. 200 post-operative prophylactic cases (half of which were pelvic operations in women). Dicumarol was started in these cases 2 to 4 days post-operatively and kept up till the patient was ambulatory (7 to 10 days). In ordinary cases it is started on 2nd day. In cases of gastric resection, prostatic operations, cholecystectomy, and postpartum the drug was given only after the 4th post-operative day.

The results in this group have been most satisfactory. Dicumarol treatment prophylactically given, is safe—the only inconvenience being the daily venepuncture for prothrombin estimations.

2. **Acute embolization.**—30 cases were treated—26 pulmonary, 3 cerebral and one peripheral. All except two recovered.

3. **Phlebitis.**—45 cases of thrombophlebitis (both deep and superficial)—20 of these were post-operative cases which had not received

prophylactic treatment. The other 25 were associated with the well known etiologic factors. Under dicumarol treatment the average phlebitis cases lasted 7 days.

4. **Coronary artery disease.**—30 cases were treated with dicumarol, 24 of these were typical coronary occlusions with myocardial infarction. 4 of these died (none, however, had pulmonary or coronary insufficiency). Complicating embolization can be effectively prevented by anti-coagulant treatment in coronary artery disease. T.N.S.R.

Dicumarol therapy in acute coronary occlusion with myocardial infarction. (*Amer. Jour. Med. Sciences*, June 1948.)

The application of anti-coagulant therapy for coronary artery thrombosis was first suggested in 1938 by Solandt and Best in England.

During the last four years Dr. Marsh McCall of the Beckman Downtown Hospital, New York, has used both dicumarol and heparin in the treatment of acute coronary occlusion with myocardial infarction. These are used (1) to prevent the formation of mural thrombi in the cardiac chambers; (2) to prevent the extension of the thrombus from its point of origin; (3) to prevent the formation of thrombi in peripheral vessels from which disturbing thrombi emboli could propagate.

Seventy one patients were given anti-coagulant therapy using dicumarol. In addition they all received papaverine hydrochloride during the whole period. Oxygen by catheter and morphine subcutaneously were routine procedures during the 1st 3 days and later given when required. Sodium restriction and leg exercises completed the regime. The prothrombin level was daily checked and an initial 300 mg. of dicumarol was given routinely on the 2nd day. Then 100 or 200 mg. daily for 4 weeks was given to maintain the prothrombin level.

This therapeutic approach was found to be quite sound and useful. Daily prothrombin determination is essential for successful therapy. Hemorrhagic complications were infrequent and easily controlled. The convalescent period was comparatively less stormy, and there was a low incidence of thrombo-embolic phenomena. The continued use of this form of therapy is thus justified. T.N.S.R.

Intra-articular alkali therapy in chronic joint diseases.—(*Schweiz Med. Wochschr.*, Jan. 31, 1948).

Dr. Kron., (basing his experimental work on Robert's previous work on the beneficial effect of large doses of intravenous sodium glycerophosphate on certain chronic joint diseases) injected in increasing doses from 0.5 to 2 c.c. at 2 days intervals of isotonic sodium bicarbonate (1.29 per cent) solution, intra-articularly; usually 2 to 4 injections were found adequate, a second course being given 5 to 10 months later. Accidental periarticular or

intravenous administration is harmless. Local analgesia was not used. 15 cases of arthritis and arthrosis, are described, the knee joint being most often and most successfully treated. T.N.S.R.

Chemotherapy of leprosy. (*Leprosy Review*, 1948, vol. 19, 3 papers.)

1. Davey records that in a Negro Settlement in West Africa 17 patients with lepromatous leprosy, after long but unavailing treatment with hydriocarpus oil were treated with 'sulphetrone' for six to ten months and they showed general improvement.

2. Erickson and Johansen record their experience of treating leprosy with promizole, which has to be taken in doses of 12 to 18 tablets over long periods. This drug is unpalatable and also expensive. They therefore decided to try other sulphones; with long continued sulphone therapy 2 of their patients became bacteriologically negative.

3. Faget and Erickson used relatively large doses of streptomycin over long periods but noted highly toxic effects. They however feel the results are good and the experiment should be continued. T.N.S.R.

Deodorization of Shark Liver oil. (*Nature*, 25.9.48)—Messrs. Mathew, Nair, Ramakrishnan and Srimoolanathan of the Travancore University Chemistry Department, carried out tests to deodorize shark liver oil which has a much more pronounced disagreeable odour than Cod liver oil. Three methods were used by them: (1) steam-distillation of the oil under normal and reduced pressure in which the malodorous substances passed over with the steam. (2) Agitation of the oil with fermenting milk and toddy. (3) Selective hydrogenation of the oil in the presence of a nickel catalyst. Steam-treated oils were free of the odour when freshly prepared but reverted to their original character in a few days. Oils deodorized by agitation with fermenting milk or toddy have been found to remain bland for several months.

Working with 0.1, 0.25 and 0.4 per cent concentrations of nickel catalysts, the authors have obtained very promising results. Only 7% of vitamin A present in the crude oil is lost in this process, when using 0.1 and 0.25% concentrations of the catalyst and more when using 0.4%. T.N.S.R.

Treatment of angina by reducing basal metabolism. (*Br. Med. Jour.*, Feb. 7, 1948).

Dr. G. Schoenewald adopts a classification of patients suffering from angina pectoris into three groups—(1) obese (2) slim (3) anæmic.

Those in groups 1 and 3 derive benefit by weight reduction and improvement of the blood picture respectively. The slim variety improve with nitroglycerine (to shorten the attacks). Three patients received 600 mg. daily of methylthiouracil for six weeks and responded well to this drug. In order to reduce thyroid activity it is necessary to give

much larger doses for longer periods to patients with normal thyroid functioning, than to those with thyrotoxicosis. T.N.S.R.

Penicillin in the treatment of diphtheria.—M. N. De, J. R. Chatterjee and L. Ganguli, Medical College and Medical College Hospitals, Calcutta, India. *Brit. M. J.*, 4498:376-80, Mar. 22, 1947.

The authors report 27 cases of diphtheria treated with penicillin; 16 of these cases were bacteriologically positive; in the remaining 11 cases the diagnosis was made clinically. As no antitoxic serum was given, only early cases or moderately severe cases with mild toxemia were included in this series. Penicillin was given by injection, 10,000 units every three hours; the average curative dose was within 500,000 units. There were no deaths in the series. In the majority the temperature became normal in one to three days and the general condition showed marked improvement in the same period. The extensive patches on the tonsils, uvula, pharynx and larynx disappeared within five days, and the smaller patches in one to two days. Extension of the patch was not noted in any case after penicillin treatment was begun. All the 16 cases that were bacteriologically positive when treatment was begun became negative within six days. There were no circulatory or nervous complications and tracheotomy was not necessary in any case.

The chief advantage of the penicillin treatment over antitoxic serum appears to be that it acts more promptly, especially in inducing the disappearance of the throat patches much more rapidly than serum therapy. Penicillin cannot replace antitoxic serum in severe toxic cases of diphtheria in which immediate neutralization of toxin is essential. If penicillin is given early in diphtheria, it may check the infection and stimulate the production of immunity. The chief disadvantage of penicillin, especially in children, is that it must be given by injection every three hours. This disadvantage may be overcome by the discovery of other effective methods of administration. The possibility of combining penicillin and antitoxic serum in severe cases must also be considered as a means of reducing the mortality rate. —*Quarterly Review of Medicine*.

Bleeding peptic ulcer.—Fisher and Zukerman present 57 consecutive cases of bleeding from the upper gastrointestinal tract. The series was chosen to include all cases of initial or repeated hemorrhage from peptic ulceration which came their supervision. The diagnosis in each case was compatible with either gastric or duodenal ulcer as shown by X-ray and/or by the clinical, physical and laboratory findings; there were no deaths in the series. There were 39 patients with duodenal ulcer and 19 with gastric ulcer, giving a ratio of 2.05 to 1.

The authors conclude that hemorrhage from peptic ulceration may take place at any age

but it occurred more frequently in the fourth and fifth decades of life in the series. Bleeding from the upper gastrointestinal tract as a result of benign ulcers occurs more frequently in men than in women. In this series there were 42 males and 15 females, a ratio of 2.8 to 1. Body build was not a pertinent factor in the occurrence of ulcer nor was it a factor in predisposition to hemorrhage in the cases reviewed. The authors strongly advocate that patients with bleeding from the upper gastrointestinal tract not be X-rayed until at least two weeks have elapsed after the onset of their hemorrhages because they believe that undue manipulation of the abdomen might precipitate severe hemorrhage at the time and that fluoroscopy carried out without manipulation and X-rays taken at the time of hemorrhage frequently fail to show any gastrointestinal lesion.

It was stated that factors precipitating gastrointestinal hemorrhage are: (1) upper respiratory infections; (2) alcoholic beverages; (3) emotional disturbances; (4) dietary indiscretions and overwork. It was confirmed in the authors' series that the period from October to March is the time interval during which most hemorrhages from benign ulcer occur.

In outlining the management of upper gastrointestinal hemorrhage, the authors place strong emphasis upon early feeding and large amounts of blood when indicated. They state that continuous and massive blood transfusions are not only life saving but innocuous. The most common symptoms at onset of gastroduodenal hemorrhage, in order of frequency of occurrence in the authors' series, are pallor, tarry stools, emesis of dark blood, weakness, severe epigastric pain relieved by alkali, nausea and syncope. The clinical picture at the onset of gastroduodenal hemorrhage varies according to the amount of blood lost.

In their final conclusions the authors list the following factors as those which determine the mortality in bleeding peptic ulcer: (1) It has been noted that there is a much lower mortality in bleeding ulcers in the female. (2) The age factor is one of the most important in determining the outcome for the patient, most deaths occurring after the age of 45. (3) There is a definite higher incidence of deaths from first hemorrhages. (4) Antecedent dyspepsia or ulcer-like symptoms definitely give a worse prognosis for bleeding ulcer patients. It has been suggested that in those without previous ulcer symptoms the bleeding is due to a superficial ulcer or erosion rather than to a deep ulcer. (5) Arteriosclerosis is stated to be a definite factor in the prognosis, since the older patients bleed from ruptured, stiff vessels which do not retract and tend to stop bleeding. (6) A patient showing a blood urea nitrogen of 100 mg. percent or more or those patients in whom the loss in cell volume exceeds 50 percent the prognosis is definitely worse. (7) Hypertension. (8) Erosion into the pancreas and bleeding from granulation tissue in the base of the ulcer have been stated to be definite factors in giving a worse prognosis in these cases.

(Fisher, Ralph Lee, Riverside Clinic, Detroit, Mich., and Zukerman, Morris, "Bleeding Peptic Ulcer." *American Journal of Medicine*, 5: 503-517 October, 1948.—*United States Information Library*.)

Acute laryngotracheobronchitis.—Although many articles describing the treatment of laryngotracheobronchitis have appeared in the literature, there is lack of agreement regarding the best methods of treatment. Because this fact is coupled with a high mortality—70 percent ten years ago and slightly lower to-day—F. W. Davison analyzes his own methods of treatment which resulted in no deaths in a series of 52 consecutive cases, 15 of whom required tracheotomy. All of the patients in this series had a dry, croupy cough, inspiratory stridor, retraction of soft tissues around the clavicles during inspiration and dyspnea. A clear cry indicated that the edges of the vocal cords were normal and free from membrane. Diphtheria and supraglottic edematous laryngitis were ruled out by laryngoscopic examination.

The author believes that dry indoor air in winter is one of the major predisposing factors in this condition, because it dehydrates mucous membranes, stops ciliary activity and thus permits organisms to penetrate the mucosa and set up inflammation. The patients were placed immediately in humidified oxygen tent, and the last 24 of the series were given penicillin, 15,000 to 25,000 units, by intramuscular injection, every two hours, day and night. The author states that acute laryngotracheobronchitis usually begins as a primary subglottic laryngitis due to any of the pathogenic gram-positive cocci which cause other types of infection of the respiratory tract. Because most of these organisms are sensitive to the action of penicillin, and because a lower percentage of penicillin-treated patients required tracheotomy as compared with sulfadiazine-patients penicillin was considered the superior drug in this series.

The author concludes that the low mortality rate in this series is attributed to: cool, moist air provided by a humidified oxygen tent; adequate doses of penicillin or sulfadiazine, preferably the former; avoidance of instrumental trauma to the mucosa of the trachea and bronchi by introducing the bronchoscope or the aspirating tube no farther than one inch beyond the vocal cords; postural drainage which avoids the retention of exudate which causes pneumonia; early tracheotomy; transfusion when indicated, and careful personal attention to each patient, including special day and night nurses before and after tracheotomy. (Davison, F. W., Danville, Penn., "Acute Laryngotracheobronchitis: Further Studies on Treatment." *Arch. Otolaryng.*, 47:255-464 April, 1948.) *U. S. Information Library*.

The treatment of granuloma inguinale with streptomycin. Harold L. Hirsh, M.D., and S. Ross Taggart, M.D., Washington, D.C.

American, Journal of Syphilis, Gonorrhea and Venereal Disease.

Granuloma inguinale is a venereal disease of unknown etiology, and the treatment of it in the past has been quite unsatisfactory. Antimony compounds such as tartar emetic and fuadin, alone or in combination with escharotic agents, irradiation, or surgery have been employed. Only a small number of patients were apparently cured. In most patients there was only temporary improvement with relapse shortly after treatment was discontinued. Not infrequently the lesions spread while the patient was under treatment.

Several months ago we learned that Greenblatt and his associates had successfully treated 23 patients with streptomycin. On the basis of the results of this investigation we undertook a study of the use of this antibiotic in the treatment of our patients with granuloma inguinale.

We have treated a total of 21 patients without selection. Streptomycin therapy was instituted as soon as the diagnosis was made. In all patients the diagnosis was established by demonstration of Donovan bodies with Wright's stain of smears of scrapings of the involved tissue. Since our supply of streptomycin was limited, all patients were started on 1 Gm. of streptomycin per day in divided doses every 4 hours intramuscularly.

All the patients were Negroes. There were eleven men and ten women. The ages ranged from 19 to 48 years, twelve patients were less than 30 years of age. Fourteen of the patients had had evidence of the disease for periods of time varying from one to eight months, while in the remaining seven patients the lesions had been present for fourteen months to twelve years. Nine patients had previously received varying amounts of fuadin and tartar emetic, with only partial or temporary improvement during treatment.

Results.—Treatment has been completed in all of the patients. The total dose ranged from 5 to 47 Gm. of streptomycin. In all of the patients there was complete healing of all ulcerations before treatment was discontinued, except in the case of a patient with squamous cell carcinoma at the same site. The granulomatous masses decreased in size, so that most of the masses became at least one-half as large as before treatment was started. The follow-up period for these patients has now been for periods of time up to fourteen weeks. There has been no evidence of relapse or recurrence in any of the patients, while the granulomatous masses continue to decrease in size.

Certain characteristic changes were noted during treatment in the patients with extensive lesions. Within 24 to 48 hours after the start of therapy the lesions became essentially painless. At the start of therapy the lesions

were invariably red, shining, and angry in appearance. After several days they became paler and less intense and showed evidence of healing. At the end of a week they were violet or purplish in color. By this time the skin was growing in from the margins of the ulcers. The central areas were the last to heal. The granulomatous masses began to decrease in size after a week or ten days of therapy and continued to do so after treatment was discontinued. Streptomycin was not stopped until the lesions were covered by skin which was invariably depigmented.

The time necessary for complete healing was directly proportional to the extent of the disease so that this course was abbreviated in patients with small lesions. Moist, ulcerative lesions that were apposed, or in contact with one another, or bathed by vaginal discharge healed more slowly.

Biopsies of the lesions were taken on all patients at weekly intervals until therapy was discontinued, and the tissues studied for the presence of Donovan bodies. Although they still could be demonstrated at the end of one week of therapy, none has been found in the two-week specimens.

Only one patient had what appeared to be a toxic reaction to streptomycin. She began to complain of headache, dizziness, and tinnitus one week after streptomycin was begun. These symptoms persisted for several days and then disappeared spontaneously without any change in therapy and without any apparent residua.

It is too early to endorse completely the treatment of granuloma inguinale with streptomycin, as the number of patients treated to date is small and the follow-up period short. However, never has any form of therapy consistently produced such a change in the course of disease as has streptomycin. This is evidenced by the complete healing of the most extensive ulcerations, diminution in size of the granulomatous masses and disappearance of Donovan bodies.

There are still some problems to be solved in the use of streptomycin, particularly the total daily dose and the duration of therapy. All of our patients received a total dose 1 Gm. of streptomycin a day. Since we found the concentration of streptomycin in the blood to be between 5 and 10 micrograms per cc. at the fourth hour in some patients who were receiving 1 Gm. per day divided equally in four hourly injections, it would appear unwise to reduce the daily dose below one gram.

Whether treatment need be continued until the lesions are completely healed or may be discontinued earlier requires further study. In any event, it would seem reasonable to discontinue streptomycin when the Donovan bodies can no longer be demonstrated regardless of the condition of the lesions.—*Digest of Treatment.*

Proposed Integration of Indigenous and Western Systems Chopra Committee's Recommendations

"There is urgent necessity for inaugurating research in Indian Medicine so that it may, in an abundant measure, contribute to the corpus of medical science and art. By research, Indian medicine, which has been static for many centuries, will once again make its contribution to the welfare of the people of this country and of the world," says the Report of the Committee on Indigenous Systems of Medicine which has just been published. The Committee was appointed by the Government of India in December, 1946, under the chairmanship of Col. R. N. Chopra.

The following is a brief summary of the Committee's more important conclusions:—

Medical relief afforded by Western medicine in India at present is extremely inadequate, says the Report. Indian medicine, in spite of its static condition, is still largely practised in India. There is demand for it on the part of large and varied sections of the population. It helps to fill the big gaps in the present State-sponsored and State-maintained systems of Western medicine.

Synthesis of medicine.—The Committee are of the opinion that while Indian medicine can take much of practical value from Western medicine, especially in the fields of surgery, obstetrics, structural physiology, pathology and diagnostic methods and appliances, the latter can also learn much from the philosophical background of Indian system, its comprehensiveness, the importance it attaches to the soil factor and dietary, its generalisation of principles and the knowledge of truth gained by the use of supra-sensory perception.

The Committee do not believe that there can be separate systems of Western or Indian medicine. Science is universal and medical science is no exception. The so-called "systems" merely represent different aspects and approaches to medical science as practised in different ages and in different parts of the world. The aim of all is the maintenance of health, and prevention and cure of disease. Anything of value emerging from these should be integrated and utilised for the benefit of humanity without reservation.

Such a unified system will give our people the benefits of all the advances that Western medicine has made and will provide them with a system more in keeping with their habits, tastes and requirements and which from its comparatively cheaper medicines will be more suitable to their economic circumstances.

Integration practicable.—The Committee are of opinion that the integration of Indian and Western systems of medicine leading to synthesis is not only possible but practicable and recommends that immediate steps should be taken in this direction.

The first step will be integration of the courses of study by arranging curricula in such a way that whatever is weak in one system is supplemented and strengthened by the strong points of the other system or systems. The second step will be teaching of each subject by the same teacher, instead of by separate teachers as now, giving the students a unified view of the Indian and Western medicine. The final step will be in the field of research where experts of Indian and Western medicine will work side by side, checking and verifying the various hypotheses and theories, either rejecting or harmonizing them. If the theories are such as could neither be rejected nor reconciled, they are to be used as parallel hypotheses.

Just as Western medicine is being taught in the colleges of Indian medicine, chairs of Indian medicine should be established in the colleges teaching Western medicine.

To facilitate the integration of teaching and studies the following steps should be taken simultaneously: (i) improvement in the basic education of the entrants; (ii) compilation of unified text-books giving integrated versions of Indian and Western medicines and (iii) training of special teachers for integrated studies.

Supply of teachers.—The first source of supply of teachers for integrated studies will be from the present schools and colleges of Indian medicine. Promising graduates of both systems with proper training will form the second source of supply to the future colleges provided good prospects are offered to them. The students should have working knowledge of Sanskrit or Arabic for Indian medicine and sound knowledge of English and basic modern science—chemistry, physics and biology—before starting professional studies.

Illogical objections.—One objection raised against integration is that it will give rise to mental confusion in the student but if the teachers and the taught are of the right type this should not occur. The other objection is that the integrated studies cannot be completed in the time specified for the course.

If the syllabus is properly worked out and a lot of unnecessary details eliminated, as is now being proposed in America and has also been recommended by the Health Survey and Development Committee, there should be no difficulty in completing the integrated course within the specified period.

Wider education.—The conception of education to be given to a medical practitioner must be considerably altered and enlarged so that he not only has knowledge of technical subjects, but also a general background of

sociological subjects. In other words, he should have the fullest opportunities for the development of scientific and humanistic talents to enable him to be a friend, philosopher and guide to his patients.

The curriculum of studies should be so arranged as to give the student adequate knowledge of Indian medicine with essentials of modern Western medicine, particularly in those branches where medicine is deficient, to make him fitted for modern conditions of practice.

New curriculum and text books.—The course of training should extend to five years. A short-term course of three years should be conducted for an interim period, till an adequate medical personnel is trained to work in the rural areas. A curriculum of studies, which should be uniform all over the country, has been worked and syllabus given in the Report.

The Government should set up a Board of experts for editing and publishing classical texts and compiling the right kind of text books harmonising ancient and modern knowledge, first in Hindi in the case of Ayurveda, and Urdu in the case of Unani, and later to translate them into provincial and regional languages.

Training facilities.—Teaching institutions should be adequately subsidised by the State and maintained at a certain standard. There should be at least one well-equipped and adequately staffed institution in each Province and State in which the teachers should be adequately paid so that they do not have to resort to private practice. Those institutions which do not come up to the standard should not be allowed to carry on with the work of instruction. Such institutions should, if possible, be grouped together into one good institution or used for relief purposes. All teaching institutions should also be centres for carrying out research in which both students and teachers should participate.

The permanent increase in the number of trained medical personnel will take a long time and, even if they are available, at a distant date, these persons will settle by preference in towns and cities only, in spite of monetary inducements to settle in villages. The pressing problem of immediate rural medical relief will thus remain unsolved. The Committee, therefore, suggest that use should be made of the existing practitioners of Indian medicine by giving them necessary training in public health and other essential subjects.

Medical relief.—According to figures collected by the Committee there are more than 2,00,000 indigenous practitioners in India and out of these it should be possible to get 25,000 to come forward for this training course during the next five years. In addition to this, there are about 4,000 of institutionally qualified practitioners. This number should be sufficient to man the primary village dispensaries so urgently needed. The

following suggestions have been made: (i) a six months' course in the elements of public health, minor surgery, obstetrics, etc. be given to them; (ii) registered practitioners, who wish to take the course, be given a subvention at Rs. 30/- per month; (iii) graduates of schools and colleges of Indian medicine, who wish to participate in the scheme, be allowed to sit for the examination without taking the course; and (iv) those who pass the examination should be taken in the scheme of rural medical relief.

There should be common all-India standards of professional and technical education for health personnel and a stable continuous long-range health policy. To implement the scheme of providing the rural medical personnel suitable text-books should be written by an expert committee and made available in all provincial and regional languages.

The three units.—A medical practitioner, trained according to the Committee's scheme, is to be put in charge of a rural dispensary to serve a population of 3,000 to 3,500 which will be the primary unit of medical relief. The secondary unit will be in charge of an institutionally qualified person with headquarters in a big village giving relief to a population of 10,000. This unit shall also supervise the work of primary units. The Panchayat Unit is to be a mobile unit with emergency equipment and nursing staff and serve a population of 50,000.

There should be adequate provision for in-patients in the taluk, district and presidency towns. These hospitals should provide relief in all the branches of medicine, be well-equipped and manned by both practitioners of Indian and Western medicine, the latter doing surgical and obstetrical work and the former treating mainly with Indian medicine. This bilateral arrangement will be only for a short time—until the synthesis has been effected.

State control.—The Committee consider that the time has come for the Government to deal with the matter of control of medical education and practice in a comprehensive manner and that the Government should set up a special Committee to go into the matter so that an all-India system of control is evolved and, if possible, one single Register for all recognised systems by a comprehensive Act of the Central Government.

If the problems of health and medical relief are to be tackled on a national footing, the State should take in its purview all the recognised systems in the country and legislate comprehensively for all, instead of by piece-meal provincial legislation.

In legislating for the control of recognised systems of medicine the following fundamentals should be kept in view: (i) adequate provision for the supervision of medical education of all the recognised systems, and of their teaching and treating institutions; (ii) registration of practitioners of the recognised systems;

(iii) disciplinary control over practice; and (iv) setting up a consultative and advisory body on matters relating to public health and medical relief.

National Medical Board.—To implement these proposals the Committee recommend the formation of a statutory body which may be called the National Medical Board. This Board should consist of two autonomous sections—the Indian Medical Council and the Council of Indian Medicine—one dealing with Western medicine and the other with Indian medicine. The provincial and regional branches should be affiliated to the Board which will also be an appellate authority over disciplinary actions on practitioners and institutions taken by provincial branches.

Elimination of quacks.—Registration should be made compulsory for all practitioners in order to eliminate quacks and prevent the credulous public from being exploited. The Register of practitioners of Indian medicine should be separate from that of the practitioners of Western medicine for the present. Later, when the standard of education in the colleges of Indian medicine improves and the non-institutionally qualified fade out, the question may be reviewed and the desirability of having one Register considered.

In the case of those who have no recognised academic qualifications, including well known Vaidyas and Hakims, no distinction should be made in the Register between the institutionally qualified and non-institutionally qualified. There should, however, be separate electorates for each of them for representation in the Councils.

Need for Research.—The Committee is convinced that there is a wealth of medical knowledge and experience in Indian medicine which needs proper investigation. It should be the purpose of painstaking research to salvage and collect this knowledge and experience and make it available to the country. The approach to research should be more in accord with the systems themselves, i.e., not only through observation and experimentation in the laboratory but also through meditative and intuitional means as practised by ancient savants.

Research, the Report says, should have a two-fold aim, (i) to clear Indian medicine of centuries of accretions of doubtful value and make its science and art intelligible to the modern mind and (ii) to work for a synthesis of the Indian and Western medicines so as to evolve a unified system of medical relief and education, suitable for conditions of life in India.

Research should be conducted under the following categories: (i) Research in the fundamental doctrines of Ayurveda and Unani Tibb; (ii) Research in the ancient literature on medicine; (iii) Clinical Research; (iv) Drug Research-Pharmacological, Pharmaceutical and Botanical; (v) Research on nutrition and dietetics; and (vi) Research on psychological aspects of medicine.

Research Council and Institute.—A Central Council of Research in Indian Medicine should be set up immediately whose functions will be analogous to those of the Central Medical Research Organisation. The Council should consist of (i) eminent practitioners of Indian medicine; (ii) representatives of scientific bodies, dealing with Indian medicine; and (iii) representatives of educational institutions where research in Indian medicine is being carried on.

The functions of this Council should be (i) the formulation of policy of research in Indian medicine; (ii) the co-ordination of policy with that of other medical bodies and other research activities; (iii) the organisation and general control and supervision over the Central Research Institute in Indian medicine which is to be established; (iv) stimulation of research in Indian medicine in the Universities and educational institutions; (v) laying down of rules for the appointment of Directors and superior staff; (vi) appointment of the staff; (vii) appointment of Advisory Committees for research in special subjects; and (viii) allocation of funds and grants-in-aid for research work in the Central Research Institute and in other centres.

The progress of work in the various departments of this institute should be published in a journal.

In the Central Research Institute provision should be made for postgraduate courses and training of research workers; research fellowship of the value of Rs. 150/- per month should be established tenable for three years in the first instance to be extended to five years in special cases.

Drugs and medicinal preparations.—There is great difficulty in correctly identifying many of the medicinal plants used in Indian medicine. This work should be taken up in all the provincial and regional centres and coordinated under the direction of the proposed Central Research Institute. The identification of medicinal plants will be helped to a great extent if a herbarium of properly identified and preserved specimens of all known medicinal plants is established. Such collections already exist in the Forest Research Institute, School of Tropical Medicine, Calcutta, and Drug Research Laboratory, Kashmir.

For the extension of medical relief on rational lines, it is necessary not only to study medicinal plants but also to cultivate them for obtaining authentic and regular supplies. To do this successfully, a careful survey of these plants is necessary in order to determine suitable localities for their cultivation.

Book on Materia Medica.—As the existing literature on the subject is scattered and not easily comprehensible to students and practitioners, a proper text book on Materia Medica should be compiled giving all the necessary particulars of different drugs by collecting and sifting all available information.

It is not possible to prepare an Ayurvedic Pharmacopœia on the lines of Western Pharmacopœias in the absence of the necessary data required for this purpose in connection with drugs.

The Central Research Institute should appoint an Expert Committee to collect data, and consolidate it in the form of two lists—one of single important drugs and the other of important compound preparations. This will form the basis of a Pharmacopœial List of Indian medicine. It should give all the information, regarding the character, method of preparation, dosage and modes of administration with various vehicles.

As there is great difficulty in securing supply of genuine drugs for the manufacture of standard preparations, it is necessary that (a) collection and distribution of crude drugs be carried out under a Government license and (b) those who sell crude drugs in the market be licensed and controlled.

A small committee consisting of the representatives of the industry, vaidyas, hakims and a few modern pharmacists should be appointed to examine the requirements of the country in respect of indigenous drugs and finished preparations and suggest how best the control may be exercised.

Certain minimum standards should be laid down regarding the minimum staff, equipment and accommodation necessary for the efficient working of commercial manufacturing firms.

In respect of procuring excisable and poisonous drugs such as opium, ganja, alcohol, arsenic, etc., the facilities available to manufacturing firms of Western Medicine should be made available to firms preparing Indian medicines.

Course for Pharmacists.—Well-trained pharmacists in Indian medicine are essential for making available reliable preparations to the public and the Committee envisaged above should recommend ways and means to start a suitable course for training pharmacists.

The profession of pharmacy relating to Indian medicine should be controlled by proper registration on the lines of similar legislation enacted for the profession of pharmacy of Western medicine.

Finance.—The many proposals made by the Committee would naturally involve additional expenditure to the Central and Provincial Governments and the States. The Committee are unable to make detailed recommendations in this regard, but urge that, in the existing health condition of rural India, medical relief should receive a high priority in provincial budgets.

A liberal Government grant should be given to selected existing educational institutions, for adequate accommodation, equipment and staff. A sum of Rs. 2 to 2½ lakhs as capital expenditure and Rs. 1 to 1½ lakhs as recurring expenditure should be given to each institution selected for the purpose by a committee to be appointed for the purpose. The total cost will be Rs. 20 to 25 lakhs and the recurring expenditure Rs. 10 to 15 lakhs annually divided among Provinces and States.

The subvention of Rs. 30 per month for each trainee for the rural medical scheme will cost a sum of Rs. 1,20,000 to each Provincial Government for training 600 practitioners every year.

An officer should be appointed under the Health Ministry to hold charge of the section of Indian medicine and to be responsible for implementing the recommendations of the Committee and coordinating work in the Provinces and States.

Work of the Committee.—The Committee toured all the Provinces and States, and met a large number of practitioners and institutional representatives of the various indigenous and modern systems of medicine in India, and also visited several Indian medical institutions and hospitals run by Government, States and private agencies in the country. The various questionnaires issued by the Committee elicited generous response from all parts of the country.

Capt. G. Srinivasamurthy's Memorandum

The following are extracts from the Memorandum on the Synthesis of Indian and Western Medicine by Vaidyaratna Captain G. Srinivasamurthy, B.A., B.L., M.B. & C.M., President, The Academy of Indian Medicine, (Madras) and Retd. Principal, Government School of Indian Medicine, Madras.

Synthesis.—The Synthesis of Indian Medicine and Western Medicine into one unified and integrated whole is a practical necessity under present conditions in India; and it is also the most satisfactory way of increasing the usefulness of these systems to the public. There is no other way to follow; "Nanyah Pantha Ayanaya Vidyate."

One of the terms of reference of our Com-

mittee is the consideration of the question "whether a synthesis can be made of three systems, Ayurveda, Unani Tibbi and Modern, into one all-comprehensive system." My answer to this question is emphatically in the affirmative, based both on theoretical considerations and also on the practical results of an actual scheme that is being worked for the last two decades in the Presidency of Madras. I go further and say that such a synthesis is not only practicable but is also the most satisfactory and necessary measure if we are to pay due regard, as it is our duty to do, to another of our terms of reference which requires us to suggest the measures to be taken "to increase the usefulness of the

systems to the public as a part of a comprehensive plan."

The proper approach to the question.—In any consideration of the comprehensive system and plan envisaged in our terms of reference, it is of vital and fundamental importance to define exactly the ends and objectives we have in view as also the means by which the desired ends and objectives are to be achieved. I suggest that the proper approach to the question should be as follows: Our people have the right to be provided with the ministrations of the best and the most satisfying Medical and Health Service that is available in the world today and that will become available from day to day as time passes on. The best and the most satisfying ministration under present conditions in India is one which offers the excellences of both Indian Medicine which our people want and Western Medicine which they need. It is the duty of our Government and ourselves to adopt such measures as are best calculated to ensure that the necessary institutions, personnel, equipment etc., are adequately provided for, here and now, or as expeditiously as our circumstances permit. I consider that, for conditions in India, the best means to achieve the end in view is through the building up of one unified and integrated system of Medicine incorporating therein whatever is of proven value in the teachings and practices of both Indian and Western Medicines and not in working these systems as rivals contending for supremacy. Not in isolation, much less in opposition, but in collaboration and co-operation is to be found the key to all-round progress and increased knowledge with power to render more widespread and efficient service. In this view, it is a great mistake—a fundamental mistake—to approach the question in the partisan manner that is frequently adopted and to approach it as though it was a contest between two contending parties in the legal suit "Indian Medicine versus Western Medicine." Such an approach has resulted, as it was bound to do, in unhealthy rivalry and unscientific isolation and even blatant obscurantism. In the result, both Science and sick humanity have suffered. Our slogan, if one is needed, should be not "Indian Medicine versus Western Medicine," but rather, "Indian Medicine cum Western Medicine." Instead of pooling all our Medical resources for the common benefit of suffering humanity, we have been prone to exhibit the fierce antagonisms, bitternesses and other ugly features of religious fanaticism and to shout at each other and proclaim from house-tops. "Come to me and you are on the way to salvation. Go to him and you are on the way to damnation." It is a matter for thankfulness that, in refreshing contrast to such an attitude, the inaugural proceedings of our Committee began with an eloquent plea for "pooling together things of value in both ancient and modern medicine and placing them at the service of suffering humanity."

In deciding upon the best means to achieve

the desired ends, it is wise to take due note of existing conditions and plan our future after a discerning consideration of the present and also of the past that has led up to the present. It is unwise to proceed as though we could afford to write upon a clean slate without any reference to the present or the past especially where the past is one of striking and outstanding achievements and the present is one of undeniable and much appreciated service to large sections of the Public—especially in our rural areas.

The past and the present of Indian Medicine.—In the palmy and progressive days of Ayurveda, the fathers of Ayurvedic Medicine were the foremost exponents and all-round practitioners of their times, teaching and practising Ashtanga Chikitsa, "the eight divisioned therapy," comprehending medical, surgical and other branches included in the term "Ashtanga". To those who are apt to judge the past of Ayurveda by the conditions of the present lack of self-sufficiency especially in the field of surgery, a description of the striking achievements of the past even in the surgical lines as given in the Encyclopædia Britannica (vol. XXII—page 672-9th Edition) may serve as a useful corrective. History has recorded that medical students from all parts of the world came for post-graduate study to the Medical Faculty of some famous University in India, as the one at Taxilla or Nalanda. The field of activity of our Physicians and Professors of those days was not confined to India but extended from Persia and Arabia in the West to China and countries of Greater India in the East. Indian Professors and Practitioners of Ayurveda were then warmly welcomed by Royal Patrons in other countries. They practised under Royal Patronage and exchanged thoughts freely with practitioners of those countries. The treasures of Ayurveda were translated into the languages of other countries, Persian, Arabic, Chinese, etc., and a number of remedies of proven utility used by the Arabians, Persians and Chinese were incorporated into Ayurvedic Pharmacopœia; but, due to various causes—political and others which need not be gone into here—this palmy and progressive period was followed by dark and decadent days for Indian Medicine as for many other branches of learning in India. State recognition and State-patronage were withdrawn from Indian Medicine and transferred to the Western Medicine of our Rulers. This led to stagnation, obstructed progress, stunted growth and partial functioning from the effects of which Indian Medicine is still suffering; but, even under the severe handicaps it has been subjected to, it is Indian Medicine that is still ministering to large sections of our Public—especially the rural millions in whose hearts it still finds a place of grateful appreciation and abiding affection.

Furthermore, it has to be noted that the ministrations of Indian Medicine are sought after not only by the vast masses of our unlettered poor whose faith and preferences are rooted in Indian Medicine but also by well-placed persons of light and learning in all

walks of life, including rich intellectuals who could well afford to obtain the services of Western Medicine if and when they want it as also by some practitioners of Western Medicine itself in the treatment of some of their patients and of the members of their family including themselves.

It will thus be seen that the practical and survival value of Indian Medicine is decidedly high, as may be gathered from the fact that it is Indian Medicine that has ministered for millennia to the medical needs of the vast masses of our population and that, even today, and notwithstanding the very adverse conditions to which it has been subjected for over a century and a half, it is Indian Medicine that ministers to about 80 to 90 per cent of our teeming millions especially in rural areas whose faith, affection and preferences are rooted in Indian Medicine, while it is only 10 to 20 per cent of the population living mostly in Urban Areas that are served by Western Medicine, notwithstanding the fact that, for over a century and a half, it has enjoyed almost exclusive monopoly of State-patronage, State-support and State-munificence. Under these circumstances, it was a disservice to the cause of both science and suffering humanity that previous Governments should have ignored or discouraged an agency with such proven, practical and survival value as that of Indian Medicine. This mistake has now to be set right and that as quickly as possible.

