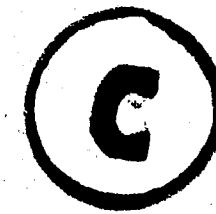


MADRAS CLINICAL JOURNAL.

VOL. 6, No. 6, December 1959.



(For the use only of Registered Medical Practitioner or Hospital or Laboratory)

THE
MADRAS
CLINICAL
JOURNAL

JOURNAL OF THE MADRAS STATE BRANCH INDIAN MEDICAL ASSOCIATION
(With which is incorporated the "Miscellany")

Vol. XXVI

DECEMBER 1959

No. 6

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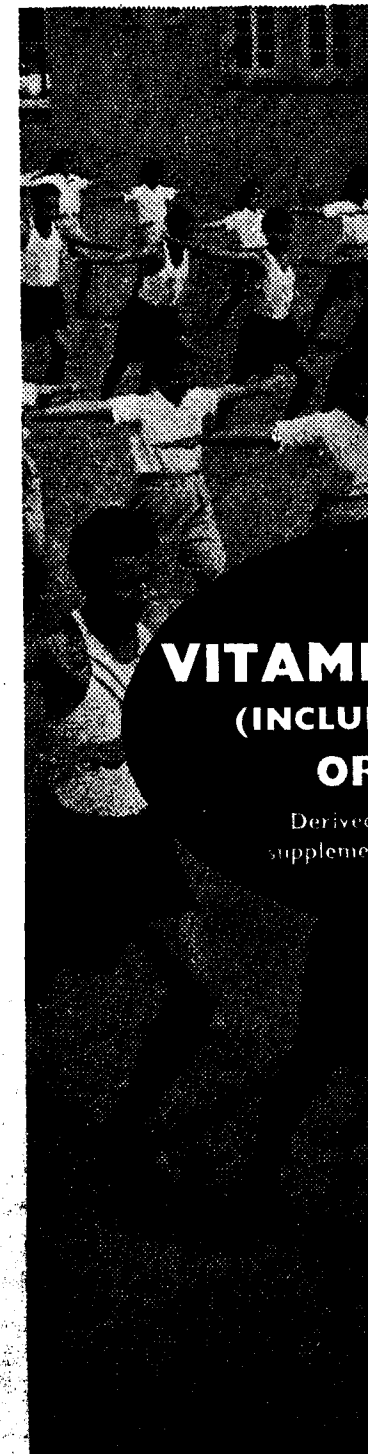
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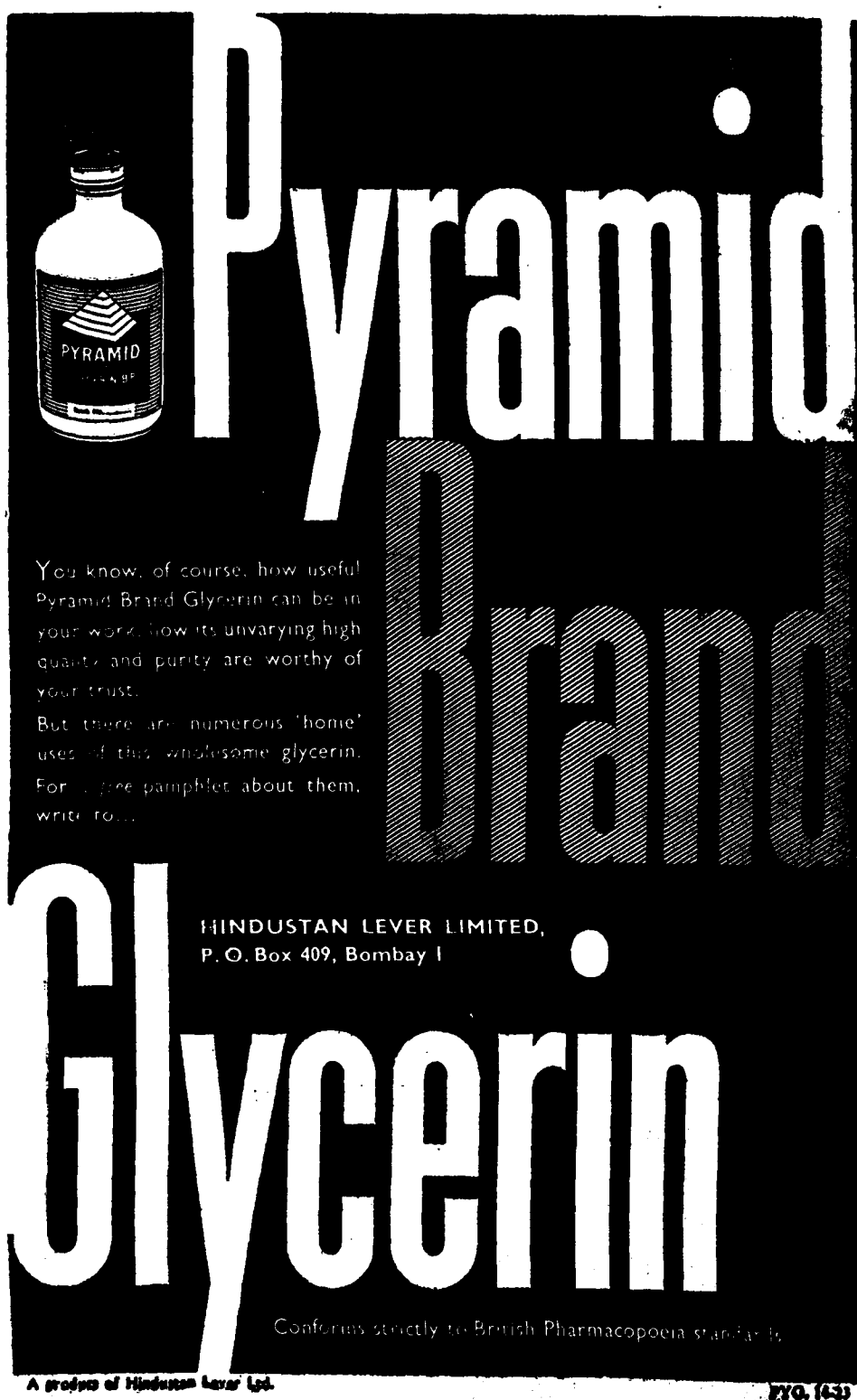
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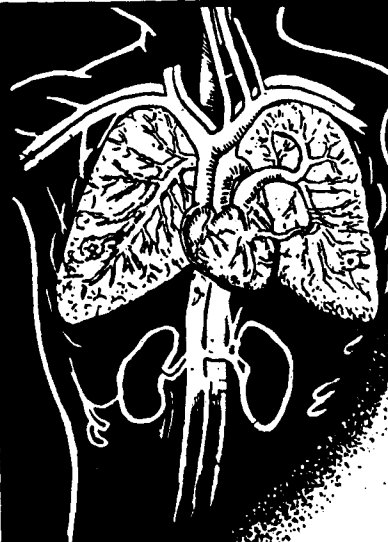
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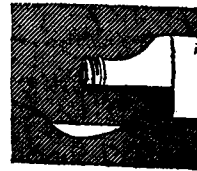
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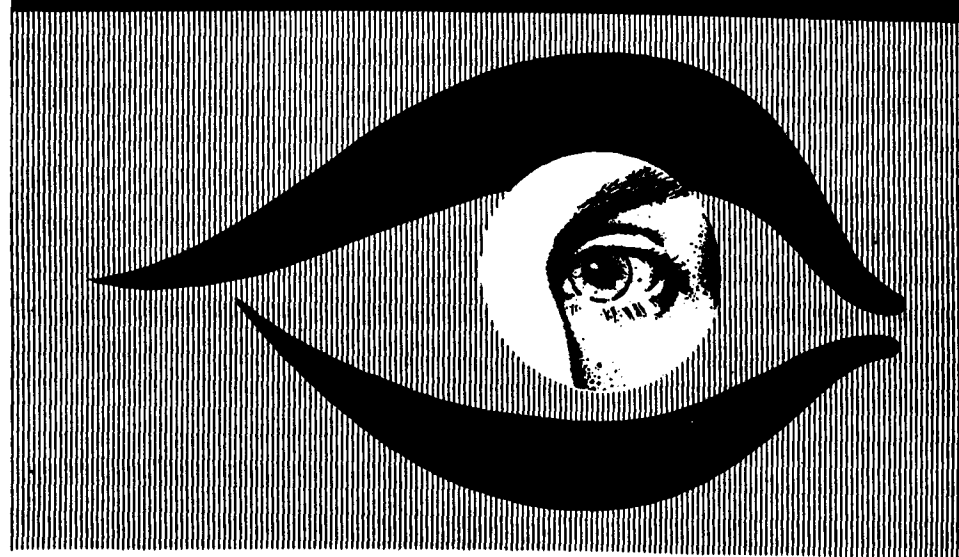
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INDIAN MEDICAL ASSOCIATION

(With which is incorporated the "Miscellany")

Vol. XXVI]

DECEMBER 1959

[No. 6

CLINICAL MEDICINE AND THERAPEUTICS (Contd.)

by

DR. T. V. VENKATESAN, M.B., B.S., F.A.I.M., F.C.C.P., (U.S.A.)

F.I.A.A., F.A.C.A., F.D.S. (Lond.), Madurai.

Modern Trends in Dermatology

Of the various recent trends in Dermatology, the treatment of pigmentary disorders come to the fore-ground. In the treatment of vitiligo, the derivatives from ammi majus play an important part. This contains 3 active principles—ammodine, ammidine and majudine and is available as meladinine solution. This solution is painted over affected skin and exposed to Sun's rays or ultraviolet rays. The proper technique is starting with low dilutions and gradually increasing the strength, it is possible to achieve good cosmetic results. The drug can also be given orally in dose of 2 capsules of 20 mgm. at 9 A. M. taken with food and the patches are exposed after 3 hours of ingestion. My experience in local application is preferable to the oral therapy.

In the treatment of tuberculosis of skin, Isoniazide alone in dose of 3 to 6 mgm. per kilo of body weight for 4 to 5 months has shown well-marked improvement. In some cases, the dose may have to be reduced due to vertigo and coarse tremor of the hands. The concurrent administration of pyridoxine and nicotinic acidamide is helpful.

2

Modern Trends in Therapy in Leprosy

The principles of treatment of (i) basic treatment of the sulphones (ii) treatment of special symptoms (iii) treatment of sequelae of disease. Commencement dosage is 25 mgm. of Dapsone twice weekly and raised by 25 mgm. until 100 mgm. weekly is given. It is thereafter raised each month until 400 mgm. twice a week has reached. Sulphaterone parentally is a method of choice if the toxic effects are feared with oral treatment. Commence with $\frac{1}{2}$ a cc. twice weekly and raise by $\frac{1}{2}$ a cc. fortnightly till 3 cc. twice weekly is given.

Toxic symptoms due to Sulphone Therapy

The following symptoms and signs are noticed :—

1. Feeling of tiredness. This passes off quickly.
2. Burning micturition and haematuria. These stop with stopping the drug.
3. Dry feeling in the mucous membrane of mouth, urethra and anus.

4. Some people develop swelling of the hands and feet and lymphadenitis. These Symptoms subside with Calcium Gluconate intravenously.

5. Temporary exacerbation may be produced, called Erythema Leprosorum nodosum of Walcott.

6. Anaemia :- Requires iron liver and Vitamin B. 12.

7. Lepra reactions. Two types :—
(a) Febrile type (a) Non-febrile reaction.

Treatment of special symptoms in Leprosy

1. Lepra reaction :— (a) Stop all Chemotherapy. (b) Give Calcium Gluconate. (c) Potassium Antimony tartrate 0.02 gram intravenously every other day twice a week or

Foudain or Fontarin or Stibatin }
2 cc. I.M. or 2 cc. I.M. or 10 cc. I.M. }
— For 10 days

(d) A. C. T. H. daily dose of 150 to 200 mgm.

60 mgm. daily or prednisolone

(e) Phenyl methyl amino paramino-benzene Sulphonate (Sulphomin) is useful for Lepra reaction in total doses of 1.5 gm. (30 injections).

2. Neuritis in Leprosy: For pain give Veganin or Codopyrin or S. W. diathermy.

3. Ulcer: Debridement; removal of sequestrum.

4. Eye complications: Normal saline 1% Mercurochrome liquid paraffin, cortisone eye ointment.

Treatment of sequelae of the disease. This consists in the prevention and management of the deformities.

Corticosteroids in Dermatology

1. Hydrocortisone hemisuccinate has been found usually intradermally in

2. Prednisolone ointment externally and prednisolone tablets orally are indicated in Eczema and allergic eczematous contact dermatitis.

3. The new steroid triamcinolone (Leder cort) is more effective than other corticosteroids in the management of Psoriasis. 4 mgm. of Triamcinolone is equivalent to 5 mgm. of Prednisolone.

4. Another new steroid is Dexadecadrol (Decadron) and is 5 times more powerful than prednisolone and least toxic.

Of all antibiotics used during the infected stage of skin lesions, Framycetin Sulphate (Soframycin) locally in 1.5% water soluble solution is the best.

Modern trends in Endocrinology.

One of the most important discovery is the use of Tri-iodothyronine in Myxoedema madness or Myxoedema coma. Dyson and Wood reported favourable results with 0.1 mgm. by intragastric administration followed by repeated doses of total 0.4 mgm. per day.

Therapy in Leukemias.

Acute Leukemias

Antimetabolites:

(a) Folic acid antagonists:

(1) Aminopterin. Dose: 0.5 to 1 mgm. in children and 1 to 2 mgm. in adults daily.

(2) Methotrexate: 2.5 to 5 mgm. in children and 5 to 10 mgm. in adults usually given orally.

The drug can also be given I. M. These drugs are more effective in acute lymphoblastic leukemia and less effective in myeloid leukemia.

(b) Purine antagonists:

6 M. P: 6 Mercapto purine is useful in acute lymphoblastic Leukemia. Dose: 2.5 mgm. / kg. body wt. / day.

Corticosteroids: In children A.C.T.H. is given intramuscularly 40 mgm. in divided dosage. Or Cortisone 100 mgm. daily in divided dosage or Prednisolone in dosage of 15 mgm. in divided doses.

General:

- (a) For haemorrhage blood transfusion.
- (b) For infection use appropriate antibiotics.
- (c) Proper rest and diet.
- (d) Attention to oral hygiene and bowells.

Chronic Leukemia:

(a) Specific as Radiotherapy: Deep X-rays. Average dosage 100 r. daily or on alternate days. The treatment lasts for one to 4 months.

Contraindications: High Fever and anaemia.

(b) P. 32. It is given intravenously in the dosage of 2 to 3 milli curies each week till W. B. C. count falls to 30,000 per c mm.

Deep X-rays.

(c) Chemo-therapy:

1. Urethane useful in chronic myeloid Leukemia and also in lymphatic leukemia. Dose: 1 to 3 gm daily. The disadvantages are by the side effects produced.

Nausea, vomiting and diarrhoea.

2. Nitrogen mustard: Two preparations are: (a) H N₂ (b) T E M. Dosage Total course is 25 to 30 mgm of H N₂ and 15 to 20 mgm of T E M. In chronic lymphatic, $\frac{1}{2}$ of the dosage can be given.

Unpleasant side effects are nausea, vomiting treated with Phenobarbitone

and dramamine. Chlorpromazine and antihistaminic are helpful.

3. Myleran or G T 4₁:

The drug is available in 2 mgm and 0.5 mgm tablets. With W. B. C. Count of over 150,000 commence with a daily dosage of 10 mgm until the count falls to 25% of total count and then maintenance dosage of 2 mgm daily till remission is obtained. The drug is useful only in chronic myeloid Leukemia and there are no undesirable side effects.

4. Chlorambucil:

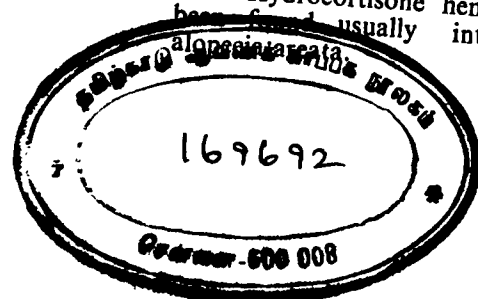
Available in 2 mgm tablet and is given orally in divided dosage before meals twice or thrice daily. Dosage is 0.2 mgm Per Kilo of body weight per day for 21 days. Useful in chronic Lymphatic and monocytic leukemia. This drug is safer than T E M.

5. Democolin is a new colchicum alkaloid. Initial dosage is 4 mgm daily orally and gradually increased to 8 mgm daily. The drug is useful in chronic myeloid and contraindicated in Lymphatic leukemia.

General measures are: (i) For haemorrhage and (ii) Psychotherapy.

In this discussion it has been possible to cover only a fraction of the various MODUS OPERANDI in Clinical diagnosis and therapeutics and it should be emphasized that it is possible for every Doctor to keep abreast with the latest trends in treatment so that he may give his best to the patient. He should examine the patient by conventional methods to avoid omissions and he can be a certain about the diagnosis and the treatment.

[Concluded]



CORONARY INSUFFICIENCY (Contd.)

By

Dr. K. VENKATA RAO, M.D.,

Physician, In charge of the Chest Clinic, Govt. Stanley Hospital, Madras.

Treatment of Angina pectoris

Since the pain of angina pectoris ceases on resting no drug is needed to stop the pain. In cases where cardiac pain comes even while at rest then a potent tablet of trinitro-glycerine 1/100 gr. under the tongue will stop the pain in a few minutes the effect beginning in one to two minutes. Since the effect of this drug lasts for half to one hour, it is advisable to swallow a tablet containing combinations of Aminothyllin, Phenobarbitone and Papaverine or a tablet of papaverine gr. 1 or a nitrite such as pentaerythritol tetranitrate, before the sublingual application of trinitrin. The effect of the oral tablet may last some four to six hours. It is doubtful whether aminophylline has any action in dilating the coronary arteries though it definitely relaxes the bronchial muscles where its use I. V is very effective in relieving attacks of severe asthma. (status asthmaticus).

Papaverine one of the isoquinoline derivatives of opium has no narcotic or analgesic effect. It relaxes smooth muscles. But this effect is more marked when applied directly to smooth muscles. But has no significant vasodilator action when injected subcutaneously. But in clinical use either orally or subcutaneously, it relieves the anginal pain. But the relief may be psychical, a similar relief occurring with any placebo.

