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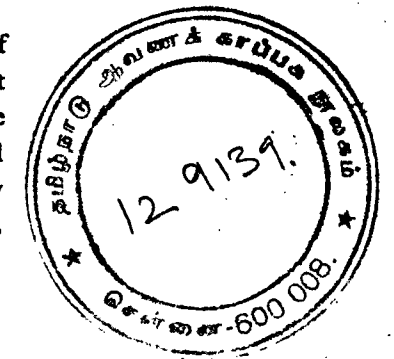
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F. Obstet. Gynaec., 1933, 40, 966.

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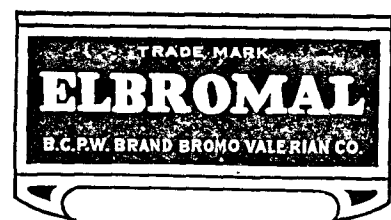


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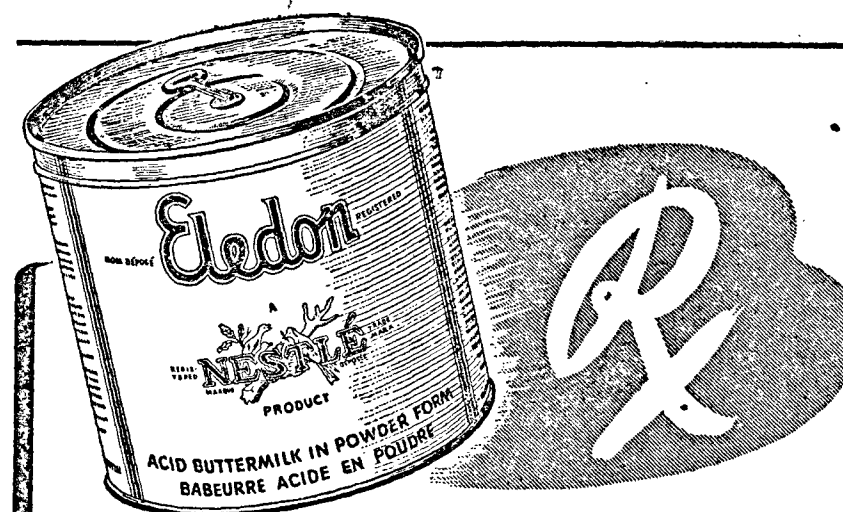
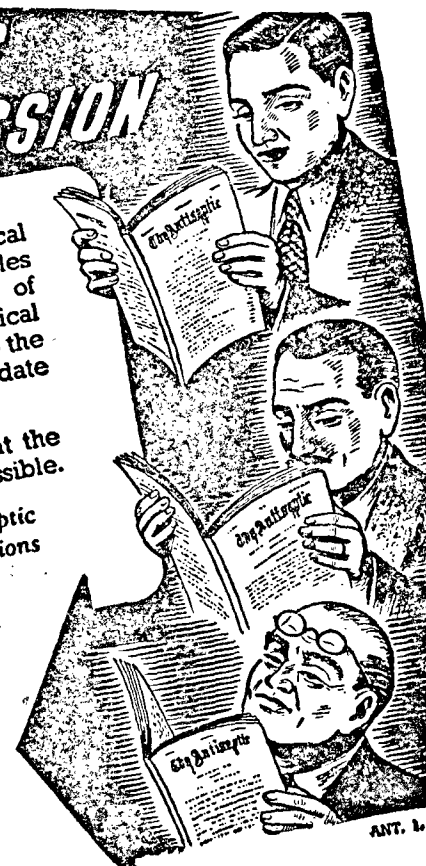
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Indian Medical Journal

(Journal of the All-India Medical Licentiate's Association)

Vol. 40. Madras : January, 15, 1946. No. 1

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(Journal of the All-India Medical Licentiate's Association)

Vol. 40. Madras, January 15, 1946 No. 1.

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OUR MONTHLY SURVEY

New Year Greetings:—We wish our readers and advertisers a happy new year. We feel we have not done our best for them during 1945, but that is due to circumstances beyond our control. Paper Order and paper rationing effectively prevented us from putting in more pages, much against our desire. The year 1946 does not seem to hold better hopes in this respect. And till the paper order is lifted we would not have much freedom to print as many pages as we like or as the readers and advertisers demand.

Prevention of Transfusion Reactions:—Despite many safeguards, transfusion re-action still occurs. Exactness and accuracy in typing and cross-matching is highly essential. Particularly cross-matching is of importance to exclude Rh incompatibilities. Cleansing of transfusion apparatus immediately following use is equally important before autoclaving. All donors must be in a fasting state for six hours before blood is drawn, and of course we have to rule out beforehand malaria, venereal disease, blood dyscrasia, infectitious diseases and allergic conditions in the prospective donors.

Child-Leprosy:—Cochrane* is doing a distinct service to leprosy eradication by stressing on the obvious but oft-forgotten fact of experience that if children are not exposed to infection leprosy would gradually die out of a community. He submits clear evidence to show that the majority of persons acquire leprosy in India before the age of 20 and that many

* Ind. Jr. of Pediatrics, Vol. XII, No. 48, Oct., 45.

have been infected by the time they reach 15 years of age. Thus it may be stated generally that most cases of leprosy acquire the infection during childhood. Another interesting observation of Cochrane is that room-contact, as in the case of tuberculous infection, plays a significant role in the epidemiology of leprosy. The following table of his clearly illustrates his hypothesis.

Total,	Intra-familial contact.				Extra-familial contact.	
	Room.	%	House.	%		%
Neural Type 189	76	40.2	28	14.8	85	44.9
Incipient Type 31	24	77.4	4	13.0	3	9.6
Lepromatous Type 63	41	65.1	...	3.2	20	31.7

Most of the infection in childhood arises from intra-familial contact, of which room-contact shows a higher percentage of incidence. The inferences are that bad housing condition, over-crowding in a single tenement and unwillingness to segregate the infectious case, constitute, as in tuberculosis, a prolific cause of the spread of infection. Prevent the child from getting the infection, and you prevent the spread of leprosy in a community.

Needless fear:—We hope our readers have perused the press statement of Dr. Manoharlal Kapur, President of the A.I.M.L.A., published in our December issue, in connection with the question of recognition of the licentiate qualification by and the representation of the licentiate in the Indian Medical Council. The need for this press statement arose out of the haunting fear of the Indian Medical Council that if the licentiate are recognised they are likely to lower the standard of medical education and swamp the Council in large numbers. We are astonished that the mighty people with mighty intelligence who make up the present Medical Council should be so ill-posted with facts. Who stood for the abolition of medical schools and who successfully worked for it? It is the All-India Medical Licentiate's Association, and nobody else. In fact, if the members of the Medical Council are good enough to read the proceedings of the Government of India Conference on Medical School Education held in 7th and 8th Nov. 1938, they will find that the medical graduate representatives pleaded passionately for the continuance of medical school education while the licentiate representatives solidly stood for its abolition. How then can any one say that if the existing licentiate are given representation in the Council, they would lower the standard? This is sheer hypocrisy. As for the licentiate capturing the seats in the Council it is impossible under the existing rules, as they would not get more than seven seats in a House of 30 because the only electorate through which a licentiate can contest is the Provincial Medical Register, of which there are only seven at present. The fear therefore of the Indian Medical Council is absolutely groundless. We would humbly advise the Council to shed this fear in its own interest and good name.

ADDRESSES AND ARTICLES

On the relationship between vitamin B₁ and Acetyl Choline and the action of the latter on the various muscles of the body.*

BY

D. P. SADHU, M.Sc.

(Physiology Dept., Presidency College, Calcutta).

This work was undertaken in continuation of the investigation carried on under Prof. N. M. Basu regarding the influence of Na⁺, K⁺ & Ca ions on the relationship between vitamins B₁ & C and adrenalin regarding the effect of the latter on various muscles of the body. It was suggested that interesting results might be obtained regarding the relationship between these ions and vitamins and the action of acetyl choline on the various muscles. In the present paper the effect of vitamin C has not been taken up.

The literature is replete with conflicting observations regarding the relationship between vitamin B₁ and acetyl-choline (to be written subsequently as A. C.) in respect of the action of the latter, but the influence of ions on this relationship has not been studied. Thus Quastel (1936) first suggested a connection between glucose metabolism in brain and A. C. synthesis. This clearly indicates a probable relationship between vitamin B₁ and A. C. Again the action of A. C. and adrenalin on the gastro-intestinal tract was correlated with the atony of the same tract and loss of appetite in vit. B₁ deficiency (Cowgill, 1931; McCarrison, 1921; Fletcher and Graham, 1930 (a), (b).) Bradycardia in vit. B₁ deficiency (Carter & Drury, 1929; Drury et al, 1930; Birch & Harris, 1934) was related to the vagus effect which has been proved to be produced through A. C. (Carter & Drury, 1929). A sensitising relation was found between B and A. C. (Brucke and Sarkander, 1940 (a) (b); Nachmansohn & Steirbach, 1942; Zeller & Birkhauser, 1940; Brecht, 1940; Nitzescu and Teodoru, 1941; Dick & Hege, 1941; Bayer & Harpuder, 1940). Curiously enough, another group of workers (Pighini, 1940; Brecht & Meiners, 1941) noticed an antagonistic relationship between vit. B₁ & A. C., while some workers (Jackson & Wald-1942) found both antagonism and synergism between vit. B₁ and A. C. under different conditions, whereas others asserted that no relationship exists between them. (Reichert, 1940; Erspamer, 1941; Martin & Lissak, 1941). As these conflicting observations might be caused either by a difference in experimental methods of study or by a difference in the ionic or pH concentration of the perfusion or bathing fluid, it was decided to study them by approved and standardised methods and to note what effects are produced by changing the concentration of various ions or pH in the perfusion or immersion fluid.

Experiments were performed on skeletal muscle, cardiac muscle and plain muscle of the intestine.

* Abridged by the Editor.

Regarding skeletal muscle, as it is convenient to study the effect of a drug on the onset of its fatigue and on its contraction-remainder, experiments were arranged to investigate the effects of different concentrations of vit. B₁ alone, vit. B₁ plus A. C., and vit. B₁ and A. C. with varying concentrations of Ca and K⁺ on the incidence of fatigue and the contraction remainder caused by repeated contractions of a toad's gastrocnemius-sciatic preparation placed in a Keith-Lucas muscle chamber, and subjected to respective stimuli of constant intensity, delivered from a Neon lamp stimulation apparatus devised by Prof. N. M. Basu. The contractions were, as usual, recorded on a drum moving slowly and at constant speed. On account of shortage of time it was not possible to study the effects on isolated contractions of a muscle (such as sartorius) under conditions which are likely to give uniform contractions for a long time.

Regarding cardiac muscle the heart of toads was perfused in the same way as was done by Prof. Basu. As vit. B₁ is rapidly destroyed at pH 7.4 which is maintained during perfusion, its solution was introduced slowly by injection with a serum syringe into the tube leading to the heart cannula, so that the vitamin may not remain long in contact with the solution before it may reach the heart. During winter when the temperature of the room was much lower, arrangements were made to make the perfusion fluid flow through a tube placed in a bath of constant temperature (38°C) before it circulates through the heart.

Regarding plain muscle, the movements of loops of cat's intestine were recorded with Dale's apparatus. Fleisch's solution was used and its pH was kept constant at 7.6. The solution was regularly aerated, instead of O₂ being allowed to bubble through it. Due to shortage of time it was not again possible to study the effects on other plain muscle of the body, such as those in blood vessels by vessel perfusion method, or in uterus or spleen by recording their contractions.

The experiments conducted in our Department show clearly that vitamin B₁ if administered in large doses so as to raise its concentration in blood and tissues to a great extent even temporarily, is expected to exert a profound influence on heart beat, intestinal movements and muscular performances of the body by combining with acetyl-cholin that may be present or liberated in these tissues. Its effect on heart beat is antagonistic to vagus action, so that in cases of vagus preponderance, such as during acute mental shock or emotions or surgical operations it will relieve symptoms of suffocation. Its influence on intestinal movements is expected to be directed towards greater relaxation of intestinal muscle. Accordingly in cases of acute diarrhoea attended with frequent evacuation of bowels, caused by exaggerated peristaltic movements, oral administration of a large dose of vit. B₁ would give great relief to patients by bringing about relaxation of the muscles of gut, and is likely to stop immediately the wringing and twisting movements of bowels that occur in dysentery. The effect of vitamin B₁ on skeletal muscles of the body is expected to be still more marked. It delays very greatly the incidence of fatigue by (1) allowing the muscles to relax more fully after each contraction, however rapid

contractions are forced to occur, and thus to recuperate to a considerable extent and (2) by helping the oxidative removal of lactic acid, the accumulation of which brings about exhaustion and fatigue. As vitamin B₁ even in a very large single dose is still considered to be absolutely innocuous the therapeutic importance of its use in a large dose in cases like the above is strongly indicated.

Acknowledgement

The author acknowledges his indebtedness to Prof. N. M. Basu for kindly suggesting and guiding him throughout the work.

Results of Treatment of 200 cases of Naga-Sore. (Tropical Phagedenic Ulcers.)

BY

DR. DURGADAS GOSH, L.M.F., L.T.M., M.O.,
Sathguo Tea Estate.

Naga-sore, next to malaria, is one of the important diseases that are common in the Tea-estates of Assam. It causes a lot of discomfort to the labourers.

Etiology.

Its etiology is still uncertain. The theory of contamination of soil does not explain why the children are not attacked by this disease. It is suggested that it may be due to serum calcium deficiency, but in a good number of cases there is no appreciable deficiency of calcium in blood. So it is with the theory of avitaminosis. Cuts and abrasions do not account for multiplicity of ulcers so characteristic of Naga-sore. Poor peripheral circulation may be supposed to be responsible for lowering the skin's resistance to infective organisms, but this applies to all skin diseases including Naga-sore.

The coincidence of epidemic conjunctivitis with Naga-sore incidence may suggest a common infection through the house fly but the organism found in Naga-sore is different from that of epidemic conjunctivitis. The former is a fusiform bacillus mixed with spirillum, and anaerobic.

Site of Ulcers.

In 90% of cases, the ulcers are invariably found in the lower two thirds of the leg, below the knee. They may be seen on the dorsum of the foot but never on the sole. Unless there is direct contamination, they are not seen in the upper extremity.

Treatment.

Since the offending organism is anaerobic, growing and multiplying under the foetid slough, it is important to provide aerobic conditions in the ulcer by the removal of the sloughs by chemical or physical means. Excision of the slough or scraping the base of the ulcer by Volkman's spoon under local anaesthesia is the first step in treatment. The slough can be removed by other than surgical methods also. The

best drug for this is mag. sulph. which if dusted over the ulcers causes slough to come off in a day or two.

Once the slough is removed, the rest of the treatment consists in applying some antiseptic ointment.

Following are the results of various treatments adopted in my series of 200 cases.

Agents Used.	Percentage of success in the removal of slough.
(1) Dusting with dry mag-sulph. Powder ...	90%.
(2) Dusting with Per-borate ...	70%.
(3) Swabbing with pot. permanganas and copper sulphate sol. (2%) ...	70%.
(4) Copper Sulph. dr. 3. Carbolic Acid. dr. 1. Glycerine. oz. 1. ...	50%.
(5) Powdered pot. permanganate. (Very painful.) or 1 in 500 solution ...	40%.
Percentage of success in healing.	
(6) Bismuth Sub-gallate and Iodoform Ointment. (Sub-nitrate also could be used) ...	80%.
(7) Ointment containing: Sulphanilamide. gr. 20. Zinc Oxide. dr. 1. Copper Sulph. gr. 4. Cod Liver oil dr. 2. ...	60%.
(8) Paste made up of: Mag-sulph. } Acid carbolic } aa. ... Glycerine ... }	50%.
(9) Acriflavine ointment or lotion ...	40%.
(10) Quinine sulphate solution (In various strength) ...	15%.

Comments and Conclusions.

Sulphapyridine (M & B 693) or Sulphanilamide powder with or without cod-liver oil is definitely harmful and a mere waste of valuable medicines. It hinders the aeration of the ulcers by producing a tough crust over them.

It has also been observed that even if the affected lower extremities are kept under electric cradle with proper oxygenation, much good result does not ensure unless the slough is cleared previously.

Arsenic compounds such as N.A.B., do not seem to have any specific action in the cure of the ulcers.

The secret of success in the treatment of Naga-sore lies in:

- (1) Prompt removal of slough, thus allowing proper aeration of the base of the ulcer.
- (2) Application of any of the antiseptic ointments mentioned in the course of this article.

Substitution of Iodine by Sulphonamide in Hobb's Glycerine Treatment of septic Uterus

BY

DR. N. CHOWDHURY,

Bhawnpore Nursing Home, Mymensingh.

The addition of sulphonamide to glycerine as a modification of Remington Hobb's glycerine treatment gives much better result than Iodine-glycerine advocated by Green Armytage. I used this combination in a good number of cases with promising result, mainly inside the septic purperal uterus.

Illustrative Cases.

(1) A Hindu, female, aged 25 years was in labour with a prolapsed hand for about 24 hours. Delivered by evisceration and internal version. Uterus highly septic. Hobb's treatment with sulphonamide glycerine was given 12 hours after delivery, another after 36 hours. After 48 hours the lochial discharge was found much improved in character. The treatment was repeated after 60 hours. The discharge was almost normal after 74 hours, and completely normal on the 4th day. Septamide injections and hot vaginal douches were also given.

(2) Hindu, female, aged 30, incomplete miscarriage with virulent sepsis and high toxæmia. After evacuating the uterus, Sulphonamide-glycerine was introduced into the uterus by the Hobb's method. Septamide injection also given. Lochia became normal on the 4th day, and along with this improvement temperature also became normal.

(3) Female, aged 52, with incomplete miscarriage and a history of profuse bleeding for a couple of days. Sixteen hours after admission, offensive purulent discharge was noticed. After two days of sulphonamide-glycerine instillation lochia became normal. Parenteral or oral sulphonamide was not given in this case.

(4) Hindu, female—primi para—age 18—forceps case—developed pyometria on the 4th day. Cured by two day's treatment with sulphonamide-glycerine instillation.

Discussion

Compared to iodine-glycerine, sulphonamide-glycerine takes much less time to free the lochia. With the former, 6 sittings are necessary and 7 days are required to make the lochia normal. With the latter, the maximum number of days for cure is four. The foetid smell is controlled within 24 to 36 hours provided the drainage is efficient.

Iodine usually gives rise to burning sensation and disturbs the leucocytic barrier by the penetration of iodine into the mucous membrane of the uterus. This may facilitate the entrance of pyogenic organism into the general circulation more freely and easily. The cauterising action of iodine is a draw-back.

By iodine-glycerine method temperature is not so easily controlled as by Sulphonamide-glycerine.

The percentage of iodine advocated by Green Armytage is not sufficient to kill the offending orga-

nisms, and if given in higher percentage it injures the already weakened mucous membrane of the uterus. Sulphonamide has not got this disadvantage.

In all case of virulent toxæmia or septicæmia, I give, in addition to local treatment, parenteral or oral sulphonamide. In mild cases local treatment alone would be sufficient.

It is preferable to use dehydrated glycerine as it possesses high hygroscopic property which helps in promoting the contraction of the uterus as well as in evacuating the pent-up lochia.

I usually add 1 gm. of sulphonamide in 10 c.c. of glycerine—usually Thiazamide which dissolves more easily in dehydrated glycerine with a little stirring.

The technique of introducing sulphonamide-glycerine by Hobb's method, I shall describe in a separate paper.

Reference

- (1) Col. V. B. Green—armytagé and P. C. Dutt—Hand Book of Midwifery.
- (2) British Encyclopaedia of Medicine.

Fluctuations in Malaria incidence in Bengal

BY

DR. B. C. BHATTACHARYA, L.M.F.,

Medical Officer, Kharna Dispy., Dt. Mymensingh.

In my article "Probable causes of increased incidence of Malaria in Bengal" published in the *Indian Medical Journal*, March 1945, I mentioned three factors as influencing the increase in malaria incidence last year in Bengal.

(1) Reduction of jute production and the consequent enormous increase in the area of soil suitable for production and multiplication of anopheline mosquitoes.

(2) Lowered vitality of people due to famine conditions.

(3) Shortage of quinine.

At present, the epidemic of malaria in parts of Bengal has almost subsided, although there is no increase in the area of jute cultivation and in the distribution of quinine. I therefore feel that I should explain the probable cause of subsidence of malaria this year.

Epidemic of malaria usually occurs when areas of stagnant water favourable for the growth and multiplication of anopheline mosquitoes are numerous. This year (1945) however there were heavy rainfalls from the middle of May to the end of September, and this washed off thoroughly the localities as a whole leaving little chance for water to stagnate much. The natural effect was a marked reduction in the incidence of malaria. I think if in the next year too similar rainfall occurs, the prospect of a still lowered incidence will be bright, provided other factors are favourable.

Another cause of subsidence of malaria epidemic is that there is no acute famine conditions at present.

Government have made satisfactory arrangements for the free distribution of Mepacrine and Quinacrine,

cinchona and quinine through mobile units, satellite centres and hospitals.

This note, read along with my previous article, would show the influence of various factors leading to fluctuations in the incidence of malaria in many parts of Bengal. Good rainfall in Bengal this year is perhaps the more important single factor in reducing the malaria incidence. How the next year would be, we do not know.

CLINICAL NOTES

Where the Antirabic Treatment Falls:
DR. J. W. PHILIPS, L.S.M.F., *Medical Officer, Infectious Diseases Hospital, Gorakhpur, writes:*

I have read with interest the article of Dr. Khan Chand Wohra in the *Journal* of October, 1945 under the caption *failure of Anti-Rabic treatment in dog bites of the face*.

I have treated about 7,000 anti-rabic patients during the last 9 years, and my experience has shown that treatment may fail not only in cases of face-bites but also in bites on any part of the body if the biting animal is violently rabid. It does not matter, from the point of view of ultimate results, whether the treatment is started early or late or the bites are in face or otherwise.

I well remember the case of a boy of 9 years bitten by a rabid dog. He had two deep bites on the right leg. Anti-rabic treatment was started within 20 hours, and the boy completed a course of 14 injections of anti-rabic vaccine at a daily dose of 5 c.c. Two months after the completion of treatment the boy developed a sort of hatred for water and seemed a bit excited. When he was brought to me again, I could make him drink about three drachms of water flavoured with Tr. cardamon with great difficulty. He was declared by me as case of hydrophobia. Next afternoon the child died.

Now the question arises why this patient developed hydrophobia in spite of a full course of treatment, commenced the very next day after bite. Similarly there were a few mortalities amongst cases bitten by a dog, a jackal or a mongoose on head and neck and other parts of the body, all of whom had their treatment started within 12 to 24 hours of the bite. There were some others who came late and developed hydrophobia during the course of treatment.

In my opinion, all bites of rabid animals are very dangerous, whether they be on the head or neck or any other part of the body and whether treatment is started early or late.

This shows that anti-rabic injections are not cent per cent preventive like all other prophylactic inoculations.

But as very early treatment gives a better chance I would strongly advocate that dog-bite cases should be treated as emergency cases and therefore fixed hours of treatment at anti-rabic centres should not be insisted upon. The case must be treated as and when received without a moment's delay.

I am thankful to Dr. H. Joffery, M. O., R. T. Centre, for allowing me to publish my views.

Mepacrine as a Cause of Temporary Insanity:
DR. R. S. LALL, A.M.O., *Khairagarh State, Khamaria Post, Raipur, C. P., writes:*

I have read the article of Dr. Krishna Das Das published in the *Journal*, Nov. 35 page 266 under the above caption. I have also read the editorial note. I agree with the editor of the *Journal* when he commented that insanity noted in the patient by Dr. Das might probably have been due to malaria itself. I also had a similar case, brief details of which are given below:—

A male, aged 30 years, was under my treatment for malaria. After two days of quinine treatment, his temperature came down to normal. But on the evening of the second day, he developed sudden unconsciousness. He would often try to get up to go somewhere. Temperature however was normal. Next day I give 10 grs. of quinine intramuscularly. With an hour, signs of collapse appeared but was promptly treated for the same. No improvement in his mental condition was noted for the next 15 hours. Next day there was improvement, and he gradually regained his normal mental state. He was however kept on quinine mixture for the next few days.

My Experience of Mepacrine: DR. A. RAHMAN, *Medical Officer, Fatehpur Ch. Dispy., writes:*

I have read the clinical notes on "Mepacrine as a probable cause of temporary insanity" by Dr. Krishna Das Das and I beg to report my personal experience of Mepacrine (war quality) as follows:

In Aug. 1945 a boy aged 12 years was suffering from malaria and admitted into the hospital. I prescribed him Mepacrine, 2 tablets daily. On the third day he developed symptoms of insanity with incoherent talks. Bromides orally and glucose intravenously for about a week brought the patient round.

Five years back, a female relative of mine, had malaria. I gave her at first one dose of quinine mixture in the morning and after two hours injected her with 2 gms. of Bayer's Atebrin intramuscularly. Thirty minutes after, she developed symptoms of insanity, was furious in behaviour biting every body she came across. After an immersion in cold-water for an hour she gradually came to her senses after 24 hours.

Hence it is my decided opinion that these drugs are irritants to the nervous system, and the cases therefore should be carefully selected for Mepacrine treatment.

Mental Excitement during Mepacrine and Quinacrine Administration: DR. R. S. SHUKLA, *Medical Practitioner, Sarai Miran, writes:*

May I be permitted to report two cases of mental excitement during Mepacrine and Quinacrine administration, which I recently came across.

Case No 1.—A boy, aged 13 years, anaemic and poor in health came to me for the treatment of fever with rigor of 7 days' duration. I gave him Mepacrine tablets, one three times a day. On the morning of the fifth day of treatment, he was excited, had a vacant look, took away his cloth and tore it to pieces. He was violent in behaviour. I gave him heavy doses of bromide which controlled his mental condition after 18 hours.

Case No. 2.—He is a cousin of mine, aged 19 years, with poor health. For his malarial attack I gave him Quinacrine 2 tablets b.d. Temperature came to normal after 5 days; the drug was stopped on the 4th day. But on the 6th day he developed symptoms of insanity of the violent type. Bromides relieved him after 24 hours of its administration.

Sodium Penicillin Treatment in 55 Infants suffering from Congenital Syphilis.—DR. I. S. GULATL, *American Mission Hospital, Tilda, (C. P.)* writes:

In a series of 55 cases of congenital syphilis, the following observations were made: (1) All the patients had epiphysitis (2) Some had diarrhoea and rashes over the skin (3) The parents have admitted having suffered from syphilis.

Sodium-penicillin was administered intramuscularly up to a total dose of 60 to 90 thousand Oxford units. The average dose varied from 1250 to 1500 units, given 4 hourly; and the total number of injections varied from 48 to 60.

All the cases responded very well so far as clinical improvements were concerned. None had any local or general reaction.

Penicillin in Lobar Pneumonia: MAJOR KHAN BAHADUR AHMED BAKSH, O.B.E., I.S.O., *Agency Surgeon, Bundelkhand, Nowgong, C.I.* writes:

In compliance with the Editorial appeal issued in the *Indian Medical Journal* (Sept. 45, p. 226) to record the experience of Indian practitioners on the use of Penicillin in its columns I give below short clinical notes on the usefulness of penicillin in a case of lobar pneumonia.

I was called on 13-10-45 to attend on a case (the patient was aged 47,) who gave a history of seven days fever with pain on the left side of the chest, cough and rusty sputum. He was delirious at the time of my examination.

The doctor who treated him before gave M & B 693, two tablets three times a day. But this, though given for 6 days, did not bring down the fever or alleviate his other symptoms.

It was at this stage I was called in for consultation.

I found, on examination, that the whole of the left lung was consolidated, pulse 140 per minute. He was extremely restless.

I advised penicillin 10,000 units every three hours intramuscularly, 1 drachm of paraldehyde in the

night for sleeplessness and application of antiphlogistic over the affected chest.

Within 3 days the clinical symptoms improved remarkably: the temperature gradually came to normal, so also his pulse and respiration.

On the fifth day of my treatment, however, the patient complained of pain in the chest. His temperature also shot up to 100° F. On examination, I found that the patient had developed pleurisy.

I again gave him another course of penicillin 10,000 units every 4 instead of 3 hours for the next 48 hours. 12 hours after the start of penicillin, pain was much relieved, and 36 hours after, temperature came to normal.

His convalescence was uneventful. He was put on expectorant mixture for a few days, and then on Neogadine.

In this case, a total of 16 gms. of sulphapyridine was administered during the first week of his illness, but did not give the desired results.

The total dose of penicillin given was 700,000 O. U. Rusty sputum disappeared after 100,000 O. U.

SELECTIONS

Infections of the Female Urethra, BY ALFRED I. FOLSOM, M.D., AND HAROLD O'BRIEN, M.D., *From "The Journal of the American Medical Association," June 9, 1945.*—We feel that we and others have proved that there exists a definite group of glands surrounding the posterior part of the female urethra, that this group of glands is identical in morphology, distribution, secretory activity and location with the male prostate and that in fact this group of glands should and will ultimately be spoken of as the female prostate gland just as we speak of the male mammary gland. In size the mammary gland in the male may be really infinitesimal as compared with some of the more luxurious adornments of the female torso, yet, in fact, it is a miniature mammary gland. Just as the male breast is a homologue of the female breast, so, also, in our opinion, is this group of glands the homologue of the male prostate gland.

These glands do become infected in very early infancy and may remain infected for many years or even throughout life, producing a varied and, at times, a bizarre papillary posterior urethritis. Just how they become infected has not as yet been proved. In former contributions we have suggested that the infectious organisms reached the glands through the rather open funnel-shaped, short urethral canal the faeces during the diaper stage. The infections of the cervix may, and in some cases do, have a part in keeping alive, if not actually producing, these infections.

This inflammatory urethritis may vary from a mild granular urethritis, as seen through the close visioned cystourethroscope, or may appear as a more definite papillary urethritis. This inflammatory reaction may vary from a mild infiltration to a vicious inflammatory process. In some cases true prostatic calculi have been found.

From the foregoing we think it will be agreed at least that these women do have an active inflammatory process in their posterior urethras. This process may be acute, subacute or chronic. In many cases the urethral lumen is definitely strictured as shown by Stevens and others; and these strictures are an integral part of the pathologic picture we are trying to focus attention upon. The two processes, viz., the severe papillary or granular posterior urethritis and the stricture, go hand in hand to produce a pathologic clinical entity which can and does cause many women untold suffering.

There are two groups of clinical symptoms that are produced by this inflammatory posterior urethritis, bladder irritation and pain, and these two cannot be over-emphasized; for so many women suffer from frequency, burning and some type of pain around the pelvis that it becomes of real importance to doctors dealing with women. These two groups of symptoms should be engraved on the mind in letters so bold and so bright that one can no longer fail to recognize that these irritable bladders and some pain, it has not been possible to account for, may have as their common denominator, this inflammatory posterior urethra.

Many women suffer for years with either a continuous or a frequently recurring bladder irritation characterized by frequency and burning. These symptoms vary widely in different women; some are merely annoyed by occasional attacks of a mild degree, while others may have almost a constant frequency and burning which makes them miserable and, as one can well imagine, they get extremely nervous from this constant assault on their nervous systems.

In our experience, if we take all women who come to us for any urologic complaint, at least 90 per cent. have this bladder irritation as one of the presenting symptoms, if not the main one. Of this group, 90 per cent. have as the sole cause of this troublesome symptom complex, an inflammatory urethritis. In spite of this, the urine in these cases is usually free from pus.

Some of these women have suffered for years and have consulted numerous physicians, gynaecologists and urologists. They have had their bladders irrigated with solutions of every colour of the rainbow, from the Stygian blackness of argyrol to the passionate light orchid of a pale potassium permanganate solution. They have been given the classic prescriptions of saw palmetto, buchu, juniper, potassium acetate and so on. But in spite of all the irrigations and medicines they go along getting no relief from anything.

These patients remind us of the old woman in St. Luke who had suffered many things at the hands of many physicians, had spent all her money and instead of getting better, grew worse.

Until a few years ago, we urologists had overlooked these lesions in the posterior urethra of the female, and even now some of our brethren are not too intimately familiar with this very definite clinical and pathologic picture. These women have been told by some of the best urologists in the country that they had no pathologic condition of the urinary tract; that their trouble was in their head and that they should go home and forget about it by getting interested in some form of outdoor exercise. One such woman so

advised went home and started horseback riding. It did not take long to convince her that this form of diversion might be good for her mind but that bouncing around on her bottom with an inflammatory grass bur in the centre of it was not so good.

Through the years we have believed that, when some one came in complaining of a very definite trouble and always told the same story, one should be very loth to accuse such a patient of being neurotic. This is particularly true of these patients for, while they are terribly nervous, yet they have a definite cause for their nervousness. It is this ceaseless irritation that causes them to be nervous rather than the nervousness causing the irritation, for, as far as we have observed, there is no such thing as a nervous bladder.

Many women who suffer as we have outlined have had, or have been advised to have, a suspension of the uterus to lift it up away from where it was pressing on the bladder. The surgeon or gynaecologist told them that the uterus had fallen forward so that it was pressing on the bladder and that this was the cause of their bladder irritation. In our judgment there is nothing more fallacious than this, because we have seen so many women who have had suspensions done for the relief of bladder irritation and then continued to have the same trouble until this urethral lesion was properly treated.

The Great Architect of our bodies did not make many errors in design, and He so placed the uterus that it must live in rather intimate association with the bladder; therefore, its anterior surface must be almost constantly pressed against the bladder wall.

Let us hasten to say that we are not by any means suggesting that suspensions should not be done for definite gynaecologic reasons; but what we are saying is that if one is doing the suspension primarily to relieve a trying bladder irritation, then we think that one is wrong; and one's failures will finally be cured by the alert urologists who find and clear up these inflammatory posterior urethras.

Repairs of cystoceles have also been done for the relief of bladder irritation. We feel again that if one has a definite reason for doing a cystocele operation it should certainly be done; but if one is doing the cystocele operation primarily to relieve the woman of bladder irritation one should first have the posterior urethra studied very carefully before operating; for in the great majority of such cases one will fail to get a result, not because one did a poor operation, but because the real cause of the woman's trouble was not the cystocele but a chronic inflammatory posterior urethra. We have literally scores of these cases in our files, in which successful repairs of cystoceles have been done and the bladder irritation has continued. These patients had this lesion of the posterior urethra, and when it was cleared up, they were finally cured.

Once more we want to emphasize that we do not advise against cystocele repair—far from it—but, if one has only bladder irritation as an indication for the procedure, then we feel that one should stop, look and listen.

The next symptom produced by this inflammatory posterior urethritis is pain. This pain is a referred

pain manifesting itself in various locations. These pains are, as a rule, dull and aching in character, but at times they may be so closely similar to renal colic in location and severity that it may be difficult for one to be sure one is not confronted with a true renal pain. A Frenchman, Civiale, in 1850, first called our attention to the fact that pains in and around the female pelvis may and can be caused by the urethra; but the dust of nearly a century had covered over his statement until we excavated it from the ruins and gave him due credit in a paper we wrote in 1934.

The most frequent sites for this referred pain are either (1) in the right or the left iliac region, low down, (2) the lumbosacral region of the back... and how many women have the backache there, (3) either loin, where, if the pain is severe, it may be, and has frequently been, mistaken for renal or ureteral disorder or (4) the inner side of the thighs. In fact, in recent years, we have paraphrased one of Richard Cabot's famous dicta thus: "Any pain within 2 feet of the female urethra for which one cannot find an adequate explanation should be suspected of coming from the female urethra."

The pain most usually seen is in the iliac regions, and it is well known that any woman with a pain in either iliac region is in danger of being operated on by some good surgeon or gynaecologist for some real or fancied pelvic disease. An appendix is not entirely safe under such circumstances, for an appendix may, as is also known, be found on the left side.

Our records are literally filled with women who have had, through the years, just two definite symptoms, bladder irritation and pain, in one of these locations. They have had from one to six or eight abdominal operations with absolutely no relief from either the bladder irritation or the pain. We have in a tremendous majority found these women to be suffering from a chronic papillary or granular posterior urethritis, and the correction of this trouble has almost uniformly given them relief, not alone from one, but from both complaints.

The foundation work of the treatment of this troublesome pathologic condition is urethral dilations. This should be done twice a week, regularly, beginning with the size sound that will stretch but not tear the urethral mucosa. Then the size of the sound should be gradually increased until a 30 or 32 F. will go easily. After each dilation we instil 10 to 15 cc. of 0.25 per cent. solution of strong protein silver. We really do not believe that this instillation has any virtue, but out of respect to the ancient faith in solutions in the bladder we continue the practice.

When the urethra has been dilated for about six weeks, the next thing to do is to fulgurate some of the pathologic tissue in the posterior urethra. After the fulguration the patient is allowed to rest for two weeks. Then the dilations are resumed and given for a period of six weeks to two months; when another fulguration may be done. This routine is followed until the patient is relieved and there is no further evidence of pathologic change present in the posterior urethra.

In some cases that are refractory to treatment, one should never lose sight of the fact that there is a very intimate lymphatic connection between the

cervix uteri and the posterior urethra and trigone. Hence these patients may be, and often are, helped by clearing up an old endocervicitis which may have been playing a part in the perpetuation of the urethral infection.

These women have not been operated on by the wagonyard group of surgeons and gynaecologists, but by some of the best in either group; and we are not pointing the finger of scorn, as we live in too fragile a domicile. We are simply trying to point out that the female urethra is not the insignificant structure we have been taught to believe, but that it harbours a clinical and pathologic entity worthy of the most serious consideration, (Courtesy: G. P. Australia.)

Single Injection Treatment of Gonorrhoea with Penicillin in Beeswax-Peanut Oil: BY CAPT. MONROE J. ROMANSKY, CAPT. ROBERT J. MURPHY, AND TECHNICIAN G. R. RITTMAN, (From "The Journal of the American Medical Association," June 9, 1945). In previous reports two of us have described a method for prolonging the action of calcium penicillin by suspending it in beeswax-peanut oil and have shown successful results attained in a small group of patients with gonorrhoea by a single injection of this mixture.

Our purpose here is to give the results obtained in the treatment of 175 cases of gonorrhoea in males by a single injection of penicillin beeswax-peanut oil.

In our first reports a suspension of penicillin beeswax-peanut oil was obtained by shaking the mixture for ten to fifteen minutes by hand. We have since used a mechanical blender, which has proved more efficient and practical for preparing larger quantities. It is necessary to emphasize that the preparation of a satisfactory penicillin beeswax-peanut oil mixture is contingent on the use of calcium penicillin, highly refined peanut oil and bleached U. S. P. beeswax.

The peanut oil is sterilized by the following procedure: It is first Seitz filtered, then passed through six layers of sterile gauze or a sintered glass filter, and finally autoclaved at 17 pounds of steam pressure for twenty minutes. The beeswax is heated to a liquid state and filtered through six layers of sterile gauze. It is then autoclaved at 17 pounds of steam pressure for twenty minutes. The most satisfactory mixture used in this study was 100,000 units of calcium penicillin in 1 cc. of 4 per cent. (by volume; 3.2 per cent. by weight) beeswax in peanut oil. This can be prepared in the following manner: The desired quantity of penicillin is placed in the sterile mechanical blender or mixer, and to this is added 1 cc. of a sterile 4 per cent. mixture of beeswax in peanut oil for each hundred thousand units of penicillin. Prior to adding the beeswax-peanut oil, it is heated until clear. The mixture is then blended until the penicillin is completely suspended in the beeswax-peanut oil. At this time the mixture is sufficiently liquid so that it will not only pass through a 19 or 20 gauge needle, but will even go through a 26 gauge needle. Sodium penicillin in beeswax-peanut oil has not produced as satisfactory a mixture or as consistent results as the calcium penicillin. Therefore, its use is inadvisable for the present.

Detailed studies on the absorption and excretion of 200,000, 250,000 and 300,000 units of penicillin in 1 cc. of beeswax-peanut oil will be reported later.

Studies on the stability of penicillin in beeswax-peanut oil will also be reported later. However, assay of this material, which has already been maintained at ice box, room and 37C. temperatures for six months has shown no loss of potency.

Additional follow-up on the gross and microscopic studies of the tissues from the site of the injection of the mixture shows minimal residual findings of five months in hamsters and two and one-half months in rabbits. Details on those results will also be reported.

The cases of gonorrhoea in this study were treated by both the hand shaken and the mechanically blended mixture of penicillin beeswax-peanut oil.

Of the 100 patients who received a single injection of 100,000 units, 85 had penicillin assays of the blood determined at intervals of one hour for ten hours. Assays of penicillin in the urine were also done to determine for how long a period penicillin continued to be excreted. In this group of patients the average duration of assayable penicillin in the blood was seven and one-half hours. The average highest level in the blood was 0.156 Oxford unit of penicillin per cubic centimetre. The average duration of excretion of penicillin in the urine was twenty-four hours.

By contrast, a single injection of 100,000 units of penicillin in saline solution will produce a very, high initial blood level of penicillin in the first hour which rapidly diminishes to a vanishing point in four to four and one-half hours, with excretion of penicillin in the urine continuing for only six to eight hours.

Sixty of the 75 patients who received a single injection of 150,000 units had penicillin assays of the blood determined at intervals of one hour for twelve hours and had penicillin assays of the urine determined. In this group of patients the average duration of assayable penicillin in the blood was ten hours. The average highest level in the blood was 0.204 Oxford unit of penicillin per cubic centimetre. The

TABLE 1.—Time Interval: Change from Purulent to Mucoid Urethral Discharge after a Single Injection of 100,000 Units.

Hours ...	2	4	5	6	7	8	10	12	18	24	36	48	72
Cases ...	5	13	3	17	6	16	7	10	6	6	2	2	1

average duration of excretion of penicillin in the urine was thirty-two hours.

The in vitro susceptibility of the gonococcus to penicillin was determined in 52 patients. The range of susceptibility to penicillin was 0.0039 to 0.0625 Oxford unit per cubic centimetre.

All the 175 cases of gonorrhoea treated gave definite clinical signs of urethritis with a frank urethral discharge. In addition, all cases gave a positive smear and culture for the gonococcus prior to the institution of therapy. All individuals admitted to the hospital for gonorrhoeal infection were treated regardless of the length of time the disease was present or whether previous treatment had been administered. No attempt at selection was undertaken and no other treatment either local or systemic, was given to patients receiving the single injection of penicillin in beeswax-peanut oil. All patients were

confined to the hospital during their treatment and follow-up period to determine their cure, thereby eliminating any possibility of confusion between treatment failures and reinfection. The period of observation in all instances was a minimum of two weeks from the time of injection of penicillin in oil. Patients were inspected daily during the period of observation, and prostatic smears and cultures were done at two, four and seven days. This period of observation, and the intervals at which cultures were obtained were based on previous experience with the use of penicillin in saline solution in the treatment of gonorrhoea. In

TABLE 2.—Time Interval for Cessation of Mucoid Urethral Discharge with a Single Injection of 100,000 Units.

Hours ...	24	48	72	96	120	168
Cases ...	21	11	32	16	10	3

addition, smears and cultures were taken from the third through the seventh hour after the injection of penicillin in oil in order to determine at what hour they might become negative. Duplicate cultures, to which had been added penicillinase (Clarase), were also taken in order to eliminate the possibility of inhibition of growth by penicillin which might be present in the secretion.

The first group of 100 patients was treated by a single injection of 100,000 units of penicillin in beeswax-peanut oil. Injections were given in the upper outer quadrant of the buttock. Of the 100 patients, 76 were white and 24 Negroes. Seventy-one had had no previous treatment, and 29 were sulphonamide resistant. Ninety-three of the 100 patients were cured by the single injection. Seven required retreatment with a single injection of 150,000 units of penicillin in beeswax-peanut oil and were cured. Five were white and 2 Negroes; 2 of the white and 1 of the Negro patients had been sulphonamide resistant.

Of particular interest from the clinical standpoint was the rapid change from a purulent yellow urethral discharge to a scant, watery, mucoid type, as shown in table 1.

Eighty-three per cent. showed this change in twelve hours and 95 per cent. by twenty-four hours. The remaining 5 per cent. changed by the seventy-second hour. Included in table 1 are the 7 failures

TABLE 3.—Time Interval Between Treatment and Bacteriologic Negative in 93 Cases after a Single Injection of 100,000 Units.

Hours ...	3	4	5	6	7	24 to 48
Cases ...	22	9	12	14	12	14

TABLE 4.—Progress of 7 Gonorrhoea Patients Retreated with a Single Injection of 150,000 Units of a Penicillin in Beeswax-Peanut Oil after Failure with a Single Injection of 100,000 Units.

Purulent to mucoid discharge—						
Hours ...	...	6	7	8	16	24
Cases ...	...	3	1	1	1	1
Cessation of mucoid discharge—						
Hours ...	...	18	24	36	72	
Cases ...	...	1	4	1	1	
Bacteriologic negative—						
Hours ...	...	3	4	6	7	24
Cases ...	...	2	1	1	1	2

with 100,000 units. These 7 cases also changed from a purulent to a mucoid discharge, from one to twelve hours after their injection.

The 93 patients cured by the single injection of 100,000 units had complete cessation of the mucoid discharge, as shown in table 2.

At the end of a three day period following the institution of treatment, 66.8 per cent, were entirely negative for evidence of mucoid discharge, by the fifth day 96.7 per cent. and by the seventh day the remaining 3.3 per cent. In the 7 cases which were failures a recurrence of purulent discharge was present in forty-eight to twenty-two hours.