This Science and Art of Indian Medicine is part and parcel of our invaluable cultural heritage which should be zealously preserved, fostered and promoted at least in India and for the greater service to the cause of Science, suffering humanity and the generations that are to come after us. If it is ignored in India itself, where else could we expect it to be cherished as the Science and Art of such proven, practical and cultured value deserving to be cherished?

This plea for Indian Medicine does not, of course, mean that we could afford to ignore the invaluable benefits which Western Medicine has brought to the public. To do so, would be against the interests of the Public as also against the precepts and practices taught by Charaka himself, the great Father of Indian Medicine. The position therefore is that, for conditions in India, we need both Indian and Western Medicine neither of which could be neglected or accorded step-motherly treatment without causing disservice to the cause of Scientific advancement as well as the suffering public.

It is therefore urgently necessary to provide for the ministrations to the Public—to the masses as well as the classes—of both Indian Medicine and Western Medicine. There are two ways of doing this. One way is to run parallel institutions of both systems working in water-tight compartments with all the attendant evils of unhealthy competition, unbecoming rivalry, unworthy bickerings and unscientific isolation and obscurantism. This way is also prohibitively and almost impossi-

bly costly; for, each system would make persistent and insistent demands, on various plausible grounds for preferential treatment for itself in respect of Government grants, opening of its own Dispensaries, Hospitals, Schools, Colleges, etc. The Government cannot possibly meet the demands of all these rival systems if only on the ground of the colossal cost involved; but, if the demands are not met, there would be discontent, agitation and clamour against the Government by the followers of the disappointed system and its supporters among the public. The other and better way is to provide for the proper training of practitioners who could place at the service of the public the excellences of both Indian and Western Medicine. In the highest interests of both Science and suffering humanity such synthesis of Indian and Western Medicine into a unified and integrated whole is the only and most satisfactory way; and for reasons stated above, there is really no other alternative way to resort to.—“Nanya Pantha Ayanaya Vidyate,” if I may use a famous Upanishadic saying in this context.

It is along such lines as those noted above that the recommendations of the Madras Committee on the Indigenous Systems of Medicine were framed in their report of 25 years ago; and as a first step for implementing the recommendations of the Committee, the Government School of Indian Medicine was established early in 1925; and two years later, the associated hospitals were added. I give below a brief note on the history and progress of the Madras Scheme as they may serve to indicate the lines which may be followed in our future plans as also those which are to be avoided.

The Madras Scheme.—It was towards the end of 1921 that at the instance of the late Raja of Panagal, then Chief Minister-in-charge of Public Health, the Government of Madras appointed a Committee under the Chairmanship of Mr. (now Sir) Muhammad Usman Sahib Bahadur, “to report on the question of the recognition and encouragement of the indigenous systems of medicine in vogue in this Presidency.” One of the difficult questions which the Committee had to consider was what was spoken of then (and even now, by some) as “the problem of rival systems”—the Indian and the Allopathic.*

* In regard to the use of the term “Allopathy” and Allopathic Medicine, I am aware that for sometimes past, some practitioners of Allopathic Medicine have been wanting to change the present appellation as though there was something in the name of “Allopathic Medicine” which they were dissatisfied with or did not like. Some letters relating to this change have also appeared recently in the local Press; but the name “Allopathic Medicine” is one sanctioned by statutes. Section 13 (b) of the Madras Medical Registration Act of 1914 speaks of “the Allopathic or any other system of Medicine.” So too, the term “Allopathic Medicine, Obstetrics and Surgery” appears in section (2) of the Indian Medical De-

There were some who saw nothing good in Indian Medicine; and their solution was to end it. In their view, Allopathic Practitioners could certainly not have anything to do with what was deemed by them to be something which is unscientific in theory, and quackery in practice. On the other hand, there were exponents of Indian Medicine who saw nothing good in anything else; their system was quite perfect and there was no need to look at any other Fortunately for the cause of science and suffering humanity proposals for continued isolation and stagnation did not prevail. If such proposals had prevailed, the purpose of Schools of Indian Medicine would have been, not to restore to Indian medicine the high status it had in the palmy and progressive days of its past, when its professors provided all-round training in all the “eight branches” (*ashtanga*) of medical practice, including the practice of surgery and obstetrics, and exchanged thoughts with the learned doctors of other lands, from China to Arabia, to the end that the knowledge of each may be continuously brought up-to-date with whatever was new and valuable in the teaching of others, but to perpetuate the sad plight of its dark and decadent days, when its practice on the surgical and obstetrical side had almost ceas-

ed, and its medical practice suffered from stagnation and isolation. After a thorough and extensive investigation of these and other related questions, the Usman Committee came to the considered conclusion that, from the standpoint of science and theory, the Indian systems were thoroughly scientific and logical, while from the standpoint of art and practice, they were generally self-sufficient, efficient and economical in the medical line, while they were not so in the surgical. While paying the tribute to the general efficiency, suitability and popularity of Indian Medicine for providing relief in medical cases, and while recognizing to the full the potentialities of Indian Medicine for contributing in the future as in the past, its own quota to the sum-total of human knowledge for promoting health and diminishing ill-health, they proceeded to observe as follows:

“It seems to us that the first and foremost problem that we have to address ourselves is to see how we can make the Indian Systems of Medicine rapidly self-sufficient and efficient; for, unless and until this is secured, the problem of bringing adequate medical relief within the easy reach of our masses, especially in the rural areas, will not become satisfactorily solved. Moreover, the establishment of institutions of Indian systems will, under these circumstances, remain a proposition of only limited applicability; because it would involve the maintenance of a double set of institutions, one, the Indian, to look after our medical ailments, and the other the European to look after our surgical needs—an arrangement as uneconomical as it is unsatisfactory. Some such arrangement may, however, become inevitable in the transitional stage, but this period should be as short as possible. We, therefore, consider, that the most urgent and immediate concern for the State is to establish and promote by State-aid, State-recognition, and such other means the establishment of suitable centres of medical education, and the devising of suitable scheme of studies of Indian Medicine calculated to make those trained under it equal to the task of ministering, not only to our medical needs, as at present, but to our surgical ailments as well. Every scheme of study of Indian Medicine whether Ayurveda, Siddha or Unani, should make adequate provision, for not only the efficient training in subjects appropriate to itself, but also for the training of the essentials of whatever is valuable in Western Medicine.

“Consistently with this view, we would like to see the future practitioners of India, no matter what denomination they belong to—Ayurveda, Siddha, Unani, European medicine or any other being so schooled and trained, as to be able to bring to bear on the problem of health and ill-health, not only the expert knowledge of their systems, but as far as practicable the best that is in other systems also.”

It is to implement the above recommendations of the Usman Committee that the Government School of Indian Medicine at

degrees Act, 1916 under the term “Western Medical Science.” Those “Allopathic” practitioners who wish to see that the term “Allopathic” is not applied to their system should take up this question with the appropriate legislators for necessary amendment; but, in doing so, they should not seek to arrogate to themselves as some of them are trying to do, the sole monopoly of the term “The Scientific Medicine” calculated to mislead the Public to the totally untrue and unjust suggestion that Allopathic Medicine alone was scientific and others like Indian Medicine were not. We know that some want to liquidate Indian Medicine altogether; it would be unfair to seek to achieve this object by the easy method of giving Indian Medicine a bad name. I should strongly protest against the move to secure for Allopathic Medicine the sole right of being described as “The Scientific Medicine” when Indian Medicine has at least as good a title, if not a better one, for the description “Scientific Medicine.” If some Allopathists want the name of their system changed, then the proper appellation for “Allopathic Medicine” would be “Western Medicine” or “Western Medical Science”—a term used in the Medical Degrees Act, 1916. “Western Medicine” and “Indian Medicine” would then serve to indicate the countries of their origin and practice without any implication regarding the scientific nature or otherwise of their content. Some have proposed the term “Modern medicine” but, what is modern today ceases to be so by the mere passage of time. Hence, the term “Modern Medicine” does not seem appropriate to designate the system as it is today and as it will be tomorrow. The term “Modern” may be appropriate only for what is known and practised at the present time and not for what may become known and practised in the future.

Madras was founded, and began functioning on 8th January 1925, with a scheme of studies so devised as to achieve the purpose, the Committee had in view, and "provide such training to its alumni as will enable them to become competent practitioners of Indian systems of Medicine with a good working knowledge of the Western system also."

Since then, many hundreds of Licentiates (L.I.M.'s) have graduated from the School and settled down for practice mostly in Rural areas or as Medical Officers in institutions under Government or Local Bodies or as Rural Medical Practitioners of subsidised dispensaries in posts previously open only to M.B.'s, L.M.P.'s, and other qualified Allopathic Practitioners. Notwithstanding the discouraging and step-motherly attitude accorded to them by Government in regard to their status, salaries, prospects and opportunities in Public Service, they have acquitted themselves in a manner that does great credit to them, ministering medical relief to the vast masses that yearn for Indian Medicine as well as for the smaller percentage that want or need the ministrations of Western Medicine. Some years ago, a few batches of the L.I.M.'s underwent training in Public Health work along with L.M.P.'s and other Allopathic practitioners, passed the qualifying tests and carried on Public Health work in addition to their duties relating to Medical relief. These and other L.I.M.'s have gone to out-of-the-way places and jungle tracts, giving anti-cholera and other preventive inoculations and generally carrying on preventive and epidemic duties whenever called upon to do so. The records of their work both in the Medical and Surgical lines are found in the Annual Reports and Statistical statements published by the Government. Their work in all these directions has stood the test of periodical inspections by Allopathic District Medical Officers or their assistants, some of whom have openly expressed their antipathy for what L.I.M.'s stand for, while the generality have no special sympathy for them. Judged by the results of even such official inspection and the much-appreciated service rendered by them to the public in Medical and Public Health work, the Madras Scheme has been a success as far as it has gone, and is well worthy of study by persons entrusted with the duty of planning the future of Medical and Public Health work for India—more especially because the success achieved has been obtained under the distressingly grudging and step-motherly conditions it has suffered from at every step of its progress. This makes us hope confidently for far greater success if the existing handicaps are all removed and the step-motherly attitude replaced by the fostering care of a real mother which, let us hope and pray, will be the role of the new popular Governments of our Free and Independent India.

I have stated above, that for conditions in India, it is urgently necessary to build up a unified and integrated system of Medicine by a synthesis of both Indian and Western Medicine. It will take some years to prepare suitable Text books incorporating the excellences

of both Indian and Western Medicine and provide for other conditions necessary for the desired scientific synthesis to be fully achieved. Meantime, much may be done by way of transitory arrangements. Judging by the success of the Madras scheme for training competent practitioners of Indian Medicine with a good working knowledge of Western Medicine, I have frequently pleaded and now plead again that provision should be made for imparting a working knowledge of Indian Medicine in our existing Allopathic Medical Colleges and for imparting a working knowledge of Western Medicine in our existing Colleges of Indian Medicine. This is certain to lead by easy steps and natural fusion to the building up of the unified and integrated system of medical synthesis we have in view. In other words, our ultimate objective of achieving this synthesis of Indian and Western Medicine into one unified and integrated whole is to be brought about by transitional arrangements through two types of institutions, both of which are to provide training in both Indian and Western Medicine but with emphasis on Indian Medicine in the one case and on Western Medicine in the other. Indian Medicine will be the main subject in one case with Western Medicine as the subsidiary subject and vice-versa.

Objections against synthesis answered.—Objections raised against the unified and integrated scheme of Medical Education and practice (the objective of schemes like the one operating at the Government School and College of Indian Medicine at Madras) have centred mainly around two questions, namely:—

(1) It is not possible to work with the differing basic theories of both Indian and Western Medicine without causing mental confusion; and,

(2) Even if such working is considered feasible, it is not possible to find time in the five to six years of medical study at our Medical Colleges for the integrated study of both Indian and Western Medicine leading ultimately to synthesis of both into the one unified system.

So far as I am concerned, these objections raised now by some witnesses before our Committee are not really new. They were raised here at Madras a few years ago with a view to persuade the authorities to give up their scheme towards the synthesis followed at the Government School of Indian Medicine, Madras. It then became my duty to answer the objections raised and the scheme towards synthesis was allowed to continue. Now that it has again become my duty to consider the same objections, I cannot do better than give below the same answers that I furnished then, as I consider that they remain valid even now.

Objection No. 1.—It is not possible to work with differing basic theories of both Indian and Western Medicine without causing mental confusion.

Answer.—Practical experience as well as theoretical considerations show that the

scheme for achieving synthesis has worked successfully in actual medical practice and is also in accord with sound scientific principles.

Over a thousand practitioners have now qualified from an institution in Madras (namely the Government School of Indian Medicine) where the scheme for achieving synthesis has been in operation for some years past. They have settled down in private practice or been employed as Medical Officers under Government or local bodies. Thousands upon thousands of individual problems have been dealt with by them in the course of their professional work during these many years, without any report of mental confusion being caused. It will therefore be seen that judged by results, the scheme for synthesis in Medical teaching and practice has worked satisfactorily in practice; and this after all is the strongest evidence one could have. A tree is best judged by its fruits. Under the circumstances, the fear of mental confusion is merely a hypothetical bogey or which some people have needlessly distressed themselves. Two theories may be different; but need not, on that account, be contradictory. On the contrary, different theories may be complementary and serve to explain the unexplained features of one another. Further, the teaching of different and even apparently contradictory theories is inevitable in the present state of our knowledge of different sciences—whether we are votaries of a mainly experimental Science like Physics or of an "exact" science like Geometry or an imperfect science like Medicine. Everywhere, we have to accept different and even apparently contradictory theories and try to reconcile and harmonise them as best as we could.

So far as the question of differing basic theories in medicine is concerned, is it not clear what particular theories of Modern and Ayurvedic medicine are meant when the question about the fear of mental confusion is raised. I am aware of the criticism and the objection that Ayurveda teaches the "Humoral" theory—sometimes referred to as the "discarded" humoral theory; but, as different people seem to mean different things when they speak of "humoral" theory, it is difficult to know what particular theory is meant. Frequently, it is referred to as the theory which is opposed to the modern "cellular" theory. If this is what is meant, is it really possible to discard the humoral theory? Is it not the case that the very advances of Modern Medicine—especially in the field of Endocrinology and Immunology—have served to place "Humoral Theory" on a firmer footing and to lead to attempts at the reconciliation and harmonising of cellular and humoral theories which were held to be antagonistic to each other till quite recently?

It is therefore seen that, both on theoretical and practical considerations, the path of scientific progress and wisdom lies in building on the basis of schemes providing for a unified and integrated system of Medical Education such as that provided at the Government School of Indian Medicine at Madras. When

properly taught by competent teachers to competent students, it has not led and is not likely to lead to mental confusion. On the contrary it is the royal road to that reconciliation and harmonising of apparently conflicting theories which it should be our aim and endeavour to achieve.

It is perhaps needless to add that where teachers or the taught or both are incompetent, mental confusion may occur even in the absence of conflicting or contradictory theories. There is certainly need for uttering a warning against mental confusion consequent on the present day methods of teaching followed in our purely Allopathic Medical Colleges. This has been done by competent critics; but, that does not relate to the teaching of different and antagonistic theories but to attempts that are sometimes made to teach too much, specially of details, instead of concentrating on basic and fundamental principles in each subject.

Objection No. 2.—Even if the scheme for achieving synthesis is considered feasible, it is not possible to find time in the five to six years of study at our Medical Colleges for the integrated study of both Indian and Western Medicine leading ultimately to synthesis of both into one unified system.

Here again I can state from personal experience that the required time could well be found for integrated study of both Indian and Western Medicine by effecting necessary reforms to eliminate wastage of time in existing schemes of study of our Medical Colleges. Both as a student and teacher in Allopathic institutions, I had felt that considerable wastage of time and effort was involved in the way that instruction in subjects like Anatomy, Physiology, Pathology, etc., was being given. Hence when I was entrusted in 1925 with the responsibility for organising the courses at the Government School of Indian Medicine, I arranged things in such a way as, in my judgment, was best calculated to eliminate wastage and provide sufficient time for adequate studies in both Indian and Western Medicine. When nine years later, (1933-'34) I read the report of a very influential and authoritative Committee on Medical education appointed by the British Medical Association which recommended among other things, the elimination of wastage which, nine years earlier, I had tried to avoid at the Government School, I need hardly say that it gave me great relief and satisfaction. Now, again, it is no small satisfaction to me to find that the expert findings now recorded in the report of the Bhore Committee also justify the view I took nearly twenty-three years ago. May I illustrate this point by reference to the Committee's remarks relating to the study of anatomy as it is still pursued in our Allopathic medical schools and colleges? Now we find the following finding on page 159, Volume I of the Report of The Bhore Committee: "As regards anatomy a disproportionately large amount of the total period devoted to the medical course appears to be spent in this country on the teaching of this subject as compared with the practice in countries in which medical education is on more

progressive lines. For instance, in King Edward's Medical College, Lahore, the subject appropriate to itself one thousand two hundred and seventyfour hours, out of a total of four thousand five hundred and forty-six for the entire medical curriculum and in the Andhra University, one thousand, one hundred and twentyfour hours out of four thousand, one hundred and fifty-eight. At Harvard, on the other hand, the corresponding periods are four hundred and eight hours out of four thousand, and in Russia, four hundred and thirty-eight out of five thousand, seven hundred and sixty hours. It is believed that the time taken up by lectures and demonstrations and by the dissections can be curtailed to an appreciable extent."

It will therefore be seen that, by a suitable modification in the curriculum time could be found in four years' scheme of studies for an effective medical training, which could provide, even now, for a working knowledge of Western Medicine in our schools and colleges of Indian Medicine and a working knowledge of Indian Medicine in our schools and colleges of Western Medicine. This would lead ultimately by easy steps to the synthesis of both into one unified and integrated system that we have in view.

Provision for imparting training in Indian Medicine to selected practitioners of Western Medicine and vice-versa: This would be one of the most desirable and effective ways of finding the workers necessary for achieving synthesis as smoothly, harmoniously and quickly as possible. If they are brought together to work side by side in one and the same institution and for the achievement of their own common end *viz.*, the synthesis of Indian and Western Medicine into one united and intergrated whole, we may reasonably expect that, in the course of a few years, the desired synthesis would be achieved automatically as the natural fulfilment and fruition of their common purpose and endeavours.

Our greatest desideratum in the immediate present is a sufficiently large number of teachers who will so train their students at the Institutions of Indian Medicine that the alumni may become wholly self-sufficient and fully efficient in every way and not defective along the surgical line as is the case with the bulk of practitioners of Indian Medicine of the present day. To secure this end, we require the help of a number of Western-trained doctors who are willing to equip themselves to this truly ennobling task. When once we succeed in efficiently training some batches of selected students, they may then be trusted to carry on the tradition and even improve upon it according to their own genius; in the meantime it is the unique privilege and the glorious opportunity for the Western trained doctors, if they have the imagination to see it, to re-start the followers of Indian Medicine along the lines of their own forgotten surgical art; it is not every Western-trained doctor that is fitted to this task of regeneration which demands the highest qualities of both head and heart. It is not enough for him to be an expert in his own line; that, of course,

is necessary, but it is but a part of his equipment; he must, in addition, have a profound faith in the immense possibilities of Indian Medicine, and a clear grasp of its essential teachings, so as to enable him, as far as possible to present to his students whatever is worth knowing in modern Western Medicine, as so many natural corollaries of their own fundamental propositions and not as alien innovations, destructive of their own tested teachings and practices. He must have learnt enough of Indian Medicine as to be filled with the robust faith that Indian Medicine has a message of its own to give to the medical world of to-day and to-morrow. He should have freed himself from all notions of any fundamental superiority or supercilious patronage and be filled with a genuine desire to learn as well as to teach and to move among practitioners of Indian Medicine as brother among brothers and equal among equals. More than all, he must enter on his duties with a faith whose sincerity no ridicule can shake, a zeal whose edge no obstacle can dull, and an enthusiasm which no disappointment can cool. Now there are two ways of recruiting into our service the sort of teachers that we have in view; the one is to select promising graduates of Western Medicine, with a good knowledge of Sanskrit, Tamil or Arabic, and depute them for a period of two or three years to learn Indian Medicine, on condition that, on the completion of their course, they will devote themselves for service at our Colleges and Schools of Indian Medicine. It may be difficult at first to get candidates with all the qualities of head and heart that we have indicated above, but, we must be content to choose the best that are available; and while we may see to it that, as far as possible, we select only such as are actuated more by the spirit of service and dedication to an ideal than by mere monetary considerations, still we must not expect too much from poor human nature but make the cadre attractive enough for some, at least, of our best and promising intellectuals; the selected graduates may first be recruited as permanent members of our State Medical Organisation on the pay and prospects of the officers of the State Medical Service and then deputed to study at the expense of the State. Similarly, selected graduates of Indian Medicine may be recruited and given the required training in Western Medicine.

While I was the Principal of the Government School of Indian Medicine, I did institute schemes of study for both types of training noted above; but, the prospects for those who took these courses were so poor that the schemes could not become popular and the expected progress could not be made because of the grudging support and step-motherly attitude towards Indian Medicine shown by persons directing the medical policy of the State. To this, I shall have to refer presently at some length, if only to ensure that such things shall not be permitted to continue in our new set-up.

In the meanwhile, it would be a very wholesome rule if everyone seeking to practise

medicine in India is required to equip himself with a working knowledge of Indian medicine, no matter what his other medical qualifications may be. If it is found desirable and necessary that every civil servant recruited for service in India should be required to make himself acquainted with the mother-tongue of the people among whom he is posted for duty, it cannot be less necessary for every allopathic practitioner seeking to practise in India to be required to make himself conversant with a working knowledge of Indian Medicine to which it is calculated nearly 80 to 90 per cent of our population resort for relief. The Government of Madras have already instituted post-graduate courses for study in Indian Medicine, extending over a period of two years and open to fully qualified practitioners of Allopathic Medicine. Other Governments may follow on the same lines. I would also urge upon them the desirability of having at least one practitioner qualified in Indian Medicine on the staff of every headquarter hospital and other hospitals where there is provision for appointing more than one medical officer. If necessary, the medical officers already in service may be deputed by turns to undertake a course of training in Indian Medicine.

Pooling the resources of both Indian and Western Medicine to provide for the betterment of both and their synthesis into one unified and integrated System: One of the best and most fruitful ways in which Medical Education, Medical Relief and Medical Research in both Indian and Western Medicine could be better fostered and promoted is by pooling the resources of the existing institutions of both Indian and Western Medicine. In Madras, Bombay, Western Medicine. In Madras, Bombay, Trivandrum, Bangalore, Mysore, Cochin, Poona, Calcutta, Lucknow, Delhi and many other places in India, there are Schools and Hospitals of Indian and Western Medicine which are working separately and with no professional contact with each other. If, however, we could provide for the staff and other resources of the Allopathic institutions to be made available for the purpose of giving a working knowledge of Western Medicine to the students of the Schools and Colleges of Indian Medicine while the Staff and resources of the Institutions of Indian Medicine are likewise made available for giving a working knowledge of Indian Medicine to students of the Schools and Colleges of Western Medicine, it would provide the quickest, the most economical and fruitful way of achieving our long-range and ultimate objective of building up a unified and integrated synthesis of Indian and Western Medicine through the short-range transitional arrangements of imparting a working knowledge of Western Medicine to students of Indian Medicine and vice-versa. It would mean considerable saving over avoidable duplication of Staff, Equipment, Dissection Halls, Laboratories etc., and it would provide for that close collaboration and cooperation between practitioners of both Indian and Western Medicine which would lead to the rubbing off of their angularities and mutual appreciation among the practi-

tioners of both the collaborating groups—a consummation devoutly to be wished for, in the highest interests of both the Science of Medicine as well as of the public who could thereby be ensured of the ministrations of the best that is available in both Indian and Western Medicine in the matter of obtaining relief for their sickness and suffering.

Medical Research.—The scheme for collaboration and co-operation outlined above is of great value and significance for promoting not only Medical Education and Medical Relief but also Medical Research as well. For instance, let us consider here the case of Clinical Research. For evaluating the reputed values of the recipes and methods of treatment followed in Indian Medicine, it will be necessary to gather clinical data on a sufficiently large scale and check up results. While the actual treatment will be the responsibility of practitioners of Indian Medicine concerned, specially selected allopathists (qualified in Indian Medicine also, if available) will have to serve as Medical Registrars and maintain careful records of the day to day treatment, progress and all other necessary data required for reaching a Scientific conclusion on the merits of the treatments adopted.

For this purpose, it would be necessary to be sure of the exact diagnosis in terms of both Indian and Western Medicine, to record in detail the exact condition of the patient when he comes in and to keep careful records thereafter of the dietetic and medicinal treatment adopted from day-to-day and the changes observed in the patient from time to time. The findings and inferences of microscopical examinations, X-ray investigations, electrical reactions, chemical, bio-chemical and other laboratory tests (including serological investigations) will have to be recorded as and when indicated. The adoption of these and other methods implying a close collaboration between workers in the field of Indian and Western Medicine will be necessary if scientific judgment acceptable to the Medical world at large is to be pronounced on the reputed values of the therapeutic measures advocated in the texts and traditions of Indian Medicine. The most economical and efficient way in which clinical Research as described above could best be carried on is by providing for the Laboratory X-ray, bio-chemical and other resources, of the Government Allopathic Colleges, Schools and associated Hospitals and Research institutes (where they exist) being made freely available to workers of Research sections at Institutions of Indian Medicine where the actual treatment Medicinal, Dietetic and others would be carried on by Professors and Practitioners of Indian Medicine specially selected for the purpose.

In many cases, it should be possible, at a comparatively small cost to convert the existing institutions—particularly the well-equipped Allopathic institutions at our Metropolitan and District Headquarters stations into combined institutes where provision could be made at once for Medical Education and

Medical Relief and Medical Research we have in view viz., (1) Medical Education which would lead us to the long-range objective of a unified and integrated system through the immediate and short-range objective of providing for Medical Education of two types, in both of which, training is given in both Indian and Western Medicine but with emphasis on Indian Medicine as the main branch in one case with Western Medicine as the subsidiary branch, while on the other, the emphasis would be on Western Medicine as the main branch with Indian Medicine as the subsidiary one, (2) Medical Relief through both Indian and Western Medicine working side by side, in the same institution, so that the preferences and needs of both the masses and the classes can be met to their entire satisfaction and they are assured that, as far as possible, the excellences of both Indian and Western Medicine will be available at all times according to the needs and requirements of the individual patient seeking relief and (3) Medical Research—Specially Clinical Research—where the essential requisite for achieving the most satisfactory results is the close collaboration and the willing (and even enthusiastic) co-operation between competent practitioners of both Indian and Western Medicine which should be forthcoming in an abundant measure in the combined institutes we have in view.

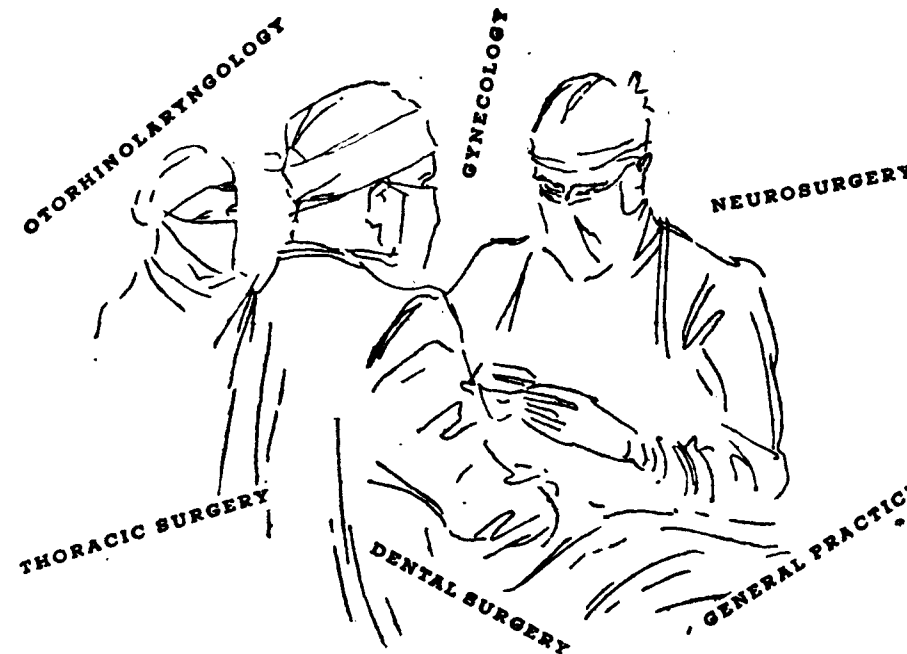
Objections on many grounds—administrative, temperamental and the like could easily be raised against the scheme outlined above as indeed to any other scheme for bringing Indian and Western Medicine into close collaboration and co-operation with a view to achieve, as rapidly as possible the building up of that unified and integrated synthesis which is very necessary in the highest interests of the public. Our people want Indian Medicine and we *must* give it to them. Our people need Western Medicine also; and we *must* give that also to them. Synthesis of both into one integrated system is therefore an urgent practical necessity—in-avoidable and inescapable—and there is no

other way, as has been shown earlier. Given a certain amount and type of cleverness, it is easy in fact; nothing is easier than to raise a hundred and one objections against any scheme if we do not like it or do not like to work it. If, however, there is a will to work it, there is a way; and not even a thousand and one objections shall stand in the way. If our Government could declare that, in their view, it is in the highest interests of our public that such synthesis (which it is their policy to promote) should be achieved as satisfactorily and as rapidly as possible and that, in pursuance of this view and policy, they expect their officers of all grades to co-operate fully and do all in their power to "get on with the work or get out," things are certain to move most satisfactorily towards the rapid achievement of our objective.

It is not that I am inclined to minimise the administrative and other difficulties that may arise. A certain amount of friction and other troubles may perhaps be inevitable but not insoluble; they can and must be met as they arise, and it does no good to unduly distress ourselves over all possible difficulties known and unknown; nor, is it always possible to think out beforehand all difficulties that may arise in the future and make due provision for them. As practical workers, we cannot afford to spend ourselves in pondering over all conceivable difficulties and "by fearing to attempt, lose the good we oft might win." Many and many a time in history have problems which have remained insoluble to our doubting Hamlets and Academical perfectionists become readily solved when taken up by our practical enthusiasts who meant business and were determined to dare and to achieve. Such are exactly the persons that are required for our present purpose—persons who can become fired with a noble ideal and moved to high endeavour by an uplifting idea. The supreme need of the hour is not so much a matter of money as men—men who couple enthusiasm for ideals with the capacity required for translating them into practical achievement.

Corrigendum

In the advertisement of Shark Liver Oil of the Bombay Government published in page 52 of the January '49 issue of the *Antiseptic*, in line 10 under Elasmis Pearls for "each pearl contains 3000 I. Us. of vitamin D" please read "300 I.Us. of vitamin D." In the matter under vitamin A-D tablets in the same advertisement, for "200 I.Us. of vitamin B," please read "200 I.Us. of vitamin D."



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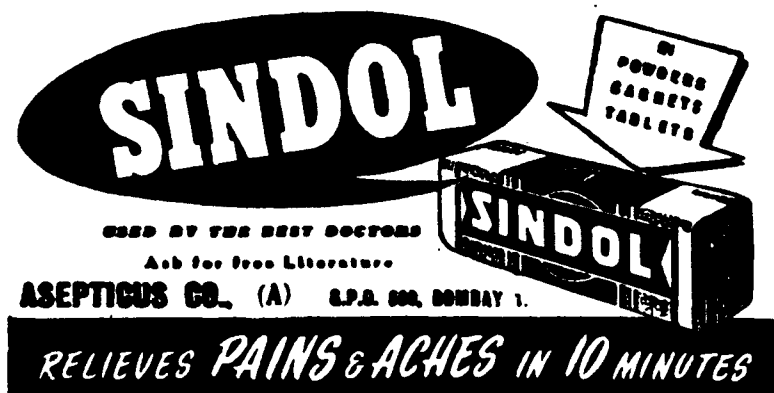
A DUMEX PRODUCT

DANISH UNITED MEDICAL EXPORT

SPONGOSTAN is a specially prepared, sterile, gelatine sponge made by treating and hardening gelatine. It can be cut into suitable-sized pieces which, after soaking, can readily be moulded to fit the site to which it is to be applied. SPONGOSTAN positively arrests capillary and venous bleeding and is especially recommended in cases of diffuse oozing. This new form of hæmostatic has the great advantage of being readily absorbed by the tissue within 3-4 weeks, creating no injurious tissue reaction. Neither does it promote any risk of development of hypersensitivity. Special literature will be sent on request.

PACKINGS: SPONGOSTAN is distributed in dry sterilized packages.
 "STANDARD": One box containing one plastic bag with 2 pieces of approximately 6 sq. inches.
 "HOSPITAL": One box containing 18 such bags, each of 2 pieces SPONGOSTAN.

Sole Distributors: THE EAST ASIATIC CO. (INDIA) LTD., 27/A, WAUDBY ROAD, BOMBAY



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USED BY THE BEST DOCTORS
Ask for free Literature

ASEPTICUS CO. (A) S.P.A. CO., BOMBAY 1.

RELIEVES PAINS & ACHES IN 10 MINUTES

ARSEN- TYPHOID for FILARIA

FOR
ELEPHANTOID LEGS, HANDS,
FILARIAL SCROTUM, WEEPING
BREASTS AND EVERY FORM
OF FILARIASIS

Particulars free from

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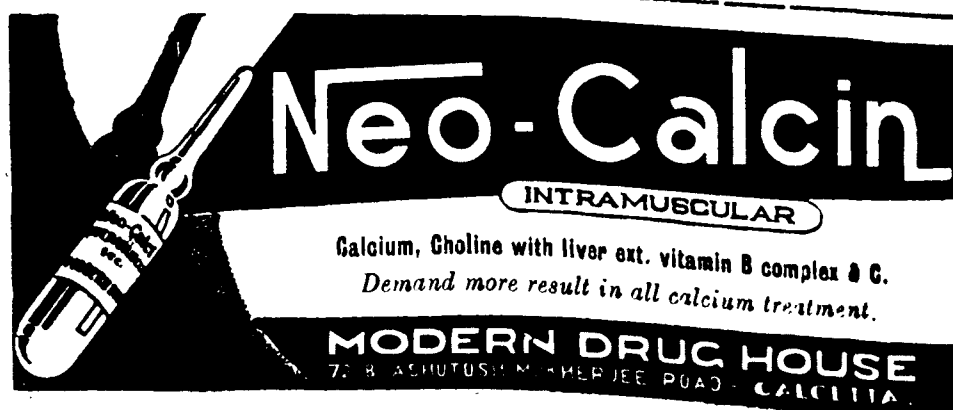
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INTRAMUSCULAR

Calcium, Choline with liver ext. vitamin B complex & C.
Demand more result in all calcium treatment.

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To supplement average deficiencies
of modern diets and to recuperate
the system after illness:

MELGADIN

Contains:

Vitamins—A, D, C & B complex

̄ Glycerophosphates in

Syrupy base.

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Sole Distributors for
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Instant Relief Assured in the treatment of Asthma

Conforming to B. P. standards, Marker Alkaloids' Ephedrine Hydrochloride is highly effective in the treatment of respiratory disorders marked by obstructive or difficult breathing. In containers of 100, 500 and 1,000 of $\frac{1}{2}$ grain, $\frac{1}{4}$ grain and 1 grain tablets. Pure Ephedrine Hydrochloride crystals in 1 oz., 4 oz. and 1 lb. packing.

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MANUFACTURERS OF PURE DRUGS & FINE
ALKALOIDS FOR THE MEDICAL PROFESSION

Swastik T. B. Sanatorium

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A home for middle class and the poor.

The unlucky Victims of T.B.

- UP-TO-DATE TREATMENT
- SPEEDY CURE
- BEST CLIMATE
- CAREFUL ATTENDANCE
- MODERATE CHARGES.

Write for full particulars to the
SUPERINTENDENT,
With one Anna for Postage.

LEPROSY

Internal & external treatment
Rs. 12/8 per set.

LEUCODERMA

Internal and external treatment
Rs. 8-4-0. V.P. Charges extra.
Guaranteed harmless.

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Bangalore:—"Used in cases of Leuco-
derma and found very efficacious."

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HYPODERMIC SYRINGES
AND NEEDLES.
CATBUT & BUTUTES.
ALL SORTS OF MEDICAL
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HOSPITAL ENAMELWARE
AND RUBBER GOODS.
DRUGS AND CHEMICALS.
LABORATORY
REQUISITES.
A. S. N. BLADES AND
HANDLES.
STETHOSCOPE ETC.
Enquiries solicited.

SHARMAN & CO.,
32-36, ANANT WADI, BOMBAY 2.

CHLORIDOQUINOL

(7: Iodo 8: Chloro 8: Hydroxy Quinoline)

Purified by special method.

Contains 41% of available Iodine and is suggested in the treatment of amœbic Dysentery acute and Chronic, Summer Diarrhoeas, Colitis and Fermentative Dyspepsia.

Available in 20, 100, 500 and 1000 tablets packing

Detailed Literature on request

G. D. A. CHEMICALS LTD.

Research & Manufacture
44, Badridas Temple Street,
CALCUTTA-4.

MONO-CALCIN

Each 5 c.c. ampoule contains:—Saturated solution of calcium Gluconate.

Vit. B₁ (Thiamin Hydrochloride) 30 mgm.
Vit. B Complex 30 mgm.
Vitamin C 300 I.U.
Liver Extract 1 U.S.P.
Cholin Hydrochlor 1/60 gr.