But nitrites are really useful and the relief in pain in Angina pectoris is produced by coronary vasodilatation. It is thought that these drugs open up the

numerous arterioles which form the anastomosing net work which is so marked a feature of the compensatory change in the heart. This action on small coronary vessels has been observed and measured in the exposed hearts of animals. It is obvious that no drug can open the constrictions in the main coronaries, which constriction is due to organic changes and not due to spasm.

At present the use of penta-erythritol tetra nitrate (trade name - Peritrate) is found highly efficacious both in the attack as mentioned earlier and also in avoiding attacks if they are coming many times a day. Nitroglycerine and/or this drug can be effectively used in anticipation of any exertion which brings on pain otherwise. Attacks produced regularly while climbing a flight of steps may thus be prevented. So also the drug can be taken before attending any important business meeting or an important work. Angised is a stable preparation of trinitroglycerine prepared by B. W. & Co., trinitroglycerine can be dissolved under the tongue before undertaking the work or the tablet of penta-erythritol tetranitrate 10 to 20 mgm. swallowed 5 to 10 minutes before undertaking the journey or both may be combined one for the immediate action and the other for a fairly prolonged action.

These drugs are very useful in angina decubitus. It is to be emphasised here that one need not hesitate to administer nitroglycerine as many times as required in a day, for it has been found that many tablets can be taken daily over long periods with no apparent untoward

results. So in angina decubitus where the patient may get pain in turning in bed or rising up for meals or straining at stool, the drug can be taken by keeping it under the tongue just before the act. In such a case Peritrate in doses of 10 to 20 mgm. can be given 3 or 4 times a day the drug being best given one hour before food which by its prolonged action may prevent the attacks of angina completely.

Khellin (Benacardin) is also recommended as an effective vasodilator in oral doses of 25 mgm. but in many it produces gastric irritation and nausea.

General Management: A general review and check up on the lines mentioned under preventive treatment must be undertaken in every case of angina pectoris.

Briefly they are (1) since a large number of patients are of the over-weight thick-set type a reduction in weight is the most important therapeutic measure. A reduction of one or two stones of superfluous weight greatly reduces the burden on the heart and frequently increases the exercise tolerance, of the individual without the aid of drugs. He should be encouraged to attain a weight which is a few lbs. less than the standard weight for the height, age and sex. Thyroid extract should not be used for the purpose as this imposes increased load on the heart. With this in view the use of animal fats such as ghee or sweets prepared in ghee should be considerably reduced for animal fat favours atherosclerosis of the arteries. keeping the weight within normal limits also reduces the chance of getting diabetes since diabetes in the middle-aged is largely due to alimentation.

(2) **Rest:** The patient should take food at regular intervals since attacks of pain generally occurs on exertion after a heavy meal; and so the meal should be

small and can be taken more frequently. The patient should rest after food for one to two hours. He should have atleast 10 hrs. of sleep daily. For professional men and businessmen it is advisable to reserve one day a week for complete relaxation and rest. This is all the more useful for hypertensives as a preventive measure to avoid coronary insufficiency occurring at a future date. It helps to build up the cardiac reserve.

Mental rest is quite essential. Physical rest alone without mental rest will not be of much use. It is the mental worries that is responsible in keeping the blood vessels tense and thus favouring the occurrence of hypertension. Hence all sources of mental worries are to be sought and removed. If his work involves heavy responsibilities he must be made to distribute his responsibility to others in the family. Causes of worry should be analysed and explained to him and he should be convinced of the necessity to shed worries.

Some patients cannot get over these worries by all these explanations. It is to these people the administration of small doses of barbitonate is useful. Phenobarbitone in doses of $\frac{1}{2}$ gr. twice or thrice a day can be administered the last dose being at bed-time and if the sleep is also disturbed the last dose can be one grain. (2 tablets) or more.

In a few patients even phenobarbitone does not give complete relaxation. Their B. P. is raised and they get several attacks of angina even with rest. If in these attacks their B. P. is taken there is a sharp further rise of several mm. of mercury. In such individuals muscle relaxants are useful. Halabak (Glaxo) 1 tablet thrice a day is useful. After sometime this can be discontinued. Seconesin (crooks) is another similar useful preparation.

The last method of relaxation which according to me is the most important, and perhaps the best method is relaxation by certain exercises. The best among these is the "Shavasana" wherein the body is completely relaxed by lying flat supine without a pillow and with closed eyes the individual concentrating on his breathing. He forgets his body completely withdrawing his mind from the outer world and thinks only of his breath. He should lie like this for 15 minutes. This can be done both morning and evening—after a day's work. The beneficial effect of this exercise has been noted by me in all cases of labile hypertensive patients. If persistently followed daily as a routine it will permanently bring down the diastolic hypertension unless organic changes have occurred in the arteries. This exercise is also a preventive for hypertension.

In this connection I would like to recommend certain exercises which on a little thought will show that they may improve coronary circulation.

These are the breathing exercises and some of the Indian Asanas. It must be said here with emphasis that no drug has yet been discovered which will definitely and with certainty dilate the coronary vessels. At various times doubts have been raised about the efficacy of drugs as coronary dilators by men of authority. The claims made for certain drugs are equally and emphatically refuted by others who claim a similar result for any placebo, for that matter. We know the incidence of coronary disease is much less in physical workers (labourers), in women who lead a contented life throwing the burden of earning the bread to their male partners and in the poorer class of people who cannot afford to indulge in rich food. Contentment, regular relaxation, breathing exercises and moderation in eating etc. are the legs for the table on which sound health and longevity rests.

Anginal pain can be induced in the patient getting cardiac pain on exertion by making him breathe air with less oxygen or by causing vasoconstriction by adrenalin or other sympathomimetic drugs. The latter method is dangerous. When heart pain could be induced by breathing air containing less oxygen the opposite condition of breathing deeply (supplying more oxygen) must alleviate the pain. In fact the patient gets relief of pain if he is asked to breathe deeply on getting pain. Cardiac anoxaemia is abolished and the pain is relieved. So the patient must be told to breathe in deeply and breathe out, deeply, about a dozen times or more, at least twice a day. He can also do alternate breathing exercise. This is done by inhaling through one nostril and expelling through the other and vice versa. This can be done a dozen times both morning and evening. In patients confined to bed with angina decubitus and after the first two or three weeks after the coronary thrombosis these exercises can be done more often even every four hours.

If you screen a patient and make him breathe deeply you will find the diaphragm descending down by about 2" with deep breathing. After full and complete exhalation it moves up into the thorax. The excursion may be to a distance of 2½ to 3 inches. The heart being attached to the diaphragm moves up and down with the deep breathing. It is as if it is massaged by this process. The lungs become more voluminous during deep breathing and the heart is compressed by the two lungs one on either side. It is compressed and relaxed alternately. So deep breathing is likely to be beneficial to the heart. It may therefore reasonably prevent heart disease and equally reasonably improve a diseased heart. Just as spaced eating is necessary for normal health, spaced deep breathing is all the more necessary for sound cardiac health. The heart can be massaged by another method. The

principle is the same as above-mentioned. Before the "Savasana" on lying flat, deep breathing can be done a dozen times. Breathe deeply by lifting the abdomen and then breathe out completely and at the end of expiration draw in the abdomen. Repeat a dozen times.

Among asanas Sarvangasana is ideal to improve certain cardiac conditions and to maintain cardiac health. In this exercise blood from the trunk and the lower limbs are returned to the chest and heart and blood from the heart is prevented by going up to the head. Cardiac output is increased and if so the coronary circulation will also increase. The exercise is something akin to Bier's treatment to the limbs.

Acute coronary insufficiency: The treatment is the same as that instituted for angina pectoris. In addition the predisposing conditions must be promptly treated. It is also advisable to institute anticoagulants for 2 or 3 days as otherwise coronary thrombosis is likely to occur. In fact coronary thrombosis is imminent and it is therefore necessary to inject Heparin immediately simultaneously with antispasmodic drugs. Heparin is effective instantly when injected I. V. It can be given I. M. in doses of 10 to 15,000 units every 8 to 12 hrs. It is an antithrombin. The clotting time is increased and its effect lasts only for 2 to 4 hrs. whatever be the dosage. Protamine sulphate I. V. immediately undoes the action of heparin. Dosage being 1.0 to 1.3 mgm. for each 100 units of heparin.

Coronary thrombosis: Briefly the treatment I follow is as follows:

Immediate treatment:

(a) Inject Pethidine 1 amp. of 100 mgm.

(b) Take 4 c. c. of Papaverine (39 mgm. in each 2 c. c. amp.) and inject into 2 or 3 places (multicentre absorption) so that it may be quickly absorbed.

(c) Take the B. P. and if the blood pressure is normal or slightly below normal and if there is slight dyspnoea inject 2 c. c. of Nikethamide.

(d) The patient should be treated at home or office where he gets the attack. He should not be sent to the hospital or removed from the place of occurrence till the pain and shock is got over.

(e) For severe shock with acute hypotension noradrenalin as an I. V. drip 4 c. c. of 1:1000 nor-adrenalin to a litre of Isotonic 5% dextrose. If hypotension persists nor-adrenalin in higher concentration (to avoid too great a volume of infusion) may be continued for hours or days till the shock is got over. Nor-adrenalin acts on the muscles of the peripheral vessels. It does not produce ventricular fibrillation, like adrenaline.

(f) **Heart failure:** This may occur at any time usually the left at first and later the right also. Aminophylline as a suppository at night may help to control the nocturnal attacks of dyspnoea. Aminophylline can be given I. M. Digitalis for congestive failure should be very cautiously administered. It is better to avoid digitalis unless it is absolutely necessary.

(g) **Arrhythmias:** Quinidine for too many extra systoles or auricular fibrillation or paroxysmal tachycardia (auricular). For ventricular tachycardia prompt treatment with Quinidine should be instituted. For ventricular fibrillation procaineamide I. V., dosage being checked with several E. C. G. readings during injection. This can be done only in a hospital or in a well-equipped nursing home.

(h) **Further treatment:** By the prompt injections of Pethidine and Papaverine the pain of infarction usually disappears quickly. If the pain is not relieved in half an hour pethidine can be repeated.

I generally give papaverine 2 c. c. (39 mgm) I. M. every six hours for the first day and then every 8 hrs. the next two days. Thereafter Papaervine can be given in half to one grain dose three times a day along with a pill containing small doses of aminophylline, phenobarbitone and papaverine (1/6 gr.) such as Sedocordil or Cardiosedon (Alembic). This can be continued for several weeks. Acts as a mild diuretic and forestalls the cardiac pain.

(i) *Other drugs and vitamins*: Vitamin C 200 mgm. twice a day. This promotes healing of the infarct. Largactil has been found very useful during the first few days. A tablet of 10 mgm. can be given after the first dose of Pethidine. It prolongs its action and also prevents the occurrence of vomiting that may follow its administration. A similar dose can be given as the last thing in the night, often with a small dose of phenobarbitone. The combination ensures a good restful sleep. Nicotinic Acid 4 tablets (50 mgm. each) thrice a day after food is another useful drug.

Brandy and Whisky: These are reported to be useful in angina pectoris. So one of these can be given several times a day for the first few days after cardiac infarction along with glucose.

(j) *Diet*: For the first two or three days glucose water coffee, milk and fruit juice only. Later rice congee, barley porridge, biscuits and one or two slices of bread can be added to the diet. The principle to be observed is to give a smaller diet more frequently so that there should not occur any gastric distension which latter may oppress the heart. A return to normal diet should be very gradual. If the patient is a diabetic insulin should not be started till the E. S. R. touches the normal, which may mean 12 to 20 weeks. Thereafter a small dose should be tried and watched for the occurrence of cardiacpain. Glycosuria should be controlled by diet only.

(k) *Anticoagulant therapy*: The treatment has a sound rationale. As the extension of thrombosis by further

coagulation of blood cannot be foretold it should be started from the first day itself and continued for 2 or 3 weeks. The treatment should be controlled by daily estimating the prothrombin time. The prothrombin time should not exceed double the normal prothrombin time. Normal time is 20 to 22 seconds. I generally follow the following method. First day I give two injections of 15000 unit of Heparin I. M. I also start giving Tromexan (Dicoumerol preparation) one tablet (300 units) three tablets at 8 hrs. interval. Next day heparin 10,000 units two injection. Tromexan two tablets for the day. Third day no heparin but Tromexan two tablets. Thereafter the dose is to be judged from noting the prothrombin time. It is my experience that from the 4th day half a tablet (150 unit) twice or once a day is quite sufficient to keep the prothrombin time at the safe level.

Rest: In all serious cases absolute bed-rest for three weeks with no bath-room or commode concession. Bed pan must be used. Bowel movement to be helped by glycerin enema or suppositories. Thereafter the patient is allowed to use commode kept by the side of the bed. After three months he can be allowed to get down from the cot to go to the bathroom. The period of rest is to be individualised. Deep breathing 4 to 6 times a day every 4 hrs. from the second or third week is advocated. Subsequent treatment is on the lines advocated for angina pectoris; the aim being to improve the coronary circulation and to prevent further attacks of coronary thrombosis.

SUMMARY

1. The aetiology and treatment of coronary insufficiency is discussed, with greater emphasis on aetiology with a view to get help in the prevention of the disease.

2. The medical treatment is briefly stated and the importance of remedial and preventive exercises are discussed on a scientific basis.

[Concluded]

* INTRATHORACIC TUBERCULOSIS IN INFANCY AND CHILDHOOD

By

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THE battle against tuberculosis entered a new phase with the advent of the era of specific antimicrobial therapy. But there has been much confusion regarding the type of treatment in primary tuberculosis in childhood. To delineate this problem more precisely it would seem desirable to define the primary lesion of tuberculosis and to discuss its prognosis, as we know it today. Since the primary lesion of tuberculosis is pulmonary in the great majority of cases, I have confined myself to the discussion of intrathoracic tuberculosis in infancy and childhood.

Definition: After the inhalation of droplet nuclei containing living, virulent tubercle bacilli, there occurs a parenchymal pneumonia plus enlargement of the hilar lymph nodes, both the lesions together having been well described as "the primary complex". Coincident with the development of the primary complex, and about four to six weeks after the onset of the infection, the tuberculin test becomes positive. In the majority of cases this entire process is attended by few, if any symptoms and then goes on to a slow and asymptomatic healing over a period of six to twenty four months. Under certain conditions, the infection may mature to clinical disease within a short period of time. For instance, tuberculous meningitis, miliary tuberculosis and progressive primary tuberculosis usually occur within a few months following the primary infection. Bone and joint tuberculosis usually develop within one year. Chronic

pulmonary tuberculosis, which is seldom seen before the age of puberty, is a remote but serious sequel of primary tuberculosis. It is the most common form of reinfection type tuberculosis seen in adult life. When primary tuberculosis occurs during adolescence it may lead to chronic pulmonary tuberculosis within a short period of time.

Tuberculosis still kills and cripples so many children that it remains one of their greatest menaces in many countries. In addition the children infected with tubercle bacilli, will constitute a significant portion of adult tuberculosis of tomorrow.

Pathology: The portal of entry of the tubercle bacillus is characteristically through the respiratory tract by means of inhalation. The response of infants and small children to tuberculous infection differs from that of adults and older children.

1. The pulmonary lesion in children shows some tendency to be localized in the periphery. The site is more likely to be in the lower part of the lungs than in the upper parts.

2. The regional lymph nodes are more often involved in infants and children than in adolescents and adults.

3. Both the parenchymal and nodal lesions in children exhibit a strong tendency to heal by calcification, whereas in adults the tendency is to heal by fibrosis.

* Lecture delivered at the Trichy Branch of I. M. A. on 29-8-1959.

4. Hematogenous dissemination is more likely to occur in children than in adults.

5. It is generally stated that the tuberculous lesion in children tends to be proliferative while that in adults tends to be exudative.

At the site of the initial infection, the primary focus, which is usually single, measuring about 1 cm. or so in diameter, is formed. The lymph nodes draining this area become enlarged, often matted together, and tend to adhere to adjacent structures. In the mediastinum they may exert pressure on the trachea, bronchi or blood vessels and at times rupture into them. Although the tendency of the primary lesion both in the parenchyma and the lymph nodes is towards healing in majority of instances, there are immediate and remote dangers associated with it. There may result

- (1) progressive destruction at its initial site,
- (2) erosion of a bronchus with intrabronchial dissemination and the formation of other pulmonary lesions,
- (3) hematogenous distribution resulting in one or more isolated foci in such parts of the body as the lungs, bones, kidneys, liver or brain, or in widespread miliary lesions involving some or all of the viscera.

Symptoms of any tuberculous lesion may be varied and may simulate many other disease entities. In the differential diagnosis of the majority of chronic infections and of many acute ones, the possibility of tuberculosis must be considered.

Intrathoracic Tuberculosis. The classification of intrathoracic tuberculosis given below is based on the clinical features.

1. Hypersensitivity to tuberculin (positive tuberculin test) without clinically demonstrable disease.

2. Calcified pulmonary focus and/or calcified lesions in the tracheobronchial lymph nodes associated with hypersensitivity to tuberculin.

3. Non calcified pulmonary focus.

4. Tuberculosis of the tracheobronchial lymph nodes.

5. Intraluminal or extraluminal bronchial lesions.

Intraluminal lesions are produced by extension of the tuberculous process from the adjacent lymph node through the bronchial wall with the establishment of an ulcerative or granulomatous lesion. The ulceration may permit entrance of infected tuberculous material, dissemination of it to other portions of the tracheobronchial tree, and establishment of one or more new lesions at remote sites (bronchopneumonia). Granulomatous lesions may partially or completely obstruct the lumen of the bronchus. An extraluminal lesion is a compression of a bronchus by an enlarged, adjacent and usually adherent tuberculous lymph node without erosion through the bronchial wall, resulting in partial or complete occlusion of the lumen.

When a bronchus is partially obstructed, the portion of the lung supplied by the bronchus becomes emphysematous. When the obstruction is complete, absorption atelectasis occurs. In each instance there may also be a tuberculous pneumonitis in all or part of the involved pulmonary area.

6. Caseous bronchopneumonia. Children with this type of the disease tend to be quite sick and the prognosis is generally grave.

7. Hematogenous tuberculosis. Blood borne lesions are not uncommon in infants and children. These lesions occur as isolated or multiple lesions in practically any tissue of the body. Extreme toxæmia may be the only manifestation of miliary tuberculosis. If treatment is substituted early in the course of the disease, recovery is now possible in the majority of instances.

8. Pleurisy. Tuberculous pleuritis may occur as a dry fibrinous pleurisy, or as a serous effusion. The prognosis is almost invariably governed by the pulmonary lesion and not by the pleurisy. Aspiration, other than for diagnostic purposes is indicated only when there are severe symptoms of compression. Absorption of fluid is followed by varying degrees of pleural thickening and adhesion.