Of the 100 patients 79 per cent. were bacteriologically negative within seven hours after the single injection of penicillin in oil (table 3) and 14 per cent. were negative within seven to forty-eight hours. The remaining 7 per cent. in this group of 100 patients receiving 100,000 units were the failures mentioned. These 7 were bacteriologically positive forty-eight hours after their injection. Subsequently, they responded to a single injection of 150,000 units of penicillin in beeswax-peanut oil. Table 4 shows in these 7 cases the changes from purulent to mucoid discharge, the cessation of the mucoid discharge and the hours at which the smears and cultures became negative. Contrasted with these findings, the treatment of gonorrhoea with a single injection of 100,000 units of penicillin in saline solution resulted in only 74 per cent. cure.

Group 2 consisted of 75 patients who received a single injection of 150,000 units of penicillin in beeswax-peanut oil. In this group there were 54 white and 21 Negro patients. Sixteen of the 75 were sulphonamide resistant and 59 had had no previous treatment. There were no failures in this group of 75 patients receiving 150,000 units of penicillin in beeswax-peanut oil. The purulent urethral discharge became mucoid, as shown in table 5, within seven hours in 73.3 per cent of the cases, 8 twelve hours in 92 per cent and twenty-four hours in 100 per cent.

The time required for the mucoid discharge to subside entirely in these 75 cases is illustrated in table 6,

TABLE 5.—Time Interval for Change from Purulent to Mucoid Urethral Discharge after a Single Injection of 150,000 Units.

Hours	4	5	6	7	8	10	12	15	18	24
Cases	9	15	22	9	8	3	3	1	2	3

TABLE 6.—Time Interval for Cessation of Mucoid Urethral Discharge in Gonorrhoea after a Single Injection of 150,000 Units.

Hours	18	20	24	30	36	42	48	72	96	120	168
Cases	4	1	35	1	1	2	20	4	3	2	2

TABLE 7.—Time Interval Between Treatment and Bacteriologic Negativity after a Single Injection of 150,000 Units.

Hours	3	4	5	6	7	24	48
Cases	26	8	5	13	10	1	12

in which 85.3 per cent. showed this change in two days and 94.6 per cent. in four days, with the remaining 5.4 per cent. free from discharge by the seventh day.

Of the 75 patients, 82.6 per cent. were bacteriologically negative within seven hours, as shown in table 7. The remaining 17.4 per cent. in this group were negative within seven to forty-eight hours.

Of the 175 patients, 11 had severe acute prostatitis, as evidenced by a greatly enlarged, exquisitely tender prostate. The smallest was twice the normal size, and the largest did not allow one digit of the examining finger to be introduced into the rectum. The effect of penicillin in oil on such complications appeared to be quite dramatic. Following the institution of treatment, in every instance, the prostate was about 25 per cent.

reduced in size by the end of the second day and 75 per cent. reduced at the end of four days. By the seventh day culture, the prostate had returned to its normal size. The response of prostatitis was much more striking than in cases previously treated with intermittent doses of penicillin in saline solution.

Three patients with epididymitis had complete relief from pain the day following treatment. However, it was not felt that there was more rapid reduction in swelling than in patients treated with penicillin in saline solution.

COMMENT.

Striking features in the treatment of these patients with penicillin in beeswax-peanut oil were the rapid disappearance, usually within seven hours of the subjective symptoms, especially frequency and pain on urination, the rapidity with which the purulent discharge became mucoid and disappeared, and the early attainment of bacteriologic negativity.

The degenerated coccoid organisms which have been described were usually found in the smears which were taken in the third to the seventh hour.

The fact that the duplicate culture plates containing penicillinase yielded the same results as the regular culture plates indicated that if penicillin was present in the secretion obtained in the third to the seventh hours it was in insufficient quantities to inhibit the organism's growth on culture mediums.

The injections of penicillin in beeswax-peanut oil produced no immediate discomfort. Twenty-four hours following the injection, slight soreness was present to pressure, but this was gone within forty-eight hours. In none of the patients in this series were there any allergic manifestations to the mixture. No history of sensitivity to peanuts was obtained. Further allergy studies, including skin and patch tests on patients who have received the penicillin in beeswax-peanut oil and on a control group, are being carried out.

Approximately 30 patients in this group had complete haemologic studies including bleeding, clotting and prothrombin times. In addition, studies of the urine prior to the injection of the mixture and for seven days subsequently were obtained. These studies revealed no adverse effects from the penicillin in beeswax-peanut oil. (Courtesy: G. P. Australia).

Chest Pain and Heart Disease BY TREACY H. DUERFELDT, M.D., (From "Northwest Medicine," June, 1945.) Almost every patient with chronic or recurrent discomfort or pain in the chest fears heart disease. As physicians, we realize that the only common serious cause of such pain is heart disease with disturbance of the coronary circulation. Thus, our job is to decide whether the patient's fears are justified. Our knowledge of the causes of pains in the chest is limited. Obscure abdominal pains are investigated quickly with surgical exploration, the cause determined and the disease process correlated with the patient's symptoms. Only with autopsy findings are we able to so correlate many of the causes of obscure pain in the chest. Accordingly, we must study the patient carefully to make our decision.

In angina pectoris, the sensation described by the patient is the smooth or non-fluctuating feeling of pressure, gripping, choking or burning called pain, starting acutely under the sternum on exertion. The sensation of strangling which gave this condition its name is most marked when the discomfort occurs high in the chest. The pain may remain localized, but more frequently radiates over the upper chest towards the arms, especially the left, and may extend down the arm to the little finger. Less frequently it radiates to the neck or left jaw or to the back in the left scapular area. Only rarely does it extend to the epigastrium. The attack usually lasts three to five minutes and stops with rest. Any attack less than half a minute or over half an hour must be attributed to something other than angina pectoris.

Although physical exertion most often produces the attack, it may be brought on by excitement, especially anger, a full meal or by exposure to cold. Certainly these will reduce the amount of exertion required to produce an attack. The symptoms are usually repeated at intervals, whenever sufficient strain is encountered and may be avoided by never exerting to that point.

The exact mechanism of the pain in angina pectoris is unknown but from most studies appears to be dependent upon insufficiency of the coronary circulation leading to myocardial anoxaemia. The more the coronary circulation is limited by sclerosis, the less exertion is needed to cause angina pectoris. In those patients without sclerotic changes (only about 5 per cent), it is probable that coronary arterial spasm produces the myocardial anoxaemia. An essential factor is the pain threshold of the individual. A sensitive person with but little coronary insufficiency will suffer severe anginal pain, while an insensitive person may have extensive coronary disease with little or no angina pectoris. It is important in all consideration of pain, therefore, to include consideration of the patient's sensitivity to pain as part of his total personality.

Angina pectoris precedes coronary thrombosis in nearly half of the cases. The serious threat to life and the need for absolute rest in the treatment of myocardial infarction from coronary occlusion make accurate diagnosis of this condition so important that all my time could well be spent discussing coronary thrombosis alone. Here the pain is usually the same in character and position as in angina, though more severe and of longer duration, often lasting hours after morphine has been given. Rarely there may be only the precordial aching, due commonly to neurocirculatory asthenia or the pain in the arm without substernal distress.

The fact that pain from myocardial anoxaemia or infarction may be felt in any region between the nose and the navel and that infarction may occur without pain takes the complete diagnosis out of the realm of this paper. You are all familiar with the appearance of shock, rapid pulse and fall in blood pressure so frequently seen. The appearance of slight fever, leukocytosis and increased sedimentation rate after twenty-four to forty-eight hours indicate acute myocardial damage. The occurrence of a transitory pericardial friction rub strengthens the diagnosis and the electrocardiographic changes usually complete it.

In spite of our knowledge of these things we may miss this important diagnosis, if we do not keep it in mind, just as we too often make a diagnosis of angina pectoris where it does not exist because the patient is reminding us of it.

I shall discuss some of the conditions which bear a close or superficial resemblance to the pain of coronary disease in order to stress the importance of a careful and complete history in differential diagnosis. The most important to recognize is the "heartache" or precordial ache of neurocirculatory asthenia which in the classic case is combined with palpitations, dyspnoea, faintness, dizziness, tremor, sweating, nervousness and exhaustion. If extrasystoles are present as well, they accentuate the picture. The pain is usually a dull or heavy ache, lasting for hours with occasionally sharp, stabbing sensations which may follow excitement or exertion and is usually worse when excitement, exertion and fatigue are combined. Here the dyspnoea is frequently of the sighing type or there is an abnormal tendency to sigh, one of the indications of the instability of the nervous state in general as well as the vasomotor control. This diagnosis should be made on the basis of the history and general examination and not merely by exclusion.

Closely associated to and not infrequently combined with neurocirculatory asthenia is the precordial or lower left chest pain from spasm of the colon in a patient with an irritable bowel syndrome. This pain can be reproduced not only with the use of a harsh laxative, but also by distension of the colon with air and sometimes by merely deep massage to the irritable bowel. Some patients actually refer to their heart pain as due to or provoked by gas in the bowel. So common is this condition that it can be stated that most of the pain under the left breast (precordial) is due to spasm below the diaphragm or to neurocirculatory asthenia. These are important and frequently lead to more or less complete disability from cardiac neurosis unless promptly diagnosed and treated as being due to something other than heart disease.

Intercostal neuralgia as the cause of pain on the left side of the chest may be very puzzling at times, especially when it is recurrent and is described as a substernal or precordial pain referred to the axilla. The history of onset, recurrence after infections and hyperaesthesia usually present will usually establish the correct diagnosis and thiamin chloride works wonders in giving relief. Even more confusing has been the patient with herpes zoster before the skin lesions have appeared. Even the pain in the back may seem to spell coronary occlusion until the tell-tale skin lesion finally appears.

Cardiospasm and pylorospasm are two gastrointestinal conditions which may closely simulate the pain of angina pectoris. In fact, there are some authors who feel that angina may be due to these conditions, since the pain is relieved only by relief of the spasm. Thus, they treat angina pectoris by medical management of an ulcer or surgically attacking the hiatal hernia, gallbladder or appendix responsible for the associated cardiospasm or pylorospasm. The patient is usually able to help to make the correct diagnosis, since he gets relief from belching gas. This history should be followed up by roentgen studies. When

the pain is reproduced by distension of the stomach with air as a diagnostic procedure, the best treatment measure possible has been instituted.

Pain of pulmonary infarction of the postoperative patient may simulate coronary occlusion closely as may massive collapse (atelectasis) or spontaneous pneumothorax, yet these can usually be differentiated as the condition progresses.

Bursitis, myalgia or arthralgia of the left shoulder may be mistaken for coronary trouble when the patient complains of pain on walking, since swinging the arm or other exercise tends to bring on the pain. More confusing is the picture when the middle-aged person complains of the shoulder pain, aggravated by such exercise as reaching up, and you even find the deltoid muscle tender to touch, yet the trouble is coronary insufficiency and there has developed the uncommon spasm of the pectoral and deltoid muscles as a reflex condition.

Spondylitis or spinal arthritis is known to cause root pains which are increased by movement. When these occur in the chest, we must be sure to ask whether the pain is increased by all movements or only by such exertions as walking, and the differentiation made. Similarly, the type of exertion or movement must be investigated, when the patient with an old spondylitis involving the lower back begins to complain of chest pain. This may be due to coronary disease.

Acute pericarditis with effusion, whether tuberculous or rheumatic in origin, seldom is confused with coronary disease. However, there is a type of pericarditis that can be and is confused with coronary disease. Occurring in younger men soon after a respiratory infection, it is seen most often in winter or early spring months. The onset is typically sudden, but the pain is apt to be more stabbing in nature, less constrictive and frequently intensified by deep breathing. Fever and leukocytosis are apt to develop more rapidly and electrocardiographic changes develop more slowly than in coronary thrombosis, so that the distinction can be made if the physician is thinking about this condition.

Mediastinal emphysema and mediastinal lymphadenitis have recently attracted more attention as causes of substernal pain of various intensities and types, though usually increased by coughing or deep breathing.

In previous pleurisy the chronic inflammation may have changed the structures involved, especially the intercostal muscles and nerves so that recurrent attacks of pain have been described which differ from intercostal neuralgia, and in the severe forms may be confused with coronary disease, if the history is not taken carefully.

In treatment of diabetics with coronary sclerosis, overdosage of insulin is carefully guarded against, since it is well known that such hyperinsulinism may cause definite attacks of angina pectoris which might prove fatal. There has recently been described a combination of precordial pain with a sinking sensation and even substernal oppression due to spontaneous states of mild dextrose deficiency.

The ill effects of tobacco smoking in coronary disease is well appreciated. Whether an allergy to

tobacco can cause anginalike pains without coronary disease is a moot question. Certainly other allergies can do just that.

A number of years ago I saw a single woman of thirty-six who had had rheumatic fever as a child. She was complaining of substernal and precordial pain. Was this caused by her slight mitral stenosis? While trying to decide, she developed acute sinusitis and was referred to Dr. Cameron for treatment. He promptly sent her back to me, the allergist, with a diagnosis of nasal allergy. I had missed the history of all hay fever in the case.

Elimination of wheat and fish, to which she proved sensitive, relieved her sinus trouble promptly and also allowed her to enjoy greatly increased activity without recurrence of chest pain. When wheat was returned to her diet, the substernal and precordial pains returned on exertion, this without any evidence of pylorospasm, colon spasm or any of these other conditions which can cause similar pain. In other patients I have seen allergy cause chest pain by means of these other conditions.

In closing, let me stress again the importance of a careful history in the differential diagnosis of chest pains. The most important feature of such a history is the careful inquiry into the relation of the pain to the various body functions, especially to muscular activity. If there is no relationship to exertion, it is highly improbable that the patient has angina pectoris. But even so, the number of errors in diagnosis will be reduced, if the physician will, when in doubt, note whether muscular exercise, undertaken under observation, induces the discomfort. Also, a careful analysis of the patient's history will usually disclose the correct clue so that a few specific studies will confirm the diagnosis, saving the patient money and actually saving the physician time and effort. (Courtesy: G. P. Australia).

ABSTRACTS

Nature of the Rh Factor

The Rh factor is a true agglutino-gen and appears to be in the form of a carbohydrate attached to proteins of the erythrocyte. It is slow acting and produces its effect best at body temperature. The introduction of Rh positive blood stimulates the formation of anti-Rh agglutinins in the recipient. This sensitization is believed to take about five days to develop. If such a person is subsequently transfused with Rh positive blood, agglutination and a disastrous hemolytic reaction are to be expected.

There is evidence that sensitivity to the Rh factor, once it is acquired, may persist for many years, probably for life. This sensitivity appears to be a true tissue immunization which persists even after the antibodies can no longer be detected. It is obvious, therefore, that Rh incompatibility is a grave danger which must be well understood by every one having anything to do with the transfusion of whole blood or blood cells.—GOULD, G. A.: transfusion survey. Roy. Canad. Nav. M. J. 9: 2-11, June 1945.

Modified methylene blue test in Hepatitis

The modified methylene blue test is as follows: To 5 cc. of a pre-breakfast urine specimen were added 2 drops of an 0.2-per cent aqueous solution of methylene blue chloride. If a green color resulted, more methylene blue was added dropwise and the last drop required to convert the green color to blue was recorded. Pipets were used which delivered 20 drops of the solution per cubic centimeter. Methylene blue chloride proved to be satisfactory, in that the dye content of different lots showed little

variation. When readings were made by natural light, no difficulty was found in determining the change from a green color to blue. If more than 5 drops were required to produce the color change, the urine was diluted with distilled water and methylene blue was added again drop by drop until the end point was reached. Correction was then made for the dilution factor. This was found to be necessary because the addition of more than 5 drops of methylene blue resulted in a color of such intensity that the end point was difficult to determine.—GELLIS, S. S., and STOKES, J., JR.: Methylene blue test in infectious (epidemic) hepatitis. J.A.M.A. 128, 782-783, July 14, 1945.

Excessive Fluids after shock inadvisable

Following the shock phase, burned animals that were maintained on an intake of food identical with that consumed before injury show a decided rise in their plasma volumes above the normal. Since a state of overhydration is manifested during the convalescent phase by the increase in the plasma volume per kilogram of body weight, it does not seem advisable to give excessive quantities of fluid during the postshock period. Such an overaccumulation of fluid may undoubtedly lead to some of the so called "toxic" deaths. Adequate urinary output should be maintained and diuresis encouraged.—ABBOTT, W. E.; HIRSCHFELD, J. W.; and MEYER, F. L.: Metabolic alterations following thermal burns; changes in plasma volume and plasma protein in convalescent phase. Surg., Gynec. & Obst. 81: 25-30, July 1945.

Effect of Coffee upon the stomach

The prolonged and continuous administration of caffeine in a mixture of beeswax and mineral oil is capable of producing gastric ulcers in cats, but not in dogs. Caffeine stimulates gastric secretion in man and the cat, but not in the dog.

Coffee, Sanka, Postum, Coca-Cola, and tea provoke an abrupt transient stimulation of gastric secretion in normal subjects. The addition of sugar and cream reduces the total free acid response to coffee by approximately 40 per cent. Coffee and Sanka provoke a prolonged and sustained increase in the total output of free acid in patients with peptic ulcer.—ROTH, J. L. D'A.: Effect of caffeine upon stomach. Proc. Inst. Med. Chic. 15: 350-354, June 15, 1945.

"Early Rising" after major surgery

The early rising of the general surgical patients has been observed and has resulted in a uniformly favorable impression of the practice. Improvement in the general well-being of these patients over that of bed-confined patients has been discussed. With early rising there is improved morale, avoidance of asthenia, more patient self-care and less nursing care, less financial loss to the patient because of shorter hospitalization and earlier rehabilitation, and because of more rapid turnover more patients can be cared for with existing hospital facilities and personnel. Early-rising patients have been shown to have a lower postoperative fever of shorter duration than the bed-confined patients of four other general surgical services. This factor is closely related to observed improvement in respiration. The record of complications presented compares favorably with the number of complications observed in a similar group of bed-confined patients.—SCHAFER, P. W., and DRAGSTDT, L. R.: "Early rising" following major surgical operations. Surg., Gynec. & Obst. 81: 93-97, July 1945.

Disorders of stomach with chest symptoms

Among cases reported demonstrating disorders of the stomach with predominant chest pain were a patient with perforation of hiatal hernia, a man with mild angina pectoris who subsequently developed violent pain in the chest and left arm due to cascade deformity of the stomach, a woman with severe postoperative chest pain due to intermittent obstruction of the gastroduodenal communication, and a patient with genuine "acute indigestion" (due to dietary indiscretion) simulating myocardial infarction.—HARRISON, T. R.: Clinical aspects of pain in chest; pain arising from stomach. Am. J. M. Sc. 209: 771-783, June 1945.

Vaccine against Dengue

It has been demonstrated that dengue virus can be propagated by intracerebral inoculation in mice. Although initial adaptation to the mouse is a tedious and difficult process, 16 consecutive passages have been achieved already in one series and further passages are in progress. The virus propagated in mice produced dengue in human volunteers, but was not pathogenic for cotton rats, hamsters, guinea pigs or rabbits. Although it was evident that even after 2 serial passages in mice the virus produced a modified type of disease in human beings, tests with the

seventh, ninth and tenth passage material indicated that the modification had become so marked that it could be used as a vaccine for the production of immunity against dengue.—SABIN, A. B., and SCHLESINGER, R. W.: Production of immunity to dengue with virus modified by propagation in mice. Science 101: 640-642, June 22, 1945.

Nerve Block for Thoracic Battle Injuries

Obliteration of pain by intercostal and paravertebral nerve block is an important step in the treatment of thoracic trauma. Recovery from shock is speeded, obstructing bronchopulmonary secretions are raised more efficiently, and the patient may be transported with greater safety and comfort. Absence of pain following thoracic operations will simplify postoperative care. Since nerve block has been employed, thoracic adhesive strapping for the control of pain has been discarded.—SAMSON, P. C. and FITZPATRICK, L. J.: Intercostal nerve block. California and West. Med. 62: 254-256, May 1945.

Para-Amino-hippuric acid prolongs penicillin action

When the plasma p-aminohippuric acid concentration was maintained at or above 10 mg./100 ml., a 3- to 6-fold elevation in penicillin plasma concentration was obtained except in two instances. When the p-aminohippuric acid plasma levels were allowed to fall below 10 mg./100 ml. there was no effect of that compound on the plasma concentration of penicillin. The p-aminohippuric acid was nontoxic in the dosage given even when administered over a period of 8 days.—LOEWE, L.; ROSENBLATT, P.; ALTURE-WERBER, E.; and KOZAK, M. Prolonging action of penicillin by para-aminohippuric acid. Proc. Soc. Exper. Biol. & Med. 58: 298-300, April 1945.

Chest pain of Esophageal Origin

The location, quality and intensity of the pain due to esophageal disorders may be indistinguishable from that due to disease of the coronary arteries. In both conditions the pain may be precipitated by emotional disturbances and by the ingestion of large quantities of food. In the differentiation of angina pectoris from pain brought about by disorders of the esophagus, one of the most useful methods of diagnosis is induction of the pain when the patient is under observation. This can nearly always be done by muscular exertion in patients with angina pectoris. Esophageal pain can be precipitated in some patients by the ingestion of highly seasoned food or of alcoholic liquors, and especially if these irritants are swallowed when the patient is recumbent. In other patients esophageal discomfort may be induced by distending the stomach or the esophagus with air or with water. Since these procedures may cause discomfort in healthy persons they are only significant when they reproduce exactly the spontaneous discomfort of which the patient complains.—HARRISON, T. R. Clinical aspects of pain in chest; pain arising from the esophagus. Am. J. M. Sc. 209: 765-771, June 1945.

Toxicology of DDT

DDT is tolerated in fairly large amounts when administered as single or repeated doses. Toxic levels are not easily reached when dilute solutions suitable for insecticidal purposes are employed. Danger to health is likely to arise only from careless use of concentrates. Prolonged contact with undergarments impregnated with DDT has not produced any local or general disturbance in human subjects. DDT poisoning is characterized by nervous symptoms and the development of severe damage to the liver. Premonitory symptoms and changes in the blood picture give warning of the onset of the toxic stage.—CAMERON, G. R. Toxicity of 2,3-bis (p-chlorophenyl) 1,1,1-trichloroethane (DDT). Brit. M. J. 1: 865-871, June 23, 1945.

Prevention of seasickness

Experiments on the prevention of seasickness were carried out in the tropics during the training of troops under conditions closely approximating those of battle. The drugs tested and the number of observations on each were hyoscine, hyoscine plus amphetamine, hyoscine plus ergotamine, chlorbutol, and ergotamine. A high degree of reliability is shown for the hyoscine, hyoscine plus amphetamine, and for some chlorbutol experiments. Of the remedies tested, hyoscine, 1/100 grain, proved most effective. The degree of protection was of the order of four-fifths of those susceptible. This degree of protection was observed in relatively calm seas, when the seasickness rate in controls was 16 per cent.—HILL, I. G. W., and GUEST, A. I.: Prevention of seasickness in assault craft; report of experiments under tropical conditions. Brit. M. J. 2: 6-11, July 7, 1945.

Chest pain of stomach origin

The clinical analysis in 24 patients with pain in the chest due to disorders of the stomach showed that in a number of subjects the pain radiated from the precordial or substernal region to the left shoulder and arm, and resembled in character and in intensity the distress caused by disease of the coronary arteries.

Most of the cases fell into 1 of 2 groups: (1) Functional distention of the stomach due to pylorospasm, aerophagia, ptosis or a combination of these factors, and characterized by mild pain, relief by belching, a tendency for the pain to be aggravated by lying on the left side, the coexistence of palpitation, pronounced relationship to emotion, the presence of anxiety reactions out of proportion to the intensity of the pain, and the frequent occurrence in young to middle-aged females; (2) disorder dependent on abnormal pouches in the fundal end of the stomach including hernias, diverticula and cascade deformities, and characterized by pain of mild to intense severity, radiating to the left side of the chest, shoulder and arm, spasmodic and intermittent character, aggravation by ingestion of alcoholic beverages, marked relationship of the pain to eating and to the position of the body, and a tendency to simulate closely the pain of angina pectoris or of myocardial infarction.—HARRISON, T. R.: Clinical aspects of pain in chest; pain arising from stomach. *Am. J. M. Sc.* 209: 771-783, June 1945.

Penicillin by inhalation

Calcium penicillin administered as a mist is very rapidly absorbed through the respiratory mucous membrane. Highly bacteriostatic titers can be established in the blood in this way, comparable to intramuscular and intravenous routes. The wastage of material involved is from 60 to 75 per cent but the high values obtained in blood and urine encourage the hope that weaker solutions of less than 5,000 units per cc. could be used economically and successfully for the local treatment of infections of the respiratory mucosa and immediately adjacent tissues, such as in purulent bronchitis and bronchiectasis, and as a prophylactic against secondary pyococcal infections in influenza.—MUTCH, N., and REWELL, R. E.: Penicillin by inhalation. *Lancet* 1: 650-657, May 26, 1945.

Liver Function tests

In patients who are jaundiced, the best tests to use for the estimation of hepatic function are the serum protein determination (hypalbuminemia) and the glucose tolerance tests. Invariably such patients will have had a van den Bergh test already performed. In patients who are not jaundiced, it appears that the best tests to use are the bromsulphalein dye excretion test and the urochilogen test. In these patients the van den Bergh too, will already have been performed. In either situation, the other tests may well add further information regarding the degree of impairment of hepatic function.—TEITELBAUM, M.; CURTIS, A. C.; and GOLDHAMER, S. M.: Comparative value of several liver function tests. *Ann. Int. Med.* 22: 653-666, May 1945.

CONFERENCE PROCEEDINGS

(Provincial)

Assam Medical Conference Oct. 1945

Extracts from the Presidential Speech of Dr. Lalit Kumar Barua.

Ladies and Gentlemen, We are to-day passing through a time when each hour and each moment has a specific value, when marks of distinct advance distinguish the to-day from the yesterday and so with the to-morrow. Things and events are really moving in a kaleidoscopic fashion and indeed much faster than we could imagine. Destruction and Construction are on race par excellence,—old and hide-bound ideas are crumbling away like a pack of cards giving birth to ideas new and wide in outlook and broad-based on the welfare of the entire world—population envisaging a new world of peace and tranquillity and heralding an age where racial and class conflicts would no more cloud the atmosphere. Let us all live in the hope that has been aroused around the world and fashion ourselves in that perspective.

I hope to be excused when I say that the state of affairs obtaining in our Province as regards Medical Education and the activity of the Provincial Medical Council are anything but encouraging. The Provincial Medical Council does not seem to be justifying its existence except as only a Registering Body. The record of the Examining Board, which has been a close preserve of the Medical Graduates, with a majority of the nominated

members on it and with not a single Licentiate as its member has fared no better. The Examination Board do not seem to have interested itself much in improving the standard of Education imparted in the Berry White Medical School. We are at least not sure of any suggestion having been offered by the Examination Board in this direction. We seem to live in a Land of Darkness, the high hills and mountains in and around Assam possibly withstanding all approaches to light. When disinterested public opinion (even if the demands of our Association be left out of consideration) are insistently pressing on the abolition of the Medical Schools and for raising the standard of Medical Education all over the country, when the Provinces of Madras, United Province of Agra and Oudh, the Punjab and the young Province of Orissa have already abolished the Medical School Education and have introduced one uniform standard of Medical Education throughout their respective Provinces; when the University of Calcutta, like all other Universities, have done what lay in their power to do, in allowing the Licentiates to appear for the Degree Examination after only two Years' Course with a further reduction of six months in the case of those Licentiates, who have obtained their training in the Indian Army Medical Training Corps, our respected Members of the Assam Legislative Council would tenaciously cling to the old ways and would have yet one more Medical School for Assam to be located in the Surma Valley, let alone the possibility of countenancing the move for the abolition of the existing Medical School and that of raising its standard of education.

We are proud here to be able to say that for the three successive terms of Examination of the Indian Army Medical Training Corps, the Licentiates have unmistakably proved their merit and efficiency and have occupied higher places than even medical graduates and the share of those who had passed out of the Berry White Medical School has not been negligible. This is another sure proof that given suitable opportunities the Licentiates, even with their scope of education arbitrarily and artificially circumscribed, are fit to hold and occupy the places, which are ordinarily denied to them.

If living in the years 1944 and 1945, we are served with this dose of yet another Medical School, little can we boast of our being an Autonomous Province, scant respect can we expect for our Province from the other Province of India, not to speak of what others outside India might or might not think of us. Ill-fated we really seem to be and the Province we are living in really seems to be a benighted one. We have yet to see if the contemplated Gauhati University would dispel the Darkness and bring us LIGHT.

I cannot here help referring to glaring instances of injustice that has been and is being done to the Sub-Assistant Surgeons and we have had occasions to refer to it on occasions more than one. Promotions of Sub-Assistant Surgeons to the rank of Assistant Surgeons is a thing of rare happening, though a differential treatment is meted out to the Assistant Surgeons, who are freely promoted to the rank of the Civil Surgeons whenever a vacancy occurs. The lot of those in the Public Health Department is worse still. The Licentiates appointed in the post of the Sub-Divisional Medical Officers in the Public Health Department have been allowed a status below that obtaining amongst those in the Civil Medical Department. It is not known if this is only an extension of the policy of setting one against the other, so that the two may not meet on the common platform. Colonel Shortt, I.M.S., the then Inspector General of Civil Hospitals and Prisons and Dr. S. H. Paul, the then Director of Public Health held out an assurance to us of a fair deal in this matter but whatever might or might not have been the reason we have it that nothing was done during the term of their offices. Colonel Diamond, I.M.S., our present Inspector General of Civil Hospitals and Prisons, Major Ahmed, the new Director of Public Health have taken over charge only the other day and we take this opportunity of conveying to them the high hopes we place in them. We have every faith that they would do away with these iniquities and leave a remembrance of themselves, which nothing would fade.

Before we pass on to Post-War Re-construction plans, we would be guilty of neglect of duty if we do not draw the pointed attention of the Government to the hopeless scarcity of Quinine and the consequent misery to the ailing people and the heavy increasing toll the scourge of Malaria has been merrily having. As the position stands, the manufacturers can give no supply and the Government supply is hopelessly inadequate and far below the mark. We do not understand how in the name of other necessities, the health of the civil population can be so ruthlessly ignored and how the "Malaria" can be allowed to stalk about the land freely. We would request the Authorities to deeply and seriously consider if the limitations imposed by the Drugs Control

Order should be lifted and free movement of medical drugs allowed, so that deaths of Civil population may not happen by default.

Never before in its history had the World been faced with such a terrible and all-devastating crisis, never before were devastations and ruins so appalling in magnitude and extensiveness. Necessarily, therefore, the re-construction shall have to be equally gigantic and we cannot afford to sit idle and be a play-thing in the hands of events. The problem of the political emancipation of India is safe in the hands of her true and worthy sons. We shall not commit any trespass on their domain but shall confine ourselves to those spheres of post-war re-construction schemes, which are as vital to the progress and welfare of India as political and economic emancipation is.

The first and most important is Nutrition. Admittedly, the Indian masses are hopelessly underfed and quite a pretty large proportion of the people do not know what it is to have two full meals a day. The representatives of the British Government, admitted at the Conference, which met at Hot Spring in the U.S.A. in 1943, that one-third of the Indian people were habitually underfed in normal times. Even sadder and fearful was the statement of the Director General of Public Health of Bengal in 1933, when he said that the peasantry of Bengal were in large proportion subsisting on a dietary on which even rats could not live for more than a few weeks. This was in 1933 and last year, according to the statistics of the Anthropological Department of the Calcutta University, no less than three and a half millions of people died of starvation and diseases attendant thereto in the Province of Bengal. How under fed and malnourished Indian people are and were even in normal times would be clear from a comparison of the capacity of out-turn in U.S.A., England, Germany and India. While an average mining-worker produces 589 Tons in a year in U.S.A., 300 Tons in England, 243 Tons in Germany, the average Indian Worker can produce 80 Tons only. It will not do to put it to indolence or slackness of activity of the Indian worker, his ill-nourishment is responsible for this and it would be futile to expect more return from him unless we take care to remove the root-cause. This is only one of the numberless instances of how the whole Indian nation has been devitalised by the slow but sure process of ill-feeding, ill-nourishment, insanitary conditions of living and such others. The tale of India and Indian people is a tale of woe and distress, a tale of horror. We command to our immense credit high rate of infant mortality, high rate of mortality in child-birth, high rate of deaths of Malaria, of Tuberculosis, of Cholera and Pox, high rate of general mortality, high rate of blindness and highest percentage of illiteracy too. Just compare the figures, pause for a moment and think "Where we stand". Our mortality figure is 22.4 per thousand, while that of England and U.S.A. are 12 and 11.2 respectively. The infant mortality in India is 162 per thousand while that in Great Britain and U.S.A. are 53 and 54 respectively. Would you believe that over a million infants under the age of one die annually in India and half the total mortality in India recorded in any one year occurs amongst children under the age of ten. The death amongst women in child-birth is estimated at 20,000 per year. The net result stands at this that the average expectation of life in India is only 27 years, as against 47 years in Japan, 62 years in Great Britain and U.S.A. and 67 years, the highest in the world, in New Zealand.

The Birth-rate in India presents no better picture. Between the years 1870-1930, Indian population increased by only 30.7 per cent, while that of Great Britain went up to 77 per cent, that of Japan and Russia to 113 per cent and 115 per cent respectively. Yet even this comparatively low increase in population cannot be provided with the necessary requirement of food and that in what was once called a Land of Plenty as Dr. W. R. Aykroyd says in his Pamphlet "Nutrition". The available evidence suggests that the area of lands under cultivation is not increasing proportionately to population growth, so that the ratio is decreasing. The very same thing has been put by Professor Carr Saunders when he says "There are too many people in relation to the whole set of facts"—all therefore, suggesting that India is over-populated and possibly suggesting therefrom that this over-population is responsible for the ill-dietary, ill-housing, ill-sanitation and the like and that the solution lies in cutting down the birth-rate. Nothing could be a more cruel joke. While other countries, independent they are, are exploring all possible ways for increasing the percentage of birth-rate, we are, as it appears, required under pressure of circumstances, to reduce the percentage of birth-rate, if total annihilation is to be stopped. Agriculture so far appears to be the main source of livelihood of the majority of the Indian people and in spite of the best efforts of the Business Magnates, little so far could be done

to industrialise India, which she must have to be if she is to be raised from her present moribund condition. Even in Agriculture, India is far behind the other countries. Here in India, cultivation is being carried on the old 16th century-method, with the old types of agricultural implements, with no method of irrigation, no manuring and modern science denying it her aid. Our Agriculturists, mostly and shockingly illiterate as they are, have to depend on the mercy, freaks and caprices of Nature and Nature in her playful mood deals out excessive rain, leading to high flood and draught alternately and the inevitable result almost always is that there is failure of crop in one or other part of the country and starvation and death follow in quick succession. If Post-War Re-Construction Plan does not provide for Agriculture being carried on a scientific basis, with up-to date implements, manuring, methods of irrigation and the like, does not make cultivation independent of the caprices of Nature, does not make maximum yield possible, it shall have no useful purpose for us. The Indian Peasantry have been deprived of everything they could boast of. With no plough-cattle, with a famished body with the heavy load of debt, increasing year after year, with no hope, no future before them, they have been carrying on a weary and dreary existence. "A bold peasantry, the Country's Pride once destroyed can never be supplied" and Bengal provides an illustration. If Agriculture has to be placed on a sound footing, if India is to find sufficient food and nutrition for her children, amongst other improvements, Post-War Re-construction scheme must bring in the "Collective Farm System".

The tale of medical service available to the village people (and villages are the back-bones of India) is yet another tale of sorrow. People in the villages of India, die like cats and dogs for want of medical treatment, for want of medicines and last but not the least for want of proper diet. It is our minimum demand that Post-War Re-construction must provide at least one qualified Doctor for each group of five villages. The Govt. of Assam have allotted 76 crores of Rupees for Post-War Re-construction and it is our earnest hope that an adequate sum should be set apart for the organisation and education of Medical Service. Eye Clinics should be maintained and supported at convenient places in order that treatment may reach even in the most interior of the villages. Touring Eye Dispensaries should be provided for.

X-ray treatment is now at present a costly affair and is available only to a microscopic minority. The Sub-Divisional and District Head Quarters Hospitals should have full complement of facilities for treatment and should have the X' Ray apparatus and regular Nursing system.

War leaves as an inevitable legacy venereal diseases amongst other evils and situated within the war zone as Assam is, the infection, we have reasons to believe, has already been spread here and before it strikes its root deep in the land, measures, active and immediate, should be taken to weed it out and in this matter at least we cannot afford to wait till after the termination of the War. People already devitalised cannot be suffered to fall a victim to this pernicious disease. Even the sister Province of Bengal has appreciated the gravity of the situation and has already initiated steps in the matter and our Government cannot afford to sight tight in the matter.

C. P., & Berar Provincial Medical Conference

19-20th Oct. 1945.

Inaugural Address by Col. W. Scott, Inspector General of Civil Hospitals O. P. & Berar.

Owing to the transfer of Col. Harty to Bombay, it has fallen to me to open this conference and to prepare an address at short notice. It is nearly always a virtue to be brief, and if I do not detain you long, you will understand and commend my brevity.

During the war now happily terminated, I am told that some 27 per cent of the eligible licentiates of this province came forward to offer their services. While serving their country they have also benefited themselves by the contacts and experience which they have acquired. They have taken their places alongside graduates on equal terms and have filled many responsible posts. It is one of the perennial grievances of the licentiates that their standing is lower than that of the graduate, but I do not imagine that this will remain a very solid thing amongst those who return from service in the forces. The only thing to be regretted is that a far higher proportion than 27 per cent did not avail themselves of this rare opportunity.

Perhaps I am treading on delicate ground in making the suggestion that it is time to sink what differences exist and join up with the graduates in one association. However I would put forward the suggestion in the belief that the numerically stronger body of Licentiate would not suffer by the union, while it would do much to efface the complex from which some still appear to suffer.

One further suggestion and I am done. This is that while a provincial gathering is an important milestone in the history of your Association much benefit would follow more frequent meetings on a district basis. I believe that a very successful district meeting has recently been held in Chhindwara and it seems to me that this example should be multiplied. There is no doubt that contact with other minds is good for any of us and not least to medical men, who do tend to allow their interests and enthusiasm to narrow with the passage of time.

I have now much pleasure in declaring this conference open.

Extracts from Welcome Address By Dr. P. H. Sant.

Memory of late Rai Bhadur Dr. K. P. Sen Gupta,
Ex-President of Provincial Branch.

I feel that I must pay my debt of gratitude to that person of our class, whom we all very much miss here, and whom we shall ever miss in future on similar occasions. I mean Late Rai Bhadur Dr. K. P. Sen Gupta, our worthy Ex-President, whose loss to us, on account of his leaving this mortal world, we very much mourn, and whose irreparable loss, we all are afraid shall never be made up befittingly by any one of us. He was the originator and the very life energy of our organization in this province. In spite of his continued ill-health he was ever at the helm of it, maintaining and upholding the prestige of our class in a dignified manner, strenuously and vigorously working out the ideals of our association, through a number of years. May his memory ever inspire us to achieve that which is yet to be achieved. I also remember on such occasion Dr. B. P. Delvi who was once our Provincial Secretary. If Almighty God had spared these persons to us, I am quite confident, that this assembly would never have been without their presence.

I also remember many other noble souls of our profession, whose names I abstain from mentioning for the sake of brevity, but who were equally valuable and dear to us. I assure their bereaved families, ladies and gentlemen, that we are co-shares in their grief and pray that the departed souls may attain the bliss of perpetual peace and freedom by the bountiful mercy of our Lord.

History of Bilaspur Branch Association.

The District Branch of A. I. M. L. A., which was established here in the year 1938 and which is a very live and energetic body now has since its birth, taken very active interest in promoting the cause of Licentiate and doing its utmost in following the wish and mandates of its Mother body in every respect. Besides bringing about a social and fellow feeling amongst its members, it has held many clinical meetings to discuss scientific medical subjects. It has now 25 members on its register. Since the portals of King's Commission were thrown open to Licentiate in this recent World War by Government, as the result of intensive struggle for that purpose by our Mother body, and since Government's assurance came that it will take up the subject of redressing the grievances of our class in civil life in proportion to the response we show in joining the ranks in the Indian Army Medical Corps, members of this branch and resident Licentiate of Bilaspur town have vigorously took the gauntlet. I am glad to say that C. P. stands second in filling up the vacancies in the I. A. M. C. by Licentiate in proportion to the strength of available Licentiate of admissible age. C. P.'s percentage is 27. In all, as far as my unofficial information goes, 88 Licentiate have joined the I. A. M. C. Out of these members 11 are from Bilaspur branch and town. This branch has also the honour of co-operating with Government in doing extensive propaganda and tour through the efforts of some of its member in increasing number of Licentiate who joined the I. A. M. C. in spite of disturbed state of the Province due to political, economic and war conditions. Allow me to say that this was done not because the Licentiate of this District or of C. P. are antagonistic or disrespectful to the political aspirations of this country, but because they are bound by the policy of the Mother body in this respect of improving the fate of Licentiate.

Medical Education in C. P.

On behalf of you, Ladies and Gentlemen, I heartily congratulate our C. P. Government upon its decision of starting the Medical College in Nagpur in July 1946. We the Licentiate are most glad to see the termination of the Robertson Medical School, to the first batch of which this humble person speaking now happens to belong and which was started in the year 1914 to manufacture doctors to assist Government to run its medical service on cheap basis. To the general public it may sound strange but it is none the less true and realistic, that the Licentiate themselves are more anxious to see the death of their own class, considering the serious handicaps with which they have to run the race of their lives in competition with medicos of university education and in the estimation of the public. The uniform and unitary standard of minimum medical education, rightly demanded by the Medical Council of India, so far unimpaired in the medical schools, has its apparent advantages fully appreciated by our class. Though the C. P. Medical examination Board has been doing earnest efforts to fulfil those conditions it was not without difficulties of its own. Stopping to create more Licentiate by closing the Medical School and opening a Medical College will in course of time efface the water tight compartments and remove these ignoble divisions in the profession, which are eating away the vitals of our lives and prevent organisation of our profession in one solid representative body. I request the Government to crush with bold step any idea of a medical school in C. P. if it is ever thought in future by vested parties or enterprising bodies as is done in some other provinces. It is the responsibility of the State to see that right type and only one type of medical men and women are produced in the best interest of the public health. Great Britain's Good-enough Committee's recommendations to allow only university medical Graduates to be produced should be taken as an inspiring guidance by India and its Provinces, while chalking out schemes of post war planning and developments of medical and public health departments. It is our strong recommendation to the Government and the University of C. P. that they should evolve some workable scheme of post-licentiate training, by taking advantage of which the existing Licentiate at present may soon qualify themselves as graduates from the Medical College. University degree should be conferred upon those Licentiate of long standing whose advanced age and busy life precludes them from studying books from examination standpoint. Let me clear this point here that we are not asking this favour with beggar's bowl in our hand but as a privilege, which the authorities, who are guarding the portals of higher University education, and who have so far excluded our class from admission into their domain, must now accede to us by taking unprejudiced view of things as they exist. Whenever the Licentiate had the opportunities of trying their merits on equal basis with the Graduates they have come out successful—nay even more successful with credit and have convinced the world that they are in no way intellectually or professionally inferior to others as will be seen from the results of the D. T. M. and Military Medical training examinations and their proficiency in the Indian Army Medical Corps as well as in general practice. I must say that it does not become the British State, so much reputed for its democratic outlook of life and Government, to strangle ambitions of a class of medical man simply with the object of running a cheap medical service.

The grievances of Licentiate in Medical and Public Health services, in Railway, Local Bodies and State Services are too many and too bitter to enumerate and are unbearably painful; the various ignominies heaped on them from time to time and from day to day have almost smothered their soul out of existence. They are neither heard nor much less attended to by those in whose hands it lies to improve their lot. I do not intend to take your valuable time giving vent to the heart rending recital of them all. But in one sentence I must say that the treatment meted out to the Licentiate who are the most useful and self-sacrificing bulk and backbone of Medical Profession in India, is horribly unjust and undeserved. That is why we submit to our self-extinction without the slightest compunction.

A word on cost of medical education in College will not be out of place. C. P. cannot really boast of being a very rich tract, devoid as it is of any industries and manufacturing concerns worth the name. But it can unfortunately compete well with any part of India, as for insanitary unhygienic conditions and prevalence of epidemic diseases like Cholera, Plague, Small-pox, and other rampant diseases like Venereals, Malaria, Filaria, and Tuberculosis are concerned. If such a poor tract is expected

to create many doctors, as many doctors will undoubtedly be required, the medical education in Medical college must be kept within easy reach of the children of its soil. If public health is accepted to be the primary duty of the State as it ought to be, as is in all civilised countries, there is no reason why medical college education should be made costlier than any other college education, and why Government must not direct part of its revenue for upkeep of such medical college so as to make it cheap for its students. We do hope that the authorities will take this into consideration.

Indian Army Medical Corps

In response to the mandate from our mother body our province has fully co-operated in doing an intensive propaganda work in collaboration with the person deputed by the Military Department, and has assisted the Government in the hour of its need in filling up the ranks of I. A. M. C., by Licentiate in spite of adverse political and economic circumstances. Though the Licentiate, who have taken the King's Commission have individually profited themselves to a certain extent for the time being, it has to be appreciated by the local Government that they have not done it without enough risk to their lives, and at a great inconvenience and dislocation of their family happiness. On return back to their civil duties they will naturally find it difficult to accommodate themselves to that old wretched existence as Assistant Medical Officers, playing the third fiddle to the medical and public health department. The Government should, in appreciation of their military services, find out ways and means to improve their lot and fulfil the hopes given to them.