Indications:

1. Tuberculosis in all its manifestations and in all pre-tubercular stages.
2. Bronchitis, Bronchopneumonia, Pleurisy, Asthma etc.
3. Calcium and Vitamin Deficiencies.
4. Anæmia.
5. Infantile Liver etc.
6. Hæmoptysis Puerperal Diarrhoea (Sutika).

Dosages & Direction.

Adults:—3 c.c. to 5 c.c. intramuscularly twice a week or thrice if desired according to the severity of the cases.

MANDOSS & CO., LTD.,

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LEUCOL TABLETS

Highly efficacious Herbal remedy for LEUCORRHOEA (white discharge) irregular, excessive or painful menstruation; enlargement of womb, uterine haemorrhage and other allied troubles of the fair sex.
LEUCOL is widely prescribed by Doctors.

At Leading Chemists or from—

The HIMALAYA DRUG Co.

251, Hornby Road, BOMBAY-1.
Sold by leading Chemists.

Literature, Clinical Reports & Sample on request.

ELIXIR MINRON

(Useful for Iron & Mineral Deficiency)

Massive Iron therapy with vitamins, containing each fluid ounces:—

Ferri et ammon citrate	60 gra.
Sodium glycerophosphate	2 "
Potassium glycerophosphate	4 "
Calcium glycerophosphate	4 "
Copper and Manganese	traces
Strychnine Hydrochloride	1/200 "
Vit. B ₁	2000 "
Vit. B ₂	3200 I.U.
Vit. C	100 Mg.

Indicated in all cases of secondary anæmia, anæmia during pregnancy, anæmia of children and nutrition.

Available in phial of 6 oz.

FOR DETAILED LITERATURE,

PLEASE WRITE TO:—

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A 20% Protein Hydrolysate with Vitamin B complex, C and Folic Acid for Protein deficiency and Stomach Ulcer, Under Nutrition and General Weakness.

AMINOZYME

(Amino Acids Cum Enzymes)

A combination of directly assimilable Protein Hydrolysate with living and active Enzymes, (Amyolytic, Proteolytic, and Hypolytic) and Vitamin B complex, C and Folic Acid for Diarrhoea, Flatulence, Amœbiasis and under growth.

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ELIXIR VALERIAN BROM

**A SAFE SEDATIVE AND
HYPNOTIC FOR:**

Hysteria, Epilepsy,
Convulsions, Insomnia,
Dysmenorrhoea, Menopause, Neurosis, Irritability of Chronic Alcoholism and all conditions of Nervous Hyperexcitability.

We Manufacture
Proteolysed Liver Extracts
(NAVA-HEPON)
Standardised and palatable
Protein Hydrolysate

PROTOGEST

AND

other standardised preparations
from indigenous drugs

Navaratna Pharmaceutical Laboratories

Post Box No. 13,

Mattancherri, P.O., COCHIN.

COMPOSITION:

Each Fluid Dram Contains:

Potassium Bromide	10 Gr.
Chloral Hydrate	5 Gr.
Tinct. Valerian	8 Min.
Tinct. Cannabis Indica	1 Min.
Tinct. Hyoscyami	4 Min.
Tinct. Aurantii	1 Min.
Ext. Glycyrrhizae Liq.	1 Min.

Bottles of 4 ozs & 1 lb.



ALEMBIC CHEMICAL WORKS CO. LTD.,
BARODA.

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FEROSAN TABLETS

FERROUS SULPHATE COMPOUND

A stable and convenient preparation of ferrous sulphate, with traces of copper and manganese. One tablet of FEROSAN contains 3 gr. of ferrous sulphate, and is therapeutically equivalent to approximately 15 gr. Bland's pill. FEROSAN TABLETS are indicated in the treatment of hypochromic anæmias, as a prophylactic during pregnancy and as a general tonic.

Bottles of 100 and 500 tablets



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Manufactured by:
BOOTS PURE DRUG CO., LTD. NOTTINGHAM, ENGLAND

M 20A

ASCABIN

25% benzyl benzoate emulsion
pleasantly perfumed

For the treatment of scabies:

The Advisory Committee on scabies of the Ministry of Health (April-1942) reports that benzyl benzoate emulsion is the best preparation for scabies.

Effective in a single application without the danger of dermatitis and with the minimum of skin irritation—Graham-1943.

Issued in 4 oz phials.

CHEMO-THERAPEUTICS (India) LTD.,
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Products of the Brahmachari Research Institute

QUINAMBICIDE

(Brahmachari)

Iodochloroxyquinoline for acute, sub-acute and chronic amoebiasis, lamblasis and other intestinal fermentations. Contains 12% chlorine and 40% iodine. Obtained in phial containing 20 tablets of 0.25 grm. each.

ARSAMBIDE

(Brahmachari)

Pentavalent arsenic in tablet form for oral use. Indicated in amoebic dysentery, Giardia intestinalis and Lamblasis; and also used orally in syphilis. Obtained in phials containing 20 tablets of 0.25 grm. each.

The Brahmachari Research Institute,
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RAMTIRTH BRAHMI (Special No. 1) OIL

Useful in all cases of:

Baldness, Dandruff,
Grey Hair
Falling of Hair.



The use of the Oil
imparts Sound Sleep,
and
thus ensures better
eyesight and memory.

Useful to everyone in all seasons

Rs. 3/8 Big Bottle—Rs. 2/- Small Bottle (Sold Everywhere)

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PRIMO-DERM CREAM

In the Treatment
OF

ECZEMA AND DERMATITIS

(Contains 5% Liquor Carbonis Detergens in a special Lanolin and water-miscible base, pleasantly perfumed with menthol and rose.)

Available in two sizes : 2 oz. and 1 lb.

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MONO-LECITHIN

A TONIC FOR
BRAIN & NERVE

BENGAL MODERN DRUG HOUSE LTD.
7, S. N. ROY ROAD, BEHALA, CALCUTTA

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Alembic Ophthalmic Ointments



- 1 High Degree of Purity & Efficacy.
- 2 Prepared according to the latest ophthalmic formulae with standard correct bases.
- 3 Accurate composition, thorough compounding and careful sterilization.



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Insist on Quality Products

"CARNEBROS"—Sterile Ampoules
Almost Painless.

QUININE BIHYDROCHLORIDE
Sterile Solution in Ampoules.

10-grain in 2 cc. in boxes of 6 & 12 Amps.
5 grain in 1 cc. in boxes of 6 & 12 Amps.

Caution: To avoid imitation and fraud the name of the drug indicating contents has been printed on the glass ampoules.

Can be obtained through

PARNELL & CO., LTD.,
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BISMUDAL

Chemically pure and stable suspensoid of Bismuth for treatment of **SYPHILIS** in all its stages and complications.

An easily injectable aqueous suspension readily absorbed and rapidly eliminated.

Absolutely non-toxic and painless.

Widely recommended by doctors.

For literatures please apply to:—

MEDICAL SUPPLY CONCERN LTD.

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OINTMENT

Opisulphanil

Its primary ingredient, sulphanilamide, is incorporated in a base of water-in-oil type of emulsion, rich in cholesterol. It is thoroughly bacteriostatic and bactericidal because it contains urea peroxide, known for its self-sterilising properties. The well-adjusted ratio between fats and emulsifiers ensures complete liberation of the incorporated drugs.

INDICATIONS

Acne, whitlow, post-scarlatinal rhinitis, infected wounds, cuts, small second-degree burns, Ivy dermatitis, eczema and other contagious diseases.

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In PNEUMONIA & PLEURISY

MACOTIZINE is applied as a Poultice over the entire thoracic wall, for its medication and prolonged warmth reduces the danger of complications.

There are probably very few products in which combination of ingredients like Glycerine, Iodine and Boric Acid are so much proportionately compounded.

MACOTIZINE

BRAND — ANTISEPTIC POULTICE •
• DECONGESTIVE • BACTERIOSTATIC

Sample on request

Manufactured by
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R. 98, OFF: 98, ZAVERI BAZAR, BOMBAY 2.

Phone 34551.

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[1949]

An Elegant Reconstructive
VITAMIN-MINERAL-TONIC

B.C. MIN Elixir

Each fluid ounce contains	
Vitamin B ₁	10 mg.
Vitamin B ₂	5 mg.
Nicotinic Acid	50 mg.
Calcium Pantothenate	10 mg.
Pyridoxine Hydrochloride	50 mg.
Vitamin C	5 mg.
Calc. Glycerophos.	5 mg.
Strychnine Glycerophos.	1/50 gr.
Alcohol	15% v/v
Glycerine	5%

A PALATABLE ELIXIR
OF VITAMINS C AND
B COMPLEX WITH
MINERALS FOR STIMULATING GENERAL
METABOLISM AND
APPETITE

INTRODUCED BY:

Phoenix DRUG HOUSE
10 BONFIELD LANE - CALCUTTA

SYRUP LEUCORHÆNA

Indicated in: LEUCORHÆNA
DYSMENORRÆNA &
ALLIED DISEASES

TILL RECENTLY:

Douching by sedative antiseptic or astringent lotions as the cases required assisted by general and uterine tonics was the treatment in vogue. The results were far from satisfactory.....

.....and now

The complaint being now accepted to be constitutional rather than local, medical men began looking for drugs and combinations which may influence the local condition at the same time correcting the constitutional trouble.

ESCORVAL'S SYRUP LEUCORHÆNA has more than justified the expectations of the scientist of Clarke & Co.

PRICE: 8 oz. size: Rs. 2-4.
16 oz. size: Rs. 4-0.

Packing and Postage Extra.

PRODUCTS OF CLARKE & Co.

Agents: **PAREKH TRADING CO.,**
Princess Street, BOMBAY 2.

Used by renowned Bombay Hospitals

Prescribed by Eminent Physicians

Serving the country since 1931

RATES:

Rs. 21/- per doz. for size No. 1 (10½ oz.)
Rs. 11/- Trial Size (5 oz.)

F.O.R. Bombay.

(In force from 1st July 1947)

Antiphlozone is useful even in the most serious cases of Pneumonia and other inflammatory complaints.

NOTE.—Free sample cannot be supplied.

SOLD BY ALL GOOD DEALERS.



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Manufacturers:—**THE ZONE CHEMICAL CO., BOMBAY, 4.**

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Tablet RHEUMOPHAN COMPOUND

(Mahayoga) Gugal and Maharasanadi Gush in tablet form with GOLD BHASMA)

Indications: Arthritis and other Rheumatic diseases.
Special features of Rheumophan Compound treatment

- Only after about two weeks' treatment notable results are obtained. Complete treatment lasts only for 8 weeks.
- No toxic effects and no contra-indications even though the tablets contain GOLD.
- No constant vigilance, laboratory examinations of blood, urine, skin etc. necessary.
- No relapses in any of the cases reported so far.
- Has given good results in cases of Chronic Infective Arthritis, Osteo-arthritis, Peri-articular Arthritis, Osteo-arthritis of spine.
- In cases of Chronic Infective Arthritis within the course of about three weeks the blood sedimentation rate decreases.
- In comparison with other known forms of treatment it is SIMPLE, SAFE and not costly.

Other particulars from the makers of Tablet LEPTADEN:
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B.S. COMPANY'S

ASTHMAROL



Well adjusted preparation of Ephedrine, Thioal, Pruni Virginiana etc. Very useful in all sorts of Asthma, Bronchitis, Cold & Cough.

Sole Agent:

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Available at all Chemists

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RHEUMATIC DISEASES

POLYARTHRITIS — ARTHRITIS —
SCIATICA — LUMBAGO — GOUT

LEUCOTROPIN

Brand of Phenylcinchoninate of Hexamethylentetramine

Has an immediate analgesic effect. Eliminates the causes of inflammation. Abridges the healing process.

LEUCOTROPIN

Increases excretion of uric acid and has a potentiated antiseptic action.

LEUCOTROPIN

Is non-toxic owing to the absence of free Phenylephrine, and has therefore no side effects. Boxes of 5 ampoules for intravenous or intramuscular injection.

Tubes of 20 Tablets.

Samples and literature gladly on request from the Sole Agents.

Manufactured by: SILTEN LTD., HATFIELD, HERTS, ENGLAND.

VYAS BROS. Princess Street **BOMBAY**

Memorandum

Qumaresh

Indication: Infantile liver: Hepatic obstruction with dropy: Tropical congestion of liver: Intestinal troubles during dentition: Summer diarrhoea: Post-natal anorexia with gastro-intestinal irritation and diarrhoea: Anasarca: Jaundice.

Composition: Andrographis Paniculata (Kalmegh)
Hygrophila Spinosa (Kuliakhara)
Luffa Bindal (Ghosalata)
Ptychotis (Jowan)

and other Cholagogues and Carminatives. Retains full efficacy in both acid and Alkaline mixtures.

THE ORIENTAL RESEARCH & CHEMICAL LABORATORY LTD.
SALKIA (HOWRAH)

**COUGH ALLAYING, ANALGESIC
AND SEDATIVE**

Codietol

Each Tablet contains:
Codain Phos. 0.075 gram
Phenobarbital 0.075 gram

Codietol is effective in small doses on the central nervous system, on the cough reflex, and the unstriated muscles (Spasmodic effect.)
Codietol is an agreeable sedative.
Codietol produces agreeable and quiet sleep in smaller doses. Codietol is not habit forming.

Introduced by:-

Phoenix DRUG HOUSE
10, BONFIELD LANE, CALCUTTA

For Effective Calcium Therapy
SYRUP BIDICAL
(Bi-D-Cal)

*A most assimilable combination of
Calcium with Vitamins B₁ & D*

Composition:

Calcium Gluconate 40 grs.
Vitamin B₁ 10 mgms.
Vitamin D 4,000 I. units
Flavouring base to make 1 oz.

Indications:

All types of Anaemia and General debility due to Calcium deficiency. Recommended during Pregnancy and Lactation.

INDOCO REMEDIES LTD.,

457, Sandhurst Road,
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For
BABY'S
Teething Trouble & Stomach Disorder.



Effective in Gripping Convulsions, Restlessness, Constipation and Diarrhoea.

An Ideal Tonic and Body Builder.

Mfd by A. Peterson & Co.,

Distributors: **PAREKH TRADING CO.,**
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BILATONE

Liver Stimulant

A combination of Selected Indian drugs which have a specific action on Liver and Kidney. It increases flow of Bile and reduces Liver. Corrects constipation, and helps digestion. Very useful for biliary headache.

Full literature on request:-

LUCOCID

A combination of Pushanug Churna, Oil Santal, Oil Cubeb with urinary antiseptics. Useful in the treatment of **LEUCORRHOEA** congestive conditions of the pelvic viscera and other uterine troubles.

Manufactured by:-

IDOMAX CHEMICALS

MIRAJ, S. M. C.

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AGRE-ANTACID (PHILIPS)
THE MOST EFFECTIVE ANTACID

It is a novel combination of magnesium trisilicate 0.240 gms and aluminium hydroxide 0.240 gms per tablet.

Agre-Antacid reduces the acidity of the gastric contents to normal and has a protective astringent action on the mucous membrane of the stomach. It is highly effective in hyperchlorhydria, gastric and duodenal ulcers.

AVAILABLE IN ALUMINIUM CONTAINERS OF 60 TABLETS

AGRE-TONICUM (PHILIPS)
FOR CONVALESCENTS

1949 FEBRUARY 1949						
SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	
6	7	8	9	10		
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

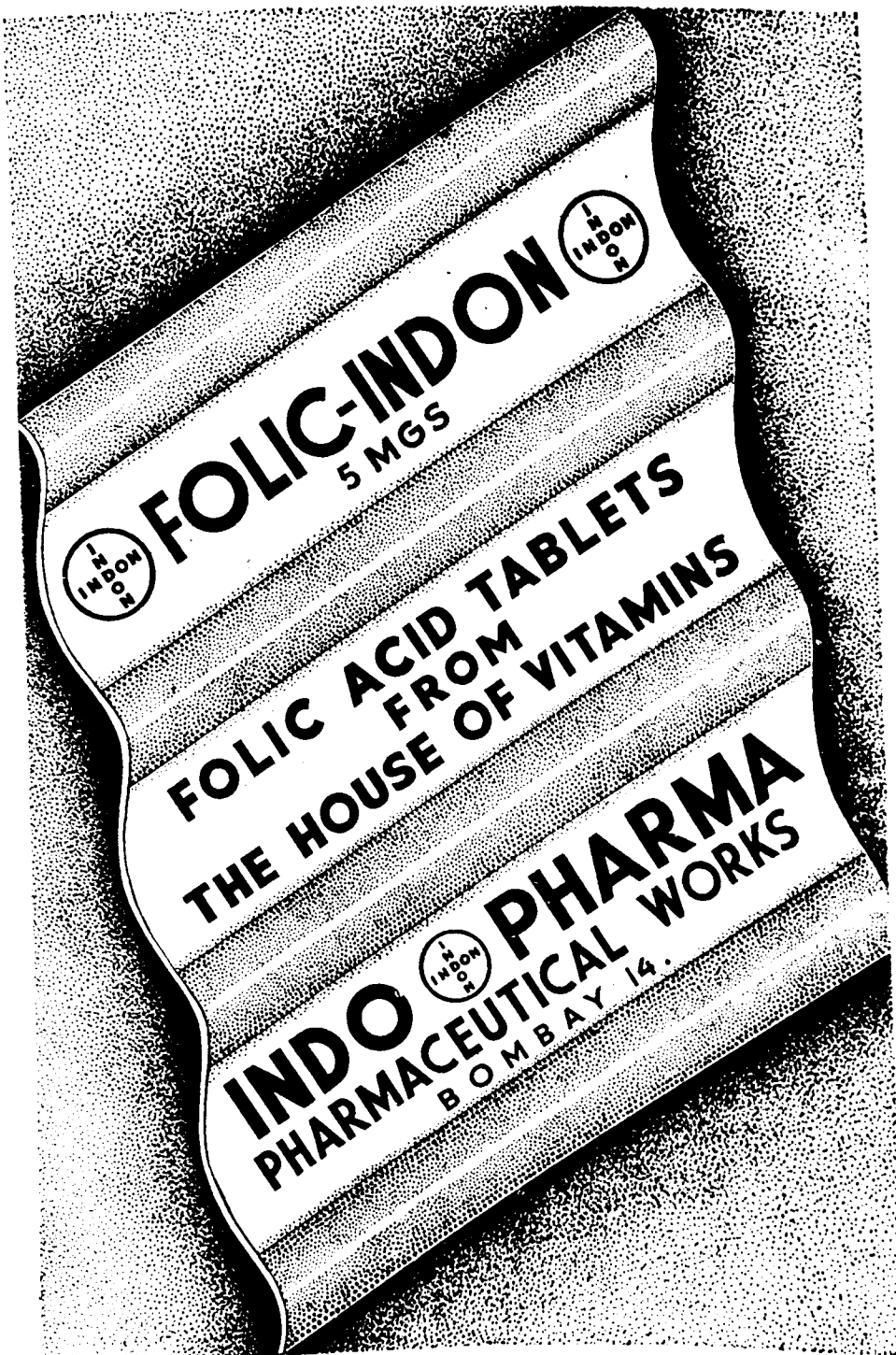
A non-alcoholic, palatable restorative tonic for all run-down and debilitating conditions composed of liver extract, iron, vitamins and other ingredients which ensure a strong stimulating action on blood formation and on the central nervous system.

AVAILABLE IN 200 C.C. BOTTLES



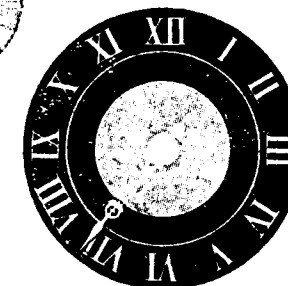
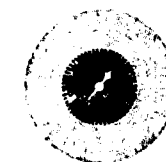
PHILIPS ELECTRICAL CO. (INDIA) LTD.
X-RAY & MEDICAL DEPARTMENT
(PHARMACEUTICAL DIVISION)
PHILIPS HOUSE, HEYSHAM ROAD, CALCUTTA-20.

Sole Distributors in India, Burma & Ceylon for
PHILIPS VAN HOUTEN & ROXANE LTD., HOLLAND
BREW & COMPANY, INC. WORCESTER, MASSACHUSETTS, U.S.A.
ESTRO CHEMICAL COMPANY, INC., NEW YORK



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seconds become minutes



During wakefulness associated with mental unrest, excitement, or extreme fatigue, even seconds seem like minutes.

Sound sleep can be attained in fifteen to twenty minutes by the administration of 'Seconal Sodium' (Sodium Propyl-methyl-carbonyl Allyl Barbiturate, Lilly). The sedation is terminated in considerably less than eight hours, usually without leaving an aftereffect of drowsiness. The patient is assured a sound night's sleep and awakes well rested and refreshed.

Of the several barbiturates bearing the Lilly label, 'Seconal Sodium' is the most rapid in onset, the shortest in duration.

SECONAL SODIUM

Pulvules 'Seconal Sodium' are available as filled capsules containing 1 1/2 grains (0.1 Gm.) (No. 240) and 3/4 grain (0.05 Gm.) (No. 243).

ELI LILLY AND COMPANY OF INDIA, INC.
(Incorporated in the U.S.A., the liability of the members being limited) • P.O. BOX 1971, BOMBAY 1

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ELIMINATING PAIN
AFTER PROLAPSE



CIBALGIN
Analgesic Tablets
AMPOULES TABLETS

DIAL
DIALYLBARBITURIC ACID
For natural Sleep
AMPOULES TABLETS

CIBA PHARMA LIMITED
P. O. Box No. 1123 BOMBAY.

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Bacillary & Amoebic Dysentery

Both in the management of disease and in subsequent convalescence the ulcerated condition of the intestine makes for poor digestion and absorption. Some attempt must be made, however, to cater for the body's energy requirements without putting any undue strain on the digestive organs.

This condition calls for an easily assimilable protein food which can supply the nitrogen needs of the body.

Brand's Essence of Chicken is a first-class protein of animal origin. Being partly hydrolysed, it is capable of easy ingestion, digestion and absorption. It is extremely palatable and may be taken either as a jelly or a liquid. It is an ideal means of supporting convalescence and restoring a positive nitrogen balance.

**BRAND'S
ESSENCE
OF
CHICKEN**



Manufactured by: BRAND & CO. LTD. LONDON

Agents:
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Calcutta • Madras • Bombay

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ANTIBIOTIC NASAL DECONGESTANT

'PROTHRICIN' combines the antibiotic activity of Tyrothricin and the vasoconstricting action of 'Propadrine' Hydrochloride to provide a double control for the symptomatic treatment of nasal congestion accompanying bacterial infections.

'Prothricin' is indicated in the relief of nasal congestion accompanying the common cold, allergic rhinitis, acute catarrhal rhinitis, acute rhinosinusitis and acute ethmoiditis.

'Prothricin' is applied by means of tampons, irrigation, drops or spray. Supplied in 1-ounce bottles with dropper assembly.

PROTHRICIN

Sharp & Dohme
PHILADELPHIA

Scientific Literature on request from
VOLKART BROTHERS
BOMBAY P.O. BOX 199

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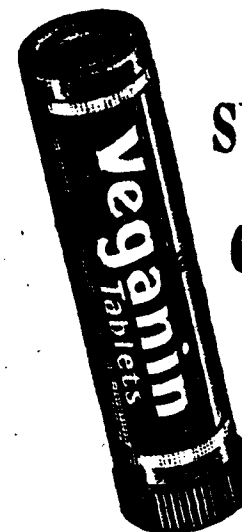
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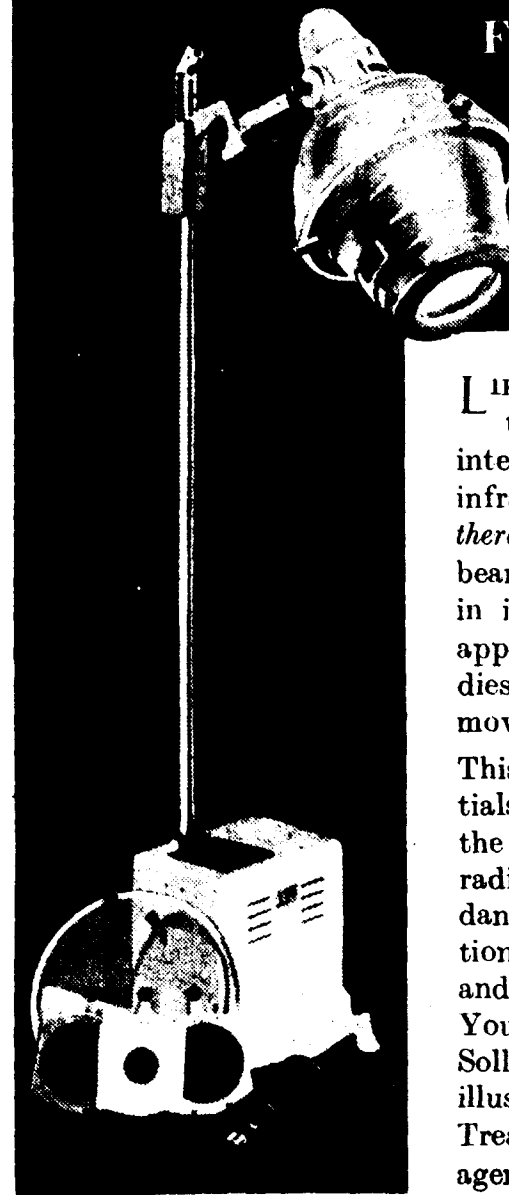
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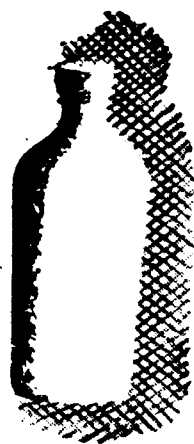
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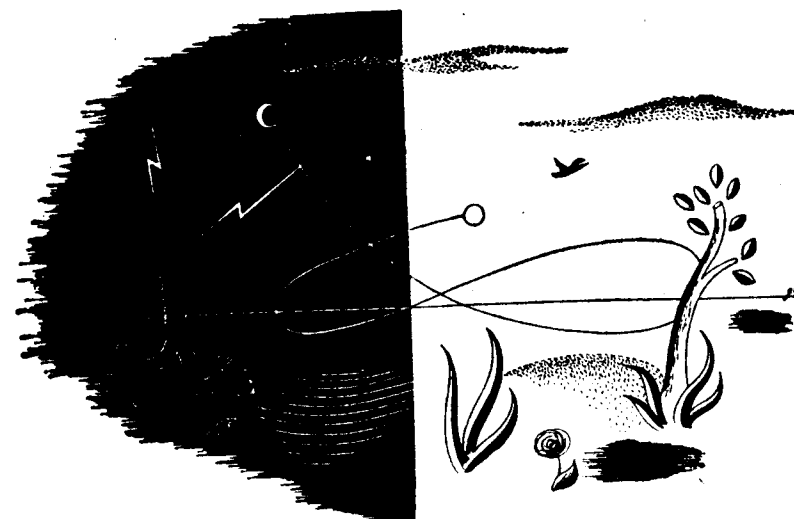
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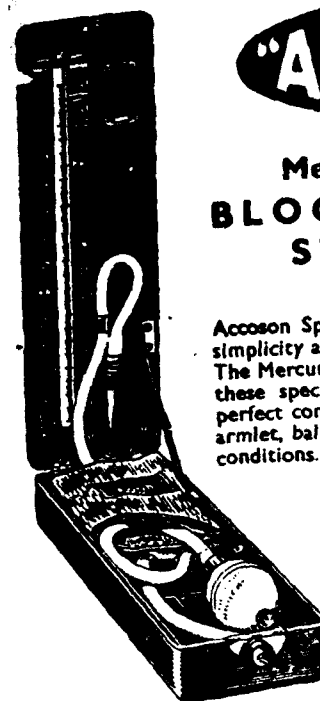
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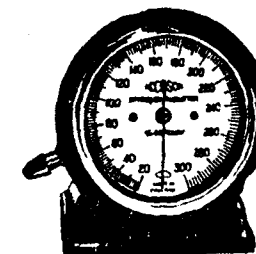


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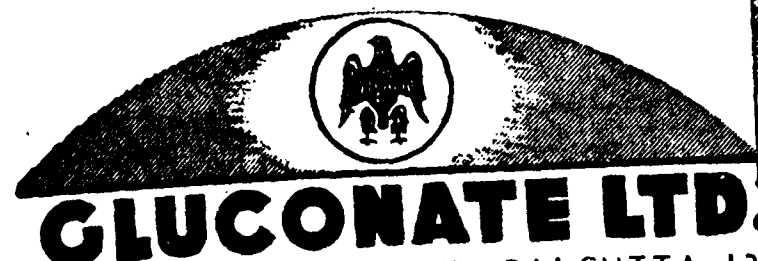
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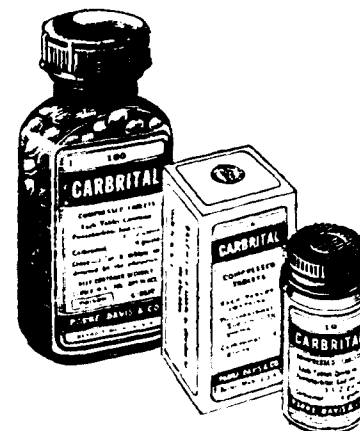
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(Index to Advertisements on page 4)

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CONTENTS		Page 241 to 320
ORIGINAL ARTICLES:—	PAGE	PAGE
Pulmonary Eosinophilia—(Tropical Eosinophilia).—Dr. J. R. Harris Mandody, Casco da Gama (Portuguese India).	241	Health Security and Medical Assistance Scheme for Railway Workers.—Dr. B.L. Chopra, West Bengal 267
Ear Discharge (The Running Ear).—M. R. Bail, M.B., B.S., Madras	257	Dives into Ancient Hindu Medicine.—T. S. A. Padmanabhan, L.M. & S. Badagara, Malabar. 273
Medicine and the State.—G. Raman Pillai, M.B., ch.B., (Edin.), Trivandrum.	260	Injection of Sulphetrone and Dione in Leprosy (A Preliminary Study)—S. N. Chatterjee, M.B., D.T.M., Calcutta. 282

(Continued on Advt. page 2)

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CONTENTS—(Contd. from Front Cover)

Control of Leprosy in India.—S. N. Chatterjee, M.B., D.T.M., Calcutta	284	Night cramps in arms and legs	306
CASES AND COMMENTS:—		Results of an investigation with the therapeutic action of Paludrine and Pamaquin on acute attacks of B.T. malaria	306
A Case of Leprosy Treated with Promin.—Rajmal Nandecha, L.M.P. (C.P.), Indore	289	Hamophilia	306
Stye.—M. P. Ranjan, L.M.P., Laheria Sarai	290	Insulin and the degenerative changes in diabetes mellitus	306
Emetine Hydrochloride and Sulpha Drugs Combinations.—K. N. Gour, M.D., M.B.C.P. (Ed.), F.R.F.P.S. (Glas.), D.O.H., R.C.P.S. (Eng.), D.P.H., Agra and J. N. Gayal, M.Sc. (Allahabad), D. Phil. (Allahabad), Agra	292	Sublingual methyl testosterone for immaturity in boys	306
Streptomycin in a Case of Tuberculous Endometritis.—M. S. Shah, L.C.P.S. (Bom.), Bombay	293	Recurrence in duodenal ulcer, medical management notwithstanding	306
Scabies and its Treatment.—Dr. K. L. Varma, Aliganj, Etah Dt., U.P.	295	Meister's reaction in diagnosis of rheumatism	306
EDITORIALS:—		Effect of isohemia in painful joints	306
Retrospect and Prospect	297	Combined theoglycinate and penicillin aerosol in the treatment of severe asthma	306
Public Health and Medical Relief in Madras	301	Dilution acidosis	306
GLEANNINGS FROM MEDICAL PRESS:—		Normal temperature in old age	307
Medicine:—		Ophthalmology.	
Rapid disinfection of clean unwashed skin	286	Solar retinitis due to exposure during eclipse	307
Pneumococcal Meningitis in an Infant, 8 days old: Recovery	281	Diagnosis and treatment of blepharconjunctivitis	307
Streptomycin treatment in intestinal tuberculosis	304	Prognosis and treatment of sympathetic ophthalmia	311
Low-grade fever therapy as an adjuvant in the treatment of certain types of arthritis	304	Myopia	311
P-aminosalicylic acid in tuberculosis	304	Surgery	312
Clinical uses of intravenous Benadryl Hydrochloride	304	Obstetrics and Gynaecology	316
		Dermatology	317
		Book Reviews	318
		Correspondence	319
		Dr. Venkappa's Fund	320
		Corrigendum	320

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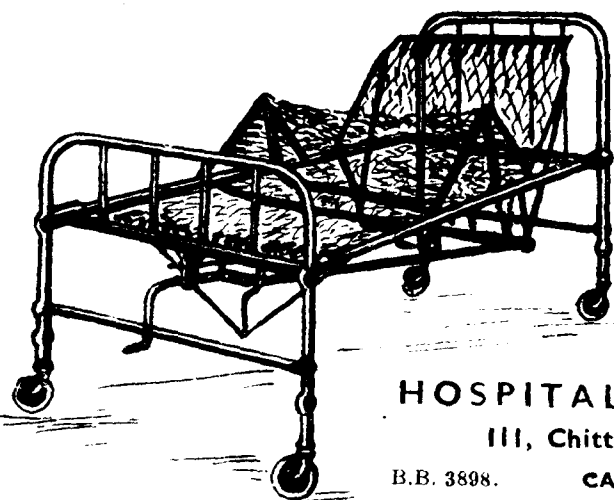
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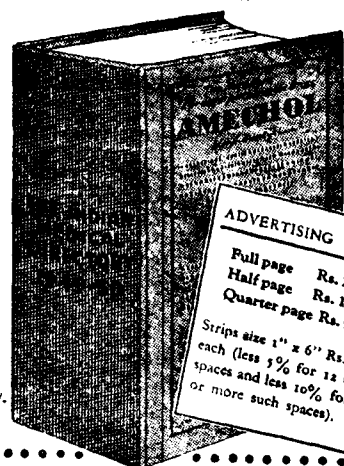
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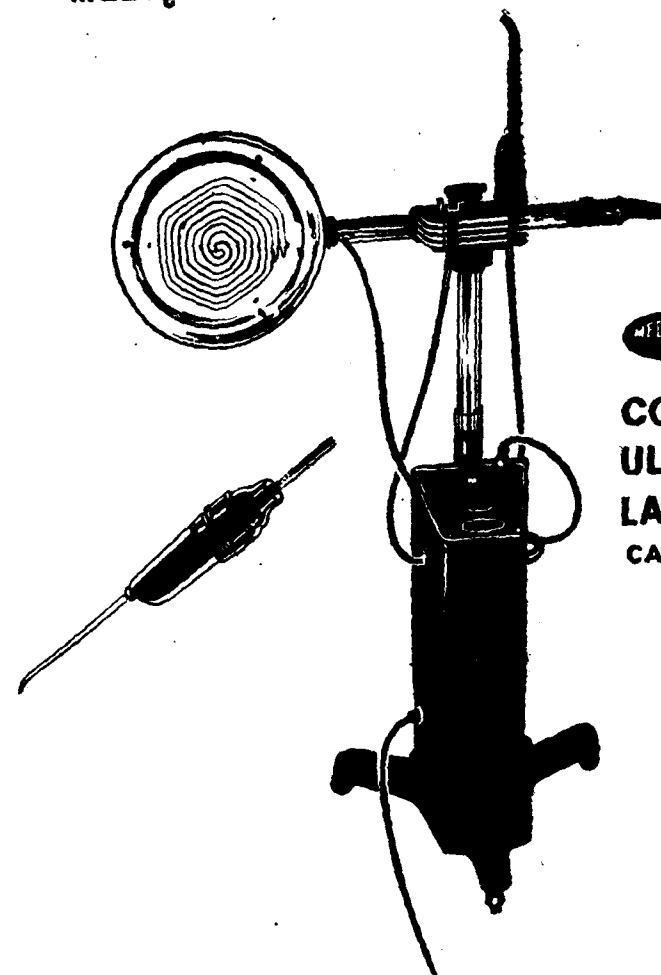
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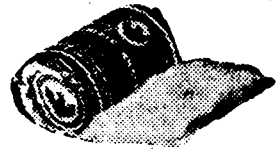
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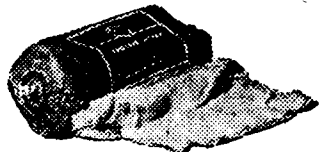
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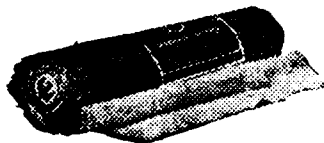
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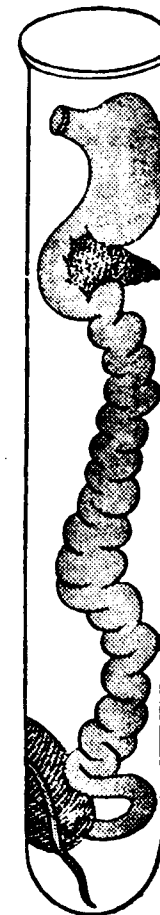
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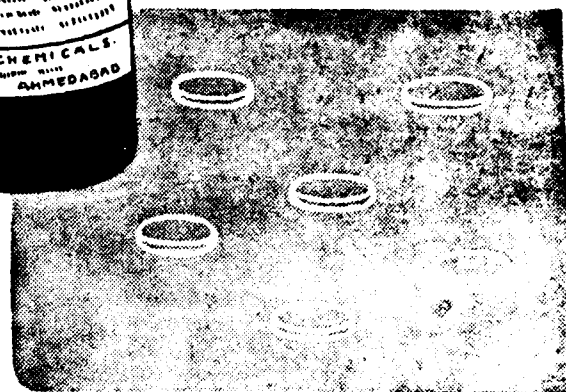
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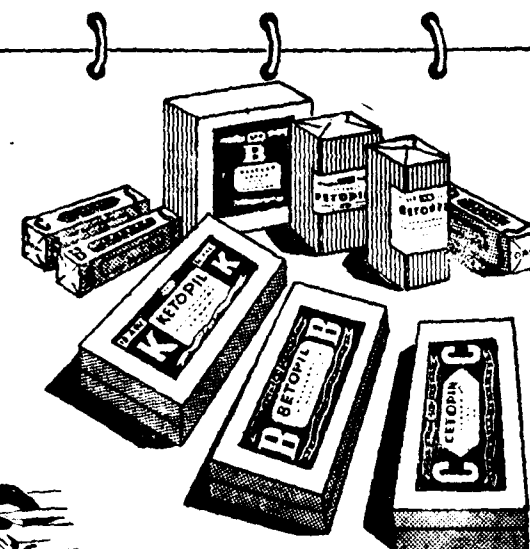
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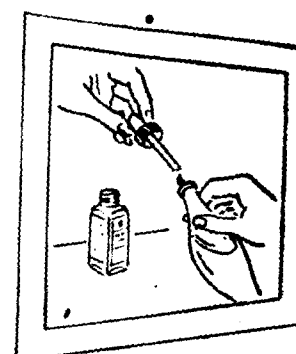
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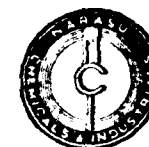
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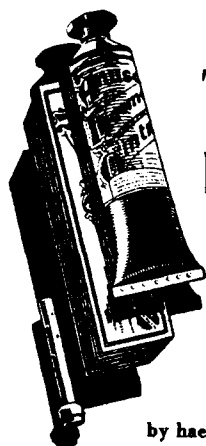
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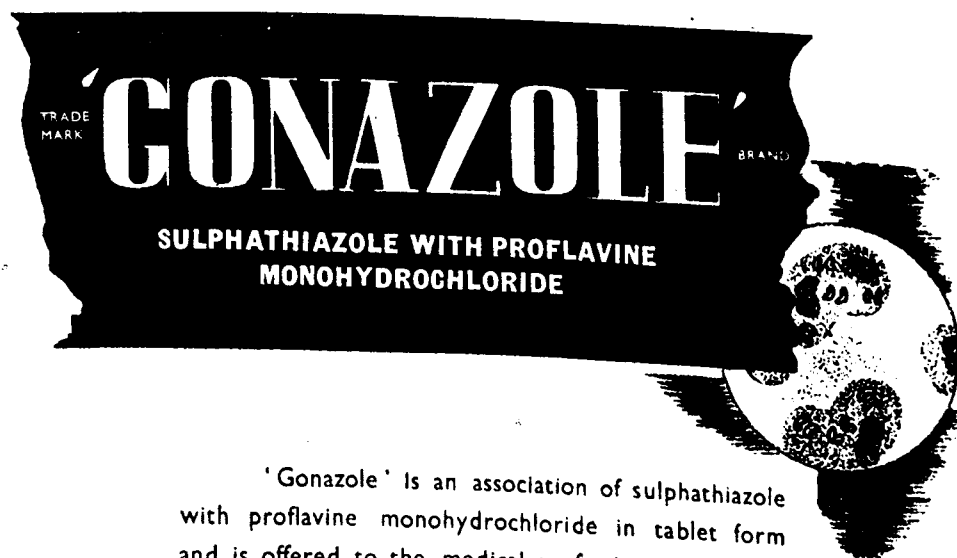
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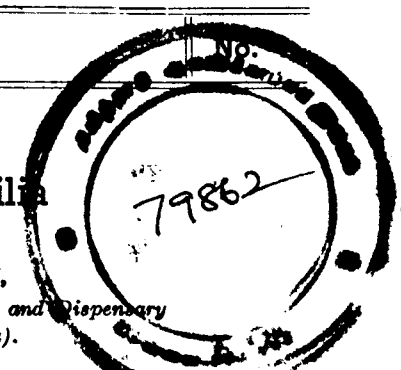
APRIL, 1949

Original Articles

Pulmonary Eosinophilia (Tropical Eosinophilia)

DR. J. R. HARRIS MANDODY,

Assistant Surgeon, I/c W.I.P. Railway Hospital and Dispensary
Casco da Gama (Portuguese India).