9. Apical and infraclavicular lesions as seen in adult life are relatively uncommon before the adolescent period.

Diagnosis of pulmonary tuberculosis
The diagnosis of pulmonary tuberculosis is established with certainty by the demonstration of tubercle bacilli in the sputum, bronchoscopically aspirated material or gastric washings. In the absence of such information the diagnosis is based on (1) the history of symptoms and of contact with open tuberculous infection (2) the physical examination (3) cutaneous reaction to tuberculin and (4) the roentgenographic examination of the lungs. Of these, the roentgenogram and the tuberculin test are the most informative. All the members of the family including the grand parents should have a careful physical examination and a roentgenogram of the chest. This plan has the dual advantage of detecting other persons with tuberculosis and of avoiding subsequent contact of the tuberculous child with open tuberculous infection.

Prognosis: It has been shown that certain factors are of particular importance in evaluating the probable course and outcome of tuberculosis in a particular child.

1. Age at the time of infection. Age is an important factor affecting prognosis, infancy and adolescence representing danger periods in which likelihood of the development of progressive disease is greater. Several studies have shown that the highest mortality rates upto 30% occur in the first year of life, and especially during the first six months.

2. Family background. The child whose family has had a lot of tuberculosis is more likely to have a larger primary lesion and a poorer ultimate prognosis than the child infected by casual contact. Factors involved in this probably are (1) hereditary lack of resistance (2) frequent exposures.

3. Age of infection when disease is diagnosed is an important prognostic factor. The first 6-12 months after the onset of the disease are the most hazardous and progressive disease is most likely to occur during this period.

4. Intercurrent infections, most particularly measles and pertussis may cause exacerbation and progression of a previously quiescent primary disease. Similarly intercurrent surgery or steroid therapy in the presence of an active tuberculous lesion may cause spread of the disease.

5. Undernutrition may increase susceptibility to disease.

Treatment: The child who has been infected with tubercle bacilli, whether the infection be manifested by a detectable disease process or only by a positive tuberculin test, should be supervised with particular care during infancy,

or during the first year following his infection, and again during adolescence. He should also be given the benefit of adequate rest, good nutrition and immunization against whooping cough and measles, which constitute a particular hazard to him.

Antimicrobial therapy :

1. All three of the most effective antituberculous drugs should be given to patients with *miliary tuberculosis* and *tuberculous meningitis* (*hematogenous tuberculosis*) since these conditions carry a grave prognosis with them and since the intense dissemination of tubercle bacilli throughout the body may give rise in later life to pulmonary, renal and osseous complications. These patients should receive isoniazid 10 to 20 mgm per kilogram daily for a minimum period of twelve months, PAS (0.3 Gm. per kilogram daily) for the same period and Streptomycin sulphate intramuscularly daily (50 mg. per kilogram) for four to six weeks.

2. *The child with progressive pulmonary tuberculosis* as manifested by increased pulmonary involvement, bronchogenic spread to another part of the lung or cavitation needs hospital or sanatorium care. A combination of Isoniazid and P A S is recommended for a period of eight to twelve months in the doses mentioned above.

3. *The child with a positive tuberculin test and enlarged hilar lymph nodes.* Often these children show no symptoms or the symptoms are vague, consisting of irregular low grade fever, fatigue, irritability, failure to gain weight and

vague aches and pains. These children should be given the benefit of isoniazid therapy atleast for a period of six months. The lymph nodes cannot be expected to decrease in size more rapidly with isoniazid than without it. The drug is given purely for its prophylactic effect on the lethal tuberculosis complications which arise, as we know in a considerable number of cases.

4. *The child with a positive tuberculin and no radiologic evidence of disease.*
(a) *The infant under 2 years.* It seems clear that any child in this age group with a positive tuberculin test has acquired the disease rather recently, and therefore the disease is active. Isoniazid in a dose of 10 mg. per kilogram of body weight daily is recommended for a period not less than six months.

(b) *The child above 2 years.* Concerning the advisability of chemotherapy in this age group there is at present the widest divergence of opinion. Since the prognosis for these children is good, chemotherapeutic agents should be reserved only for complications that may arise. The patient should be under frequent medical check up for a period of one year. General supportive measures have a definite place in the care of these children.

Now that primary tuberculosis can be treated, it is more than ever a regret that the child be allowed to develop serious tuberculous disease. Physicians and public health officers must assume their new responsibility of recognising primary tuberculosis and make available to children the benefit of modern drug therapy.

A PUBLIC HEALTH APPROACH IN THE DIAGNOSIS AND PREVENTION OF TUBERCULOSIS IN CHILDHOOD

by

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To diagnose tuberculosis in children I would stress (1) routine Tuberculin testing and (2) a detailed case history, are the most important of all procedures. Careful physical examination should also be done. I would like to caution here that in the early primary infection, physical findings will be entirely negative. Radioscopy is also not specific. It is difficult to obtain a good skiagram in a crying child and it is not possible to make a diagnosis on a poor film. Other difficulties are, the lesions may be obscured by intrathoracic structures, the shadows mistaken for other diseases or the lesion may not have developed to the extent demonstrated by X-ray film. Miliary and meningitis occur in children where films do not show any evidence of primary complex. Lastly remember a negative film does not rule out active Tuberculosis and this, you may see in Recent Tuberculin converter with massive Tuberculosis exposure.

While taking history, dates in children are more important than in adults, e.g., date of babyhood and puberty; date of beginning and end of contact with 'open' Tuberculosis; date of onset and of duration of symptoms; date of negative and of positive Tuberculin reaction; date of B. C. G. vaccination if done and the date of negative and positive X-ray findings. The Pains taken in eliciting the above information will be fully rewarded.

Edna M. Jones and W. L. Howard of Michigan had reviewed 335 children treated in Maybury Sanatorium, 98% had positive Tuberculin Test and 85%

had X-ray evidence of primary Tuberculosis. 75% of the children had the onset of tuberculosis before five years. This tells us that Tuberculin Testing should be done as a routine in well-baby clinics and hospitals as part of the examination and not to be left, till school going age.

When an open case of tuberculosis is found, it is worthwhile estimating the duration of adults' infectivity. Then a careful history should be elicited to what all places he had gone and with whom all he had lived during that period. What I mean is, it is not enough just to check present-household. Next comes source of contact. It is estimated that nearly 75% of children were infected by adults who had not previously been diagnosed as having tuberculosis. About 15% were infected by known adult cases. The source of contact as to immediate family, other relations and friends is as follows: Roughly 16% of the children were infected by mother, 18% by fathers, 7% by grand-mothers, 6% by grand-fathers, 8% by aunts, 10% by uncles, 2% by cousins and 21% by non-relatives who are friends who come to visit casually or frequently. It is worth remembering the possibility of children contracting from their class-mates with advanced tuberculosis at school. It is also observed that cases diagnosed in non-tuberculosis hospitals and clinics are likely to have more severe symptoms than those diagnosed in tuberculosis clinics. The reason is, these children known to be exposed and infected are treated for various other conditions before the real cause of disease is detected. In that period, these children progressed to

advanced tuberculosis. I would make a plea to discard the routine three months interval between check-up examinations in the management of early tuberculosis in children, because serious progression often occurs in these three months.

Tuberculin Testing is the most specific and valuable Test in detecting tuberculosis with or without symptoms. A positive tuberculin test is diagnostic of active tuberculosis in a child (1) when preceded by a recent negative test, (2) when associated as a contact with an open case of tuberculosis, (3) if it is supported by clinical, radiological or laboratory findings, or (4) if the child is very young. If the child is below one year the disease is considered as active; probably active between two and three years. But in a 5 year old child, age is not the confirmatory evidence. For example, a father has a negative X-ray ten months back and becomes an open case now. A recent positive tuberculin conversion test in his son indicates fresh active tuberculosis irrespective of symptoms or X-ray findings.

A contact child showing negative tuberculin test is a potentially dangerous case. If the child is sick due to overwhelming infection, he is anergic. If the child is healthy, he may be in the incubation period of his infection. Within these three months the child may become tuberculin positive and possibly develop generalised tuberculosis. Such child should be kept under observation, recording the temperature and symptoms if

any, every day and repeat the tuberculin test for two months. By this we would be able to prevent such child, being treated as pneumonia and then referred to tuberculosis clinic later at an advanced stage. Success also depends upon the home front where parents must be dependable, and should keep up the clinic appointments. We should also try to enlist, educate and supervise the mothers and grand-mothers to have an effective control programme.

Lastly a word about treatment. Chemotherapy must be used as early as possible in childhood tuberculosis, i.e., when the tuberculin converts or if the child is sick (anergic) having had heavy exposure. The younger the child the more urgent should be the treatment. Isoniazid 6 mg/kg with PAS 100 mg/kg a day will be tolerated. No harm will result when used in suspected cases, but if not used, and the child develops serious tuberculosis, the blame is entirely on you.

Acknowledgement: I thank the Commissioner and the Health Officer, Corporation of Madras for according permission.

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THE HOSPITAL STAPHYLOCOCCUS.*

by

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STAPHYLOCOCCAL infections acquired in hospitals are becoming increasingly important in most parts of the world. In Western countries, during recent years to control staphylococcal infections, several hospitals or sections of hospitals had to be closed temporarily. During the four years 1954—57, the Staphylococcus Reference Laboratory at Colindale, London studied 3803 strains of this organism as well as 32 epidemics in maternity units and 15 epidemics in surgical wards. A Committee with Lord Cohen as Chairman was appointed to recommend measures for controlling this menace. In the United States during the last few years, several conferences have been convened under the auspices of the American Medical Association, American Public Health Association, U. S. Public Health Service and the New York Academy of Sciences to study this problem in all its aspects. There are numerous reports from Denmark, Norway, Italy and Eastern European countries on the same subject. As a result of all this activity, at the present time, a considerable amount of research is concentrated on this organism. Even though published reports of Staphylococcal epidemics in hospitals from this country are not available, surgeons and obstetricians are fully aware of cross infections in their wards. There is no doubt that the world over, *Staphylococcus pyogenes* is the chief villain parading the stage of hospital acquired infections.

The three factors to be considered in any investigation of an epidemic are the parasite or the agent, the host and the environment. Let us have a close look

at the Staphylococcus. This microorganism is a factory of enzymes and toxins. They are :—

- | | |
|---------|--|
| Enzymes | 1. Coagulase |
| | 2. Spreading factor
(Hyaluronidase) |
| | 3. Fibrinolysin |
| and | 4. Penicillinase. |
| Toxins | 1. Exotoxin |
| | 2. Enterotoxin |
| | 3. Hemolysin |
| and | 4. Leucocidin |

What are the usual tests carried out to identify the organism? The first and the simplest is a smear stained with Gram's stain. Then comes culture on blood agar or nutrient agar. The colour of the colony gives an idea of its pathogenicity. *S. albus* is not pathogenic. Sugar reactions like fermentation of mannite are also helpful in identifying a pathogenic strain. But coagulase test is the most important. We test for the presence of the enzyme coagulase with the aid of rabbit plasma. All pathogenic strains are coagulase positive.

The next step is to test for antibiotic sensitivity. This can usually be done by measuring the zone of inhibition of growth caused by filter paper discs with different antibiotics on a blood agar plate. By this means penicillin resistant strains are easily identified. Obviously, there is no use in giving large doses of Penicillin if the organism is not affected by it.

* Paper read on 26-9-1959 at a meeting of the Nilgiris Dist. Branch of I. M. A.

The technique of phage typing introduced about ten years ago has been of great value in tracing epidemics. When one strain is indistinguishable from another by means serological and biochemical tests, phage typing (we may call this a kind of finger printing) can differentiate them. Of about 20 phage types commonly met with, phage type 80/81 is the most common in staphylococcal epidemics.

How does resistance to penicillin emerge? Penicillin does not kill the staphylococcus or any other organism. It only prevents the multiplication. In a million staphylococci, we may find one or two which are not affected by penicillin because of some genetical peculiarity. A resistant strain reproduces more resistant progeny which find the field cleared of all the sensitive strains. It is suspected that the emergence of antibiotic resistant strains is responsible for the present deplorable situation. So far no strain of streptococcus has been found to be resistant to penicillin. In spite of all we know about the staphylococcus, we do not know the secret of its invasiveness and virulence; why a strain which produces no harmful effects in a carrier produces infections in the newborn.

The second link in the chain is the host. A British investigator finds that 50-70% of all hospital staff are nasal carriers of staphylococcus and about 20-40% are skin carriers. These are good at colonising; they settle down and multiply without causing disease, in the nose, on the skin, the drying umbilical cord of the newborn and perineum. Staphylococcal infections are met with in postoperative wounds, in the nursery and as cross infection in medical and surgical wards. Individual resistance to staphylococcus appears to vary. Different tissues also show varying resistance. For instance the peritoneal cavity appears to withstand infections better than the thoracic cavity or the brain.

The third factor or environment is most important in the control of wound infection and also in the Nursery. The ventilation of the operation theatre has been a subject of much research. Objects like blankets and hospital linen can be a fertile source of cross infection. The autoclave must be efficient; the procedure of sterilisation should be faultless. If materials are packed too tight, steam and heat may not penetrate to the deeper areas. Sterilised things should be kept sterile. Surgical technique is important; but more important is the dressing procedure. For a strict "No Touch" technique two persons are required for dressing.

In some hospitals, 15% of the newborn are reported to have contracted pemphigus. The care of the newborn and the infant should not be left to the least trained. Infants dying of staphylococcal pneumonia are not few. Any condition causing oedema of the lung appears to favour staphylococcal pneumonia. More and more cases of staphylococcal septicemia are being reported now. Staphylococcal enteritis may not be fatal; but pseudomembranous enterocolitis is fatal. In cases of persistent diarrhoea, it is worthwhile to examine a faecal smear with Gram's stain. The cause of death in many cases of Asian influenza was undoubtedly penicillin resistant staphylococcus.

What is the solution for this problem of staphylococcal cross infections? Eternal vigilance and an awareness of the various manifestations of staphylococcal infections are required. Even though a newborn child may be discharged from the ward, we may not know the results of cross infection unless we follow them up. A mother may contract the infection from her child, developing a breast abscess, and then pass on the infection to other children as skin infections.

Before we tackle the problem of cross infections we must know the size of the

problem. This is not possible without adequate records. Every ward should keep a register for post operative and cross infections. Depending on the size of the hospital, a "Control of Infection Committee" or a "Control of Infection Officer" should be appointed. This Officer and the members of the Committee should have not only zeal and enthusiasm, but also adequate authority to enforce rules.

An educational programme for all levels of hospital staff is essential. Our ward aids and sweepers should understand why all this fuss is made.

At the time of admission, great care should be exercised to detect infectious cases and isolate them from the outset. Isolation of cases with Staphylococcal infection is most important. Staff who show any sign of such infection should

be kept out of the operation room and the Nursery.

Soap containing Hexachlorophane has been found to be superior to ordinary soap for washing hands before surgery and dressing. Traces of this antiseptic are found in the skin after washing with this soap. A powder containing the same antiseptic is now available. Some authorities recommend a power "Sterzac" for dressing the umbilical cord.

A hundred years ago, Florence Nightingale insisted that the first requirement for any hospital is that it should do the patient no harm. In other words a hospital should be a safe place. Are our hospital safe places or are we distributing pathogenic, antibiotic resistant, dangerous staphylococci to innocent patients who come in search of healing and comfort?

Madras Medical Register - 1959 Publication

Registered Medical Practitioners under the Madras Medical Registration Act, 1914 are requested to intimate their current address urgently.

111, Mount Road,
Madras-6.
D/28th Nov., 1959.

Registrar,

MADRAS MEDICAL COUNCIL.

* SOME SOCIO-MEDICAL PROBLEMS & THEIR MANAGEMENT

By

DR. K. S. KRISHNAN, M.B., B.S., F.I.C.S., Madurai.

"THERE is no human intellect, however, great in genius, who can find a challenge worthy of its powers in contemplating the structure of the atomic nucleus, the nature of the chemical bond, the physiology of a living organism, the meaning of life, or the origin and future of the universe".

—Glen T. Seaborg quoted in Science Digest.

Introduction

The impact of two world wars, on world civilisation, science and technology has been very great in this the twentieth century. We are now living in the age of sputniks and the sarcastic and oft-quoted phrase 'asking for the moon' may have to be taken in its literal sense in the next decade or two. We may come to a situation when Napoleon's dictum, "impossible is not found in my dictionary" may come to have a new significance.

While large amounts of money are spent in treatment of diseases, comparatively little attention is given to socio medical measures, which will pay sizeable dividends later, in the form of less disease and so less expense, and better living for the people. If we do not have enough finance we can make a start and have a phased programme to be completed in the course of the next 10 years. Even then we will be backward compared to the advanced countries. The cardinal principle of social medicine is that "no one should at any time lack the means

necessary to maintain complete physical and mental health". Every branch of medicine has its social aspects and treatises have been published, e.g., on social Cardiology, Social gynaecology and obstetrics, social paediatrics, & in fact, on the social pathology and treatment of almost of every branch of medical science. Social therapeutics are applied through social, economic and legislative measures taken to rectify the etiological factors. There is no frontier between social medicine and curative medicine. Close relationships exist between the psyche and physical illnesses.

Psychosomatic and organic diseases may coexist. H. B. Richardson points out that the Psychosomatic study of an individual patient must be applied to the family which being 'the unit of illness should also be the 'unit of treatment'. Ravdin, Professor & Surgeon-in-chief, Pennsylvania University Hospital and School of Medicine, Philadelphia says, "frequently a solution of the psychosomatic reaction of the patient will lead one to the unmistakable certainty than an operation is unnecessary. The understanding surgeon looking at an abdominal wall with multiple incisions, all too frequently realises that the original operation was perhaps unnecessary, and that one surgeon after another has multiplied the emotional circumstances which initiated the patient's symptoms". Specialisation "deprived the medical student of his view of the patient as a whole and of medicine as a single

discipline. A start has been made at Pennsylvania by the preceptorship plan; the Medical students act as apprentices to practicing physicians throughout the country. In the Family Health Advisor Plan, a first year student is assigned as a Health adviser to a family which he follows all during his 4 years in Philadelphia. In the Scandinavian countries, where the expectation of life is highest in the world, there is a happy and effective combination of medicine and social measures. In the words of Rene Sand, a happy blend of freedom and natural dignity with physical, intellectual, artistic and civic culture makes a race of aristocrats.