Medical Council

What more glaring instance of gross injustice to our class can be cited than that by which our class, which forms more than 2/3 bulk of medical profession, is treated as untouchable and refused representation in the Medical Council of India? We shall not be asking for more than our dues if we request the Central Government to revise and alter their Laws in this twentieth century of democracy. Even in the provincial council, seats for Licentiate must be increased according to the strength of Licentiate existing in this Province, on the principle of equitable basis, so as to make the C. P. Medical Council really and fully representative. Let us hope that the Indian Medical Council will also act upto its resolution of October 1940 and establish an All India Register including all Licentiate upto 1946 in its first schedule by giving them eligibility to election on that body as well as participation in the working of Indian Medical Council on equal basis. Otherwise the proposed All India register will be strongly resented and opposed by our organization.

Hospitals, and Dispensaries

Government Hospitals and Dispensaries are primarily meant for the poor and indigent people, so says the Medical manual. We really wish that this principle was thoroughly understood and respected in practice, both by the public and Government doctors. A responsible Government Medical Officer has very rightly said once, that when a Government Medical Institution is said to be unpopular, it should be taken as an indication that less attention is paid by Govt. Doctors to highly paid and well-to-do class of people, who want free advice, treatment and attention from Govt. doctors and hospitals. The stock of medicines allotted to these institutions is so meagre, and number of people expected to be treated is so large that there is no wonder that the medicines supplied there are more or less faith cures. Staff of doctors, compounders and nurses is never enough even for normal work. In the post-war development of medical departments let us hope that better and more staff and medicines are provided and that some scheme of charging well-to-do class people in Government Hospital is chalked out, so that these institutions are made really useful to poor class for whom they are primarily intended. Government doctors' salaries should be increased, their life insurance should be paid by the Government, and they should be made so comfortable and satisfied in every way that they should have no temptation to earn money by private practice, which should in that case be debarred to them. But if more money is made available to Medical aid and Public Health in the post-war development, and if a medical tax is assessed it is not at all impossible for State to be more serviceable to the bulk of poor humanity. Fair chances must be given to all Regd. Medical Private Practitioners to be useful and serviceable to the poor attending those Institutions in the part time paid service, irrespective of those fictitious difference in their qualifications of diploma or degree. Free V. D. Clinics, Tuberculosis clinics, X-rays, electric and light therapy centres, must be instituted at every district head-quarter hospital, which must also be expanded to cope with the actual need of the people. The rich people who increase the already existing number of Temples,

Mosques, and Dharmashalas by spending enormous sums in erecting them, will do more good to the suffering humanity by directing their philanthropy in this right direction of serving their Lord in human form, and thus fulfilling the objects of all religions based on the principles of fellow feeling and social service. In short, the whole social economic and political outlook of the Governors and Governed, the Capitalists and the Labour, the plentiful and the needy has to be changed, and worked on altogether different lines, atleast in the godly domain of medical aid and public health of urban and rural areas, while chalking out schemes of post-war medical and public health departments.

Extracts from the Presidential Address of Dr. A. D. Mukharji.

Medical Education.—It has been realised by the profession that most of the ills which we are suffering from, are due to the existence of two types of medical education having a gulf of difference between them and the activities of our Association had been directed all these years since its inception in 1906 to get one uniform medical education all over the country. It can be said that these efforts have partially succeeded in several parts of India.

The Congress ministries in Madras and U. P. had introduced this much needed reform in these provinces followed by the Punjab, Orissa and Sind. I am glad your province has also decided to convert the Robertson Medical School at Nagpur into a College from July, 1946. I congratulate your University, Government and those of your leaders in our Association, who succeeded in giving practical shape to this aspect of educational reform. When the abnormal conditions caused by the war could not prevent less resourceful provinces like Orissa and Sind to convert their schools into Colleges I wonder why other more resourceful provinces could not take right lead in this matter. I think it is deliberate and possibly due to the activities of vested interests who want to perpetuate class and class in the society professing healing art.

War and I. A. M. C.—I am told your province has supplied a number of doctors for the Army during the all engulfing war which has just concluded in Allied victory. This was due to the efforts of late Dr. Sengupta and others of your province, who spared no pains to make the I. A. M. C. successful, imbued perhaps with the idea that given opportunities Licentiate could rise equal to the occasion and demonstrate their professional and other qualities which were so badly needed in war not to speak of in peace as well. This war has brought in its train immense miseries all the world over but it has also introduced some far reaching changes in the outlook of mankind. The creation of the Indian Army Medical Corps embracing all the qualified medical practitioners of our country in it as full fledged Commissioned officers has revolutionised the Army Medical Service of this country. The response of the Licentiate for this service was spontaneous. Although it is too early to compute the value of these services rendered by them as members of this Corps, I have learnt with great satisfaction that most of them have rendered excellent account of themselves. The profession expects the repercussions of this change to be felt in other Civil Medical Services also.

With the cessation of hostilities the question of rehabilitation of those members of the provincial subordinate services who joined the war should receive special consideration of the authorities. Whether these Commissioned officers, many of whom are now Captains and some are Majors and graded specialists, are on reversion to civil service going to be branded as Sub-Asstt. Surgeons and made to work in the same condition when they joined the war, is a question which is troubling me very much. The I. A. M. C. had so far been announced to be a temporary war measure which the profession never accepted as such and urged its being made a permanent measure for the Indian Army with ultimate abolition of I. M. S. and I. M. D. services. This Corps should also be purely a Military service and no one from this service to have any claims in the civil side as now obtain for members of I. M. S. Civil administrative posts, be filled up by creating special civil cadre open to all the best qualified candidates and not confined to a group of service people and reserved for out-siders. Members of this I. A. M. C. who have rendered good account of themselves should be retained permanently in this service and those from provincial service should get special treatment regarding their future rehabilitation in the provinces. The principle of merging of all qualified medical men and women irrespective of their qualifications as had been done in the I. A. M. C. should also be adumbrated in the creation of a pro-

vincial service, without the upper and lower branches. The changed outlook caused by the war must not be allowed to take different shape as soon as its ravages are over and difficulties of recruitment are overcome. In this connection I want to draw the attention of all concerned to those unfortunate brethren of ours who did not get Commission in the I.A.M.C. and are compelled to serve as V.C.Os. It is difficult to reconcile their position as after serving the Army for a number of years some of them were not eligible to get the I.A.M.C. Commission although many with inferior merit have been recruited from the open market after the corps was created. It seems to me that cases of these unfortunate persons who wore their *Khaki* Uniform earlier, possibly due to pecuniary difficulties, during a period when the war was in its worst phase, call for serious consideration. During my Presidency of the All-India Organisation when the I.A.M.C. was created and afterwards, I have urged that those whom the military authorities do not think fit for Commission should be allowed the option to resign and not compelled to work as discontented band of inferior graded officers. I have met many of them and not a single person is satisfied with his lot and they were feeling the invidious distinction bitterly. When we hear about the lofty ideals for which this war was fought and the high sounding charters to be introduced for the betterment of mankind it passes my comprehension to know how such invidious distinctions could be perpetuated amongst the service personnel who bore the brunt of the menacing war all these years. The cases of those doctors who became prisoners of war due to no fault of theirs have not yet been considered so far as their claim for the commission in I.A.M.C. although they are being gradually repatriated. I urge all of them to be granted commission. The other questions of granting the Licentiate members of I.A.M.C., overseas allowance, and increased gratuity on retirement had been engaging the attention of the Government for the last two years but nothing definite had been done although the war is over. This kind of procrastination had produced much of difficulties and it is a pity that powers that be do not realise this or pay deaf ear to the recommendations of the profession.

The rehabilitation of the members of the profession who either were in active military service or in other branches of quasi military services must not be treated lightly. The Government of India in consultation with the Provincial Governments should devise ways and means to extend the existing hospitals and open new ones, firstly to utilise the services of these doctors and also to make medical aid available to a larger section of our people who are practically without needed aid. The leaders of the profession in the provinces and all-India fame should be consulted for evolving these schemes, which should engage the attention of all concerned without further loss of time.

Medical Relief.—It is desirable that the obligations of the State towards the people of the country are better realised, and to introduce a well planned Public Health and Medical Service to take charge of the health of the nation as a whole so far as the curative and preventive aspects of diseases are concerned. The present arrangement of having few dispensaries as the outcome of charity of Government, Local bodies or philanthropic persons of the country, is not at all satisfactory. It is the inherent duty of the State to provide for education, medical relief and sanitary measures as well as basic food for the people for whom the State is supposed to exist. The State must not exist for its display of power in administering only the "Law and Order" much of which have been felt through these years of suffering without any improvement in the conditions of life of the people in general. To provide this a comprehensive and well planned scheme dividing the country into separate units according to population in charge of trained medical personnel is called for. No part of the country or any population be deprived of getting scientific medical aid under the aegis of State programme. Along with this the economic condition of the people must be raised by better forms of agriculture, marketing for the produce of the land, mass education on national regenerative lines. Better communications, improved drainage and irrigation must also be planned for by the State. For this the whole outlook of the Government has got to be changed, nay revolutionised, which I do not think is possible unless the true and self sacrificing representatives of the people of the land are placed in charge of the Government as I feel that they only can usher in a changed outlook from all spheres of life and cause a reorientation of the entire social fabric of the nation. For this development the country would need the services of a larger body of medical men than exist now, and arrangements will have to be made for the turning out of more of the better qualified doctors of the University type as it is in universities that education on right lines can develop as gathered

from experience. This would help in the abolition of the Caste System from the profession which has created artificial barriers preventing the growth of a unified medical profession and an organisation in our country.

Services of the members of the medical profession should be utilised by the State who would distribute them in the rural areas with better pay than those stationed in urban areas enjoying better amenities of life and there would then be no question of an area or population going without aid.

Medical Councils.—The working of provincial medical Councils should be on more popular lines with majority of representatives of the profession elected by franchise of the profession with an elected President as is the case in the Madras Council. The Medical Council of India is to my mind a misnomer as it has kept out of its purview the largest body of qualified medical men and women—the Licentiates—from its scope. I would urge the inclusion of Licentiates within its control during the transitional period at least as in course of the next few years I anticipate the total abolition of medical schools. Unless a Central body like this looks into the question of school education I am afraid the much talked of enforcement of uniformity in medical education in our country would hardly succeed.

Temporary Military Hospitals.—I take this opportunity to join issue with Pandit Jawaharlal Nehru and Dr. B. C. Roy who have very timely advocated the transfer of the many war emergency hospitals in India set up by U. S. and British Army in India and the Government of India for use of civil population.

The existing number of hospitals for civil population and the beds in them are too meagre to cope with the needs of the country and I consider the move of these two leaders of our country is very opportune and I exhort the authorities to accede to this request of theirs which I am sure is the voice of India as well.

Amalgamation with I.M. A.—I have purposely so far refrained from speaking on the local problems of yours in this province as I am sure these will be the subject matter of specific resolutions for consideration of the Conference. I would like you also to consider in your Conference whether you would like to be isolated from the rest of the profession by maintaining your separate communal entity and thus help in the existence of two different organisations for the profession or give your considered views regarding the question of amalgamation with the Indian Medical Association which has stretched out its hand of communion and fellowship to you. In provinces where Medical schools have been replaced by Colleges, I am sure, problems particularly related to Licentiates are, rapidly and gradually, becoming less and less acute and time is fast approaching when these would be showing passing phases. I consider we should endeavour to present to the authorities as well as to the world a united medical profession as in other free countries to fight out the battle of the profession along with the other groups shoulder to shoulder. I am sure such a body would be able to wrest the just dues of the profession from the powers that be. Let us demonstrate that educated as we are, we are fully alive to the necessity of utility of joint action. We will be worthy of the profession if we achieve unity of thought and action under a single organisation. Those who feel that our interest would not be safe by joining with the other organisation I can tell them that in these days of democratic determination of things all round, the voice of the multitude is bound to count and the voice of licentiates who far outnumber the graduates and foreign qualified will be paid due heed to, if, of course, we can make the same felt by our efforts, sacrifice and service. I have no misgivings on this issue as, if we so desire, we can swamp this organisation and shape it to come to our rescue which will ultimately help our people in solving their health problems. I would expect you to give some thought to this question as well.

I have often felt that members of the profession should take more interest in the activities of legislature and local bodies and should enter these bodies in large numbers so that they can contribute their best for the enforcement of better health conditions along with other leaders of the society. I am sure the medical profession will be able to render no less beneficial and constructive suggestions for the re-generation of the national health of India which has reached a stage needing thorough upheaval. At the ensuing elections to the Provincial Legislative Assemblies I would request those of you who have opportunity and zeal to serve our people in these spheres to offer yourselves for election and take your share in ushering in of the new order which we all anticipate in the near future.

Provincial Secretary's Report by Dr. G. K. Kulkarni, L. C. P. & S. (Bom.)

I have great pleasure in placing this report before you in the manner in which I have an opportunity of doing so today. My previous reports that were submitted to the General Secretary of our Mother Association were published in Conference-issues of our journal. They were naturally abridged to suit the space and this is the first time during the period of my Provincial Secretaryship when Provincial Conference is held and I therefore feel obliged to place before you my whole account. The C.P. & Berar Provincial Conference was held last in 1938 and I came to this office in the year 1940. In the absence of any records I have no guidance. It is therefore highly probable that some omission may be made and I am fully aware of my own short comings for which I am sure you will excuse me.

Branches:—There are eight old Branches and four new Branches are reported to have been formed. I have however no official information about their formation and recognition. One old Branch has stopped functioning in spite of frequent requests and personal contacts. The activities of the Branches can be described as under:—

(1) **Wardha**—This Branch is very active though it is formed only 2 years before. Attempts were made to increase the number of members successfully. Number of members is 30 today. Last year it was only 15. Thanks are due to Dr. R. S. Khot, the Secretary of that Branch.

(2) **Bhandara Branch**—This is one of the old Branches and its active and energetic Secretary is Dr. Dawoo through whom the members of the Branch secured adequate supply of Quinine Sulph, Quinine for injection, kerosene oil and cloth. Three new members also were enrolled.

(3) **Rajpur Branch**—This Branch is an old Branch and under the guidance of very old members of the Association Drs. Bhalerao & Latiff ex-member of the Medical Council C.P. & Berar and with the help of a very active and capable Branch-Secretary Dr. Wanjari, it has done very good work.

(4) **Bilaspur**—The activities of this Branch need not be described since they are manifest in the form of this Provincial Conference.

(5) **Chhindwara**—This Branch though comparatively young has done very good work. Special credit goes to this Branch for holding a District-Conference in February 1945. Dr. D. B. Bhate, the Branch Secretary, takes a keen interest in the working of the Association in spite of his multifarious engagements for which he deserves special mention.

(6) **Amraoti**—This is one of the oldest Branches and under guidance of the most influential President Dr. B. J. Bansod, Dr. K. D. Kolwadkar, the young and energetic Branch Secretary, has kept up its reputation.

(7) **Chhindwara Mining Area Branch**—This Branch also is comparatively a young Branch but Dr. Tembhekar the Branch Secretary has taken a very keen interest and has proved its activities by passing many important resolutions.

(8) **Nagpur**—Dr. S. N. Sanyal, the young and energetic Branch Secretary, has proved that Nagpur Branch is a very important Branch so far the activities of the Association are concerned in this Province. It is this Branch which can know important happenings first and guide other branches.

Members:—The number of members, has increased nearly three times of what was in 1940. The number was 140 and now it is 400 and more. The credit is partly due to the active Branch Secretaries and partly due to the civilian touring recruiting officers namely, Drs. Sant, Dawoo and my humbleself. Also the members of the Selection Board for I. A. M. C. played a very important part in this enrolment of members. Special mention has to be made, apart from my humbleself, of our late lamented President R. B. Dr. K. P. Sen Gupta. We never missed any one who came before us for interview.

Medical Council—Before I say a word about the Medical Council I would like to give you a short history of it. Those who passed out their final examination before the actual introduction of the Medical Council and the act of Registration in 1939 can very well recall to their memory that there was a rule in the C.P. Medical Manual that a Licentiate must put in 11 years practice before he can be eligible to apply for being permitted to issue certificates of ill-health to Government servants. He has also to forward certificates from two respectable gentlemen from the area through Deputy Commissioner. All these persons are laymen. This Rule required professional man to be certified by laymen. No greater insult can be made to the Licentiates.

The wonder of it was that there was no result out of our protests, requests or deputations and my humble self even when I was not the Provincial Secretary thought of changing the direction and route of action. My humble self availed of the opportunity given by the Annual Conference of the All-India Medical Association in the year 1935 and moved in that influential Body a resolution requesting the C. P. & Berar Govt. to bring into force the Act of Registration immediately. Knowing fully well that when a Licentiate is registered the insulting rule in the C. P. Medical Manual will have to be expunged and I am happy to say that the result is before you. None of you, however junior you may be, need wait now for 11 years and be at the mercy of the laymen. You will please remember here that I was permitted to issue certificates in 1923.

Medical College.—The history of the Medical College is as old as that of the Medical Council. Much can be said on this subject but suffice it to say that the A. I. M. L. Association is demanding better education and standard of medical qualification in the interest of the profession and the country. I took the opportunity in the same year and moved a resolution demanding standard of medical Education as laid down by the Indian Medical Council and I am happy again to say that C. P. will have a College from 1946. In this connection I cannot but mention the yeoman services rendered later on by our worthy President, late lamented R. B. K. P. Sen Gupta. Very few know what hard labour and tough fight he had to put up.

High School Certificate Examination Board—Before 1942 the Medical Licentiates had no place as examinees of Practical Physiology & Hygiene. It was monopolised by our friends, the graduates. It was due the personal influence of my humble self and the representation made on behalf of the Association as can be seen from the records in the office of the Secretary of the said Board that the Licentiates are now given their due share.

Medical Officer-ships of Colleges under Nagpur University—Up to 1942 the Licentiates had no place for these posts and my humble self had to undergo troubles beyond all imagination. By personal contact I had to convince the anti-Licentiate element and thanks to the Great Almighty I could convince it. The University rule was amended allowing Licentiate of 10 years standing to be appointed as Medical officer of a College affiliated to the Nagpur University. Here I want to sound a note of caution that this anti-licentiates-element is still there. This element is under the impression perhaps that our graduate brothers are immune to faults and mistakes. It has no sympathetic consideration though it is so highly cultured,

Last but not the least important item requiring mention is that of I.A.M.C. the history of which was duly published in the Indian Medical Journal. You are fully entitled to know what part our Province particularly has played through its representative, my humble self. As is already published in the Journal a meeting of all representatives of all Provinces was held at Simla on the 22nd September 1941. A good long discussion was held and concrete proposals were made. I feel proud to say, my humble self was the only member asking for and insisting on nothing short of 2nd Lt.-ship. I felt highly relieved and greatly pleased when I learnt that my idea has materialised in 1943. Naturally enough I had the curiosity to learn the details of the scheme. I found certain defects in it which I had to bring to the notice of the Association in the Annual Conference held in Delhi. Resolution drawing the attention of the Government to the drawbacks was accordingly passed and later on I am glad to say many were removed. It will give you all a great satisfaction to know that our Province stands 2nd in order of the number of recruitment to I.A.M.C. and our Province has contributed 27%. Our Province has given 102 Licentiates for I.M.D. and 88 for I.A.M.C. you will be happy to know that practically all I.M.D.S. were absorbed in I.A.M.C. This is no mean contribution to the war efforts and we are justified now in demanding proper place in the post-war period. However, we must be quite alert at the time of resettlement.

Ladies and gentlemen, these are some of the outstanding results of my humble services rendered on my own behalf and also on behalf of the Association. There are many other petty achievements which if narrated would make a long list and would take much of your valuable time. I would only say this much that no opportunity has been lost by me to increase the prestige of our class in general and my brothers in the Province in particular.

I thank very sincerely all the Branch Secretaries for their hearty co-operation given to me to enable me to serve you to the best of my ability.

Resolutions passed in the Provincial Conference held at Bilaspur on the 19th and 20th October, 1945.

1. This Conference places on record its deep sense of sorrow at the untimely demise of:—

1. R. B. Dr. K. P. Sen Gupta.
2. Dr. B. P. Dalvi.
3. Dr. Veer Venkaiya.
4. Dr. G. S. Ghadge.

and offers its sincere condolence to the members of their bereaved families.

2. This Provincial Conference unanimously demands from the Government of C. P. and Berar that this class of Medical Licentiate be abolished leaving only one class of Medicos as is done in Madras and U.P. and other Provinces and that the designations, pay and other amenities incidental to this class of Medical Licentiate be raised so as to bring them on equal level.

3. Resolved that the Director of Public Health be requested to increase his staff so as not to drag the A. M. O.'s I/C Dispensaries for carrying out preventive measures during epidemics.

4. This Provincial Conference requests the Government of C. P. and Berar to amend the Drug-Control-Order in such a way as not to force any registered Medical Practitioner to obtain Purchaser's Licence.

5. Resolved that the Inspector-General of Civil Hospitals C. P. and Berar be requested to move the Local Government to place all the District Councils and Local Bodies Dispensaries under the direct administrative control of the Civil Surgeons.

6. Resolved that the Government of C. P. and Berar be requested to provide suitable residential quarters for S.A.H.O.'s in all Tahsil and District places on reasonable rent.

7. Resolved that the Government of C. P. and Berar be requested to appoint Medical Licentiate as Hony. Physicians in District Hospitals for a period of three years.

8. Resolved that the D. G. I. M. S., Delhi be requested to move the Government of India to make the I.A.M.C. permanent and to retain the Medical Licentiate who have joined this Corps and to abolish I.M.S. and I.M.D., altogether.

9. Resolved that the C. P. and Berar Government be requested to include a representative of the Provincial Branch of the All-India Medical Licentiate's Association on the Selection Board of the Robertson Medical School and of the proposed Medical College and also

(b) To reserve ten seats out of the total admission to the proposed Medical College for sons and daughters of Medical Licentiate.

(c). To give free opportunities for the Condensed Medical Course for M.B.B.S., in the proposed Medical College to all Matriculate Licentiate.

10. Resolved that the All-India Medical Licentiate's Association be requested to establish an Information Bureau for giving all informations to the members regarding further studies in India and abroad and also regarding preliminary qualifications required for such courses. This Bureau should also arrange for admission to such institutions as a member may desire to join.

11. Resolved that a part of the fund of the A.I.M.L.A. be utilised in giving scholarships to members of the Association for prosecuting further studies on certain conditions and that scholarships thus given should be refundable.

12. Resolved that the Mining Federation be requested to give better status and living conditions for the Medical Licentiate as are given to the other technical superior staff employed.

13. Resolved that the Government of C. P. and Berar be requested to impose rigid restrictions on unqualified and unregistered medical practitioners with a view to abolish quackery altogether.

14. This conference thanks Dr. D. V. Pradhan for his kind donation of rupees twenty-five, even when he is retired, thus showing his sincerity towards his fellow brothers.

15. This Conference feels that the time is opportune for exploring all avenues for amalgamation of the two Associations, namely A.I.M.L.A., and I.M.A., and requests the Sub-Committee appointed by the President of the A.I.M.L.A. at Calcutta for this purpose to expediate the matter.

NEWS AND NOTES.

The first Indian Congress of Radiology will be held at Madras from the 13th to 16th February '46, under the presidency of Dr. M. O. Joshi, M.B.B.S. (Bom.) D. M. R. E. (Cam.). Four sections dealing with X-ray diagnosis, Radio-therapy, Radiation Physics and Radio-biology will be a feature of this Congress under the chairmanship of Dr. S. C. Sen (Delhi), Dr. K. P. Mody (Bombay), Dr. R. Naidu, (Bombay), Dr. V.R. Khanolkar, (Bombay) or Dr. Bhaskara Menon (Vizag.) respectively.

The 11th Session of the Assam Provincial Conference of the A.I.M.L.A., will be held on 16th and 17th February 1946. In the varied programme is included an exhibition of Medical and other Scientific products and of surgical instruments and appliances. Firms intending to display their products may communicate with Dr. S. P. Nath, Police Hospital, Silchar, Cachar, (Assam), General Secretary of the Conference.

The First Behar Provincial Medical Licentiate's Conference will be held on 27th and 28th January 1946 at Chaibasa, Singhbhum, Behar. No delegation fee is required. An exhibition also will be held along with the Conference. Intending delegates and visitors, and firms willing to participate in the exhibition may kindly write to Dr. R. De, Secretary of the Reception Committee, Chaibasa (Singhbhum) for further details.

The General Secretary, A.I.M.L.A., announces the following results of Provincial Elections.

Bombay Prov. Branch: President: Dr. V. D. Sathaye, Secretary: Dr. V. J. Paranjape.

Madras Prov. Branch: President: Dr. G.V. Hanumantha Rao, Secretary: Dr. D. V. Venkappa.

U. P. Prov. Branch: President: Dr. K. B. L. Verma, Secretary: Capt. Bhagvat Sahai.

Proceedings of the Standing Committee

(Continued from p. 278 of December Issue)

16. All-India Medical Licentiate's Association approves the general principles contained in Prof. Adarkar's Report on Health Insurance and authorises the special sub-committee formed in this meeting to give the final opinion on the subject by 31st December, 1945.

17. Resolved that the following dues shown in the account of the Association be written off as irrecoverable sum:—

1. Rs. 85 as shares in Bacterio-Clinical Laboratory Ltd., Calcutta.
2. Rs. 793-12-1 standing against Dr. S. R. Sen Gupta Ex-Manager, Indian Medical Journal.

18. Resolved that Dr. D. V. Sathaye of Poona be deputed to meet the Ex-Finance Secy. Dr. K. J. Bhatt of Ahmedabad to get all papers in connection with accounts of the association for the years 1942-43, 1943-44 for purpose of audit and send the same to the Finance Secretary Dr. J. N. Roy of Gauhati to have it audited.

19. Resolved that the Finance Committee, Gauhati, be authorised to appoint auditor to audit the accounts of the Association.

20. Resolved that Dr. A. Viswanathan, Editor, Indian Medical Journal, be requested to print Rules and Regulations of the Association and the General Secretary be furnished with the required copies.

21. Resolved that the budget of the association for the year 1945-46 and revised budget for 1944-45 be passed.

Revised Budget of Income and Expenditure for the year 1944-45.

Heads	Actual 1943-44	Budgetted 1944-45	Actual 1944-45	Heads	Actual 1943-44	Budgetted 1944-45	Actual 1944-45
Opening Balance ...	£ 157 17 10d. Rs. a. p. 70,872 9 6	£ 157 17 10d. Rs. a. p. 81,234 4 0	£ 157 17 10d. Rs. a. p. 81,251 9 7	Establishment ...	Rs. a. p. 5,939 9 0	Rs. a. p. 6,240 0 0	Rs. a. p. 7,062 0 0
Subscription...	17,888 10 6	18,000 0 0	20,016 14 0	Postage ...	2,903 13 9	3,500 0 0	2,652 14 9
Advertisement	19,858 5 7	20,000 0 0	27,198 2 5	Stationery ...	289 13 8	400 0 0	380 0 11
Interest ...	1,080 5 6	1,200 0 0	1,075 9 0	Rent ...	909 0 0	1,080 0 0	1,120 0 0
Miscellaneous.	3 6 0	100 0 0	115 0 0	Miscellaneous ...	1,452 14 1	4,600 0 0	1,626 9 4
Total ...	38,830 11 7	39,300 0 0	48,405 9 5	Travelling	...	...	...
Grand Total...	1,09,703 5 1 £ 157 17 10d.	1,20,534 4 4 £ 157 17 10d.	129,657 3 0 £ 157 17 10d.	Allowance ...	2,140 13 0	8,000 0 0	8,600 10 0
				Furniture ...	132 0 0	200 0 0	146 0 0
				Printing I. M. J.	11,433 5 8	11,500 0 0	9,381 15 1
				Audit fee ...	...	120 0 0	170 0 0
				Payment to Contributors ...	...	60 0 0	...
				Other Printing ...	343 6 6	800 0 0	1,289 7 10
				Propaganda ...	213 4 0	1,000 0 0	175 13 0
				Other contingencies	40 9 10	200 0 0	55 0 0
				Branches ...	1,915 8 9	3,000 0 0	2,497 13 9
				S. R. Committee.	...	200 0 0	128 15 0
				O m e r a Gold Medal ...	...	80 0 0	...
				Total ...	27,714 1 3	40,980 0 0	35,287 2 11

Profit and Loss Account for the year 1944-45.

Net income ...	Rs. 50,494 13 5
Less expenditure ...	Rs. 38,406 15 5
Net surplus ...	Rs. 12,087 14 0

BUDGET OF INCOME FOR THE YEAR 1945-46.

Heads	Actual 1942-43	Actual 1943-44	Actual 1944-45	Total of three years	Average	Budgetted 1945-46
Opening Balance	£ 157 17 10d. Rs. a. p. 65,551 5 5	£ 157 17 10d. Rs. a. p. 70,872 9 6	£ 157 17 10d. Rs. a. p. 81,251 9 7	£ 473 13 6d. Rs. a. p. 2,17,675 8 6	£ 157 17 10d. Rs. a. p. 72,558 8 2	£ 157 17 10d. Rs. a. p. 93,339 7 7
Subscription	Rs. a. p. 14,278 12 0	Rs. a. p. 17,888 10 6	Rs. a. p. 20,016 14 0	Rs. a. p. 52,184 4 6	Rs. a. p. 17,394 12 2	Rs. a. p. 20,000 0 0
Advertisement	16,537 6 1	19,858 5 7	27,198 2 5	63,593 14 1	21,197 15 4	28,000 0 0
Interest	2,094 2 0	1,080 5 6	1,075 9 0	4,250 0 6	1,416 10 10	1,200 0 0
Miscellaneous	398 10 0	3 6 0	115 0 0	517 0 0	172 5 4	100 0 0
Total ...	98,860 3 6 £ 157 17 10d.	1,09,703 5 1 £ 157 17 10d.	1,29,657 3 0 £ 157 17 10d.	3,38,220 11 7 £ 473 13 6 d.	1,12,740 3 10 £ 157 17 10d.	1,42,639 7 7 £ 157 17 10d.
					Actual income budgetted ...	49,300 0 0

BUDGET OF EXPENDITURE FOR THE YEAR 1945-46.

Heads	Actual 1942-43	Actual 1943-44	Actual 1944-45	Total of three years	Average	Budgeted for the year 1945-46
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Establishment	5,244 8 0	5,939 9 0	7,062 0 0	18,246 1 0	6,082 0 4	8,904 0 0
Postage	2,613 5 3	2,903 12 9	2,652 14 0	8,170 0 0	2,723 5 4	3,600 0 0
Stationery	456 4 3	239 13 8	380 0 11	1,126 2 10	375 6 3	435 0 0
Rent	700 0 0	909 0 0	1,120 0 0	2,729 0 0	909 10 8	1,440 0 0
Miscellaneous	1,184 2 10	1,452 14 1	1,628 9 4	4,263 10 3	1,421 3 5	2,191 0 0
Travelling Allowance	5,450 2 0	2,140 13 0	8,600 10 0	16,191 9 0	5,397 3 0	8,000 0 0
Furniture	10 12 6	132 0 0	146 0 0	288 12 6	96 4 2	300 0 0
Printing I. M. J.	9,064 3 2	11,433 5 8	9,381 15 1	29,879 7 11	9,959 13 3	12,000 0 0
Payment to Contributors	35 0 0	...	...	35 0 0	11 10 8	...
Audit fee	60 0 0	...	170 0 0	230 0 0	86 10 8	420 0 0
Other printing	292 15 0	343 5 6	1,289 7 10	1,925 12 4	641 14 1	900 0 0
Propaganda	217 12 6	213 4 0	175 13 0	606 13 6	202 4 6	2,200 0 0
Other contingencies	52 6 0	40 9 10	55 0 0	147 15 10	45 5 3	200 0 0
Branches	2,393 3 9	1,915 8 9	2,497 13 9	6,806 10 5	2,268 14 1	6,090 0 0
S. R. Committee	8 12 0	...	128 15 0	137 11 0	45 14 4	300 0 0
Omera Gold Medal	80 0 0	...	...	80 0 0	26 10 8	80 0 0
Rules Book Printing	...	...	...	...	...	300 0 0
Change of Managing Editor's Office	...	...	...	...	...	2,500 0 0
Total	27,863 7 3	27,714 1 3	35,287 2 11	90,864 11 5	30,288 3 9	49,860 0 0

BUDGET ALLOTMENT FOR DIFFERENT OFFICES FOR THE YEAR 1945-46.

Particulars	General Secretary	Managing Editor	Treasurer	Finance Secretary	President	Total
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Establishment	1,680 0 0	4,140 0 0	1,740 0 0	624 0 0	720 0 0	8,904 0 0
Postage	400 0 0	1,600 0 0	1,500 0 0	50 0 0	50 0 0	3,600 0 0
Rent	360 0 0	720 0 0	240 0 0	120 0 0	...	1,440 0 0
Stationery	150 0 0	100 0 0	150 0 0	16 0 0	19 0 0	435 0 0
Miscellaneous	120 0 0	1,500 0 0	350 0 0	150 0 0	71 0 0	2,191 0 0
Travelling Allowance	...	...	8,000 0 0	...	...	8,000 0 0
Furniture	200 0 0	...	100 0 0	...	...	300 0 0
Printing I. M. J.	...	12,000 0 0	...	...	...	12,000 0 0
Audit fee	...	240 0 0	180 0 0	...	...	420 0 0
Printing	300 0 0	300 0 0	300 0 0	...	...	900 0 0
Omera Gold Medal	...	...	80 0 0	...	...	80 0 0
Payment to Contributors	...	...	...	...	...	...
Electric Charges	60 0 0	...	...	...	...	60 0 0
Telephone	...	...	...	...	...	...
Type Writer	...	...	...	...	...	...
Fan	...	...	...	...	...	...
Rules Book Printing	300 0 0	...	...	...	...	300 0 0
Change of Managing Editor's Office	...	2,500 0 0	...	...	...	2,500 0 0
Total	3,570 0 0	23,100 0 0	12,640 0 0	960 0 0	860 0 0	41,130 0 0
Propaganda...	...	...	2,200 0 0	...	...	...
Other Contingencies	...	...	200 0 0	...	...	...
Branches	...	...	6,090 0 0	...	...	...
S. R. Committee	...	...	300 0 0	...	...	8,790 0 0
Total	...	...	8,790 0 0	...	Grand Total...	49,920 0 0

Detail of Branch Expenses for the Year 1945-46.

Branches	Establishment	Postage	Miscellaneous	Stationery	Total
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Provincial Branches	3,600 0 0	750 0 0	140 0 0	150 0 0	4,640 0 0
District Branches	360 0 0	800 0 0	130 0 0	160 0 0	1,450 0 0
Total	3,960 0 0	1,550 0 0	270 0 0	310 0 0	6,090 0 0

ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION.

Annual Consolidated Statement of the Accounts of the All-India Medical Licentiates' Association for the Financial Year 1944-45.

RECEIPTS.	Rs. a. p.	PAYMENTS.	Rs. a. p.
Subscription	20,016 14 8	Printing Indian Medical Journal	9,381 15 1
Advertisement	27,198 2 5	Establishment	7,062 0 0
Other Receipts	62 12 0	Rent	1,120 0 0
Loan received from General Secretary	969 14 0	Stationery	380 0 11
Interest	1,075 9 0	Travelling Allowance	8,600 10 0
By error in branches in remitting to Dr. B. Chaudry of Mymensingh	0 10 0	Postage	2,652 14 0
Army Licentiates fund	26 0 0	Miscellaneous	1,626 9 4
Miscellaneous	115 0 0	Propaganda	175 13 0
T. A. Advance	70 0 0	Branches	2,497 13 9
Advance received from Ex-General Secretary	202 0 0	Audit fee	170 0 0
Refund of Sales Tax	193 0 0	Loan returned to General Secretary	1,420 11 6
Delegation fees	560 0 0	Scientific research	123 15 0
		Bank commission	2 14 0
		Income-Tax	255 15 0
Total Income	50,494 13 5	Exp. S. C. Committee	254 4 0
Opening Balance on 1st Oct. 1944	81,251 9 7	T. A. Advance to S. D. Chabra	60 0 0
	£ 157 17 10d.	Double subscription paid	4 0 0
		Legal expenses	205 0 0
		Advance to Dr. A. D. Mukherjee account of delegation fee	710 0 0
		Sales Tax	198 0 0
		Advertisement refunded	9 0 0
		Furniture	146 0 0
		Other contingencies	55 0 0
		Printing	1,289 7 10
Net income	50,494 13 5	Total Expenditure	38,406 15 5
Net expenditure	38,406 15 5	Closing Balance on 30-9-45	93,339 7 7
Net surplus	12,087 14 0	Grand Total	1,31,746 7 0
			£ 157 17 10d.

INTRODUCING

- **BIVIPLEX**, a Vitamin B Complex preparation for quick and efficient treatment of B Complex deficiency.

Available as Syrup, tablets and ampoules.

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Packing: 6 oz., 1 lb. and 1 gallon (for Hospitals)

SOME OTHER PRODUCTS: ADRENALINE chlor. amp.—ASMO SYN tab. (for asthma)—BLISTYN jelly (for burns)—CALCIUM-D tab. & syrup—CYLOTOSYN amp. (replacing Cylotropin)—EMETINE amp.—EPHEDRINE amp.—FEROSYN tonic (for anaemias)—IOSYN tab. (for arteriosclerosis)—PECTUSYN (cough syrup)—STRYCHNINE amp.—SYLAX (laxative)—SYN-TONIC (tonic for adults and children)—TANNOSYN tab. (for diarrhoea).

SUBSTITUTE FOR COD LIVER OIL

Morhusyn

MORHUSYN is an effective improvement over Cod Liver Oil, without any of its disagreeable taste or smell. It is a valuable nutritive tonic, most easily assimilable and non-constipating.

Morhusyn is especially indicated for improving weight and improving the general conditions. Its effects are best seen in tuberculosis, all forms of wasting diseases, infections of the lungs or bronchi, and nutritional disorders. It is an ideal tonic for under-grown, undeveloped and undernourished children.

COMPOSITION: Active, essential constituents of fresh cod liver oil, oleum morrhuae, combined with traces of copper, manganese, iron, calcium, arsenic and juices of fresh fruits in a sweet medium.

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HARMLESS COUGH SYRUP

THE antiseptic, deodorant and disinfectant qualities of Pectusyn are derived from its content of Creosote-Lactate, which is well known for its antiseptic influence on the respiratory tract. It is soothing and lessens attacks of cough, causes sputum to liquify easily and stimulates free and easy expectoration.

INDICATED in all affections of the respiratory passages and lungs: abscess of lung and bronchiectasis, acute and chronic cough and bronchial catarrh, coryza, colds, influenza, etc.

Formula of the Active Principle: Creosote—Lactate, cps. $C_6H_5-CH_2-O-CH_2-O-CO-CHOH-CH_3$



Bottles of 4 oz. and 16 oz.

SOME OTHER PRODUCTS: ASMO SYN (for asthma) tabs.—CALCIUM-D tabs. and syrup—CYLOTOSYN both venous and muscular (replacing Cylotropin) amps.—MORHUSYN Tonic—SYNTOL (a powerful disinfectant and germicide) liquid and Jelly—TANNOSYN (for diarrhoea) tabs. and common ampoules.



SYNTETIC (INDIA) LTD.,
SLEATER ROAD, BOMBAY 7.

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Consolidated Statement of the All-India Medical Licentiates' Association, for the
Month of September, 1945.

RECEIPTS.	Rs. a. p.	EXPENDITURE.	Rs. a. p.
Subscription ...	1,167 0 0	Printing I. M. J. ...	640 8 0
Advertisement ...	3,480 0 0	Establishment ...	1,097 0 0
Delegation fee ...	45 0 0	Rent ...	110 0 0
Miscellaneous receipts ...	2 0 0	Stationery ...	85 12 6
Loan from General Secretary... ..	85 8 3	Travelling Allowance ...	204 15 0
T. A. Adjusted ...	70 0 0	Postage ...	237 8 6
Total ...	4,849 8 3	Miscellaneous ...	194 2 3
		Other printing ...	39 4 0
Balance for the last month ...	91,499 3 7	Branches... ..	42 14 0
	£ 157 17 10d.	Furniture... ..	122 4 0
		Audit fee... ..	20 0 0
		Legal expenses ...	155 0 0
		T. A. Advance to Mr. Saundatta Mal ...	60 0 0
		Total ...	3,009 4 3
		Balance in hand ...	93,339 7 7
			£ 157 17 10d.
Grand Total ...	96,348 11 10	Grand Total ...	96,348 11 10
	£ 157 17 10d.		£ 157 17 10d.

Detail of Balance.	Rs. a. p.	With Treasurer.	Rs. a. p.
War Loan ...	£ 157 17 10d.		
	Rs. a. p.	P. O. S. B. Account ...	5,298 13 4
13 Shares of Bactreio Clinical Laboratory Ltd., Calcutta ...	85 0 0	P. N. B. Lahore ...	22,682 6 11
War Loan ...	8,200 0 0	Cash in hand ...	2 15 3
Imperial Bank of India Delhi, (Savings Bank Account Omeria Gold Medal) ...	403 11 11	Cash in stamp ...	6 10 0
G. P. Notes ...	16,291 9 0		27,990 13 6
Government Bond for S. S. ...	9,409 2 1	With Managing Editor.	
5 Years Postal Certificates ...	7,050 0 0	At Bank ...	4,154 8 9
Dr. S. P. Sen Gupta Ex-Managing Editor ...	793 12 1	Cash in hand ...	48 4 7
Imperial Bank of India, Delhi, Current Account, With Branches ...	12,789 3 6	Cash in stamps ...	24 13 9
Postal Savings Bank Account with President ...	186 0 0	Paper purchase advance account ...	1,100 0 4
	812 8 1	Cheque in transit ...	4,000 0 0
		Total ...	9,327 11 5
			93,339 7 7
			£ 157 17 10d.

Typharsen
WELL TRIED REMEDY FOR
Filariasis

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Prepared in our Laboratory for the first time in India.

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A sterile solution of Antimony V Hexonate containing
— 20 mg. of Pentavalent Antimony per c.c. —

THE SAFEST and NONTXIC INTRAMUSCULAR
THERAPY IN THE TREATMENT OF KALA-AZAR

TESTED IN A LABORATORY OF THE GOVERNMENT OF INDIA

Particulars from:

ADCCO LIMITED
KALIGHAT, CALCUTTA

EYE OINTMENT PRICE LIST.

Packings 1 oz. 100 Grs.			Packings 1 oz. 100 Grs.			Packings 1 oz. 100 Grs.		
R.A.	R.A.		R.A.	R.A.		R.A.	R.A.	
1. Anti Cataractous	3 0	1 4	24. Atropine and Dionine	2 8	1 4	54. Sulphanilamide Cum		
2. Anti Leucoma	2 8	1 4	25. Argylol	2 8	1 4	Shark-Liver Oil.	2 8	1 4
3. Anti Conjunctivitis	2 8	1 4	26. Atropine	2 8	1 4	55. Yellow oxide of mercury		
4. Anti Keratitis & Pannus	3 0	1 6	27. Anti Septic Sedative	2 8	1 4	Cum Atropine	2 8	1 4
5. Anti Keratomalacia	4 0	2 0	28. Argento Cuprum	2 8	1 4	56. Sulphadiazine	3 0	1 8
6. Anti Corneal Ulcer	2 8	1 4	29. Bichloride Mercury	2 8	1 4	57. Sulphadiazine Cum		
7. Anti Bacterial	2 8	1 4	30. Boric Acid Ointment	2 8	1 4	Atropine	3 0	1 8
8. Anti Chalazion	3 0	1 8	31. Boric and Zinc	2 8	1 4	58. Penicillin Strong		5 0
9. Anti Iridocyclitis	3 0	1 8	32. Calomel Ointment	2 8	1 4	59. Penicillin Cum Atropine	7 8	2 1
10. Anti Scleritis	2 8	1 4	33. Chaulmoogra Oil	2 8	1 4	60. Penicillin Cum		
11. Anti Blepharitis	2 8	1 4	34. Collargol	2 8	1 4	Sulphathiozole	7 8	2 8
12. Sulphanilamide Cum			35. Copper Citrate	2 8	1 4	61. Copper Cum Protargol	2 3	1 8
Atropine	2 8	1 4	36. Eserine Ointment	4 0	1 8	62. Penicillin Cum		
13. Sulphanilamide Cum			37. Homatropine	2 8	1 4	Sulphadiazine	7 8	2 8
Dionine	2 8	1 4	38. Mercurochrome and			63. Penicillin Cum		
14. Sulphanilamide Cum			Atropine	2 8	1 4	Sulphanilamide	7 8	1 8
Copper	2 8	1 4	39. Procaïn & Chloretone	3 0	1 8	64. Calomel Cum		
15. Sulphanilamide Cum			40. Pilocarpine	2 8	1 6	Sulphathiozole	2 8	1 8
Zinc	2 8	1 4	41. Protargol	2 8	1 4	65. Atropine Cum Scopamine	3 0	1 8
16. Sulphanilamide Cum			42. Picric	2 8	1 4	66. Calomel Cum Atropine	2 8	1 4
Yellow Oxide of			43. Scarlet Red Ointment	2 8	1 4	67. Sulphanilamide 10%,		
mercury	2 8	1 4	44. White Precipitate	2 8	1 4	20%	2 8	1 4
17. Anti Pneumococcal	2 8	1 4	45. Xeroform	2 8	1 4	68. Shark-Liver Oil Cum		
18. Anti Gonococcal	2 8	1 4	46. Zinc Ointment	2 8	1 4	Yellow oxide of mercury		
19. Copper Citrate Cum			47. Zinc and Itchyol	2 8	1 4	Shark-Liver Oil 20%	3 0	1 8
Atropine	2 8	1 4	48. Picric Cum Atropine	2 8	1 4	69. Shark-Liver Oil 30%	2 8	1 8
20. Yellow Oxide of Mercury	2 8	1 4	49. Pilocarpine Cum Dionine	3 0	1 8	70. Dionine Cum Iodide	3 0	1 8
21. Halibut-Liver oil Cum			50. Xeroform Cum Atropine	2 8	1 4	71. Tyrothricine Cum		
Yellow Oxide of			51. Yellow oxide of mercury			Sulphathiozole	5 0	2 8
mercury	3 0	1 8	Cum Balsam Peru	2 8	1 4	2. Tyrothricine Cum		
22. Halibut-Liver oil Cum			52. Scopamine	3 0	1 8	Sulphadiazine	5 0	2 8
Plasma Cum Atropine	3 0	1 8	53. Sulphanilamide Cum			73. Penicillin Cum		
23. Dionine	2 8	1 4	Chaulmoogra Oil	2 8	1 4	Yellow oxide of mercury	7 8	2 8

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CHODAVARAM - (Vizag. Dt.) - SOUTH INDIA

when SULPHATHIAZOLE has to be prescribed we
invite you to prescribe

Rx 'M & B 760'
'THIAZAMIDE'



SUPPLIES:

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

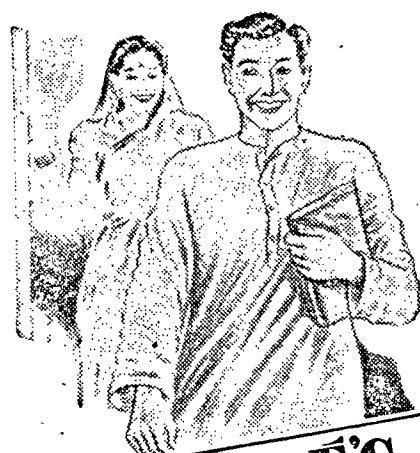
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*increases your
Vitality!*



Nestlé's Malted Milk is of more health-giving value than ever before. With its added Vitamin 'B' it is not only a delicious nourishing drink but a tonic food as well. Without an adequate daily intake of Vitamin 'B', health deteriorates and vitality lessens.