I. Introduction.—For nearly ten years there has been considerable interest aroused amongst clinical observers in India in particular, in a symptom-complex presenting massive blood-eosinophilia with associated lung changes in some of the patients suffering from asthma-like attacks and where aromatic arsenicals have been found to be a certain cure.

Since 1944 I have been able to record and study a few such cases in my practice in Goa. The present report covers 15 such cases. The first four of these were at first presented before the Scientific Session of Ordem dos Medicos da India Portuguesa (Goa) in September 1945.* It has not been possible to obtain X-rays and other analytical data in all cases except in six of them due to lack of proper facilities at the time they came under observation. These other nine cases, however, have been included because of the uniform therapeutic response to treatment. The economic conditions of the patients also have been a deterring factor resulting in incomplete clinical data. Some of the cases were referred to me by colleagues on having suspected them of cases of Pulmonary Tuberculosis. Follow up of the cases have been impossible because of the common accepted practice of the patients who once they feel better do not think it necessary to return or report to the doctor who attended on them till then. Most of them do not even return when they get a recurrence of the same condition.

* Boletim Geral de Medicina, 1945, Serie XXVII, page 1 (The official organ of the Ordem dos Medicos da India Portuguesa).

Almost all the available literature on this subject have been studied and particularly those published in India and other foreign journals in English. From this it would appear that there is yet no agreement upon the nomenclature of the syndrome and some do not even accept that this so called symptom-complex is a separate clinical entity. At present it is known to us under various synonyms, viz.: (1) Weingarten's syndrome; (2) Weingarten's eosinophilia; (3) Tropical eosinophilia; (4) Eosinophil lung; (5) Pseudo-tuberculosis of the lungs with eosinophilia; (6) A pseudo-tuberculous condition associated with eosinophilia; (7) Benign eosinophilia leukæmia; (8) Pulmonary eosinophilia; (9) Benign eosinophilia with pulmonary shadows; and (10) Eosinophilic lung; etc., etc.

II. History.—To Weingarten (1943) goes the credit of having grouped this symptom-complex into a new clinical entity. By calling it 'Tropical Eosinophilia' he has confined its incidence to the tropical regions. Subsequent observations by others have established the fact that this is not so. But a large majority of the patients suffering from this condition give a history of residence in marshy or swampy areas, if not along the sea coasts.

Other writers in India and elsewhere have observed and recorded identical or very nearly similar conditions earlier than Weingarten. It is also found that the use of arsenicals has been in vogue in India for a long time. Patel (1945) and Sundaram (1945) mention about the old asthma specialists of Bombay and the famous D'Souza's treatment for asthma in Madras,

In India Freimodt-Moller and Barton (1940) were probably the first to observe, in some cases referred to them as tuberculous, evidence of this symptom-complex. They collected and reported such cases under the name of 'A pseudo-tuberculous condition associated with eosinophilia'. According to them the condition was characterised by the evidence of high leucocytosis and eosinophilia, cough, fever, loss of weight and strength, blood-stained sputum of frank hæmoptysis, asthma or bronchitis in varying combinations and degrees, the X-ray picture resembling that of miliary tuberculosis and the absence of laboratory findings suggestive of tuberculosis. They considered it to be non-tubercular and probably allergic in origin.

Löffler (1932, 1936) earlier than this had described a very similar condition which according to him was characterised by a

- * (1) Sundaram, S. K., 1945, *Antiseptic*, Vol. 42, p. 432
- (2) *Indian Medical Gazette*, 1945, p. 52, Abstract from *Lancet*, 1944, p. 606.
- (3) Weingarten, R. J., 1943, *Lancet*, i., p. 103.
- (4) Choudhuri, R. N., 1943, *I.M.G.*, LXXVIII, p. 575.
- (5) Treu, R., 1943, *I.M.G.*, LXXVIII, p. 70.
- (6) Freimodt-Moller, C. and Barton, R. M., 1940, *I.M.G.*, LXXV, p. 607.
- (7) Simeons, A. T. W., 1943, *I.M.G.*, LXXVII, p. 271.
- (8) Mandody, J. R. H., 1945, *Boletim Geral de Medicina*, XXVII, p. 1.
- (9) Patel, Nathooobhai, D., 1945, *The Indian Physician*, Vol. IV, p. 93.
- (10) Owen, J. R., 1943, *The Indian Physician*, Vol. 11, p. 412 and Gupta, S. P., 1945, *J.I.M.A.*, Vol. XIV, p. 102.

transitory pulmonary infiltration with eosinophilia, the X-ray picture suggestive of miliary tuberculosis, running a benign course and usually clearing up spontaneously in a few days or weeks. Nothing much is yet known about its ætiology. It is presumed to be of an allergic nature, probably an allergic pneumonia of an atypical type. It is at present known as 'Löffler's Syndrome.'

Saint Etienne (1938) reporting on a similar condition considered it as a definite clinical entity. Since then several observers have reported somewhat identical cases in India: Treu (1943), Simeons (1943), Owen (1943), Heilig and Visweswar (1943), Vaidya (1943), Patel (1943), Chaudhuri (1943), Roy and Chakrawarty (1943), Shah (1943), Menon (1945), Sundaram (1945), Lal (1945), Gupta (1945), Froilano de Melo (1944-'45) from Portuguese India, Mandody (1945), Carter, Wedd and d'Abrera (1944) from Ceylon, Parsons-Smith (1944) of an English Airman who was never in India, but had lived in Egypt for 10 months. Emerson (1944) in a non-Indian who had stayed in India for 4½ years, and Soysa and Jayawardena (1945) of cases seen in South East Asian Command among Ceylonese soldiers. Also Apley and Grant (1944) in men invalided to England from the East.

III. Definition.—There is yet no agreement for calling this symptom-complex a disease entity and therefore an attempt to define it will be too early. Massive blood eosinophilia with associated radiological lung changes yielding to arsenicals being the deciding factor, the definition given by Sundaram (1945) appears to me to be very apt. It is as follows:—"... is a chronic disseminated, focal broncho-pneumonic infiltration of the lungs, with eosinophilia of the blood and sputum. It undergoes spontaneous remissions and exacerbations over several years and completely remits only on arsenical therapy."

IV. Geographical distribution.—It was at first believed that this condition was found only in the tropics and along the coastline. Weingarten (1943) was the first to postulate this. Of the 15 cases seen by me 11 have come from the coastal areas within three miles of the sea in Portuguese India, 2 from Bombay but natives of Goa, 1 from Africa, also a native of Goa, 1 from Kolhapur (Deccan) who was born and bred there for the whole 18 years of his life and got the attack there. That this condition is widely distributed in India with relatively high incidence in certain localities is not now disputed and the reports of the cases in India in the literature will also confirm it. Cases are being reported from non-tropical areas also. Therefore it will not be accurate to say that it is geographically restricted in its distribution.

V. Seasonal variations.—There is no acceptable evidence available upto now to show that it has any definite variations in its manifestation depending upon the seasons. No such indication was observed in any of the cases seen by me. But the influence of

environments has been established, it may be said, as an ætiological factor such as residence in swampy areas or on the sea coasts. The asthma-like attacks are in a few cases seen to have been precipitated by exposure to cold winds and during monsoons rightly observes Joseph (1946) in a study of 16 such cases recently by him from Manavadar State.

VI. Age and sex incidence.—This is not established yet. It appears to affect mainly adults. The very young and the old probably are not prone to it. The ages in the present series vary from 13 to 54 years. The cases reported upto now that I have seen vary between 7 and 55 years. It is most common between 15 and 45 years in the opinion of Weingarten (1943).

So also is the question of sex. Males seem to predominate. In the present series there are 12 males and 3 females. Several factors have to be taken into consideration before declaring that the incidence in this condition is lower in the females. Patel (1945) is of the opinion that the higher incidence in males does not suggest sex as an etiological factor because it may be due to a larger number of males seeking medical advice or leading a more exposed life etc.; and in my opinion the cultural and social standards of the people also have no important bearing on the question.

VII. Occupation and individual characteristics.—Occupation does not seem to have any influence. In the present series the following were found:

Businessman	.. 1	Sailor	.. 1
Clerk	.. 1	Shoemaker	.. 1
Cook	.. 1	Shopkeeper	.. 1
Fitter	.. 2	Student	.. 2
Housewife	.. 3	Tailor	.. 1
Machineman	.. 1		

Habits like smoking, addiction to intoxicating drugs and beverages, food habits and other habits due to social status do not appear to have any bearing.

Racial character and caste do not also seem to have any bearing. Of the present series 7 belonged to the better class and 8 to the working class. 5 were Christians, 4 Mohamedans, 5 caste-Hindus and 1 low-caste. Other races resident in India appear to be equally prone as cases are being reported of such cases occurring in Europeans, Americans and Arabs in India.

Only in one case was a history of allergy in the family obtained with a certain amount of certainty. Intradermal histamine test was not carried out in any of the cases nor Tuberculin tests due to lack of facilities for doing same.

Table No. 1 on page 245 shows the occupation, individual characteristics, duration of the disease prior to treatment and place of residence in tabulated form.

TABLE No. 1

Cases	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
Occupation	Housewife	Shopkeeper	Housewife	Machine-fitter	Clerk	Student	Tailor	Housewife	Cook	Merchant	Sailor	Shoemaker	Student	Machine-man	Fitter
Race or caste	Chris.	Caste-Hindu	Caste-Hindu	Moha.	Chris.	Chris.	Moha.	Caste-Hindu	Chris.	Caste-Hindu	Moha.	Harijan	Caste-Hindu	Moha.	Chris.
Food habits	Mix.	Veg.	Veg.	Mix.	Mix.	Mix.	Mix.	Veg.	Mix.	Veg.	Mix.	Mix.	Veg.	Mix.	Mix.
Alcohol	Med.	Nil.	Nil.	Nil.	Med.	Nil.	Nil.	Nil.	Exce.	Nil.	Nil.	Exce.	Nil.	Nil.	Med.
Tobacco	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Med.	Nil.	Med.	Nil.	Nil.	Med.	Nil.	Nil.	Med.
Other intoxicants	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	?	Nil.	Nil.	Nil.	Nil.	Nil.	?
Family history of allergy	Nil.	Father had asthma	?	?	?	?	?	?	?	?	?	?	?	?	?
Duration prior to treatment	2 yrs.	3 yrs.	1 yr.	5 yrs.	1 yr.	2 yrs.	6 ms.	2 yrs.	2 ms.	1 yr.	?	?	2 ms.	2 ms.	2½ ms.
Residence with reference to sea coast	Sea coast (Goa)	Sea coast (Goa)	Sea coast (Goa)	Sea coast (Goa)	Sea coast (Goa)	Kolha-pur (Deccan)	Bombay	Sea coast (Goa)	Bombay	Sea coast (Goa)	Sea coast (Goa)	Sea coast (Goa)	Sea coast (Goa)	Sea coast (Goa)	Africa

VIII. Symptomatology and clinical picture.—Chronic paroxysmal cough and asthma-like attacks of spasmodic dyspnoea were the most common and important complaints of the patients in this series of 15 cases under review. All had low irregular fever, anorexia, loss of weight and lassitude. Gastro-intestinal symptoms were not constant. In 5 the bowels were costive, 7 had regular bowel movements, in 2 the bowels were irregular and in 1 the bowels were costive only when the attacks were present. There was a previous history of passing of blood and mucus in stools in 7 of the cases. In one there had a definite history of a past attack of amœbic dysentery which was diagnosed microscopically. In another case also a history could be got of an attack of diarrhoea with mucus and blood where the stools once contained *entamoeba histolytica*. None had night sweats except one. There was no history of frank hæmoptysis in any except one who had for three days coloured sputum in the mornings for which he came originally to the writer for treatment. Three other cases also gave a history of having had blood-stained sputum before. One case had attacks of urticaria and eczema along with attacks of asthma-like dyspnoea and paroxysmal cough. Another had only slight itching of the whole body every time attacks of asthma appeared. The attacks of urticaria in the former case were very much distressing to the patient so much so that every time she had these attacks together it would very often result in cyanosis and collapse. None of them had any noticeable enlargement of the spleen and liver even in the febrile periods. During the attacks of paroxysmal cough or the asthma-like dyspnoea the patients would look very much like a case of the usual bronchial asthma. Two of them were inclined to think that they got severer attacks at the phase of the new moon; but I have not been able to confirm this. The others did not think that their attacks had anything to do with this at all. Their attacks used to come on at any time or part of the day or night. The case that used to get the severe type of urticaria used to get them for the slightest of reasons such as excitement or exertion or the proximity to a fire (kitchen) or even the mere thought of doing something exciting like going to a party or to a dance etc. At other times nothing much would result from any of these things. Four of them were accustomed to constant attacks of "colds".

Brief case histories of these cases are given below :

CASE I.—M.E.M., female, married, 29, housewife. Resident in Goa for 8 years.

Family history :—Father living and well. Mother died of some lung complication at the time the patient was 2 or 3 years old. 3 sisters and 3 brothers all living and well. Husband living and well. 2 sons and 2 daughters living and well. No abortions and no miscarriage.

Present illness :—Asthma-like attacks since 2 years. Also urticaria from that time. Lately eczema also. Attacks of asthma and

urticaria come on at any part of the day or night. Worse on slight exertion, excitement or on coming near to a fire or heat. Otherwise free. On these occasions no trouble at all even if excited or exerted etc. Sputum thick, frothy with greyish lumps. Bowels irregular, low grade fever, but not always. Appetite poor. Sleeps poorly only when attack is on. Urticaria has no relation to food or drinks. Not lost much weight. Weakness. About a year ago slight blood-stained sputum was noted. No night sweats. Constant "cold".

Previous history :—Had kept good health all these years. Has had repeated attacks of diarrhoea with blood and mucus in stools. Stools have been positive for *entamoeba histolytica* repeatedly.

CASE II.—V.V.S., male, 31, bachelor, shop-keeper. Resident in Goa always.

Family history :—Father died of asthma (?). Mother committed suicide. 4 brothers and 1 sister living and well.

Present illness :—Cough 3 years. Thick yellow sputum. Constant "colds". No definite fever but occasionally slight feverish feeling towards evening. Appetite poor. Lost weight. Bowels regular, urine free. No night-sweats. Slightly blood-stained sputum once about 2 years ago. Weakness.

Previous history :—Diarrhoea with mucus but no blood. Measles and chicken-pox as a child.

CASE III.—H.S., female, 21, married, housewife. Resident of Goa.

Family history :—Father died of diabetes. Mother living and well. 3 brothers and 2 sisters living and well. Husband living and well. 1 son and 2 daughters living and well. No abortion and no miscarriages.

Present illness :—Nearly a year; cough, dyspnoea and fever (evening rise). Occasionally no fever. Appetite good. Bowels costive. Urine free. Sleep good. Attacks worse towards the phase of the new moon. Sputum thick, yellow and frothy. No hæmoptysis. Lost weight considerably. No night-sweats. Constant "colds".

Previous history :—Attacks of diarrhoea repeatedly. First of which was at 8 years. Mucus but no blood present. Pneumonia at 17 years.

CASE IV.—Sk., D. K., male, 54, married, fitter mechanic, Resident of Goa.

Family history :—Father died of fever (?). Mother died of old age. 3 brothers dead. 2 sisters living and well. Wife living and well. A son and a daughter living and well.

Present illness :—Cough, dyspnoea and occasional high fever. 5 years. Sputum thick and frothy. Slight hæmoptysis once or twice

within the last three years. Appetite poor. Loss of weight. Great weakness. No night-sweats. Bowels costive when the attacks are on. Constant "colds".

Previous history:—Diarrhoea with mucus and blood several times when young. Malaria repeatedly before but none for several years now. Some time last year had an attack of diarrhoea with prolapse of anus. The stools had been positive for entamoeba histolytica.

CASE V.—J. M. F. B. B., male, 28, bachelor, clerk. Resident of Goa.

Present illness:—Cough, dyspnoea, 1 year. At first constant but now occasionally. Appetite fair. Lost weight. Bowels regular. Urine free. Sputum thick, yellow and frothy. No hæmoptysis or colour in sputum at any time.

Previous and family history:—Nil.

CASE VI.—E. M. male, 18, bachelor, student. Resident of Kolhapur (Deccan).

Family history:—Parents living and well. 2 brothers and 2 sisters living and well. 2 sisters dead when very young.

Present illness:—Cough, dyspnoea. 2 years. Great weakness. Bowels regular. Urine free. Itching of whole body. Frothy sputum. Lost weight. No fever.

CASE VII.—Md. G., male, 27, married, tailor, Bombay (Native of Goa).

Family history:—Parents living and well. 1 sister living and well. Wife living and well. 2 sons dead.

Present illness:—Cough six months with thick sputum. Wheezing worse at nights. Profuse sweats. No hæmoptysis. No fever. For some time at the start there was fever. Dyspnoea. Appetite poor. Bowels costive. Urine free. Sleep fair. Lost weight.

Previous history:—No illness at all at any time.

CASE VIII.—S.M., female, 30, married, housewife. Resident of Goa.

Family history:—Nil. Husband living and well. No children. No abortion. No miscarriage.

Present illness:—Cough, breathlessness. 2 years. Bowel regular. Appetite fair. Urine free. Lost weight. Sputum thin. Occasional fever. Lassitude.

Previous history:—No illness.

CASE IX.—J.V., male, 32, married, cook, Bombay (Native of Goa).

Family history:—Parents dead, one brother living and well. Wife living and well. No children.

Present illness:—Palpitation. Chest pain. Cough. Sputum thick and for three days now blood stained in the mornings. Appetite poor. Sleep fair. bowels regular. Urine free. Lost 10 lbs. weight in 2 months. No fever.

Previous history:—Measles and chicken-pox as child. No other illness. Had the uvula snipped 2 months ago.

CASE X.—P.M.V., male, 38, married, businessman. Resident of Goa.

Family history:—Wife living and well. One son dead. Parents dead.

Present illness:—Cough, dyspnoea, 1 year. Bowels regular. Urine free. Appetite fair. Sleep fair, no fever. Lost weight. Sputum thick.

Previous history:—Syphilis 3 years ago. Malaria very often. Asthma (?) 15 years ago. Free till now.

CASE XI.—I.I., male, 50, married, sailor (country craft). Resident of Goa.

Family history:—Nil.

Present illness:—Fever, dyspnoea. Cough. Long duration. Bowels regular. Urine free. Sleep fair. Appetite fair. Not lost weight appreciably. No hæmoptysis. Sputum thick and frothy. Lassitude marked.

Previous history:—Several attacks of diarrhoea with passage of blood and mucus.

CASE XII.—V.G., male, 31, married, shoe-maker. Resident of Goa.

Family history:—Nil.

Present illness:—Sense of tightness in chest at nights. More left side. Cough. No fever. Giddiness. Sense of itching all over the body. Palpitation. Bowels regular. Appetite poor. Sleep fair. Sputum frothy.

Previous history:—Has had repeated attacks of diarrhoea with passage of blood and mucus.

CASE XIII.—S. K., male, 13, bachelor, student. Resident of Goa.

Family history:—Nil.

Present illness:—Cough, dyspnoea. 2 months. Bowels costive. Urine free. Sleep poor. Occasional fever. Not gaining weight. Sputum thick.

Previous history:—Nil.

CASE XIV.—Sk. I.H., male, 49, married, machineman. Resident of Goa.

Family history:—Nil.

[illegible]

of this condition remains unsettled the proper diagnosis of this symptom-complex would remain one of trial and error.

Prognosis.—No case is yet reported of having been fatal so far as my personal knowledge goes. There have been deaths in persons suffering from this condition due to intercurrent diseases or other causes. The present presumption is that this condition assumes a chronic stage and remits only with the use of aromatic arsenicals or other allied drugs. Exacerbations during the course of the treatment are usual and are to be expected. It is however too early to say anything dogmatic about the prognosis of this condition.

XI. Treatment.—In two cases autohæmotherapy was tried but with no apparent benefit. 6 injections of autoblood were given in each case.

When put on aromatic arsenicals the response was spectacular and uniform. Acetylarsan, Neo-arsenobillon and Stovarsol were the drugs used. Acetylarsan was given every fourth day intramuscularly starting with 1 c.c. increasing gradually to 5 c.c. maximum. The course consisted of 6–8 injections and the same was found necessary to be repeated in most of the cases. Neo-arsenobillon was used in doses of 0.15 to 0.45 gm. and the method suggested by Weingarten was adopted giving weekly intravenous injections not exceeding 6 such injections at a time. Here also a repetition of the course was found necessary in some of the cases. The dose of Stovarsol was not more than 6 grains a day for a period of eight days at a time and repeated after an interval of 8 to 10 days. The response was not so spectacular as was obtained with Acetylarsan and Neo-arsenobillon. Stovarsol had to be given over a long period.

Injections of Calcium Gluconate and Vitamin C were given in all cases. Oral preparations containing poly-vitamines were also given as most of them were found to have manifest vitamin deficiencies like cheilosis, pellagral patches etc. Iron and liver were also ordered orally in addition to parenteral liver.

Majority of the patients got relief of the actual attacks of dyspnoea and paroxysmal cough with that useful preparation Zephrol Cough Syrup. Adrenaline injections were required only in very severe attacks.

The flare-up of the symptoms noticed with the use of Acetylarsan and Neo-arsenobillon did not hinder the continuation of the treatment in any of the cases.

Chemotherapeutic agents and antibiotics like Sulpha drugs and Penicillin were not tried as all these cases were cases seen in private practice.

XII. Discussion pathogenesis.—Various theories are put forward to explain this condition. Massive eosinophilia being an

invariable factor of this syndrome the question of allergy stands foremost in its consideration. Oriel (1937) writing on Allergy states as follows: "One change, however, is accepted by all, namely, the presence of eosinophilia in allergic conditions. The number of eosinophils in the circulation is increased and a local concentration of eosinophils occurs at the site of the allergic reaction. The exact significance of eosinophilia has not been determined, but it is generally believed that they are associated with the presence of foreign protein in the system and may be concerned with its destruction. The injection of foreign proteins into animals produces an eosinophilia, as also does the presence of parasitic worms." Also we see Musser and Wintrobe (1936) stating that: "Eosinophils are much less actively amœboid than neutrophils and their chief function probably consists in bringing about the disintegration and removal of foreign proteins from the tissues." The eosinophilic count has been found to be high in all allergic states produced by pollens, bacteriotoxins, proteins, helmintho-toxins, mite infections, gastro-intestinal causes and benzene and nirvanol poisoning etc. Also in various other conditions eosinophilia is encountered. Injections of Liver Extract, Acetylcholine and Insulin have been found to produce eosinophilia. In allergic bronchitis produced by inhalation of house dust, orris root, yeast etc. the eosinophilic is high. Weingarten claims that his is a new and upto now unrecognized clinical entity, totally different from that of Löffler's syndrome. The contention that this, his syndrome, is not an allergic phenomena is not accepted by all. Though it is now accepted by most observers that the syndrome of Löffler and that of Weingarten are two different ones in many respects there seems to be no agreement on the point of allergy being an important ætiologic factor in the syndrome of Weingarten.

The question of pathogenesis has been more difficult to settle because of this disease entity being non-fatal benign condition and very few pathological studies have been possible upto now. Meyenburg (1942) probably was the first to report on the autopsy findings on four of his cases and later (1944-'45) one more case of a similar nature. Viswanathan (1947) has reported on a case that had died of arsenical encephalopathy during the course of treatment for this condition. Both these studies appear to establish the nature of the miliary shadows seen in the X-ray plates of such patients. In Meyenburg's studies the common finding was the "exudative pneumonic character of the pulmonic foci with an impressive richness of eosinophils." Giant cells were not found in all the cases, whereas in the case studied by Viswanathan he found giant cells which were thought to be mononuclear cells that had fused together. The nuclei varied from fifteen to twenty in each cell and he also noticed that they all were gathered together in the centre.

Virus ætiology as suggested by some observers is yet to be established though the present trend of opinion appears to favour it. Viswanathan and Natarajan (1945) have tested sera of cases diagnosed as 'tropical eosinophilia' for cold agglutinins. Out of the 61 cases thus tested 53 gave positive cold agglutinins in varying titres some of them giving very high titre values.

Menon (1946) who had envisaged the possibility of this being an infective condition has brought forward experimental evidence by intraperitoneal injections of blood from cases of 'tropical eosinophilia' given to guineapigs.

Similarly much interest has been aroused in the observations of Carter, Wedd and d'Abrera (1944) regarding the occurrence of mites in the human sputum with blood eosinophilia.

XIII. Summary.—1. A detailed study of six cases and nine more of 'Weingarten's syndrome' is presented.

2. The commonly accepted name 'Tropical Eosinophilia' tends to limit its occurrence to the tropics whereas it is now definitely known to be present in other than tropical regions and therefore it is suggested that the name 'Pulmonary' Eosinophilia' is more suitable.

3. The uniform response to arsenicals of this syndrome is established.

4. It has not been possible to weigh the trends of opinion as to its ætiology due to the lack of sufficient evidence and experimental data in the various literature studied.

5. Pulmonary eosinophilia (tropical eosinophilia) is a definite clinical entity.

6. Radiological and hæmatological examinations are very essential to establish the diagnosis of pulmonary eosinophilia.

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Ear Discharge (The Running Ear)*

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THIS is a very common complaint, especially in childhood. It is usually associated with a chronic nasal discharge as well. An attack of measles or influenza, sometimes gives rise to certain complications, by the spread of the infection, from the throat to the lungs or to the middle ear, through a small canal, called the Eustachian tube. Inflammation sets in, with congestion and pain and, probably, a slight rise of temperature also.

The normal pearly white tympanic membrane, which forms the external wall of the bony middle ear cavity, gets red and inflamed. The inflammatory products, as they increase in bulk, and unable to get out through the bony walls, follow the line of lesser resistance, and bulge the tympanic membrane outward, till it bursts finally, with a tiny perforation, due to the increased intratympanic pressure and inflamed condition of the delicate membrane.

If this perforation occurs in the lower part of the membrane, there is at least some chance for drainage; but, unfortunately, most often, it is formed in the comparatively weaker upper part of the drum, in which case, there is always a condition of only overflow of the pus, with retention and stagnation in the bony tympanic cavity. It is this phenomena, that gives rise to a chronic discharge from the ear—the so called running ear or chronic otorrhea.

The anatomy of this part of the ear is very complicated, and it explains the possible dangers of this apparently innocent discharge. The middle ear cavity contains three small bones, called the ossicles, connected to each other, and transmitting sound waves, from the drum to the inner ear, which contains the very sensitive organ of hearing, called the cochlea, and also three tiny bony

* Specially contributed to THE ANTISEPTIC.

semi-circular canals, controlling equilibrium or stability of gait etc. A chronic inflammation would naturally involve these ossicles and their delicate joints, impairing their proper function, and consequent deafness.

The hard bone behind the middle ear is called the mastoid process. It contains a number of air cells, the largest one being called the 'mastoid antrum.' All these are in direct communication with the middle ear cavity, through the upper part of the latter, called the "aditus or epitympanic recess." When the ossicles and bony middle ear are involved in a chronic inflammation, a sudden cold or any other circumstance that lowers one's vitality, easily allows the spread of the infection to the mastoid cells, with pain, tenderness and swelling in that region, along with a sharp rise of temperature, rapid pulse, and marked constitutional symptoms. Very often, these extensions are heralded by a sudden cessation of aural discharge. Mastoiditis is one of the commonest complications of a chronic middle ear disease. Less commonly, however, if the infection spreads into the inner ear, the patient would get giddiness and loss of equilibrium etc. The brain, its coverings, and important blood channels, are separated from the middle ear cavity and mastoid antrum by very thin bony partitions, through which infection may find its way out, giving rise to brain abscess, meningitis or sinus thrombosis. It is on account of these possible dangers, and also on account of impairment of function of such an essential organ, that people with a chronic 'running ear' are not certified as fit for any public service—army, navy, air-force etc. Even insurance companies do not like to take any risk on their lives, without an extra load.

From the short description of the seriousness of the 'running ear,' one can easily understand, how foolish it is for the ill-informed, to say that it is a trivial matter, and that it invariably disappears at adolescence. So, if a person complains of deep-seated ear pain, after an attack of measles or influenza, and especially, if there is slight rise of temperature, not relieved by some simple ear drops, like 5% Glycerine Carbolic etc., along with Sulphanilamide and even other latest therapeutic measures, within 2 or 3 days, be he a child or adult, it is always safer to see the condition of the drum under reflected light, and incise the membrane, to provide for sufficient drainage, instead of leaving it to chance, and take the risk of a tiny perforation in the upper part of the drum, resulting in overflow with retention. This simple operation is called "paracentesis tympanum." A stitch in time will save not only the trouble of loss of hearing, but also many other serious complications. Any of the modern remedies, including the famous Penicillin, will not be useful to remove pus. It may at the most allay inflammatory condition in the beginning, and promote early healing. But, pus anywhere has to be drained out. This is the time-honoured first principle of surgery, and it holds good even to-day.

A note of personal experience will not be out of place here. An average Westerner, even those who belong to the lower strata of society, seem to be highly nervous about 'small-pox and running ear.' But, in our people, even among the educated and the opulent, it is regarded as a negligible thing, in infancy. It is the screaming child that disturbs the father's sleep, that is brought to the doctor, just to silence him, than for the dangerous discharge for which the granny has got a dirty rag to be plugged with. In addition, the inevitable oil bath, with soapnut powder etc., makes the ear, a veritable cesspool with stinking, foul smelling pus, which the text books would describe as an evidence of bony involvement.

The operation of timely paracentesis, should be considered as prophylaxis against chronic otorrhea. If inspite of it, or without it, there is profuse thick creamy or stinky purulent discharge, it should be removed by swabs of hydrogen peroxide and sterile cotton wool, or by gentle syringing with warm boric lotion, though there is difference of opinion about the advisability of the latter procedure. The cavity is dried with sterile cotton wool, and dressed with 5% Glycerine Carbolic or Otosol-Sulphanilamide in glycerine base—along with oral administration of Sulphanilamide. After a few days, as the discharge gets less profuse and thinner, the meatus is cleaned as before with Peroxide of Hydrogen, dried with sterile cotton wool, and a 10% solution of Boric acid in rectified spirit, is dropped. This will also benefit those cases with extra granulations. A combination of both, i.e. H_2O_2 and Boric Alcohol, can be used by the patient himself at home, for cleaning and healing. He lies down on the sound side, pours a few drops into the ear, gently pulls the pinna of the ear outwards and presses the tragus,—the small triangular cartilaginous part in front of the ear-inwards. After a few minutes, he turns on the affected side to pour out the ear contents, dries it with sterile cotton wool, and puts the same drops once again, with the same manipulation, with a plug of sterile cotton wool finally. This process can be repeated once or twice a day, depending on the amount of discharge soaking the plug.

Lastly, when the ear is almost free from discharge, iodised Boric powder has to be insufflated, or even a pinch of plain Boric powder can be dropped into the ear once in 2 or 3 days by the patient himself.

During the course of the above treatment, one should take care not to introduce secondary sepsis, by way of soap water or dirty rags into the ear, and also to avoid catarrh and sepsis from the nose and throat, by nasal drops and warm saline gargles, after food, as nasal and oral hygiene. If inspite of the above regime, there is no improvement, certainly, local or constitutional causes, such as, adenoids, septic tonsils, chronic rhinitis and sinusitis or even anæmia, diabetes, albuminuria etc., are to be attended to.

Medicine and the State*

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THIS is only a simple discourse on certain principles and policy, and by no means a "blue print", for the *socialising of the medical services*. The new pattern of the modern State constitution and the Public services call for a review of our earlier concepts of medical service, both preventive and curative.

The supreme duty of man lies in service to man, the individual to the species. The individual is endowed with talents, that he should develop, to discharge this prime humanitarian function for the general good of his kind. The State in the abstract is no longer a sacrosanct or authoritarian idol of worship, but a righteous instrument of service to the meanest individual on the globe as a single corporate concern. The State is for the man, rather than the man for the State.

When humanity in the mass has been goaded on by accumulating misery and avoidable want, mostly of man's making or neglect, it is not surprising that revolutionary ideologies crop up from outraged confidence and trust, challenging the "bonafides" of the framers of State policy. The ignorant masses do not, cannot, in their pressing crises, stop to ponder and plan out ways and means to tide over emergencies; they are moved, even to violence, with menacing slogans that counsel extreme measures of despair, even to the point of racial suicide.

The seasoned statesman, confronted with the new situation, gets into a panic, and, relenting, rather late in the day, flaunts forth a belated "Beveridge" plan, a "Bevire" plan, or a Bhore scheme, on paper, which, without any visible and adequate ways and means, seems utterly inadequate to meet the situation that calls for a drastic and comprehensive change of outlook in the psychology of human relationships, rather than tinkering methods of charity or patch-work sought with one's gold resources or armed might. What hope is there if die-hard war-mongers still inflame passions and researches of statesmanship have suddenly unearthed a new species of the genus "homo", to wit, the "Common Man" (formerly a vagabond or a fakir) haunting the streets of prosperous cities of the world in quest of crumbs of food, of discarded rags, or of a tumble-down shelter. This species, after two total wars depleting the world's resources, and a third war in the offing, is now promised a higher *standard of living* than even before these catastrophes, when goods were not so scarce. They are now a potent power to reckon with, the product of a lop-sided economic maladjustment, bidding

fair to be top-dogs in the struggle for survival within one and the same species. The individual is to be paramount, subject only to the largest human interest, of which by his vote, he is the final arbiter. He is shedding his fatalism for a realism he can control. Through him, and by his mandate only, the State is to cater for the species in the aggregate. The socialistic State thus emerges out of the medley of politics of the past that enslaved and exploited, if they also cared for, the subservient and the weak. In their view, the State was deemed prosperous so far when a handful of millionaires largely furnished the State exchequer. But now, our new Constitution for the *people's government* prescribes: "One man one vote"; more than that; "one man one value". The value, then, is shifting, from the current coin, to the individual human being with hardly any pie in his Bank. The starving man is driven to eat up his last goose, rather than breed her for the eggs that others gather. Socialism has, therefore, to implement this doctrine, more or less amplified, into practical politics in every activity of the State including medicine.