Today I propose to deal with a few Socio-Medical Problems which are uppermost in my mind and which have received little or no attention from medical men. A good deal of research on Sociology, Biology, Physiology have gone into the study and management of these problems.

- (1) Infancy and childhood.
- (2) Population, food and Family planning.
- (3) Sex and marriage.
- (4) Old age and the prolongation of life.
- (5) The chronic "Incurables".

Infancy and Childhood

Parental attitudes and quackery :

A few years ago in the hospital a case of imperforate anus was admitted and I had to do a colostomy to save the child. The child did well but the parents did not want the child because it was a female with an artificial anus in the abdomen. Any amount of explanation to the effect that by a later operation the colostomy could be closed, did not convince the relations. It was with great difficulty that the child could be sent home. It is our duty to impress on

the parents the achievements of modern surgery relevant to each case. I may mention here for your information that the new born babies are good surgical risks. The best time to do surgery in the new born is within the first three days after birth. At that time the infant is in an excellent nutritional state with high levels of hormones and inherited antibodies in the blood. There is less pain; less anaesthetic is required and so the child recovers rapidly. After the first three days it is better to suspend surgery till the child is two weeks old.

We meet with many cases of infantile diarrhoea where the parents lose a lot of valuable time by going to the quacks who claim that they suck out the foreign body in the stomach of the infant and bring out the skin of an onion, or the shell of a groundnut or a piece of paper. The great joke behind this is that these foreign bodies are retained in their own mouths before they put the tube into the mouth of the child. Children are branded with red not iron to stop epileptic fits. In one case branding on the neck almost opened up the trachea. I have seen one case of fracture of the humerus treated by a quack with tight bandage around the arm which resulted in necrosis of the arm distal to the bandage and so an amputation. In the absence of governmental action against such social evils it is our duty to educate the public.

Population, Food and Family Planning

One disquieting feature of modern times is the alarming increase in the population of the world, especially of the Asiatic countries. It has come to such a pass in Japan that pregnant women who cannot afford to have more children submit themselves to legalised abortion to end their pregnancies.

According to the latest estimate of the Government of India, in March 1961

* Based on the lecture delivered before the Trichy District Medical Association on 26-9-1959.

our population would be 430.8 millions. The increase between 1951 and 1961 would be 69 millions. In 1971 we may reach the staggering figure of 527.8 millions. Dr. Julian Huxsley refers to the calculated population increase in India from an official report, which would mean "one extra mouth in less than every 4 seconds, or the equivalent of a new town of over 20,000 inhabitants everyday of the year"! A Californian scientist, a few years ago working laboriously on the problem of world population said that at the present rate of increase in population, 900 years hence, human beings will have just enough space to be standing all the 24 hours of the day, taking into consideration all the available land including the hills. The causes are not far to seek. There has been a great fall in the death rate, due to the eradication of many scourges that threatened the health of humanity. Many health campaigns and the discovery of the antibiotics and the education of the public have resulted in a much lower mortality rate. In India, for example, plague has practically disappeared. Cholera is about to disappear, and the final stages in the eradication of Malaria are in the offing. The Eastern nations are found to be more fertile, probably, due to the rice diet. Birth control on a national scale such as the family planning campaign is the only practical solution for the ever threatening shortage of food and pressure on land in spite of energetic measures taken for increasing food production. The religious arguments against birth control cannot hold water, anymore. At the moment organised opposition to birth control comes only from the Roman Catholic Church. "Nevertheless, in fairness to the Catholic Church, it must be pointed out that *today* their quarrel is not with the end of controlling conception but with the means - that of scientific contraception. They advocate moral restraint in marriage and if this ideal is unattainable they advise married

couples to resort to the "safe period". The safe period or rhythm method of birth control itself was permitted by Pope Pius XI in his Encyclical on Christian Marriage issued in 1931 when it became clear that millions of Catholics all over the world were resorting to contraceptives for economic and health reasons" (Dr. Chandrasekhar). It is gratifying to note that the family planning campaign of the Government of India, the first of the kind in the world, is becoming increasingly successful. Enquiries made by Village patients have convinced me that the knowledge is spreading like wild fire. It is the duty of every doctor to spread the message at least on medical considerations such as the following:

1. While the first pregnancy should occur between the ages of 18 and 24, the subsequent pregnancies must be spaced properly so that the mother may get over the strain and help give more vitality to the unborn that will follow.
2. Avoiding pregnancy which is likely to prove injurious to the mother's health.
3. To prevent birth of children with hereditary diseases and some congenital diseases.
4. To restrain the size of the family to suit the income on which depends the nutrition of the family. It appears, statistics show that the first babies die slightly more frequently than second babies do and that after the birth of the second child there occurs a steady rise in the infant mortality rate. By the time the seventh child has been born the mortality rate is 50% higher than it was for the first baby and after the birth of the tenth child it is 200% higher."

Over all these, imagine the tragic situation of the family when the mother

dies of the strain of frequent pregnancies or of some obstetric complication after bearing a number of children. I wish to give here two illustrative case histories. An efficient headmaster of a high school was getting a child almost every year and had produced eleven. His wife died immediately after the last child birth. He began to use the school money for his household, due to his bad economic circumstances, and was soon dismissed. He became a hyperpetic and was down with hemiplegia. His father-in-law with a small earning was no better, was also prolific, became a hyperpetic and was later a paralytic. Both the patients were lying in the same room and were discussing who would die first. In the end both died within 10 days of each other, the son-in-law dying first. The poor uncles of the children had to face the task of rehabilitating an 'army' of children. It may look like a story but this happened and I knew the patients and their families.

The other case is a lady who had 5 children and who was undergoing treatment for non-gonorrhoeal cervicitis. During every childbirth she had a severe post partum haemorrhage. I had been advising the husband to have a vasectomy done for himself.

He was postponing the operation. The lady became pregnant and begged of me to put an end to her very early pregnancy as she instinctively felt that she would not survive it if she had a natural course. I refused to be a party to get an illegal abortion done. She got good ante-natal care and was admitted into a maternity home where at full term she easily delivered a baby, but, within half an hour after that she had a sudden post partum haemorrhage and no amount of resuscitation could save her. This case has two points to note. The family planning measure had not been taken advantage of by the husband, though the facilities were easily available

with me for a vasectomy. Legalised abortion, in a restricted way even in situations like these, was not available to the woman to save herself. She has left behind 5 children and an infant.

Vegetarianism :

The Californian scientist whom I referred to earlier said, that family planning and vegetarianism were the panacea for the evils of overpopulation. Why vegetarianism? Animal foods take a longer time to produce compared to vegetable foods. Animals for slaughter cannot be grown as fast as cereals. Even the present rapid growth of cereals by scientific methods cannot keep pace with the increasing population. It has been calculated, that in an area of land required for grazing and for growing fodder for the animals for one flesh eater, enough cereals can be grown for 19 vegetarians. Anthropologically and physiologically, man's anatomy is planned for vegetarianism. Comparative anatomy shows that unlike herbivorous and frugivorous animals, the flesh eating animals like the cat tribe have a very short bowel for rapid expulsion of putrefying and decomposing flesh, long teeth for tearing flesh, no chewing movements of the jaw, no ptyalin for digesting starch, while 10 times more hydrochloric acid is present in the stomach for digesting even bones. Research in human nutrition shows that by a proper selection, from the wide variety of vegetable foods, a perfect diet can be constructed and that animal protein is not a necessity. It is common knowledge that disease like hypertension require a vegetarian diet. The close relationship between blood cholesterol values and coronary thrombosis has of late come into prominence and a vegetarian diet with vegetable oils (except perhaps coconut oil) brings down the cholesterol level to safer limits. Autopsies on the bodies of American soldiers and Korean soldiers have shown marked atherosclerotic deposits in the coronaries due to

their non-vegetarian food in the former, and the absence of sclerosis in the latter due to their diet of cereals and low fat. Vegetarian youth movements have been started in Europe and Russia. In Bonn (West Germany) vegetarian restaurants have become a fashion and they are much overcrowded. I was told by an Arab Officer of the U. N. O. that many Arabs are pure vegetarians enjoying perfect health. To crown all these, some of the world's best thinkers, athletes, and a swimmer of the English channel have been vegetarians. It is not my purpose to extol the virtues of vegetarianism. I wish to point out that flesh eating is injurious in certain respects and an economic waste, especially when it is known that health is compatible with an intake of only 25 gms. of vegetable protein per day. Dietetic surveys after the last war, in England have shown that the nation's health had really much improved during the war when animal food was much rationed and vegetables were substituted. Before leaving this topic I wish to point out to you that apart from the fact that animal food is becoming scarce and costly it contains what are called 'fear poisons' released into the tissues of the animal just before and during slaughter. These poisons plus the toxic products liberated by the putrefactive changes of flesh may act deleteriously on human health. It is possible that carnivorous animals have a mechanism to protect against these toxins.

Sex, Marriage and the Connected Problems

We are still in a society where sex is taboo, though it is governed by well-defined biological laws. Writing about the place of sex in medicine, Havelock Ellis said in 1933, "In every department of medicine and now at last in the most intimate of all, it is our business to adjust the conditions of life, that, if possible,..... evils may not arise.

There is no field in which it is more necessary than in that now before us for the physician to acquire a wider knowledge or to exercise a finer intelligence."

Only field social workers and psychoanalysts can tell how much we lose in society due to want of a proper sex education, marriage counselling and knowledge about conjugal hygiene. As one has said that we in medicine should persuade "morals to wed normals", and "theology to adopt biology". Religion has played the role of a dictator in the matter of sex and marriage without giving due consideration to the normal biological sex instincts of man and woman. It has suppressed and repressed many individuals from following the normal law of life. On the other hand a famous sociologist goes to the extent of saying that in modern times there is sexualisation of culture in every field of human endeavour. While I agree that to a certain it is true, I should point out that medicine is replete with cases of mental ailments which are the products of repressed or suppressed sexual desires. Exact knowledge is lacking in us on many aspects of marriage and sex life about which we are often consulted. The medical graduates who come out of the colleges know only the sex apparatus and its diseases. Gynaecology has concerned itself with inflammations and tumours but not with life adjustments or sexual problems of women which are vital matters in society. Recently, in the United States, the National committee on maternal health, collected information for 10 years and published very valuable data on the medical aspects of human fertility which do not find a place in treatises on gynaecology and genito-urinary studies. The norms and deviations of the female pelvis in relation to sex intercourse, the uterus and its rhythmic contractions and quiescence in the intermenstrual periods, the palpation of the ovary and tube to determine the time of ovulation, the

vulval changes in relation to coitus, and the excitabilities of the clitoris, the nipple and the areola, and coitus with special reference to problems of sterility have been investigated, recorded and published by the committee after detailed study. Some excellent books have been written by genito-urinary surgeons and gynaecologists of international fame, which have not received the notice of the medical profession. The advice given to patients on sex matters by the doctors are purely from common sense and imagination and are not based on scientific data. I myself learned to answer the patients' questions scientifically only after reading authoritative publications on the subject of sex. I realised what a big gap in my knowledge existed between what we acquired from the colleges, hospitals and conventional text books and what we have to enlighten on when patients ask for solutions of specific sex problems. The subject of 'sex and marriage' is too vast and I shall rest contented if I can tell you a few examples of the problems and solutions and show on the screen a few diagrams which will stimulate your interest in the subject. Love has been viewed differently by different experts. Kenneth Walker calls love, a syndrome. The biologist thinks in terms of sexual reproduction and asexual reproduction in the evolutionary scale. The psychologist like Freud sees in every action of the human organism a sort of libido. The endocrinologist attributes it entirely to the action of the gonads controlled ultimately by that 'master of the orchestra' namely the pituitary body. The chemist sees biochemical reactions in love. But the correct view has a much wider meaning "that the real purpose of human love between the sexes is to assist the spiritual growth of the individual rather than to perpetuate the race". Noble wives have helped to enrich the spiritual lives of their husbands. We have in India the

glorious examples to illustrate this conception—I mean that type of relationship that existed between the saint and carnatic music composer Sri Thyagaraja and his wife, between Tulasidas of Ramayana fame and his wife. Similar example have been and are found in other countries and religions. "Love is a manifestation of an individual's sense of his own incompleteness and it can be said that the desire of a man for a woman, of a woman for a man and of both for children is the original source from which all forms of society have been derived". If you read deep into this statement you will realise that ultimately the stress is laid on a good family life. In India, in older days this idea was the one on which our famous 'joint family' system existed for the good of large communities. I find many Americans in India appreciating that system very much, while it is breaking down rapidly. The sacred literature of the east considers love between a husband and wife as a graduation and an apprenticeship for the post graduate degree in the love of God. Hinduism enjoins every man to be a bachelor first, then a married man, then a father and grand father and it is only after that to be a saint.

The marriage rituals that are performed represent and emphasise this basic idea. Religious fears imposed a certain discipline in marriage and with the rapid decline in religion discipline also is declining. We now need arguments, and education to bring back that discipline. Fortunately for us, psychologists have stepped into the gap and can now prove that only with a happy marriage the resulting child will get emotional nourishment, and will become a well balanced and an effective citizen. Organisations must spring up counselling on a good choice of partners, on the attitude of the partners towards each other and towards the world in general, on the problems and planning of the family and on "a reasonably satisfactory

and harmonious sexual life of the partners". Courtship, as in the west, is a natural phenomenon as we see it in the animal scale. It is desirable from the view of choosing the proper partners. It is by courtship that the partners study each other and know whether emotionally they are suited to each other. I do not deny that India has managed well for centuries without the practice of courtship but modern trends make one feel that it will be very useful, to our society, if it can be deprived of the possibility of clandestine sexual relationship. For reasons future good health of the partners, a health check-up should be advised before marriage. In Sweden pre-marital examination is compulsory. Emotionally and intellectually they must be agreeable to each other. "Falling in love" and marrying have many disadvantages. Scientifically it is not the correct way. Eugenics, that is, the science pertaining to improvement of race by judicious mating has its own value. Certain questions are often asked of us by intelligent patients. From physiological considerations the difference in age between the husband and wife should be 8 to 10 years, because, ordinarily man's sexual powers begin to decline about the age of 55 and the woman's about the age of 45 (menopause). There are no hard and fast rules, because there are exceptions which have worked satisfactorily. A larger difference in age is not conducive to a happy married life unless it is that the partners care more for spiritual and intellectual union.

Can cousins marry? From experiments on cattle in-breeding, it can be stated that there is no objection, provided, there are no objectionable recessive features in both the families. For example, the history of Cancer in both the families will be an objectional feature and the marriage of cousins in this case is not desirable in view of the effect on the off-springs. In the absence of definite family histories and close

investigations it will be wise to avoid cousin marriages because partners chosen from entirely different families are much less likely to possess injurious (M) Mendelian recessive features, and their newer characteristics may be imported into the offspring to its advantage due to a wider selection. Differences in race, sect, and language can easily produce discord due to differences in the circle of friends and relations and so one has to be careful.

It has to be emphasised that in the consummation of marriage the partners should learn to make certain adjustments in their attitudes. The absence of such a knowledge has been the cause of many unhappy marriages. Kenneth Walker says "Mary Wollstonecraft rightly observed a women's sexual feelings have to be approached by way of her heart and not through the gateway of the senses". Man gets his satisfaction through his senses represented in coitus. The ideal coitus is one in which both husband and wife get the organs at about the same time. The red Indians practice what is called "Karezza", a form of controlled intercourse akin to Coitus Reservatus where the coitus is prolonged without the ejaculation of semen. One view is that this is unsatisfactory because this leaves the genital organs in a state of congestion. In the male prolonged periods of such congestion may lead to prostatic troubles. Walker thinks the objections raised are only theoretical and the method has several advantages.

In our practice we hear patients complaining about sex difficulties and deviations. It takes some time for a couple to adjust themselves to the sex requirements of each other, after marriage. During this transitional period, due to the lack of this knowledge troubles arise. I know of cases where men and women consider sexual intercourse as a disgusting and messy affair. A woman who was sterile and was

longing for a child used to take a cold water bath immediately after the intercourse, even before she relaxed herself. She still remains sterile. A sterile woman should be advised to rest on her back at least for an hour after the intercourse with the thighs flexed and a pillow beneath the pelvis, so that the cervix will be dipping into the pool of semen in the posterior fornix. Chances of fertilisation are much greater, if both the partners get their orgasm at the same time. In incurable sterility the childless couple will do very well to adopt a child of their choice which is sure to bring happiness into the home. The child gets a supercharge of parental affection. It will be ideal if he does not become aware of the adoption even when he grows old.

I shall now deal with an abnormal type of sex. Often we meet with a manly woman and a womanly man either in appearance or psychology or both. The marked peculiarities of this class have been grouped under the term "intersex". Normally "in every male there lurks a female, in every female, a male, so that we have to look upon sexuality as a long keyboard in which every kind of note is sounded, from the deep base of the most masculine male to the highest treble of the most feminine female..... We are all strange mixtures of masculinity and femininity. In the human embryo the decision (of sex) is not likely to be made until the fifth and seventh week of gestation..... what makes the settling of the embryo's sex much more difficult is that it has a foot in both camps possessing the rudimentary duct systems and the external organs of both sexes. We start our lives as hermaphrodites, capable of moving in the direction of the male or the female. But whichever of these events happens to us we shall retain for the rest of our lives certain rudimentary vestiges of the opposite sex". (Walker.)

Old age and the prolongation of life

In the year 1900, one hundred and seventy five young men received their medical degrees from the College of Physicians and Surgeons of the Columbia University. They started a dinner that year and it has become an annual event on the 12th February, that is, Abraham Lincoln's birthday.

Every year it is the custom to read out the obituary list of that group of men when the members stand in silent tribute to the dead for two minutes just before the dinner. By 1940, 68 of these 175 had died at an average of less than two a year but the 1940 list showed 7 deaths in the year preceding. Dr. North, an expert bacteriologist among the assembly stood up and pleaded for a two minute speech before the dinner, and with difficulty got the permission when the other members were in no mood to hear a speech. He said, "It looks as though our members are dying at a faster rate. Some of us in this room will be gone next year. Shall we accept this without a fight"? Asked by the chairman as to what they could do about it Dr. North suggested a committee of experts to keep this 1900 class alive with the best methods known to medical science and asked how many among that assembly would have a check-up of their health done. No one answered. A committee was formed however, with Dr. North as chairman. The committee was active and vigilant, collected relevant knowledge regarding the anatomy, physiology and pathology of old age, and requested every member to send his annual health report if he was not willing to be examined by the experts of the committee. 40 members responded to this call and some got a check-up from the committee. It was a revelation. A leading gall bladder surgeon was suffering from gall stones without knowing it; a hernia specialist

was harbouring a hernia without caring for it. The E. N. T. & Eye specialists were suffering from some lesion or other of their own specialities. One heart specialist who believed he was suffering from coronary disease was examined by the committee which found nothing of that sort. Finally most of the members began pooling their knowledge to fight senescence, and, that is how the recent speciality of 'Geriatrics' was born. This 'Baby' has taken rapid strides in knowledge within the past 18 years, and today, there is new hope of prolonging one's life to over a century. It is significant that the labours of the Dr. North Committee has brought down the obituary list of the 1900 A. D. graduates, recently, to only a single member lost every year. Besides, the average age of the members living is 69 years not to speak of many between seventy five and eighty.