**NESTLÉ'S
MALTED
MILK**



with added VITAMIN 'B'

Because the body cannot store Vitamin 'B' it must replenish its supply frequently. Lack of Vitamin 'B' is a cause of serious nervous and alimentary disorders as well as loss of weight and vigour. Guard your health by drinking Nestlé's Malted Milk, with added Vitamin 'B', daily.

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It can be usefully administered in all forms of dyspepsia, heartburn, Hyperacidity, pain in stomach, vomiting and flatulence. It can be beneficial in intestinal disturbances like colic Diarrhoea etc.

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PHENOL CO-EFFICIENT
(under Rideal-Walker conditions, employing staphylococcus aureus.) 3.0
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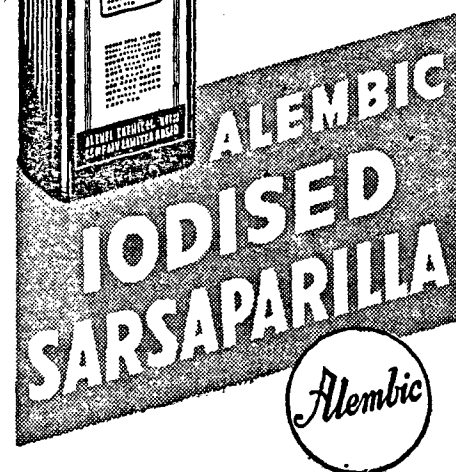
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of highest therapeutic value in skin affections due to blood poisoning.



A very effective combination of Indian Sarsaparilla, Iodides, Mercury, Arsenic, etc., indicated in:

Chronic Rheumatism, Gout, Scrofula, Pimples, and all chronic skin diseases, and in skin affections of tuberculosis and syphilitic natures.

Improves digestion, regulates bowels, removes toxins, and tones up the body.

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(1) ANTI-SPASMON

Extracted from the Indian indigenous herb highly efficacious for Asthma. Has proved infallible in almost all cases of Bronchial Asthma. Only first three doses usually sufficient for complete amelioration.

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Which in combination with phosphoric acid acts as co-enzyme helping in the spontaneous oxidation-reduction of cells, and thereby augmenting carbohydrate metabolism.

For Parental use only.

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Box of 6 and 12 ampoules containing 25 c. c.

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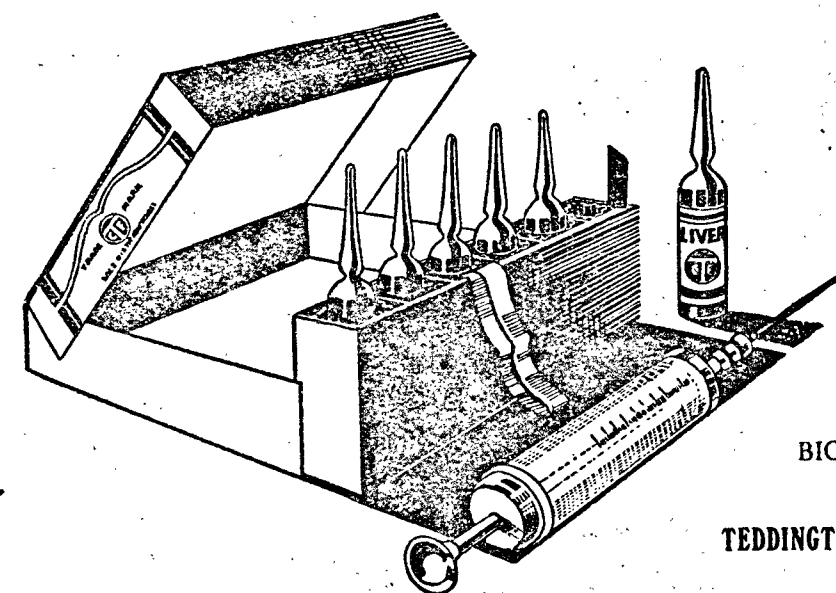
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- **T. C. F.** Whole Liver Extract not only contains all the anti-pernicious anaemia factors, but also Whipple's factors, Wills' factors and Vitamin B-Complex comprising Thiamin (B₁), Riboflavin (B₂), Adermin (B₆), Pantothenic acid (Filtrate-factor) and Nicotinic acid* (P-P factor) from fresh young healthy sheep liver.
- **Packed in 2 c.c. & 5 c.c. Ampoules and 10 c.c. rubber-capped Vials.**



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

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For Malaria and Anaemia

most harmonious combination of IRON, ARSENIC and
QUININE for painless intramuscular injection.

Each 2 c.c. Ampoule of FERARCHIN contains:

Readily Soluble Organic Comp. of Iron ... gr. 1 (0.0648 gm.)
Quinine of Bi-Hydrochlor ... gr. 5 (0.3234 gm.)
Organic Salt of Arsenic (equivalent to } gr. 1/100 (0.00065 gm.)
Arsenous Acid)
Urethane q. s. Aqua (Bi-Distil and Sterilised) to 2-c.c.

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

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

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

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

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

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

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

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

Contra-indications:—Ferarchin should never be used in case where arsenic administration is not desired.

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

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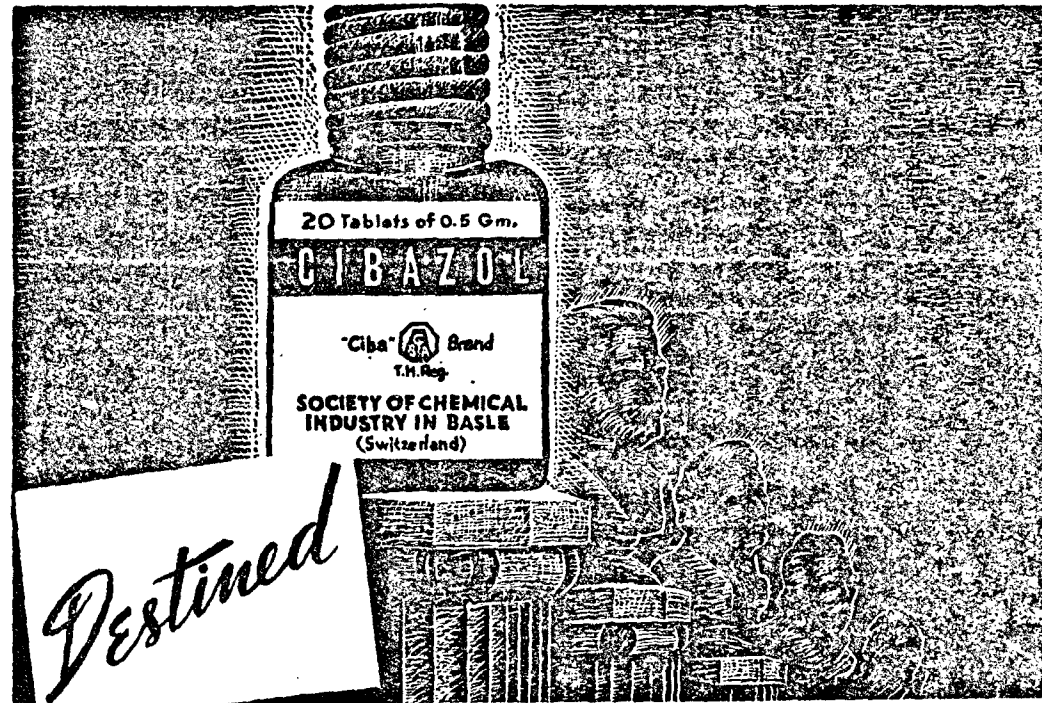
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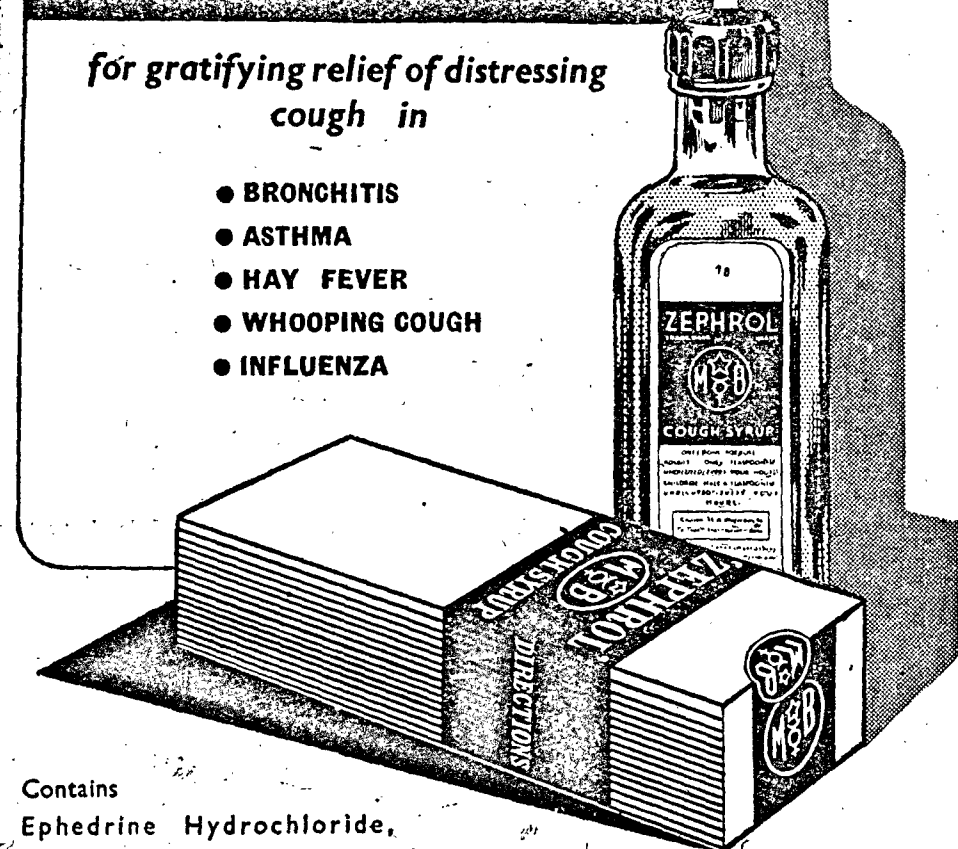
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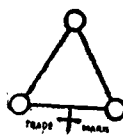
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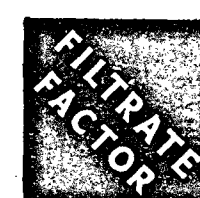
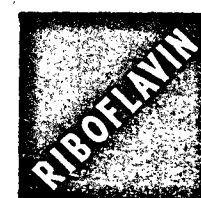


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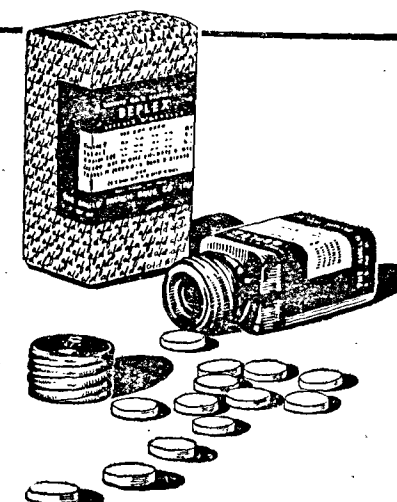


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* *Brit. Med. J.*, 1933, 2, 273

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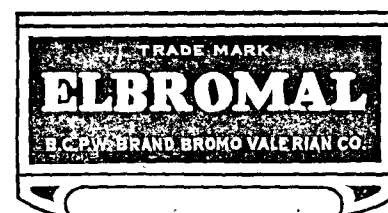


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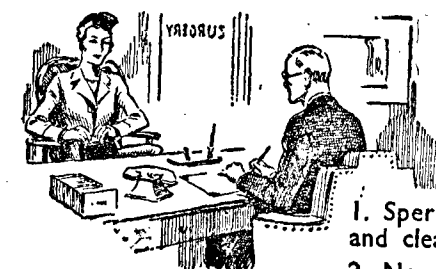
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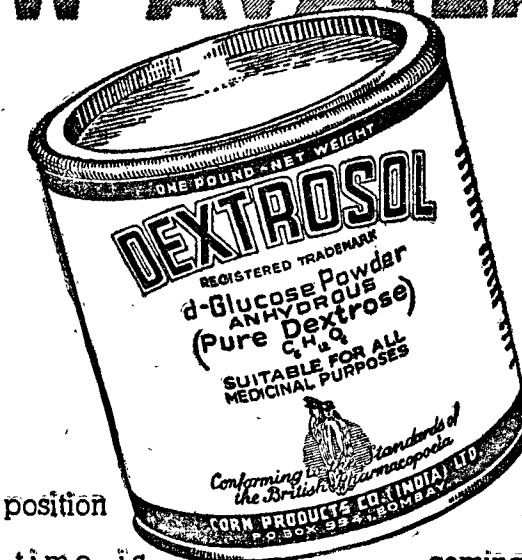
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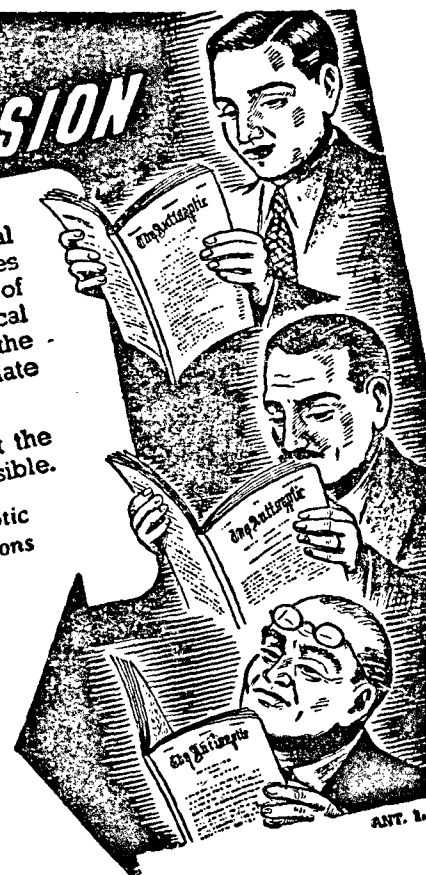
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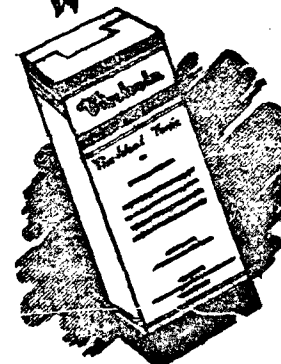
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Indian Medical Journal

(Journal of the All-India Medical Licentiates' Association)

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OUR MONTHLY SURVEY

Sterilisation of Syringes:—There is a growing evidence to show that strict care in the sterilisation of syringes is not always observed by the practitioners and, even, by hospitals. Some are still hugging to the elusion of rectified spirit or boiling oil as a means of sterilising the needles. The syringes are cleaned in a half-hearted manner and boiled perfunctorily. We have been warning the practitioners in these columns, now and again, against their complacency in this matter. News is now to hand that in the American Army more than 28,000 men developed jaundice after yellow fever vaccination in the early months of 1942. This was traced to human serum used in making up the vaccine. Mac Callum suggests that post-arsephamine jaundice in England is due to transmission of infection from patient to patient by means of traces of blood left in the syringes, which at that time were not sterilized by heat between cases in most venereal clinics. Witts has demonstrated that a virus could be transmitted in the syringe used for obtaining blood for blood-sugar examinations. All these undoubtedly show that syringes used for drawing or injecting blood for ordinary intravenous injections or transfusions, unless sedulously cleaned and sterilised every time they are used, are likely to contain blood which may harbour infective agents like the virus of epidemic jaundice. It follows therefore that such syringes should be cleaned immediately after use and sterilised before being used again. So much importance is attached to this trite business of sterilisation that the Medical Research Council of Great Britain has issued a memo-

randum in 1945 on the sterilisation, use and care of syringes. We give below a part of its main recommendations.

"A fresh sterile syringe and needle must be used for each injection or aspiration.

A syringe that has been used for aspiration, e.g., of blood from a vein, or pus from an abscess or for intravenous injection, which always entails aspiration of blood, must be cleaned and sterilised before it is used again.

Syringes and needles require thorough cleaning after use, before re-sterilisation. Sterilisation methods may be unreliable if the syringe or needle contain dirt or coagulated protein. Needles must be kept sharp.

All glass syringes are easier to clean and sterilise than are those made of glass and metal.

After use, syringes should be washed with 2% lysol lotion, and cleaned with tepid water with test tube brush. The needle should be kept on the syringe while the cleaning process is carried out for the syringe. The needle is then removed, washed with clean water and then with alcohol or methylated spirit. The stylette is then passed through the needle to make sure that the bore is clear. Then it is allowed to dry.

Complete sterilisation can be achieved only by sterilisation in the autoclave or hot air oven. The next best is boiling, but it must be clearly understood that a boiled syringe is not necessarily sterile, and its safety cannot be absolutely guaranteed.

Disinfection of syringes by alcohol and chemicals cannot be recommended, nor by the hot oil method."

These recommendations are worth acceptance by the practitioners. They are not difficult to apply even by practitioners who are fighting for time. The main point is thorough cleansing of the syringes and needles before sterilisation. It is the former that is often neglected and that is the source of danger.

Planning is now over:—The recommendations of the Health Survey and Development Committee cover 500 pages in royal octavo. We propose to publish a summary of the same in the next issue of the Journal so that our readers may gain some real insight into the whole problem of National Health and Professional Education. The Committee recognises the waste of human material due to existing malnutrition and avoidable diseases. None can question their observation that "improving of nation's health is a gilt-edged investment yielding immediate and steady return in increased productive capacity and that the Government and the people would be well justified in entailing large expenditure to improve the nation's health." Its plan, in outline, is somewhat as follows:—

- (1) Provision of suitable housing, sanitary surroundings, and safe drinking water supply.
- (2) Provision for effective means for early detection and prevention of epidemic and communicable diseases.
- (3) Elimination of unemployment and improvement in nutritional standards.
- (4) Care of the individual from the cradle to the grave through various forms of national health service.

It aims to achieve these objectives by long and two short-term programmes of five years each. The long term depicts the ideal aimed and the short term programmes outline definite course of work. The country-side is taken as the focal point of all its recommendations. We shall discuss their main recommendations in our next issue.

ADDRESSES AND ARTICLES

Criticisms and Remarks on the Report of Blindness in Travancore State

BY

DR. R. S. AGARWAL,
Delhi.

The report on blindness in Travancore mentions various causes of blindness and suggests various measures to combat the diseases which lead to blindness. It recommends education, vaccination, nutrition, medication and legislation, etc. As regards the suggestions to prevent blindness due to small pox, maternity care, injury, quackery and keratomalacia, I have nothing to add to them and I think these suggestions will be very helpful. The report adds "it will be fair to presume that the increase of blindness during the years 1931-45 will be at least hundred per cent higher than the figures of 1931". I think before 1931 there was more illiteracy, less medical aid, less maternity care, less consciousness to prevent blindness than from 1931-45. How is it then that the blindness has increased to hundred per cent during a period when there was more education and more medical aid? It indicates that there is something wrong in the system of education and in the methods of medical aid. Unless we are able to discover the mistakes and rectify them, we shall not be able to prevent blindness.

Under the present system of education and the modern ways of civilization there is great strain on the minds of children, adults and old people. The eyes and mind are closely connected and when the mind is under strain the eyes also share that strain. The habit of straining for distance or for near vision leads to the development of loss of sight with or without errors of refraction. The doctor finds himself incapable to relieve the strain or to improve the sight if there is no error of refraction. If there is error of refraction, glasses are easily prescribed and the patient is usually satisfied. It is after some time that the patient finds that his sight has gone worse and that he needs the change of glasses. In this way the sight goes on deteriorating, the health of the eye suffers. Most of the patients who become blind due to glaucoma, progressive myopia, detachment of retina, retinitis, optic neuritis, optic atrophy, choroiditis, haemorrhage and cataract suffer from some form of error of refraction or mental strain in the early stages. If the strain is not relieved by glasses then they suffer from some such diseases. These diseases are found usually in better classes of people who can afford for the treatment quite nicely. Many of them begin to attend the hospitals as soon as they detect the signs of strain and defective vision. In spite of the best help of the specialist and continuous visits of the patient the sight goes on deteriorating in most of the cases. The methods which are at the disposal of the doctors prove inefficient and in the end the patients are left to their fate.

The hospital is a sort of doctor's laboratory. If in this laboratory we are unable to prevent and cure errors of refraction and to relieve the strain and floating specks which are present in almost all cases who are losing their sight then how can we hope to prevent blindness? If we can prevent and cure errors of refraction and the habit of straining, blindness will be much reduced in a few years of time.

To prevent errors of refraction and strain on the eyes the authorities suggest detailed rules as to the size of types to be used in school books, the length of the lines, their distance apart, the distance at which the books should be held, the amount and the arrangement of the light, the construction of the desks, etc. The Germans, with characteristic thoroughness, actually used all these methods. The results of these preventive measures were disappointing. Risley has observed in his discussion on "System of Diseases of the Eye", "the injurious results of the educational process were not notably arrested". Dr. Sidler Hugenin of Zurich expresses his opinion that glasses and all methods now at our command are "of but little avail", in preventing either the progress of the errors of refraction or the development of the very serious complications with which it is often associated.

Venereal diseases are supposed to be the cause of iritis, retinitis, optic neuritis, optic atrophy, chorioiditis, hence antisyphilitic treatment or anti-toxin treatment is adopted but really speaking the results are very poor, in spite of heavy expenses incurred in the blood examination and injections. The failure lies in not determining the cause of such eye diseases. The following facts are worth considering:—

1. Many people suffer from syphilis or some other infection but only a very few out of them suffer also from above mentioned eye diseases, and those who suffer from them are usually not benefited by antisyphilitic treatment or anti-toxin treatment or by extraction of teeth.
2. Many cases of such diseases do not give any indication, by tests or otherwise, of syphilis or toxin or bad teeth.
3. Some cases of such diseases whether they suffer from any infection or not recover partially or completely by rest without any specific treatment.

How can these facts be reconciled with each other if syphilis or some other infection is the main cause of such diseases?

What I think is this, that in cases suffering from retinal and choroidal diseases eye strain or mental strain with or without errors of refraction lies at the bottom. If the strain already exists, syphilis or other infection may exaggerate the strain and consequently cause more damage, but they themselves can hardly cause inflammation of iris or retina or choroid when there is proper relaxation of the mind and the eyes. It is why patients suffering from syphilis or some other infection may remain free from eye diseases, and antisyphilitic or anti-toxic treatment in positive cases may do no good. Cases who recover themselves without any specific treatment indicate that somehow the strain was relieved from the eyes and mind. Treatment of strain, side by side with other treatments of

any toxin in the system will prove really beneficial; but drastic steps should be avoided as far as possible.

How the strain affects the eye sight or causes organic diseases?

The eye is one of the sensory organs and functions without any effort on the part of the subject. The normal eye has the quality of seeing best the point on which it fixes itself. For example, there is a letter C on the Snellen test card. When the eye looks at the bottom part of C, the bottom appears more distinct than the top, and when the eye looks at the top, the top appears more distinct than the bottom. This quality of the eye is called central fixation, and in the normal eye it is so acute that even on a small letter it can be experienced. This is because the retina of the eye has a tiny point of maximum vision, called 'Macula lutea'. When the eye makes an effort to see, the normal function is disturbed and the sensitiveness of macula lutea is suppressed, and there is a temporary loss of central fixation. When the tendency to strain becomes habitual there is continuous loss of central fixation, and this loss of central fixation leads to all sorts of eye troubles, functional as well as organic. If somehow central fixation can be improved, vision will automatically begin to improve and this means prevention of blindness.

How to improve central fixation in order to prevent and cure blindness?

Dr. Bates of America has discovered various relaxation exercises to improve central fixation, and in my experience these exercises along with sun treatment given to the eye prove very efficacious. In many so called incurable cases we can improve the eye sight in quite a short time. Many cases who were either on the road towards blindness or were actually blind got considerable improvement in their eye sight in my Eye Institute, Delhi. Patients from all parts of India attend this Institute. The system of the treatment that this Institute follows is a synthesis of Allopathy, Ayurved, and Dr. Bates relaxation methods.

To prevent deterioration of sight in the schools and colleges Snellen eye chart scheme may be introduced. A Snellen eye chart may be hung on the wall of each class room and the students should read it daily from their seats silently, first with both the eyes and then with each eye separately, covering the other eye with the palm of the hand avoiding any pressure on the eyeball. The students may note that the letter regarded appears more distinct. Five minutes practice at the beginning of the school is quite sufficient.

Students may be educated to blink gently, the right ways of reading, writing, sewing, seeing cinema. They may be taught how to relax by palming. All this work can be done by the teacher. This scheme will considerably decrease the number of defective eye sight students in a year's time. Those who will have good eye sight will be able to maintain it by the simple exercises.

A certain amount of supervision is absolutely necessary to make the scheme a success. At least once a year some one who understands the method should visit each class room for the purpose of answer-

ing questions and encouraging the teachers to continue the use of the method, and making some kind of report to the proper authorities.

Students suffering from trachoma and conjunctivitis can be very successfully treated by the teacher. Such patients should first wash the eyes with water and then face the sun with the eyes closed for five or ten minutes. If convenient 1% mercurochrome lotion or 1% menthol solution may be dropped or applied.

How to start practical work in Travancore?

One or two eye specialists or doctors may be sent to my Eye Institute, Delhi, for three months training. One of the specialists may take up the work of giving education to the student and public by way of delivering lectures, slides, films, booklets. The other specialist may start a separate clinic attached to the central eye hospital. A sale department to sell the medicines, books and charts may be attached to the clinic if the idea is to make it self supporting. An Eye Sight Saving Society may be formed to control the work.

If the authorities have any doubts as to its utility, let the trained doctors work under my supervision and wait for convincing results in a year's time.

Some Observations on Phylogenetic Evolution of Humoral Control of Tissue Kinetics

BY

D. P. SADHU, M. Sc.,

Physiology Department, Presidency College,
Calcutta.

The Study of the evolution of humoral control of tissue kinetics may throw a flood of light on the relation of K & Ca ions to A.C. (Acetylcholine) and Adrenaline.

In the most primitive living organisms such as protozoa and in the early stages of metazoa in which the nervous system is not yet developed, tissue kinetics are controlled by movements of ions as K & Ca. In the higher stage of evolution when kinetics become more and more complex, movements of ions are no longer sufficient to control or regulate them according to needs. Thus, if for excitation, Ca ions are to move inside (according to Heilbrunn excitation occurs when Ca ions flow from cortex to the interior of a cell) or for inhibition they are to move outside or from the interior to the cortex, such movements can by themselves never be quick unless a directive or motive force be simultaneously acting.

At this stage it may be suggested that a system of enzymes has been created for accelerating these ionic movements. Whether this stage actually exists in nature or not has not yet been probably discovered but recently an enzyme for accelerating the movement of Na ion in and out of R.B.C. has been suggested (Davson & Reiner 1942).

At the next i.e. the 3rd stage of evolution, nervous system is evolved and an elaborate system of cholinesterases developed in connection with nerve

activities (Nachmansohn & Bullock, 1942). At this stage the automaticity of heart and other organs is controlled by nerves, acetyl-choline now acts not as an inhibitor but as an accelerator to heart as has been demonstrated by Welsh (1942) in hearts of lobsters and green crab, where the pacemaker of heart is a ganglion.

In the fourth stage of evolution, when the automaticity of involuntary tissues becomes a function of specialised muscle cells, adrenaline or sympathin is evolved, which acts antagonistically to A.C. This state persists still in plain muscle of intestine where A.C. (pro-K system) still has an excitatory function and Adrenaline (pro-Ca system) has an inhibitory function.

In the final stage, when the heart requires to be much more specialised and has to function much more quickly than other organs, the heart cells become permeable so as to provide for a more dynamical rhythmic flow in and out of ions, A.C. becomes inhibitory and Adrenaline excitatory in function.

The difference of actions of A.C. and adrenaline on plain and cardiac muscles is according to these observations due to the greater permeability of cardiac muscle cells.

References.

- Davson, H & Reiner, J. (1942): *J. Cell & Comp. Physiol.* 20, 325.
 Heilbrun (1937): *General Physiology*.
 Nachmansohn & Bullock (1942): *J. Cell & Comp. Physiol.* 20, 239.
 Welsh (1942): *J. Cell & Comp. Physiol.* 19, 271.

Rôle of Mepacrine in the Suppressive Treatment of Malaria

BY

DR. M. Z. CHAUDHURI, L.M.F.,

Residential Sub-Assistant Surgeon, B. & A. Railway, Lumding.

The relationship between Lumding (Assam) and Malaria is as close as that of L. with M. Geographically situated in the heart of 'Nambar Forest of Mahabharata' and in the Mikir Hills of Nowgong District (Assam), Lumding, surrounded by Hills, is an important junction station of the Bengal Assam Railway, connecting the Upper Assam with the lower and the both with Bengal. One zigzag streamlet 'Horulangfar river' encircles the eastern and northern limits of the Railway colony and that is the main breeding place of *A. minimus*.

The maximum temperature varies from 60°F to 105°F, minimum temperature from 42°F to 84°F. Relative Humidity from 48 to 100 and the rainfall from 0 to ½" throughout the year; only on rare occasions the rainfall rises above that level upto 3"-4".

The place is at 532.62 ft (one bungalow) and 457.2 ft. (station yard) above the sea level corroborating the fact that mountainous country of modern elevation may be highly malarious where the important carriers are of species which breed in streams.

The number of staff is roundly 4000 and 6953 was the number of malaria cases in 1944 i.e. roughly each staff getting 1.5 attacks in a year. Similar proportion of malarial incidence has been noticed in 1942 and 1943 as well.

From 1-1-45 to 31-10-45 we have treated 2338 cases (males, females and children) with mepacrine and Quinacrine and found these drugs as potent as if not more than quinine and are ones that can be used safely and even with some advantages over quinine, thus corroborating the conclusions of the American Board for the co-ordination of malarial studies which have been confirmed by the sub-committee of the British Medical Research Council.

Methods of medicinal prophylaxis in malaria have received particular attention in the last few years. The League of Nations Malaria commission (1938) recommended a daily dose of 6 grains of quinine hydrochloride to be taken daily during the whole of malaria season and for sometimes afterwards to prevent symptoms of the disease.

The recent report of the commission indicates the general principles involved and the dosage and method of administration desirable. The report also enables a comparison to be made between the efficacy of the new synthetic drugs and quinine as shown by a large series of experiments carried out in various countries at the League's suggestions.

In medicinal prophylaxis a distinction must be drawn between the drugs which can be used to prevent infection by destroying the sporozoites before they reach the trophozoite stage i.e., so called 'casual' or causative prophylaxis and those which act merely by controlling the appearance of active manifestations of infection in the form of clinical attack of the disease.

Although theoretically the former is an important objective, it is, with the drugs available, scarcely practicable, since the dosage necessary (e.g., with plasmoquine) is too near the possible toxic dose. Medicinal prophylaxis is therefore at present almost entirely a matter of controlling, rather than preventing infection and the usefulness of different drugs largely depends on their relative efficacy in this respect in moderate dosage and the degree of safety which attaches to their use in different circumstances.

The method of using Atebrin in prophylaxis have been the subject of much investigation. Zeimann gave for prophylactic purpose 0.05 grm. of Atebrin daily or 0.2 grm. twice weekly. W. N. Bishpam (1941) has studied the reports of 49681 cases in which Atebrin has been administered and himself personally administered the drug on 7915 cases. (Atebrin is now manufactured in Great Britain under the name of Mepacrine which so far as is known is identical not only in structure but in biological and therapeutic effect).

According to the malaria commission report, the daily dose of quinine hydrochloride is 0.5 grm. (7½ grm.) for prophylactic purpose. As regards Atebrin they are of opinion that a daily dose of 0.3 gr. has a slightly more rapid action than has quinine in one grain dose and the absence of clinical symptoms is somewhat more prolonged. The effect with *P. Falciparum* varies with the strains of parasites. The

treatment of relapses is more effective than with quinine. The spleen rate in treated indigenous communities decreases more slowly but the effect is somewhat more lasting. It produces yellow discolouration of skin.

As 0.3 grains of Atebrin corresponds in action with one grain of quinine and as 7½ grains of quinine is advocated for daily prophylactic dose, the corresponding daily dose of atebrin would be 2.25 grains. These doses were regulated, no doubt, after observations of the effect of the drug in the individuals of Western countries but the quantity which is required to produce a certain physiological effect in strong, healthy and stout persons of more than average size and weight under different climatic conditions is certainly not necessary to produce the same action on a thin and weak individual like the average people of this country. Hence if 5 grains of quinine, instead of 7½ grains, in daily dose is recommended for prophylactic purpose, the corresponding dose of Atebrin or Mepacrine or Quinacrine would be 1.5 grains or 0.1 grm. or one tablet. This is the daily dose we administered to our staff.

We started the suppressive treatment from 15-4-45 and roundly 4000 of our staff were getting the treatment during which every and each individual was advised and reminded often and on about the bowels to be kept freely opened and taking of liquid freely. The toxicity of the drug was not noticed.

In a press communiqué it is stated that in the Forces of the Fourteenth Army the number of malaria cases in March '44 was 125 per 1,000 men which was reduced to 25 in March 1945 after Mepacrine treatment was introduced and after 1½ months use of the drug the weekly malaria cases came down from 300 to 50.

In our Railwaymen, although there are certain disadvantages in comparison to the Forces in camps under strict military discipline, still the result was found not less fruitful.

Figures of 1935 to 1944 showed no changes although effective treatment has always been given. One of the reasons for this was considered to be the greater relapse rate among the staff who preferred to carry on their duties with medicines without 'reporting sick' for pecuniary conditions and thus took treatment only up to doses required to control the fever. So from 1-1-45 we started to keep them under sick certificate to give the full course of treatment. The following figures will show the marked fall in malaria figures this year (1945) in comparison to the previous year (1944), the population remaining the same.

Numerator is the figure of 1944 and the denominator is that of 1945.

	Staff under sick certificate.	Staff without sick certificate.	Days lost.
Jan.	258 208	161 72	1413 1367
Feb.	275 149	236 18	2574 897
Mar.	286 143	219 33	2303 990
Apr.	225 171	229 14	2088 1064
May	354 151	221 18	2475 1053

	Staff under sick certificate.	Staff without sick certificate.	Days lost.
June.	615 130	264 70	4773 839
July.	451 103	474 17	3643 699
Aug.	380 43	287 1	3289 404
Sept.	289 25	331 Nil	2735 253
Oct.	277 38	161 Nil	2262 249

Thus it is seen that where each staff would get 1.5 attacks in a year in 1944, only one out of every, three got malarial attack during these 10 months the ratio coming to 4.5:1 and 2390 have been saved from injudicious use of the drugs.

The most striking feature of the period from December '43 to October '45 is that there has been not a single case of Blackwater fever whereas there had been 10-12 cases annually during the previous years. The period from December '43 to December '44 may be called "the most quinine restricted period" and from January to October '45 "Mepacrine period" corroborating the theory that indiscriminate use of Quinine is one of the causes of this disease.

A study of the booklet "Synthetic Anti-malarial Remedies" published by Haverro Trading Co., Ltd., will show the result of observations and experiments on Atebrin by 72 eminent authors of different parts of the globe. As Mepacrine is, so far as is known, identical with Atebrin not only in structure but in biological and therapeutic effect, the name Mepacrine may be substituted in place of Atebrin while going through the book.

Lastly it would not be out of place to mention that in malarious zone looseness of diagnosis in labelling the fever cases as malaria is liable to occur and on the other hand a typical cases also should not be lost sight of.

Malaria by present day usage is not defined on a clinical but on parasitological basis, i.e., the term means infection by one of the malaria parasites. Diagnosis of malaria is almost entirely a question of finding malaria parasite in the blood. In this connection the question often arises whether anti-malarial drug should be given on the assumption that, although parasites have not been found, the condition is probably malaria. Only all the circumstances of the case can decide in any particular instance. Wherever reasonable doubt exists, it is probably better to withhold anti-malarial drug until a definite diagnosis can be made. Fortunately as a rule, if the technique of blood examination is satisfactory parasites will eventually be found. When malaria is suspected and parasites not found, so called provocative treatment by administration of adrenalin or other means is sometimes advocated. Still if parasites are not found pigmented leucocytes should be looked for along the edges of the film and any indication of characteristic changes in the blood picture, e.g., monocyte increase and heterogeneity of R.B.C. noted in addition to the external manifestation of the disease, viz., history of exposure, well defined periodicity of fever, rigor, enlargement of spleen, herpes, nausea, bilious vomiting, headache, pain in the limbs and back, etc.

Test for detection of Mepacrine was carried out in a few suspicious cases to find out if they were really taking the drug.

Method:—Watt's and Ghosh's method modified by Field and Niven is as follows:—10 c.c. of urine in a test tube are made alkaline with a few drops of sodium hydroxide solution. 0.25 c.c. of amyl alcohol is then added and the tube well shaken. If Atebrin is present it passes into the amyl alcohol, which shows a marked colouration when viewed against a dark background.

Atebrin may also be detected by making the urine alkaline and shaking with ether. On evaporation of the ether and solution of the deposit in strong sulphuric acid a yellow colour with marked fluorescence is observed if Atebrin is present.

References

- (1) British Encyclopedia of Medical Practice, 1938.
- (2) Cumulative supplement of B.E.M.P.—1944 and 1945.
- (3) Modern Treatment of malaria and the return to the short Quinine treatment of the League of Nations Malaria Commission—1938.
- (4) Synthetic Anti-malarial Remedies published by Haverro Trading Co., Ltd.
- (5) Calcutta Medical Journal—April 1945.
- (6) A treatise on Malaria Medica and therapeutics by R. Ghosh (1930).
- (7) The Daily Azad.
- (8) Indian Medical Journal Vol. 39, No. 11 November 1945. "Role of Mepacrine and Quinacrine in the treatment of Malaria" Dr. M. Z. Chowdhury.

Paludrine—a new anti-malarial drug

BY
ELIZABETH NICHOLAS.

From time to time, scientists develop a line of research which proves profitable beyond the wildest expectations; research which ultimately gives to the world a weapon of really lasting value in the war against disease.

News of such a victory was made known recently, when it was revealed that a totally new drug had been discovered in Britain which might revolutionise the treatment of malaria. Not only is it more effective than quinine, or the substitute Mepacrine, but it is also cheaper and easier to manufacture.

This new drug, which will be known as Paludrine, was discovered by a group of British research workers, employed by the Imperial Chemical Industries. It is the result of an entirely new approach to the problem, for Paludrine does not belong to any family of drugs hitherto explored for anti-malarial activity. But, for all that, the discovery was not an accident. One of the scientists engaged in the experiments had a very definite "hunch" about it, which, fortunately for mankind, proved well-founded.

Three million deaths a year

We know only too well the seriousness of malaria as a disease. But perhaps we will be surprised to learn that it has caused more deaths, and

more suffering, than any other disease known to medical science. It affects no fewer than three hundred million of the people of the world, and each year it causes the death of three million men, women and children. It has, in fact, caused more deaths than the most terrible war; it has destroyed whole nations and defeated great enterprises.

Clearly, any discovery then which might reduce this terrible toll of destruction was of the utmost importance. This was foremost in the minds of the discoverers of Paludrine, when in 1942 they began their search for a new drug which would deal with malaria more effectively than quinine. They were not the first, of course, to seek for such a compound. During the past thirty-five years scientists in Britain, in the U.S.A., in Germany and other countries had synthesised thousands of new compounds with this object in view.

Yet from all this toil, only two compounds emerged which were of any value. These were Pamaquin and Mepacrine. And even these drugs failed in three basic essentials; first, that they should act as a preventive against malaria, second, that they should cure a patient actually suffering from malaria and, third, that they should prevent relapse, an all too common feature of the disease.

Better than Mepacrine

However, despite its shortcomings, Mepacrine proved valuable in the treatment of malaria and was of vital importance to the Allies when the Japanese over-ran the East Indies. For it was from these islands that the world got virtually all its supplies of quinine.

The synthetic compound of Mepacrine then came into its own, and well-qualified experts now believe it is quite as valuable as quinine in treating malaria and even, in some respects, superior to it.

But valuable as it is, Mepacrine fails in two duties which, it is believed, Paludrine will be able to fulfil. First, Mepacrine is not a complete prophylactic, taken as a preventive it cannot ensure immunity to a man exposed to malaria. Frequently, it fails to kill all the malarial parasites injected by mosquitoes into the blood stream. Mepacrine may prevent these parasites from breeding and increasing, but for all that, they live on. In due course, the patient may stop taking Mepacrine—then he probably goes down with full blown malaria.

There is a second duty in which Mepacrine fails—it cannot prevent relapses in patients afflicted with a very common type of malaria, known medically as benign tertian. The only thing to be said for this type of malaria is that it rarely kills the patient; apart from this, it may recur at intervals for the rest of his life, causing infinite suffering and inconvenience.

Protective properties

Now, it is already proved that Paludrine is not only very effective in dealing with active malaria, but it is also most remarkable in its protective properties against the bite of the mosquito. After further research to find the exact dosage required, it is believed Paludrine will afford complete protection to all who take it as a prophylactic. More prolonged trials are, however, necessary before its value in preventing

relapse can be clearly established. But here, too, there is reason for optimism.

The value of Paludrine in the treatment of active malaria has already been proved, for it has been administered to many patients of the Liverpool School of Tropical Medicine, with very satisfactory results. More than one hundred cases of malaria were successfully treated, and then, a few months ago, supplies of the drug were flown to Australia for far more extensive clinical trials. These confirmed that Paludrine was not only more effective than Mepacrine and Quinine, but also that it produced fewer disagreeable reactions in the patient. Research still continues, but two things are already certain: Paludrine is both a triumph for science and a powerful weapon in the armoury of those who fight malaria.

CLINICAL NOTES

Abnormal labour due to twin pregnancy: DR. K. N. NANDOL, Medical Officer, Charitable Dispensary, Village and P. O. Mohammadpur, Dt. Jessore, Bengal, writes;

I was called on 3rd November 45, to treat a woman who delivered a living female child but whose placenta was not yet delivered.

The patient, a mohammadan woman, 30 years, multipara, gave birth to a living female child at about 12 noon on 3-11-45. But till 3 p.m. no placenta came out. Several dais tried their utmost to deliver it, but in vain.

When I saw the patient, she was getting fits and her labour pain was not strong. On examination I found it was a case of twin pregnancy; one child having been delivered, the other remained undelivered and therefore the placenta also. The left arm was slightly prolapsed.

Her bladder was emptied, and after giving her an injection of morphine and atropine, I gave her a light chloroform anaesthesia to enable complete examination to be made.

The head was found completely extended, and firmly fixed in the sacral bay with the occiput lying on the sacrum. There was no contracted pelvis or uterine obliquity. The child was dead.

Delivery of the child was effected by a careful manipulation of the arms and the head of the child. A double placenta was delivered naturally within 20 minutes of the delivery of the second child. Then intra-uterine douche was given. The patient was kept on quinine and ergot and sulphanomide treatment for two weeks.

Toxic reaction of N. A. B.: DR. P. C. DUTT, Medical Officer, Tinkong Tea Estate, Assam, writes:

The patient, a girl aged 14 years, was under treatment with N. A. B. for syphilis. She had chronic ulcers on the right side of the face and nose. The nasal bridge was soft and sunken. Catarrhal rhinitis and perforation of the palate were present. Some of the joints also were affected. It was obviously a case of advanced syphilis.

She was treated with N. A. B. elsewhere and had already received four injections before she came under my observation.

I gave her two injections of N. A. B. (0.3 gm.) intravenously, once a week without any untoward symptoms of reaction. Each time before the injection, heart, lungs and urine were examined and they were normal.

After the third injection, however, she manifested toxic reaction: flushing of the face, congestion of the eyes, epigastric distress, restlessness, sighing respiration, and increased pulse rate. Adrenalin injection brought down these reactions within an hour. But on the 9th day she developed generalised erythema with intense itching, which, within the next two days, turned into severe exfoliative dermatitis. She however recovered under treatment with parenteral liver therapy, alkalies and glucose by mouth and calamine lotion locally.