Socialising Medicine

Essentially and pre-eminently a humanitarian service, a service of mercy, medicine and its satellite professions were a purely *social service* more philanthropic than gainsome, accessible to the poor and the rich in equal measure as a human obligation, although, recently, it is feared to be deteriorating into a down-grade commercial profession or trade where the quality of the service rendered is conditioned on the means or purchasing power of the patient treated. This certainly is unhumanitarian. Such an aspersion has to be looked into and rectified betimes. The pharmacists too have been making their hay while the sun shone. Under *socialism*, medicine is to be a *public function* of the State, by public servants paid to keep up the humane tradition that the common masses expect. Like the monster of 'black-marketing' the remotest suspicion of trading on human misery would send them furious and frantic. It has to be a *free service*, therefore, and as such, there is no place in it for any kind of fees and bills between the doctor and the patients. The new citizen demands it as his *right* and the doctor's *duty*, and not as a charity or a favour to a supplicant. The fear of fees and the high cost of medicines too often put off the early consultation so necessary for a cure. The very dread of a thumping bill beyond one's means may prove the last straw breaking the back of a convalescent. Quackery thrives when science is costly and scarce. Even the preventive doctors are said to be not quite immune from this ubiquitous virus! With payments abolished in hospitals, the doctors would be freed from the suspicion of harassment of patients by their subordinates. With free service to all, and the profit-trade-complex ruled out, doctors would far rather be inclined to *prevent* disease than be called upon to visit indefinitely the

* Paper read before the Travancore Medical Association.

hopeless and chronic cases. Further, the examining medico would not be haunted by provoking distractions that make his eyes stray from the patient's pulse to his purse!

Gandhiji's life was one sustained protest against the treatment of the under-dog by the older bureaucratic methods, shorn of the essence of humanity. It were poor consolation or charity to rob a man of his fundamental rights and then make the "*amende honorable*" by feeding him to let him live an emasculated existence. Gandhiji's famous "*mud-plaster*" in the place of our fastidious 'Antiphlogistine', his "*nature-cure*," and his austerity *vegetarianism* (that at any rate is handy for a rationed existence), and his spare loin-cloth—these but signify the spirit of humanity that should guide us in our ultra-scientific conceits. Our greatest redeemer, far from despising science, warns us not to desert the common man, our first charge in the maddening infatuation for scientific materialism. He would prefer the simple, even the primitive, happiness, to the delirious prosperity of an exploiting "gentlemanly" civilisation, with its hot-and-cold wars, with the atomic incubus on the top of it. Where science is labouring for complex and costly remedies for established diseases, often the result of intemperance or inebriation, Gandhiji has advised "*Prohibition*" (to some an unsavoury recipe, worse than castor oil!), that, at one stroke, strikes at the root of a great deal of misery, bodily, economic, moral and social, as also the inelegant toxic manifestations of alcoholism, a potent precursor of numerous maladies undermining the race. Not a mere negative stunt this! It is a *positive* constructive long-term plan of a genius with vision and foresight, to prevent troubles from which our posterity should be saved. Is not this design a *preventive treatment*, a preliminary treatment if you like, at once, of our sadly deteriorating health, our economics, and our morals? And it was evolved, not from the head of an accomplished statesman or from the bewildering laboratory of the scientist, but from the pure heart of one whose one passion was *humanity*, who also saw that science no respect of persons. In the truly socialistic dispensation of Mahatmaji's, science must *serve all*, and *not enslave* any one, nor pick the pockets of fellowmen, nations included! His 'Brahmacharya' should eliminate the venereal scourge of man. Science must not prostitute divine knowledge for unhuman, unsocial activities. The gain from prohibition is immense, the loss of revenue a more bagatelle.

Gandhiji's Harijan Reform (with its temple entry rights), contribute to establish that human equality that insists on simple sanitary reforms also to wipe out slums and ghettos, a standing disgrace to the profession of Public Health. Human equality is of the essence of communal and social health. If the State pleaded lack of funds for health reform, here are the newly emancipated

hordes that would stick at nothing until their minimum human demands are satisfied! Call it a clever ruse, or what you will, the great tactician has forced the hands of the State with various reform schemes, to save the world from the extreme cults threatening us. He allured mankind to a better moral and physical health, and led the way.

At this point we hear from follow practitioners: "Socialisation is all very well as an ideal. But what about the more humble of the profession who cannot keep the wolf from the door without some extra pickings through private practice? Further, doctors expected to be more altruistic than other professionals? Charity and humanity must begin at the home of the medico, as at other homes." These are pertinent queries. In socialism no unit or group is to be at an undue advantage or disadvantage from the service to the whole. The Madras Reorganisation (Medical) Committee recently reported that... "all entrants to the Medical Service shall be completely debarred from private practice, and the scales of pay, revised, making allowances for this bar." Apart from motives of high philanthropy or humanity, even as a business proposition, the community that contribute for our education through costly institutions, has a right to claim our services commensurate with its needs and resources. The Socialist State we have helped to set up, with Ministers drawing small salaries, could demand or exact from us, even by conscription, what it sorely needs. The better bargain, then, seems to be to agree gracefully to what you can get in fairness, rather than grouse, as certain medical groups are inclined to do elsewhere. The preventive arm of the service seeks no extra emolument by private practice that is interdicted to them altogether. This service has to be paid on a par with the curative arm of what is now realised as one and the same front against disease.

Having discussed the causes, the symptoms, the pathology, the course and possible complications and sequelae of the psychopathy of the social neurosis, the prognosis has, of course, to be guarded, but not hopeless, being a functional disease of which the causes are remediable if we treat it with courage, tact and humanity, considering the psychical imbalance and constitutional dyscrasias predisposing to relapses of convulsive, even maniacal seizures in epidemic proportions. We, Easterns, are adepts in acquiring skill in the modern *treatment* of disease, but are proverbially out-moded in our preventive methods. If the modern sanitation is beyond our reach, the modern treatment is squeezing our resources dry, not to mention its inaccessibility to the poor man who looks on and broods requital. Such a state of affairs should not be. Life is not pleasant near the crater of a volcano. Our great wizard redeemer foresaw this coming, and, by his words and acts electrified, mesmerised us into a hopeful, resurgent manhood by his magnificent service (alas!) to the utmost. It is now for our statesmen and for

the services and the people to follow religiously the great principles in spirit and in act. But the services can do little when statesmen cannot agree on the fundamentals and methods.

The professions have a hard task to reconstruct a shattered world with States' ideals in conflict. Things should move faster if doctors shed their horror of politics! Our hopes in the security of the "U.N.O." have not yet materialised. The doctoring of human affairs by the political doctors threatens a tragedy. The 'doctors' in conclave for a joint consultation at Lake Success or in Paris are of two opposing schools, differing violently before the very patients in the wards! The old capitalist treatment is confronted by the newer communist recipe. The patient trembles, placed between the prospect of the Atomic Nirvana as a last resort, and the ruthless chaos of the other, and consigns them both to another place. Is there no *'via media'*? An *avatar*, providentially appears on the scene with the commandment of *peace and ahimsa* to be achieved by *satyagraha* if the worst comes to the worst. The rivals are obviously not much impressed! Each protests he is for the *demos* and for the *democracy*, while jeopardising the very existence of the *demos*! The *via media* is to be a compromise with the old and the new cults of violence—if at all a compromise or a "synthesis" is possible between such varied and incompatible principles. (We are also talking of *synthesising* our medical systems, old and new, whether it is feasible or not!) When a compromise fails, our saviour's recipe holds the field, as that means a human, rather than the *in-human*, solution. If it is to be socialism, what kind and degree of it? The die-hards would artfully suggest a *homoeopathic dose* of socialism and put off the evil day, whereas the extreme malcontents are for drastic purges or a radical, *surgical* operation, once for all? We shall agree when statesmen differ? We, the true doctors, who are reputed to disagree by temperament, are however agreed on the humane nature of our profession. More doctors should enter and humanise our politics. If we can't prevent wars, we do the next best thing—try and mend the broken bodies (the results of inhuman wars) with our Red-Crosses and other humane measures, "after the act"! While statesmen hammer out some form of ordered truce or peace, how shall we plan our humanitarian programme? We need not quarrel about attempts of "*synthesising*" the ancient system of medicine with the modern system, now that the State has undertaken to protect the public from the dangers of quackery, by including the modern sister sciences of chemistry, physics, biology and even pathology, in the curriculum of teaching of the ancient system—that would in the end result in one and the same scientific system. We shall not, then, have surrendered unconditionally to antiquity—(our chemistry abandoned to the hoary alchemists!)

In our methods of treatment of the social neurosis, the statesmen should do nothing that would rub the people the wrong way,

to mar our humane aim by hasty measures, or provocative acts of the third degree. For example, the counter-irritation by lathi-charges are not to be recommended as a routine! In Travancore, the most thickly populated Province in India, the struggle for life has to be eased by helping the spread of peoples over the broader fields and prospects of greater India now providentially open to our children.

In the field of *preventive medicine*, our best results are obtained through prophylactic inoculations. That means that we are drawing heavily upon the individuals' limited capital resources, every time an epidemic threatens. And we know what his capital is, under "*inflation*" and "*controls*"! Clearly, this is not enough, as we wish his reserves to be sound and sufficient to stand the stress and strain of modern life with a prolonged life span. If inoculation is our *front line* of defence, this has to be supported adequately by developing the *Home Front*, the reservoir for recruiting resistance through personal and environmental hygiene, in our homes, villages and cities to ensure us our sinews of solid manhood for the national adventure. This long term plan has been long shelved by foreign interests that suppressed our initiative and then blamed our caste system and other irrelevant shortcomings for our vulnerability to Oriental epidemics. The stock excuse has been the lack of funds. Funds were exacted for wars of prestige and profit, but none for a tolerable human standard of life. The socialist plan of gathering money for the services is to tax the wealthy to pay for the rest. In Socialist Russia the industries are nationalised and the surplus profits out of them are utilised for the purpose. Our infant industries are too poor for this at present. A thousand crores is but a flea-bite for the sanitary construction of India's cities on the western model. But we need not slavishly follow the western models. What researches have we done to manufacture cheaper building materials and goods for sanitary schemes and for our daily use? Our type designs could stand a lot of improvement through the newly projected central planning service of Sanitary Engineering, making our homes fool-proof. We are not, surely, so hard up as to have to improvise mud huts for hospitals. We are not bankrupt of all initiative from our overhead planners. *Sanitary* planning must be in the hands of sanitarians who have studied the problem as their speciality rather than be entrusted to the civilian doctors trained and dedicated to the *cure* of disease. The linking of the two branches under one direction that is equipped with Public Health qualifications should testify to the people the connection between the two services in the single purpose of the eradication of diseases.

The public, now released from the authoritarian incubus, should realise that they are answerable for any act of commission or omission that makes or mars the security of life of the

community. Our social conscience needs a great deal of educating and quickening. Try to be your own "Bhangee" and then you would not dirty the road or despise your scavenger.

The medical profession has to tutor and discipline a susceptible proletariat in the art of community living. With the more liberal funds forthcoming in a constructive era of fervid enthusiasm, and without any unseemly protest as from other forms of vested interests, the health services should throw themselves heart and soul into raising the standard of health of the common man. Don't be obsessed by the costly Western schemes as our sole salvation for villages etc.

Socialism is no longer a mere dialectical philosophy of sentimentality. It is real; (rather much too earnest, perhaps). Sordid lucre is not its goal. It operates in the living present, humanity in our hearts and social justice as our guiding star overhead. It blesses him that serves, and him that is served. It pervades the race, even to the New World of wealth and power that is rather shy of it and has yet to fulfil to all humanity its solemn pledges, declarations of equal rights, in deeds as in words. To us in India, it is the resurgent vital impulse, released in our hearts by the stimulus of the new-won freedom. It has to be religiously guarded from corrupting and creeping gangrene from the periphery to terminate in the inevitable somatic dissolution. The stage is set for us to act our parts at liberty. It has received the blessings of the Great Father, its architect, the champion of the down-trodden, the major mass of humanity. The social health is in our keeping. Let us spare no effort, no sacrifice, to make our nation healthier, stronger and happier, in the brotherhood of a rejuvenated and lusty human race!

JAI HIND.

Tower View,
Karamanay,
Trivandrum.

Rapid Disinfection of Clean Unwashed Skin.—Gardner: *Lancet*, 13-11-48, pp. 760-763.

Rapid disinfection of unwashed skin (experimentally infected with bacteria) was shown to be effected by 2% iodine in 70% alcohol more rapidly than by any other substance (1948). Gardner has since continued his investigations with 1% Iodine in 70% Ethyl alcohol and smaller dilutions. If solution is allowed to act in wet state for 30 seconds 0.5% Iodine is sufficient. If the time can be extended to 2 minutes, no iodine is needed, since 70% alcohol alone gives disinfection in that time.

[NOTE.—The reviewer (T. N. S. R.) so early as 1937 demonstrated by a series of investigations (in the King Institute Laboratories) that 70% alcohol was a dependable and efficient disinfecting agent, and that higher strengths and even absolute alcohol, were not as efficient as 70% alcohol. Lower strengths were ineffective.]

T.N.S.R.

Health Security and Medical Assistance Scheme for Railway and Factory Workers

DR. B. L. CHOPRA,

Dist. M.O., East Indian Railway, Kanchrapara, West Bengal.

OF all the measures urgently required, health insurance, nutrition, housing, medical assistance and prevention of diseases clamour for immediate attention. A beginning should be made and as we gain experience, the scope of the scheme can be extended gradually and steadily to make it all comprehensive. Any national plan of amelioration and security will not go far unless it embraces other labour like agriculture etc. It may be that for agricultural workers we shall require a different scheme.

The problem must be studied in all its aspects and bearings and above all we have to count the cost and look to our finances. Many good designs in regard to quarters for Railway workers had to be considerably modified due to the cost and the finances in hand. The Mitra Committee appointed by the Railway Board in 1945 recommended a double-unit quarter with two rooms, a courtyard, a verandah, washing facilities and a store-room. This design has recently been considerably modified and at present new quarters are being built to austerity standards.

To run the scheme successfully a Senior Railway Medical Officer should be sent overseas for about six months to get training and diploma in industrial and preventive medicine. He should then be made responsible for organizing and running the scheme on the following lines. The nature of work calls forth the missionary spirit in the director of the scheme. We want men like Sir Henry Holland, Sir Wanlyss of Quetta and Miraj fame respectively. Now that we have gained independence, volunteers amongst doctors with this missionary spirit are required all over the country to work amongst workers and villagers for their treatment and uplift.

Prevention of disease.—In the realm of prophylaxis great strides have been made in recent years. Since 1939 important developments have taken place in the field of tropical medicine. This has resulted from military needs of World War No. II. Important discoveries on the preventive side are given below against different diseases:—

(1) *Malaria*:—The discovery that D.D.T. is an effective insecticide against mosquitoes, filth flies, lice and other orthopod transmitters of diseases has made possible the rapid control of malaria, filariasis, dengue, enteric, typhus and relapsing fever (louse infection). New and more powerful insecticides are on the horizon. Dimethy phthalate, Dibutyl phthalate, Benzyl Benzoate, Benzene

* Specially contributed to THE ANTISEPTIC.

Each factory has its own first aid post, staffed by workers who are trained by the service itself. If casualties require further treatment, they can obtain qualified medical attention at one of the two ambulance posts on the estate or at a central clinic which forms part of the local community centre. Seriously injured workers can be rushed to the clinic by a special accident van carrying a doctor and a nurse.

Mobile dressing station.—A unique feature of this service, which is already attracting interest in other countries, is a special mobile dressing station. This is a five-ton tractor unit, with a trailer-carrying can divided into two rooms—one for examination and the other for treatment. The van is used for re-dressing wounds at a distance from the central clinic and has reduced the time an injured worker spends away from the bench for this kind of treatment from several hours to a few minutes. It is claimed that the mobile dressing station is saving member-firms no less than 600 man-hours of productive time every month.

Also available as part of the service is a recuperation hospital, with a staff of highly-qualified rehabilitation experts.

Every month 1,000 new cases are treated by the service and the average attendance at the clinics is 3,000. This is an indication of the immense saving in ill-health and productive time effected by the service. At present the cost of the service is well above the sum contributed by the member-firms, but small in relation to the rising standards of health and output of workers. Until the scheme pays its way the extra cost is being met by the private concerns which first sponsored this service.

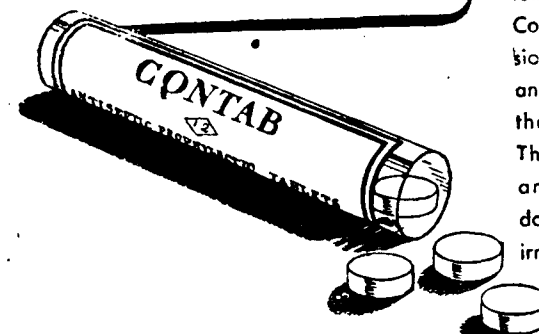
Only large factories can afford to supply comprehensive health services of their own. Of the 2,20,000 factories in Britain, under 5,000 employ more than 250 workers. Over 50 per cent of Britain's factory workers are employed in smaller establishments such as those sharing the health service at Slough."

My thanks are due to Dr. S. S. Kent, Chief Medical Officer, E. I. Railway, for his permission to send this article for publication.

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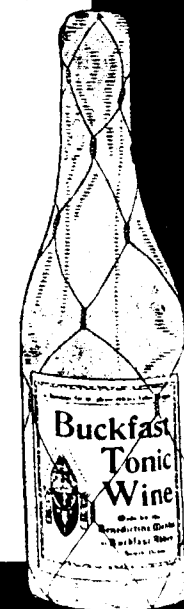
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T. S. A. PADMANABHAN, L.M. & S.,
Regd. Medical Practitioner, Badagara, Malabar.

(Continued from page 115 of Feb. '49 issue)

V. Snehas: (Ghrithas and Thailas) (Medicated Ghees and Oils)

Medicated ghees and oils are fats that have assimilated drugs thrown into them as solution or paste. While the ghees are mainly intended for use per os, the thailas are principally intended for use parenterally—as inunction, enema, nasal drops or douche etc. When given per os, the dose of either is one *pala*.

The preparation of Sneha is a somewhat complex process, and essentially consists in making the Sneha adsorb drugs in presence of fluid. Fluid is essential in the preparation of Sneha; it acts as a catalytic agent, and, without it, the drugs will not be cooked properly for digestion by the Sneha.¹ The fluid used may be simple water, decoction, milk or its product, or juice of vegetable or animal origin; and these may be added singly or in combination. Where no fluid is mentioned, water should be taken as having been prescribed.² In the vast majority of cases, the preparation of the Sneha will not be complete without the addition of flavouring substances or fragrances. Except in specified cases, these do not constitute a separate entity, but form a part of the Kalka or paste—the nonvolatile ones being treated exactly as other drugs in the paste, while the volatile ones (and certain others like rock salt) are thrown into the vessel into which the Sneha is to be filtered, and just before filtration.

In the regular course, the paste, the Sneha and the fluids are added in proportion of 1:4:16.³ In other words, with Sneha as unit, Kalka should be a fourth part of Sneha and the fluids should be four times Sneha. The above rule is only a general postulate and chiefly applicable when the quanta of the various ingredients are not specified.⁴ But, as will be seen below, the exact workings of the combination will depend on various factors.

The Sneha.—This may be ghee or oil. Where no specifications are made, cow's ghee and sesame oil should be used in the preparation of Sneha.

[Dr. Nadkarni suggests that Snehas should first of all be 'prepared' for use. They should be boiled to get rid of moisture, if

1. "Kalkasya samyak-paakaartham thoyam athra chathurgunam"—Sarangadhara.
2. "Anukthe drava-kaaryam thu sarvathra salilem matham"—Chakradatta.
3. "Kalkaal chathurgunes krithya ghritham vaa thailameva vaa | Chathurgune drave saadhyam...."—Sarangadhara.
4. "Jala-Sneha-oushadaanaam thu pramaanam yatra neritam | Thathra syaad-ousharthaal Sneha: Snehaal-thoyam chathurgunam"—Chakradatta.

any, through evaporation, and then purified. He suggests addition of a little turmeric juice for purifying ghee, and gives elaborate prescriptions for purifying the different oils. The books on Ayurveda the writer has do not mentions of such. The reader (and more so the student) is referred to bigger books for information on this; perhaps, Yogaratnavali or Bhaishajyaratnavali may be of help.]

The Kalka or paste.—It has been already said that the Kalka added should form a fourth part of the Sneha used. There are, however, wide variations to the above general rule, depending on the nature of the fluid used in the preparation of the Sneha.

Where simple water is used, Kalka should form a fourth of the Sneha; where decoction is used, it should be a sixth of the Sneha; and where juice (swarasa or vegetable juice) forms the fluid, Kalka should measure an eighth of Sneha—the last holds good also in cases where milk, curds, buttermilk or animal juice happens to be the fluid in the Sneha used.⁵ The rationale of the above is easy to understand. Simple water does not tax the “digestive” powers of Sneha to an appreciable extent; and while decoctions do so to some extent, milk etc. and the juices do it to a much greater degree. The Kalka, therefore, should be so apportioned in each case as to enable the Sneha to imbibe all the medicinal virtues of the different ingredients used in the preparation of the Sneha.

Sometimes, as in ‘*Vrisha-ghrita*’, flowers and flower-heads are prescribed as drugs for Kalka. In such instances, Kalka should form an eighth of Sneha, and four times “*Thoya*” (water or fluid?) should be used.⁶

Where the prescription but mentions the drugs and the Sneha without making any reference to the fluids, the drugs may be added to the Sneha as decoction and Kalka, or as Kalka alone in the presence of simple water. From the author's comments on his “*Pippaliyaadi-ghrita*” in Chakradatta, it would appear that Kalka cum decoction combination should be preferred in preparations of thailas while the Kalka cum water combination would be better for Ghritas.⁷

Sometimes, a prescription may direct that the Sneha should be prepared in decoction got with certain drugs, without mentioning anything about the Kalka. In such instances, the drugs should

5. “*Ambu-kwaatha-rasair-athra prithak snehasya saadamam |
Kalkasya-amsam thathra dadyaal-chathurtham shashtam-ashtamam |
Dugdhe dadhni rase thakre kalko deyo-ashtam-amsakz : ”*

6. “*Pushpa-kalkasthu ya : Snehasathra thoyam chathurgunam |
Snehe sneha-ashtama-amsacha pushpa-kalka : prayujyathe | ”*

7. “*Pippalyas-chandanam mustam-useeram katurahini*

*Pippalyadyamidam kwaapi thanthre ksheerena pachyastha
Yathra-adhikarane-na-ukthir-gawe syaal sneha-samvidhou
Thathraiva kalka-niryuha-avishyethe sneha-vedina
Ethad-vaakya-balenaiva kalka-sadya-param ghritam.*—Saragadbara.

be added as Kalka too in addition to their being used in the getting of the decoction.⁸

The fluid or drava.—As has been already said, this may be simple water, solution of drugs (decoctions), milk or its products, or juices of vegetable or animal origin.

(1) When water is prescribed, four times the measure of Sneha of it should be used and the Kalka must be ground in it.⁹

(2) *The Sneha-decoction*.—The general rule for the preparation of decoction for use in Snehas is to boil one part of drug in four parts of water and reducing the contents to get one part of filtered decoction.¹⁰ The rule, however, varies with the nature and amount of drugs used.

The general rule is to be applied where the drugs are green and juicy like *Cocculus Cordifolia*. Where the drugs are the green ones dried like the dried gooseberry or are neither very hard nor very soft as in the case of neem-bark, 8 parts of water to one of the drugs should be used (and the whole reduced to get one part ??); while, where the drugs are very hard as in the case of the heart wood of acacia catechu, one part of the drug should be boiled in 16 parts of water (and the contents reduced to give one part of decoction ??)¹¹ The foregoing stand to reason; for, while the active principles of green drugs are easy to extract, those of very hard ones are not so but require greater and more prolonged boiling in water for the purpose. In fact, the rule but follows the dictum “...*drava dwai-gunayatho bhavel...*” discussed in a previous chapter.

The rule per quanta is as follow: where the drug for decoction ranges in amount from one karsham to one palam, the drug should be boiled in 16 times water; from palam upwards to the end of Kudubam (i.e. to prastham), 8 parts of water should be used; and, for amounts of drug from one prastham to one khari, four parts of water should be used.¹² The principle involved herein is, perhaps, that the lesser the amount of water the sooner it is boiled down to reduction resulting in an incomplete extraction of drug-principles.

The rule by quality and that by quantity, when considered together, cause some confusion. In the former, the variation

8. “*Kwaathena kevalenaiva paako yatreeritham kwachil |
Kwaathya-dravyasya kalkopi thathra snehe prayujyathe |*

9. “*Dravena kevalenaiva sneha-paako bhavedyadi |
Thathra-ambu-pistha : Kalka : syal-jalam cha-athra chathurgunam |*

10. “*Nikshipya kwaathayel thoyam kwaatham dravyaal chathurgunam
Paada-sistham griheethwa cha sneham thena eva suadayel |*

11. “*Chathurgunam mridu-dravye katine ashtagunam jalam
Thatha cha madyame dravye dadyaal ashtagunam paya:
Athyantha katine dravye neeram shodasakam matham.*

12. “*Karshaaditha : palam yaaval kshipel shodasakam jalam
Thad-oordham kudubam yaavad-bhaved ashtagunam paya:
Prasthaaditha : kshipel neeram khari yaaval chathurgunam |*—Saragadbara.

depends on the softness or hardness of the drug, apparently irrespective of the amount of the drug used; in the latter, just the reverse is obtained—the variation depending on the quantity of drug used, and seemingly independent of the nature of the drug. Evidently, both the rules cannot be observed simultaneously without identifying and establishing aptly the connection, if any, between the two. It is to be hoped that some erudite brother or sister will throw light on the missing link.

(3) *The other fluids* :—The chief ones that are used in the preparation of Sneha are milk, curds, buttermilk, juice of vegetable origin and juice of animal origin; to the above may be added also whey ('*Masthu*').

It will be observed in the above that all the fluids (except perhaps whey) are much thicker than water and that all except whey and vegetable juices have a tendency to coagulate on boiling. It is, therefore, doubtful if they can serve the real purpose of fluids in the preparation of the Sneha, viz., to cook the drugs for digestion by the Sneha.

In fact, milk and the like will seem more fit to be considered as substances with medicinal virtues to be adsorbed by the Sneha. Hence, it is necessary to add water where these alone are used singly or severally¹³. And, according to Sarangadhara, a measure of water equal to four times that of the Kalka¹⁴ should be added where milk, curds, buttermilk or juice of flesh—all products of animal origin—happens to be the fluid prescribed.

(4) *Fluids and the Sneha, their proportion* :—It has been already said that in the preparation of the Sneha, the Sneha mixture must hold four Sneha-measures of fluid. "*.... Ghritam vaa thailameva vaa chathurgune drave saadyam....*" Since, however, a prescription for Sneha may contain any number of fluids, certain modifications to the general rule become necessary. The wise of old have judged that in Sneha-preparations containing 5 or more fluids Sneha-measure of each fluid must be added, while in Sneha-preparations with four or less number of fluids the measure of various fluids added should total four Sneha-measures. Thus, in a preparation containing 5, 6 or 7 fluids, one prastha of each fluid (making a total of 5, 6 or 7 prasthas respectively of all fluids) should be added to each prastha of Sneha; while in a preparation containing 1, 2, 3 or 4 fluids, a total of four prasthas of the different fluids should be added to each

13. "*Dugdha dadhni rase thakre Kalko deyo-ashtam-amsaka : Kalkasya samyak-pankartham thoyam-athra Chathurgunam*" —Sarangadhara.

14. The second line in the above verse is capable of two interpretations—the term "*Chathurgunam*" referring to the Sneha or the Kalka, and the line advising addition of four Sneha-measures of water or four Kalka-measures of it. But the context, especially when coupled with the verse immediately following (viz. "*Dravyaani yatra Sneheshu....*", quoted below) seems to favour the latter interpretation where '*Chathurguna*' has reference to Kalka, and water added in four Kalka-measures.

prastha of Sneha¹⁵. It will be observed that the general rule of fluid : Sneha :: 4 : 1 is closely followed as long as the number of fluids does not exceed four. Where the fluids are four in number, the measure of each fluid corresponds to the measure of Sneha, assuming that all the fluids are added in equal quantity. This equality—relationship between the individual fluid and the Sneha is extended to also where the fluids exceed four in number, irrespective of the fact that such a procedure will necessarily lead to the use of a greater quantity of fluids than what the rule will allow. Perhaps, the wise of old thought this better than a strict adherence to the rule as the latter will entail adding individual fluid in measure less than that of the Sneha; if the rule is strictly adhered to, the measure of individual fluid in a preparation holding eight fluids will be only half the measure of the Sneha, assuming that all the fluids are added in equal measure, and such a procedure may not fetch the full drug-value of the fluid.

[*Note* :—The aphoristic verses of ancient writers are more often than not interpreted by modern commentators diversely, each commentator commenting in his own way and according to his own light. This is seen also in the comments on the verses under discussion—viz., "*Dravyaani yathra.*" and "*Pancha-prabhriti yathra.*"

According to one commentator the verses mean that while the sum total of fluids added should be equal to the measure of Sneha where the prescription mentions five or more fluids, the quantity of each fluid should be four times that of Sneha where they are less than five in number. In the view of another commentator, every one of the fluids must have its share; but, while each fluid should be added in quantity equal to that of the Sneha where there are five or more fluids, each should be added four times the measure of Sneha where the fluids are less than five in number. And a few hold to the view expressed above in the main article. The first view is quite unacceptable; this will be evident from the comments below on the second view. The second view would purport to say that whereas a measure of Sneha with five fluids in the preparation should hold five measures of the latter, the same measure of Sneha with but four fluids in the preparation should hold sixteen measures of them, i.e. more than three times the former; this cannot and does not appeal to reason.

One commentator of Sarangadhara has commented on the verse under discussion totally differently, and dragging in water in the discussion. The couplets under reference are "*Dugdhhe dadhni rase thakre Kalko deys ashtam-amsaka : | Kalkasya samyak-pankartham thoyam athra chathurgunam || Dravyaani yathra sneheshu-panchadeeni bhavanthi hi | Thathra sneha-samaan aahur-yathaa-poorvam chathurgunam*" His reading of the couplets is: "Four

15. "*Dravyaani yathra sneheshu panchadeeni bhavanthi hi Thathra sneha samaan aahur-yathaa-poorvam chathurgunam*" —Sarangadhara.
"*Pancha-prabhriti yathra syur dravyaani sneha-samvidhou Thathra sneha-samaan aahur-arvak cha syaa-chathurgunam.*" —Chakradatta.

Sneha-measures of water should be added to the Sneha-mixture holding milk etc. to aid the digestion of Kalka; one Sneha-measure of water should be added to the Sneha-fluid mixture with more than five fluids and four Sneha-measures of water should be added where the fluids are four or less in number." The commentator here has, evidently, mingled the two ideas contained in the two couplets, carrying the one contained in the first couplet down to the second. This seems unwarranted. For one thing, the "*Chathurgunam*," it will appear, refers more to the Kalka than to the Sneha in the first couplet (this has been already discussed), while the term refers strictly to Sneha in the second couplet—whatever the reading thereof may be. For another, it rather passes one's comprehension why eight Sneha measures of water should be added where eight fluids are present and only four such are required where the fluids do not exceed four; the incomprehensibility becomes much more when it is accepted that the water is added only to aid the digestion of Kalka in which case the water to be added should vary with the amount of Kalka used and irrespective of the number of fluids the Sneha-prescription holds

The correct view will thus appear to be that mentioned in the main article—viz., that a Sneha with more than five fluids should be enriched by all the fluids, each equal in measure to that of the Sneha; while a Sneha with less than five fluids should be enriched by all the fluids combinedly equal to four times the quantity of Sneha.]

(5) *Sneha without Kalka but with fluids*:—In instances of this kind, Sneha is to be prepared in the fluids prescribed, observing the different rules mentioned under "Sneha fluid proportion."

Reduction of Kalka, or Maturation of Sneha : (Sneha-paka)—A Sneha-mixture becomes mature and fit for filtration when the Sneha has become impregnated with the drugs and got freed of moisture. Evidences of the Sneha having become mature are supplied by the changes in the Kalka and in the Sneha. When mature, the Kalka loses the muddy feel and appearance, can be rolled between the thumb and fingers into thin cylinders, and ceases to give the peculiar '*chada chada*' sound when thrown into the fire—the last being an evidence of freedom from moisture; the changes evinced in the Sneha are the development or cessation of froth in it according as the Sneha is oil or ghee respectively, and the exhibition by it of the colour, odour and taste of the drugs used.¹⁷

16. "Kalka-heenasthu ya: Sneha : Sa saadhya kevale drave."

17. "Varthival Sneha-Kalka : Syadyada-angulyaa vi-mardhitha : |
Sabda-heeno-agni-nikshiptha : Sneha : Sidho bhavel-thada |
Yadaa-phenolgamas-thaile phenas-Saanthis-cha Sarppishi |
Gandha-varna-rasa-ulpashhi : Sneha : Sidhas-thada bhavel | —Saragadhara."

The degree of maturation a Sneha is brought to depends on the use to which the Sneha is intended, and is therapeutically of three kinds—the "*Mridhu*" or soft, the "*Madhya*" or intermediate, and the "*Khara*" or hard.

The Mridhu-paka:—Here, the mature Sneha resembles a honey-wax mixture before separation. The reduced Kalka is soft, smooth and soaked in Sneha—so soaked that the residuum after filtration still contain Sneha which is difficult of extraction in full even by pressure. This variety is the Sneha of choice for nasal medications.

The Madhya-paka:—The Sneha at this stage is more or less comparable to a super-saturated solution with crystals in it. The reduced Kalka here is shiny and transparent, and delicate and pleasing—*Komala*; it is resinous in nature, and has the features of lac; when a lump of it is thrown against bronze or some metal, the lump gives a ringing sound. The Sneha does not soak it, can be drained off with ease, and extracted in full by pressure. The *madhya-paka* is all-round paka and can be used for all therapeutic purposes—per os and parenterally.

The Khara-paka:—Here, the boiling has been brought to the maximum degree from medicinal point of view. The Sneha at this stage is freed of all moisture; this is evidenced by the instant production of the peculiar '*pada pada*' noise produced when pieces of fresh betel leaves are thrown into water-free oil at high temperature; in fact, the betel-leaf test is the test usually employed to fix this stage—indeed, clever and experienced pharmacists do not wait for this exact point but remove the vessel off the fire just prior to it, since the heat of the vessel and the contents will continue to act even after removal from the hearth. As the contents now contain no water, any further exposure to fire will char the Kalka and the charred Kalka will necessarily affect the Sneha adversely. The Sneha at this stage can be drained off in full, and even without pressure. The reduced Kalka is sandy to appearance, gritty to feel, and gives the *kiri kiri* sound when rubbed between the thumb and finger—as sands do. *Khara-paka* is the choice of Sneha-paka for bathing oils for head. "*Mridhurnasye Khara-abhyamge paane Vasthyow-cha Chikkana*—(Vagbhata)."

The under-and over-done Snehas.—For therapeutic purposes, a Sneha-mixture should be on the boil till at least the *Mridhu-paka* is obtained, and no Sneha should be on the fire when the *Khara-paka* has been reached. Any paka below *Mridhu-paka* is called "*Aamapaka*," while anything beyond *Khara-paka* is known as "*Dagdhapaka*," (*Aama*—immature, uncooked; *Dagdha*—burnt, consumed by fire); and, both are unfit for medicinal purposes. Sneha of *Aamapaka* is not only virtueless, but also has certain deleterious features; being dull and heavy, it is prone to damp the

heat of body and in consequence affect circulation and metabolism evilly. Sneha of Dagdhapaka is therapeutically useless; and, may cause body-burning and resulting ailments^{18 & 19}.

Duration of Sneha preparation.—No preparation of Sneha should be completed on the same day the Sneha-mixture is put on the hearth. Sufficient time must be allowed for the fats to imbibe the drug-virtues in full. In the view of some, the more prolonged the boiling and the more gradual the reduction the better the qualities of the final Sneha²⁰.

Preparation of Sneha, a brief description.

"Aadov sanchaarayel kwaatham dugdham kalkam thatha : kramaal |
Thathonyal surabhi dravyamesha sneha-vidhi : kramaal | —Maalatikumara.

First, collect decoction, milk etc. and paste in turn; prepare the Sneha; add fragrances. This is the usual routine.

Decoction, if any, is first prepared; the drugs for decoction are boiled in water for three days and the contents are brought to the full reduction and filtered on the fourth day. Other fluids, if any, are got ready. The Kalka-drugs are ground into thin paste and rubbed in a portion of the decoction or some other fluid in the absence of decoction. The mixture is put into the vessel holding the Sneha. The rest of the fluids are added and the entire contents are agitated thoroughly. The whole is put on the hearth on the fourth day at an auspicious hour, and set to boil over a slow fire. The fire is kept alive during the day and put out for the night. The rate of boiling is so maintained that the evaporation of the water is steady, the drugs are well cooked and digested, and the Sneha acquires the required maturation in four to eight days of the mixture getting on the hearth, depending on the amount of Sneha and its accompanying fragrances or flavouring substances. The usual precautions of covering the vessel and arranging for escape of steam during boiling will be observed.