The committee found that the principal cause of death among members was coronary disease and much work regarding this villain among diseases is going on in many clinical centres in advanced countries. One thing has become clear so far. Human beings, instead of preparing themselves for old age physically and psychologically, especially the latter, must feel young and adjust their activities and ambitions to the reduced physical capacity as evaluated by the check-up examinations of the specialists. A lot has been achieved, of late, by extensive studies in the metabolism of old age. The antibiotics have reduced the dread of infections to almost nothing and many more of the hundreds of moulds in earth may give up their secrets as penicillin notatum did. The world is advancing at a very much faster rate than what the prophets of science, Wells and Belamy predicted more than fifty years ago and our contemporaries, Aldous Huxley and Haldane over 25 years ago. We do not know what great things are

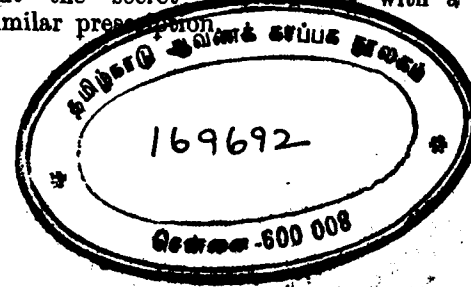
in store for us in the next quarter of a century. Let us all strive to prolong our lives by the help of science and live to see that "brave new world". The biological age and the calendar age are very different from each other. Many centenarians have been found in Russia recently and research is being carried out on the modes of life of these men. The modern and imaginative society cannot afford to dump the aged into the waste-paper basket. Ralph Barton Perry, Professor of Philosophy of the Harvard University throwing a suggestion to start an 'age movement' like the much talked about 'youth movement' said, "There is pride of youth and I would not have it one whit abated. But there is also a pride of age which is ours if we will only affirm it". He quoted from Cicero the passage, "Intelligence and reflection and judgement reside in old men and if there had been none of them no state could exist at all.....Old age, especially, an honoured old age has so great authority that this of more value than all the pleasures of youth". Dr. Martin Gumpert, in his book has quoted many instances which go to prove that "it is the individual personality and not the age that sets the final limit. For example, Dr. Lillian J. Martin retired from her service as Professor of Psychology at the age of seventy five; she learnt to drive at the age of seventy six and crossed the American Continent six times in her car.

At the age of eighty eight, she learned Spanish and typewriting and travelled twenty thousand miles through South America. At eighty nine she managed a sixty-four acre farm at a profit with four sixty year old helpers. Her slogan was "when your body moves, so does your mind" and she proved it. She recommended daily precis writing of important matter read from the newspapers for exercising the memory. She

recommended reading aloud for a few minutes daily to overcome senile speech. She wanted old people to take to mild adventures to keep up the spirit. To combat stiffness of joints and muscles she prescribed typewriting, polishing silver, wiping dishes. She further advised a healthy diet, moderate exercise, mental stimulation and resolution of emotional difficulties and family conflicts". King Gustav V of Sweden at eighty five, breakfasted at 9 A. M. handled affairs of state in the morning and in the afternoon, played tennis several times a week hunted and fished. His physician ascribed his seemingly inexhaustible energy to a youthful outlook on life, good nerves and moderation in habits. "By a similar prescription, Luigi Cornaro describing his sober life from 1467-1566 at 99 said he felt better than at thirty. The centenarian French writer, Bernard Le Bovier de Fontenelle (1657 to 1757) was said to be "exempt of the great passions, and a master of the little ones. He showed no joy, no anguish, never laughed, never wept and this emotional rigidity helped him along to a life of a hundred years". I am reminded of the lines in Tagore's Gitanjali,

"This is my prayer to thee,
my Lord - Strike, strike at the
root of penury
in my heart,
Give me the strength lightly to bear
my joys and sorrows,
Give me the strength to make my love
fruitful in service,
Give me the strength never to
disown the
poor or bend my knees before
insolent might,
Give me the strength to raise my mind
high above daily trifles,
And give me the strength to
surrender my
strength to thy will with love".

There have been brilliant painters and authors, poets, statesmen, biologists, historians, explorers and scientists who had been agile and active after 75. To mention some names, there were Benjamin Franklin, John D. Rockefeller, millionaire Mills, Michaelangelo, Charles Darwin, World historian Von Ranke, Alexander Von Humboldt, Biologist Lamarck, poet-physician Oliver Wendell Holmes, Sir Issac Newton, Victor Hugo, Philosopher Kant, Prime Minister Gladstone, Disraeli. Metternich, Bismarck and Bernard Shah. Dr. Hahneman of homoeopathy fame, "a senile bitter man of eighty as poor as a beggar" married a young French woman and practised his profession for eight years thereafter minting money before his death. In our own country we have with us fortunately Sir. M. Visweswarayya, Rajaji and Pandit Nehru who are examples. Their body and mind "could not atrophy because they used them hourly in creative activity". Dr. Gumpert summarises these facts thus:— "After the critical age between fifty and sixty has been passed, there often seems to be a new flowering of gifts of talents, coloured by all the splendour of the setting sun". Before closing the sample list of active old men I must mention the outcome of the 20 years psychological study of 450 centenarians by Professor Bird (of the Rhode Island) who said "Life for some may begin at a hundred instead of sixty Most members of the group had definite plans for the future, interest in public affairs, strong enthusiasms, hobbies, a sense of humour, good appetite and strong resistance to strain, disease and injuries. As a group they were mentally with an optimistic outlook. None expressed any fear of death. The chief reasons offered for their longevity were hard work, moderation, regular habits and freedom from worry". Sir M. Visveswarayya, 99, ten days ago gave out the secret of longevity with a similar prescription.



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Let us go a little into the biology of ageing. Recent research has demonstrated atherosclerosis in infants. Degeneration starts at birth and ends at death, but marked changes start in the fourth decade of life. The aim of the Science of geriatrics is to slow down this process as much as possible. A summary of the main changes in old age may be helpful here. The B. M. R. is reduced and so the metabolism of proteins, fats, and carbohydrates is much lower. The enzymes are reduced in quantity.

The height of the body becomes less due to the bending of the spine. Loss of fluid results in reduction of weight. The joints become less mobile due to degeneration and calcification of cartilages. The loss of mobility of the ribs causes rigidity of chest which in turn leads to lung troubles. In the 6th decade the respiratory capacity is reduced by 50%. Respiration becomes rapid. Sclerosis develops in the circulatory system and there is a disparity between the muscles of the left ventricle and the demand on their performance. Cardiac disturbances are the result. Sclerosis occurs in the kidneys also leading to defective elimination of waste products from the tissues. There is a migration of fat deposits from the face downwards. The loss of fat and atrophy of skin produce wrinkles. In women the breasts begin to involute in the fourth or fifth decade. The endocrines become deficient. There is a reduction of sexual desire about the age of 55 in men and about age of 45 (menopause) in women, though there are exceptions. There is a decrease in the parenchyma of the kidneys and nephrosclerosis develops resulting in azotaemia, hypertension etc. Finally mental changes occur and the personality changes towards that of the child. Loneliness and illness are the worst enemies of mankind. Modern science shows that these changes can be retarded by suitable care and rehabilitation of the aged. Russian medical science has the credit for original

research on the process of ageing. Bogomollet, whose parents were in prison for a very long period in the Czarist regime, produced after intensive research on tissue culture and death his modified Anti-connective tissue cytotoxic serum (the so called A.C.S.) to rejuvenate degenerating connective tissue based on his conclusions that the much neglected connective tissue of our organism plays an important part in the process of ageing. It appears it is popular among Russian soliders as a wonder drug that saves their lives even in abtble injuries. It is said Bogomelet's modified ACS is being tried against cancer. We considered till recently that connective tissue was only a cementing substance between the cells.

But now it has been shown that it has important bearings on health, disease, and, longevity. While no doubt A. C. S. in large doses kills connective tissue, in tiny doses it heals and rejuvenates it. Bogomollet's serum is said to reduce psychic and physical asthenia. Incidentally it may be mentioned implants of amniotic and placental tissues and fowl embryo extracts have been tried with conflicting results.

A. C. S. has given good results in schizophrenia and multiple fractures in very old people, bone and other tissue infections and rheumatism. Compared to the cost of corticosteroids, the cost of A. C. S. is very little, because only tiny doses are required for 3 injections every third day up to a total of 12 injections which form a course. It is contraindicated only in heart disease and advanced tuberculosis. With A. C. S. Bogomollets said "The age of one hundred and fifty is probably the limit at the present stage of human evolution". As a student of biology the author feels that some day we will be able to produce a law of life akin to Newton's I law of motion:— "Every body continues in its state of rest or of uniform motion along a straight

line, unless it be compelled by an external force acting upon it".

Dr. Carrel of the Rockefeller Institute carried out two very interesting and informative experiments. A senile invalid, 18 year old dog was the subject of one of these experiments. Carrel completely exsanguinated the animal and replaced the blood with its own old red blood corpusels plus an artificial serum. The dog was rejuvenated and behaved like an young and healthy animal. This showed that in old age some toxin originating in the body circulated and produced the signs and symptoms of senility. This finding was confirmed by the other experiment. Carrel found that the growth of tissue cultures in the laboratory was retarded by the addition of sere from old animals. This toxic effect has been demonstrated to be of a chemical nature though we do not know yet exactly what it is.

Let us see what can be done to prolong life apart from A. C. S. which is not yet available in India. A regular check-up examination of the aged will reveal many deficiencies and often diseases. Of course, diseases are treated in the usual way.

It is necessary to correct the deficiencies in diet and metabolism with artificial enzymes, vitamins and hormones. The label on a bottle of a geriatric tablet will show the many constituents that go to make it. These substances are the ones that are needed to make up the deficiencies that are likely to be present. The discussion of the functions of each of these constituents is beyond the scope of this lecture. Reading, hobbies and light work like gardening etc., which do not demand much and continuous physical energy are good. Diet must be simple, but nutritious and should be easily digestible. At least 8 hours sleep a day must be ensured. This may be in two

periods of about 6 hours in the night and about 2 hours in the day. The afternoon rest in bed is a necessity for the aged. Walking in fresh air everyday is the ideal exercise for old age.

The function of the medical profession in geriatric practice is to give dietary, psychical and physical guidance. The state and social organisations have a great part to play. A special committee of the W. H. O. has very recently made important recommendations for better care for the ageing, in the rapidly changing pattern of society. They say that the social policy has lagged behind the achievements of science and medicine with the result that the physical and mental well-being of old age in recent decades has outstripped policies of retirement and instruments of care. So, not only should there be flexible retirement policies but the proved skills of experience of the aged people must be utilised also for the benefit of the nation to the extent possible. Efforts must be made to preserve for them the normal family and community life so that institutionalising them in old age homes may be reduced to the absolute minimum. Chicago City opened its first housing development for the aged recently. The qualification to get this benefit has been fixed. The new apartments must be occupied by husband and wife or close relatives, one whom is more than 65 years of age. The buildings constructed have some special features. Doors are wider than average to facilitate use of wheel chairs. Bathing tubs are made low with strong grab rails. Kitchen facilities are constructed at waist level so that stooping is avoided.

The shelves are low enough within easy reach. One point that has to be emphasised is that the elderly should not be segregated from the family and society. They should form integral parts of the community.

The Chronic 'incurables'.

Lastly I would like to refer to the miserable incurable patients who leisurely await the trance of death to go into 'the scenes of Paradise and everlasting delights'. They also have a right to be treated well. Every hospital must have a ward for the incurables. Philosophy, religion and a doctor with a missionary zeal can "blunt the arrows of death and render less rugged and precipitous the inevitable pathway to the tomb". The doctor has to teach them courage. The so-called orthopaedic 'Physician' has a part to play. Good nursing facilities include a pleasant environment. An improvised from of Balkan beam over the bed should be fixed to facilitate movement in and out of bed. As weakness renders bowel evacuation difficult suitable drugs or enemata must be used. In cases with retention, the bladder should be catheterised twice a day, with due aseptic precautions. All pressure points in the body should be rubbed with alcohol and massaged and talcum powder must be applied daily. In the matter of diet, acid milk (or buttermilk) is preferable to pure milk in view of the poor digestion and fermentation. Cases of hepatic disease must receive addition of more proteins. For pain, Aspirin, Phenacetin, Pethidine and physeptone may be used. Opiates may be given starting with oral administration and then switching on to injection when response is not good. They should be given regularly when the patient is not likely to live for more than

a few weeks. Sleep is essential and must be assured by quick-acting barbiturates. Paraldehyde may be given by mouth (3 ii), by rectum, (3 iv) or by intramuscular injection (5 to 10 cc.). Dexedrine is a good stimulant to use occasionally. Intractable pain in some cases can be relieved by chordotomy and presacral neurectomy.

Incurable children:

Children should have a pleasant atmosphere and should be told fairy tales to divert their attention from pain and death. Osler's management of children was wonderful. "Children used to look forward to his visits with eagerness and joy. The sick room was turned into fairy land and in fairy language he would talk about the flowers, the birds and the dolls". He visited Dr. William Macdougall's child of seven who was fatally ill. He almost crawled to the child's bed. "The child gazed wonderingly at him. "Mary" Osler said, assuming a bird-like voice, "I am come to tell you a secret - a nice secret. You are going soon to leave us. You will be leaving on a journey, to a beautiful place, a wonderful place, where you will be very happy. And all your friends will soon be coming to join you. I can't stay longer now; I must run off. Good bye Mary; God bless you!" And he kissed the child gently on the forehead. Then he withdrew as he had come, the little girl watching him wonderingly with a long smile".

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Note :—Reading these source materials is highly profitable. The author, in preparing this paper has freely drawn on a few of them. The moral and religious aspects of birth control are excellently portrayed in Dr. Chandrasekhar's Book.

BEWARE OF GLAUCOMA

By

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Primary Glaucoma

Glaucoma is defined by Duke Elder as follows: "The term Glaucoma does not connote a disease-entity, but embraces a composite congeries of pathological conditions which have the common feature that their clinical manifestations are to a greater or lesser extent dominated by an increase in the intra-ocular pressure and its consequences". The degree of raised intra-ocular pressure which assumes a pathological significance is impossible to define since it varies within wide limits from one eye to another.

What is the normal intra-ocular pressure? Just as one cannot scientifically say that such and such is the normal blood pressure in man, but can only say the average figure after examining hundreds and thousands of normal men so also the normal intra-ocular pressure in man can be defined as the average figure worked out after examining thousands of normal eyes. According to the latest estimates it is 17 mm. of Hg. as measured by the applanation tonometer. An increase above 17 mm. of Hg. measured by applanation tonometer is considered pathological only if there are other signs and symptoms in the various functions and organs of the eye showing pathological changes as a result of the increased tension. Hence, a finding of apparent raised intra-ocular pressure per se is not diagnostic of Glaucoma in any eye.

Classification of Glaucoma

Glaucoma 1. Primary

(a) Acute Glaucoma or Blocked angle Glaucoma.

(b) Glaucoma Simple or Chronic Simple Glaucoma or wide angle Glaucoma.

1. Congestive.

2. Non congestive - wide angle Glaucoma.

2. Secondary Glaucoma.

Primary Glaucoma

By primary Glaucoma we mean a Glaucoma the cause of which is not yet known. In contrast to Secondary Glaucoma which is due to some obvious ocular lesion, the primary type seems probably to be the local expression of general systemic pathological or degenerative processes.

Incidence of Glaucoma in India is about 2% of all Ophthalmic cases, with a definite preponderance of females. Glaucoma is a disease of late middle life (i. e.) above 40 years. It is rare in the first and second decades. As regards heredity although by no means common, familial Glaucoma is a definite entity. The heredity is dominant and continuous and is transmitted by both sexes and while either parent is equally potent as a transmitter, the parent doing so is usually affected.

Pathogenesis of Glaucoma

As the term primary Glaucoma signified the etiology of the disease is not known. Moreover, the insidiousness of the origin of many types of increased intra-ocular pressure makes real etiological research unusually difficult, and those eyes which become available for biochemical or pathological study are usually in the terminal stages when the initial defect has long been observed in the ruins of advanced disease.

The predisposing factors for the causation of Glaucoma are (1) The state of refraction. (2) Mydriasis. (3) The capillary system. (4) Systemic diseases. (5) The neuro-vegetative system. (6) Endocrine glands.

Refraction: Primary Glaucoma is often associated with hypermetropia. The small hypermetropic eye with a large lens is apparently more prone to get its filtration angle blocked by the iris. But the myopic eye is not immune, for quite a large number of cases occur in myopes, even when the myopic error is high. It has also been found that hypermetropic eyes are more prone to get the congestive type of Glaucoma.

Mydriasis: In a predisposed eye, anything which brings about a dilatation of the pupil may precipitate a glaucomatous attack. This has been attributed to crowding of the angle of the anterior chamber with the retracted iris, thus embarrassing the drainage of the intra-ocular fluid. Sitting in a dark cinema theatre for some hours, dilates the pupil and it may result in a mild Glaucomatous attack.

The Capillary System: There is a considerable amount of evidence that one of the peculiarities commonly occurring in Glaucomatous subjects is a generalised disturbance of the capillary system. It has been found that the

capillary pressure in the eye is always raised in Glaucoma.

Systemic diseases: Acute febrile diseases especially in old people tend to precipitate an acute congestive attack. Focal sepsis, vascular and metabolic diseases are also predisposing factors.

The Neuro-Vegetative System: Patients suffering from Glaucoma are as a rule unstable in their neuro-vegetative reactions. The frequency of Glaucoma in women is probably to be explained by the vaso-motor instability at the menopause. Psychic disturbances have also been frequently observed as determining the onset of Glaucoma like, strain, anxiety, over work, sleeplessness, nervous exhaustion etc. Indeed the emotional and excitable temperament of Glaucomatous subjects has been recognised for a long time.