(Such reactions are not uncommon with arsenical injections. The writer does not seem to have followed the standard treatment of syphilis, viz., arsenicals alternated with bismuth. He could have chosen Mapharside if N. A. B. was unsuitable to that particular patient, and thus completed the treatment. Incomplete treatment is worse than no treatment at all in syphilis Ed.)

Rat-bite fever: REVESHANKER P. KAMDAR, Sub-Asst. Surgeon, Gondal, Kathiawar, writes:

S., aged 23, got fever with swellings on the lower part of right elbow, left scapular region, right buttock and crest of right ileum.

Previous history:—She had a rat-bite nearly ten months ago on the right index finger which was not noticed. During the last ten months she had no complaint.

Present condition:—The present illness started all of a sudden on the 1st of June 1945 with a swelling near the right elbow. During the night she got fever and complained of pain all over the body. She got swelling on the lower part of the right elbow, left scapular region, right buttock and crest of right ileum.

Physical examination:—Temperature 103° to 105°F.; pulse 104 to 110 with slight change during day and night. There were nodular swellings on the lower part of right elbow, left scapular region, right buttock and crest of right ileum. Nothing particular with the heart condition. During the whole illness, pulse was 104 to 110 though the temperature was 105°F. Lungs were normal. Movement was very painful and she could not move without help.

Clinical test:—Blood examination: Total W.B.C. 12,500, Poly Morph. Nuclear 80 %. R.B.C. 4,20,000. Kahn's Test—Negative. No spirillum minus organisms of rat-bite fever was found in blood films also. Urine normal except slight phosphate.

The swelling gradually increased in size. In the beginning they were hard, painful and as big as a small lemon; but in a fortnight they increased in size to that of an orange. Even though Cibazol and Penicillin were given, scapular swelling increased in size and suppurred which was opened and pus was let out. The wound was dressed with Penicillin solution and Cibazol powder and it healed up in a

week. Even after opening the abscess, temp. did not come down and remained as high as 103°F.; 104°F. She began to lose strength, pulse became very weak and soft, and she became anaemic. Right shoulder joint and left axilla were swollen after four weeks of illness.

Treatment.—Just from the beginning of the illness, Cibazol (six tablets a day) was given with alkaline mixture. Nearly sixty tablets were given which did no good. After that, total amount of Penicillin 2,30,000 units was injected intramuscularly during three days. It also gave no improvement. Then colossal iodine intramuscularly and orally was given. For heart, Coramine was given. For swelling, glycerine-belladonna, ichthyol, iodox, Antiphlogestine were applied.

I consulted many doctors but they did not agree that it was rat-bite fever as rat-bite was ten months ago. They diagnosed pyaemic abscess or subacute endocarditis due to septic focus somewhere.

Dr. G. A. DOSHI, M.B.B.S., having found nodular swelling near the right elbow, was in favour of rat-bite fever.

As the case was getting very weak and serious, N. A. B. was injected after five weeks of illness. By the end of the week, the temperature dropped to 100°F and second injection was given and on the third day, temperature came to normal and all the nodular swelling gradually subsided.

Conclusion:—The case remained undiagnosed. Large quantity of Cibazol and Penicillin did no good. Blood examination gave no light. At last the case becoming very serious, and having tried all the drugs, N. A. B. was injected. The importance of giving the case in the journal is that rat-bite fever occurred ten months after rat-bite and N. A. B. gave her a new life.

SELECTIONS

Practical Anaesthesia: BY MUKTESHWAR PRASAD, M. B. B. S., Anaesthetist, Medical College Hospital, Patna.

(From the Patna Journal of Medicine, April 1945)

General Consideration

Since the days of mediaeval surgery, when alcoholic intoxication was the only known method of rendering a patient insensible to pain, medical science has laboured ceaselessly to discover drugs and fresh methods for the alleviation of human suffering on the operating table.

The main purpose of anaesthesia is the prevention of pain from the Surgeon's knife. Those who administer anaesthetics must always keep this fact uppermost in their minds.

In the ordinary operation there are three persons, all of whom play parts of great importance, namely, the patient, the surgeon and the anaesthetist. No one of these can be said to play a smaller or greater part than another, and each of them is, for the time, completely dependant on the other two. When it is

realized that a patient submitting himself to the administration of an anaesthetic is voluntarily placing his life in the hands of another, often a stranger, the grave responsibility developing upon the administrator will be apprehended. But when it is realized that a conscientious anaesthetist is concerned, not only with the life of his patient during operation, but with his comfort, health and safety both before and after anaesthesia, the magnitude of the anaesthetist's responsibility will be better understood. It is desirable that the surgeon and anaesthetist should examine the patient on the day previous to operation, and arrive at an agreement as to the most suitable anaesthetic agent and technique to be employed. Where, as sometimes unavoidably occurs, patient and the anaesthetist meet for the first time immediately before the operation, the 'sounding' of the heart should never be omitted. Patients often dread the anaesthetic more than the operation, and a comforting assurance that the heart is strong may avert a disturbed induction. The giving of an anaesthetic is grave matter and must never be regarded lightly or as a pretext for display.

The induction stage is always a period demanding the closest attention and the highest degree of care and skill on the part of the anaesthetist. The importance of maintaining silence during the period of induction should be impressed upon all who are present. The last sense to be abolished is that of hearing, which tends to persist after voluntary movement has been lost. As a result, a sudden noise may arouse a practically unconscious patient to a burst of struggling and breath-holding which completely spoils an otherwise smooth induction. It is well to remember that an incautious remark may be perfectly apprehended and remembered by an apparently sleeping patient. As regards the position of the patient, he should be anaesthetized in the position as nearly as possible that is chosen by the surgeon for his work. To alter materially the position of an anaesthetized patient is very difficult and involves the production of a good deal of shock.

During the operation the anaesthetist plays an important role, his duty becoming twofold. Firstly, his care and attention to his patient must never relax for a moment. Almost literally he holds a life in his hands, and those hands must never loosen their hold. In addition he must note the progress of the operation and keep himself informed of the surgeon's needs, either by intelligent anticipation or by question when in doubt. In every operation, which requires very different level of anaesthesia at different stages, it is necessary that surgeon and anaesthetist must be working in close accord. The surgeon who carelessly administers an unexpected painful stimulus to a patient in an anaesthetic sleep should not blame his anaesthetist for the untoward result. Most surgeons are coming to realize that the anaesthetist is not so much a necessary evil as a helpful collaborator and an essential part of the operating team.

Tact and consideration should never be forgotten. When the surgeon is in obvious difficulties and is concentrating his every faculty on the problem before him, it is not only unwise, but grossly unfair, to distract him by a comment on the patient's condition. Though the anaesthetist may not be satisfied with the state affairs, he can only do harm by announcing the

a critical moment. A moment's consideration, patient's delay, may save a very anxious man from a useless pinprick. Care must be taken, from beginning to the end of anaesthesia, that the patient's limbs do not remain unsupported, lest relaxation occur under the combined influence of gravity and relaxed musculature. Lack of support of an arm may result in pressure paralysis of the ulnar nerve, a calamity which it would be difficult to explain to a patient who had presented himself for an abdominal operation.

The anaesthetist should not fail to visit his patient within 24 hours of the operation, to assure himself of his proper recovery. It will be seen, therefore, that the anaesthetist is not merely "a man with a rag and bottle" who appears at the last possible moment before operation and disappears at the first opportunity, after, having in the meantime kept the patient somewhere between vomiting and death during some surgical procedure. Rather he is to be regarded as the patient's guide and guardian during the induction and maintenance of anaesthesia, and during the period of recovery. The art of anaesthesia has made great strides during the last few years and there is always introduction of some new apparatus, and technique which claims to bring the administering of anaesthetic a stage nearer to being fool-proof. But an inexperienced anaesthetist should remember that no piece of mechanism can ever enable him to dispense with the skill of the trained clinician. He should, therefore practise giving the ordinary 'rag and bottle' anaesthetic until he is thoroughly efficient in the simplest of techniques and then accustom himself to some of the more complicated methods and apparatus.

Preoperative Examination.

The preoperative duties of the anaesthetist include—

1. The determination of the degree of surgical risk.
2. The selection of the anaesthetic agent to be employed.
3. The pre-anaesthetic sedation and time of administration.

Examination of the patient prior to operation should be made as a routine whenever it is possible, as useful and important information is thereby obtained. With this information and the nature of the proposed operation known, the degree of surgical risk and the type of anaesthesia to be employed may be determined. The physical and mental condition (fear or apprehension) of the patient plus the nature of the operation will determine the nature and the amount of the pre-anaesthetic medication. Adequate premedication is at all times essential to reduce both the anaesthetic and surgical hazard. During the preoperative examination certain evaluation tests must be applied; these tests help in determining the degree of surgical risk, and also enable the anaesthetist to estimate or anticipate the patient's reactions, both during and after operation.

Some of the common tests for estimating the anaesthetic and surgical prognosis are cited below.

(i) **Moot's Index**—This provides an approximate measure of the cardiac reserve (it is apt to be unreliable

in cases of thyrotoxicosis because of high pulse-pressure.)

$$\text{Moot's Index} = \frac{\text{Pulse-pressure} \times 100}{\text{Diastolic pressure}} = 50$$

Patients showing an index from 25 to 75 have probably adequate cardiac reserve, with 40 to 60 as the optimum figure. Below 25 and above 75 the reserve is grossly inadequate.

(ii) **Barach's Index**—This gives an approximate measure of the circulatory reserve, being a product of cardiac energy and diastolic vascular resistance.

Barach's Index—(Systolic pressure + Diastolic pressure) × Pulse rate = 17.

The first two figures are taken, the product being expressed in millimeter of mercury per minute. Values between 6 and 24 indicate probably satisfactory circulatory energy—with 12 to 18 as the optimum or more nearly normal. Below 6 and 24 indicate a grave deficiency in circulatory energy, and correspondingly poor risk. This test applied soon after the operation will frequently give an accurate clue to the prognosis.

(iii) **Breath holding test of Sebrasez**—This provides an approximate measure of vital capacity and is dependent upon the size and age of the patient, the athletic habits and condition of the lungs. The patient lies absolutely quite for 5 minutes, then takes a moderately deep breath and holds it as long as possible, lips closed and nostrils pinched together. A normal subject should be able to hold his breath for 45 seconds, 30 seconds would indicate good vital capacity progressively decreasing to 12 or 10. Below this, gravely impaired vital capacity is indicated with possible cardiac involvement and such a patient would be classed as a poor or subnormal risk.

(iv) **Vital Capacity**—The actual determination of vital capacity gives a better estimate of the efficiency of the respiratory system than almost any other test, more important than routine examination of the lungs. The anaesthetist is more interested in efficient ventilation than in the pathological changes present. A sudden reduction in vital capacity often points to the onset of some post-operative pulmonary complication and calls for maintenance of adequate ventilation during anaesthesia. The reduction of respiratory function not only interferes with the absorption and elimination of the gases at the time of operation, but also decreases the chance of recovery afterwards.

Premedication.

It has a two fold effect. (i) Physical, (ii) Psychic. Physical effect:—Premedication decreases the body metabolism or lowers the demand of the body tissues for oxygen, and raises the threshold of irritability for both carbon dioxide and oxygen want. The margin of safe anaesthesia is thus increased or widened. The desired level of narcosis is more quickly and easily obtained with the minimum of disturbance or reaction of the muscular, respiratory and circulatory systems. The reduced metabolism results in a slower heart-rate, with less fluctuation of blood-pressure and decrease of muscular activity generally throughout the body. A slower pulse means less cardiac labour, less exhaustion and therefore less depression. Muscular relaxation is more readily obtained. The amplitude of respiration is lessened, resulting in a decreased excursion of the diaphragm, often a factor of importance in

abdominal surgery. Another important effect is the inhibition of mucous formation and the decreased tendency to post-operative nausea and vomiting. Adequate premedication 'protects' the patient from the depressing influences of prolonged or deep anaesthesia and surgical shock.

Psychic effect.—It is to lessen or abolish the patient's fears and apprehensions and safeguard him from the recognized entity known as 'Psychic Shock'. A patient properly prepared comes to the operating room quiet and sleepy. Induction and maintenance of anaesthesia follows with the minimum of effort.

Insufficiently premedicated patients frequently exhibit, under anaesthesia, a respiratory rate that remains persistently rapid, an indication of increased metabolic rate. Our premedicated patients have their respirations too greatly depressed as indicated by the slow rate and shallow depth of breathing.

A wide variety of drugs and their combinations are available for use in preoperative sedation. The dosage employed should be sufficient to produce the desired result, a quite and sleepy patient. The nature and amount of premedication varies accordingly to the condition of the patient and the nature of the proposed operation. Patients already depressed, physically, from acute or chronic disease and shock require premedication chiefly for its psychic effect, as they offer little resistance to the anaesthetic.

Resistance to anaesthesia is determined largely by the existing metabolic rate, which gives a clue to the degree or amount of premedication necessary. Children are more difficult to control under anaesthesia especially so between the ages of 4 and 14 years as during that period their metabolic rate normally reaches its highest point. There is a widespread reluctance for some reason, for administering morphine to children. As a rule, probably because of their high metabolic rate, children tolerate morphine very well, and there is no reason why they should be deprived of its protection.

Post-operative sedation is as essential as preoperative and is too often neglected or inadequately carried out. Especially after all major operations, the patient should be kept comfortable and free from pain for at least 48-72 hours. A patient thus protected will be materially assisted in the convalescence.

The best method of premedication can only be achieved by experience. Every patient is a law unto himself in respect of his reaction towards sedative drugs.

Charting

The preliminary examination and the pre-anaesthetic medication constitute a method of protection to the patient before operation. During the operation further protection is of the utmost importance. This is best accomplished by ascertaining and charting at frequent intervals during the narcosis the patient's systolic and diastolic blood pressure, the pulse and the respiratory rates. Notes on the progress and any post-operative sequelae may be added later. Continuous recording during anaesthesia is the most reliable method of detecting the early onset of shock.

The initial determination and record of the pulse-rate, blood pressure and respiratory rate should be

made immediately before starting the anaesthesia. This provides information of the patient's physical state, and the effect of preanaesthetic drug, and serves also as a standard or normal for comparison with subsequent readings.

Value of the chart.—There is a general misconception that the blood pressure is of fairly constant value except in shock; that shock occurs but rarely, and is more or less unavoidable. Such an attitude is dangerous and should be corrected.

The anaesthetist is the one who is in a position during the operation to make the necessary observations of the patient's reactions. When the Surgeon is attempting to supervise the anaesthesia and operating simultaneously, the patient's general condition usually goes to the background for the time being. Anaesthetist must, therefore, take his place as adviser and consultant during the operation. He must meet this condition in the interests of the patient and all others concerned by being prepared to give definite and reliable information regarding the patient's condition at any time. He also needs this information for his own guidance in the proper protection of the patient. Evaluation of the patient's condition entails a knowledge of physiology, pharmacology and diagnosis—all subjects closely linked with, or part of the art of anaesthesia.

Such observations permit (i) an instantaneous review at any stage of the operation, of the condition, of the patient in respect to surgical or anaesthetic shock (ii) concentration of the attention of the anaesthetist upon his proper task (iii) the probability of improved anaesthetic technique, since an ideal record can only be obtained by the ideal administration of the anaesthetic. They also present data of great value should the patient require subsequent anaesthesia, and provide material for statistical purposes and research.

Interpretation of the chart.—In ideal anaesthesia the blood pressure is well maintained from start to finish. A slight transient rise may occur during the induction phase, with subsequent return to normal. Temporary elevation of blood-pressure also occurs in anoxaemia, and is followed by a progressive fall as the anoxaemia continues.

The onset of circulatory depression, from whatever cause, is shown by a fall in pulse-pressure, with subsequent fall in diastolic pressure. The stages of circulatory depression are thus classified:—

1st degree—15% rise in pulse-rate without change in blood pressure or 10% fall in blood pressure without fall in pulse-rate.

2nd degree—25% rise in pulse-rate plus 10–25% fall in blood pressure.

3rd degree—a pulse-rate of 100 and rising, with a progressively falling blood-pressure reaching 80 m.m. of mercury systolic and a pulse-pressure of 20 m.m. of mercury or less.

A progressive rise in systolic and later in the diastolic blood-pressure during anaesthesia may be indicative of carbon dioxide accumulation. Alternatively it may be asphyxial in character due to lack of oxygen. A slight fall in blood-pressure with a steady pulse-rate, or some increase in pulse-rate with blood-

constant, arouses no particular apprehension, a continuous or progressive increase in pulse accompanied by the progressive fall in blood pressure with resultant decrease in pulse pressure constitutes a danger signal. The higher the pulse-rate, and the lower the pressure from the normal, the more dangerous is the condition and the more urgent is the need for corrective or restorative measures. Time is an element in the prognosis since the longer the 3rd degree depression exists the more complete becomes the exhaustion of the heart muscle. It has been estimated that, of patients allowed to remain for half an hour or longer in progressively developing depression of the 3rd degree without successful treatment, approximately 70% will die within three days.

Ideally, respiration should remain constant in rate and volume after the induction phase is past. Respiration is influenced during narcosis by various factors such as (i) Premedication (ii) Nature of operation (iii) Depth of anaesthesia.

Premedication tends to decrease both rate and amplitude of breathing. Operation on the gall bladder and diaphragm and manipulation of the viscera cause reflex interference with respiration. The extreme Trendelenburg position, and an obstructed air-way both increase the muscular effort or labour of respiration, and tend to inefficient breathing. The rate quickens in light anaesthesia (reflexes); rapid respirations also occur at first in overdose, finally becoming slower and irregular. Periodic breathing, duplicated inspiration and expiration, jerky or laboured respirations are all evidences of oxygen want. An increase in amplitude of respiration shows oxygen want. And an increase in the depth shows an accumulation of excess of carbon dioxide. Each plane of anaesthesia shows characteristic respiratory responses.

Pulse rate, volume and rhythm constitute very valuable signs in anaesthesia. Increase in pulse-rate and volume occurs, particularly with patients who have not been premedicated. Palpation of the pulse is of value in determining the level of anaesthesia. A patient may stop breathing, either because of overdose or light anaesthesia (breath holding). If the pulse is rapid, with poor volume or slow or irregular and scarcely perceptible, deep anaesthesia exists; whereas if the pulse is full and strong, the patient is in light anaesthesia. When an irregular pulse becomes regular during surgical anaesthesia, the irregularity usually recurs when the patient is restored to light anaesthesia. The strength of the pulse is best determined by the blood pressure readings. Pulse rate and volume are influenced, during operation, by numerous factors other than the anaesthesia, among them being loss of blood and surgical manipulations.

Clinical application of the chart:—As the operation progresses, the chart unfolds a picture or record of the patient's reactions to the dual influences of anaesthesia and surgery, shown by the variations of the pulse, blood pressure and respiration. In any major or prolonged operation some degree of circulatory depression almost invariably develops. The charted record portrays its onset, development and degree of severity.

The anaesthetist by a careful survey and interpretations of the findings is enabled to:

1. Inform the surgeon of the patient's condition at any time.
2. Determine the relative degrees of the anaesthetic or surgical shock present at any time.
3. Advise the surgeon to
 - (i) Continue the operation.
 - (ii) Complete the operation as rapidly as possible.
 - (iii) Curtail or hasten the completion of the operation, in the meantime instituting restorative measures such as the administration of intravenous saline or stimulants.

Time factor in operations:—

The operating time is a vital factor that is too frequently overlooked. Efficiency should, of course, never be sacrificed to speed. On the other hand, many surgeons apparently do not realize that the degree of depression varies directly with the operating time and the depth of narcosis.

Overdose of anaesthetic, relative or absolute, oxygen deficiency and excessive duration of operation become cumulative after a certain length of time. Hewer quotes G. Kaye who states "It is now generally held that a patient must not be left for more than 20 minutes with a systolic pressure below 80 m.m. of mercury or a diastolic pressure of less than 60 m.m. of mercury. If this is appreciably exceeded death is extremely probable within 48 hours." (Kaye 1937).

The longer the operation time the greater will be the heat and fluid loss and toxicity from the anaesthetic agent.

Magill (1938) discussing post-operative morbidity states "It has been shown that the nature and duration of the operation have as great a bearing on the incidence of postoperative pulmonary complications as the anaesthetic used. The depth of anaesthesia required in the case of an upper abdominal operation subjects the pulmonary bases to a period of inactivity from which only the robust patient can escape unharmed." To this one might add that the sluggish venous drainage which follows reduced pulmonary activity aggravates the state of sub-oxygenation already present, and so hastens the development of anoxia which, as Chase (1941) has pointed out, is the biggest single hazard to which the surgical patient is exposed. The longer the period of respiratory depression, the greater will be the hazard.

To follow heavy premedication with prolonged deep general anaesthesia or to allow an anoxic state to supervene during spinal or regional analgesia, can only result in such a degree of postoperative, respiratory and circulatory depression that the patient's life is placed in jeopardy.

The only result of time factor that we cannot avoid is the increased tendency to postoperative complication.

REFERENCES

1. Clement, F. W.: Nitrous oxide-oxygen Anaesthesia (1939).
2. Minnit, R. J.: Hand book of Anaesthetics. (Ross), 6th Ed.
3. Hewer, L. Co.: Recent advances in Anaesthesia and Analgesia, 6th Ed.
4. Goldman, V.: Aids to Anaesthesia (1941).
5. Anaesthetic staff of the Alfred Hospital, Melbourne: Practical Anaesthesia.

6. Gillies, J.: Time factor in surgical operations, proceedings of the Royal Society of Medicine vol xxxvi : 458 (July 1943).
7. Hutchinson, J.: On the capacity of the lungs, and on the respiratory functions with a view of establishing a Precise and Easy method of detecting disease by the spirometer, Med. chir. Tr. London, 29, 139, 1846.
8. Hewlett, A. W., and Jackson, H. R.: The vital capacity in a group of college students, Arch. Int.

The Treatment of Asthma By G. SANDERSON, M. D., M. R. C. P. Stipendiary Physician, Royal Liverpool United Hospital.

(From Post-graduate Medical Journal Nov. 1945.)

One tends to think that the world might be divided into those who have asthma, and those who do not; but the truth may well be that every one has an asthma threshold, a certain greater or lesser inborn susceptibility to the condition—much in the same way that every one might be said to have a sea-sickness threshold. The individual in whom this constitutional tendency is high is the patient with clinical asthma; when this tendency is low, as it is in the majority, it is unlikely that the condition will ever occur, although such powerful irritants as phosgene suggest that nearly all are potential asthmatics. This attitude of mind has an important therapeutic implication—namely that we should regard the asthmatic, and teach him to regard himself, not as an abnormal person, but as an essentially normal person with a functional disability, within the limits of which he must learn to live his life.

The first diagnostic problem in asthma is to assess the level of this constitutional tendency. Its exact mode of production is unknown, but much of it is probably genetic, for hereditary factors are of great importance. This natural tendency is assessed firstly by enquiring for a family history of asthma and allied conditions; also by noting the age of onset and the case with which attacks are provoked. The presence of eosinophilia, and the general tissue sensitivity as shown by skin tests, are also of some help in this connection.

It is interesting to note that this constitutional tendency waxes and wanes from time to time, sometimes to a remarkable degree. Usually, although by no means always, it tends to wane if actual attacks can be prevented. It is not unknown for asthma to return after many years of complete freedom, but in general, if the attacks can be prevented for a year or two—and this is especially true of children—lifelong freedom may follow, and the individual may then be able to expose himself with impunity to influences which were previously asthmogenic.

The asthmatic therefore is endowed with a certain fluctuating tendency to bronchial spasm, and thereafter—and it is in this connection that a wide concept of aetiology is important—no event in his life or his environment is without its influence, for good or for bad or for both, on the occurrence or otherwise of asthma attacks. And asthma is successfully treated—or managed is perhaps a better word—when the patient's life and environment are so disposed that attacks do not occur.

There are certain predisposing factors of asthma which are of frequent occurrence and demand special review in every case. Firstly there is the nasal factor. The general rule here is one which holds good in many comparable problems in medicine—careful examination is essential, but if abnormality is present it should be treated mainly on its own merits. The treatment of nasal factors provides an interesting sidelight on evaluating the results of therapy. If one cauterises the nose of an asthmatic and his attacks cease, it is perhaps a pardonable conceit to think that one has cured his asthma. But what in fact one has done is simply remove one non-specific cause so that attacks no longer occur; the asthma tendency remains, and indeed the word cure has no place in discussing the results of treatment. More dangerous, and equally common, is to conclude that the nasal condition was the cause of the asthma, using the word cause in a specific sense. And it is very dangerous indeed to conclude that not only this case of asthma, but all cases of asthma, are caused in the same way; and to embark on wholesale measures of treatment. This is to undo many times the good done in a particular case. This quite illogical and unjustified process of reasoning is widespread in the diagnosis and treatment of asthma—and indeed in diagnosis and treatment of a host of medical conditions. One recalls wholesale dental extractions for peptic ulcer, colonic lavage for rheumatism, and the like.

Cauterisation of the normal nose in cases of asthma is admittedly sometimes undertaken with apparent benefit. It is most successful in young patients whose asthma attack is heralded by bouts of sneezing and running from the nose—a condition resembling hay-fever but occurring without exposure to pollens.

The second important precipitating factor in asthma is the broncho-pulmonary factor. Any lung disease will obviously tend to aggravate asthma, and of particular importance in this connection are acute respiratory tract infections. It is very common, especially in children, to hear that a cold is the usual beginning of an attack, and in addition that the child is particularly susceptible to colds.

A group of asthmatics which is large and in some way separate from the others is the adult bronchitic group. These are patients with a longstanding history of chronic bronchitis, worse as a rule in the winter months, who eventually complain also of wheezing. Hereditary and hypersensitivity factors are insignificant, and the asthma appears to be part and parcel of the chronic bronchitis. The asthma symptoms themselves differ from the ordinary type—not for them the acute nocturnal attack, but weeks or months of wheezing and tightness of the chest. In these patients also a cold is often the beginning of the asthma period.

Thirdly is the question of hypersensitivity to proteins, and less commonly to non-protein substances especially drugs. It is important to stress that there are many asthmatics who do not display any hypersensitivity factor, and conversely hypersensitivity does not *per se* cause asthma; it gives rise to asthma only in individuals with an asthmatic tendency, and in the absence of this it will show itself in some other

way—for example urticaria, hay-fever, or gastro-intestinal disturbances—or not at all.

The recognition of hypersensitivity is preeminently a matter of careful cross-examination and of trial and error. Even better with the intelligent patient is to explain the problem to him, and let him undertake the detective work for himself.

The investigation of hypersensitivity by means of skin-tests is disappointing. Patients react to substances to which they can expose themselves naturally with impunity, or with which they never come in contact; conversely they fail to react to their recognised asthmogenic agents. The condition in which skin-tests give the most consistent results is hay-fever; in this condition a positive reaction to pollens is usually obtained, but this tells one little one did not already know. The most that positive skin-tests indicate in asthma is that hypersensitivity of a kind unspecified is a probable feature of the case.

Fourthly there is the endocrine factor. Menstrual asthma, aggravation or alleviation in pregnancy, onset or cessation at puberty or the menopause—are well recognised occurrences. The striking effect of adrenalin, and to a less extent of pituitrin upon the attacks indicates two other endocrine glands that must be closely associated with asthma.

The fifth important factor is the gastro-intestinal. Gastro-intestinal disturbance, apart from food hypersensitivity, is often of importance in determining asthma attacks. The most common relationship is the heavy meal late in the evening followed by an attack in the early hours of the morning. Functional dyspepsias—especially achlorhydria, visceroptosis, and constipation are common; it is difficult to know how far they are causative, and how far they are part and parcel of the asthma personality.

Sixthly is the important environmental factor in its several aspects. Certain places suit the asthmatic, and certain places do not. In general, high, dry localities with clear unsullied air are beneficial, and low-lying, damp and smoky places are detrimental. But there is no constant rule, and each patient, tends to be a law unto himself. For example, the asthmatic with a marked pollen sensitivity may be at his best in the middle of a city. Once again the patient's history is the best guide. Often he can say which places suit him and which do not; sometimes he will have noted that ever since he came to live in a certain area his asthma has begun or has been aggravated. It is always difficult to dissect the broad geographical factor from more detailed environmental influences from sensitivities, and from psychological aspects. But when it is prominent, it points to one of the most satisfying therapeutic suggestions.

A patient's house and his place of work are environmental influences which must be considered. Dusty occupations are as a rule unsuitable, as are those where the risk of colds and chills is high. For many reasons, not the least of which is his usual high intelligence level, the asthmatic is best-off in one of the so-called black-coated occupations. A dry modern house is better than a damp old one and sometimes removal only to the next street will end attacks. Here, again, it is extremely difficult to decide where the precise difference lies. A few years ago

this principle was carried to extremes and air-conditioned houses were recommended for asthmatics; these, like so many other cures, are no longer with us.

When attacks are dominantly nocturnal, the layout of the bedroom should be reviewed. Simplicity should be the keynote, but not eccentricity. Elimination of feather beds and pillows is always worth while. It is striking how rare are asthma attacks in the plain surroundings of hospitals; here, again, many factors co-operate, but simplicity of environment is probably one.

Lastly, and most important, is the psychological factor. When a condition is described as functional, it means, or ought to mean, simply that is due predominantly to a disturbance of function; usually it implies also that organic disease is either absent or at most incidental. Since the autonomic nervous system plays an important part in the genesis of most such disturbances, they have been labelled neuroses. It is unfortunate in the present context that the word neurosis, and still more the adjective neurotic, have acquired an unsavoury flavour, because it is only if they are used in their correct sense that they can be applied to the condition of asthma, as also, for example, to the condition of sea-sickness. One is compelled so to use them, as there is no convenient alternative.

In common with other neuroses, asthma has important psychological aspects. To begin with there is an asthma personality, although not all asthmatics have this personality, and when it occurs the individual does not necessarily have asthma. It is indeed mainly the neurosis personality, and so far as asthma is concerned is best seen in the asthmatic child. The question belongs really to the constitutional side of the equation, which has a mental as well as a physical component, but for convenience it will be considered here.

The typical asthmatic child is intelligent above the average. In spite of absenteeism from school, he usually manages to keep his place near the top of the class. That sensitivity which affects his bronchial musculature, and so often his nose and skin, seems to extend also to his brain. He may be an only child, and his reactions are not helped by the frequency of a similar make-up in one or both parents. He is restless, excitable, and overanxious, and often a poor mixer. With great constancy he is not allowed to play with other children.

The most important psychological influence in the course of asthma is fear of an attack, or expectation of an attack. It is largely for this reason that the patient should have an effective remedy in his own hands, and the very having of it will prevent attacks, and stop a mild attack becoming severe.

Attacks are often brought on by worry and mental upset. Asthma is the asthmatic's *locus minoris resistentiae*—his spot of least resistance—and anything which disturbs his equilibrium is liable to bring on an attack. During the air raids, asthmatics fared badly; they mostly complained of increased numbers of attacks, and in general found sheltered life intolerable.

These then are some of the factors which operate in asthma, although many others might be added to

the list, such as genito-urinary and cutaneous stimuli, general debility, anaemia, and acidosis. Whatever influences the mental or physical life of the individual will influence his asthma also.

How then shall asthma be treated? Firstly—the attacks themselves. For severe attacks adrenalin by injection is the best remedy, and often the only effective one. Any patient who experiences severe attacks, unless his level of intelligence precludes this, should know how to administer adrenalin to himself. It is wise to warn him to sit down while having the injection, and to give it slowly. He will quickly discover for himself what is an effective dose which can be taken without unpleasant side-effects. Collapsible metal ampoules, with an attached needle and a glass cover can be purchased; they enable an injection to be given without any display—for example, in church or in a public hall. They are also suitable for patients who only require adrenalin very occasionally.

The psychological value of having adrenalin at hand is not to be despised, and is often an insurance against its being needed. The converse of this—the severe attack which occurs when the asthmatic breaks his syringe—is well known.

For less severe attacks there are a multitude of remedies, official and unofficial. The most generally effective is ephedrine, either in tablet form or as a mixture. Tablet drugs have great advantages in accuracy of dosage, palatability, and portability; they have disadvantages in that one cannot introduce correctives against possible side-effects as one can with a prescription, and that their disintegration and absorption is less certain. It is a fact that patients who do badly on ephedrine tablets may respond to ephedrine mixtures, as it is a fact that patients with malaria who have failed to respond to tablet quinine may do so immediately to the same drug in liquid solution. It is also a fact that tablets of various kinds are sometimes found in stool specimens.

The xanthine group of drugs—caffeine, theobromine, and related compounds, are also of great value. The beneficial effect of strong coffee has been known for many years. More recently, a series of theobromine derivatives have been introduced—most of them proprietary preparations and including aminophylline, euphyllin, deriphyllin, perphyllon, and cardophyllin. These compounds are a valuable alternative for patients who cannot tolerate ephedrine; the most useful are perhaps theobromine itself, theobromine with phenobarbitone, or cardophyllin.

The iodides are of particular value in the chronic bronchitic group. Many of these patients give the impression that their chest-tightness is mechanical rather than spasmodic in origin, and due to bronchial blockage by tenacious mucus. A little iodide will help to liquify this and enable it to be expelled. In contrast to ephedrine, iodides are most valuable in tablet form, but they should be chewed rather than swallowed—nibbled is an even better word. Sometimes the effective dose is extremely small—a fraction of a grain—and a larger dose will give rise to undue secretion.

Inhalations and sprays are most suitable for cases in which a nasal factor is prominent, and particularly

when attacks occur at night, as their effect is in general more speedy than that of oral medication. They are somewhat cumbersome and conspicuous for day-time use.

The common official drugs might therefore be summarised as follows:—sprays for nasal and hypersensitivity cases, especially at night; ephedrine by day, initially as tablets, but as a mixture if tablets are unsatisfactory; theobromine or cardophyllin in patients who are upset by ephedrine; iodides for the chronic bronchitic group; and for severe attacks, adrenalin injections, which the patient should learn to give himself.

Many patients pin their faith to their own particular fancy in patent medicines. So important is the psychological side of asthma that in some cases it is necessary to turn a blind eye to this practice, which the patient will probably continue anyway. There is no doubt that for mild attacks the remedy in which the patient believes is the best remedy.

It is important to cultivate the right psychological atmosphere during attacks. The patient should learn to accept them philosophically, and should not be allowed to get excited or anxious. The attitude of those around him, and especially of the doctor, should be calm and matter-of-fact. This is of particular importance with children, and must be emphasised to the parents. They should not let the child feel that they are alarmed, although he should not be left alone while the attack is on. Attacks of asthma are not a reason for invalidism. After a nocturnal attack the patient should get up as usual next morning, and go to school or work. Uncomplicated asthma is not a reason for staying in bed, although an associated respiratory tract infection is a very different matter.

The treatment of the actual attacks is, or should be, the lesser problem in asthma. The greater problem is to prevent them or to reduce their frequency, and the key to this is the full aetiological diagnosis on the lines already laid down. It is a useful conception to take a mental figure of 100 as representing the level at which attacks occur, and to try and apportion the importance of the several factors involved. Thus in a particular case, one might assess the constitutional factor at 30; the psychological at 25; 15 each for colds and hypersensitivities; 5 for going to the pictures, and so on. The object of treatment is firstly to reduce the level below 100, so that the actual symptoms disappear; and secondly to reduce it as low as possible, so as to minimise the likelihood of small adverse influences precipitating an attack. The problem is always an intensely individual one. Each case must be judged on its own merits, and it is possible to do no more than point out certain broad general indications.

Quite the best treatment for the asthmatic child is a boarding school, and almost always it is possible to find one where he is free from attacks. If the asthma habit can be broken in this way for a year or two, permanent freedom is likely. Alternatively the child can go to relatives or friends in some area which suits him, but a short visit is inadequate—certainly not less than six months, and preferably two or three years is necessary. During this time his schooling must be safeguarded. Living with relatives has the disadvantage that it may introduce further compli-

into an already abnormal family relationship. An alternative, often necessary in poor-class, is the special school. Very good results are obtained from this method, but there are several objections. There is an atmosphere of invalidity which is undesirable with asthmatics; period of study is usually limited; and the education-standard is usually below that of the ordinary school. This objection is very real; the child with a physical defect—heart disease or chest disease or whatever it may be—needs not a lower but a higher standard of education than the healthy child if he is to hold his own in due course in the struggle for existence. The child most suitable for the special school is the child whose asthma is an event in chronic bronchitis, rather than the child with true "primary" asthma.

When the asthmatic child is first seen, a suitable regime is as follows:—General advice to the parents to look for predisposing causes, and to conduct themselves suitably in relation to the child and especially in relation to the attacks; simple deep-breathing exercises for five minutes morning and evening; ephedrine for attacks; a vitamin preparation if the child is susceptible to colds; glucose or citralka if acidosis seems to be a possible factor; and finally, right at the beginning, raising the question of the child's going away. In some cases this may have a psychological value, as a sort of threat to stimulate the parents to do their best. In any case it will be a big decision for them to make, and they deserve as much time as possible to consider the problem.

A little later is the adolescent asthmatic, who presents a very great responsibility to the medical adviser. It is vitally important to steer these young people into a suitable career, and often very difficult to decide what form it should take. Often the parents suggest an out-door life on the popular assumption that an out-door life is a healthy one. What the asthmatic needs essentially, however, is a protected life, a healthy environment, the right to take time off if necessary, and more money than average—and in addition it is to be remembered that he is often of high intelligence. Out-door life is presumably contra-indicated if pollen or animal hypersensitivity is present, but in any case it is often less attractive in practice than in theory, and a better choice for the asthmatic would appear to be one of the so-called black-coated occupations. The possibility of a career abroad is always worthy of consideration.

Even among older patients change of environment should always be carefully considered—change of job, change of house, and change of geographical area. Change of job is a serious matter for an adult, but should not be shirked on that account. The sooner chronic bronchitis gets out of a dusty occupation, the better the cost, the better. The new Ministry of labour re-settlement schemes offer opportunities for adjustments of this kind.

Change of house, either in the same or in a different area, is best decided by history and by trial and error. Change of environment in general is probably the most satisfactory single solution of asthma. When successful it fulfils the adage that the best treatment of asthma is not to have it.

When recurrent colds are a feature of asthma, they suggest important therapeutic measures.

Especially is this the case with the chronic bronchitic whose cold in the autumn is followed by symptoms persisting into the spring or early summer. It is astonishing how, year after year, these patients refuse to take the initial cold seriously. It should be treated with full text-book ritual—bed in a warm, well-ventilated room with a southerly aspect, and so on, going on until the condition has completely cleared up. These patients should respect the old-fashioned principles of keeping their feet dry, avoiding sitting in wet clothes, wrapping themselves up well, keeping out of draughts, and even wearing red flannel. Some people believe that the fat-soluble vitamins will reduce the incidence of colds, and they are worth administration throughout the winter.

The action of desensitising injections, auto-haemotherapy, peptone, tuberculin, and the like, seems to be mainly psychological. They are not necessarily to be despised on that account, and they have a real place in the treatment of highly suggestible patients, but the available evidence suggests that the scientific basis upon which they were based is unacceptable. The psychological aspects of asthma enter constantly into all other forms of treatment. Indeed they are increasingly identified as the common denominator of many apparently successful asthma cures. This is not necessarily to disparage such lines of treatment although once the physician loses faith in them himself they have lost much of their efficacy.

Simple positive psychotherapy is always worth while. It consists in general in telling the patient something about his complaint, how it arises and how attacks are to be avoided; in assuring him that unpleasant and even frightening as the attacks may be—they are not a cause for alarm; and in general in encouraging him to have a philosophical outlook on his disability.

The distressing condition called "status asthmaticus" is a condition in which severe asthma continues uninterrupted for many hours, days, or even weeks. When asthma is fatal, as seldom it is, death is usually brought about in this way. It seems likely, however, that in some of these cases at least the asthma is no more than a mode of dying, or at most only a contributory cause of death. The only fatal case of status asthmaticus I have seen with a subsequent post-mortem, had an underlying pneumonia, which had been masked clinically by the patient's asthmatic state together with his known asthma history. In retrospect, the diagnosis was clear, and it should be a rule in status asthmaticus, as it is, for example in diabetic coma, to look for a cause. It is easy to see that if an asthmatic develops intercurrent disease, and especially an acute respiratory-tract infection, then his presenting symptom may well be asthma, and that this may mask more less completely the underlying trouble.

A severe uncomplicated attack of asthma, if neglected, may pass into the condition of status asthmaticus. There are a great variety of drugs which are effective in mild asthma, but the majority are valueless in severe attacks. This is a further reason why every intelligent asthmatic should be able to give himself an adrenalin injection, for, the longer

the delay in administration, the more difficult it is to break the spasm. If every asthmatic knew how and when to give himself adrenalin the majority of cases of status asthmaticus would never occur.

The best treatment of status asthmaticus is Hurst's method of continuous adrenalin administration. A 2 c.c. syringe, charged with adrenalin, is strapped to the arm, an initial injection of $\frac{1}{2}$ to 1 c.c. is given, and thereafter a minim a minute until the attack passes off. Hurst says that the injection may be continued "even for half an hour or more," but a much longer period is sometimes necessary, and it is an advantage to follow the minim-a-minute stage with a smaller dosage—say 2 minims every 5 minutes and then 2 minims every 10 to 15 minutes for a further hour or two; unless this is done recrudescence is very likely to occur.

Recently there has been described a small mechanically-acting syringe designed for the gradual administration of small quantities of Penicillin. If apparatus of this type is perfected it will be of considerable value in the administration of adrenalin for status asthmaticus, which at present demands the continued presence of a skilled attendant.

Will this treatment always control severe asthma? The answer to this question is that it will not although failure is rare. Failure occurs most often, perhaps from misdiagnosis—either an underlying condition is missed, or cardiac asthma is mistaken for bronchial asthma. Cases of cardiac asthma respond well to morphia with atropine, and in desperate cases of bronchial asthma this treatment is sometimes given. The risk of undue depression of the respiratory centre is very real, and whenever possible morphia should be avoided. The same applies, with perhaps a little less force, to hyoscine. A reasonable attitude to adopt is that very occasionally a stage is reached in asthma where morphia can no longer be withheld; but it is best reserved for those cases in which it has been decided that the prognosis is practically hopeless, and that it is a duty to ease the patient's passing.

The art of artificial pneumothorax BY E. K. PRITCHARD M.R.C.S., L.R.C.P., D.P.H., (*Tuberculosis Officer, Metropolitan Borough of Southwark*). From *Post-graduate Med. J.* Nov. 45.—It is the fashion in medical writing to give at the end of a paper, a list of references of those people to whom the writer is indebted. I propose to reverse the procedure and start by thanking my friends in the tuberculosis world not entirely for their written work but also for their help, advice, and the numerous hours of discussion which have enabled me gradually to crystallise my thoughts on this subject.

Artificial pneumothorax is no new notion. It is on record that an ingenious physician attempted to introduce air into the pleural cavity as long ago as 1822. Unfortunately he met only with a *succes d'estime*. The father of "A.P." treatment was one Forlanini whose efforts were successful in 1888. Through his work and subsequently that of many others, the treatment of pulmonary tuberculosis by artificial pneumothorax, particularly during the past thirty years, has become increasingly the first line of offence.

Most people are under the impression that artificial pneumothorax treatment blows the lung down. This is quite wrong. It should be remembered that there is always a negative pressure (about 5-15 cms. of water) in the pleural cavity. If this were not so, the lungs would not follow the contour of the chest wall during normal respiration. The introduction of air into the pleural cavity reduces this negative pressure and in the absence of pleural adhesions, the lungs relax and so occupy a much smaller volume. They are also not subjected to the full stretching involved in normal respiration. By a dispensation of providence the diseased lung loses its elasticity and so becomes more collapsed than the sound lung. This results in the "selective collapse" in which sound lung remains expanded anopartly functional while diseased lungs becomes incringly collapsed.

The principal value of artificial pneumothorax therapy is the closure of tuberculosis cavities. But there are other advantages which must not be forgotten. The treatment may extend over years and the frequent refills accompanied by regular screening of the chest ensure adequate supervision of the patient. Thus any extension of the disease or deterioration of the patient's general condition noticed at the earliest possible moment. Furthermore, there is the by no means negligible psychological value to the patient who feels that something is being done for him. This I regard as most important, and in my opinion frequently justifies the maintenance of a mechanically imperfect pneumothorax, which from the consideration of radiological appearances alone should be abandoned. This is a controversial point, but I maintain that if the pneumothorax is carefully kept up with small refills and without raising the intrapleural pressures even to zero, the dismal prognostications of the surgeon—viz., infected effusions and broncho-pleural fistulae, etc., do not often occur.

Pneumothorax may have to be assisted by ancillary measures:

I. Phrenic evulsion or "crush," causing paralysis of the diaphragm either permanently or temporarily, and allowing further relaxation of the lung and some relief from the concertina movement involved in normal respiration.

II. Division of pleural adhesions (Intrapleural Pneumolysis). This is performed with an operating thoracoscope, using either a diathermy or cautery.

III. Pneumoperitoneum—particularly with phrenic paralysis on the more affected side to increase the diaphragmatic elevation. Thus it will be seen that there are many permutations and combinations of treatment which come under the broad heading of Artificial Pneumothorax.

The treatment of tuberculosis by pneumothorax is rightly, the only form of collapse therapy which has been left to the tuberculosis physicians by the thoracic surgeons. It is a simple procedure to induce a pneumothorax and simpler still to do a refill, but it is essential that it should be a painless operation. The induction is done with a fairly wide bore needle (Heaf's induction needle is my own choice,) with a local anaesthetic.