18. "Snehapaakas-thrividha proktho mridhur-madhya : Kharas-thada |
Eeshathsa-rasa-kalkasthu Sneha-paako mridur-bhavel |
Madhya-paakasya sidhischa kalke neerasa-komale |
Eeshal-katina-kalkasthu sneha-pako bhavel khara : |
Thad-oordhwam dagdha-paaka : Syaal-daaha krin-nishprayajana : |
Aamapaakascha nir-veeryo vahni-maandyakaro guru : |
Nasyartham syaan-mridu : paako madyama : sarva-karmasu |
Abhyanga-artham khara : proktho yurjyaad evam yathishochitham !

19. Dr. Nadkarni under thaila paaka talks of "Ghanda-paka" which aims at rendering the Sneha fragrant. The process consists in adding to the filtered Sneha non-volatile fragrances in paste (one tola of each to 2 'seers' of oil) and reboiling the contents with an equal quantity of water till the water has been completely evaporated.

20. "Ghritha-thaila-gudaadeema-cha Soodhayennaiika-vaasare |
Pra-Kurvanti-ushitha-hi-she vissahaad guna-sanchayam | —Saragadhara."
"Ghritha-thaila-gudaadeema-cha naikaahaad-avatharoyel |
Vyushithasthu prakurvanti viseshena gunaan yatha : | —Chakradatta."

The following are of interest to note :—(1) More often than not, milk, curds, buttermilk and whey are not available in stated amounts to be added in lump at the time of final mixing and just before the mixture is got on the hearth. In such cases, these are added fractionally every morning and evening, and in equally divided measures making up the total on the last day. Thus, if sixteen measures of milk are to be added to the mixture on boil for four days, two measures of it are added every morning and evening. It is noteworthy too that some prefer to first bring these fluids to the temperature of the mixture on the hearth by separate heating.

(2) Ancient physicians had not thermometer; but, they seem to have known the purpose thereof. In many a prescription where boiling is mentioned, the prescription also mentions the particular fire-feeder (wood, cowdung etc.) to be used, as the various fire-feeders vary in their capacity to generate and maintain heat. Thus, the prescriptions for "phala-ghrita" and "shatavari-thaila" contain instruction for the use of dry cow-dung as fire-feeder. Likewise, the woods of acacia catechu, gall-nut tree etc. are prescribed in appropriate cases. When the fire-feeder is not specified, the wood of mango-tree is the one very usually used.

Only an attempt has been made in this article to elucidate and summarise the general principles involved in the preparation of Snehas. The student is referred to Ayurvedic books of yore for standardised recipes and other features connected with Snehas.

(To be continued).

Pneumococcal Meningitis in an Infant, 8 Days Old: Recovery. Br. Med. Jour. 13-11-'48. p 860.

The value of intrathecal penicillin in pneumococcal meningitis is well established now, but the optimum dosage is still a matter for controversy. The case of an 8 days old infant treated with very large intrathecal doses of penicillin is very instructive. A male child aged 5 days was admitted on 16.1.47 (for breast feeding) with his mother who had lobar pneumonia. Three days later the child developed fever 102°F. Lumbar puncture yielded C. S. fluid of a turbid yellow colour which on later culture yielded profuse growth of pneumococci. Penicillin 30,000 units was injected intrathecally immediately after lumbar puncture. He was also given 0.5 g. of sulphadiazine, followed by 0.25 g. every 4 hours for 7 days, then 0.125 g. every six hours for 7 days (total 14.6 grammes), 30,000 units of penicillin daily intrathecally for 8 days (total 240,000 units); 30,000 units of penicillin every 3 hours intramuscularly for 16 days (total 2,880,000) and subcutaneous salines to combat dehydration when he was not taking his feeds well. After 3 days the infant showed clinical improvement which was steadily maintained and on the 7th Feb. '47. (22 days after admission) was discharged cured, fit and well with a gain in weight of 1 lb and 2½ oz.

T. N. S. R.

Injection of Sulphetrone and Diasone in Leprosy* (A Preliminary Study)

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Introduction.—Sulphetrone and Diasone have been in use in leprosy since 1943. They have been reported favourably by Faget *et al*, Faget and Pogge, Fite and Gemar, Wharton, Mom, Muir, Dharmendra, Cochrane and others. There is no doubt that these drugs are useful. But they have some disadvantages. These drugs are costly and it is said that when Diasone and Sulphetrone are given per mouth about 50% is absorbed and the rest pass out of the intestine unabsorbed. It is a serious matter for consideration. With a view to overcoming this difficulty and minimising the cost of expenditure, we administered Sulphetrone and Diasone by injection. This was only a preliminary investigation.

Preparation of the medicine.—Solution of Sulphetrone was made in Normal Saline (0.85%) by dissolving 10 tablets of Sulphetrone in 150 c.c. of Saline. Each tablet contained 0.5 gm. of Sulphetrone. Hence a 3.3% solution was obtained. The solution was brought to boil. On cooling, some insoluble particles deposited at the bottom of the container, and they were eliminated by filtering. The solution was put in ampoules and sterilised in an autoclave before use. Diasone solution was prepared in the same way.

Dosage and method of injection.—In the beginning an initial dose of 1 c.c. of half the above strength (1.65%) was given, i.e. a dose of 0.016 gm. of the drug was given to a number of patients, and when it was found that this dose was well tolerated, the full strength solution (3.3%) was used in rising doses beginning with 1 c.c. (0.03 gm.) of the drug. Later the routine was to start with this dose (1 c.c. of 3.3%) and this was gradually raised to 5 c.c. (0.15 gm.). The injections in all cases were given intramuscularly twice a week.

Experiment on patients.—There were 17 lepromatous cases under our observation, some at the Leprosy Out-door Department of the School of Tropical Medicine, Calcutta, and others outside it but none of them was an indoor patient. Within a short time clinical improvement of varying degrees was seen in all the cases. In all cases skin lesions subsided to some extent. Three cases had chronic iritis and dim vision and after the administration of Sulphone drugs their eye sight improved. Five cases had multiple leprotic ulcers which healed with these drugs. No marked bacteriological improvement was however seen, although in a few cases the smears were less strongly positive. As a matter of fact one would not expect any marked bacteriological changes in a short period covered by this preliminary report. In four of the

* Read in the All India Leprosy Workers' Conference in 1948.

*The filtration did not reduce the concentration of the drug as determined by estimation with the help of a Lovibond Comparator.

cases, lepra reaction set in about 2 weeks after the commencement of the treatment and which was then discontinued.

While working on out-door patients it is difficult to obtain complete data regarding the concentration of the drug in the blood and to correlate with their clinical and bacteriological improvements. However, this was attempted in a few cases and it was found that with the small doses used the drug could not be detected in the blood although undoubtedly there was clinical improvement. In these cases the blood picture did not show any anæmia following the administration of the drug in small doses.

Discussion.—It is evident from the above that within a short time clinical improvements were seen even when small doses of Sulphetrone and Diasone were injected. Bacteriological improvements were not so rapid, but that is also found when bigger doses of these drugs are given per mouth. Even when big doses are given per mouth prolonged treatment for years together is necessary to make a lepromatous case negative. Wastage of medicine by about 50% when taken by mouth was prevented by this method of treatment. Also there was no indication of the small doses producing any anæmia which is common with big doses. Therefore repeated blood examination is not required when treatment is given by this way. There was no need to give iron, liver and vitamin. There was also no need to give high protein diet to the patient, a normal well-balanced diet was all which was advised. The cost of treatment was, therefore, reduced by many times. We prefer injection of a solution of these drugs in Saline which is painless and can be injected easily.

Leprosy patients are accustomed to take injections twice a week. If the minimum dosage necessary for satisfactory clinical and bacteriological results be found out which will not produce anæmia, then the medicine can be injected twice weekly, can be used on a mass scale and also in rural clinics, without any difficulty. That will also save a lot of expenses.

Summary.—1. Results of injecting Sulphetrone and Diasone, in small doses, in 17 cases are reported. A maximum of 5 c.c. of a 3.3% solution has been used.

2. Small doses of medicine by injection, although not producing any appreciable blood level of the drug, produced clinical improvement without producing anæmia.

3. This method of treatment is considered more economical and safe than when these drugs are given per mouth.

4. It is suggested that more extensive trials should be undertaken to find out the minimum dose which will give satisfactory clinical and bacteriological results, without producing anæmia or any other toxic symptoms.

References:

1. Ernest Muir—Manual of Leprosy.
2. R. G. Cochrane—Practical Text Book of Leprosy.
3. Dharmendra and K. R. Chatterjee.—Treatment of Leprosy with the Sulphone Drugs, Leprosy in India, Jan. 1948, Vol. xx, No. 1.

I. Central; and II. Provincial.

I. CENTRAL.—Leprosy is an all-India problem and if adequate measures are not taken simultaneously in all provinces the result will not be satisfactory. But health is not a subject for the Central Government and therefore it cannot enforce a uniform plan of action in all Provinces. To remedy this it is suggested that there should be a Central Leprosy Committee with the Director General of Health Services as its Chairman. Director of Health Services of each Province should be a member of this Committee. Important leprosy workers of India should also be in this Committee. There should be a Central Leprosy Institute under the Central Government and its Director should be a member of this Committee. The Central Leprosy Committee is to devise ways and means to tackle the leprosy problem in India in an all-round way. The Central Leprosy Institute should have a laboratory and a hospital to carry on different research work, train up people in research work, to select persons and send them outside India to study methods of work in other countries, and to publish a journal like Leprosy in India. The Central Leprosy Committee is to frame general policies for leprosy work in the Provinces, frame a model Leprosy Act and organise leprosy conferences, (i) All India and (ii) International (See chart, *vide page 287.*)

II. PROVINCIAL.—In each Province there should be a Provincial Leprosy Committee with the Director of Health Services as its Chairman. Persons interested in leprosy work, social workers and popular persons should be members of this Committee. The Committee is to implement in the Province the general policy formulated by the Central Leprosy Committee.

In order to do that it is necessary to find out the intensity of the leprosy problem in the Province, and the nature of work which is going on. At present the quality of work done in the majority of the clinics is poor on account of bad selection of site, poor housing condition, lack of proper staff and equipment, very poor pay of the workers and want of supervision. All these should be remedied.

Secondly, there should be co-ordination and co-operation of the work done by different organisations and their functions should be clearly defined. The Provincial Committees should in turn set up District Committees and ultimately Local Committee should be formed to serve a population of 10 to 20 thousand and thereby it will be in charge of about 100 to 200 leprosy patients. In each Province there should be a Provincial Leprosy Officer under the Director of Health Services. The Provincial Leprosy Officer is to contact existing clinics, hospitals, etc., supervise their work and make improvements, where necessary, start new treatments and isolation centres, co-ordinate the work of different organisations and apply Model Leprosy Act where necessary. The Provincial Leprosy Committee is to meet periodically and receive reports about

GOVERNMENT OF INDIA

MINISTER OF HEALTH (CENTRAL)

DIRECTOR GENERAL OF HEALTH SERVICES
(Chairman of the Central Leprosy Committee)

CENTRAL LEPROSY INSTITUTE

(Its officer-in-charge should be Secretary of the Central Leprosy Committee)

Leprosy Research Laboratory & Hospital for research work.
(a) Clinical.
(b) Bacteriological.
(c) Histological.
(d) Immunological.
(e) Chemical and Biochemical.
(f) Pharmacological.
(g) Epidemiological.
(h) Dietetic.
(i) Preventive.
(j) Field research in rural areas under controlled conditions etc.

To send leprosy workers outside India to study the method of work in other countries.

Publication of a Journal like "Leprosy in India" to spread up-to-date knowledge.

CENTRAL LEPROSY COMMITTEE
(Director of Health Services of each Province should be a member of this Committee)

To frame general policies for leprosy work in Provinces.

Organisation of Leprosy Conferences—
(a) All India.
(b) International.

Framing of a Model Leprosy Act:—

(a) Notification.
(b) Isolation.
(c) Immigration & emigration.
(d) Repatriation.
(e) Employment, leave, dismissal etc.
(f) Marriage & inheritance.
(g) Adoption of children etc.

PROVINCIAL GOVERNMENT

MINISTER OF HEALTH

DIRECTOR OF HEALTH SERVICES OF THE PROVINCE
(Chairman of the Provincial Leprosy Committee)

PROVINCIAL LEPROSY OFFICER

Formation of District Committees

Co-ordination of existing leprosy organisations within the Province

Formation of Subdivisional Committees

Formation of Local Committees to serve a population of 10—20 thousand

To maintain a Provincial Research Institute for research work in leprosy & teaching

Application of Model Leprosy Act, where necessary
To call periodical meetings & receive reports about progress of work in different parts of the Province.

PROVINCIAL LEPROSY COMMITTEE

(In the Committee there should be representatives of all organisations doing leprosy work in the Province)

To keep contact with the Central Leprosy Committee & other Provincial Committees.

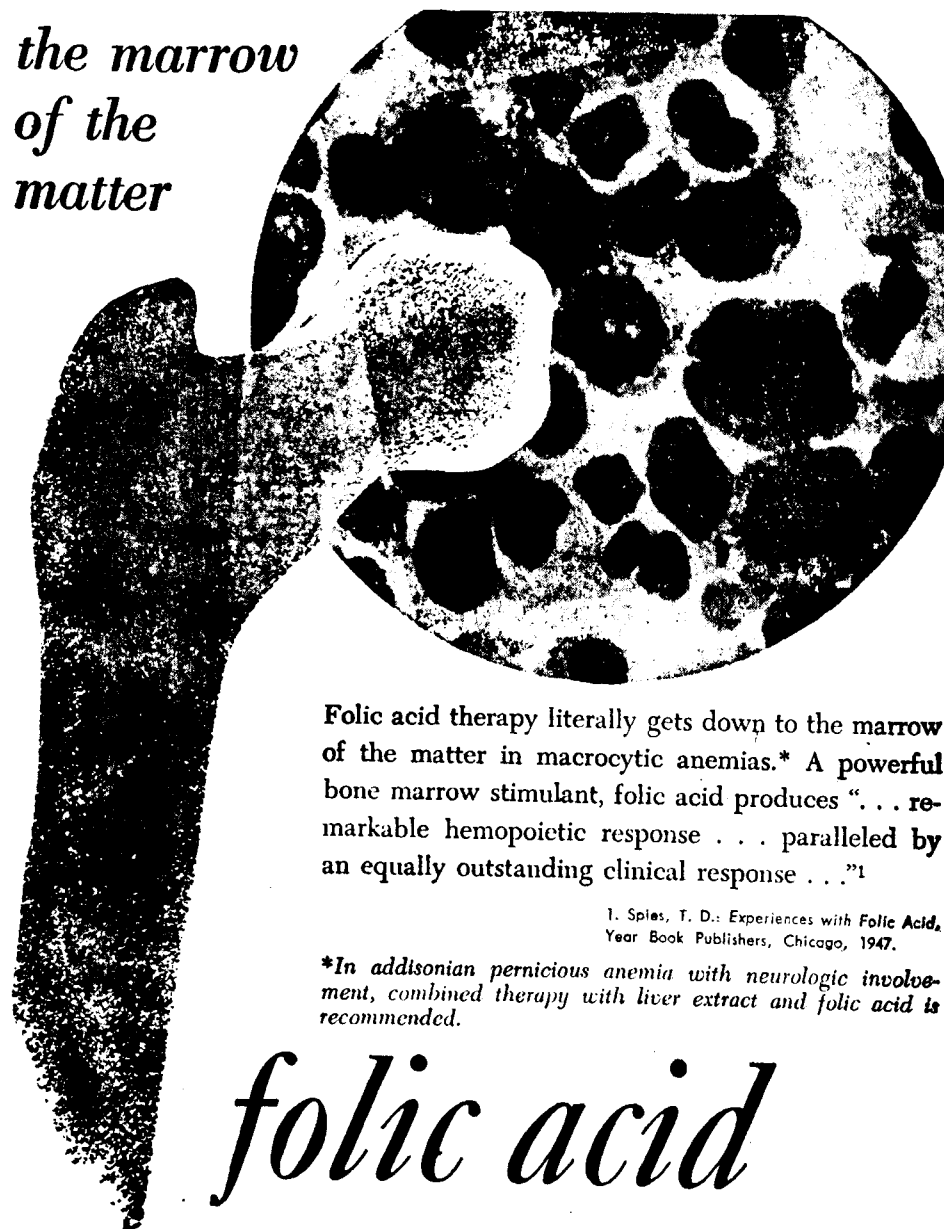
To organise Provincial Leprosy Conferences

the progress of work in different parts of the Province, organise Provincial Leprosy Conferences and keep contact with the Central Leprosy Committee and other Provincial Leprosy Committees.

The Local Committee is to enlighten the public about the incidence of leprosy in the locality, educate the public about the duty of the patients and of healthy people, arrange for teaching leprosy in local schools, create public opinion in order to make isolation more or less complete directly or indirectly. The Committee is to look after the children and dependents of patients who will be isolated in colonies or hospitals. They are also to arrange for rehabilitation of discharged patients. Private bodies like B.E.L.R.A. should take up propaganda and publicity and educate medical students, medical men, sanitary inspectors, health visitors and Social workers in leprosy. They are to survey new areas before starting treatment and isolation centres and re-survey old areas to assess the value of control measures taken. Provincial Governments should maintain a Leprosy Research Institute in each Province to carry on research work in all aspects, hold specialised courses of training for 3 months for doctors who will be in charge of leprosy institutions, give one month's training to doctors and assistants who will work in leprosy clinics and institutions and give a short course of lectures to other doctors like Civil Surgeons and District Health Officers. Besides these, the Government should see that leprosy is included in text books of Hygiene and in the medical curriculum. The Provincial Leprosy Research Institute should be authorised to give expert opinion with regard to the infectivity of a patient, advisability of marriage, service, leave, dismissal, travel by public vehicles etc. Government should see that non-infectious leprosy cases needing treatment for other complaints are not refused medical examination and help in the respective out-door departments. In all Government hospitals there should be 2% beds to admit leprosy patients, non-infectious cases in general wards and infectious cases in special wards meant for infectious diseases, like meningitis, tuberculosis etc.

Leprosy is not only a medical problem but it is also interlinked with socio-economic problem of the Province. For proper control of the disease effect should be given to all the recommendations. But the practical application of these will entail a huge financial responsibility and therefore cannot be applied all at once. Therefore the problem should be studied district by district and action should be taken according to the urgency of the problem in a particular place. Some action should be taken immediately to improve the existing facilities for treatment and isolation and then every year some new treatment and isolation centres should be started in each district so that after 15 to 20 years the whole problem will come completely under the grip and there will remain no patient uncared for either for the purpose of treatment or for isolation or for both.

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¹ Spias, T. D.: *Experiences with Folic Acid*, Year Book Publishers, Chicago, 1947.

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A Case of Leprosy Treated with Promin

RAJMAL NANDECHA, L.M.P. (C.P.),
 K. E. Hospital, Indore.

I WAS called in to see a patient named Hazarilal, aged 65 years, for the following complaints :—

- (1) Recurring blisters bursting into ulcers on distal parts of both the limbs. Healing is delayed for months—since 1 year.
- (2) Tingling and numbness in both the limbs—1 year.
- (3) Loss of sensation in both the extremities—10 years.
- (4) Weakness—6 months.
- (5) Loss of appetite—6 months.
- (6) Sudden loss of vision in right eye—6 months.

On examination.—I found face slightly flushed, eyebrows thick and prominent, hair scarce, icteroid tinge in both eyes, coated tongue, no teeth, pulse 65 per min. regular, temperature 95°F.

Chest and abdomen :—N.A.D.

Pin prick and cotton wool touch could not be felt on both the extremities, tip of nose. He could feel both these on abdomen.

Hot and cold water also could not be felt on both the extremities.

Knee and ankle jerks sluggish. There was no difficulty in his moving the limbs. He could walk and do his usual work.

Ulnar nerves were found much thickened on both sides.

Superficial ulcers on tips of fingers of hand and a deep ulcer on right leg.

Previous history :—The patient took lot of "Bhilawa" and was regularly taking annually in the winter as advised by some vaidya.

Family history :—He has got 5 sons and one daughter. All healthy. No special history to indicate a disease of this type to any of his relatives.

Nasal smears :—Positive for L.B.

Treatment.—I prescribed the following :

- (1) Regular bath with neem water.
- (2) Diet :—Plenty of fruits and milk in addition to usual ordinary food.
- (3) Medicines :—

(a) Multivitamin tab. 1	}	3 times a day after food.
(b) Celin tabs. 2		
(c) Yeast tabs. 2		
(d) Plastules with Liver Extract and Folic acid 1.		

Injection of Liver Extract 2 c.c. }
(T.C.F.) Vitabee 100 mgms. } I.M. on alternate days.

This treatment was continued for 2 months and in addition local dressings.

The improvement in general health was marked but appearance of fresh ulcers and blisters still continued.

I then started Promin Sol. 2 g.m. I.V. on alternate days for six injections with an interval of one week and Sivovina 10 c.c. orally twice a day. This was continued for 2 months. Marked improvement was noticed in his ulcers and blisters did not crop up.

I then started Promin 5 gm. I.V. with 10 c.c. Sivovina orally twice a day for another 2 months.

I was glad to hear from the patient that the blisters and ulcers which were long standing have now completely disappeared. He now feels the difference of hot and cold water on his limbs and body.

Nasal swab is negative for L.B.

NOTES:—(1) Promin is p.p'diamino Diphenyl Sulphone—N.N'di (Dextrose Sodium Sulphonate) prepared by P.D. & Co., and this gives marked clinical improvement.

(2) To avoid reduction of R.B.C. Sivovina 10 cc. was regularly given.

(3) Patient is still under my observation and further details will be made known through the columns of this esteemed journal.

Stye

M. P. RANJAN, L.M.P.,
Hospital Road, Laheria-Sarai.

Synonym.—Hordeolum.

Definition.—This is a circumscribed acute inflammation at the edge of the lid (surface or margin), hair follicle or sebaceous gland at the edge of the eyelid or of a ciliary follicle from streptococcal infection of the gland of Zeis and Moll, generally ending in suppuration.

Etiology.—1. Age—at all ages : common in young adults.

2. General—(a) Toxæmia; (b) lowered vitality: debility, and constitutional weakness; and (c) deranged condition of the system.

3. Eye—(a) Strain; (b) uncorrected errors of refraction; and (c) foreign body e.g. dirt causing blockage and consequent distension of the gland with secretion.

4. Bowels—(a) Indigestion; and (b) habitual constipation.

Clinical picture.—1. Commences as a tiny, red swelling at the margin of the lid.

2. Pain and tenderness.

3. Considerable œdema when at the outer canthus.

4. Yellowish point indicates suppuration.

5. Very often one subsides, another reappears.

Treatment.—I. General:—(1) Rest to the eye as much as possible.

(2) Avoid smoke, bright light, sun-rays, reading and needle-work.

(3) Daily bath, exercises, pure air.

(4) Improve general health.

(5) Nourishing diet.

(6) Correction of refractory errors.

(7) Treatment of concurrent blepharitis.

II. Medicinal:—(1) Cremaffin (Boots)—one or two teaspoonfuls in warm milk daily at bed time (to relieve constipation).

(2) Mixture of: (a) Syrup Minadex (Glaxo); (b) Adexolin Liq. (Glaxo); (c) Syrup Super Calcium with Vit. D (Vax)—one teaspoonful each of (a) and (c) with 15 drops of (b) mixed thrice daily.

(3) Calcium Sulphide—gr 1/8 thrice daily.

(4) Tinoxyl or Stanoxyl or Stanno-Sulphazide—2 tablets thrice daily after food.

(5) Autovaccine.

III. Local:—(1) Hot fomentations—4 to 6 times daily with Boric acid or salt water (one teaspoonful to a tumblerful of water) relieve pain and assist to bring the boil to a head and thus hasten easy suppuration. Hot boric compresses should be continued till the swelling subsides.

(2) Epilation of the eye lash corresponding with the follicle or the hair should be plucked out with pincers.

(3) When suppurated, evacuate the pus either by pricking it with lancet or needle or by pulling out one or more eyelashes or by a small horizontal incision.

(4) Application of Ung. Hg. Oxidi Flavi (gr. iv to 1 oz.) daily at bed time.

References:

1. Moore, W.—A Manual of Family Medicine, 1903, 7th edition, page 197.
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3. Hutchison, R.—An Index of Treatment 1940, 12th edition, page 310.
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Emetine Hydrochloride and Sulpha Drugs Combinations

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Physician, Medical College Hospital, Agra.

AND

J. N. GAYAL, M.Sc. (Allahabad), D. Phil. (Allahabad),
Lecturer in Pharmacology, Medical College, Agra.

WHILE draining a liver abscess and injecting into it a solution of Emetine Hydrochloride, it was thought advisable to introduce a solution of Soluseptasine in the abscess cavity also—the patient so treated having some ulcers elsewhere—to prevent the remote chance of the liver abscess cavity becoming infected through the blood stream. The Emetine Hydrochloride was injected first and the solution of Soluseptasine was drawn in the same syringe before introducing in the abscess cavity. A thick precipitate formed in the syringe as soon as the Soluseptasine solution was drawn into it. This provided a thought to take up the subject for experimental work—to test the effect of mixing Emetine Hydrochloride solution with the various solutions of the Sulpha drugs.

Five grains of Emetine Hydrochloride was dissolved in distilled water and 1 gm. of M & B 693 was dissolved separately in distilled water. On mixing the two solutions a copious precipitate was obtained. The above mixture was filtered and the precipitate and the filtrate were separated for examination.

The precipitate was found to be sparingly soluble in cold water but on heating a part dissolved and an insoluble low melting substance was obtained which went into solution after addition of a drop of HCl. This insoluble substance was identified to be Emetine Hydrochloride and the part which dissolved in the initial stages was identified to be the Sulphonamide.

This led to the study of the pH determination of the individual solutions and also of the mixture of the two.

One gm. of M & B 693 was dissolved in 10 c.c. of distilled water and was found to possess a pH equivalent to 10 whereas 1.280 gm. of Emetine Hydrochloride dissolved in 12 c.c. of water was found to have a pH equal to 6. On mixing the above two solutions the resulting pH was found to be 9.5.

The above solution was gradually acidified in order to find the stage at which a clear solution could be obtained, and as a result of preliminary observations it has been found that a clear solution is obtained at pH between 3.5 and 4.

Further investigations are in progress.

Delhi Gate,
Hariparbat, Agra.

Streptomycin in a Case of Tuberculous Endometritis

M. S. SHAH, L.C.P.S. (Bom.), L.M.P. (Bom.),
Ex-Houseman at Nair Hospital, Bombay.

STREPTOMYCIN is a highly effective antibiotic agent isolated from *Streptomyces griseus* by Schetz, Bugie and Waksman. Its activity for those organisms which are not susceptible to Penicillin makes it a very useful therapeutic agent. Though its full therapeutic value has not yet been assessed, many articles on its usefulness in various diseases has appeared in the journals of foreign countries.

Now I shall describe the case history of a case of tuberculous endometritis treated with Streptomycin.

A Gujarati woman, aged 26, came to me for the following complaints: (1) Bleeding per vagina, more during menses—duration one year. (2) Pain in the right iliac fossa and in the epigastrium—duration 8 months. (3) Low fever—duration one month. (4) Backache, severe during menses—duration one year. (5) Loss of weight, loss of appetite and headache—duration one year.

History of the present illness:—A year back she was admitted in the hospital for menorrhagia and polymenorrhea. On P. V. examination nothing abnormal was found, so D and C was done and the curetted material was sent for laboratory examination as a routine. Unexpectedly the report showed evidence of tubercular endometritis. But the patient was discharged already before the report was received. The patient returned to the hospital after two months with the same complaint. She was advised deep X-ray but the patient did not take it. After a year now she came to my private clinic again for treatment. Now the symptoms were ameliorated. Pain in the right iliac fossa and epigastrium appeared after the operation of D and C as she described it. Also low fever since one month. Menorrhagia and polymenorrhea had turned into a continuous flow of blood and showed an apparent proliferation of the disease.

On examination patient was anæmic, temperature 99.6°F., pulse 98, respiration 20, weight 78 lbs. and she was constipated. There was tenderness in the right iliac fossa just below and out to the appendicular point. Epigastric region tender, liver not palpable. Spleen just palpable which is generally found in people residing in malarial district.

Cardio-vascular system—N. A. D. except anæmia. Resp. system—N.A.D. Nervous system—N.A.D. Urinary system—N.A.D. P. V. examination showed cervix pointing downward and backward. Os parous. Uterus anteverted and anteflexed. Fornices clear except slight tenderness in the right fornices. Blood on examining fingers.

Personal and family history:—Strict vegetarian, married, having one child, father healthy and living, mother died of T.B.

Past illness :—Malaria.

Diagnosis.—It was a clear cut case when laboratory examination showed evidence of tubercular endometritis with clinical symptoms and signs suggesting the same disease. The only doubt whether tuberculosis has spread to the caecum as there was pain and tenderness in the right iliac fossa was cleared when the barium-meal skiagram of the caecum and lower intestine showed nothing abnormal. Secondly, how far the disease has spread to the pelvic tissues and tubes. But P.V. examination showed no abnormality. Pain in the epigastrium may be due to hyperacidity as it became better by alkaline mixture.

Treatment.—(1) I. M. Injections of Streptomycin 0.25 gms. every six hours for a period of 24 days. (2) Ultra-violet rays on the lower abdomen daily for a period of three months. (3) Haliverol drops, Osto-Calcium tablets, plastules with liver for combating the disease by increasing general vitality. (4) Milk of Magnesia, both for epigastric pain which was suspected to be due to hyperacidity and also to remove constipation. (5) Alkaline mixture. (6) Injections of Calcium Gluconate 10% 10 c.c. I.V., Redoxon 5 c.c. I.V. for increasing the vitality of the patient, injection of Liver Extract 10 U.S.P. 1 c.c. with Vitamin B complex 1 c.c. every third day.

Progress of the patient :—On the third day of the treatment with Streptomycin the temperature came down to normal and is normal at present i.e., five months after the completion of the Streptomycin course. The patient herself began to feel better and her appetite improved though pain in the right iliac fossa was not less till the eighth day of the beginning of Streptomycin. On the ninth day the pain was less in intensity, and absolutely disappeared by the completion of the course i.e., 24th day of the treatment. Then the patient began to take good amount of nourishment as she could take milk, butter and ordinary Gujarati diet. By the end of one month the weight of the patient increased by six lbs. i.e., weight 84 lbs. In the second month the line of treatment was just to increase the general vitality and increase weight and to my surprise the weight by the end of the second month was 92 lbs. and by the end of the third month it was 100 lbs. Headache and backache are still present though much less than before. Menses regular every month for a period of six days. Her original weight was 96 lbs. two years back. Patient was asked to get the uterine curettings examined but she refused. Then patient was sent to a village for a change and continue patent medicines. She was asked to report about her health every month and come down immediately if symptoms recur. Till last month the report shows good steady progress.

Summary.—1. Streptomycin has worked very satisfactorily in this case of tubercular endometritis. 2. Disappearance of fever by

the third day and most of the symptoms by the end of the treatment. 3. Increase in the weight of the patient was marvellous after the completion of the Streptomycin course.

People's Clinic, Behind Vegetable Market, Bhavnagar.

Scabies and its Treatment

DR. K. L. VARMA,

Medical Officer, Aliganj, Etah Dt., U.P.

As this trouble is very prevalent these days in this area, I am prompted to mention its diagnosis and treatment for the information of my friends and the general public.

Before giving the actual treatment of the malady I would like to describe the disease and its causes in short. I will also tell you that scabies is not a blood disease as is the prevalent idea of lay people. It is also not due to blood infection, hence there is no good taking blood purifiers.

Scabies is the local skin eruptions produced by *acarus scabiei*, the female of which burrows under the skin to lay her eggs, and males roam about over the body and the clothes and sometimes, though rarely, they are captured too.

Burrows thus formed are quite typical and are mostly black in the beginning with their faeces. The eruptions consist of papules and vesicles of varying sizes.

Symptoms and character of eruptions.—(1) Short white or black burrow. (2) Excessive itching and scratch marks. (3) It commences and predominates where the skin is thinnest, that is between the fingers or toes, the flexures of wrists and elbows, the breasts, lower abdomen, axilla, the penis, and the inner side of feet and thigh. (4) There must be history of contagion. (5) In some cases the insects or its eggs are discovered.

Prurigo and eczema are two diseases which are often mistaken for scabies, but the former predominates on the extensor surface and outer aspect. As for eczema if it is mistaken in the beginning for scabies it is a good rule. It may be decided after treatment for sometime for scabies and then the specific treatment for eczema may be given.

Treatment.—The line of treatment should be as follows :

(1) All the skin diseases are due to deficiency of Vit. A which gives strength and toughness with flexibility to the skin. Burrows too are difficult to be formed without its deficiency.

(2) *Contagion.*—This must be removed for autoinfection often gives further trouble and the trouble lasts indefinitely. For this daily baths with hot water and soap (a good Glycerine Pears soap, Sulphur soap of Bengal Chemical, Cuticura soap, Sandal soap or Neko Germicidal soap) may be taken, and thereafter all the clothes which were put on before bath should be immersed in hot water and washed off with soap and dried in the sun to get rid of

male *acarus scabiei* which roam about on the body and the clothes, and after using the local medicine, fresh clean clothes should be put on.

(3) *Care of the skin.*—The protected portion must be kept well, clean and glistened either with fine Chameli oil, or pure Glycerine and Rose water emulsion.

(4) *General Health.*—It must be maintained and if constipation there be it must be relieved either by Indian Gulkand or Castor oil tablet.

(5) Sulphanilamide treatment or that of Penicillin is no good in this respect unless there is mixed infection of streptococci, causing great and deep ulcers. Milk injections are of some value in certain respects. Dr. C. S. Keefer, Dr. R. P. Herwick, Dr. W. Vanwinkle and Dr. Putnam are of opinion that Calcium Penicillin may be employed for local therapy. It may be best incorporated in ointment or dissolved in water or saline and applied by means of an atomiser or spray.

Local Treatment.—(1) Ordinary sulphur ointment with the above care often cures the patients. If Sulphur produces a secondary eruption mix it with equal part of Zinc Oxide. (2) Ascabiol of M & B, Benzyl Benzoate Emulsion of Bengal Immunity in the market are quite successful, but the above care is immensely necessary. (3) Balsam of Peru either pure or mixed with equal part of Vaseline ointment may be recommended. (4) Tetra Ethyl Thium Monosulphide 5 or 10% either in toilet soap form or mixed in soap emulsion is very useful.

The following few prescriptions are also found useful in my practice. For ordinary itch:—

R Sulphur	3 i
Boric Acid	3 i
Bismuth Carb	gr. 30
Glycerine	3 iv
Aqua	3 iv

Golden or Sulphur lotion containing Sulphur, Calcin water and Mustard oil is also very efficacious. For pustular eruptions:—

R Sulphur	3 i
Zinc Oxide	gr. vi
Copper Sulph	gr. iv
Calamina	3 i
Chameli oil	3 iv

This should be finely powdered and triturated with oil and after thorough admixture it should be locally applied. It gives good relief and cures the patient soon.

R Gun Powder	3 i
Sulphur	3 i
Boric Acid	3 i
Vaseline	3 i

This ointment is also found very useful in my practice.

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Retrospect and Prospect

It is a happy departure from the usual routine that has been made in the Centre of presenting at the time of the budget discussion a report of the activities of respective departments during the year that is coming to a close and the programme of work that has been drawn up for the coming year. This will help the members of Parliament to know the achievements in the year and the prospects that are held out for the next year. A report of the kind was presented by the Ministry of Health last month before Parliament, and a copy of the same has been sent to us. So far as the medical and public health activities are concerned, there is in vogue a sort of diarchy, the improvement of public health and the provision of medical facilities falling entirely within the Provincial field, the Central Government having sole executive responsibility only for subjects in the Federal Legislative list and concurrent responsibility with the Provincial Governments for the subjects in the concurrent list, with no strict or legal responsibility for the subjects in the Provincial list. But in the case of Centrally administered areas, the functions of both the Provincial and Central Governments devolve on the Centre solely. Hence the Report that is now before us is a *resume* of the activities of the Ministry of Health in the Centrally administered areas, interspersed here and there with the steps taken on an All-India scale in regard to the subjects in the concurrent list.

It is more than three decades since the seat of the Central Government was shifted to Delhi, and yet we find that no place is more lacking in the required facilities than the capital town itself. The blame attaches wholly to those who were in charge of the administration up to August 15, 1947, when power was completely transferred to the hands of Indians. True even in the alien administration, most of the time during these three decades and more, our own nationals were in-charge of the administration of the Public

Health Department, but the Indians in the Central Government were either in a minority or were actually powerless to effect any improvement, the core of power resting with the civilians who were bent more upon safeguarding their own position and the supremacy of British rule than in effecting reforms for the good of the people of the country. Such wanton remissness on their part to the statutory obligations imposed on them has left their successors a legacy which will take a lot of time to mend, considering the financial straits to which the country has been reduced owing to unforeseen and unexpected troubles and problems that cropped up over-night as a result of the last parting shot of partition given by our alien administrators.