Clinical Picture of Chronic Simple Glaucoma. Non congestive type: This is a disease of signs and no symptoms. The symptoms that do occur are always in the late stages of the disease. As a rule, chronic simple Glaucoma develops slowly, quietly and insidiously and may indeed have arrived at a far advanced stage in both eyes before anything wrong is noted by the patient either in the appearance of the eye or in subjective symptoms of pain and discomfort or in apparent functional efficiency. In the early stages of the disease, there is rise of intra-ocular tension, during some periods in the day. Later on this rise of tensions remains constant with slight variations during the twenty four hours. In the next stage of the disease the rise of intra-ocular tension is associated with cupping of optic disc. The disc looks pale and the typical Glaucomatous cupping is observed with the ophthalmoscope. The Glaucomatous cupping involves the whole disc. The vessels are displaced nasally. There is apparent discontinuity in the

course of the vessels as they bend round the rim of Glaucomatous cup. There are holes in the lamina cribrosa. In the next stage of the disease in addition to the raised tension and cupping of optic discs, there is also a visual field loss often on the nasal quadrant with barring of the macula. Cupping of optic discs always proceeds field loss.

The subjective symptoms of pain, or feeling of fullness or discomfort in the eyes, headache difficulty in reading, scotomas in the field of vision and diminished vision are not specific and always are seen very late in the disease. In case of chronic simple Glaucoma the symptoms of pain, headache, seeing coloured halos sometimes, gradually progresses for years, until finally the eye becomes stony hard and all vision is lost, and a state of absolute Glaucoma is reached. It is interesting to note that the central vision may be preserved for a long time with a complete loss of peripheral fields resulting in tubular vision.

At other times intermittent attacks of congestion may occur indicated by severe headache, appearance of halos, and transient obscuration of vision. These attacks may come and go, the eye returning to a condition of simple Glaucoma with every disability accumulated after each attack, or at any time compensation may break down and a painful sub acute attack or a frankly acute congestive phase may intervene.

Signs and symptoms of chronic simple Glaucoma: Subjective symptoms are usually late in chronic simple glaucoma feeling of fullness in the eye frontal headache which in the more advanced give place to pain. The visual activity remains unimpaired for a very long time, even after the visual field has suffered severely. In the early stages of chronic simple glaucoma occasionally, probably due to advancement of the lens myopia

might be present. More often hypermetropia is apparent which may be due to a latent error of hypermetropia becoming manifest owing to weakness of the ciliary muscle due to the continued raise in intra-ocular pressure affecting the ciliary nerves and also the muscle directly. Hence also the most common symptom of progressive weakening of accommodative power, results in early and rapidly increasing presbyopia. *This rapidly increasing presbyopia is a common and significant sign of early chronic simple Glaucoma.* In the more advanced stages of the disease vision fails due to retinal Ischaemia, degeneration and atrophy of optic nerve.

Also patients remark constantly of their difficulties in adapting themselves on entering a dim illumination after a bright light. A delay in the development of dark adaptation and a dulling of sensitivity to dim light therefore form a syndrome of considerable value, in the diagnosis of the disease in its prodromal stages.

Investigations in a case of chronic simple Glaucoma

1. Diurnal curve - the tension of the eye is measured at regular intervals during the day and night and plotted in a graph for a week or ten days to show at what periods during the day the peak is reached and to show the maximum and minimum tension of the eye during the 24 hours. In a normal eye the variation during the day is 3 to 5 mm. of Hg. If it is 10 mm. of Hg. and above it is significant and may be considered pathological.

2. Vision and Perimetry.

3. Tonography.

4. Provocative test like (a) water drinking test (b) Vasodilator test like Priscol or Vasulat etc.

Diagnosis: In a well developed case of chronic simple Glaucoma showing the

classical signs of raised tension dilated sluggish pupil, cupped disc and restricted fields, the diagnosis is easy. The one clinical sign on which a differential diagnosis may have to be made is the cupping of the disc. A physiological cupping, atrophic cupping, and colosmatous cupping will have to be differentiated. But in any case, the diagnosis of Glaucoma should not be made on the one clinical sign cupping alone. The early clinical signs of chronic simple Glaucoma are (1) the barring of the macula and the appearance of small scotmata in the arcuate belt of the field of vision and or a wing like enlargement of the blind spot to form the seidel's scotoma. (2) the lowering of the light sense-the patients requiring a slightly more brilliant light to read ordinarily. (3) Rapidly increasing presbyopia.

The cupping of the disc, field defects etc. are all signs of well established case of chronic simple Glaucoma.

Chronic simple Glaucoma - Congestive type: An attack of congestive Glaucoma may become superimposed on a chronic simple Glaucoma. The patient may experience from time to time mild attacks of congestion of eyes pain, headache, dimness of vision which subside within a few hours or days. It may also take the form of an acute glaucomatous attack, with severe pain, headache, loss of vision, shock etc. In a case of chronic simple Glaucoma of the congestive type - the tension remains always above normal, there is a permanent circum-corneal congestion the cornea is hypo-aesthetic - the anterior chamber is shallow - the angle is partially or completely obliterated. The pupil is moderately or widely dilated, oval, Iris is sluggish - there is cupping of the disc - congestion of the veins in the retina and pulsating arteries in the fundus. Visual acuity is much diminished, field are restricted and the blind spot is enlarged. The eye gradually deteriorates

in structure and function, being assisted by periodic acute crises until finally it passes in to complete blindness and absolute Glaucoma.

Acute Glaucoma: This usually affects one eye - starts suddenly and violently often in the early hours of the morning. It is not uncommon during an acute febrile attack especially in old people. There is excruciating pain the eye, propose lachrymation and an intense trigeminal neuralgia radiating over the heart and jaws. It is frequently associated with nausea and vomiting. The vision fails rapidly sometimes upto perception of light. The constitutional disturbances are sometimes so great, that the patient is prostrated, with an irregular and intermittant pulse, pale face and cold extremities or he may even have a raised temperature.

The eye on examination is intensely red and congested, lids oedematous, conjunctiva. Chemosed, the eye ball is tender and hard. The cornea is dull steamy and insensitive. Pupil is widely dilated, vertically oval in shape. Anterior chamber is shallow and clouded and the lens may have a peculiar greenish appearance. Ophthalmic examination is usually impossible owing to the oedematous cornea, but if the disc can be seen it is oedematous and hyperaemic, but there is no cupping.

Such an attack if untreated may resolve in a few days but though the eye ball may appear normal it is permanently blind. Or it may go on to a condition of chronic congestive Glaucoma described above.

Diagnosis: Chronic simple Glaucoma may have to be differentiated from Iritis - occasionally the general constitutional disturbances in an acute Glaucomatous attack might divert the physician's attention to the abdomen and the condition in the eye may be overlooked. So

also the acute Glaucoma has to be differentiated from acute catarrhal conjunctivitis and acute Iritis. The following table will help in making the differential diagnosis. (See table last).

Treatment. In the treatment of any disease the cause of it is treated first and secondly the symptoms. We do not know the etiology of Glaucoma and hence there can be no real treatment in the true sense. This disease with its fundamental background still untackled often has a tendency to progress despite our efforts.

The broad principles underlying the treatment of Glaucoma are :—

1. Decrease of in-flow of aqueous
By (a) Operations Cyclodiathermy
Retrociliary diathermy
Cyclo electrolysis
(b) Drugs (Diamox)

2. Increasing the outflow of aqueous
By Operations
Drugs (Miotis,
Eserma, Pilocarpine
D. F. D. etc.)

Acute Glaucoma. The following routine procedures is found to be good.

1. Eye drops containing Eserma $\frac{1}{2}\%$ Pilocarpine 2% and Diamox 3% is used. one drop every minute for 4 times.

one drop every 15 minutes for 4 times.

one drop every $\frac{1}{2}$ hour for 4 times followed by one drop 4th hourly.

is applied to the eye

2. Hot fomentations to the eye.

3. Retrobulbar Novocaine or Xylocain with adrenaline to relieve pain and to reduce tension.

4. Diamox (250 mg.) tablets one tablet 4th hourly.

5. Operation. Acute Glaucoma is an ophthalmic emergency and as soon as the Intra-ocular tension has been reasonably lowered by the above procedures Broad basal *Iridectomy* - the operation of choice is performed. In selected cases where there is total peripheral anterior synechiae. Iridectomy may be combined with Iridencleisis.

Chronic Simple Glaucoma - Congestive type. Treat with

1. Miotis like Eserma or pilocarpine.
2. Peripheral broad Iridectomy if there is no total peripheral anterior synechiae.
3. Or Iridencleisis if there is peripheral anterior synechiae.

Chronic simple Glaucoma: In the early stages of the disease the treatment is entirely medical. In addition to the correction of patients hygiene and habits any constitutional conditions should be treated. For the eye miotis like pilocarpine and eserine is used and Diamox is given to reduce the inflow of aqueous. If these fail and the tension remains high or shows a dangerous instability or if a deterioration of function persists, operative measures must be undertaken for its relief. The following routine is suggested in treatment of chronic simple glaucoma.

1. Miotis control with weak miotis.

(a) Eserma $\frac{1}{2}\%$ or Pilocarpine 1% and if combined together Eserma $\frac{1}{2}\%$ Pilocarpine $\frac{1}{2}\%$ drops may be applied once, twice or three times a day depending upon the diurnal curve of the patient.

(b) D.F.P. 0.005% in pea-nut oil may be used. This should be used before bed time and never in a case which shows peripheral anterior synechiae

(blocked angle) as it might raise the tension of the eye due to the congestion.

2. Diamox. To start with it can be given as one tablet twice daily followed by $\frac{1}{2}$ tablet twice daily. This can be given for fairly long period on and off without any unpleasant side effect.

3. Explain to the patient the nature of the disease its pathology and prognosis. Inform the patient of his present condition and ensure his co-operation.

4. Periodical monthly check up of :

- (a) Vision.
- (b) Fields.
- (c) Intra-ocular pressure.
- (d) Genioscopy.
- (e) Diurnal curve.
- (f) Tonography if it is possible.

Indication for surgery :

1. Persistent rise of Intra-ocular pressure.
2. Progressive loss of fields.
3. Age of patient.

Choice of operation :—Elliot's Trephining as the operation of choice is suggested.

Other measures available are :—

- a. Iridencleisis.
- b. Cyclodialysis - especially in aphakic glaucoma.
- c. Cyclodiathermy or retro-ciliary diathermy especially in very old people or as a temporary measure.

To conclude it may be said that although exception do occur, without treatment the disease is progressive and results in absolute blindness. With adequate treatment the majority of chronic simple Glaucomas can be stabilised or their progress delayed so that useful vision remains till the death of the patient. Fortunately most patients are old but juvenile glaucoma is an unpleasant problem. There are a few cases which in spite of all treatment steadily progress down till and end in blindness. Essentially the good results in the treatment of Glaucoma depend on two factors.

1. The stage at which the patient comes under treatment
- and 2. the sustained adequacy of treatment. The disease is not cured but only arrested. It should be remembered that 30% or more of all blindness occurring after 40 years of age is due to Glaucoma and this though incurable is certainly preventable.

TABLE

	Acute Catarrhal Conjunctivitis	Acute Iritis	Acute Glaucoma.
Age	Usually children	Usually adults	Usually old people.
One or both eyes	Often bilateral	Often unilateral	Commonly unilateral.
Onset	Gradual	Slow	Sudden
Symptoms Pain	Gritty feeling as though sand has got into the eyes.	Intense pain in the eye	Excruciating pain in the eye

TABLE — (Contd.)

	Acute Catarrhal Conjunctivitis	Acute Iritis	Acute Glaucoma.
Headache	Nil or slight	Severe	Very severe trigeminal neuralgia involving all the three branches
Vision	Not affected	Impaired	Impaired to a great extent.
Constitutional disturbances.	Nil	Nil	Severe with nausea and vomiting etc.
Signs Lids.	May be oedematous	Usually not	Often lids are oedematous.
Conjunctiva	Congestion more marked in the fornices	Circum corneal congestion more marked	Intense uniform congestion and chemosed.
Discharge	Mucopurulent discharge	Watery	Profuse lachrymation
Cornea	Clean	Usually clear in early cases.	Oedematous steamy, hazy and hypoaesthetic.
Anterior Chamber	Normal	Normal in depth Aqueous not clear Aqueous flare present	Ac shallow. Aqueous not clear.
Iris	Marking normal. React normally to light	Iris pattern lost muddy in appearance - not reacting to light	Iris oedematous not reacting or sluggishly reacting to light.
Pupil	Normal in size	Contracted	Dilated with vertically oval axis.
Tension	Normal	May be raised or normal	Always raised the eye ball is stony hard.
Lens	Normal	Normal	Greenish in colour.
Fundus	Normal	Usually normal if it can be seen	Optic disc oedematous and congested if it can be seen.

* B. C. G - A VALUABLE ADJUNCT PARTICULARLY SUITED TO INDIA IN THE TUBERCULOSIS CONTROL PROGRAMME

By

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Let me begin with saying that B. C. G. is not the only answer in any Tuberculosis control programme. No doubt it serves as a valuable adjunct, which under the present socioeconomic set up of this country, is most suitable to achieve our target by the end of Second Five Year Plan. There is yet another reason that, we in India, depend on B. C. G. It is well known that malnutrition causes low general resistance to tuberculosis which results in more number of active tuberculosis cases. Hence there is every reason for using B. C. G. vaccination in those socially and economically under developed countries in order to induce the specific resistance to tuberculosis. In no population group is B. C. G. vaccination so needed as in a community with low general resistance. In Scandinavia all the diabetics are vaccinated with B. C. G. because it is known that diabetics have a low general resistance to tuberculosis.

The following three courses are open to us if tuberculosis is to be controlled in any locality or community (1) By improving the socio-economic condition of the community (2) By adopting anti-tuberculosis measures (3) By building up the specific resistance to tuberculosis at no great cost by B. C. G. vaccination.

Taking the first course, let us examine this question, namely, Is it possible to improve the standard of living conditions

in India all of a sudden? It is estimated that 100,000 million rupees are needed per year to improve our housing conditions and another 3,000 million rupees per year to improve our nutrition level of the people (Benjamin 1949). To achieve both, it will take more than two decades. Can we really afford to allow our man-power to be wrecked and thus further increase the economic loss of the country? The second course is to adopt anti-tuberculosis measures. From Sanatoria and hospital, the emphasis is now, to open more number of tuberculosis clinics, extension of domiciliary services and establishing Rehabilitation centres. For this, India needs 4000 clinics costing 400 million rupees. To run these institutions, 600 million rupees are required. Calculated on a fifteen year's basis, India would immediately require about 9,000 million rupees per year. Finding of technical personnel is another problem as we need 15,000 doctors, 50,000 nurses and 12,000 Health visitors. Whether it is possible to adopt this course at the present moment, I leave that to be judged by yourself. So, when we begin to think of the magnitude of the housing and nutrition problem in improving the living standard and the enormous money that is required to run these institutions, not to speak of the paucity of technical personnel, we have no other choice but to adopt the third course open to us, namely, "B.C.G. Vaccination". The

* Part of Lecture delivered on 6-12-1959 at the Inauguration of Corporation Medical Officers Association, Madras.

total expenditure expected to be spent on B.C.G. Vaccination by the end of Second Five Year Plan (1960-61) will be about 40 million rupees. Where is this sum compared to the 9000 million rupees, required for one year if we were to adopt the other two courses?

At this juncture we have to consider administration of anti-biotics to the tuberculin positives as being advocated by Dr. Palmer of United States. Dr. Palmer may be right in suggesting to those countries wherein the percentage of reactors are small when compared to the non-reactors. It is not suitable to India where 55% of the population are tuberculin reactors and that anti-biotics will have to be administered to nearly 200 million people which may cost about 5000 million rupees. Not only that - there is also the difficulty of making the normal persons to take to these drugs and that too for a prolonged period, a step which will definitely be protested by our people. Palmer's idea is to deal with the pool of natural reactors from which group, by far the largest number of active tuberculosis occur. This pool can be effectively reduced by the systematic vaccination of the non-reactors who ultimately constitute the potentially dangerous group. (Md. Ali).

So, mass vaccination is the only remedy for a country like India where there is universal exposure of infection, with low socio-economic conditions with death rate ranging 200-400 / 100,000. Even in England B. C. G. Vaccination is being given to the younger groups of children. But mass B. C. G. Vaccination is not necessary in England because the tuberculosis mortality is about 20/100,000, the standard of living is high and therefore the natural resistance is also high to prevent any off-chance infection. It is our target, before the end of Second Five Year Plan to vaccinate all those below 20 years, the number being about 170 millions and we

have no doubt in achieving this. After this, there will be a definite drop in tuberculosis mortality by about one-fifth (i.e. to 5,00,000 from 2,500,000). This will be a measure of great achievement in tuberculosis control programme so far as India is concerned.

Discussion

We are indeed proud to say that mass B. C. G. vaccination campaign launched in India is the largest single preventive public health control measure carried out in any part of the world. It aims at inducing specific resistance against tuberculosis. The resistance gives protection by way of immunity for a period of 2-4 years by which time the individual is likely to get natural resistance by repeated subminimal infection without actually suffering from the disease. Two countries which have adopted mass vaccination are worth being quoted as examples. In Japan the incidence of tuberculosis has been brought down to one-fifth. In Scandinavian countries, tubercular meningitis in infants have almost become the dream of the past. It is to be remembered that B. C. G. vaccination is no more serious than any preventive inoculation. Harmful effects of B.C.G. which are very, very rare but seen sometimes such as local abscess, indolent ulcer, glandular abscess, lupoid reaction, keloid formation are only of minor consequences. Even 2 or 3 cases among the many million B. C. G. vaccinated, have been said to have died of B. C. G. septicaemia which still requires proof. I should think the fault is mainly on the improper selection of cases which sometimes happens in dealing with millions of people. When one looks at this small insignificant percentage of such complications in a mass vaccination of millions of people with B. C. G. surely these ill effects can be ignored when compared to the benefits accrued by B. C. G. vaccination.

Conclusion

1. B. C. G. is not the sole answer to control tuberculosis. It is particularly suited to the socially and economically backward countries like India, and is a valuable adjunct to other controlled measures available. If we have the means and resources like U. S. A. & U. K., we can also think of measures other than mass vaccination.

2. B. C. G. vaccination does not produce 100% immunity and tuberculosis may also occur in the vaccinated groups, but the incidence is one-tenth when compared to the non-vaccinated groups. The B. C. G. immunity lasts for 2-4 years only and vaccination may have to be repeated in cases who have not yet received the benefits of natural immunity.