After the collapse has become well established refills should be done with a needle of finer bore

(Morland's needle is easily the best) without an anaesthetic. The needle must be introduced quickly and deliberately for the operation to be painless. It is, however, necessary to be certain that the needle will go through the intercostal space and not hit the rib—which is definitely painful and impairs one's reputation!

It is unwise to squirt the local anaesthetic into the pleural cavity unnecessarily and the needless should be dry, sterilised and not used wet with spirit. The pleura appears to be a delicate and temperamental membrane, especially in the early stages of an artificial pneumothorax, and I have definitely formed the opinion that pleural effusions, which may gravely affect the course of the treatment, occur more frequently when the pleura is regularly anointed with stray drops of foreign fluids.

When discussing the indications for collapse therapy the candidates for an artificial pneumothorax can be divided into approximately three classes based on their prognosis.

(i) Those who might recover permanently without active interference but who one thinks would be less likely to relapse if their disease were mechanically controlled.

(ii) Those cases with more extensive disease, and usually with a persistently positive sputum who are destined to become the "chronics" subject to periodical relapses. This group has an expectation of life of five years or less, if the disease is not mechanically controlled.

(iii) Those who will inevitably die in a few months if some attempt is not made to control the disease.

If as a result of one's treatment one can honestly say that a Class (iii) case has become a Class (ii)—or that a class (ii) case should have a reasonable chance of remaining fit if the artificial pneumothorax is maintained (i.e. the Class (ii) has become virtually a Class (i) case, the treatment has been very successful.

It is no use blinding oneself to the fact that pulmonary tuberculosis is a disease with a high mortality. The following two approximate figures are fairly representative of this country:

(1) Fifty per cent of primary notifications of pulmonary tuberculosis are dead within a year of notification.

(2) Eighty per cent of new cases with a persistently positive sputum are dead within five years.

With these figures in mind the rather depressing statistics from large-scale surveys of artificial pneumothorax treatment do not do the treatment justice. There is little doubt that the artificial pneumothorax case, even if the duration of his life has not been greatly increased, is during his treatment, better in general health, capacity for work without relapse, and more free from the risk of infecting others, than a similar case relying on conservative treatment only.

The indications for artificial pneumothorax treatment are remarkably wide. It should be tried always in:

I. Case with unilateral disease with positive sputum.

II. Cases with unilateral disease without positive sputum, but with radiological evidence of cavity formation.

Even when one's clinical sense says that pleural adhesions will probably prevent a satisfactory collapse, it is doubtful if it is justifiable to advise a thoracoplasty without having attempted an artificial pneumothorax. Sometimes the artificial pneumothorax works, and the patient has been saved a mutilating operation. Bilateral disease is no contra-indication, always providing there is enough sound lung tissue to sustain the life of the patient. It is usual to attempt to collapse the more affected side first and to be guided by the results as to when the less affected side should be attacked.

The main contra-indication for collapse therapy is obviously when the disease is so gross in extent that the patient would be unable to breathe if any more lung tissue were put out of action mechanically. However, one does not embark lightly on artificial pneumothorax in patients over the age of 50, or in those with a pronounced bronchitic tendency. Tuberculous disease elsewhere is no contra-indication, and laryngeal tuberculosis in particular often improves considerably when the lung lesion is adequately controlled.

The justification for the title of this paper "The Art of..." lies in the management of a pneumothorax. It is easy enough to learn to introduce a needle into the pleural cavity, but it needs much experience to know when to induce and how much air to introduce. Every case is an individual problem and it is impossible to lay down hard and fast rules.

At the outset, it must be stated that, practically without exception no artificial pneumothorax should be started unless the patient is in a sanatorium or hospital, and that X-ray facilities must be easily accessible from the beginning. Physical signs alone, besides being merely not helpful, are frequently misleading. I have often heard quite normal breath sounds all over a well-collapsed lung.

The most important part of the induction is to know when to do it. It is very tempting to attempt to produce a dramatic improvement by collapsing the offending lung in the acute stage and in the presence of a hectic temperature, but I am quite sure this is a grave mistake. Too often a rapid spread appears in the contra-lateral lung, or a tuberculous pyothorax develops. At least three weeks bed rest should be tried in order to see if the fever tends to subside; if after three weeks the chart shows no downward trend it is justifiable to attempt an artificial pneumothorax induction though one knows the prognosis is then much graver. The disadvantage of waiting for the temperature to subside, is that pleural adhesions may develop—in my opinion this risk is a much lesser evil.

Refills need to be done frequently after the induction of a pneumothorax, but within a fortnight or so, weekly refills can usually be allowed. A complete collapse is seldom achieved in the first few weeks, nor is it desirable. The degree of collapse should be increased very carefully and gradually. I am sure that unduly large refills in the early stages of an artificial pneumothorax cause breaking rather than gradual stretching of pleural adhesions with resulting avoidable pleural effusions.

The aim should always be to achieve the desired collapse with the least possible increase of the intra-pleural pressure. This may mean frequent small refills but it is well worth the small extra trouble, if only for the increased comfort of the patient. After an artificial pneumothorax is well established, the patient should not be short of breath after a refill unless a refractory cavity will not stay closed with the usual negative pleural pressures.

The care of a bilateral pneumothorax is an art in itself. A balance has to be struck between controlling the disease and leaving enough lung tissue functioning for the patient to be comfortable. This, of course, means frequent small refills. Both sides should be refilled on the same day when both artificial pneumothoraces require a fill at the same time interval. This avoids having a tendency to mediastinal displacement one way one week and the other way the next. A bilateral pneumothorax may cause some worry if an effusion develops on one side. If the effusion continues to reform after one or two experimental aspirations, I usually allow the lung slowly to re-expand beneath the effusion by stopping the refills on that side.

If during the course of a unilateral pneumothorax, a spread of disease occurs, it is usually on the contralateral side. Unless the spread is very extensive, there is no reason to withhold a pneumothorax on the newly affected side and it is tempting providence to delay the induction until the first side has re-expanded—a practice which still has some devotees. The newly affected side should be collapsed as soon as the patient's general condition permits and bilateral pneumothorax continued for a long time. A note on the termination of this treatment will be found later in this paper.

The complications of pneumothorax treatment deserves some mention. In the past "pleural shock" has been discussed. I doubt the existence of the condition. An air embolus, I think, accounts for all the symptoms. These can be anything from a slight faintness to paralysis, collapse and death. It is a most frightening condition for the operator, but if due care is taken that the needle is in the pleural space before air is introduced, it is fortunately a rare occurrence, and if the patient does not die, recovery is complete. A spontaneous pneumothorax occasionally superimposes itself on an already collapsed lung. The diagnosis may be difficult if one is not fairly experienced in the chest disease, but the patient often gives a clue by saying "it feels like a very tight refill." An X-ray is necessary for confirmation. Once diagnosed the treatment is obvious, i.e., the removal of air through a needle inserted into the pleural cavity in the usual way. This may have to be repeated or the needle can be tied in the chest and connected with a water bottle below the bed if relief is not obtained by a single decompression.

Surgical emphysema occasionally occurs—more frequently after the induction than after a refill, but except for some discomfort and considerable surprise when the patient feels it, it does not call for alarm or any particular treatment.

Pleural adhesions presumably come under the heading of complications, as they interfere with the

satisfactory collapse of the lung. Mention has already been made of the operation "intra-pleural pneumolysis" and the technique has so improved that there is no reason why an adhesion, which is actively prejudicing the patient's recovery, should be left alone. I would like to point out that this should be done before the patient is discharged from sanatorium. The decision should not be left to the unfortunate Tuberculosis Officer, who has to disappoint the patient by sending him away for a second spell of institutional treatment within a short time of his returning home in his own mind as a "cure."

The most important complication is, of course, the formation of fluid in the pleural cavity. The nature of this fluid varies from the so-called simple effusion to thick tuberculous pus, but in my own mind I regard them as different degrees of the same condition. I strongly advocate conservative treatment in these cases. The fluid often absorbs without interference. It is my practice not to aspirate unless the effusion is so large as to be causing the patient discomfort or constitutional symptoms. I have seen too many cases with persistent sinuses to be enamoured of frequent aspirations, pleural wash-outs, and the like. If the effusion becomes purulent, and contains many tubercle bacilli, I even stop the refills and wait for the lung to re-expand beneath the fluid, which in many months, often forms a mantle at the apex controlling the area of the lung which was originally diseased. Surgical procedures, i.e. thoracoplasty, are being advocated at an earlier stage of tuberculous pyopneumothoraces, even in the absence of grave constitutional disturbance. A pyothorax is likened to a time-bomb in the chest—many supposed time-bombs in the war proved to be "dud"! Furthermore, a collection of tuberculous pus is not regarded as an indication for immediate operation in surgical tuberculosis, and I fail to see why the same surgical principles should not be applied to pulmonary tuberculosis.

The results I have obtained from conservative methods of treatment of the tuberculous effusions, have certainly been much better than the figures recently published to show the necessity for early operation. If, however, as a result of aspirations and washouts, the pleural cavity has become secondarily infected surgical measures are nearly always necessary, but the prognosis in these cases is not at all good.

In the care of pneumothorax cases, the most difficult decision to make is when to terminate the treatment, particularly in view of the fact that once a lung has been allowed to re-expand the two layers of pleura usually become adherent and it is not then possible to re-induce the pneumothorax if one finds that healing is not complete. My own practice is never to tell a patient that an artificial pneumothorax is required for any definite period, but it is obvious that a small area of disease requires a shorter period of rest than a large one. It has been my experience that the lightly infected lungs re-expand fairly quickly (2 years or so) and no efforts on the part of the physician will keep the lung down. More gravely damaged lungs remain complacently collapsed for periods up to ten years, if an obliterative pleurisy has not occurred in the

meantime. Those cases which obliterate by themselves usually seem to do well. However, if no obliteration has taken place, I take the view that it is little trouble to the patient or his attendant to have a dozen refills a year—the patient has a feeling of confidence and close supervision is maintained. As a general rule, I suggest that the greater the extent of pulmonary damage, the longer should the affected area be controlled by artificial pneumothorax. This applies particularly to cases of bilateral pneumothorax.

In conclusion, I would like to point out that though generalisations are necessary in a paper of this length, every artificial pneumothorax case should be regarded as an individual and fascinating problem. Furthermore, it must be emphasised again and again that routine fluoroscopic examination at the time of the refill and serial radiograms at frequent intervals are not only desirable adjuncts but imperative necessities in the adequate management of artificial pneumothorax therapy.

MEDICAL RESEARCH IN INDIA

(The following is abstracted from the Report of the Scientific Board of the Indian Research Fund Association for the year 1944. Editorial Comments on the same were published in our November 1944 issue).

Cholera.

1. Cholera treatment enquiry at the School of Tropical Medicine, Calcutta.

The treatment of cholera with sulphaquanidine, (one of the new synthetic drugs belonging to the group of sulphonamides, and which has proved valuable in the treatment of dysentery), was tried in cholera. In a series of experiments the evidence was in favour of sulphaquanidine. As these trials were not extensive, no definite conclusion could be arrived at. A small series of cholera patients under field conditions were treated with this drug, with encouraging results. A number of laboratory tests were performed which showed that sulphaquanidine has a destructive action on the causative organism of cholera.

2. Enquiry on the statistical evaluation of anti-cholera inoculation in the Madras Presidency, Madras.

Although anti-cholera inoculation has been practised on an increasingly large scale each year for the last 53 years, its value as a prophylactic agent has not yet been definitely established. The occurrence of widespread and severe cholera epidemics in 1942 and 1943 in the Madras Presidency provided the Indian Research Fund Association with a long awaited opportunity to carry out a special investigation in Madras to list the efficacy of anti-cholera inoculation. Some of the data obtained and the tentative conclusions drawn are given below. The conclusions are not final and the results obtained are now under careful statistical analysis.

1. In a population of about 3 millions exposed to the risk of contracting cholera there were 708,977 inoculated or protected persons, amongst these 1,118 cases of cholera occurred. In 2,119,568 uninoculated persons there were 34,336 cases of cholera. The records show that incidence of cholera in these two groups was 1.57 and 16.20 per 1000 respectively, or, expressed in another way, the incidence in the uninoculated was 10.3 times more than in the protected group. A further careful analysis is needed to confirm this finding.

Out of 2,350 villages under survey 627 villages had a second outbreak of cholera a month or more after the last case in the first outbreak. In these villages there were 541,808 uninoculated persons while the inoculated or protected persons numbered 281,484, the greater proportion of whom had been inoculated in the first outbreak. In the second outbreak 6,580 cases of cholera occurred in the uninoculated group and 241 in the inoculated group; the case incidence rates per 1000 in the two groups being 12.14 and 0.86 respectively. The incidence in the uninoculated

was 14.2 times more than in the inoculated or protected group. It might be said that uninoculated persons run 10 to 14 times greater risk of contracting cholera than the inoculated (protected) persons in a community. This conclusion cannot however be treated as final until it is confirmed by careful independent statistical analysis.

2. In the whole survey, there were 1,118 cases of cholera with 474 deaths in the inoculated group, and 50,053 cases with 27,575 deaths in the uninoculated group. The case fatality rates in the two groups being 42.4 per cent and 55.1 per cent respectively.

The advantage derived from anti-cholera inoculation seems to be not so much in recovery from the disease, if one is unfortunate to develop it, as in not getting it.

3. According to the International Sanitary Convention, anti-cholera inoculation affords effective immunity six days after the date of inoculation. The data obtained during the present investigation point to the conclusion that immunity is established as early as the third day after the date of inoculation. This has however not yet been finally proved.

4. Among the villages which experienced a second outbreak of cholera, the intervals between the first and second outbreaks varied from 1 to 12 months. By classifying these villages according to the interval between the two breaks and comparing the cholera incidence during the second outbreak in the uninoculated group with that amongst persons inoculated in the first outbreak, the duration of immunity was determined. It has provisionally been concluded that the immunity conferred by anti-cholera inoculation lasts for a minimum period of five months and that there is strong evidence to suggest that immunity lasts for 10 to 12 months. The results of further careful review and statistical analysis may confirm these findings.

5. The data relating to the villages which experienced more than one outbreak of cholera showed that the greater the proportion of inoculations done in the first outbreak, the less the chances of cholera during the second epidemic wave. This data needs to be carefully reviewed before any final conclusion can be arrived at.

Malaria.

3. Malaria Institute of India—Research Section—Delhi and Coonoor.

Research activities have again been curtailed owing to the abnormal conditions brought about by the war. Five courses in malariology were held during the year at which 127 officers received training. This brings the total number trained since the outbreak of war to 448. Other special courses and training in entomology were arranged as and when required.

Laboratory research has been restricted mainly to the preparation of antisera for determining the source of mosquito blood meals, 2,169 tests have been carried out by this method. The technique of the preparation of 'JSB' water soluble stain has been modified to attain greater simplicity. A number of indigenous drugs were tested on monkey malaria, but none of these was found to have any parasitocidal value. A new ICI synthetic drug, M3349, was also subjected to test in monkey malaria. While the parasites disappear from the peripheral blood after the third dose on this drug, in many cases it did not prevent relapses of malaria in monkeys. The study of mosquitoes bionomics has been continued and the routine identification of mosquitoes and other insects of medical importance has been carried out as in former years. At the Southern India Branch an extensive series of studies on the bionomics of certain anopheles was carried out. Laboratory colonies of certain important species of anopheles were maintained. A special strain of bird malaria parasite was also kept in the laboratory.

An extensive series of experiments, both in the laboratory and in the field have been carried out on insecticides, such as Indian and foreign emulsions, activators of pyrethrins, individual spark-let sprayers, fœon bombs, etc., repellents, such as pyrethrum cream, DMP (dimethyl phthalate, one of the new synthetic insecticidal preparations allied to DDT) cream and DMP liquid repellent have been tested. Experiments have also been conducted on DDT (dichloro-diphenyl-trichloroethane) with various diluents both as larvicide and insecticide. A number of samples of cloth, camouflage netting, etc., have been investigated to ascertain their protective value against mosquito bites either when sprayed with repellents or left unsprayed. The standard type of hand sprayer (MISH) has been modified in certain respects.

4. Enquiry into the methods of forecasting epidemic malaria, Public Health Department, Punjab, Lahore.

The object of this enquiry is to study the basic data from which forecasts of malaria epidemics in the Punjab have been prepared during the past years and to place the method on a sounder basis. Accordingly, the preliminary work of collecting and compiling basic data for a period of 77 years was undertaken. These data have been compiled on a monthly basis for the province as a whole and separately for 15 individual districts. During the process of compilation and charting it became evident that the annual epidemic figures of the province exhibited a periodicity of 8 or 9 years' duration. The main conclusions are that, in the Punjab, a significant decrease has occurred over the period of 77 years (1867-1943) in the annual epidemic figures, thus demonstrating that, with the passage of time, an increasing degree of control has been exercised on epidemics breaking out in the province. These methods strongly suggest the existence of an eight years' cycle of malaria in the Punjab; but in view of the period studied being not of a sufficiently long duration, and in view of the rigidity of the technique employed in testing it, the existence of the periodicity has not been conclusively established. For purposes of forecasting, however, it seems necessary that due notice should be taken in future of the possibility of the occurrence of a malaria epidemic after a period of 8 years. In some cases this period might fall short by one year and in others the appearance of the epidemic might be delayed by one year. Some work has also been done on the assessment of the degree relationship between the epidemic figure and rainfall in the case of Sialkot district. Whilst rainfall in August is highly correlated with the annual epidemic figure, the association is not statistically significant with the rainfall in July.

Nutrition.

5. Nutrition researches at the I.R.F.A. Nutrition Research Laboratories, Coonoor.

Work done at the Nutrition Research Laboratories included: (1) The analysis of many different foodstuffs, yeasts and yeast extracts for vitamin B₁ and nicotinic acid content; a special method worked out in these laboratories was used. The effect of washing and cooking on the vitamin content of rice was studied. (2) The use of certain oils and certain cereals reduced the vitamin content in the foods, particularly of B₁. This factor which destroys vitamin B₁ was studied. It consists of two components, one destroyed by heat, and the other not destroyed by heat. Work is in progress to isolate these factors and to study the subject in more detail. The destruction of vitamins by certain chemical agents has also been studied.

The amount of vitamin B₁ in a number of foods was determined by special methods, (insect larvae technique). Cereals and pulses are good sources of this vitamin, while the foods usually designated 'protective' are often poor sources. Dried yeast is rich in this vitamin.

The nutritional requirements of three strains of lactic acid bacteria have been studied and it was found that vitamin B complex is essential for primary growth. A number of samples of shark liver oil were tested for vitamin A content. Studies have been made of the lasting properties of carotene (pro-vitamin A) in the various forms in which it is marketed. Opening of the container was followed by gradual destruction of carotene.

The use of tapioca is rapidly spreading in South-West India. The nutritive value of this root is therefore a question of practical importance. A diet largely composed of tapioca, unless supplemented by some source of additional protein, fails to support the growth of rats. Analysis has shown that tapioca protein is not deficient in essential amino-acids; quantitative and not qualitative deficiency is the important factor. The proportion of rice in a diet based on tapioca which is needed to produce nitrogenous equilibrium in rats was determined.

Animal experiments.

(1) Experiments with guinea pigs have shown that vitamin P (hesperidin) accelerates growth. A factor isolated from Bengal gram has a similar effect.

(2) Work on experimental fluorosis was continued. Of the three fluorides it was found that calcium fluoride was the least toxic, next came sodium fluoride and the most toxic being magnesium fluoride. Experimental work in rats failed to support the previous conclusions that vitamin C deficiency contributed to the causation of fluorosis in man.

(3) Studies of vitamin C production in rats have shown that the production is perhaps not affected by bacterial action in the gut.

(4) Attempts to make rats immune to rat leprosy by giving a highly nutritious diet failed.

(5) Studies of the production of fatty liver in rats by giving low protein, high fat diet were carried out. No marked difference was found between the different fats and oils used.

(6) The development of rice moth larvae on different diets has been used as a method of studying the action of vitamins and amino-acids and the relation between them.

Field investigations.

(1) Studies of a form of nutritional diarrhoea seen in Madras which responded dramatically to injections of nicotinic acid; (2) a detailed statistical analysis of the data obtained from the investigation of the relationship between dental caries and fluorosis; (3) investigation of infantile beri-beri in Cocanada.

In addition to the many different lines of research problems undertaken at these laboratories, a great deal of educational and advisory work has been carried out. Information and advice is constantly sought from all over India. The nutrition museum in the laboratories, which is continually being extended, was visited by numerous people.

6. Ascorbic acid enquiry at the University College of Science and Technology, Calcutta.

This enquiry has carried out a number of laboratory experiments on the biological synthesis of ascorbic acid (vitamin C) under influence of narcotics using rats as experimental animals, with a view to elucidating the mechanism of this synthesis. A great amount of work of a highly technical nature and of basic importance was carried out.

7. Enquiry on the formation, function and variations of plasma proteins in health and disease at the Grant Medical College, Bombay.

The report deals with 25 cases of nutritional oedema (dropsy) studied with the constant finding of a low albumin content of the blood. Some of the patients responded well to high protein diet. Numerous such cases were seen in Bombay and further careful studies of this condition planned. Fifty cases of hyperproteinemia were studied; the increase in the concentration of total protein being due to an increase in globulin. This is seen mostly in chronic disease, such as, kala-azar, tuberculosis, syphilis, liver disease. A number of other miscellaneous conditions were also studied.

8. Enquiry on the role of manganese in the biological synthesis of ascorbic acid at the Prince of Wales College, Patna.

This report covers investigation in animals (guinea pigs) on the biological synthesis of ascorbic acid (vitamin C) and the influence of manganese on the synthesis. It was found that manganese was necessary for the synthesis of ascorbic acid.

9. Enquiry into factors affecting normal calcium metabolism in certain areas in the Punjab at the Punjab University Institute of Chemistry, Lahore.

This work was concerned with the composition of diets in certain parts of the Punjab, and the investigation of calcium, phosphorus and phosphatase content of the blood serum in relation to diets. The studies indicated gross deficiency of calcium and a relatively high proportion of phosphorus in the diet. Studies have been carried out in Kulu and in parts of the city of Lahore. In Kangra much calcium deficiency was found, in Kulu little or none.

10. Enquiry on protein metabolism by human feeding experiments at the Public Health Laboratories, Bankipore, Patna.

This enquiry undertook the study of the protein content of different foods and its biological value, particularly to find out whether a mixture of rice proteins and pulse protein increase their biological value. The mixture of rice protein and pulse protein was not found as effective as rice and milk protein. Feeding experiments have been started on two human subjects in order to find out the nitrogen balance of a mixture of cereals in a poor man's diet. The pulse and vegetable quota has been kept constant, but a mixture of rice and wheat, rice wheat and maize, rice wheat and barley, rice wheat and milk has been given and the daily intake and excretion of nitrogen is being determined.

11. Enquiry on the deterioration of vitamin A in liver oils, concentrates and other preparations at the Indian Institute of Science, Bangalore.

This enquiry studied the deterioration of vitamin A in liver oil concentrates and other preparations under different conditions of manufacture. The effect of storage, mincing, mixing with salts, humidity, moisture, admixture of liver debris, mixture of other oils, were studied. Acidity particularly produces deterioration in vitamin A content of shark liver oil.

12. Enquiry into the relationship between vitamin B complex and tumour growth at the Tata Memorial Hospital, Bombay.

This is an enquiry into the relationship between certain fractions of vitamin B complex and tumour growth, and the vitamin content of liver of different strains of mice susceptible and not susceptible to mammary cancer. The insusceptible mice showed the high values. The influence of butter-yellow, a tumour producing agent, on the vitamin content of the internal organs and on the development of growths was also studied. The incidence of tumour in the experimental animals was much lower than that reported by previous workers in other countries. Metabolism studies were also carried out on 24 patients with oral cancer.

13. Enquiries into (1) tests of the biological value of soya bean protein, (2) growth tests with soya bean, and (3) human experiments with soya bean at the Punjab University Institute of Chemistry, Lahore.

This work showed that a definite improvement of the biological value of the proteins of soya bean and pulses on drying and heating and an improvement in the nutrient and growth promoting value of the poor rice diet when soya bean or Bengal gram is added.

14. Nutrition research unit at Dacca University, Dacca.

This enquiry studied the rate of absorption in rats of various fats and oils, the interrelationship between fat and calcium metabolism, the growth of young rats on different fats and oils, the stability of vitamin A in different oils, and the effect of a low fat diet in human subjects. The availability of iron in different foodstuffs was studied, and also the biological value of soya bean protein in different samples. Feeding experiments in rats showed improved growth with soya bean or pulses added to the diet. Some of the interesting findings are:—(1) coconut oil possesses a decalcifying effect in man; (2) among the common vegetable oils studied, ground-nut oil produces the greatest increase in weight per gram of the oil feed; buffalo butter fat is better than ground-nut oil.

15. Nutrition research unit at the Seth G. S. Medical College, Bombay.

This enquiry studied the effect of different levels of fat intake on the growth of rats, metabolism experiments of the different levels of fat intake, the effect of fat intake on reproduction, the absorption of fats from the intestine, the value of different varieties of soya bean, the analysis of certain foodstuffs not commonly used outside Bombay.

16. Enquiry into methods of treating sick starving destitutes in Calcutta based on the All-India Institute of Hygiene.

Studies showed a high incidence of malaria (35 per cent), bowel diseases (36 per cent), and various degrees of anaemia in sick destitutes, (severe in 20%, moderate in 61%, and slight in 19%). Biochemical investigations of the blood, and a careful investigation of the physical condition of the patients were carried out with a view to improving methods of treatment. Post-mortem material was also studied and the findings were given in detail.

17. Enquiry into estimation of vitamin A activity of plant foods at the Punjab University Institute of Chemistry, Lahore.

Vitamin A activity of 15 samples of maize of different varieties in the Punjab was studied. The different active carotenoid pigments in plant foods were isolated and individually estimated. Similar studies in other plant foods have been undertaken.

18. Enquiry on the role of nutritional factors in hepatic cirrhosis at the Haffkine Institute, Bombay.

Portal cirrhosis of the liver is a common disease in certain parts of India and its aetiology is obscure. Its incidence in the

Northern Circars of the Madras Presidency is fairly high and preliminary investigations carried out during the years 1931 to 1935 showed that "alcohol appears to have a very insignificant role" and that "dietetic deficiencies appear to be important factors in the causation of cirrhosis of the liver in the Circars". The diets of patients suffering from the disease were grossly deficient in protein, fat and vitamins, especially vitamins A, B₁, complex and C. During recent years, experimental evidence has accumulated to suggest that cirrhosis of the liver may be a deficiency disease. It has been shown in animals that deficiency of protein and vitamins of the B₁ group results in liver damage.

The enquiry was undertaken to study the part played by dietary factors in the causation of cirrhosis of the liver.

Animals were fed on diets deficient in vitamin B₂ complex to study the incidence of liver cirrhosis or damage and degeneration. Results are not yet available. As there is evidence to suggest that an amino-acid, methionine, plays an important role in the prevention of liver damage attempts are being made to isolate this interesting and important substance.

19. Enquiry on the chemical nature and nutritional availability of food iron at the University College of Science and Technology, Calcutta.

A comparative study of egg-yolk iron and tissue iron was made and revealed some striking differences in their chemical behaviour. The second line of work carried out was a study of the blood forming effect of nucleic acid on rats kept on milk diet. Nucleic acid is an essential constituent of all living cells and is synthesised inside the body system; so far as the present knowledge goes, a supply of this material in the diet is unnecessary. From the results obtained by this enquiry the blood forming power in the rat is enhanced by supplementing iron and nucleic acid to a basal milk diet. The addition of nucleic acid to milk diet does not, however, promote growth of the animals.

20. Enquiry on poor rice diets and food preparations in common use in South India at the Women's Christian College, Madras.

Rats were fed on the basal "poor rice diet" consisting of parboiled milled rice (cooked) 89.7 per cent, Bengal gram (cooked) 3.0 per cent, brinjal 4.3 per cent, mutton 0.26 per cent, coconut oil 0.21 per cent, green plantain 2.1 per cent, gingelly oil 0.43 per cent. The animals were given as much as they could eat of this diet. On this diet, growth of rats was poor and the general conditions of animals was also very poor, as indicated by malformation of the hind legs, loose rough hair with extensive bald patches, and a marked susceptibility to lung diseases. The effect of supplements of various kinds was studied. Calcium and natural foods rich in calcium—viz., milk, ragi, amaranth and other leafy vegetables—were valuable supplements to rice diets. Curds, also a source of calcium, shows less good supplementary effect than unsoured milk. But this was partially explained by the appetite factor. "Rasam" (pepper water), made from tamarind, onion and minute quantities of chillies, garlic, mustard, pepper, cumin and gingelly oil, one of the most common accompaniments of rice diets in South India had no real supplementary value. The addition of fat to the 90 per cent rice diet, in the form of butter, ghee, shark-liver oil or vegetable oil, not only induced no supplementary effect on growth but worsened the general condition of the animals.

A study of the effect of South Indian cereals on the growth of rats showed that cholam and cambu substituted for part or all of the rice had insignificant supplementary effects, and little, if any, superiority over rice as the basic cereal. When ragi is used as the basic cereal alone, the growth and condition of the animals was better than with any of the other cereals, but not so good as when used in combination with rice or with cholam.

Improved cheap modification of a rice diet containing parboiled milled rice (cooked) 50 per cent, ragi (cooked) 20 per cent, Bengal gram (cooked) 10 per cent, amaranth 10 per cent, sprouted green gram 5 per cent, brinjal 5 per cent, and costing no more than the poor rice diet, gave strikingly better growth and improved general conditions in animals, thus indicating that marked improvements can be made in poor institutional diets without increase in cost. Analysis of common food preparations in use in South India were also carried out.

(To be Continued)

LETTERS TO THE EDITOR.

REVERSION TO I. M. D.

The licentiates in the Army, specially those who got the Indian Commission from the regular I. M. D. Cadre or from the Civil Medical Service have now been asked to elect either to revert to I. M. D. in the same position as if one had continued to serve there-in throughout the present emergency, or to retire from the service on the pension and gratuity earned.

Following is the form one has to fill up and return.

"Certificate to be completed by I.M.D./I.A.M.C., and I.A.M.C. Officers commissioned from the late I.M.D., (regular)

Personal Number. Rank. Name.
On relinquishment of my commission I hereby elect.
(1) To revert to I.M.D.
(2) To retire from Service on the Pension/gratuity earned.
* Delete whichever is not applicable.
I was formerly in the permanent civil employment of the Government.....
Release Group..... Departmental Number in the I.M.D.
Release Code letter.....
Station.....
Date..... Signature of applicant."

Both these offers are too vague, and one has to elect either of the terms without exactly understanding the outcome and implications of any of the terms offered.

Nobody seems to know exactly what is meant by reversion to the same position. Does it mean going back to the pre-war status of British and Indian Cadre of I. M. D., as laid down in Section I of the Regulations of Medical Service of the Army? Does it mean reversion to the status of sub-ordinate medical service in respect of those who failed to get the King's Commission in the I. A. M. C., but who were serving on the terms and conditions laid down for the amalgamated cadre of I. C. and B. C. after the formation of the I. A. M. C.?

Was I. A. M. C. a war-time dream only? There is no reason why the permanent I. M. D's should not be absorbed in the I. A. M. C., since they have proved their worth. Is it the reward for duty well-discharged and loyalty shown under all circumstances? Or is it the reward of honest recruiting campaign of the A. I. M. L. A.?

Suppose one chooses to retire, we do not know how the pension and gratuity are going to be calculated.

It is time that the A. I. M. L. A., should intervene on behalf of the permanent I. M. D's and request the authorities to do them justice. It would be a blot in the fair name of the Association if it allows the Government to treat us as the Cinderellas of the Indian Army.

23-12-45.

THYAGI.

ON THE FENCE.

The whole of the transactions between the A.I.M.L.A. and the Government in the matter of Licentiates in Military Medical Service has been such

that the aggrieved party, namely the Permanent I.M.D's, and Emergency I.M.D's., who have not been commissioned to I.A.M.C., has been disallowed its say. They remain with their mouths gagged, body and mind captivated, although their honour and prestige, their career and outlook cannot be of less concern to the Association, if not to the Government.

In all your editorials on the I.A.M.C. I have read during the last two years, and in all the Association transactions on this subject published in the brilliantly got up and excellently edited special I.A.M.C. Number of the *Indian Medical Journal*, January 1945, I find an unaccountable strangeness of omission regarding the permanent and emergency I.M.D's, and aloofness from their interests. Are they not your men? Is their honour not yours? Is their prosperity no concern of the Association?

The plight of the permanent I.M.D's is too sad for words.

There are men, I know, who will say that they deserved their fate. I hope you are not one of them. It was indeed creditable to the Association that the Licentiates responded to its call and contributed a big quota of medical personnel to the Indian Army. But alas! where do they stand to day? Those who stood selflessly by the Government in its darkest hour of dire need, were left to the mercy and individual whims of local minions of authority many of whom, it is an open secret, did not see eye to eye with the bold step of Gen. Jolly and the Government that acted on his advice. This was due to the initial oversight or mistake on the part of the Association in not having insisted on the transfer *en block* of all the then I.M.D's to the I.A.M.C. with due grant of King's Commission.

So, dear sir, it is this solid block of former I.M.D's whose interest you have forsaken in your anxiety for the I.A.M.C., that calls upon the Association to do its duty by them without fear or favour. Let the oversight of General Jolly and Dr. A. D. Mukherji, be realised and corrected by General Hance and Dr. Kapur, as both of them are sitting as members of one and the same office—a great advantage indeed.

I know you are a clean and staunch fighter of our class. May you at least take up our cause and see that the permanent I.M.D's as well as the Emergency I.M.D's get their due share in the I.A.M.C.?

The war is over. But the whole block of I.M.D's look to the Association for help and upliftment. The least that could, and should, be done for them is: they should be absorbed into the I.A.M.C. as permanent commissioned officers. The responsibility of the Association in this matter is very great and urgent for the simple reason that the I.M.D's cannot ventilate their grievances in an open manner, as civil servants do.

With this pious yet hopeless hope, I appeal to the valiant editor of the *Indian Medical Journal* in whom the I.M.D's have got full confidence, to advise the Association not to sleep over this matter. It is already too late. They are leading a frustrated and miserable life.

24-9-45.

S. B. SINGH.

(We have received scores of such letters. The two that are published correctly represent the feelings of the I.M.Ds., as a whole.

We have always felt that they should have been transferred *en-block* to the newly formed I.A.M.C., on the basis of King's Commission. The Association tried its best to have this done, but it failed.

It was stated on behalf of the Government that Commission in the I.A.M.C., could be given only by selection, as in the case of new entrants. Thus many of the permanent, and Emergency I.M.Ds., were left out, mostly on account of age-limit. Their previous military service was not considered at all in extenuation of over-age. This of course was unfair.

Past is past, and we have no desire to criticise it.

But their future should by no means be neglected by the Government and the Association. They have a record of meritorious service in the Army. This should be a pass-port for making them permanent in the I.A.M.C., on the basis of King's Commission. Anything less would be a gross injustice to this noble band of medical men in the Indian Army, as it would mean that they are virtually excluded from the benefits of the new reform. In fact, they have got a stronger claim to it than the new entrants to I.A.M.C.

BOMBAY UNIVERSITY AND THE MEDICAL LICENTIATES

I was pleased to read in "*The STATESMAN*" of recent date that the authorities concerned with the medical education in Bengal have offered encouraging facilities for higher medical studies to the Medical Licentiates. Those holding diplomas like the L.C.P.S., L.M.P., L.M.F. etc., are permitted to join the degree course (M.B.) in the Calcutta Medical College, provided they have passed the Matriculation examination of a recognised University. The course extends over 2½ years. This procedure, Sir, is the first and essential step to the improvement of the status of the licentiates. Bengal has thus led the way.

The story is quite different in our home province. There are hundreds of Medical Licentiates (L.C.P.S.) from the four medical schools of the Bombay province, who have passed their diploma examination after a regular study of four years under the old regulations when admission to this course was open to matriculates, that being then the minimum qualification needed. Their aspirations to secure higher university qualifications are permanently blocked. Our university requires them to pass the Intermediate Science examination (Biology group) before they can enter the portals of any of the medical colleges to qualify for the M.B.B.S. degree, or the M.C.P.S. diploma. The minimum qualification for admission even to the L.C.P.S. course has now been made Intermediate Science and therefore this disability does not affect the diploma holders under new regulations. The Bengal example quoted above thus throws a ray of light in the otherwise dark future of those condemned "medicos", who passed the Licence examination years back with a regular study of 4 years in all the branches of Medicine. The first year's course then was identical with the course of Intermediate in Science. (Biology), viz., Physics, Chemistry and Biology. Besides, a medical man is sure to know much more about these subjects from the practical point of view than the fundamentals that are taught in the said Intermediate course of the University. Is it not absurd then that these experienced medical men should be required to attend classes at the Science

Colleges merely because the regulations do not permit otherwise? What is good for Bengal is good for Bombay and our University will do well to emulate Bengal and thus remove a great inequity. This will enable a good many of the experienced licentiates to obtain the M. B. degree. If the University cannot imitate the good part of the said sister University, the college of Physicians and Surgeons of Bombay at least, the mother institute of the Licentiates, should revise the strict rules effecting the admission of Medical Licentiates to the M.C.P.S. course by doing away with the need of passing I.Sc. examination. and by reducing the 2 year's course to a year, for such L.C.P.S. candidates.

Hatkeswar Road,
Junagadh.

Yours faithfully,
Pramodray C. NANAVATY.

UNAUTHORISED PRACTITIONERS OF ALLOPATHY

Many in the medical profession must have, of late, come across a good deal of writing in important medical journals of our country about 'unqualified people practising Allopathy and it is of imperative necessity that early steps are taken to curb this habit. It is possible that a section of interested people will misconstrue the intentions behind such steps but unbiased thinking will easily prove that rigid Government restraint to confine Allopathy to the practice of duly certified men, is calculated more for the good of the sick public than for the good of the Allopathic practitioners themselves.

In our country, besides Allopathy, the other systems of medicine largely practised are Ayurvedic, Unani, Siddha and Homeopathy. It will indeed be highly controversial and therefore wrong to say that one system is better than the other; but what is in fairness expected of the adherent of each system is that he shall not transgress for reasons which are obvious. Unfortunately the situation facing the Allopathic practitioners particularly in small towns and rural areas is highly disgusting.

Compounders, Homeopaths, men of the Indian System of Medicine and several self-styled doctors are simply taking to Allopathy as easily as a duck takes to water and the innocent illiterate masses with whom our country unhappily predominates, fall easy prey to their practice. There is yet another class of practitioners who belong to none of the above groups and whom it would be fitting to call as quacks. These men thrive more by a propaganda calculated to bring Allopathy into contempt amongst illiterates than by any knowledge of medicine worth the name. Such quacks in villages are held in great respect and consequently they command easy credulity. It is perhaps not necessary to explain in detail the incalculable havoc the quacks play upon sick people in their day-to-day business, for it is easy to imagine the evils their actions are productive of. Every qualified doctor in small towns and rural parts will easily say what huge number of sick people of the poor classes are destined to meet an early doom by the misguided treatment of these unauthorised medical practitioners. It is not only heart-rending but also amazing that they are tolerated. Most repugnant of

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all their pretensions to cleverness are their artful methods aimed at driving away qualified men from their area of operations.

In an age of incredible advancement in Science, for such unscientific methods to be allowed to prevail is indeed a crime and it is fervently hoped that an intensified agitation along right lines will be started to compel Government not only to eradicate quackery but also to deal relentlessly with unauthorised medical practitioners who make unfettered use of Allopathy.

The recent World War has widely demonstrated the ludicrous paucity of doctors in our country and undoubtedly the chief reason for it is that the profession after an arduous, costly and protracted study spreading over a period of half a decade does not hold out the requisite prospects of attraction. Not that there is a want of sick people in the country for the profession to prove remunerative but because of the Compounders, Homeopaths etc. taking to Allopathy. Should not the Government consider it high time to launch a campaign for eradicating these evils which undermine a profession that is regarded as the noblest the world-over?

Tirupattur, N. A. } Yours truly,
10th Jan. 1946. } Dr. E. L. RAJAGOPAL.

AMALGAMATION SUB-COMMITTEE PROCEEDINGS.

This Sub-Committee was formed by the President, Dr. Manoharlal Kapur, as empowered by resolution No. 9 of the Calcutta Conference, with the following members: Drs. A. D. Mukharji, A. Viswanathan, K. C. Worha, M. D. Pustake, G. V. Hanumantha Rao, Dhar, U.B. Narayana Rao, V.D. Sathaye and Gianchand Bhaṅana. President and the General Secretary were ex-officio members.

The President invited the similar Sub-Committee of the I.M.A., as empowered by the resolution of the Working Committee at its Calcutta meeting held on 2-4-45 to participate in the meeting of the A.I.M.L.A. Sub-Committee to be held at Delhi on the 8th and 9th July 1945.

Since Dr. Manoharlal Kapur, President, A.I.M.L.A., was informed by Dr. Jivaraj Mehta, President, I.M.A., that he had not yet formed his sub-committee, he issued personal invitation to Dr. Jivaraj and his colleagues to attend the A.I.M.L.A. Sub-Committee Meeting. Those present were: Drs. Jivaraj Mehta, A. N. Gosh, Capt. S. C. Sen, and Col. Amarchand (by invitation); A. Viswanathan, U. B. Narayana Rao, K. C. Worha, V. D. Sathaye, General Secretary A. N. Ray and President M. L. Kapur (members of the Sub-Committee) and Dr. S. S. Jetly (Co-opted.)

The following memorandum, after discussion and some changes, was adopted unanimously. It was also resolved to forward the same to the president of the I.M.A. for his official reply.

Brief history of previous negotiations:—As far as we could trace from our records the question of amalgamation of the All-India Medical Licentiates' Association with the Indian Medical Association was first mooted out by the latter in the early part of the year 1933. As a result of four parliours between R. S. Dr. Ramnarainlal, the then General Secretary of the

A. I. M. L. A. with the General Secretary of the I.M.A., the following developments took place.

(1) The election of Dr. B. C. Roy, as the President of the 26th Conference of the A.I.M.L.A., Dec. 1933, Bombay as a gesture of good will to the I.M.A.

(2) Joint Conference and exhibition (I. M. A. and A. I. M. L. A.) attempted in Bombay in December, 1933, but proved abortive. So the conference was held separately, though exhibition was common.

(3) The Secretary of the I.M.A. requested A.I.M.L.A. to form a committee to discuss the possibilities of federation or amalgamation with the I.M.A.

(4) This committee met a similar committee of the I. M. A. and came to the following decisions:—

- (1) To have a common Journal,
- (2) To have quota of office-bearers from the Licentiates and Graduates,
- (3) To have a federal Council composed of equal number from each Association.

(5) At the Bombay Conference, December, 1933, (26th Conference of the A.I.M.L.A.) it was decided to have common committees (of the I.M.A. and A.I.M.L.A.) to discuss questions like Medical Education and Medical Councils, etc. But these committees never functioned.

(6) The Report of the Amalgamation Committee which met at Delhi on 28-12-34 and the General Secretary Circular No. 12 dated early 1935, were placed before the 27th Annual Conference of the Association (Indore) on 20th April, 1935. By Resolution No. 17 it resolved "that the question of federation on the basis suggested by the Amalgamation Committee referred to above be postponed, until the Indian Medical Association incorporates in its Constitution the object that it shall work for the statutory recognition of Medical Licentiates in all spheres and to bring about unification of medical qualifications in India."

Such, in short, is the history of negotiations for 'Federation' or 'affiliation' of the A.I.M.L.A. with the I. M. A. Later, the question of 'Federation' or 'affiliation' did not arise as the I.M.A. cancelled and revoked its old rules on the subject of federation or affiliation and stated that the other Associations could get merged with the I.M.A. as its integral part but not get affiliated with or federated to it. Since this modification in the rules of the I.M.A. the question of federation or affiliation automatically dropped, and only the question of amalgamation remained.

The Licentiates' Association was formed in 1906 with a definite object which was fully clarified in its rules passed by the 27th Conference at Indore. It runs as follows:

(1) 'To work for the abolition of the present compartmentalism in medical education, medical service and registration in this country'—3 (d).

(2) 'To urge for and obtain statutory equality of status for the medical licentiates in respect of entry into State Service and higher appointments therein'—3 (e).

'This Association may be affiliated to or amalgamated with any other Public Body having objects altogether similar to those of this Association provided 4/5 of the members of this Association do record their votes in writing, in person or by proxy or by post, in favour of such an affiliation or amalgamation and provided the same is ratified by a general body meeting of the Association to be specially called for this purpose not earlier than a period of one year from the date of preliminary decision,' Rule 4 (m).

The question therefore is: If the two associations are desirous of amalgamation in the interest of unity and consolidation of the profession, the I.M.A. should make a public declaration of its policy in regard to this specific question, incorporate the same in its constitution and work it out successfully to enable the A.I.M.L.A. to consider the question of amalgamation with any prospect of success. This was the clear verdict of the Indore Conference (1935). There has been no further improvement on this point.

To sum up: (1) The position of the A.I.M.L.A. is that if it enters into discussion with the I.M.A. on the subject of amalgamation, the latter has, at first, to embody in its own constitution rule 3 (d) & (e) of the Memorandum and the Objects of the A.I.M.L.A. and take measures to bring them into practical shape.

(2) If this is considered unnecessary or impossible by the I.M.A., no blame should be attached to the A.I.M.L.A. for its hesitation to come to a conclusion in favour of amalgamation.