The report now before us is a long and distressing catalogue of the measures that have to be taken, the lee-way that has to be made up, if India is to be placed on a par with other civilised and advanced nations of the West, and also of the measures that are contemplated to bring about some improvement at least in the present position. Even under ordinary circumstances the Central Government of a big country like India with the requisite large army of officials and of various other classes of people and businesses to cater to their needs and requirements is bound to create a large number of urgent and pressing problems for the administration. To add to this, the large influx of people from the West, as a result of the brutal atrocities that were perpetrated there on the wake of partition, has added considerably to the responsibilities of the administration. And yet what are the facilities that were available in Delhi? Medical facilities in the crowded old Delhi were few and far between, and in New Delhi hospital accommodation was quite insufficient to meet even the needs of normal times. The position became worse with the natural increase of population and the large influx of refugees. Reorganisation of the various departments at the hospitals and the provision of more staff to meet the needs became imperative that something had to be done, and that too immediately, to bring about some improvement at least. A scheme has been sanctioned to develop Safdarjang and Willingdon Hospitals for the reception and treatment of non-paying poor patients and the Willingdon Nursing Home and the Hindu Rao Hospitals as Nursing Homes for paying patients; to appoint more honorary surgeons and physicians in place of full-time salaried medical officers; to increase the bed strength in the Irwin Hospital from 302 to 630, and as a preliminary to extend ward block No. 5 to provide 48 additional beds; to build an entirely new three storeyed Nurses' Home to provide accommodation for 210 Nurses; to take over under Government management the Victoria Zenana Hospital whose present financial condition is far from satisfactory; to expand the existing Infectious Diseases Hospital at Kingsway which has a provision now only for 30 (!) beds to provide for 100 beds; to construct two primary health

centres at Nazafgarh (this has already been opened) and Narela as models for Centres elsewhere; and to extend the existing water works in Delhi. In Ajmer Merwara where there are no proper arrangements for the treatment of tuberculous patients, a clinic will be established at the Victoria Hospital, to work in close co-operation with the Madar Union Sanatorium, run by a Mission. There is no mention of any scheme sanctioned or under consideration for Coorg.

As regards general lines of development, the recommendation of the Advisory Committee set up to make recommendations for the establishment of an All-India Medical Institute at an initial outlay of five crores and a recurring expenditure of 60 lakhs has been shelved, for want of funds, and the upgrading of existing medical colleges has been taken up instead. The Report of the Committee appointed for this purpose is now under the consideration of Government. The Government have, in addition to its duties of manufacturing sera and vaccines on a large scale and carrying on research for the preparation of newer and better products and improved methods, assigned to the Central Research Institute, Kasauli, the task of inspecting commercial firms and other laboratories manufacturing sera and vaccines on behalf of the licensing authority under the Drugs Act. The purchase of a Mass Chest Radiographic unit for purposes of experimental survey amongst industrial workers, to the incidence of tuberculosis, through mass radiography, has been decided upon for the use of the All-India Institute of Hygiene and Public Health. And the Malaria course has been extended from six weeks to twelve weeks in the Malaria Institute.

The Control of drug standards has also been taken up and a Drugs Controller in the Directorate General of Health Services and Four Assistant Drug Controllers for Delhi, Bombay, Calcutta and Madras have been appointed. A rough draft of a Bill as well as the Rules to be made thereunder, to provide for the prevention of undesirable advertisements pertaining to drugs and medicines through the press or put out in other ways by quacks and unscrupulous persons, has been prepared by the Drugs Technical Advisory Board and it is now under the consideration of the Government. The question of extending the manufacturing activities of the factories attached to medical stores so as to bring them in line with the general industrial development of the country is also said to be under consideration. Plans for the establishment of a Housing Factory in Delhi have been completed and it is stated that regular production of houses covering an area of 500 sq. feet and costing about Rs. 2,500, exclusive of the cost of land and fittings, will commence in the latter half of the year, the idea being to go ahead with the establishment of more factories after gaining experience of the working of this factory. It is good that the

Government have not gone full steam ahead in this matter, for not only there is a difference of opinion among experts as to the suitability of pre-fabricated houses for a country like India where climatic and other conditions differ widely from those in the West, but also because the cost will be much too high for the class of people to whom they are intended, not to speak of their uselessness after a number of years. It is because of this latter reason that even countries in the West which took to it seriously at the outset in view of the shortage of houses are now chary of going in for them. Besides climatic variations, this is bound to influence largely the minds of the people and it is well that the Government have not irrevocably committed themselves to it.

We are glad that the recommendation of the Bhole Committee to establish a Central Health Publicity Bureau to promote the hitherto neglected problem of health education among all sections of the population and to give suitable advice and assistance to the Provincial Health Departments in the organisation of health propaganda in their territories by the publication of an Indian Health Journal, production, collection and circulation of suitable material and literature, local and foreign, motion pictures, films, models, museums, radio talks etc. is under the active consideration of Government. Prevention is better than cure. It is only by inculcating knowledge on problems relating to health that the people can be made to lead healthy lives. Then and then only can the aim of Government to bring about all round increase in production with a view to increase the national wealth of the country succeed. But no branch of this department is more neglected at present than this all important one. The habits formed in childhood last to the grave. If therefore a knowledge of health problems is to be inculcated it should start from the very beginning and should be continued up to the University course. Then and then only it would be lasting and beneficial. We are aware that something is done in the elementary schools to inculcate this knowledge, but the knowledge imparted is scrappy and the teacher ill-equipped for the task, that what little is taught is clean forgotten soon. Unless effective steps are taken to make this knowledge go deep into the hearts of our children and youths, nothing substantial can be gained. It is therefore imperative that knowledge of health problems should be imparted from the elementary to the collegiate course. While the other methods suggested by the Bhole Committee are useful so far as education of the adults of the present day are concerned, the making of health education compulsory in all the stages of education will be productive of very good results and will in course of time make every one health-minded. We therefore request the Government of India to take up this matter in right earnest and bring about this reform.

To a superficial observer, all that has been detailed above might appear formidable. But one who knows how much backward

this country is in regard to public health and medical relief has no reason to be satisfied with this tinkering of the problem. The Hon'ble the Minister for Public Health in the Central Government is not herself satisfied with the progress made. With a Central budget providing only 1% of the total revenues and Provincial budgets not exceeding 5 per cent of their revenues for this all-important and basic problem in the successful and satisfactory solution of which depend the happiness and contentment of the people and the prosperity of the country, it is inconceivable that any large scale plans can be drawn up and implemented to bring about rapid progress. The Hon'ble the Minister wails that the grants made are too small for the purpose and she asks how can anything effective be done. The question must be addressed to her colleagues in the Government and they must be made to realise the urgency and importance of this problem. It is the elementary function of the State to assure positive health to the people and any sum, however big, spent on this behalf is an insurance towards prosperity. May we therefore appeal to the Central Government not to rest on their oars in regard to various other activities but to go ahead with a positive, broad based and all comprehensive programme for the development of public health and place India on a par with other advanced nations in the West.

Public Health and Medical Relief in Madras

THE effectiveness of the discharge of its functions by a Provincial Government in regard to medical relief and public health is not to be judged by a comparison with the steps taken in other Provinces but by the test how far it meets the needs of the situation. True it is that we are passing through abnormal times, but that is no justification why the two most important departments of Government, on the efficient administration of which depends the well-being of the people, should be starved. While in every advanced country in the West a large percentage of the total revenues is set apart for these two services, in India the percentage is far too low to touch even the fringe of the problem. In a budget for nearly 50 crores of revenue only 2 crores and 53 lakhs have been provided for the Medical and one crore for the Public Health Departments. And the Hon'ble the Minister has catalogued a long list of achievements present and prospective with this meagre sum. While we do not grudge him the credit for some improvement from the past position we have to point out that it is but a drop in the ocean and unless larger provision is made and greater facilities provided to the people than at present the Government cannot claim to have discharged its responsibility to the public.

The one explanation that has ever been offered for the non-extension of medical facilities had always been the lack of personnel. As a result of this the Minister-in-charge of the medical portfolio

admits that one hundred dispensaries of Modern Medicine and 65 dispensaries of Indian Medicine remain closed. It is the realisation of this lack of personnel that prompted the Bhore Committee to recommend the establishment of a number of medical colleges all over the country to prepare the personnel required to meet the ever-growing needs of the country. Schemes were also afoot in Madras for establishing a number of medical colleges in different parts of the Province. But the Hon'ble the Minister says now that the Government are not in a position at present to start new colleges for which large sums of money will be required. He therefore wants to be content with the extensions and improvements made to the Stanley Medical College and the Andhra Medical College with a view to raise the admission strength of each to one hundred. Does the Hon'ble the Minister believe that the depletion of the services of men and women due to retirement and otherwise can be made good with this small number of medicos turned out by our Universities every year? Even assuming it equalises the position the prospect of extending medical relief will become remote due to the lack of the required personnel.

The Hon'ble the Minister takes pride in the fact that the eminence of our medical men is recognised all over India. The Hon'ble the Minister is not unaware of the fact that these men are those who were selected for admission to colleges in their days on considerations of pure merit. When this is given the go-bye and communal preferences become the rule, does the Hon'ble the Minister expect that this same excellent record of achievement and reputation can be maintained? It is very much to be regretted that in spite of the repeated declarations of the Central Government that communalism in any shape or form will not be allowed and in spite of the fact that in the portions of the Constitution already accepted all discriminations in regard to caste, community, religion etc. have been removed, the Government of Madras alone should plough the lonely furrow and give further lease of life to the pernicious principle of communalism. The Hon'ble the Finance Minister says that so long as communalism lasts, so long will communal preferences have to be maintained. So long as communal preferences continue, so long communalism will last. This is a vicious circle and only by taking the bold step of eschewing communalism can it be brought to an end. Let us hope that the Government will realise the dangerous potentialities of encouraging communalism before it is too late. That will help Madras achieve greater distinctions and glory than in the past.

The Hon'ble the Minister has detailed at some length the schemes sanctioned for the construction of new hospital buildings in some places, for the reconstruction of one of the 'Taluq Head Quarters' Hospitals in each district, and so on and so forth. This is as it should be. But these cannot amount to extension of medical relief to areas where they are at present absolutely lacking. We are not

unaware of the fact that some primary centres have been established in 1948-'49 and that provision has been made to open primary centres in 25 of the Firka Development centres at the rate of one centre in each Firka in 1949-'50. Even then the position will remain practically the same, people dying from preventable diseases in rural areas for lack of medical facilities. It is not enough to say, as the Hon'ble the Minister does, that he too feels that the money provided for the medical department is not all that they wanted. True there are many other departments which are insistent on the grant of more money. But the health of the people is much more important and any amount spent on it will be an investment which will bring in a good harvest. The Hon'ble the Minister should therefore have pressed for larger allotments to his two important departments.

As stated by the Hon'ble the Minister it is of course true that poverty, ignorance and disease are the triple curses of the country. And it needs no emphasising that the third flows from the other two, poverty as not to be able to keep the body and soul together and ignorance of even the elementary principles of hygiene and healthful living. It is not possible to erase the first two overnight or by a stroke of the pen. It requires laborious labour and huge expenditure. It might not be possible to do all that in a day. But a beginning at least must be made. We do not find much traces of it in the budget presented to the Assembly. To add to poverty, adulteration of foodstuffs has been developed, in the words of the Hon'ble the Minister, as a fine art, causing the slip between the cup and the lip. We read in the dailies of adulteration cases disposed of in the courts of Magistrates, the culprits being let off with small fines which are only flea bites compared with the profits they make by their unsocial and highly criminal acts. We are glad that the Government are considering the question of amending the Food Adulteration Act with a view to increasing the minimum fine and making imprisonment one of the penalties. Food adulteration is a much worse crime than blackmarketing and it is up to the Government to hasten legislation with a view to eradicate the evil. And in that legislation the introduction of provisions to prevent people convicted of adulteration from any longer carrying on the trade will be a good deterrent and bring down adulteration to the minimum possible.

The wealth and prosperity of a nation depend on the health of the people. It is a realisation of this great truth that has induced almost all governments in the West to set apart a large proportion of their revenues for this purpose and they are reaping the rewards thereof. Only by adopting similar measures here can the health of the people be improved and their happiness and well-being assured. We hope and trust that the Government of Madras will realise their responsibility in this behalf and do everything in their power to extend medical facilities far and wide and improve public health.

MEDICINE

Streptomycin treatment in intestinal tuberculosis. (*Schweiz Med. Wochr.*, 78: 10-4-'48).

In this preliminary report Markoff has recorded his findings in five cases of ulcerative intestinal tuberculosis treated with streptomycin. It was given parenterally and by means of high enema in a strength of 250 mg. per 500 c.c. of normal saline, a few drops of Tinct. Opii prevented local irritation. Daily enemata are given for a fortnight and are well tolerated. By elevating the pelvis and placing the patient on the right side, the solution is enabled to pass through the ileo-caecal valve. The results so far have been eminently satisfactory, considering the hopelessness of the condition. This treatment should however be given in a hospital or sanatorium where the pulmonary and general condition can be assessed. T.N.S.R.

Low-grade fever therapy as an adjuvant in the treatment of certain types of arthritis. (*Arch. Phys. Med.*, May 1948).

Drewyer treated 103 arthritic patients by giving them fever therapy and gold injections with conspicuous success. The general body temperature was raised to 101 F. (38.3 C.) by means of a hypertherm cabinet on alternate days. The patients were then wrapped in a steel and wool blanket and allowed to cool gradually till the body temperature reached normal. 5 mg. of gold sodium thiomalate was given twice a week intramuscularly in selected cases of Rheu. arthritis and spondylitis: 90 per cent of the patients with rheumatoid arthritis showed improvement. T.N.S.R.

P-aminosalicylic acid in tuberculosis. (*Schweiz Med. Wochr.*, 78. 10-4-'48).

Constant attempts are being made to find new chemotherapeutic agents, having a lipophile effect on the tubercle bacillus which has a high wax and lipid

content. Of the series of salicylic acid derivatives investigated, P-aminosalicylic acid was specially studied on account of its low toxicity and marked tuberculostatic effect. This drug has been given in high dosage 10 to 15 g. daily for a week, in alternate weeks and for several months. Rapid improvement was observed in 60 to 70 per cent of pulmonary tuberculosis. A 10 per cent solution of this drug may be used in local treatment of tuberculous empyema and abscess. It has failed to cure patients with tubercular meningitis and miliary tuberculosis. T.N.S.R.

Clinical uses of intravenous Benadryl Hydrochloride. (*Amer. Jour. of Med. Sciences*, Aug. '48, pp. 158-162).

Rosenberg and Blumenthal of the Washington University tried the use of intravenous solution of Benadryl (supplied by Parke Davis & Co) in the treatment of conditions (39 patients) generally accepted as being allergic as well as in conditions which are questionably allergic in nature. If the medication brings relief in a few minutes after it is given then the relief is definitely ascribable to the drug exclusively. Urticaria, asthma, vasomotor rhinitis, pruritis, allergic arthritis, tabetic crises were among the conditions treated. Nineteen of 21 patients with urticaria had immediate and complete relief of the pruritis. In some the period of relief was only 3 to 4 hours. The two cases which did not benefit by intravenous benadryl were both patients whose urticaria followed the use of penicillin in wax and oil. The intravenous solution used contained 10 mg. per c.c. and the dose was 30 mg. diluted in about 75 to 90 c.c. of normal saline given by the continuous intravenous drip, taking from 7 to 12 months to complete the procedure. The intravenous benadryl has undoubtedly a certain therapeutic value and one of the most useful purposes is to aid in the prompt and immediate evaluation of the drug in any condition in which its value is uncertain.

Dizziness, sleepiness and dry mouth were the main side reactions. These wore off in a few minutes. T.N.S.R.

Night cramps in arms and legs. (*Amer. Heart. Jour.*, March, 1948).

Moss and Herrmann continued their studies on the treatment of persons suffering from nocturnal muscular cramps, with quinine. Relief was quite prompt after administration of quinine. Evidence is adduced to prove that the action of quinine is directly on muscle rather than on the myoneural junction. Prostigmin fails to increase the intensity or frequency of night cramps even when given in doses that produced vasodilatation. T.N.S.R.

Results of an investigation with the therapeutic action of Paludrine and Pamaquin on acute attacks of B. T. malaria. (*Trans. R. Soc. Trop. Med. Hyg.*, 41, 657-662, March '48.)

179 cases of B. T. malaria were treated with paludrine 250 mg. and pamaquin 10 mg. given concurrently every 8 hours for 10 days. 168 cases alternated with the above received 0.65 g. (10 grains) of quinine and 10 mg. of pamaquin concurrently every 8 hours for 10 days. Rapid disappearance of the parasite occurred in all cases but in the quinine series the average duration of fever was 1.4 days as compared with 2.1 in the paludrine series. Toxic manifestations were fewer (7 per cent only) in quinine series than in the paludrine (37 per cent). The cyanosis, anorexia, and gastric discomfort in the paludrine series were ascribed to pamaquin, which is displaced from the tissues by the paludrine. T.N.S.R.

Hæmophilia. (*Jour. Am. Med. Assocn.*, 138, pp. 174-179).

The control of hæmophilia by repeated infusions of normal human plasma has been the subject of a careful study by Alexander and Landwehr of Boston. Their observations on patients treated over a period of 10 to 20 months indicate that this therapeutic approach forms a basis for amelioration of the bleeding tendency with noticeable rehabilitation of the patients.

100 to 150 c.c. of plasma is infused three times a week and the total number of infusions in the cases treated ranged from 100 to 250. The infusions were always followed, almost at once, by a pronounced drop in the coagulation time to normal or near normal limits.

The intravenous infusion of freshly processed frozen normal human plasma helps to control hæmophilia. The clot-promoting effect of plasma was constant over a period of 12 to 20 months. T.N.S.R.

Insulin and the degenerative changes in diabetes mellitus. (*Med. Jour., Illinois, Chicago.*, April '48):—

Hedges stresses the necessity for recognising and attending to early degenerative changes in diabetes mellitus such as albuminuria, hypertension and commencing retinitis, in addition to the attention given usually to arteriosclerosis in the extremities. The life of the diabetic can only then be prolonged and complications prevented. At present all treatment is directed only towards control of the blood sugar through the use of diet and insulin. Insulin no doubt controls glycemia, but has no power to check the development of degenerative lesions. Greater attention to these are therefore strongly advocated. T.N.S.R.

Sublingual methyl testosterone for immaturity in boys. (*Jour. of Pediatrics, St. Louis*, 32, 351-57, 1948).

Methyl testosterone increases the size and tone of all parts of the male genitalia before or during puberty. Small doses do not initiate the onset of puberty in a child too young for the occurrence. It was given in small daily doses to a selected group of 58 boys between the ages 7 and 15 years. Tablets of this drug were held under the tongue or between the teeth and the cheek and allowed to dissolve slowly. Each tablet contained 5 mg. of the material. For the smaller doses (for younger ones) the tablets were cut in half or fourths (2.5 and 1.25 mg.). Total daily dose varied from 0.6 to 10 mg. and the treatment was continued for 2 to 20 months. Genital development and development of primary and secondary sex characters

were satisfactory in all cases. Increases in height and body weight were also noted.

T.N.S.R.

Recurrence in duodenal ulcer, medical management notwithstanding. (*Gastroenterology*, vol. 10, 1948, pp. 184-199.)

A study of 181 males and 52 women suffering from duodenal ulcer was made by Dr. Flood. The initial treatment consisted of 18 days in bed in hospital and a 2 hourly diet of milk and cream with a gradual addition of other bland foods. Alkaline powders and phenobarbitone were given and smoking strictly prohibited. The patients on leaving hospital were told to take food in puree form six times a day for a year. The average follow up period was 6 to 9 years and 27 were observed for 15 years and more.

Only 48 (about 20 per cent) remained symptom free. Others had recurrence once in 2 years on an average. 30 had to be subjected to surgical treatment for pyloric obstructions and hæmorrhage.

T.N.S.R.

Mester's reaction in diagnosis of rheumatism. (*Rev. Sp. Pediat.*, vol. 4, 1948.)

Mester described a reaction which he regarded as specific for rheumatism. It consists of injecting 1 c.c. of 1 in 1000 aqueous solution of Soda Salicylas subcutaneously. Leucocyte counts are made before injection and again 30 and 60 minutes after. There is a fall in the count up to 50 per cent in rheumatic but not in other cases. Drs. Serrate and Orfia carried out this test with a little modification of their own, in 15 cases of tuberculosis, 15 of syphilis and 15 normal subjects. In all these there was leucocytosis. In 17 rheumatic cases tested 15 were positive. Granulocytes showed the greatest reduction. Eosinophils and monos showed no change.

T.N.S.R.

Effect of ischemia in painful joints. (*Act. Psych. Neur. Suppl.*, 46 of 1947).

Relief of pain is very important in arthritis treatment, as it helps to pre-

vent contractures. Five patients with arthritis and periartthritis of the fingers of recent onset were subjected to the following treatment. A blood pressure cuff was inflated above the systole level and maintained for 20 to 25 minutes; the joints were given rest during this time. When the ischemia was interrupted there was a strong hyperæmia with paraesthesia lasting for ten minutes. There was a simultaneous marked reduction in tenderness and a noticeable increase in the range of movement. Treatment should be given on alternate days and not more than 15 treatments in all.

T.N.S.R.

Combined theoglycinate and penicillin aerosol in the treatment of severe asthma. (*Bull. Univ. Sch. Med. Md.*, 32, April 1948.)

The remarkable success which attended the treatment of severe asthma with theoglycinate and penicillin aerosol therapy without any toxic effects, is responsible for this preliminary report by Bubert and Cook. They treated 33 patients with bronchial asthma, 18 of whom were in *status asthmaticus*.

The combined aerosol therapy was most satisfactorily given in a small transparent canopy with oxygen or an oxygen-helmin mixture for nebulising the solution, though other nebulizers functioned well and yielded good results. In the majority of cases a five per cent solution of theoglycinate aerosol was used, usually 2 c.c. every 4 hours before the penicillin aerosol. The latter usually consisted of 20,000 units of sterile water or saline. The time required for aerosolization of 2 c.c. each of the two, was 45 minutes. This treatment was successful in all cases even where all others had failed.

T.N.S.R.

Dilution acidosis. (*Ann. Int. Med.* 28, March 1948).

Whenever it is necessary to administer intravenous saline very rapidly to a patient, a significant amount of Soda Bicarb should be administered at the same time to prevent a dilution acidosis. This applies also to diabetic acidosis, and to cases of renal disease. The

authors (Shires and Holman) use a commercial preparation containing 6.44 g. of Sod. Chloride, 2.52 g. Soda Bicarb and 0.18 g. of Potassium Chloride per litre.

T.N.S.R.

Normal temperature in old age. (*Lancet* 3.4.1948).

Howell conducted an investigation amongst 326 inmates of the Chelsea Hospital and Battersea Hospital, to deter-

mine if there is any peculiarity in the oral and axillary temperatures in the aged, as compared with those in younger people. 50 nurses, male and female, served as control. The ages of the older people ranged from 65 to 91 years. The temperature in elderly people is lower than in younger individuals and the range of variation is greater. Half a minute is too short a period to get the true reading.

T.N.S.R.

OPHTHALMOLOGY

Solar retinitis due to exposure during eclipse. (*Ann. West. Med. and Surgery, Los Angeles*, 2, p. 217, 1948).

Tower reports that 8 children presented themselves at the Eye Department of the Yale Health Centre with signs of retinal injury to the region of the macula due to exposure to the sun (within two weeks following a recent solar eclipse). The symptoms of solar retinitis are a persistent after-image, positive scotoma, and metamorphosia. Visual acuity is reduced. After a while a translucent gray spot, suggestive of congestion and surrounded by a darker ring, becomes visible in the centre of the macula lutea. Pigment deposits become more pronounced and from a circular stippled area of gray around the fovea centralis. The damage proved to be irreversible in all children. Vision did not return to the previous state even after several months. Neither smoked glasses nor photograph films afford adequate protection for observing an eclipse. Ordinary sun glasses when used for looking into the sun transmit infra-red rays. The incidence of solar retinitis decreases with advancing age. School children are most likely to experience macular injury following observation of an eclipse.

T.N.S.R.

Diagnosis and treatment of blepharoconjunctivitis. James H. Allen, M.D., Iowa City.

Recognition of blepharoconjunctivitis is simple, but determination of the cause and treatment of this condition frequently is difficult. Perhaps this is one of several reasons why it is the most common external disease of the eyes.

Blepharoconjunctivitis may be divided into two groups of cases: those producing generalized inflammation of the lids and those producing localized lesions. Blepharitis marginalis and angular conjunctivitis are typical of the latter group, whereas allergic and contact blepharoconjunctivitis are typical of the generalized inflammatory reactions of the lids. These groups are composed of a large number of etiologic entities, most of which may produce either type of lid lesion. Therefore, this discussion will be confined to the most common forms and, incidentally, the most difficult to treat. These are staphylococcal blepharoconjunctivitis, seborrheic blepharitis, mixed seborrheic and staphylococcal blepharitis, allergic or contact blepharoconjunctivitis and angular conjunctivitis.

Seborrheic blepharitis.—Seborrheic blepharitis is a bilateral lesion characterized by dull, dirty, greasy, loosely adherent scales on the slightly reddened lid margins. In some cases conjunctival irritation occurs, especially during the use of near vision under artificial illumination. This type of blepharitis is always associated with or secondary to a seborrheic dermatitis of the scalp, brows or face, the course of which parallels the remissions and exacerbations of the primary lesions. The causative agent probably is a *Candida Pityrosporum ovale*. Lid margin scrapings show many of the budding yeast cells.

Staphylococcal blepharitis.—Blepharitis marginalis of staphylococcal origin may be squamous but usually is ulcerative in type with the ulcers and lid margins covered by hard, tenacious scales. The

lesion occasionally may be unilateral and frequently shows considerable variation in the inflammatory intensity even on a single lid. The lower lids frequently show a greater amount of involvement. In addition ulcerations of the lid margin, hordeola and chalazions are frequent. Temporary or permanent loss of lashes is common. This type of blepharitis is characterized by a long course of remissions and exacerbations of signs and symptoms. During the severe exacerbations, an eczematoid dermatitis of the skin of the lids, extreme conjunctivitis and keratitis may develop. During the remissions, there are no symptoms; however, with exacerbations, burning, smarting and foreign body sensations develop. A watery or a slight to moderate purulent discharge may appear. With a more acute exacerbation, superficial punctate epithelial keratitis or marginal corneal ulceration with accompanying photophobia may develop. This type of blepharitis frequently is accompanied by staphylococcal skin lesions of the face such as sycosis barbae, impetigo, acne vulgaris, otitis externa and infectious eczematoid dermatitis.

Mixed seborrheic and staphylococcal blepharitis.—Seborrheic blepharitis is frequently complicated by the superimposition of staphylococcal infection. It is quite possible that many staphylococcal infections of the lid margins may become established upon a pre-existing seborrheic blepharitis. However, once established, the lesion takes on the characteristics of staphylococcal blepharitis, and in many cases the mixed nature of the lesion does not become manifest until the staphylococcal element of the infection is either eliminated or greatly reduced. Then the seborrheic aspects become manifest and persist until proper treatment is instituted.

Morax-axenfeld blepharitis.—This type of blepharitis is quite rare in Iowa. It is characterized by a mild blepharitis associated with maceration or excoriation of the lids at the canthi. Usually the outer canthi are involved, but the inner or both the outer and inner canthi may exhibit the characteristic angular excoriations. The lid margins are never ulcerated, and there is no involvement

of the glands or hair follicles of the lids. However, there invariably is an accompanying conjunctivitis, and at times an associated epithelial keratitis or superficial marginal corneal ulceration.

Allergic blepharitis.—Allergic blepharitis may vary from slight itching to vesiculation and excoriation of the skin of the lids. Characteristically, the skin of the lids is thin and wrinkled, having the appearance of old parchment with a fine scaly surface. This appearance extends outward, fading indistinctly on the cheek, temple and brow. In a more acute lesion, weeping eczematoid changes occur. This type of lesion is seldom accompanied by involvement of the lid margins, lash follicles or glands of the lids, but is always accompanied by a greater or lesser degree of hyperemia of the conjunctiva associated with excessive lacrimation. In severe cases, a marginal corneal infiltration without ulceration may develop. The characteristic symptoms are itching and weeping, with the addition of photophobia in cases with keratitis.

DIFFERENTIAL DIAGNOSIS.—Perhaps a consideration of the differences of the various lesions by individual sign and symptom might lend some clarity to the differential diagnosis.

Scales are not present on the lid margins in contact blepharitis and Morax-Axenfeld blepharitis; however, they are characteristic in pyogenic bacterial inflammation of the lid margins and in seborrheic blepharitis. In the latter case the scales are soft, dirty, greasy and easily removed, whereas in staphylococcal blepharitis and other pyogenic types of inflammation the scales are hard and adherent to the lid margins.

Ulcers of the lid margin occur most characteristically in staphylococcal blepharitis and less commonly or not at all in other types.

Hordeola and chalazions are common complications of staphylococcal blepharitis. Occasionally they are due to other pyogenic bacteria. They are not found in pure seborrheic, contact or Morax-Axenfeld blepharitis.

Excoriation of the skin, only at the canthi, is most characteristic of Morax-Axenfeld blepharitis but also may occur

with staphylococcal lesions. It does not occur in seborrheic blepharitis. In contact blepharitis and the more severe cases of staphylococcal blepharitis, excoriations of the lids are more generalized.

Conjunctivitis is usually not found with pure seborrheic blepharitis, but when it does occur it is mild and catarrhal in character.

Catarrhal conjunctivitis is always associated with Morax-Axenfeld blepharitis, and it may vary from mild to severe. Similarly, mild to severe conjunctival injection with lacrimation may accompany contact blepharitis. However, the conjunctivitis associated with staphylococcal blepharitis may vary from a mild purulent variety to a severe catarrhal form.

The cornea seldom is affected in seborrheic blepharitis, and then only as a mild superficial punctate epithelial keratitis. A fine diffuse type of superficial punctate epithelial keratitis is one of the two characteristic complications of severe staphylococcal blepharitis; the other is marginal corneal ulceration. A larger type of epithelial keratitis or marginal corneal ulceration is found with Morax-Axenfeld blepharitis. Marginal infiltration into the stroma of the cornea without ulceration is a characteristic complication of contact blepharitis.

With the exception of the asymptomatic cases of seborrheic blepharitis, all types of blepharitis are characterized by an increase of symptoms during use of the eyes for near vision, especially under artificial illumination. Symptoms common to all types are burning, scratching, smarting and watering of the eyes with the addition of photophobia when corneal complications develop and itching in contact blepharitis.

Scrapings made from the lid margins stained by Gram's method show many budding yeast cells in seborrheic blepharitis, gram-positive spherical cocci in staphylococcal blepharitis, both yeast and cocci in mixed lesions, gram-negative diplobacilli in Morax-Axenfeld blepharitis, and a few diphtheroids with occasional cocci in allergic blepharitis.

Cultures from these cases made in routine manner on blood agar or Löffler's slants show no growth in seborrheic and contact blepharitis. However, they do show hemolytic colonies of staphylococci in staphylococcal and mixed cases, and also typical colonies of *H. duplex* (Morax-Axenfeld diplobacillus) in Morax-Axenfeld blepharitis.

TREATMENT.—**Seborrheic blepharitis.**—Cleansing of the eyelids followed by application of 3 per cent ammoniated mercury ointment three times a day results in rapid improvement and may produce a temporary cure of seborrheic blepharitis. However, since the lid margin lesion is secondary to seborrheic dermatitis of the scalp or face, it will persist or return unless the source is cured or controlled. Therefore, vigorous measures for the control of dandruff should be instituted and maintained.

Staphylococcus blepharitis.—The treatment of staphylococcal blepharitis and blepharoconjunctivitis is a difficult and prolonged procedure in many cases. This is due, probably, to the associated involvement of the glands of the lid margins which permits the infection to persist deep in the glands even though the surface infection may be controlled temporarily.

The occasional case of acute blepharitis or blepharoconjunctivitis of staphylococcal origin without involvement of the glands may be controlled completely by vigorous treatment with any of the usual conjunctival antiseptics, but once the glands of the lid margins are involved the disease becomes chronic, and repeated hordeola, meibomian abscesses and chalazions complicate the problem of treatment.

In all cases the lid margins should be cleansed thoroughly. For the more difficult cases with tightly adherent scales, a 1:5000 aqueous solution of zephiran chloride is valuable because of its detergent action. The scales should be moistened with this solution and the patient instructed to soak the lids by the application of wet compresses for five to 10 minutes. Cleansing of the margins with a cotton applicator moistened with zephiran chloride solution then usually is easy.

After cleansing, the lids should be expressed or massaged in order to expel the contents of the glands. The material expressed should be removed from the lid margin with a cotton applicator moistened (not wet) with 2 per cent aqueous solution of silver nitrate, care being exerted to avoid touching the cornea or conjunctiva with the applicator. This should be followed by the instillation of one drop of 1/1000 aqueous solution of suprarenin onto the conjunctiva. In severe cases this procedure may be repeated daily for several days, then at progressively less frequent intervals until the inflammation subsides.

During the acute episodes and with chronic involvement of the glands, the patient should be instructed to use hot, wet compresses on the lids for 15 to 20 minutes, three or four times a day.

In addition, the patient should be instructed in the use of local antiseptic drops or ointment. Penicillin ointment, 2,000 units per gram, 5 per cent sulfathiazole ointment or 10 per cent sulfacetamide ointment should be used four to six times a day, or one drop of 30 per cent aqueous solution of sulfacetamide should be instilled onto the conjunctiva every hour while the patient is awake. These medications are sometimes more effective when alternated, but one of them should be used in decreasing frequency every day for at least two weeks after the lids and conjunctiva apparently have returned to normal.

Occasionally such methods of treatment are not adequate; therefore, supplementary immunization procedures are required. If the lesion is complicated by keratitis or corneal ulceration, passive immunization should be accomplished with daily injections of 10,000 units of staphylococcus antitoxin until the corneal lesion is healed. Normally four injections are adequate. This should be followed by active immunization with a combination of staphylococcus vaccine and toxoid.

Local treatments should be continued during and following immunization procedures as indicated by the clinical manifestations.

Mixed seborrheic and staphylococcal lesions:—Mixed seborrheic and staphylococcal blepharitis and blepharoconjunctivitis should be treated as if the lesions were staphylococcal, but simultaneously foci of seborrheic dermatitis elsewhere on the face and scalp should be eliminated. Under this regime the seborrheic element may disappear with the staphylococcal, but should it persist further therapy should be directed along the lines outlined above for pure seborrheic blepharitis.

Morax-Axenfeld blepharitis:—This type of blepharitis and blepharoconjunctivitis responds well to the application of 5 per cent sulfathiazole ointment or 10 per cent sulfacetamide ointment four times a day. It may, however, be necessary to maintain treatment for three to four weeks in order to prevent recurrences.

Allergic blepharitis:—The primary consideration in the treatment of allergic or contact blepharoconjunctivitis is the determination of the offending agent. In the majority of cases, particularly in women, cosmetics (nail polish, powder, cream, perfume, mascara, etc.) are the chief source of difficulty. The next most common source is drugs (butyn, atropine, pontocaine, hydrochloride, etc.). In fewer instances, foods, plants, pollen, animal epidermal and irritating dusts are the source. The offending agent may be determined by history of contact, by the process of elimination or by patch testing. Once the agent has been ascertained, every effort should be made to prevent contact between it and the patient, or the patient should be desensitized. In severe cases and in those in which the offending agent has not been determined, the antihistamine drugs may be of benefit. Benadryl or pyribenzamine may be given in 25 mg. doses four to six times a day for the adult. For the child, the total daily dose may be calculated on the basis of 2 mg. per pound of body weight, divided into four equal parts for administration throughout the day. The total daily dose should not exceed 150 or 200 mg.—*Journal of Iowa State Medical Society.*

Prognosis and treatment of sympathetic ophthalmia.—B. Samuels, *A. J. Ophth.*, April 1948.

I. SURGICAL TREATMENT.—(a) *Time to enucleate.*

1. When the fellow eye is irritable, even if it be apparently normal, the injured eye should be removed.

2. At the discovery of deposits on the posterior surface of the cornea of the fellow eye, the injured eye should be removed.

3. In all cases in which the wound is retracted, especially if it contains uveal tissue and the eyeball is soft and tender to touch; when the vision is failing; when in short, there is no hope that the organ will ever again be serviceable, the time to enucleate has arrived.

Sympathetic ophthalmia has been known to set in within 48 hours after the injury, but it may not happen until years have elapsed. It is at once the gravest and the unpredictable of all ocular diseases. The most hazardous period is during the first 2 or 3 months.

4. A globe with endophthalmitis is removed with safety at any time because the infection is confined within the fibrous tunic.

(b) *When not to enucleate.*

1. When the wound heals properly, the tension is good, some sight is retained, and the fellow eye shows no irritation, it is safe to wait and watch.

2. When the injured eye still has some vision after the fellow eye has become severely inflamed, the rule is to retain the injured eye, for in the end it may be the one eye that retains any sight.

3. When both eyes are violently inflamed, the enucleation of the injured eye can serve no purpose.

4. As regards panophthalmitis, Grafe reported the loss of two patients from meningitis after the enucleation of a globe with flagrant panophthalmitis. Since that time, it has been traditional in Germany and Austria never to excise such a globe until the inflammation has subsided.

Sympathetic ophthalmia has occurred during the active stage of panophthalmitis but so rarely as to justify delay. Occasionally, after the promptest removal of

an injured eye the remaining one becomes inflamed. This may happen up to 20 days, which is the longest time on record. Such a retarded attack was formerly believed to have been excited by the removal of the injured eye. In these delayed cases, the virus was probably on the way but had not reached its destination at the time of the removal of the globe.

II. MEDICINAL TREATMENT.—Miotics would tend to increase the central synechia, and mydriatics would be harmful on account of the tendency to glaucoma—if, indeed, these solutions can have the least effect on iritis maligna.

Starting with the salicylates and mercury in the early days, down through salvarsan and tuberculin to the sulfa preparations and penicillin, not omitting fever therapy, medicinal remedies of many kinds have been tried. A complete list would form a catalogue of the passing moods in therapeutics during many decades. From almost every remedy there has come a report of a cure, after the removal of the injured eye. No doubt a number of these cases have been reported far too soon. The sight of an eye may improve immediately after the removal of the exciting eye and then, within a month or two, there may be a return of the inflammation followed by one attack after another through years until blindness ensues. It is to be remembered that cases of spontaneous cure are on record in which the removal of the injured eye was refused.