3. Tuberculosis used to be the sole monopoly of the clinicians, but now the pendulum has swung towards Public Health Department. In the words of Dr. Benjamin - "It is no longer an individual problem, but a community problem and more correct to say it has come to be a national problem."

Acknowledgement

My thanks are due to the Commissioner, Corporation of Madras and the Health Officer for according permission to publish this paper.

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B. C. G. vaccination surely prevents two diseases in infancy and childhood - miliary and meningial tuberculosis. Some time back B. C. G. vaccination was the subject of heated discussion in many parts of our country with the result, the anti-propaganda marred progress to a certain extent in some States, especially Madras. This is nothing new because history tells us that any vaccination programme had met with similar fate in the beginning and B. C. G. is no exception. The opposition was wholly unfounded, based on the primitive views of some tuberculosis workers. This anti-propaganda has done one good thing, namely, that it has focussed country wide attention and made the tuberculosis workers to study the subject in all its aspects and get convinced in its usefulness. It has also definitely brought about in our people an increased awareness of the tuberculosis problem facing the country.

The results of the investigation published by the British Medical Research Council on this subject have left little doubt in the efficacy of this vaccination. The London County Council Public Health Department puts it this way - "It is the best way known to medical science at present of protecting any one against any but the most severe exposure to tuberculosis."

Let me summarise why B. C. G. vaccination is most suitable to India at the present moment in this way. A modern tuberculosis control programme is not only expensive, but also demands a big staff of high technical personnel. The financial commitments have been fully explained before. In countries like India where modern tuberculosis control programme cannot be set up at the present time, B. C. G. vaccination should be used as an emergency measure, particularly because mass vaccination, is relatively inexpensive and easy to carry out.

A DECADE OF NEUROSURGERY

by

Dr. B. RAMAMURTHI

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It is about 10 years since Neurosurgery was started as a separate speciality in the State of Madras and during these 10 years our State has made great and rapid progress in the field of Brain surgery. Today it can be said that most of the things that are possible in Brain surgery anywhere in the world are possible in the Madras state. It is interesting to look back and review the progress made during the past 10 years. The credit for getting trained in Neurosurgery and Electro-Encephalography as a separate speciality must be given to Dr. S. T. Narasimhan who is unfortunately no more with us. As early as 1945-1946 he went to the United States and specialised to Neurosurgery and Electro-Encephalography. On his return in 1948 he started a private clinic in Madras devoted to diagnosis and treatment of neurological diseases. Later by the end of 1949 the department of Neurology and Neurosurgery was started in the Christian Medical College Hospital, Vellore and in 1950 the department of Neurosurgery in General Hospital, Madras was started. Madras State could thus claim the honour of being the first state in the whole of India where Neurosurgery was started as a separate speciality. The Madras Government can well be proud of the fact that it was the first state Government in India to encourage and start this speciality of Brain Surgery separately. Later in 1952 the K. E. M. Hospital in Bombay started its department of Neurosurgery. In 1955 a surgeon from Vizagapatnam was trained in Madras and started the department of Neurosurgery in the King George Hospital, Vizagapatnam in 1956. This was due to the foresight of Major K. N. Rao, the Director of Medical Services of

the Andhra State. In the meantime Dr. M. V. Govindasami who was the Director of the All India Institute of Mental Health, Bangalore was making great effort to start a department of Neurology in the Bangalore Institute. He was able to secure the services of a good Neurologist and a good Neuroradiologist. But only in 1958 he was able to secure the services of a Neurosurgeon, who was trained for 4 years in Bristol, the United Kingdom.

In Bengal, Professor T. K. Ghosh was the neurologist and was fighting a hard battle from 1948 to start a department of Neurology and Neurosurgery. So in 1955, Dr. B. C. Roy invited Dr. H. Krauss of Vienna to start a department of Neurosurgery in the Presidency General Hospital which has now flourished into a Post Graduate Department of Neurology and Neurosurgery. By the end of 1957 Hyderabad had a department of Neurosurgery Surgeons trained in Vellore started another department in J. J. group of hospitals, Bombay. Thus it will be seen that Madras, Vellore, Bangalore, Vizag., Hyderabad, Bombay and Calcutta have full fledged Neurosurgical centres. The rest of India is not yet blessed with such centres but there are a number of people under training in

the United Kingdom and in India to start separate departments of Neurosurgery in these various places.

It is not necessary now to discuss the need or the necessity for such specialised departments in various parts of the country. As Medicine and Surgery have advanced by leaps and bounds, it has become necessary for some people to devote all their time to specialities so that they may give the best possible benefit to the suffering patients. Madras has thus two foremost centres for Neurosurgery. The University of Madras has started the course of M. S. in Neurosurgery and candidates are now being trained in Vellore and are to be admitted shortly in Madras.

Proposals are under consideration by the Director of Medical Services, Madras to start a neurosurgical centre in Madurai at a suitable opportunity. It is hoped that by another decade, every medical college centre in Madras will have a department of Neurology and Neurosurgery.

At this juncture, it becomes necessary to pay homage to the brave pioneers in Madras who attempted neurosurgical procedures before the specialised departments were started. Before 1949 attempts were

made at treatment of Neurosurgical cases in the General Hospital, Madras. Intracranial tumours were diagnosed but could not be treated with any great success because those surgeons were fully occupied with their general work and did not have the necessary facilities or the special training for doing specialised Neurosurgical work. Neurosurgery requires not only skill in operating but also all the ancillary facilities necessary for accurate diagnosis and localisation. As these were absent Neurosurgery could not make any headway in Madras, till specialised centres were started. This does not mean that no intracranial tumours were dealt with in our State before 1949. Pituitary tumours have been operated in General Hospital, Madras and tuberculomas Brain have been removed. Spinal cord surgery as well as surgery of Trigeminal Neuralgia and surgery of peripheral nerves and of head injuries were well established by surgeons of those days.

Since the advent of special centres the general medical men all over India began to realise (1) that intracranial tumours exist, (2) that they could be diagnosed and (3) they could be treated with a reasonable minimum risk. Thus more and more cases were diagnosed or

suspected and referred to the centres. In the early days of Neurosurgery in the general hospital, Madras more than 80% intracranial lesions were admitted with blindness but now we find that cases are referred much earlier. This has led to a remarkable improvement in results. Similarly spinal lesions are diagnosed early and treatment started early.

There is no doubt that the chief factor in the success of Brain surgery is **EARLY DIAGNOSIS**. It depends on the general medical practitioners or the family physicians to make an early diagnosis. One must have the possibility of the occurrence of intracranial lesions in one's mind and thus make an effort to make a diagnosis. In this connection I would like to stress again that the general practitioner must start the habit of using the Ophthalmoscope. It is the duty of senior medical men and medical teachers to stress that every medical man must possess an ophthalmoscope and use it. If this is being done in the west, for the past 25 years, why should it be difficult for us? I would appeal through this article to all general practitioners and also the consultants, to think of intracranial lesions and use the Ophthalmoscope as often as they can.

Progress made in the various fields :

Intracranial tumours are now being operated with great success. All modern techniques of diagnosis are practised; viz. Plain X-rays of the skull; Air studies like ventriculography and pneumoencephalography; Cerebral angiography, Myodil ventriculography, Electro Encephalography etc. Specialised equipment is available in these centres for such investigations. These serve to localise intracranial lesions accurately so that they may be tackled with the least mortality. In addition to the treatment of intracranial tumours, great progress has also been made in the proper treatment of head injuries. Investigation and treatment of epilepsy in various forms is being undertaken. Relief of pain also forms an essential part of the work.

The surgery of intracranial vascular lesions has been an advance in neurosurgery in the past decade. But to our surprise we find that intracranial aneurysms are not so commonly met with in South India. Is this due to the fact that they are not recognised or is it that they are rare? In the Western countries each neurosurgical centre may deal with about 4 or 5 intracranial aneurysms a month. But here in the

department of Neurosurgery, General Hospital, Madras we met with only 6 aneurysms during the past whole year. Experience of other centres in India are also similar. It is to be hoped that the general medical men will bear in mind the signs and symptoms of subarachnoid haemorrhage (bleeding aneurysm) and direct the case to the various neurosurgical centres, for definitive treatment.

The most recent advance in Neurosurgery has been in the direction of accurate placing of lesions in various areas of the brain by means of stereotaxy. By this method major operation is avoided; by means of a small burrhole electrodes are introduced into the brain. These electrodes are directed by means of a stereotaxic apparatus, guided by X-ray control. Thus lesions can be placed in the thalamus or the globus pallidus or any other portion of the brain as is necessary. This is being done to cure involuntary movements like Parkinsonism, hemiballismus etc. This method can also be adopted for procedures like surgery in relief of pain etc.

Since Neurosurgery began in 1949 a lot of progress has been made in Madras and in India, in the therapeutic and

curative aspects of neurological and neurosurgical problems. There are many problems still unsolved in Neurology and Neurosurgery. There are many diseases whose origin is obscure and many lesions whose treatment is still unsolved. Research into these problems are undertaken with great vigour all over the world. In India we have only been adopting the progress made in the curative treatment of these lesions. Neurological and Neurosurgical research is at a low ebb here. A wide field is open to us both in Neurology as well as in the relation of brain to mental illnesses. It behoves us to encourage original thinking and research in these fields. It is hoped that in the coming decade, two or more centres of advanced neurological research will be set up in the country. The need for this was pointed out at the Annual Neurological Conference in Jaipur last year. India has established many centres of research in various aspects of science. I am sure that in the near future centres of Neurological research also will become a reality and thus we will be able to contribute our share the store house of knowledge.

Proceedings of the 7th Madras State Ophthalmic Conference held at Madras on 17th and 18th October, 1959.

THE 7th Madras State Ophthalmic Conference was held at the Elliotts School of Ophthalmology in the Government Ophthalmic Hospital, Egmore, Madras. Delegates from all over the State and Guests from Mysore State were present. On the 17th Morning the Inaugural Session started at the Elliotts School. Dr. E. V. Srinivasan, Chairman of the Reception Committee welcomed the gathering. After referring to the beauties and the amenities of the City of Madras he covered the latest advances and various aspects in the practice of Ophthalmology.

Due to the unavoidable absence of Dr. Sir. A. Lakshmanaswamy Mudaliar, the Conference was inaugurated by Lt. Col. V. R. Thayumanaswamy, F.R.C.S., M. Ch. (Ortho.), Director of Medical Services. He first read the speech of Sir. A. Lakshmanaswamy Mudaliar. In that speech Sir. A. L. Mudaliar referred to the fact that Ophthalmologists were the first to confer as specialists either in a World Congress or as an All India Ophthalmic Conference. He also referred to the greatness of the Government Ophthalmic Hospital and the post graduate courses started by the Madras University. He hoped that all Ophthalmologists, trained atleast at the diploma level, will be available in a honorary, if not in a paid capacity, in every Taluk Head Quarters Hospital. He spoke about two world Medical Education Conferences which he attended, one in 1953 in London, and the second in 1959 in Chicago. Finally he said that the products of the Medical Institutions of this country will not compare unfavourably with the products of any Institution in any other country. He hoped that the Conference will give further stimulus to young and old alike to the specialists and the general practitioner, nay to the

public as well, to realise to importance of sound scientific treatment of diseases and to discard the ephemeral and exaggerated impressions of faith cures and other irrational approach.

Lt. Col. Thayumanaswamy after reading the Vice Chancellor's speech, spoke about the importance of selecting suitable candidates to undergo training for post graduate, Medical diplomas and degrees.

Dr. Patwardhan the President delivered his presidential address and covered all aspects of cataract surgery in great detail.

Lt. Col. S. Annaswami proposed vote of thanks to the various persons who have helped the Working Committee in making the Conference a great success.

In the afternoon of the 17th, Dr. B. K. Narayana Rau inaugurated the Scientific Session. He spoke about the original contributions to Ophthalmic knowledge made by Kirpatrick and Elliot. He also spoke about the Scientific work that is being done in India. He laid stress on the preventive aspect of Ophthalmology and how this has to be practised in rural areas. He emphasised the need for good and upto date libraries.

The first Scientific Session started with a paper on Venereal diseases in relation to ocular conditions by Dr. P. N. Rangiah, Director of Institute of Venereology, Madras. He put up charts to show the incidence of various ocular conditions caused by different venereal diseases. This was followed by a paper on Optic Gliomas by Dr. K. V. Mathai of the Neuro-Surgical department, Christian Medical College, Vellore. After this Dr. B. Ramaurthy, Professor of Neuro-Surgery, Madras Medical College,

spoke about his experiences of Neuro-Ophthalmology, during his recent tour of Russia. The first Scientific Session ended with a detailed paper on Psychosomatic Ophthalmology, by Dr. E. Balakrishnan, Asst. Professor of Ophthalmology, Madras Medical College.

On Sunday the 18th October, the following cases of Clinical interest were presented.

1. A case of Tumour lower lid by
Dr. C. E. Rama Rao.
2. Acrylic lens implant
Dr. V. C. Sudarsanam.
3. A case of Marfan's syndrome and a case of anterior Lenticonus
Dr. E. Balakrishnan.
4. Alkaptanuria
Dr. S. Thyagarajan.
5. A case of Cholesterol crystals in Anterior chamber
Dr. V. Anandaraman.
6. A case of Neurofibromatosis with Nodules on Iris
Dr. V. Anandaraman.
7. A case of Vogt Koyanagi Syndrome and a case of symphathetic Ophthalmia.
Dr. J. E. Abraham.
8. Amyloidosis of Conjunctiva
9. Deposits on the Cornea
Dr. S. Thyagarajan.
10. Blood staining of Cornea
Dr. V. Anandaraman.

11. Cyst in Iris

Dr. S. Thyagarajan.

The second Scientific Session was started with a very interesting talk on "Physical Signs and Clinical Manifestations in UVEITIS" by Dr. V. C. Sudarsanam, Hony. Professor of Ophthalmology, Stanley Medical College. His talk was illustrated by pictures and slides on the screen. This was followed by a topical paper on the problem of Myopia by Lt. Col. S. Annaswamy. The last paper for the second Scientific Session was one, on Modification of Smiths Intracapsular Extration by Dr. N. Srinivasan, Hony. Ophthalmic Surgeon, Government Royapettah Hospital.

After the business meeting of the Ophthalmic Association of Madras State, the Scientific Session started with two interesting papers one on observations on Buphthalmos and two Bilateral Subluxation of Lens associated with Scleritis by Dr. Roy Ebenezer, Professor of Ophthalmology, Christian Medical College, Vellore. Dr. A. V. Rajagopal, D.M.O., Chingleput, gave an interesting talk on Ophthalmology through general practitioners eyes. Dr. G. Venkataswamy, Reader in Ophthalmology, Madurai Medical College showed slides of interesting clinical cases. This was followed by an interesting film on the introduction of acrylic lens by Dr. D. G. Patwardhan. Dr. R. Sundara Rajan of Coimbatore, spoke on public health measures to prevent eye affections. This was followed by a paper on Galucoma by Dr. V. Kalyanasundaram.

Dr. Patwardhan spoke about the very interesting scientific papers and discussions and closed the Conference.

INDIAN MEDICAL ASSOCIATION (MADRAS CITY BRANCH)

A Review of the visit to Madras

OF

DRS. S. WAND & D. P. STEVENSON

It was on an auspicious Wednesday (18—11—1959) evening that a representative gathering of the Madras City Branch of the Indian Medical Association were awaiting the arrival, at the Aerodrome, of Drs. S. Wand, Chairman of the Council and D. P. Stevenson, Secretary of the British Medical Association.

This was preceded by feverish preparations for housing the guests and formulating a colourful programme for them. The necessity for such an anxiety was evident. They were representing our Sister Organisation from a land which has contributed much to medicine and medical men. One of our venerable members and the speaker of the Legislative Assembly, Dr. U. Krishna Rao had also come to the Aerodrome and we had special permission to enter the get-away to receive our distinguished guests. We expected difficulty in identifying them. But to our relief it was not so. They were accompanied by the State President Dr. T. V. Sivanandam.

The guests were immediately driven to the Hotel Connemara where accommodation for them was arranged. After a wash and change they were taken round the city's most sought after evening resort—the Marina. They appreciate the Marina very much. They were then brought to Hotel Dasaprakash where a cultural show awaited them.

This show consisted of dances by Baby Sasikala daughter of our Treasurer Dr. K. V. Swamy. This little girl who is

hardly nine years old captured every one's heart and the visitors were no exception. Dr. S. Wand gave his impression rather humorously. He said that the little dancer would create a stir in the minds of any New-Yorker or Londoner. He volunteered to act as an agent on a small commission only if Dr. Swamy could send his daughter to UK or America! Kumari Vimala daughter of our President Dr. G. Sriramulu filled up the intervals rendering in her melodious voice, songs in almost all the major languages in vogue in India.

The Dinner was well received by the guests. It was purely vegetarian as a good majority of us wanted it to be, so that the visitors could taste some South Indian dishes.

After dinner Dr. K. C. Nambiar one of our Senior and revered members stated that all degrees obtained in India should be recognised by the U. K. Medical Council. The visitors assured that though they are not connected with the British Medical Council they would convey our feelings and do what they could.

Thus ended the First day.

It was programmed to visit the City Hospitals the following morning (19—11—1959) But only one Hospital—The Cancer Institute situated at Picturesque, Adyar could be visited. Dr. Nathamuni Naidu, Vice President of the State Branch also accompanied us.

The visitors were so engrossed in the work done there by and under the able guidance of Dr. S. Krishnamurthy, the Institute's Director, that time fled without our knowing it. We could get out only at 11 and so visits to other hospitals had to be dropped as we had an engagement with the Health Minister, Hon'ble Shri M. A. Manikavelu at Fort. St. George at 11-30 A.M.

The guests discussed with the Minister matters pertaining to Health for about 30 minutes. Following this we had Tea with Dr. U. Krishna Rao at his Chamber in Fort. St. George. The visitors were then taken to Mahabalipuram by the Joint Secretary, Dr. B. Rama Rao. They liked the place very much and spent quite a good time there, so much so,

they were late for the evening programme of tea and meeting.

A suitable audience had collected to hear the visitors from U. K. Dr. G. Sriramulu, President introduced the visitors to the gathering Dr. Wand spoke about various topics including the National Health Services. Dr. Stevenson gave vivid account of the Birth and growth of the B. M. A. and said it was a powerful body having about 97% of doctors in its fold. He also said that the Government always took their advice in matters pertaining to health, Medical relief and Medical Education.