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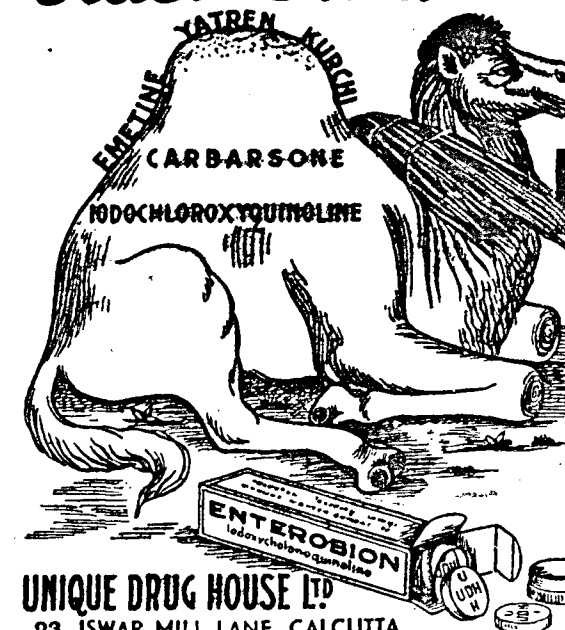
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Even granting that the objective relating to this specific matter is common to both the Associations—which of course it is not in letter though it is said to be in spirit—yet different ways may be pursued by these two Associations in the achievement of this particular objective. Thus in practice and experience one could see the difference in the methods pursued. Which is the better way is not the point at issue. But what is relevant is: which is the way chosen by these two Associations and how does it differ? The I.M.A. has ostensibly chosen the way to ask for and to achieve the abolition of the I.M.S. from civil service, and by this method perhaps hopes to attain the consolidation of the profession. On the other hand the A.I.M.L.A. has chosen the way to ask for, and to achieve, the abolition of the subordinate medical service and the institution in its place of a provincial Civil Medical Service open to all registered medical practitioners on an equal scale of pay to all with equal opportunities to rise to the highest administrative and professional position, and by this method it hopes to attain the consolidation of the profession. These two methods are entirely different in their detailed application to men and things in the profession, and are, *prima-facie* irreconcilable. The I.M.A. is not likely to give up its own cherished methods; nor is it right or just on the part of the A.I.M.L.A. to ask the I.M.A. to give up this position. The A.I.M.L.A. also is not likely to give up its own cherished method, nor would it be just or right on the part of the I.M.A. to ask the A.I.M.L.A. to give up its own method of work in preference to theirs. Thus, the question of amalgamation on the basis of a common objective is wrapped up not only by legal difficulties intrinsic to the present rules and regulations of both the Associations but also overgrown with weeds following different directions, though arising from a common stem.

It may be said that the I.M.A. has never stood against the abolition of subordinate medical service and the ushering in of a common Provincial Medical Service. But there has been no indication of a positive and definite policy along these lines. A few years ago, when such questions came to be discussed by some of the I.M.A. branches of the U.P., the Central Council advised those branches to steer clear of all such service questions in the interest of unity and goodwill among the members of the profession, which, to say the least, is indeed an anomalous advice in view of the fact that the question of the I.M.S. is also a service question. It only indicates that the medical graduates want to be masters in the place of the I.M.S. men—a change from the white to the brown bureaucracy; and if the I.M.A. supports this move without any specific declaration regarding the existing licentiates in service, no honest painter can escape tarring it with the same brush. That the I.M.A. has been supporting this brown bureaucracy is an undisputed fact, for there has been no conference without a resolution on the abolition of the I.M.S. in its civil side. Contrast this to the absence of any positive resolution on the question of the abolition of the subordinate medical service.

Perhaps the I.M.A. hopes that this would automatically be abolished when the medical schools are abolished and when the licentiates cease to exist. If so, it does not mean that the I.M.A. is for establishing equality of status and opportunities between the graduates and the licentiates till such time as the latter are sent out of existence. In other words, equality between medical men could only be obtained if the medical schools and the licentiates cease to exist in as quick a succession as possible. In plainer words, it means that there can be equality between two graduates but not between a licentiate and a graduate. One cannot help coming to this conclusion because even though all the provinces have abolished or have taken the decision to abolish the medical schools (except Bengal)* yet the I.M.A. has not openly and boldly come forward to advise the Government to treat all medical men alike in their services. It is without its first word or the last word on this subject because it is aware and is sure of the effect of time on this question. 'This question is bound to die out after some years following abolition of medical schools. Why worry over a question which time is bound to set aside.' Such seems to be the idea behind their studied silence.

Thus there is a difference—a vital difference—in the paths which the two associations are pursuing in their respective attempts to achieve a common objective, viz., unity and consolidation of the profession in our country. It follows therefore that not only there should be a specificity in this particular objective but there should be also a common plan and a common method of work in the pursuit of this goal. The I.M.A. if it claims to represent the licentiates, can by no means avoid to refuse to work on their behalf, and it cannot set itself to this work without specifying as clearly as possible the nature and scope of the work it is contemplating on their behalf.

* Bengal Government also have decided to abolish its Medical Schools this year. Ed.

Is the I.M.A. willing to undertake this job? If so, the A.I.M.L.A. is prepared to hand over this work to the I.M.A. If it is not prepared to do so, owing to difficulties in its way, well, let it not put the A.I.M.L.A. in the wrong by telling the country that it sets its face against amalgamation in its own selfish interest.

The A.I.M.L.A. is not competitive to the I.M.A. in any sense of the word. There has been no conflicts between these two associations so far. Some of the decisions of the I.M.A. are indirectly beneficial to the licentiates as well. But why have some of the leaders of the I.M.A. who are members of the I.M.C. voted against the temporary recognition of the licentiate qualification for the purpose of emergency commission in the I.M.S. during the War? Why some of them vociferously oppose the amendments to the Provincial Medical Acts on the model of the Madras Medical Council Amended Act? Why some of them are trying to open more medical schools with 3½ years course? All these are done despite the resolutions of the I.M.A. on these burning questions.

Amalgamation examined from other points of View.

Unity of the Profession:—It is said that amalgamation would symbolise the unity of the profession. If this unity is not organic, mere amalgamation would give us but a mechanical mixture which has to be shaken vigorously every time it is taken, and once if it is left on the table, precipitates would fall to the bottom. If amalgamation is to be a dynamic chemical solution, the solvent to bring it about is the recognition of the licentiate qualification by the I.M.C. under the schedule I of this Act. The I.M.C. which made itself famous by its October, 1940 resolution for got its mission in 1942 when the question of temporary recognition of the licentiates for the purpose of emergency commission in the I.M.S. was referred to it for its decision, although between 1940 and 1942 some more medical schools were abolished. Of course the I.M.A. is not responsible for the action of I.M.C. But the common personnel in both raises a suspicion in the mind of an average man who knows things but who is unable to explain them in any other way. The unity of the profession could only be said to be achieved if the I.M.C. is made to recognise either by the A.I.M.L.A. or the I.M.A. or by common endeavours of both, its statutory duty. Amalgamation would then be an inevitable and natural result. If all the present energy and labour bestowed on the subject of amalgamation is diverted towards this single purpose for at least two years to come, amalgamation would be in our palm like a walnut, a tangible thing to grasp and to enjoy. Treat the cause and not the symptoms is the first axiom in therapeutics. But as is our want, we are treating the symptoms and not the cause, although the cause is visible to our naked eyes.

Our future political constitution:—The future political constitution of ours is bound to be on a federal basis. This would make each province entirely autonomous barring a few subjects like Customs, Foreign Policy, etc. Under such circumstances, a central organisation—be it I.M.A. or A.I.M.L.A. or an amalgamated body—is not likely to be of much use. Perhaps there may be a need for a medical organisation at the centre made up of representatives from provincial medical organisations to be in-charge of such subjects (pertaining to Medicine and Public Health) as fall within the purview of the Central Federal Government. It is therefore prudent on our part to await future developments in politics.

Be this as it may, the needs of the situation are: active co-operation, good understanding and mutual help between these two Associations. Let both the Associations evolve a plan of common work, particularly on the work of obliterating the castes and compartments in the profession—the legacy of our past, and the cause of our despair and disunion at present, by creating a Committee consisting of 5 men from each Association who shall meet at the annual function of each Conference. This Good-will Committee may bring about amalgamation of both these Associations earlier than perhaps many of us to-day believe.

On learning from the President of the I.M.A. that he had formed his Sub-Committee, Dr. M. L. Kapur, President, A.I.M.L.A. fixed a joint meeting of both the Sub-Committees to be held at Amritsar on the 22nd and 23rd December 1945.

Both these Sub-Committees met on 23rd. The members of the I.M.A. Sub-Committee were.

- (1) President: Dr. Jivraj Mehta,
- (2) Joint-General-Secretary: Capt. S. C. Sen.
- (3) Dr. Iswardas Bhatia, L. S. M. F. (Punjab).

The members of the A.I.M.L.A. Sub-Committee who attended this meeting were: A. D. Mukharji, A. Viswanathan, K. C. Worha, M. D. Pustake, U. B. Narayan Rao, Dhar, G. V. Hanumantha Rao, Gianchand Blagghanna, President & General Secretary. Drs. K. Rajaopalan and P. A. S. Raghavan were present by invitation.

Before both these Sub-Committees met on the 23rd, the A.I.M.L.A. Sub-Committee members met in the forenoon and after discussion the following resolution was adopted. This resolution was placed before the joint meeting. It was also forwarded to the president of the I.M.A. officially to be placed at the current session of the Central Council.

"This sub-committee is of opinion that Amalgamation is desirable in the interest of professional unity and advancement.

This committee eagerly awaits the incorporation of Rule 3 (d) and (e) of A.I.M.L.A. in the constitution of I.M.A. to enable this committee to discuss this matter in greater detail.

This committee is of opinion that to create the necessary atmosphere for the speedy attainment of the objective of amalgamation, it is hoped that the Indian Medical Association would take in the ensuing year such practical steps as are open to it to obtain

1. Recognition of licentiate's, qualifications under Schedule 1 of the I.M.C. and to (2) concert means and measures for the abolition of subordinate medical services (3) stop admission of students into the existing medical schools with effect from the next academic year."

BOOK REVIEWS

Biological Actions of Sex Hormones by Harold Burrows, C.B.E., Ph.D., F.R.C.S. Cambridge University Series, 42sh net. Available from Macmillan & Co., Bombay, Calcutta, Madras.

The nature of sex hormones and the reactions of living tissues towards them have been the subject of study during recent years. Yet, we are of the view that this subject is ill-understood by the general practitioners in all its bearings. The author of the book under review deserves to be congratulated for the compilation of a co-ordinated summary of experimental enquiries into the biological actions of sex-hormones. The book is made up of six parts. The first part deals with gonodotrophins, the second with gonadal hormones, the third with androgens, the fourth with oestrogens, the fifth with progestins and the sixth with sex hormones of the adrenal cortex. The fact that compounds formed in the pituitary, gonads and adrenals affect the structure and functions of the of the body and the working of the mind, apart from therapeutic utility of these hormones, makes this subject intensely interesting. The author's intention is to present a trust-worthy account of biological values of sex-hormones, and make this a foundation for further progress in both sex-hormone research and clinical practice. We commend the book to the earnest attention of our readers.

Aids to Hygiene and Public Health by V.K. Phadke, Lecturer in Hygiene (Retd), King Edward Medical School, Indore, Price Rs. 4/8. Copies can be had at 62, Jail Road, Indore City or Kothari Book Depot, Parel, Bombay.

It is essentially a book for the medical students. Brevity is aimed at by incorporating essential details for the basic understanding of the subject of Hygiene

and Public Health and by discarding non-essential details which often confuse the students. Each chapter ends with "Questions" which may indicate to the students the points of importance to be remembered from the examination point of view, and help also in a quick revision. We heartily recommend this book to the medical students,

NEWS AND NOTES

Assam Government Purchase U. S. Hospital

The 20th General Hospital, the biggest hospital in this theatre with a capacity of 2,000 beds, has been purchased by the Government of Assam from the U. S. Army.

The articles in hospital include microscopes, surgical and dental instruments, most of which are rare to be found in any hospital in India.

A U. S. Army Medical Officer remarked that the deal was cheap and fair. Brigadier I. S. Ravdin, Commanding General of the Hospital, seeing the poorly equipped hospitals in India, left everything in the Hospital to be included in the sale, he added.

Milk is neither pure nor cheap in India.—The vigorous depreciation made by Mr. R. A. Pepperall, Chief Regional Officer of the London Milk Marketing Board, of the quality of Indian milk, has drawn attention to an outspoken report which he produced in April last year, after a 90-day tour of the country to investigate the present condition of the dairy industry in India.

Incidentally his comparison of the milk in India with the London sewage effluent is confirmed by figures given in a recent report of the Agricultural Marketing Adviser to the Government of India. Bacteriological examination of market milk in one city, says this officer, shows that it had more than 36 million microbes in a quantity tested. In the same city, fresh milk drawn in sterilised containers after thoroughly scrubbing and washing the flanks and udders of the animals with antiseptic lotion showed less than 275 microbes in the same quantity. The sewage effluent of London shows 11 million microbes in a similar quantity.

Mr. Pepperall, in his report, makes detailed recommendations including one for a declaration of milk policy by the Government of India. Oilseeds grown in India, he says, have for generations formed the basis of high milk yields secured by European farmers. He asks that a total ban on the export overseas of oilseeds or "cattle cakes" derived from Indian grown seeds should be imposed.

The most powerful incentive to produce more milk, Mr. Pepperall says, lies in the producer getting a satisfactory price. One fundamental requirement of any future milk policy must be fixation, by some independent but sympathetic body, of producers' prices. The very low rates of income of millions of people and the high cost of milk prevent them from purchasing anything approaching their nutritional requirements. He has found the price of milk in India to be exactly double than in England. These excessively high prices are based on the artificial method of producing milk in the city stables and war time cost of importing food for the animals. Mr. Pepperall suggests that a fixed price for the producer which need not necessarily be high so long as it is assured and the lowest price that can be arranged for consumers are two essentials.

Quinine Production in India

A production target of 1,00,000 lbs. of Quinine Sulphate per year, making India reasonably self-sufficient in this vital drug, is envisaged in a five-year plan of the Government of Bengal. The district of Darjeeling has been provisionally selected as the area for the application of the scheme. It is expected that the entire cost estimated at Rs. 7,00,000 in five years will be recovered through the sale of quinine and other cinchona products.

Dr. Kunj Behari Lal Varma President, U. P. Provincial Branch, A.I.M.L.A. has written to the Secretary to Government, United Provinces, Lucknow, as follows under date 5th January 1945.—

I find my name included in list of the recipients of the title of "Rai Sahib" in the New Year's Day Honours. Being an humble public worker, I feel embarrassed to accept the title, which implies an unhappy social distinction; hence most respectfully I beg to decline the favour so offered.

ASSOCIATION NOTES.

24 Parganas (Bengal). The following Resolution was passed unanimously in the Annual General Meeting of 24 Parganas Branch of the A.I.M.L.A. held on 29-10-45 at Dum Dum at 6-30 p.m.:—

The Annual General meeting of the 24 pargana Branch of the A.I.M.L.A. urges upon the Government to declare its policy of post-war measure without further delay before demobilisation is on progress. This should include permanency of I.A.M.C. and reorganisation of Civil Services on the model of I.A.M.C., and introduction of uniform standard of medical education in India.

Annual Report: The responsible duties of my post have recently fallen upon me due to resignation of Dr. Bhaduri, our ex-Secretary. This is more or less the second occasion of my meeting you, as Secretary in the Annual General Meeting.

I will be failing in my duty if on this occasion I don't give thanks to Dr. A. D. Mukherjee for his utmost efforts to abolish dual system of medical education and to convert the schools into colleges and to open M.B. Course for the Licentiates. Demobilisation of the I.A.M.C. is going on and I appeal to the Government to give them proper position and pay in the Civil Service and also to maintain I.A.M.C. permanently without converting it into I.M.S. & I.M.D.

Since Dr. K. K. Dutt (Now Capt.) our ex-Secretary joined I.A.M.C., our branch membership is falling in numbers. At present our members are about 40 in number and recently 2 new members have been recruited. Attendance of members was very poor in the meetings. We held 6 meetings including 2 special meetings in this year. The war is over and we hope that the enthusiastic members like Capt. Dutt, Capt. Mitra etc., will come back soon to strengthen our branch.

I regret to say that the existing fund of our branch this year is not at all substantial due to want of proper collection and less attention of the members to the branch. The total receipt of the year is Rs. 78-5-0 including balance of last year and total expenditure of the year is Rs. 42-3-0 leaving a balance of Rs. 36-2-0. The expenditure includes donation to Ahibhusan Memorial fund Rs. 20/-, donation to Bengal Provincial Conference Rs. 15/-, Typing charges Rs. 3-15-0, and Postage Rs. 3-4-0.

(2) Meeting held on 25-12-45 with Dr. S. Sarkar in the chair. 6 members were present.

Resolutions. (1) The following members were unanimously elected as delegates to the next provincial conference at Howrah: Drs. P. Dutta, S. N. De & R. N. Dey.

(2) Rs. 15/- be donated to the next provincial conference at Howrah.

(3) Contingent bill for Rs. 19-12-6 be passed.

(1) **Mymensingh (Bengal)** The 19th annual Conference (District) of this branch was held on 30-9-45 at 8 p.m. with Dr. M. N. Roy in the chair. Seventeen members were present. The Branch Secretary's report was read with an audited account of the working of the branch from 7-10-44 to 30-9-45 and was passed by the House unanimously.

Interesting papers were read by Dr. A. Nundy and Dr. A. Talukdar, regarding vitamin A and Occular Complications of Meningitis, respectively.

Election of office bearers.—

President:—Dr. B. N. Chowdhury, proposed by Dr. N. Chowdhury and seconded from the Chair.

Vice President, Dr. S. K. Sirkar, proposed by Dr. R. K. Sengupta and seconded by Dr. A. Nandy.

Hony. Secretary:—Dr. N. Chowdhury. Proposed by Dr. S. Bagchi and seconded by Dr. H. N. Chakravarty.

Treasurer:—Secretary,

Auditor:—Dr. H. N. Chakravarty, proposed from the chair.

Provincial Standing Committee members:—

(1) Secretary (Dr. N. Chowdhury).

(2) Dr. A. Bagchi.

Members of the Executive Committee:—

(1) President (2) Vice-President (3) Secretary (4) Dr. H. Bagchi (5) Dr. R. K. Sen Gupta (6) Dr. D. C. Roy. (7) Dr. J. Ahamad (8) Dr. M. N. Ray (9) Dr. A. Nandy (10) Dr. S. C. Chakravarty (11) Dr. S. Patranabis (12) Dr. B. Basak (13) Dr. A. Talukdar (14) Dr. M. Aich (15) Dr. R. Sen,

Dr. R. U. Hingorani, 128, Harley Street, London, W. 1, writes to us under date December 1st 1945, as follows:—

The question of Indian students who come to England to study, raises certain problems which have to be faced and disposed of, if fresh bitterness is not to be added to Anglo-Indian relations. Unfortunately there is a tendency.

(1) for some Colleges and Universities to limit the number of students from India, and

(2) for some Boarding-houses to refuse to receive these students from overseas.

These conditions place the student from India in a very unhappy position if he (or she) has not previously made definite arrangements. Often students desiring to come to England are not in a position to make such arrangements because of a lack of the right contacts in this country through which to make them.

Having studied medicine in England and lived and practised as a surgeon in London for 16 years, I have established many contacts with English people who are sympathetic to Anglo-Indian friendly relations. I am anxious to help intending students from India to avoid the difficulties I have mentioned, and if such students will write to me in the first instance, telling me what studies they desire to pursue here, I will put them into direct touch with a reliable source where every help will be given.

Dr. D. B. Bhate, Provincial Secretary, C. P. and Berar Branch of the A.I.M.L.A., Chindwara, writes to us under date 12-1-45 that in the last Bilaspur Conference the following office bearers for the Provincial Branch were elected:—

Dr. G. K. Kulkarni ... President.
" D. V. Dawoo ... Vice-President.
" D. B. Bhate ... Provincial Secretary.
" N. B. Tembhekar ... Joint-Secretary.

The office of the President will be at Congress Nagar, Nagpur, and that of the Provincial Secretary at Chindwara.

R. S. Dr. M. L. Kapur, President, A.I.M.L.A., writes, under date 19th January 1946 to announce as follows:—

Now that the demobilisation of I.A.M.C., Officers will start soon, I request all the demobilised licentiate medical officers to intimate their civil address to Dr. A. N. Ray, General Secretary, A.I.M.L.A., 27, Dixon Lane Calcutta, and also their needs and grievance, if any.

All the Branch Secretaries are requested to give these demobilised officers right royal reception and request them to join our Association, if they have not joined already, and to play their part in the amelioration of the licentiates of the country in every respect.

I take this opportunity to thank all the I.A.M.C., Touring Officers and other leaders of our Association for the service and sacrifice they have rendered in the recruitment to the I.A.M.C.

The Provincial Presidents and Secretaries are requested to wait in deputation before March 1946 on their respective Administrative Medical Officers on the lines suggested by the Standing Committee meeting held on 25th and 26th November 1945.

I also appeal to all the medical licentiates to become members of the Association, so that we may all be united and speak with one voice in the matter of our rights and privileges in the profession.

Chindwara District Medical Conference will be held at Barkui, Parasia, C. P., on 25th and 26th May 1946. All the doctors of the district and other Mining are as of C. P. and Berar are cordially invited to attend, and send Scientific papers to the Secy., Chindwara Mining Area Medical Assn., Parasia.

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The Election of office bearers were passed unanimously.

Mymensingh (Bengal) (2) Meeting held on 25-10-45 with Dr. B. Chowdhury in the chair. 9 members and two invitees were present.

Resolutions: (1) Dr. A. D. Mukherji's name was proposed and passed unanimously for the Presidentship of the Bengal Provincial Branch.

(2) Approved of the Scheme of Health Insurance for the Industrial workers reported by Prof. Adarkar.

(3) **Re:** The high fees and the migration fees charged by the Calcutta University from the licentiates applying for admission into the M.B.B.S. Course; this meeting protests against the same & requests the University to reduce them so that a good number of licentiates may easily undergo the M.B.B.S. Course.

(4) Resolved that in view of the fact that licentiates are not able to obtain foreign medical qualification owing to their non-recognition by the Indian Medical Council, this meeting urges upon the Council to recognise the licentiate qualification in as much as it is recognised

i by the Prov. Med. Councils.

ii for the purpose of King's Commission in the I.A.M.C.

Resolved further that this Branch do request the Bengal Provincial Branch & the Parent Body to take active measures in respect of this matter.

Mymensingh: (Bengal) (3) Meeting held on 30-11-45 with Dr. B. Chowdhury in the chair. 11 members were present.

Resolutions: (1) Due to want of accommodation and travelling difficulties etc., it is resolved that this Branch is not in a position to invite the A.I.M.L.A. to hold its Annual Conference here, this year.

(2) This meeting requests the Civil Surgeons to issue necessary permits to purchase Quinine to the registered medical practitioners without unnecessarily asking them to interview him for this purpose.

(3) This meeting requests the Bengal Government to convert the local medical school into a college when other schools in Bengal are so converted.

Bengal.—A meeting of the Provincial Standing Committee, A.I.M.L.A., Bengal was held on 28-10-45, at 5 p.m., at 27, Dixon Lane, Calcutta.

Fifteen members were present. Dr. A. D. Mukharji, Provincial President, presided.

The following resolutions were passed:—

1. Proceedings of the last meeting held on 11-2-45, were confirmed.

2. The invitation of the Howrah Branch to hold the next Provincial Conference was accepted.

3. The dates of the conference were provisionally fixed on the 26th and 27th January, 1946.

4. After scrutiny of the voting papers for the election of the Provincial Secretary it was found that Dr. B. Chaudhuri secured the largest number of votes. So he was declared duly elected Provincial Secretary for 1945-46.

5. Resolved that the funds for perpetuating the memories of late Dr. A. B. Mukharjee and late Dr. Satkori Ganjuly be kept open till the next Provincial Conference at Howrah. The Provincial Secretary be authorised to write to the branches which have not yet contributed to do so if possible.

6. Resolved that the Provincial President and the Provincial Secretary be authorised to send their opinions on Prof. Adarkar's Report to the General Secretary at an early date.

7. Considered the position of the Licentiate members of the I.A.M.C., on demobilisation and resolved that the Government of India be immediately moved by the parent Association to announce the permanency of the I.A.M.C., and the Government be urged upon to admit the members of this Corps who have rendered meritorious service during the war which has just ended to the permanent Commission and to admit prisoners of war and those who are still working as V. C. Os in the I.A.M.C., to the Commission and also the Government be urged upon not to revive the old I.M.D., and to treat medical men and women who might have joined the Indian National Army sympathetically and not to draw proceedings against them.

8. Resolved that the Bengal Government be moved to introduce one uniform Provincial Medical Service for Bengal.

9. Resolved that the Government of Bengal be thanked for acceding to the request of the President of Bengal Provincial Branch in appointing another Licentiate to the Governing Body of the State Medical Faculty in pursuance of the resolution of the last Provincial Conference.

10. This meeting learns with concern that several Assistant-Surgeons are being posted to Sadar Hospitals which were so long being served by Sub-Assistant-Surgeons and this meeting urges upon the Government not to brush aside the services rendered by these officers and deprive them of their share in manning these public hospitals after they are provincialised.

After some informal discussions on other matters affecting the class the meeting terminated after tea and light refreshments.

Noakali (Assam):—Meeting with Dr. M. N. Sur, in the Chair. 5 members were present.

Resolved that:—1. This meeting of the members of the All-India Medical Licentiates' Association, Noakhali Branch, places on record the deep sense of sorrow and grief at the sudden and premature death of Dr. T. C. Barchan. May his soul rest in peace.

Resolved that:—2. This meeting of the All-India Medical Licentiates' Association, Noakhali Branch, vehemently protests against the non-inclusion of Medical Licentiates within the purview of the Indian Medical Council Act 1933 and request the Government to so amend the Act as to include the Medical Licentiates within its purview.

Resolved that:—3. The members be requested that their concentrated energy be devoted to recruit as many of our colleagues as possible as members of this Branch Association, so as to show to our other sister organisations that our organisation is popular, representative and powerful and this can be done by recruiting one new member each month by every member.

Resolved that:—4. Members of this branch be requested to subscribe Re. 1/- (one) each per month to run the minimum expenses of this branch smoothly.

Resolved that:—5. A list of members with up-to-date addresses and register number be sent to General Secretary, A.I.M.L.A., (vide Circular No. 2, dated 27-7-45) and copies of the proceedings of the meeting be sent to General Secretary, Provincial Secretary and the Editor of our Journal.

Gujarat (Bombay):—The annual general meeting of the Gujarat Branch, Ahmedabad was held on Wednesday, the 31st October 1945, at 4 p.m., at Prarthna Samaj Mandir, when about twenty-five members and a few non-members were present.

The following business was done:—

(1) Proceedings of the last meeting were read and confirmed.

(2) Bombay Provincial Secretary's Circular letter No. 4 was read and resolutions were passed.

(3) The resolution of the Thesis Committee to award Dr. P. S. Ramchandrier's prize of Rs. 25 for best papers on Asthma to Dr. H. I. Jhala was passed. No prize was awarded as there were no papers on Dr. Joseph Benjamin Thesis.

(4) Contingency bill of the Branch for a sum of Rs. 8-0-3 only for the month of October 1945 was passed.

(5) Dr. H. N. Raval, the Branch Secretary, read the annual report of the working of the branch for the past year which was carried unanimously.

(6) The proposal from Dr. A. P. Shukla to increase the local subscription of the Branch from Rs. 1-0-0 to Rs. 2-0-0 only was passed.

(7) The following Office-bearers were elected for the ensuing year:—

Dr. J. H. Bhatt	... President.
" K. J. Bhatt	... Vice-President.
" P. R. Trivedi	... Hon. Branch Secretary.
" H. G. Jhambhekar	... Hon. Joint Secretary.

(1) Dr. H. N. Raval (2) Dr. R. C. Dalal (3) Dr. A. P. Shukla (4) Dr. J. J. Vyas (5) Dr. B. G. Mehta (6) Dr. G. B. Patel (7) Dr. Jamiatram B. Desai as Patron of the Branch.

Report of the Working of the Gujarat Branch from September 1944 to October 1945:—We are pleased to place before you the report of the working of the Branch for the year 1944-45 as passed by the Managing Committee at its meeting held on 26th October 1945.

The following were the office-bearers during the period under report:—

(1) Dr. J. B. Dessai	... Patron of the Branch.
(2) " J. H. Bhatt	... President.
(3) " K. J. Bhatt	... Vice-President.
(4) " H. N. Raval	... Hon. Secretary.
(5) " H. G. Jhambhekar	... Joint Hon. Secretary.

Members of the Managing Committee.

(1) Dr. Bhau Rao G. Mehta.
(2) " M. K. Pandya.
(3) " N. S. Shah.
(4) " P. R. Trivedi.
(5) " A. P. Shukla.

In the beginning of the year there were 58 members on roll and during the year 27 new members were enlisted and at present we have 85 members.

During the period under report twenty-five meetings were held. Out of which six were Managing Committee meetings, two Thesis Committee meetings, nine general meetings and four clinical meetings. In the clinical meetings, papers on Sulphonamide Therapy, Infantile Convulsions, and Vitamins in Health and Disease were read and discussed. All the meetings were fairly well attended.

Here I take this opportunity to request you all to make it a point to attend as many meetings as possible.

During the period under report our Branch joined the Ahmedabad Medical Society in celebrating the 82nd Birthday of our old Veteran Dr. Joseph Benjamin on 23rd September, 1944.

The second noteworthy event was giving a farewell party and wishing a successful future to one of our members, Dr. H. I. Jhala L.C.P.S., M.C.P.S., and on his being appointed as Clinical Pathologist to J. J. Hospital.

One special meeting was convened to meet the present President of our Association, R. S. Dr. M. L. Kapur, the then General Secretary of our Association when he was here on I.A.M.C. Recruiting tour. The meeting was largely attended and the members present took great interest in the discussion.

During the period the Thesis Committee met twice and decided to award prizes as under:—

For the year 1943:—

(1) Dr. Joseph Benjamin Prize, Rs. 40/- Subject:—Sulphonamide Therapy to Dr. H. I. Jhala of Ahmedabad.

(2) Dr. P. S. Ramchandrier Prize, Rs. 30/- Subject:—Infantile Convulsions to Dr. G. S. Pernaik of Malegam.

For the year 1944:—

The Thesis Committee have decided to award Dr. P. S. Ramchandrier Prize of Rs. 25/- Subject:—Asthma, to Dr. H. I. Jhala. As there were no papers for Dr. Joseph Benjamin Thesis, the prize was not awarded.

We take this opportunity to congratulate the writers who got the prizes and request all the members of our class in general to write Thesis Papers and compete for the prizes.

About the meetings of our branch, we should hold more clinical meetings and I take this opportunity to request all our local members to read papers in our branch meetings and hold discussions on them.

During the period our worthy Dada, Dr. Jamiatram B. Desai, the Patron of our Branch, gave us full co-operation and guidance and attended almost all the meetings.

During the year under report, we have spent Rs. 74-5-0 only as contingency expenses, the statement of which is as follows:—

	Rs.	s.	p.
Stationery, printing and typing	22	5	0
Postal expenses	14	0	0
Rent of the meeting hall	10	0	0
Expenses for circulating meeting intimation, notices, circulars etc.,	28	0	0
Total	74	5	0

We request all the members to take more interest in the working of the branch especially by volunteering to read clinical papers. As our numerical strength in this city is very large, we think it is quite possible that we can make this branch, the best working branch of all the branches of our Association.—(H. N. Raval, Hon. Secy, Gujarat Branch).

Munshiganj. (Bengal) The Annual General meeting was held on 23-9-45 under the Presidentship of Dr. H. K. Ghosh. Six members were present.

1. The annual report was read by the Secretary Dr. H. C. Das and accepted.

2. The Secretary produced the account of the Branch upto the date of the annual meeting which was already passed in the managing committee meeting held on the same date and was passed unanimously.

3. The Secretary produced the budget estimate of income and expenditure for the coming year (1945-1946) which was now passed unanimously.

4. A resolution was passed unanimously to the following effect:—

This Branch strongly protests against the non-inclusion of Medical Licentiates within the purview of the Indian medical Council act of 1933 and requests the Govt. of India to amend the act as to include the Medical Licentiates within its purview. The branch further resolves to send copies of this protest resolution to the Provincial and Central authorities through the Provincial Secretary.

5. Dr. H. K. Ghosh and Dr. J. K. Dutta were elected unanimously as members of Provincial Standing Committee Bengal from this branch.

6. A resolution was passed unanimously suggesting the name of Dr. A. D. Mukerji as the Provincial President for Bengal.

7. A resolution was passed unanimously suggesting the name of Dr. B. C. Choudhury, Mymensingh as the Provincial Secy.

8. Resolved that a subscription of Rs. 5/- sent to the Provincial Standing Committee and the Secy. be requested to realise -/8/- from each member of the branch for this purpose.

9. Discussed about raising subscription towards the Ahibhusan and Satkari memorial fund and resolved that attempt should be made to raise subscription for this purpose.

10. The following office bearers were elected for the ensuing year (1945-46):—

President:—Dr. H. K. Ghosh.

Vice President:—Dr. A. K. Dutta.

Secretary:—Dr. H. C. Das.

Managing Committee:—Dr. D. N. Paul, Dr. G. K. Gupta, Dr. J. K. Dutta and K. M. Sen.

N. B. The President, Vice-President and Secretary will also be considered as members of the Managing Committee.

11. Dr. H. C. Das, the Secretary of the branch, was elected unanimously as delegate of this branch to the annual conference of the A.I.M.L.A. to be held at Shillong.

Annual Report:—This branch was established on the 26th December, 1944 on the occasion of the visit of Dr. A. N. Roy, the then principal recruiting officer for I.A.M.C.

The branch was established with seven members. During the year, three new members have been established in its roll and expects to enlist many more members in the ensuing year.

Altogether three meetings were held during the year including the annual meeting. All the meetings were quite successful both as regards medico-political and scientific discussions.

Dr. W. J. Verjin, Civil Surgeon, Decca, was approached for becoming a Patron of this branch and he very kindly agreed to it.

Some schemes were prepared for speedy development and new enrolment of members in the Branch and accordingly licentiates of the Sub-Division were approached. Some of them have already promised to be members from the coming year and I hope the branch will flourish.

Chalibasa (Behar).—Proceedings of the Executive Committee meeting held on 23rd September, 1945 at 5 p.m., at Dr. A. Kundu's residence. 6 Members were present.

The President and Vice-President both being absent Dr. A. K. Mitra took the chair.

The following resolutions were passed:

1. Minutes of the last Executive Committee meeting were read and confirmed.

2. It was unanimously resolved that the Annual Conference of this branch and the Bihar Provincial Conference be held simultaneously at Chalibasa sometimes during the ensuing X'mas and the

Secretary be requested to make all preliminary arrangements for the same.

3. Resolved that a Conference Sub-committee, to manage the affairs on the Conference, be formed jointly from Chaibasa and Jamshedpur branch with the following members from Chaibasa and the Secretary, Jamshedpur branch, be requested to elect members for inclusion in the said sub-committee.

1. Dr. P. C. Sen,
2. " A. R. Kundu,
3. " R. De,
4. " G. C. Bose,
5. " A. K. Mitra.

4. The estimated budget of this branch for the year 1945-46 was put up and passed.

5. The bill for purchasing a tin box (*vide* resolution No. 3 passed in Executive Committee meeting held on 10-6-45) was put up and passed for payment and the Secretary is requested to recover the money from contingencies of this branch from the Treasurer A.I.M.L.A.

Executive Committee meeting held on Sunday, the 11th November, 1945, at 5 p.m., at Dr. R. De's Residence, 8 members were present.

Dr. N. R. Buxi was voted to the Chair.

1. Minutes of the last Executive Committee meeting were read and confirmed.

2. The contingent bills of the branch from 1-7-45 to 30-9-45 amounting to Rs. 17-11-6 and the T. A. bills, submitted by the Secretary, for doing propaganda work amounting to Rs. 29 were scrutinised and passed and the Secretary was requested to submit it to the General Secretary, A.I.M.L.A., for recoupment at his earliest convenience.

3. Read and considered General Secretary's (A.I.M.L.A.) Circular No. 8 dated 30-10-45 regarding opinion of Chaibasa Branch in inviting the next annual conference of A.I.M.L.A., at Chaibasa and it was resolved that the General Secretary be informed that this branch regrets its inability to invite such a conference in near future.

4. Read and discussed the Bihar Provincial Secretary's letter No. 341-56, dated nil, regarding nomination of the Provincial President and it was resolved that this branch has the pleasure to nominate unanimously, Dr. R. C. Prasad, the present Provincial Secretary, as the President-elect of the Bihar Provincial Branch for the ensuing year.

5. Resolved that the I.G.C.H., Bihar be requested to inaugurate the forthcoming Bihar Provincial Conference to be held at Chaibasa and that Dr. A. D. Mukharji of Calcutta be approached to preside over that particular conference, and the Civil Surgeon, Singhbhum, to open the exhibition.

6. Resolved that 23rd and 24th December, 1945, be fixed for the sitting of the Provincial Conference and that a Reception Committee and the different Sub-Committees be formed.

7. It was further resolved that anybody may become a member of the Reception Committee by paying a special membership fee of Rs. 5 only but the office-bearers must be members of the Association.

8. Resolved that the Secretary, Reception Committee, be requested to intimate, at his earliest, the date, programme and other relevant information to the Editor, *Indian Medical Journal* for publication.

9. Resolved that the Reception Committee be requested to arrange for all entertainments so as to make the conference as attractive and successful as possible.

10. Resolved that a Recruitment Sub-Committee consisting of the following members be formed to push on "membership drive" more vigorously in the district.

1. Dr. P. C. Sen, 2. Dr. A. R. Kundu, 3. Dr. R. De,
4. R. P. De, 5. Dr. A. K. Kumar, 6. Dr. M. C. Mishra.

Nadia (Bengal).—A monthly meeting was held on 29-9-45 in the house of Dr. K. B. Roy at 7 p.m., 6 members were present.

1. The proceedings of the last meeting were read and confirmed.

2. General Secretary's Circular No. 6, dated 17-9-45 was placed on the table and discussed with the following results:—

(i) There are no properties of the Association in the branch. Secretary of this branch himself supply everything when occasion arises.

(ii) Budget for Rs. 25 (Rs. 15 for monthly expenses and Rs. 10 for propaganda) be passed.

(iii) There is a branch of Indian Medical Association in this town. The rate of subscription is Rs. 4-8-0 per annum. It consists of a very few members of the licentiate class.

3. The annual report of this branch was placed before the meeting and passed.

4. All the old office bearers of this branch resigned; and the following new office bearers were elected unanimously for the year 1945-46.

- (1) Rai Shaheb S. C. Dutta ... President,
- (2) Dr. B. C. Bhadra ... Vice-President,
- (3) " K. R. Roy ... Secretary,
- (4) " P. C. Chakrabarty ... Asst. Secretary,
- (5) " M. Bhounic ... Auditor,

(6) Dr. M. Sen. (7) Dr. J. N. Roy. (8) Dr. N. B. P. Bhiswas. (9) Dr. D. Basu. (10) Dr. B. C. Chosh. . . . members of the executive committee.

Annual Report:—1. 12 monthly meetings and one Special meeting were held during the year and scientific discussions were made in almost all of them.

2. This Branch paid Rs. 10 as donation to the Budget Conference and sent Dr. Kulojaranjan Roy Secretary of this Branch as a delegate to that Conference.

3. Dr. Kulojaranjan Ray and Dr. Birendra Chandra Ghosh attended the 33rd Annual Conference of the A.I.M.L. Association held in Calcutta as delegates from this branch.

4. Rai Shaheb Dr. S. C. Dutta and Dr. K. R. Roy became members of the Reception Committee of the 33rd Annual Conference of the of the A.I.M.L. Association.

5. This branch paid Rs. 100 (Rupees One hundred only) to the Satkari Ganguly Memorial Fund.

6. This branch moved the higher authorities to modify the defective rules of distribution of Quinine and Mepacrine to the Registered Medical Practitioners.

7. This branch recruited 3 members for our mother Association this year.

8. A special meeting took place on the 20th September 1945, to observe the All-India Anti-Indian Medical Council day.

(2) A monthly meeting was held on 26-10-45 in the house of Dr. K. R. Roy at 7 p.m., 7 members were present.

(1) The proceedings of the last meeting were read and confirmed.

(2) This branch unanimously elected finally Dr. A. D. Mukherjee of Calcutta as Provincial President for the next year.

(3) Dr. K. R. Roy and Dr. J. N. Roy members of the Provincial Standing Committee be requested to attend the meeting of the Standing Committee to be held on 28-10-45.

(4) Scientific discussions were made on some malarial cases.

(3) A monthly meeting was held on 30-11-45, in the house of Dr. K. R. Roy at 6-30 p.m., 5 members were present.

1. The proceedings of the last meeting were read and confirmed.

2. The Circular No. 8 dated 30th October, 1945, from the General Secretary was placed on the table and discussed.

3. The letter from Dr. J. Mojumdar, Joint Honorary Secretary, Calcutta branch was placed before the meeting which was appreciated by the members present.

4. Considered the letter of the Hony. Joint Secretaries of the Howrah Branch inviting the 12th Bengal Provincial Medical Licentiate Conference in January 1946 at their place. Members of this branch were requested to take active part in the Conference.

5. Scientific discussions were made on treatment of Malaria with Mepacrin and Quinine.

Silchar (Assam) Annual General meeting held on the 22nd December, 1945. 21 members were present.

Dr. R. M. Deb, M. B., Civil Surgeon, Cachar, presided over the scientific section. Dr. A. Das Patni read a paper on Malaria and the members took part in the discussion which followed.

Light refreshment was served to all present. The ordinary business of the day was carried under the Presidency of Dr. M. R. Chakrabarty.

1. Minutes of the last meeting were read and confirmed.
2. Accounts upto date were checked and passed.
3. Annual report of the branch as presented by the Secy. was read and adopted.

4. Office-bearers for the year 1945-46 were elected as follows:—

- | | |
|---------------------|--|
| President. | Dr. M. R. Chakrabarty. |
| Vice-President. | Dr. S. K. Dutta. |
| Secy. & Treasurer. | Dr. S. P. Nath. |
| Joint Secy. | Dr. P. B. Deb. |
| Auditor. | Dr. B. Gupta. |
| Standing Committee. | Office-bearers & Drs. K. Purkayastha, I. V. Roy, S. C. Sen Gupta, D. N. Chakrabarty, M. Chakrabarty. |

5. Dr. S. P. Nath and K. Purkayastha are elected as members of the Provincial Standing Committee.

6. Resolved that this branch elects Dr. J. N. Roy or Rai Bahadur Dr. G. C. Das as President of the next Provincial Conference to be held at Silchar.

7. Resolved that a Reception Committee be formed with the following members for the ensuing provincial conference of A.I.M.L.A., Assam.

- | | |
|----------------------------|--|
| Chairman. | Dr. S. K. Dutta. |
| General Secy. & Treasurer. | Dr. S. P. Nath. |
| Asst. Secy. | Dr. P. B. Deb. |
| Scientific Sec. | Dr. D. N. Chakrabarty D. T. M. (In-charge), Dr. H. C. Paul D. T. M. |
| Entertainment. | Dr. M. R. Chakrabarty, Dr. A. Chatterjee, Dr. P. B. Deb. |
| Members. | Dr. B. Gupta, S. Sen Gupta, P. Sen, S. C. Ghosh, T. Chakrabarty, I. V. Roy, S. Chakrabarty, K. Purkayastha, K. P. Sinha with powers to co-opt. |

A sum of Rs. 10/- is fixed as fees for members of the Reception Committee. The meeting concluded with a vote of thanks to the Chair.

(2) Meeting held on the 29th, September, 1945. 11 members were present.

Dr. R. M. Deb M. B. Civil Surgeon, Cachar, presided over the scientific section.

Dr. K. Purkayastha read a very interesting paper on the diagnosis and treatment of pyrexia. Members present took part in discussion and the President closed it after his valuable remarks.

A vote of thanks was proposed to the Chair and the scientific section was terminated.

Dr. Dutta then took the chair and carried the remaining business of the day.

1. Minutes of the last meeting were read and confirmed.
2. Account of the branch upto date was scrutinised and passed.

3. Letter No. 192-208 dated 9-9-45 of the Provincial Secy. was read and the contents were noted by the members. All were requested to send their contribution direct to the Prov. Secy.

(3) Meeting held on 27th October, 1945. 10 members were present.

Dr. R. M. Deb M. B. Civil Surgeon, Cachar, took the Chair.

Dr. K. P. Sinha read a paper on Anaemia-its classification and treatment.

Dr. S. P. Nath opened discussion, followed by Dr. R. Sinha who narrated some cases, his personal experience and difficulties owing to limited amount of laboratory help available. The President then closed this section after his learned remarks.

Dr. Chakrabarty then presided.

1. Minutes of the last meeting were read and confirmed.
2. Account upto date was checked and passed.
3. Cir. No. 6 of the Genl. Secy. was read and Budget estimate for the year 1945-46 as presented by the Secy. was adopted.

4. Letter No. 209-25 of the Prov. Secy. was read and the members expressed their inability to invite the All India Conference.

(4) Meeting held on the 24th November, 1945. 15 members were present.

Dr. M. R. Chakrabarty took the Chair.

1. Minutes of the last meeting were read and confirmed.

2. Letter No. 272-88 dated 12-11-45 from the Prov. Secy. was read and the members extend their hearty invitation to hold the next annual Provincial Conference at Silchar during the X'mas, provisional dates are fixed on the 27th December, 45. A sub-committee is formed with the following members to work out the details.

Sub-committee: Drs. S. K. Dutta, M. R. Chakrabarty, S. P. Nath, B. Gupta, A. Chatterjee, P. B. Deb & P. Sen.