In evaluating the efficacy of any particular medicinal treatment, it is necessary to know in what exact pathologic stage of the disease it was begun. Treatment is conceivably helpful in the first stage before too many nodules have infiltrated the choroid and invaded the sclera, but in the second and third stages, it is difficult to understand how any remedy can affect the infiltration which by this time must have replaced the normal uvea and can only end in a fibrous membrane.—*Indian Journal of Ophthalmology.*

Myopia.—F. C. Stansbury, (*Arch. Ophth.*, March, 1949.)

1. Axial elongation of the eye beyond normal limits is not necessary to myopia.

2. Near work has never been shown to cause myopia, either in school or in adult occupations.

3. There is no proof that overcrowding, poverty, poor health, inferior or superior mentality or bad ocular hygiene can cause myopia.

4. No mechanical basis for myopia has ever been substantiated.

5. There is no evidence that congenital deficiency of the sclera, disorder of growth, imbalance of the extraocular muscles, endocrine dysfunction, or avitaminoses plays any part in the causation of myopia.

6. The relation of other diseases to pathologic myopia has not been determined. It is possible that they play a part in the production of secondary myopia.

7. The role of heredity is not definitely established, particularly with respect to secondary myopia.

8. There is statistical evidence that

primary myopia is a biologic variation and clinical evidence that it is a healthy refractive state.

9. There is clinical and pathologic evidence that secondary myopia is a disease of the eye, the cause of which has not been demonstrated. It is suggested that a low grade chronic choroiditis is the primary lesion.

10. The main factor in differential diagnosis of the two types of myopia is the presence or absence of the lesions in the fundus.

11. A classification of myopia is essential for progress in statistical and clinical research on this condition. The terms primary and secondary are suggested as simple and descriptive.

12. Differential diagnosis of the two types is of great importance clinically, in therapy and in prognosis. It will prevent the waste of many useful citizens as "myopic cripples."—*Indian Journal of Ophthalmology*.

SURGERY

Surgery in bleeding peptic ulcer.

—Warren and Lanman say that under current methods of conservative treatment, 1 or 2 of every 20 patients admitted with massive hæmorrhage from peptic ulcer will die. These patients establish a need for surgery in the treatment of bleeding peptic ulcer. The mortality following surgical treatment seems to be directly dependent on the degree of exsanguination at the time of operation. The authors have found it useful to separate operations done during different phases of exsanguination into three categories; namely, emergency, urgent and elective. Of the 54 patients with bleeding from peptic ulcers observed by the authors, 29 had massive hæmorrhage; the erythrocyte count was less than 3,000,000. In 10 of 20 who bled rapidly, the hæmorrhage continued or, having stopped, it recurred. Four of these 10 were over 45 years of age and were operated on. Their postoperative courses were satisfactory and there were no deaths. One of these 4 patients operated on had a small duodenal ulcer of the anterior wall. A subtotal gastric resection with excision of the duodenal

ulcer was performed. In the other 3 cases the ulcers were of the posterior penetrating variety and had eroded large arteries. Each ulcer was treated by exclusion. Since they presented three different problems in technical management which call for exclusion rather than excision, they are reported in detail. The authors stress early "urgent" operation for all patients with massive hæmorrhage from peptic ulcer who are over 45 years and in whom the hæmorrhage persists after forty-eight hours following admission to the hospital or, having stopped, recommences. Subtotal gastrectomy with removal of the lower two thirds of the stomach, including the pylorus, should be the surgical plan for these patients. In those patients in whom the ulcer is technically difficult to remove, a subtotal gastrectomy with exclusion, but not removal, of the ulcer is advocated. In patients with a large inflammatory mass involving pylorus and duodenum, a two stage subtotal gastrectomy as described by McKittrick should be done.—*Jour. of Amer. Med. Assn.*, Jan. 15, 1949.

The uses of streptomycin in urology.—John T. MacLean, M.D., Emerson Smith, M.D., Lloyd Bower, M.D., and Frederick Smith, M.D., Montreal. Condensed from the *Canadian Medical Association Journal*.

Hinshaw et al in a report on over 100 various types of tuberculosis state that "The mycobacterium of tuberculosis is susceptible to streptomycin and that the course of the disease can be changed if an adequate dose is administered." It has been known for some time the *M. Tuberculosis* like the *M. leprae* has a waxy cell wall, which protects the organism. Slotkin concluded that if there was a substance which would dissolve this protecting waxy wall of the *M. tuberculosis* the organism might then be attacked by an antibiotic. He conceived the idea of dissolving this waxy wall with chaulmoogra oil and then giving the organism what would now be a lethal dose of streptomycin. He reported six cases so treated with apparently exceptionally good results.

During the past year we have had an unusual opportunity to study the possibilities offered by this method of treatment, and wish to present our conclusion based on ten cases so treated. In all cases treated, moogrol, which is the ethyl ester of hydnocarpus oil, was used.

In attempting to evaluate any type of therapy in cases of genito-urinary tuberculosis, it must be borne in mind that the greatest single characteristic of this type of tuberculosis is its marked tendency to spread. Further, it is a well known fact that removal of a tuberculous kidney alone without any chemotherapy at all, will often result in immediate relief of urinary symptoms and rapid healing of the bladder lesions. In evaluating the effect of moogrol and streptomycin therapy on genito-urinary tuberculosis, one must therefore exercise reasonable caution.

It is realized that the number of cases presented is small, and does not necessarily establish incontrovertible proof. However, the observations are interesting, and we believe that there is sufficient evidence to indicate that by the use of 1cc. of moogrol and 1 Gm. of streptomycin daily for one month, in

cases of genitourinary tuberculosis, certain benefits may ensue.

CONCLUSIONS.—1. With the use of streptomycin and moogrol, there is definite clinical improvement at the end of the period of therapy in some cases of renal tuberculosis and pronounced improvement in others.

2. Tuberculous epididymitis responds very slowly, if at all, to streptomycin therapy. This parallels exactly the failure to obtain an adequate concentration of the drug in the tissue concerned.

3. There is little to be gained by giving moogrol and streptomycin therapy to patients with a small contracted tuberculous bladder, especially if the urine is negative for tubercle bacilli. The clinical symptoms are perhaps slightly improved, but the overall picture is unaltered.

4. In a case of bilateral renal tuberculosis the more severely infected kidney was removed and the lesion in the other kidney healed following moogrol and streptomycin therapy.

5. Intensive therapy with moogrol and streptomycin appears to hasten the granulation and healing of grossly infected tuberculous wounds.

7. There was no demonstrable spread of infection during the period of observation in any of the ten patients treated.

8. The optimum dosage of moogrol and streptomycin, and the length of time over which this should be given, has not yet been established.—*Digest of Treatment*.

Causalgia.—Cullen's report is based on 24 cases. He is of the opinion that the typical syndrome of causalgia develops only when the median or internal popliteal nerves are injured. He doubts whether pain associated with injury in the peripheral part of the limb, or of the brachial plexus, should be classed as causalgia. Procaine hydrochloride block of the sympathetic ganglions is important as a diagnostic method. Twenty-three injections of procaine hydrochloride were made in 17 of the author's patients. Of these, 8 were treated subsequently by sympathectomy and 9 by radiotherapy. No permanent benefit

from procaine hydrochloride injection was observed. After sympathectomy, 7 patients were relieved of all pain at the end of one year; 1 complained of occasional pain in the ring finger. The improvement in these was maintained for two years after operation. Roentgen therapy alone was used in 7 patients, 3 with brachial plexus lesions and 4 with median and other peripheral nerve lesions. Two of the 3 patients with brachial plexus lesions were almost free from pain after two years and suffered pain only on excitement or exposure to cold. One showed no definite improvement and has since been treated by tractotomy. In all 4 patients with lesion of the median or peripheral nerves there was steady improvement over two years. The result was less satisfactory after roentgen therapy than after sympathectomy. While these patients were able to carry on with their work, they were still liable to mild recurrences of pain as the result of excitement, loud noises, or exposure to cold. Of the remaining 9 patients, one was treated by alcohol injections with incomplete relief. Of 3 who were treated by neurolysis with periarterial sympathectomy in 2 and arterectomy in 1, only 1 showed slow improvement over two years which did not appear to be related to the operation. Four patients with mild causalgia received simple physical therapy including wax baths, galvanism and massage. Physical therapeutic treatment is not tolerated in cases of severe causalgia.—*Jour. of Amer. Med. Assocn.*, Jan. 15, 1949.

Chronic prostatitis—The management and prognosis.—J. L. Davis, M.D., Jackson, Miss. (Condensed from the *Mississippi Doctor*).

The clinical importance of chronic prostatitis lies in its prevalence and in its peculiar tendency to persist and to progress unless adequately treated. There are few protracted diseases which deserve the term "chronic" more than this type of "prostate trouble," and like all such chronic diseases, some one of which is common to all types of practice, chronic prostatitis is cured, if at all, only by the perseverance of the physician. Unfortunately, there exists

among the profession an understandable, yet unjustified, scepticism as to the curability of chronic prostatitis which militates against the perseverance and resourcefulness often required to bring about a successful event. In briefly reviewing the status of this subject, it is the purpose of this paper to reaffirm the urologists' faith in the curability of chronic prostatitis.

ETIOLOGY.—A small number of these prostate infections are truly gonococcal, that is up to about six to eight months following an attack of gonorrhea. Others are post gonorrheal—non-gonococcal infections. More than 60 per cent of all infections of the prostate, however, are due to other initiating causes such as the following:

1. Upper urinary tract infections.
2. Post instrumental urethritis.
3. Strictures of the urethra.
4. Focal infections elsewhere in the body.

Whatever the initiating causes or the contributory factors involved at the outset, the infection owes its chronicity to the peculiar structural complexity of the prostate gland which favours retention of infection.

SYMPTOMATOLOGY.—The symptomatology of chronic prostatitis presents no constant combination which might lead to an inferential diagnosis. In about 25 per cent of the men who exhibit pus cells in the prostatic expressions, there are no symptoms, but this by no means implies that the disease is pathogenically quiescent.

If any one symptom can be regarded as pathognomonic of chronic prostatitis, it is the well-known "morning drop." Its appearance hastens the guilty and the curious alike to a diagnosis of unsuspected pre-existing prostatitis. The "morning drop," sometimes associated with diurnal moisture at the meatus, and itching and tickling along the urethra, is the anterior urethra's exudative response to bacterial toxins or organisms liberated from the infected prostate.

DIAGNOSIS.—The diagnosis of chronic prostatitis requires microscopic study of the prostatic expressions. Palpation

yields little information of value. Wherever the aforementioned symptoms exist, diagnostic massage is in order. Furthermore, no complete or general examination in the male, in health or disease, is truly complete without diagnostic massage of the prostate, and study of the prostatic secretion, unless there is a definite contraindication.

TREATMENT.—Prostatic massage is basic treatment in every case. The interval between massages should be 3 to 4 days, not as long as a week. Rarely more than 6 to 8 in a series; a stationary period response is usually reached between sixth and eighth massage. Rest interval of 4 to 6 weeks for adjunctive therapy, and investigation of foci. Usually not more than 2 or 3 courses are required, interspersed by rest intervals. Such prolonged therapy must be anticipated and explained to the patient.

In the vast majority of cases there is no further need of the sound beyond the demonstration that it is not needed. A No. 24 sound is employed at the outset of treatment or following the first course of massage: its purpose is to detect stricture or contracture of the vesical neck. In non responsive cases full dilatation up to 26 or 28 F. is indicated for the purpose of opening the prostatic duct orifices and to promoting evacuation of retained or inspissated secretions.

Penicillin is the drug of choice because of its selective action on the coccal infections which predominate in chronic prostatitis. The sulfonamides, notably sulfadiazine, are also of great value. The concurrent use of penicillin and a sulfonamide is justified in the more serious or more complicated cases.

Obvious dental and tonsillar infections should be removed in every case of prostatitis. In many cases of chronic prostatitis, an exhaustive search for dental and tonsillar foci must be prosecuted, and if such infections are found they must be removed. The causal relationship between dental and tonsillar infections and chronic prostatitis can no longer be questioned.

In conclusion, it is pertinent seriously to consider the psychosomatic aspects

of the problem. I know of no phase of urologic practice wherein the "treatment of the patient" is so important. All males are deeply concerned with the slightest affection of the sex organs. Serious mental disturbances out of all proportion to the severity of the organic disease are common among victims of chronic prostatitis. In handling these cases the physician must display confidence in the end results of his treatment, avoid radicalism and psychic trauma and enforce a stern discipline upon the patient.—*Digest of Treatment*.

Effect of streptomycin in experimental strangulation of the bowel. H. S. Davis, J. Gaster, R. L. Marsh, and P. A. Pritel, *Surg., Gynec. and Obst.*, 87:63, July 1948.

This study was based on experimental strangulation of the bowel by devascularization. Bacterial growth in the devascularized bowel wall was the major factor leading to perforation and gangrene of the bowel. Prevention of the growth of bacteria by streptomycin was the mechanism underlying the prolongation of life in the treated rabbits. Streptomycin in doses of 40 mg. per kilogram of body weight daily lowered the mortality rate, and 100 mg. per kilogram of body weight daily prevented any mortality. On the basis of these experiments the authors suggest that the clinical administration of streptomycin might be a useful adjunct in the treatment of strangulated intestinal obstruction, especially of the type due to acute arterial mesenteric thrombosis or embolism. Since the therapeutic value of streptomycin is dependent upon the length of strangulated bowel, and since it is impossible to predict the extent of strangulation, streptomycin should be regarded as an adjunct to and not as a substitute for surgery.—*Journal of the International College of Surgeons*.

Principles old and new of resection of the colon for carcinoma.—Leland S. McKittrick, *Surg., Gynec. and Obst.*, 87:15, July 1948.

A study was made of the immediate results following resection of the colon

for cancer for the past 16 years. The year 1942 is used as the transition year from the earlier to the present methods, showing striking drop in mortality rate, and the striking transition from staged operations to resection and primary anastomosis. A continuance of present methods seems justified by the mortality rate of 3.6 per cent for 110 operations with primary anastomosis. The basic principles for resection of the colon for cancer are listed as the following: (1) Proper preparation of the patient. (2) Optimum exposure of the segment of colon to be excised. (3) Adequate immobilization of bowel. (4) Adequate cancer operation. (5) Free blood supply to both segments. (6) Avoidance of tension on suture line. (7) Proximal complete colostomy, if adequacy of suture line or blood supply is in doubt.—*Journal of International College of Surgeons*.

Current trends in surgery of the distal colon and rectum for cancer.—A Stephens Graham, *Ann. Surg.*, 127: 1022, May 1948.

A survey by questionnaire was undertaken to determine current trends in the surgical treatment of cancer of the distal

colon and rectum as practised by 50 surgeons with relatively large experience in this field. The opinions of 10 of these whose pre-eminence few would question have been contrasted with those of the remainder of the group. The departments of surgery of 31 medical schools and seven clinics are represented.

The author claims to have noted a decided trend away from extraperitoneal multi-stage operations for lesions of the distal colon. Forty-two, or 84 per cent, indicated regular use of chemotherapeutic agents. Forty-one, or 82 per cent, indicate the Miles operation as the procedure of choice both for lesions of the rectum and rectosigmoid. From the questionnaires it would seem that a trend toward operations upon the rectum with preservation of the anal sphincter is declining. Another trend, however, that toward single-stage operations in every segment of the large intestine, seems to be growing. This is accomplished for the transverse, descending and sigmoid portions of the colon by immediate anastomosis after resection and for the rectosigmoid and rectum by a one-stage combined abdominoperineal resection.—*Journal of the International College of Surgeons*.

OBSTETRICS and GYNÆCOLOGY

Primary post-partum hæmorrhage. (*Br. Med. Jour.*, 23-10-48, pp. 740-43.)

Joyce and Lennon of the Nuffield Department of Obstetrics in the Oxford University have made careful studies between 1938-47 of 156 cases of post-partum hæmorrhage and 56 cases of manual removal of placenta. 94 of the 156 were primiparæ the rest multiparæ. Normal pregnancies were 100; the rest were somewhat abnormal.

Normal labour occurred in 113 cases; forceps deliveries numbered 27; version insertion of bag and other obstetric manœuvres had to be made in 16; medical or surgical induction was done in 24. Multiple pregnancies numbered 3 and breech deliveries four. Two with placenta prævia had P.P. hæmorrhage after vaginal delivery.

Manual removal of the placenta (by the technique outlined in this article) is a less dangerous procedure now from the sepsis point of view than is generally supposed.

Greater use might be made of *Ergometrine* (as the drug of choice in preference to more than one different oxytocics) for the control of hæmorrhage.

Larger transfusions of blood might reduce morbidity and shorten convalescence. T.N.S.R.

Early rising after delivery. (*Am. J. Obst. and Gynec.*, 55, p. 768, 1948).

Cornell and Mullen report that patients who were allowed to be up on the fifth or sixth day or even earlier after delivery were in better condition at the time of discharge than if they had remained in bed for eight or more days. No case of thrombophlebitis occurred.

in those delivered vaginally and early ambulation reduced this complication. There was no case of uterine prolapse. The rate of involution of the uterus was increased. The necessity for enemas and catheterization was lessened when the patient was up to the toilet on the postoperative day, after caesarian section. When necessary, because of over-crowding, the patient could be discharged from the hospital earlier than heretofore with a greater margin of safety.

T.N.S.R.

DERMATOLOGY

Sulphathiazole ointment in treating impetigo contagiosa. *Med. Officer*, 79, pp. 187-188, 1948.

Sulphathiazole (10 per cent in lanoline) ointment has been widely used in cases of impetigo caused by the strepto-pyogenes and staph. aureus both in children and adults. It has been found to produce magical results, cures being effected in 24 hours. Firmly adherent crusts need not be removed before using the ointment; long duration of the disease is no bar to this treatment. Essential precautions were:—(1) Soap and water washing of the affected area; (2) shaving off the hair or cutting it short; (3) liberal application of the ointment; (4) firm bandaging or strapping; (5) Tine. and starch dusting of the cured area if there was itching. T.N.S.R.

Roentgen therapy in tinea capitis: A new method. (*Radiology*, April, 1948, pp. 468-75.)

Drs. Pendergrass and Mahoney of the University of Pennsylvania Hospital treated 120 cases of ringworm of the scalp by X-rays. All but one were completely cured without any damage to the scalp. They reject the classical open-field technique of epilation as unreliable, because of the uneven distribution of the radiation by the Adamson-Kienbock technique. The Pennsylvania Hospital adopts the five-field closed-portal technique (dividing the skull into five fields) of Drs. Pendergrass and Mahoney. Each field receives a dose of 500r. (measured in air) the surrounding scalp being screened and protected by their lead sheets; with this technique the centre of each field gets the full dose and the periphery only 350 to 375r which is necessary for a complete epilation. T.N.S.R.

Calcium ointment in dermatology. *Jour. of Invest. Derm.*, 10, 229, 1948.

An ointment containing 10 per cent calcium gluconate in a water soluble base (pH 5.5) was used to treat 136 cases of eczematous dermatitis and localized neurodermatitis. 82 of these had failed to improve with orthodox treatments. Remarkable improvement was noted in 31 out of 59 patients with contact dermatitis, in 39 out of 47 with neurotic eczema and in 23 of 50 with neurodermatitis. Moderate improvement occurred in a smaller number of cases. T.N.S.R.

Liquid oxygen in dermatological practice. *Arch. Derm. Syphil.* (Chicago), vol. 57, Jan. 1948).

Kile and Welsh found liquid oxygen to be a very effective local destructive agent for treating warts, hæmangiomas, leucoplakia, and other lesions which are treated with CO₂ snow. Liquid oxygen is preferred, as the local effect and reactions could be more easily controlled. Liquid oxygen boils at -183°C & CO₂ has a sublimation point of -78.5°C, which is the equivalent of the boiling

point liquid oxygen (CO₂ has no liquid phase). Liquid oxygen can be obtained from a suitable industrial concern and stored in a thermos flask having a cotton

wool plug instead of a cork. Patients prone to form keloidal scars do not develop these on the areas treated with liquid oxygen.

T.N.S.R.

Book Reviews

The Lt. Col. Sir A. Lakshmanaswamy Mudaliar Commemoration Volume—Published in 1948, by the Committee in Madras.

This volume of Essays and papers, written by friends, pupils and admirers is presented to Sir A. L. Mudaliar on his sixty-first Birthday. Sir Lakshmanaswamy is an outstanding man not only in the Medical World but also in the sphere of education and administration. As a teacher and gynaecologist he has won international honours. As Vice-Chancellor of the Madras University, as Chairman of the Red Cross, as Chief Commissioner of the Madras Boy Scouts, as member of the Madras Legislative Council, as member or Chairman of numerous scientific, medical and educational Committees he has shown outstanding abilities. It is but proper that his friends, admirers and pupils should bring out this volume and present it on his sixty-first birthday as a token of their tribute to and appreciations of his great work. The volume is in two sections—the first on Education and the second on Medicine. Distinguished persons have contributed to both sections. In the section on Medicine there are contribution from such distinguished members of the profession such as Dr. P. V. Benjamin, Dr. M. G. Kini, Dr. Purandare, Sir William Fletcher Shaw, Dr. Bethel Solomons, Dr. Yodh, Dr. H. M. Lazarus and Dr. R. V. Rajam. The articles are well written. The illustrations are good. The general get up and printing are satisfactory. It is a fitting tribute to Dr. Sir A. L. Mudaliar's work. The Committee deserve our congratulations.

Pulmonary Tuberculosis—Diagnosis and Treatment—By S. SEN, B.Sc., M.B., M.R.C.P. (Lond.), F.R.F.P.S. (Glasgow), Physician to Government Hospital Rangoon, 74 pages. Published by Messrs. Bookland Ltd., No. 1, Sankar Ghose Lane, Calcutta 6.

[Price Rs. 4-8-0.]

The purpose of this small but fairly exhaustive booklet on the subject of "Pulmonary Tuberculosis" is to bring home to the general practitioner, especially those in the rural areas, the necessity and the means by which this dreadful disease can be recognised even in its earliest stages and brought under control and treated. The booklet is meant mainly as a ready reference and consists of 74 pages of neatly printed matter which have been divided into III Chapters, the diagnosis and investigations in the earlier ones and the treatment and methods of control in the later ones. The treatment part of it is dealt with

in detail and has been divided into 5 headings. The use and limitations of streptomycin in tuberculosis has been given special attention. To the control of tuberculosis has been devoted a separate Chapter which includes such important problems as residential institutions, after-care schemes and financial security. There are two appendices one of which deals with surgery in pulmonary tuberculosis and the other describes the Mantoux test.

C.V.R.

Neuroanatomy—By FRED. A. METTLER, A.M., M.A., Ph.D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University, New York, 1948, Second Edition, 536 pages, 357 illustrations including 33 in color. [The C. V. Mosby Company St. Louis].

This book is intended to meet the needs of the medical student beginning instruction in Neuroanatomy. The book is divided into two sections. The first part deals with the topography and morphology of the central neural system as seen with the naked eye. The chapter on general gross features of transverse sections at various levels is very well written. The second part deals with the microscopical anatomy of the neural system. Here the functional view point is stressed. The diagrams and drawings are very good. These have been made from original directions and present new angles and views not usually given in text books. The printing and general get up of the book is very good. We recommend the book as a reference book to those working in anatomy and neuro-anatomy.

All-India Medical Directory and Who's Who—Edited by Dr. K. V. Mathew. Published by the Health Bookstall, 1949. 7/8, Krishnan Koil Street, G.T., Madras. [Price Rs. 20.]

The Directory is perhaps the first of its kind in India. It is divided into 8 Sections. Section A deals with the History of Indian Medicine, Medical Administration in India and Christian Medical Work in India. Section B deals with Medical Education in India and gives a history of the growth of the Medical Colleges of India. Section C deals with Chemists, Pharmacutists and suppliers of Medical and Surgical requisites. Section D gives a list of doctors in India. Section E describes the hospitals in India. Section F deals with special institutions like nursing homes, radiological institutions and clinical laboratories. Section G gives a list of Medical Journals and Booksellers. Section H describes in a brief manner,

the latest advances in treatment. There are photographs of the leading medical politicians of India and of the Advisory Board. Dr. Mathew has to be congratulated on his achievement. It is a very difficult task to compile such a Directory and Who's Who and the editor has done his best. It is a very useful work and gives a fund of information on a variety of subjects. Every medical man, chemist or business man, must have a copy of this book.

Bacterial and Virus Diseases—By H. J. Parish, M.D., F.R.C.P.E., D.P.H., 168 pages.

This book has been written to present in a concise and clear manner the essential principles of Immunology as well as their application to Medicine. The Book is divided into three parts. The first deals with general topics such as the uses of Serological Preparations, Immunity and Serum Sickness. The second describes various Antisera, Antitoxic Sera, Antivenoms etc. The third section deals with Serological Products for Active Immunization and some Diagnostic Reagents. In this chapter are described in detail the Schick Test and the Dick Test. Details as regards the age for immunization, dosage and intervals are thoroughly discussed. There is also a chapter on Bacterial Vaccines. The chapter dealing with Tuberculin and B.C.G. Vaccine will be very useful.

Manual of Hygiene and Public Health—By RAI BAHADUR JAHAR LAL DAS, L.M.S., D.P.H., Professor of Hygiene and Public Health, Carmichael Medical College, Calcutta,

Retired Assistant Director of Public Health, Behar etc. Fourth Edition, Parts I and II, Illustrated. Part I, 1947, 486 pages. Part II, 1948, 1124 pages. Published by Messrs. Das Gupta & Co., College Street, Calcutta. Price: Part I Rs. 7. Part II, Rs. 8-8.

Part I. This is the fourth edition of the well-known text-book on Hygiene and Public Health. It has been revised and contains several new chapters. Many chapters are re-written. It deals with the usual subjects covered by any text book of Hygiene and is written with special reference to the peculiar conditions of the tropics. The chapters that might be specially useful are the ones on Public Health Organizations, House Sanitation and Industrial Hygiene. This last chapter is specially well written and in view of the fact that Industrial Hygiene and Industrial Medicine are going to play a prominent part in the future it is bound to be useful for those interested in the subject.

Part II. This volume has also been extensively revised and many Chapters have been re-written. Among the useful chapters might be mentioned those on Mental Hygiene, Sex Hygiene, Social Hygiene, Rural Reconstruction and Village Sanitation, and Climate and Meteorology. This Volume also contains useful appendices which deal with the routine duties of a Medical Officer of Health. The Volumes are well written and will be very useful for Nurses and Medical and Public Health students. It is written very exhaustively and is very popular among the student population. We recommend the book as a text book on Hygiene and Public Health.

Correspondence

To the Editors, THE ANTISEPTIC, Madras.

Sirs,

Will you or any of your numerous readers kindly inform me direct and at the earliest where I can get up-to-date books dealing on "Omens" and "Dreams" scientifically.

T. S. A. PADMANABHAN, L.M.S.,
Badagara, Malabar.

pointed out as "specific" for measles. Will some of the readers please let me know through your much esteemed journal, their experience with this drug (Pyramindon) in measles, its dose, precautions to be taken during its use etc.

Yours faithfully,

Pandu, SUKUNDU DASGUPTA, M.B., (Cal.),
Assam. Asst. Surgeon, Assam Rly.

The Treatment of Measles and its Complications

To The Editors, THE ANTISEPTIC, Madras.

Sirs,

In the article, "The Treatment of Measles and its Complications" the usefulness of Sulpha group of drugs in the treatment of measles and its complications has been rightly pointed out by the author. In some text books including Chopra's Hand Book of Tropical Therapeutics (1938 Ed.) Pyramindon has been

A Suspected Case of Cerebral Meningitis

To the Editors, THE ANTISEPTIC, Madras.

Sirs,

I have gone through "A Suspected Case of Cerebral Meningitis Treated with 4 times Lumbar Puncture" published in the May '48 issue of your ANTISEPTIC, written by Dr. Ali. I find that he has missed some important points during his clinical examination, which should be noted in every suspected case—as for Kernig's sign and Brudzinski's sign, of

which the first one is the most important. In rural areas where lumbar puncture and laboratory findings are not possible, I think Kernig's sign will help us to diagnose a case of meningitis. Last of all I press it upon my friends that in every suspected case of cere-

bral meningitis, proper clinical methods should be taken from head to tail.

P. O. Bariahi,) SUDHENDU SEKHAR PAUL,
Dt. Bhagalpur,) M. O., Maina K.A. Centre.

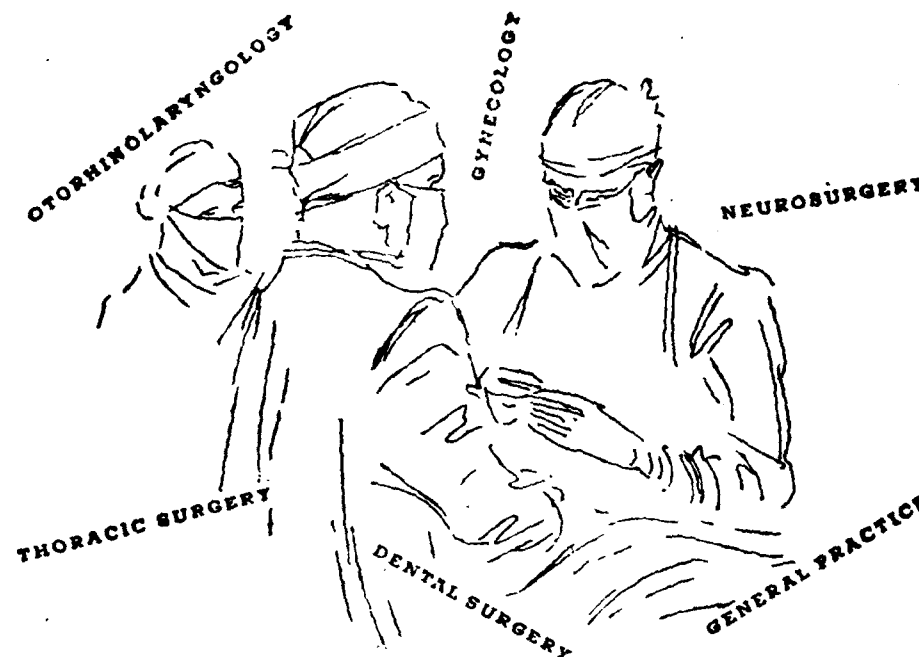
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Corrigendum

In the article "The Problem of Rural Medical Aid in India" published in the February issue of the ANTISEPTIC, in page 157 for "10 Village Chambers" please read "Village Chammains" and in page 158 for "District Talaman" please read "District Palamanu."



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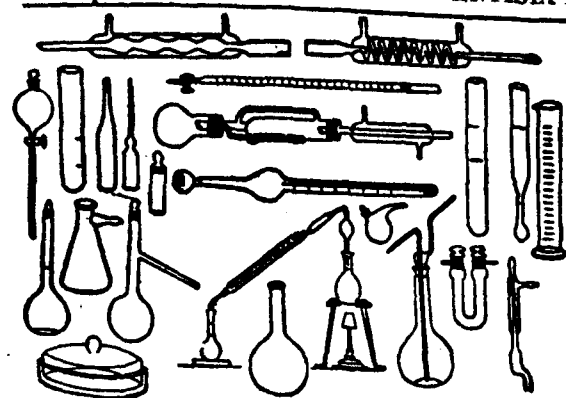
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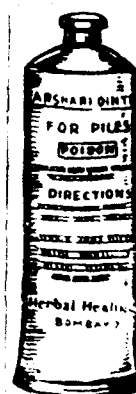
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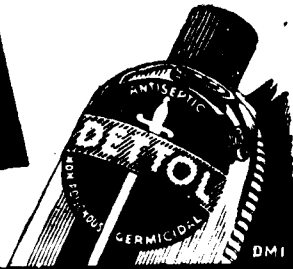
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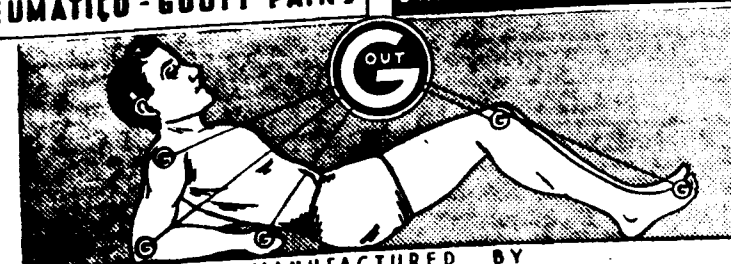
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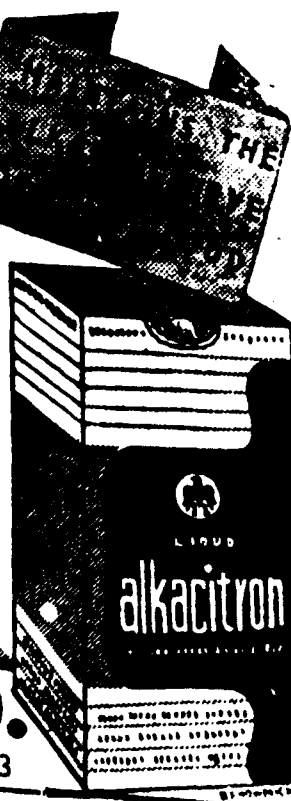
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What Doctors Say

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Calcium Gluconate	...	10%
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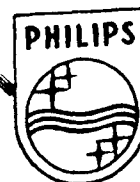
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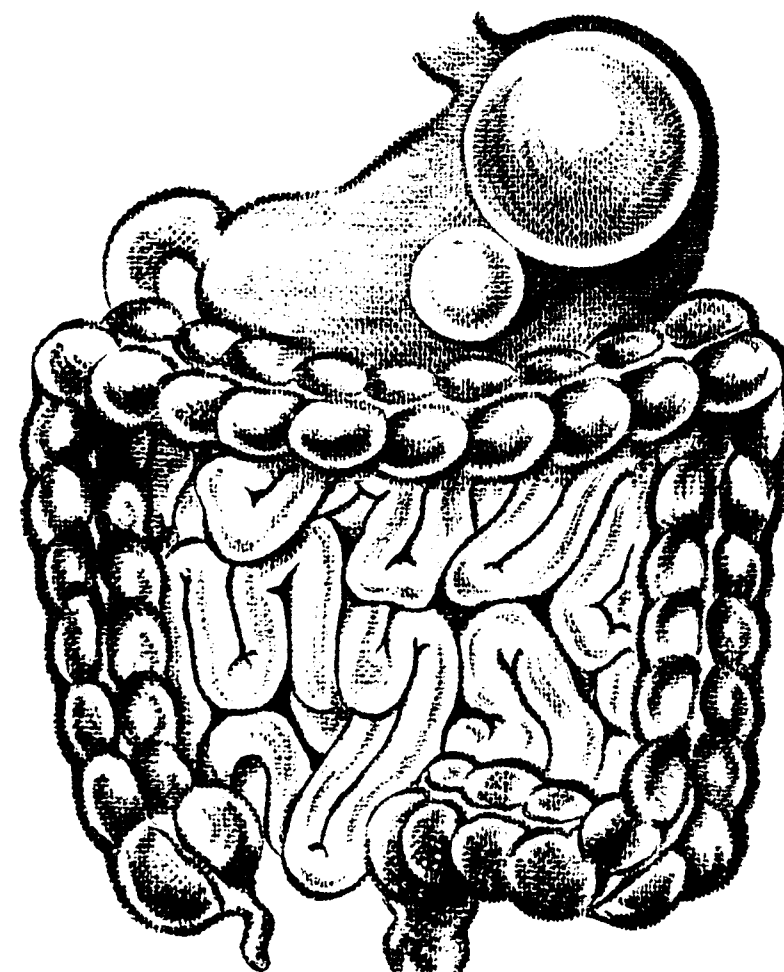
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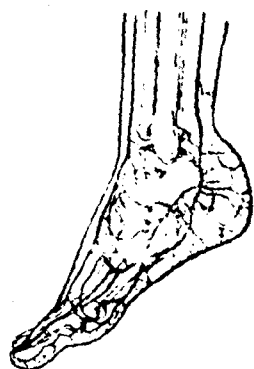
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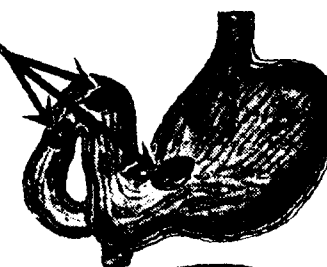


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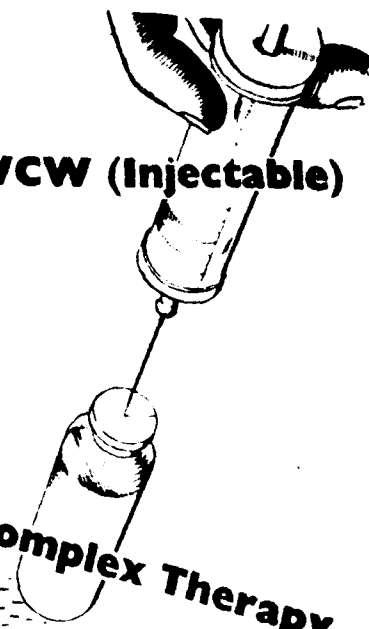
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Each cc. contains:

B₁ 25.0 mgs.
B₂ 2.0 "
B₆ 2.0 "
Cal. Pantothenate 5.0 mgs.
Niacinamide 100.0 "

Intramuscularly and intravenously

PACKINGS

R. C. Vials of 10 cc. and 30 cc. and in boxes of 10, 50, 100 ampoules of 1 cc. each.

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Reprints of above reports on request.

PACKING: 60 and 30 tablet phials.

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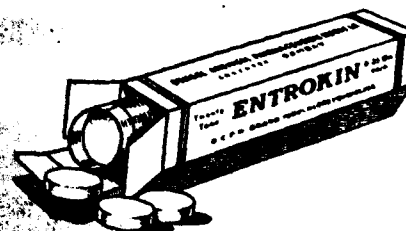
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