On the last day (20-11-1959) the office bearers of the City Branch saw the Visitors off at the Aerodrome. They were leaving for Ceylon.

Health Survey and Planning Committee Government of India.

The Government of India have appointed a few months back a Health Survey and Planning Committee under the Chairmanship of Dr. Sir. A. Lakshmanaswamy Mudaliar to make a survey of health conditions after the publication of the report of the Bhore Committee and to put forward proposals for health developments on a long-term basis.

The Committee has been given the following terms of reference.

1. the assessment (or revaluation) in the field of medical relief and public health since the submission of the Health Survey and Development Committee's Report (the Bhore Committee).
2. review of the First and Second Five Year Plan Health projects.
3. formulation of recommendations for the future plan of health development in the country.

In view of the importance of the issues to be considered I feel that the Association will have a valuable contribution to make both in regard to the assessment and regard to the formulation of the recommendations for the future plan of health development.

I shall be grateful if you will kindly send me a memorandum on the various aspects of medical care of patients in hospitals both in urban and rural areas and the best method of promoting such care.

Under-graduate and Post-graduate Medical Education

Under-graduate medical education is regulated by the advice and decision of

the Indian Medical Council, while so far as the post-graduate medical education is concerned, it is presumed that there will be a separate Post graduate Council to advice on such education. It would, however, be useful at this stage if your Association could favour us with its views on these two subjects.

So far as post-graduate medical education is concerned, this includes training in the various specialities in medicine and surgery. Apart from your views as to the sort of training that should be given, the period for which it should be given and the type of tests that is desirable to assess the competence of the candidates at post-graduate examinations, I would be grateful if you could give your views on the following subjects.

1. The conditions under which hospitals should be recognised for instruction in the different post-graduate courses.
2. The qualifications of the personnel that should be responsible for guiding post-graduate studies.
3. The type of examination that should be conducted to evaluate the competence of the persons in the different specialities after completing their courses of study and the help needed for developing post-graduate instruction.

Incidentally, it would be appreciated if you could please let us know in what manner and to what extent the Central and State Governments should come to the help of the medical institutions of the country to favour and to encourage the post-graduate studies among the students.

Medical Research :

This is a theme that has attracted a considerable attention everywhere. In this connection, the positive steps that may have to be taken to encourage medical research in various sectors may be suggested.

Medical Equipment :

The question of our country being self-contained in regard to the supply of medical equipment as far as possible is one that has attracted a considerable attention. Your Association's views as to how best this can be achieved will be greatly appreciated.

Rural Medical Relief :

The problem of rural medical relief has undoubtedly been a theme of constant attention and also of some criticism from diverse sources. May I have your views on the question of how best rural medical relief can be promoted and what attractions should be given to medical people to settle down in the rural centres for their practice. Should the Government take positive steps to encourage this and if so what steps would you suggest so that the benefits of modern medicine can be made available to the bulk of the rural population. It is hardly necessary for me to refer to any of the other subjects that will obviously occur to you in this

connection. It is for this reason a set questionnaire is not sent so that a wide latitude may be available for your memorandum to touch on the different aspects of the problem with which undoubtedly members of your Association are familiar.

I shall be most grateful if you could, therefore, let me have two copies of the memorandum so as to be received by me on or before the 15th of January 1960. I have deliberately given a later date so that you may have an opportunity to discuss this at the ensuing Surgeons' Conference.

May I request you to kindly acknowledge this communication and let me know roughly when I can expect your memorandum.

Yours sincerely,

(Sd.) A. L. MUDALIAR.

A Sub-Committee of this Committee is dealing with drugs and medical equipment and appliances; and this Committee has drawn up a questionnaire to collect information on relevant matters from members of the medical and pharmaceutical professions.

QUESTIONNAIRE II

Questionnaire to the medical and pharmaceutical professions

A. Drugs, dressings, instruments and appliances—their availability, quality and cost.

A. 01-0 Do you experience any difficulty in getting an adequate supply of drugs.

- (i) imported,
- (ii) of indigenous origin,
- (iii) made locally from imported raw materials ?

A. 01-1 Do you think that import restrictions on drugs in ready packaged form have had any adverse effect on the treatment of disease ?

A. 02-0 Are you satisfied with the quality of drugs available in the country

- (i) imported,
- (ii) of indigenous origin,
- (iii) made locally from imported raw materials ?

A. 02-1 Are you satisfied with the quality of biological products such as sera, vaccines etc., produced in the country ?

A. 02-2 Do you have any suggestions to improve the quality of drugs manufactured in the country ?

A. 02-3 Do you have any liaison with the drug industry ?

A. 02-4 Have you visited any of the drug manufacturing factories in the country ? If so, what is your opinion of these ?

A. 02-5 Are you aware that the Drugs Act is in force in the country since 1947 ?

A. 02-6 If so, do you think it is being properly enforced ?

A. 02-7 Has it had any effect in maintaining and improving the standards of drugs ?

A. 02-8 Do you have any suggestions to improve the enforcement of the Act and the rules under it ?

A. 02-9 Have you in your practice come across any cases of spurious drugs ? If so, can you give specific instances ?

A. 03-0 Are you aware of the prevailing prices of drugs and do you keep that knowledge in mind while writing prescriptions for your patients ?

A. 03-1 Do you ordinarily prescribe drugs under their proprietary names ?

A. 03-2 If information were readily available to you that certain drugs sold under a proprietary name are also pharmacopoeial drugs, would you prescribe such drugs only under their pharmacopoeial name ?

A. 03-3 If the cost of any particular drug is known to you to be high, would you consider the feasibility of prescribing a less expensive alternative, if information about such alternatives were readily available to you ?

A. 03-4 Have you access to information regarding different substitutes for the same drug ?

A. 04-0 Do you have any difficulty in obtaining :

- (i) Surgical dressings
- (ii) Sterilised sutures
- (iii) Instruments. If so, which type ?
- (iv) Appliances - if so, which type ?
- (v) Diagnostic agents
- (vi) Dental goods
- (vii) X-ray films
- (viii) X-ray equipment
- (ix) Laboratory reagents
- (x) Any other item ?

A. 04-1 Of the above items which do you obtain from sources of indigenous manufacture ?

- C. 01-2 Do you prescribe any drugs included in the Indian Pharmacopoeia ?
- C. 01-3 What do you think should be the methods to be adopted to make the Indian Pharmacopoeia known to the medical profession ?

D. National Formulary

- D. 01-0 A national Formulary of India is now in print ; the Formulary contains all the essential formulations of drugs of the Indian and other Pharmacopoeias. Are you prepared to limit your prescriptions only to those included in the National Formulary ?
- D. 01-1 If so, are you prepared to prescribe such drugs only under the names given in the Formulary ?

E. Self Medication and Excessive Medication

- E. 01-0 Do you consider that self-medication, is on the increase ? If so, would you suggest that
- (i) it should be stopped
 - (ii) limited to only minor ailments ?
- E. 02-1 Do you think that there is excessive medication, in particular of antibiotics, sulpha drugs, vitamins etc. ?
- E. 02-2 If so, what would you suggest to limit medication to the desirable minimum ?
- E. 02-3 Under the provisions of the Drugs such as antibiotics, sulpha drugs, can be sold only under the prescription of a registered medical practitioner. Do you consider that this has checked the abuse of such drugs ?
- E. 02-4 If not, what would you suggest to check their abuse ?

F. Pharmacy Act.

- F. 01-0 Are you aware that the Pharmacy Act is in operation in the country ?
- F. 01-1 Do you have a qualified pharmacist working in your pharmacy ?
- F. 01-2 If you have had experience of both qualified and unqualified pharmacists can you indicate briefly differences in the quality of service, if any, between the types of pharmacists ?
- F. 01-3 Have the provisions of the Pharmacy Act resulted in raising the standards of training of pharmacists ?
- F. 01-4 Do you think that the standards prescribed for the trainings of pharmacists under the pharmacy Act are sufficient or should they be upgraded ?
- F. 01-5 In view of the large number of trained personnel required for the general medical care programme for the community, do you think it a reasonable and practical suggestion that, in the case of smaller institutions especially in the rural areas, the same person should be enabled to combine in himself the functions of a pharmacist and of a laboratory technician and that the training programme should be prepared accordingly ?

- F. 01-6 If so, what suggestions do you make for such a combined training programme ?
- F. 01-7 The view is often expressed that the dispensing and supply of drugs to patients should be left to the pharmacists and that doctors should confine themselves to the examination and diagnosis of patients and prescribing treatment for them. Do you subscribe to this view ?
- F. 01-8 It is understood that some doctors keep consulting rooms in chemists' shops and see patients there. Is this procedure likely to lead to over-prescribing of drugs ?
- E. 01-9 It is often said that pharmacists, qualified and unqualified, practise as doctors in many cases. Does your experience substantiate this statement ? If so, what remedial measures can you suggest ?

G. Pharmaceutical service for the country.

- G. 01-1 A view is often expressed that there is need for the building up of a sound pharmaceutical service. Do you support this view ?
- G. 01-2 If so, do you think that there are enough qualified pharmacists to run
- (i) Hospital pharmacies
 - (ii) City pharmacies
 - (iii) Town pharmacies
 - (iv) Rural dispensaries ?

What would you suggest to improve the quality of pharmacists ?

H. Drug Addiction

- H. 01-0 Are you aware of the risk of addiction attendant on the use and misuse of addiction producing drugs such as morphine, pethidine ?
- H. 01-1 Do you think there is adequate control to check the misuse of such drugs ?
- H. 01-2 Have you come across any cases of drug addiction ?
- H. 01-3 If so, which sections of the community are, in your opinion, more prone to addiction
- (i) Business community
 - (ii) Workers
 - (iii) Professional people
 - (a) Lawyers
 - (b) Doctors
 - (c) Nurses
 - (d) Engineers
 - (e) Chemists
 - (f) Others

- H. 01. 4 Have you come across any cases of juvenile addiction ?
- H. 01. 5 In your experience, what are 'addiction drugs' you have found in use by the people ; give the types of such drugs used by persons under (i), (ii) and (iii) of H. 01. 3 ?
- H. 01. 6 Do you think addiction to drugs should be made a penal offence ?
- H. 01. 7 Are you subject to any restrictions regarding the use of addiction producing drugs.
- (i) Under the Dangerous Drugs Act 1930
 - (ii) Under the Drugs Act, 1940 ?
- If so, are you conforming to the requirements under those Acts ?
- H. 01. 8 Considering the danger of indiscriminate use of such drugs, do you think that methods designed to impose reasonable restrictions on their use would be justified ? If so, suggest such methods as appear to you to be suitable and, at the same time, feasible.
- H. 01. 9 Do you get adequate information about drugs liable to produce addiction ?
- H. 01. 10 If not, would you suggest that such information should be provided to the medical profession by a governmental agency ?

I—Miscellaneous

- I. 01. 0 Have you any interest in any drug manufacturing concern or concerns ?
- I. 01. 1 Do you think it is desirable that member of the medical profession should have association with drug manufacturing concerns involving personal profit, except as employees on the pay-rolls of those concerns ?

Dr. K. C. K. E. Raja, the Member-Secretary of the Committee, has desired that the answers to the questionnaire may be obtained from prominent doctors who are members of this State Branch of I.M.A. As the questionnaire shows, the answers to it has to be based on the experience of individual doctors, and I venture to think that your valuable experience would go a long way in moulding correct answers to the various questions. Of course, it may not be easy for every one to answer all the questions;

but Dr. K.C.K.E. Raja feels that it will help the Committee if each person will answer as many of them as possible. May I request you to kindly spare some of your valuable time to this national cause and try to deal with the questionnaire ? The replies to the questionnaire may kindly be sent *direct* to "Dr. K. C. K. E. Raja, Member-Secretary, Health Survey and Planning Committee, Ministry of Health, 91-B, Ground Floor, North Block, New Delhi-2" before the end of December 1959.

(Sd.) DR. C. ARUMUGAM,
Hony. State Secretary,
Madras State Branch, I. M. A.

Dr. PATTABHI SITARAMAYYA

“IN the death of Dr. Pattabhi Sitaramyya our country has lost a great man and a fearless fighter for freedom in the rank and file of the Indian National Congress. We are specially indebted to him for the significant reform he has brought about in the Profession of Medicine in the then individed Madras State wherein we had castism and compartments in the Civil Medical Services under the British regime. As members of the Committee of Action along with Dr. P.B. Annangarachariar, Dr. R. Sankaran and my humble self on behalf of the All India Medical Licentiate Association, Madras Provincial Branch we had interviewed him as President of the Indian National Congress then and achieved this desirable reform by the unification of the Civil Medical Services for which we are ever indebted and pay our tribute. This reform in turn brought about the gazetted rank for the medical licentiate who were then styled as belonging to the subordinate Medical Service under Government. A similar and outstanding reform was achieved by the Congress Government through the efforts of the late Dr. T. S. S. Rajan, Health Minister then and our Association in bringing about a uniform standard of Medical education by the abolition of medical schools and upgrading them into medical colleges. These two stalwarts of the Congress belong to the Profession of Medicine of whom we ever feel proud for having done justice in removing undesirable complexes in the body politic of the profession. I am reminded of the lines of the great Poet who states :

Lives of great men all remind us
Let us make our lives sublime
And departing leave behind us
Foot prints on the sands of time.

May the soul of Dr. Pattabhi rest in peace.

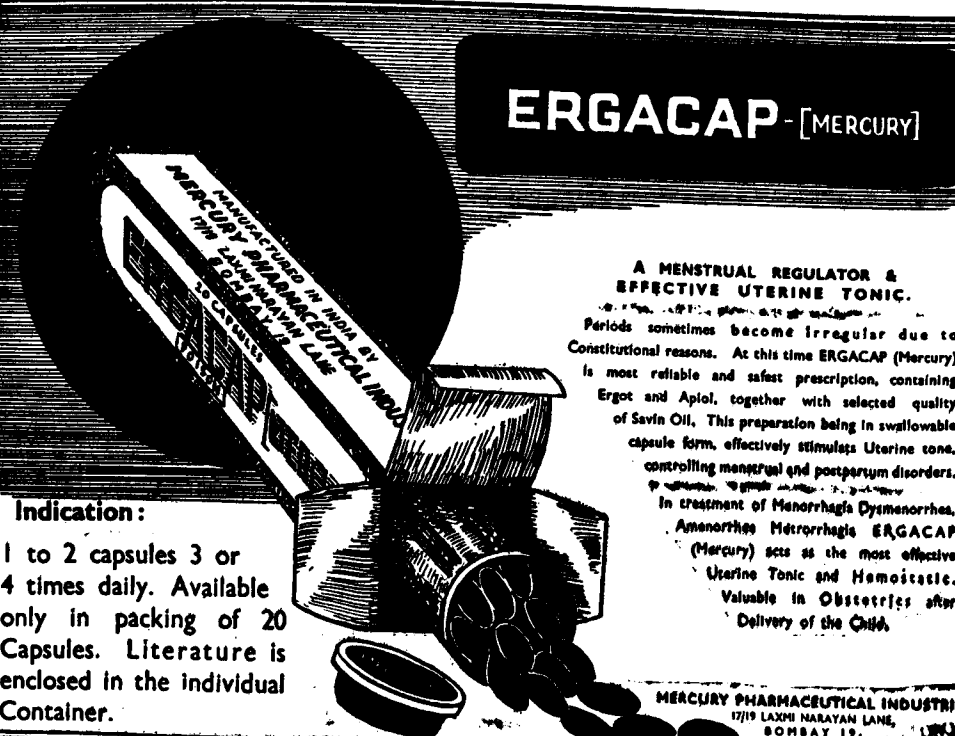
(D. V. VENKAPPA)

Ex-President

*Indian Medical Associations and
Member, Medical Council of India.*

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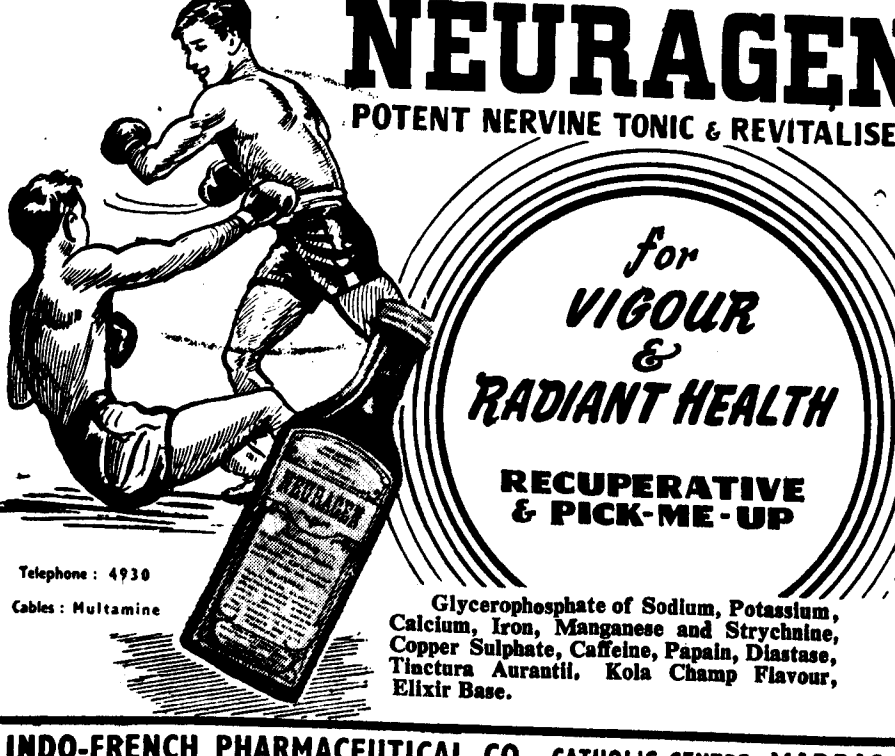
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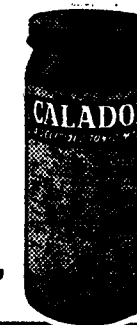
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READERS ATTENTION PLEASE

Due to conditions to which the present Editor was unwilling to submit, the Editor very regretfully relinquishes his office. He thanks the various advertising firms, their agents, the contributors for their very kind cooperation and the readers for their helpful criticism, because of which the Journal had shaped itself into a useful organ of Post Graduate information in matter. Plans are in the anvil to bring forth another journal, with its area of circulation widened to the Southern States and it is hoped that ere long the new journal may start serving the doctors of the Southern States of Kerala, Madras, Mysore and Andhra.

The Editor tenders once again his grateful thanks to all the contributors and the Pharmaceutical firms who have helped in the cause.

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