3. Letter No. Nil dated 8-11-45 from the Prov. President with a copy of the address delivered by him at the last Prov. Conference held at Gauhati was placed on the table for the perusal of the members.

4. Account of the branch to date was checked and passed.

5. Dr. A. Chatterjee read a case note on Belly-ache. Discussion was opened by Dr. K. Purkayastha and all the doctors present took part in it.

Baghalpur. Meeting of the Executive Committee of the Baghalpur Medical Officers' Association took place on 29-11-45 at 8 P. M. in the quarters of the Civil Surgeon, Baghalpur. Attendance:

1. Rai Bahadur B. K. Rai M.B.D.M.R.E. (Cantab) Civil Surgeon, Baghalpur (President ex-officio).
2. Dr. J. M. Singh L.M.P. Medical Officer Dagmara (Vice-President).
3. Dr. K. Prosad L.M.P. 2nd Medical Officer Sadr Baghalpur Hospital (Organiser & Auditor).
4. Dr. T. P. Choudhry L.M.P. Medical Officer, Colgong (Secretary).
5. Dr. B. C. Ghose L. M. P. Medical Officer, Banjoan (member).
6. Dr. A. Samad L. M. P. Medical Officer, Jagdishpur (member).
7. Dr. R. K. Ghose L. M. P. Banka (member).

Proceedings:—

1. Confirmed the proceedings of the last conference held on 8-4-45.

2. Considered the utility of an organisation of all the medical officers serving under the local bodies of the Bihar Government and resolved that the Secy be authorised to contact the health Officers of all the district boards who may be requested to communicate our message, rather stimulate the doctors of the respective district, so that they may be under one unit to deal with our common cause and advancement of medical science.

It is further resolved that the Secretary and the local organiser of the association be authorised to attend the Provincial Medical Licentiate's association which is going to be held very shortly at Chaibasa so that they may contact the doctors there coming from different parts of the Province and may draw their attention towards the utility of the common organisation in near future.

3. Considered the circular No. 32-75-3355 dated 7-6-45 of the Chairman District Board Baghalpur regarding vaccination in dispensaries and resolved that vaccination in dispensaries be pushed on as far as possible by the dispensary staff there being no compulsion over the staff for any minimum daily number of vaccination. The medical officers be informed to keep a register separately for the vaccination and the registers will be supplied by the district board.

(4) Resolved that a deputation on behalf of the Baghalpur D. B. medical officers' association be given to the Chairman D. B. Baghalpur; his attention may be drawn to the D. B. Resolution No. 17 dated 19-2-45 for favour of provision in the revised budget for 1945-46 with retrospective effect.

Further resolved that the grade be modified as wanted by the association in its resolution No. 3 of the conference held on 8-4-45 & the extract forwarded to the Chairman D. B. Baghalpur under No. 79 A dated 24-5-45 for action.

(5) Resolved that the A. H. O's salary, as sanctioned by the Govt. i.e. Rs. 150/- per month, may be given effect to immediately.

(6) Considered that as the work of the A. H. O's have been greatly increased by the extensive supervision and epidemic work and the present Budget allotment for their T. A. does not cope with

their earned T.A., the association resolved that the budget allotment for their T.A. be sufficiently increased so that there may not be any hitch in drawing the actually earned T.A.

(7) Considered that as the present rate of all conveyances has greatly increased, the T. A. rate of the medical officers for their epidemic work is very insufficient and hence resolved that to cope with the outbreak of epidemic, the actual T. A. be paid to the medical officers.

(8) Resolved that the A.H.Os. be provided with one peon, as without him, it will be extremely difficult for them to attend their duties on tour.

(9) Resolved that a Savings Bank Account be opened by the Secretary for depositing the income of the association.

Saran (Bihar) An extraordinary meeting held on 6th October 1945, and passed the following resolution unanimously:—

Resolved that owing to the financial stringency the pay of the Medical Officers serving under District Board had been cut since 2½ years. Now that its financial position has improved, the pay should be restored to the previous level atleast and the present increased cost of living should also be taken into account.

(1) Rajshahi (Bengal) Meeting held on 20-9-45 with Dr. M.C. Lahiri as president passed the following resolution:—

Resolution:—"Resolved that this meeting while reiterating the resolution passed in the previous years, once again strongly protests against the continuance of the Indian Medical Council Act 1933 in spite of repeated protests and condemnation by the whole medical profession of India and requests the authorities concerned to take immediate steps to amend the said Act as to include the medical licentiates within its purview."

(2) Meeting held on 21-9-45 with Dr. M.C. Lahiri as president and passed the following resolutions:

(1) It is resolved that Dr. D. G. K. Maitra and Dr. A.C. Choudhury be elected members of the Provincial Standing Committee for the year 1945-46.

Proposed by Dr. M.C. Lahiri Seconded by Dr. A. Aziz.

(2) It is resolved that Dr. A.D. Mukherjee be elected Provincial president for the year 1945-46.

Proposed by M. C. Lahiri. Seconded by Dr. G.K. Maitra.

(3) It is resolved that Dr. B. Choudhury of Mymensingh be elected Provincial Secretary for the year 1945-46.

Proposed by Dr. A.C. Choudhury. Seconded by Dr. A. Aziz.

(4) It is resolved that our branch is not in a position to hold any Conference this year.

(5) Secretary is authorised to collect money for Satkari Memorial fund and to send it to Provincial Secretary in due time.

Indore (C.I.) Review of the meetings of the A.I.M.L.A. Indore Branch held from 1st Oct. 44 upto 30th of Sept 45.

Seven meetings were held during the year with an average attendance of nine members.

Subjects discussed at the different times were as follows.

Typhoid with haemorrhage in its early stage. Cases of Hematuria, Hematemesis, Conjunctivitis (acute and Chronic) Interstitial Keratitis, Ascitis, Myloid Leukemia., Pemphigus, Haemorrhage in the Eye, Degeneration in the Retina, Diphtheria and its aftereffects. A case of Multiple Fracture of the Skull, without the patient being unconscious, was demonstrated.

Many resolutions were passed.

1. In A.I.M.L.A. Conference more importance may be given to the scientific Section. The programme should be so arranged that it should suit all delegates to attend Scientific Section. It should be given the same importance as the open session and should be held in the open session hall.

2. From the experiences of the previous conferences we suggest that the subjects committee meeting should be held a day earlier to the open Conference. This will save the night stress on the delegates and unnecessary troubles.

3. This Branch protested against the All India Medical Council Act as it is and requested the Govt. to include the Medical Licentiates in the proposed All India Medical Register.

Regarding the progress of this branch we have increased our strength by seven members more.

For the next year, that is 1st Oct. 45, to 30th Sept. 46 we have elected the following as office bearers of our branch.

President Dr. G. V. Deshpande, Vice-President Dr. G. V. Motiwala, Secretary Dr. S. N. Kelkar, Joint Secretary Dr. Moḡhe Treasurer Dr. Bhagawat, Members Drs. Oak, Kane Capt. Tare.

NOTICE

A Meeting of the Standing Committee will be held on 4th and 5th March 1946 at 79, Daryaganj, Delhi, where arrangements for their Boarding and Lodging will also be made.

All Members of the Standing Committee are requested to attend.



The Next Issue of the Journal would be a Special Number on
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Each finger was then used as a "test," for which purpose it was first immersed in the fluid under examination for the required length of time, transferred to a bowl of distilled water for a period of one half-minute to remove traces of any disinfectant, etc., after which a dry sterile wool swab was rubbed vigorously over the finger tip for a period of one half minute (timed.)

This wool swab was then used to inoculate a suitable culture plate for the growth of the organisms under test. Thus each finger tip was artificially infected, and, as indicated by the control finger, this infection was heavy. The action of the antiseptic unassisted by rubbing or other movement was investigated from the point of view of bactericidal action.

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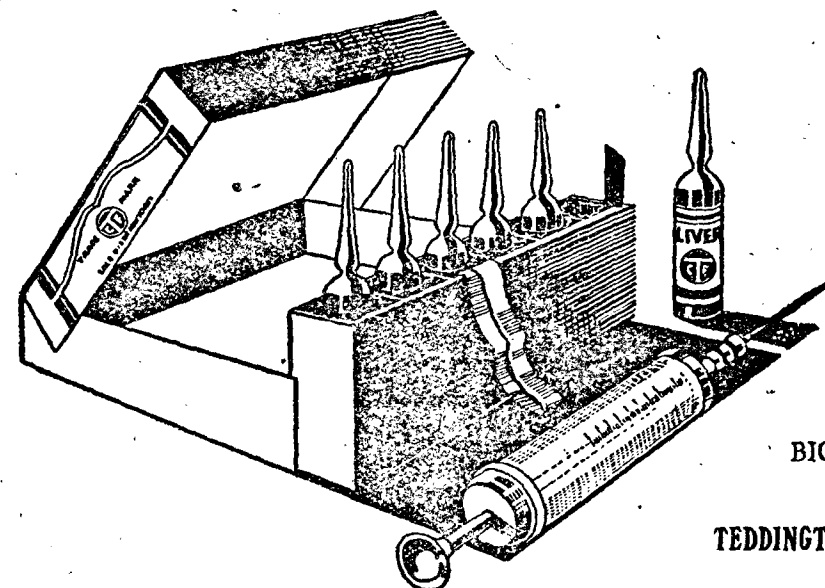
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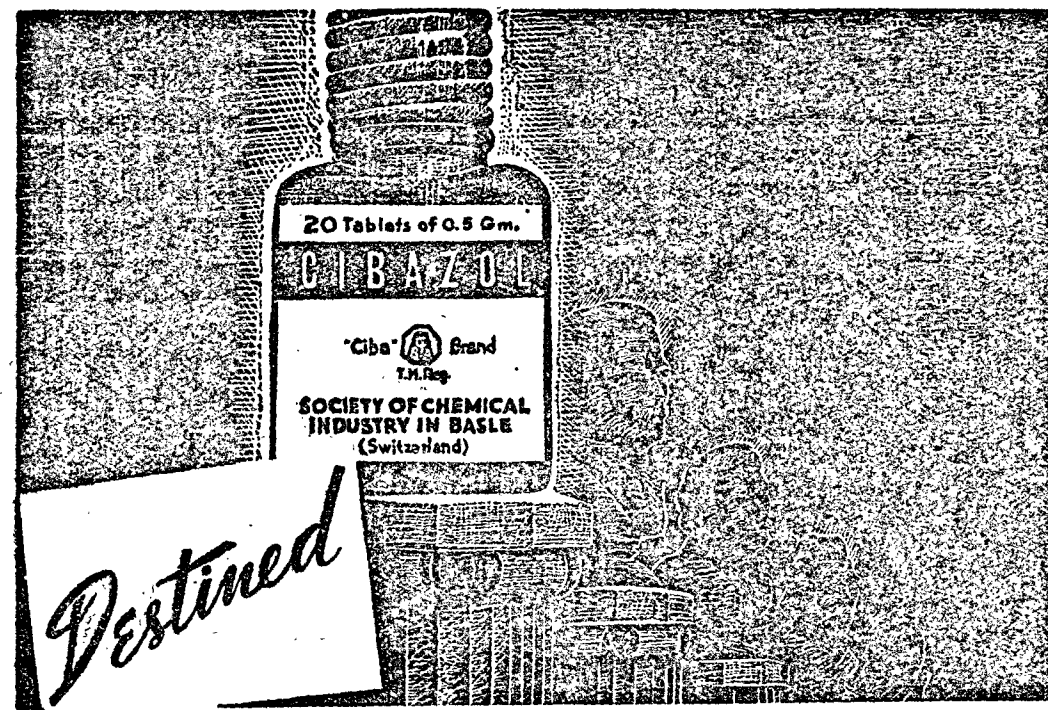
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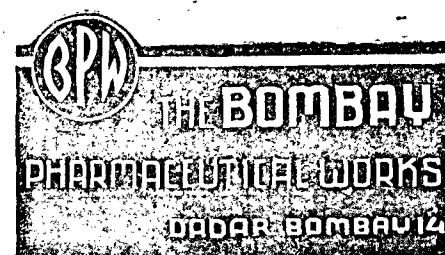
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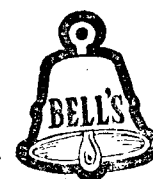
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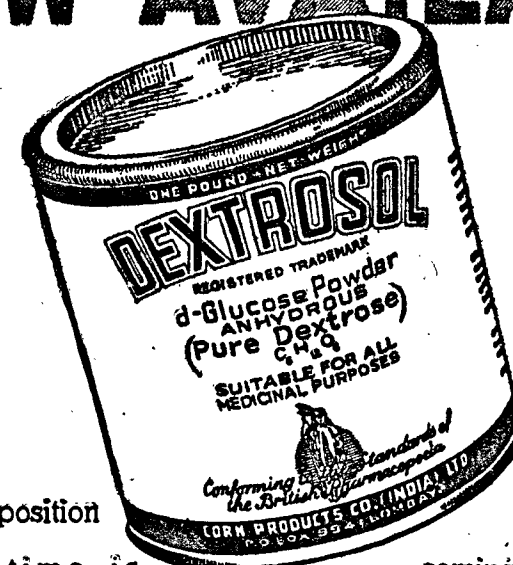
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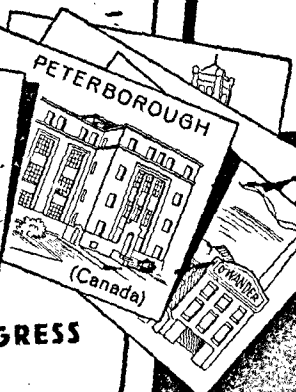
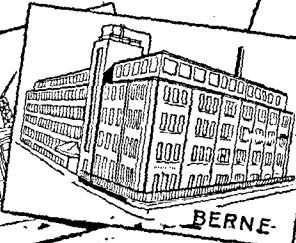
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the new Information

During the last few years the following facts about staphylococci have been established :—

1. There are at least 5 separate elements in staphylococcal toxins producing 5 distinct toxic effects :—

Haemolysin: Leucocidin: Dermatonecrotic: Nephrotoxin: Enterotoxin.

2. Staphylococci are important causative agents in food poisoning.

Since the war, outbreaks have been recognised as due to the effects of this organism or its enterotoxin.

The latter is particularly dangerous as it can withstand a temperature of 100°C for 30 minutes. Outbreaks of poisoning which have been traced to milk have been accounted for by the frequent occurrence of staphylococci in cases of mastitis in cattle. Examples of tinned meat poisoning due to staphylococcal infection are recorded in recent literature.

3. Danger of Staphylococcal infection in Maternity Homes.

Several such outbreaks have been reported in Bulletins of the Emergency Public Health Laboratory Service. These outbreaks would appear to be due chiefly to the spread of infection from the hands of nurses.

STAPHYLOCOCCI and MODERN ANTISEPTICS

In the realm of established medicine it is, to-day, well understood that staphylococci rank pari passu with streptococci as a cause of many infections. Medical men, therefore, are increasingly anxious that manufacturers of antiseptics should be aware of the importance of making their products equally effective against both these organisms.



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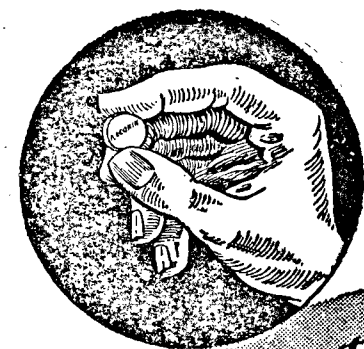
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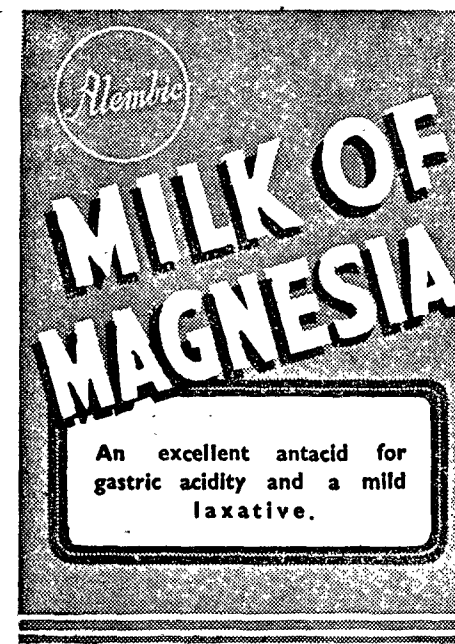
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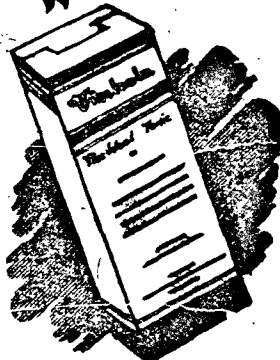
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† "The Treatment of Wounds in War Time." Medical Press & Circular, January 13th, 1943.

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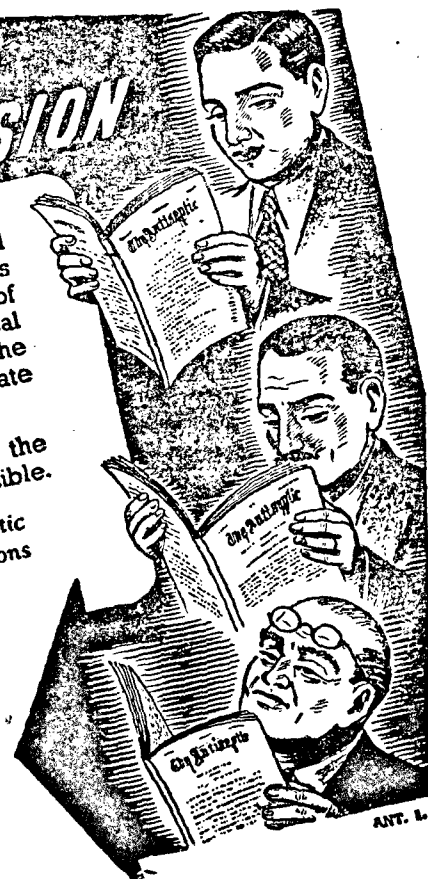
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Indian Medical Journal

(Journal of the All-India Medical Licentiate's Association)

Vol. 40. Madras: March, 15, 1946. No. 3

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Vol. 40. Madras, March 15, 1946 No. 3.

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OUR MONTHLY SURVEY

Report of the Health Survey and Development Committee: The Committee had finished its arduous labours in December last and issued a report in three volumes. The first volume surveys the existing conditions of public health, medical relief and other cognate subjects. The second volume outlines its recommendations for a comprehensive National Health Service and for the development of the needed professional and technical personnel. The third volume contains a number of appendices giving notes on technical matters such as professional education. In this issue we publish only a summary of the second volume, as the other two volumes are but of academic interest. We have tried our best to make this summary as correctly as possible, subject to the demands of brevity. Any mistakes in this summary are entirely ours. We alone are responsible for them. Mistakes, if any, would be one of omission rather than of commission, and of shifting of emphasis on particular ideas. These are unavoidable in any summary and entirely unintentional.

Intensely practical: We have gone through the report with the greatest care. It is not only a monumental but also an intensely practical report. The Committee has not minced matters but stated them in straightforward and telling manner. It is easy to cross the Ts and dot the Rs. But that kind of work is best left to the time when the Committee's scheme is put through, when alone one would be able to set right any probable flaws in it. We have only to judge it as a whole at present. So judging, we are of the view that the Committee has frankly faced the requirements of the situation and recommended a sound comprehensive scheme of National Health Service for immediate application, which, we dare say, the provincial governments cannot reject with impunity. In making its recommendations, it has at every step kept in view the limited financial resources and the insufficiency of trained personnel, and has wisely made corresponding adjustments in their short-term programme. The most marked and commendable feature of its planning is that it has not divorced public health measures from medical relief but made both preventive and curative work the primary responsibilities of the medical officers at the primary as well as the secondary units. The other marked feature is the widest possible provision for co-operation between the health personnel and the people in all the regional as well as in the central organisations. The village Health Committees of the primary units, the District Health Board of the secondary and the District H.Q. Units, the Statutory Health Board and the Statutory Health Council of the Minister of Health are essentially organisations intended to secure utmost co-operation, help and guidance of leaders of public opinion and of science. Its recommendations on Health Services for certain simple but more widely prevalent diseases such as malaria, tuberculosis and leprosy are on lines often advocated by the organised profession. Its scheme of undergraduate and post-graduate education in Medicine, Dentistry, Pharmaceutics and Nursing are well conceived and aim both at quantity and quality—quantity by recommending establishment of such educational institutions in as many centres as possible and in progressively increasing numbers; quality by recommending proper standards and sufficient equipment and staff. These institutions are put under the guidance of the existing Indian

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Medical Council, the proposed Central Committee for Post-Graduate Medical Education, All-India Dental Council, All-India Pharmaceutical Council and All-India Nursing Council with their counter-parts in the provinces.

The Committee has rightly laid great stress on medical and allied research and observes that there is urgent need for its improvement, expansion and development. It has unanimously recommended that there should be a Central Body for medical research, as in other countries, enjoying latitude in the formulation of its research policy and complete freedom in the disposal of funds allotted to it. The constitution and functions of this Central Body are, in our view, well framed and quite suitable for the purpose for which it is intended.

The provisions for laboratory facilities for practitioners as well for hospitals of the Primary, Secondary and District units are made by suggesting decentralisation of the chief provincial laboratories such as the Guindy and the Haffkine Institutes at Madras and Bombay. The regional laboratories would undertake diagnostic work as well as food and water analysis, while the parent institute will undertake the manufacture of biological products, research and the control of regional laboratories.

Example better than precept: The members of the Health Planning Committee are so convinced of the soundness and practicability of their recommendations, all leading to a comprehensive health service, that they urge on the Central Government to make the small province of Delhi a demonstration centre. We warmly endorse this recommendation. If it proves successful in Delhi, the soundness of the proposed scheme will be established beyond dispute. It will also act as a model and inspiration to other provinces. The Central Government has all the resources to undertake this job. We wish it takes it up at the earliest possible time and demonstrate the wisdom of the old adage that example is better than precept.

Would the future elected government shelve this report?: Some believe that the elected provincial and central governments which are in information, and likely to be established within the next couple of months, would not care to look at the plans evolved under the auspices of the present

unrepresentative and unpopular Central Government and that the new governments would formulate their own plans. We are afraid there seems to be no basis for this belief. We hold no brief for the existing governments either in the Centre or in the Provinces. They are by all accounts unpopular and undemocratic and deserve to be sent out of existence. But we refuse to believe that the popular governments in the making would reject a report so well substantiated and remarkably well drawn as the report of the Central Health Survey and Development Committee undoubtedly is.

Financial implications: A look at the budget estimates prepared by the Planning Committee for the execution of their two 5-year programmes may stagger us at first sight. The non-recurring expenditure for the first 5-year period is 153.5 crores of rupees, and the recurring expenditure 160.46. The average of both for each province works out to Rs. 28.5 crores on the basis of an annual *per capita* expenditure of about Rs. 1-4-0. We do not consider this expenditure to be beyond the resources of any major province. Even if it is otherwise, it is an essential expenditure and highly productive in the final analysis. Money could be raised by the dual policy of loan and taxation.

We agree with the Committee in its suggestion that there should be a statutory obligation on the part of provincial governments to allot at least 15 per cent of their total expenditure to the requirements of people's health in its comprehensive aspects. At present it is not more than about 4 per cent, and *per capita* expenditure about 5.9 annas. Even the standard suggested by the Committee is poor compared to the *per capita* expenditure of Rs. 55 in U. K. and Rs. 51 in U. S. A., and 20 per cent and 13 per cent allotment to health requirements. If even this standard is lowered, it is inconceivable we can ever have a comprehensive health service worth the name. No wonder, therefore, the Committee pertinently and poignantly observes:

"If the rates of expenditure now incurred by the provincial governments on their medical and public health departments were to be taken even as an approximate guide to determine the financial limits of our proposals, any attempt to build a satisfactory scheme of health services would be fore-doomed."

Adequacy of medical and ancillary personnel: The health personnel required to complete the long-term programme and the number now available is shown in the table on pages 65 and 68 of this issue. But let it not be forgotten that the number immediately required, so far as medical personnel is concerned, is not more than 20,000 and this, in our view, can be made available for employment in the health services, provided reasonable remuneration is offered to them. Out of 47,500 medical men, not more than 7,000 are in salaried jobs at present. The vast majority have settled in practice because there has been no scope for them in State service. Nearly 50 per cent of the present available medical men could be mobilised to run the health services provided, as we have said, proper salary and reasonable prospects to rise to higher positions are given. The Committee itself suggests that 25 per cent of medical staff in the secondary and district units can be employed on a part-time salary basis. This is a welcome suggestion. We are quite confident that the practitioners would avail themselves of this offer, if there is not much red-tapism and official pin-pricks behind it. As for the long-term requirements, establishment of a number of medical colleges, anew or by conversion of the existing medical schools, has been strongly recommended. But in this recommendation we find a strange omission. As each new medical college would at least take 5 years to bring out qualified doctors, provided the start is made immediately which of course is not likely, we expected the Committee would recommend the introduction of shift-system of teaching in the existing medical colleges. It has not said even a word about this method of meeting the present inadequacy of medical personnel. This method has got two definite advantages:

- (1) *No extra equipment and building is necessary immediately;*
- (2) *Double the present number of students can be admitted.*

Extra teaching staff would, however, be necessary. Although we welcome more colleges we are yet against too many as it virtually means an avoidable duplication of equipment and buildings and as the amount spent on this account can be usefully diverted to the other more urgent needs of health services. Let us take the example of Madras. It has three medical colleges at present. Four more are proposed, one each

at Guntur, Madura, Coimbatore and Calicut. Would it not be more economical to make arrangements in the existing colleges, at least during the first short-term programme, for admission of double the present number of students and deal with them by a well-balanced and regulated shift system? The Committee has provided Rs. 5 crores on an average for each province for the development of medical colleges and other ancillary teaching institutions. A good part of it can be saved for more urgent needs. We would therefore urge on the provincial governments to consider the feasibility of our suggestion before undertaking projects for more medical colleges. Rather we would advocate more nursing colleges, as our need for nurses is far more urgent than the need for more doctors. It is ridiculous that our country has got only about 5 thousand qualified nurses, nine times less than the number of available doctors. This should be the other way round in a normal development of health personnel. Till this normal ratio between health personnel is achieved, it would not be appropriate to start more number of medical than nursing colleges for reasons which are self evident.

Socialised Health Service: The service proposed by the Committee is entirely free to the people. It is of the view that social insurance, except in limited areas and among certain sections of the population, is not possible as very large section of it cannot afford to pay as yet even a small contribution that an insurance scheme will require. Our study of this subject has also lead us to the same conclusion. The great majority of medical men to be employed under the proposed health services will be on full-time pay basis while a fourth of the total personnel is recommended to be employed on a part-time paid basis. We are glad also to note that there will be no discrimination in the selection and prospects of medical men so employed, and Dr. Viswanath, one of the members of the Committee, suggests strongly that even in the selection for higher appointments periodical tests should be held to pick out from among the health personnel the best candidates instead of direct recruitment. We heartily endorse this suggestion for the reason that if the candidates to health service know they have every prospect of rising to the highest available post, they will seek such a service in larger number than is probable otherwise. This would rectify the standing grievance of

the present members of the service that, today, merit is allowed no chance to show itself up as against nepotism often involved in the so-called direct recruitment.

The three million plan: Taking the average population of a district at 3 millions, although there is a great variation in this respect between province and province, district and district, the Committee has, for the purpose of illustration, taken this as the pivot of their health organisation. The long term planning aims to have one primary unit for every 20,000 of the population, one secondary unit for every 60,000 and one district unit at the district head-quarters. Thus the three million plan will consist of three types of organisation in an ascending scale of efficiency from the point of view of staff and equipment. The total number of beds proposed is 17,000, a ratio of 5.67 beds per thousand of the people.

Necessarily the first 5-year short-term programme is more modest owing to inadequacy of trained personnel and finance. So it envisages one primary unit for every 40 thousand people and one secondary unit, or, perhaps if possible, two such units in each district at the first instance. District unit is not mobilised during this period. How this would be enlarged during the next 5-year period is shown in tables published on page 67 of this issue.

The organisation of the primary unit is of fundamental importance and on its success alone depends the success of the whole programme. It is divided into 4 peripheral units, one of which will be the head-quarters of the unit with a dispensary and two emergency beds,—later on with a 30 bed hospital. One P.H. nurse, midwife and one dai will be stationed at each of the peripheral units. The two medical officers at the primary unit head-quarters will do dispensary and field duties alternately, and the whole staff are responsible for all duties that fall broadly under public health and medical relief, such as vaccination, malaria control measures, vital statistics, maternity and child-welfare work, etc. In short, the members of the primary unit are to act as friends, philosophers and guides to the people whom they are asked to serve.

The secondary unit is intended for a more specialised institutional treatment and to

supervise the work of the primary units in all their ramifications.

Such in brief is the short-term programme of work proposed. It has been well conceived and planned.

Dissenting minutes examined: The report is spiced here and there with dissenting minutes by some members of the Committee, notably Dr. Viswanath, Dr. A.H. Butt and the Hon'ble Mr. P. N. Saprú. We shall review and comment on them with the impartiality of an external critic.

(1) *Licentiate medical education:* Dr. Viswanath and five others maintain that in view of the overall shortage of medical men the licentiate type of education with 3½ years course and 6 months internship is an unavoidable necessity. Lest they may not be misunderstood, we desire to inform our readers that they hold strongly the opinion that the existing licentiates are not "imperfectly or hastily manufactured" doctors and that they should be recognised by the Medical Council of India as the graduates are recognised. Only in the interests of immediate adequacy of medical personnel do they recommend the continuation of the licentiate type of education, although they are of the view that ultimately there should only be one single type of doctor with a basic five years' training. But our contention is that the licentiate type of education has been in vogue in this country for the last 100 years and has created conditions of which Dr. Viswanath may not be unaware under which merit is stifled, and service means permanent stagnation and indignity often beyond forbearance. The way of the early sponsors of licentiate education has indeed been paved with good intentions. But experience has belied their intentions, and the licentiates have been made the scapegoats of policy and expediency. If it is merely to make up the present inadequacy of medical personnel—and this is the specific intention of the dissentients—we believe there are other methods of meeting it. We have already suggested elsewhere in this survey that the shift-system of teaching, if introduced immediately, will double the production of medical men every year, with trifling cost to the taxpayer. To this we may add a further suggestion. The cost of medical education should be substantially reduced and a certain percentage should be admitted free. If these two suggestions, the latter of which is also recom-

mended by the Committee, are implemented without wasting time in academic disputation, we are quite confident that adequacy of medical personnel can be obtained to work up completely the second five-year programme. After all, there is not much difference by way of loss to adequacy between 4 and 5 years' training. We therefore agree with the majority view about one type of medical education subject to our remark that the present inadequacy must be met partly by increasing the admission and dealing with it by shift-system of tuition and partly by establishing more medical colleges but in a gradual manner.

(2) *Supplement but not to supplant:* The Committee quite frequently stresses in the course of the Report that the health services they propose are to supplement but not to supplant the existing ones. To which Dr. Viswanath rightly objects on the ground that during the greater part of the short-term programme the country will be still served by the existing organisation and that the disparity of amenities in these two areas will result in discontent and resentment.

We entirely agree with this view. There is no reason why the present organisation should not be displaced by the new except it be that the Committee thought that it would be discourteous or dangerous to tread on other's corn. The present organisation, particularly the medical side of it, is so rotten that it deserves to be displaced by the new one. If it is not done at the very outset of the new organisation it will grow in mock derision of the other and stifle it by all possible means and on all opportune occasions. In fact our judgment indicates that unless the new displaces the old there is little chance of its success in the near or distant future.

(3) *Direct recruitment to higher appointments:* While the Committee is not opposed to give full opportunities to the lower rung in the health personnel to rise to the highest position, yet it prefers a moiety of higher appointments by direct recruitment from this country and outside. Dr. Viswanath is opposed to this view. He is of the opinion that selection should be made from among the health personnel by means of suitable tests and that even the lowest in the rung should be given every opportunity to compete for the higher posts. We are unable to trace any fundamental difference between the general view of the Committee and that

of Dr. Viswanath. Perhaps he laid emphasis on this point by way of abundant caution against the facile habit of the Central Government to import foreign experts whether they are really needed or not.

(4) *Provincialisation of health services:* The Committee has recommended provincialisation of the health and medical services of the Local Bodies except in the case of municipalities with over 200,000 population. But the Hon'ble Mr. P. N. Saprú dissents from this view from constitutional points of approach. If a comprehensive health service is to be developed uniformly and consistently, it has necessarily to be under one controlling agency. Otherwise, progress is not possible. The health services of the local bodies in our country—be they small municipalities, district boards or big corporations—are notoriously deficient both in quality and quantity. A Corporation like Calcutta has no isolation hospital. A Corporation like Madras is unable to manage and maintain a maternity hospital on a decent standard. In the face of the failure of the Local Bodies it is incumbent on the governments to take over their health services in the interest of the people and enforce a statutory compulsion on them to apportion 30 per cent. of their total income to the health requirements. We are even seriously opposed to the view of the Committee that municipalities with over 200,000 population may be allowed to develop their health services for the simple reason that health services of a country must be under one control and organisation to achieve optimum results. Our information indicates that the majority of Local Bodies would be glad to divest themselves of this responsibility which has been an eternal bug-bear to them.

(5) *Inter-Provincial quarantine and drainage:* The Committee has suggested provisions to be made to the extent of enabling the Central Government to intervene in provincial health administration in circumstances in which dereliction of duty by a provincial government jeopardises the health not only of those under its charge but also of those in adjoining areas. It also calls for intervention in the matter of pollution of rivers by sewage running through an adjacent province. The Hon'ble Mr. Saprú objects to statutory provisions of this type. We are not constitutional experts like him, but from the health point of view of the country as a whole it is

necessary that the Central Government—federal or unitary—should have ample powers to safe-guard the health of the nation by proper rules of quarantine, internal and external.

Indigenous systems of medicine: We feel that the Committee has failed to put up proper recommendations as to how far and how best the indigenous systems of medicine could be synthesised and absorbed into the modern scientific system. It has suggested an Indian Pharmacopocia inclusive of such indigenous drugs which have proved their value, empirically or scientifically. It has also suggested the institution of a Chair in History of Medicine in the proposed All-India Medical Institute. One of its functions would be to study the indigenous systems and drugs with a view to find out to what extent they can contribute to the sum total of medical knowledge. But these are not sufficient in our view. The Committee must have called upon the leaders of the indigenous systems of medicine to give evidence as to the possibility of absorbing them into modern medicine on the basis of scientific acceptance. Unless medicine is taught within the perspective of our characteristic culture and civilisation, our people would not resort to it in such large numbers whom the comprehensive national health service contemplates to serve. Surely a suitable curriculum could be made out on the basis of a proper standard of instruction and examination in the combined systems of medicine. There is, in our view, an imperative need for maintaining the historic continuity between the past and present medicine in our country while planning for the future. We have always consistently set our face against separate fostering of indigenous medicine, as may provincial governments have thoughtlessly already done. This is bound to result in a conflict at the end. It is better to avoid this while we are on the eve of considering changes in the organisation of medical teaching institutions and of medical relief. We do not at all accept the view of the Committee that the modern health practice gives no room for adjustments with the concepts of health and disease held by the indigenous systems of medicine.

Indian Medical Council: Beyond stating that the position of this Council is unsatisfactory, because it lacks a medical register and its supervision is restricted to qualifications mentioned in the first schedule

of the Act, the Committee seems to have done very little thinking as to its genesis, its composition and constitution. It has not taken into consideration the country-wide resentment against the exclusion of the licentiates from within its purview. It has left these matters blank. "The difficulty", the report says, "which was responsible for the dropping of the proposal for an All-India Medical Register in 1933, namely the co-existence of the graduate and licentiate types of medical men, will also disappear in due course. We therefore recommend the establishment of an All-India Medical Register when the training of licentiates ceases throughout the country." This is too vague a recommendation and a model of masterly evasion. That the Committee does not contemplate the inclusion of the licentiates when the register comes into being is evident by the protest—rather the suggestion—of Dr. Viswanath that when such a register is established the existing licentiates and graduates should be included in it. The views of the Licentiates' Association are well-known to and accepted by the profession. They have been discussed threadbare in the columns of the journal. We are quite sure that the two licentiate members of the Committee representing the two All-India Medical Associations would have acquainted the other members of the Committee fully about the claims of the licentiates for recognition by the Indian Medical Council on the basis of abolition of medical schools. *If what the Committee means is that an All-India Medical Register could be established only when the training of the licentiates ceases throughout the country, it would virtually mean retardation of the process of abolition of medical schools and the postponement of decision on the just claims of the licentiates for immediate recognition by the Indian Medical Council and inclusion in the proposed All-India Medical Register.* Even as it is, five provinces have converted their medical schools into colleges. If the existing licentiates of those provinces are recognised, it would force, by the volume of agitation it creates, the wavering provincial governments to embark immediately on the programme of conversion of schools into colleges. This, in our opinion, is a surer method of effecting abolition of medical schools throughout the country than the passive policy of wait and hope. The Committee would have done justice to its own ideals had it recommended immediate establishment of an All-

India Medical Register including the licentiates of these provinces which have abolished their medical schools and declaring a time-limit for other provinces to follow suit.

Neither has this Committee gone into the question of the present composition of the council. It is now composed of seven members elected by the graduate section of the seven provincial medical registers, eleven nominees of the eleven provincial governments, six elected by the medical faculties of the British Indian Universities and four nominees of the Central Government. Such overwhelming majority of nominated members has been the cause of the reactionary policy of this Council and of obstacles to the acceptance of progressive views. Only seven out of twenty-eight are elected by the profession and that by a part of it only, as the licentiates are excluded from the provincial electorate. Till the composition of this council is made really democratic, we like Dr. Viswanath who has come to the same conclusion on different grounds, are definitely against giving this council any power as a court of appeal in disciplinary cases, as advocated by the Committee. There is even judicial inconsistency and injustice in this suggestion as this right of appeal could only be exercised by the graduates in the provincial registers and not by the licentiates who, at present, do not come within the purview of the Indian Medical Council in any respect.

All-India Medical Institute: The establishment of one such institute is strongly advocated by the Committee with the chief aim of concentrating on quality in medical education—undergraduate and post-graduate and research. Such an institute, it is said, would bring together in one place educational facilities of the highest order for the training of all the more important types of health personnel. While such institutes are also recommended to be established in some selected

provinces, the Committee is particular, in view of the issues involved, that the Central Government should start the All-India Medical Institute and set an example to other provinces in regard to quality of medical education in its comprehensive aspects. We commend this suggestion whole-heartedly.

Conclusion: The Report of the Committee is, on the whole, highly acceptable to the people and the profession and hope it would be so to the Provincial and the Central Governments also. Its plan of national health services is based on high ideals and practical methods of achieving those ideals. Even financially, it is in no way extravagant or unreasonable if we keep in view, as the Committee often pertinently stresses, that one of the effective means of increasing national productive capacity is improvement of public health. The closing words of the Committee are well worth repetition.

"In our view, our short-time health programme provides a minimum standard of achievement in the different fields of health development which the Governments should keep as objectives to be attained within the first ten years. We desire to stress the organic unity of our programme and feel it should be accepted and executed in its entirety. We would strongly deprecate any attempt, on the plea of lack of funds, to isolate specific parts of the scheme and to give effect to them without taking into consideration the interrelationships of the component parts of our programme."

We do earnestly hope that the newly elected provincial governments, although they would be busy in the pursuit of freedom of the country from political tutelage, would yet find time to study this Report and put it into execution. It is a good Report though the Committee was constituted by the Viceroy's Government. But that was not the fault of the Committee. Its only fault lies in not recommending measures as to how to bring the existing organisations of medical relief and public health into the new ones though the Committee hopes that in the end the old will be absorbed by the new.

NATIONAL HEALTH PLANNING

(The recommendations of the Health Survey and Development Committee, which concluded its sessions on December 15, 1945, run to 500 pages of closely printed matter in Royal Octavo. In view of the importance of these recommendations to the planning of our National Health we publish them in a comprehensive summary to enable our readers to judge for themselves how far they meet the needs of the situation and how best the organised profession can help the Government and the people in rehabilitating the decaying health of the Nation.)

To make the summary effective and readable it is given in direct speech. Any probable mistakes of fact or opinion arising out of summarisation are entirely ours. (Ed.)

CHAPTERS ONE TO THREE

Introduction—Modern Trends in the Organisation of National Health Services—The Long-term Programme.

1. Introduction: The evidence before us cannot fail to reveal the extent and intensity of the dark shadows in the health picture of the country. The loss to the country is great through the avoidable waste of valuable human material and the lowering of human efficiency, through malnutrition and preventable morbidity. Therefore, expenditure of money and effort on improving the nation's health is a gilt edged investment yielding not deferred results but immediate and steady returns in the form of increased productive capacity.

A future health plan has to ensure suitable housing, sanitary surroundings, and a safe drinking water supply; provision for effective means for the early detection and prevention of epidemic and communicable diseases; improvement in nutritional standards; elimination of unemployment; provision of a living wage; improvement in agricultural and industrial production; development of village roads and rural communications, and health care of the individual from the cradle to the grave through some form of national health service.

The two serious impediments in the way of early fruition of our recommendations are country's limited financial resources and lack of necessary trained personnel.

The needs of rural India form the back-ground of all our recommendations. Success depends on State's efforts as well as the co-operation of the people.

2. Modern Trends: It is now accepted by all countries that health service should be available to all citizens irrespective of their ability to pay and that it should be a complete medical service, domiciliary and institutional. In Great Britain a National Health Service is under legislation and its aim is that individual members of the public will be able to obtain medical advice and treatment of every kind entirely without charge except for the cost of certain appliances. They will be paying for medical care in a new way, not by private fee but partly by an insurance contribution and partly by ordinary process of central and local taxation. (Insurance 27%, Tax payer 36·6%,

and Rate-payer 36·4%—these are the respective shares of the total cost of the scheme.) The Australian scheme is based on direct taxation and aims at a national salaried medical service based on a system of health centres on district and commonwealth basis. U.S.A. has no definite State scheme. Its health service is now organised by Private Medical Insurance which guarantees adequate service through the payment of small-premia. U.S.S.R. has a positive policy, and by a net work of organisations has successfully developed Socialised Medical and Public Health Service. Its health service is entirely free to the people—its places at their disposal the service of the general practitioner, the specialist, and the laboratory.

The application of these modern trends to India has necessarily to be in a modified form in view of paucity of funds and inadequacy of trained personnel. Social insurance, except in limited areas and among certain sections of the population, is not possible as a very large section of the population cannot afford as yet to pay even a small contribution that an insurance scheme will require. The service has therefore to be free and made up mostly by salaried service, full-timed and part-timed, and honorary service wherever possible. The question of employment of doctors on honorary basis require careful consideration, and we prefer part-timed paid to honorary medical officers. We are of the view that a salaried State Health Service would be no serious impediment to private practitioners, as it will take a long time for the entire population to be served by our proposed health services. Besides, our plan provides also for the utilisation of private practitioners in a part-time and honorary capacity.

3. The Long Term Programme: It will make for clarity if the major objectives of a fully developed programme to be attained in thirty or forty years and the smaller scheme for implementation within the first ten years are dealt with separately. The former constitutes the long-term programme and the latter the short-term programme. The objectives of the long-term programme are, briefly: (1) adequate provision for the medical care of the individual, (2)

these services should be easily available to the people, (3) widest possible provision for co-operation between the health personnel and the people, (4) representation of the medical and ancillary profession in the Health Committees, (5) easy availability of consultant, laboratory and institutional facilities, (6) special provisions for mothers, children and mentally deficient, (7) free service as far as possible and (8) improvement in home environment.

We are definitely of the view that preventive and curative health work must be dovetailed into each other. Hence these two functions are combined and form part of the duties of the doctors in the primary units, rural and urban.

Equally definite is our view that the subject of health in its comprehensive sense should be in charge of a separate Minister, both in the centre and in the provinces. Thus the Central Ministry of Health would have (1) Minister of Health assisted by (2) Statutory Central Board of Health made up of the Representatives of the Central and Provincial Governments and (3) Central Health Council of experts. Under the Minister there will be (4) a Director-General of Health Services with the following departments: (i) General Administration, (ii) Medical Relief, (iii) Public Health, (iv) Professional Education and Research, (v) Public Health Engineering, (vi) Town and Village Planning. The corresponding plan for the provinces is as follows: (1) A Minister of Health assisted by (2) a Statutory Provincial Board of Health consisting of representatives of the Government and Local Bodies and (3) Provincial Health Council of experts. Under the Minister, there will be (4) a Director of Health Service with the following Departments: (i) General Administration, (ii) Medical Relief, (iii) Public Health, (iv) Professional Education and Research, (v) Public Health Engineering.

The regional planning is based on the district as one unit with a population of about 3 million. One primary unit is intended to serve a population of 20,000. Under what is called, for brevity's sake, *The Three Million Plan*, each district will have 150 primary units, 5 secondary units, and one unit at the District Head Quarter. The estimate of personnel required to staff these units and the estimate of distribution of beds is as below:

	Control- ling M.Os.	Other M.Os.	Non- Medical Staff.	Hospital.
Primary Unit ...	1	5	78	75 Beds
Secondary Unit ...	1	139	358	650 Beds
District H. Q. ...	1	268	1398	2500 Beds

Thus the District Health Scheme will consist of three types of organisation in an ascending scale of efficiency from the point of view of staff and equipment. At the periphery will be the primary unit, the smallest of these three types. A certain number of these primary units, say 30, will be brought under a secondary unit which will perform the dual function of providing a more efficient type of health service at its head-quarter and of supervising the

work of these primary units. Thus each district will have 5 secondary centres. The District H.Q. will be provided with an organisation offering facilities of modern medical practice and sufficient supervisory staff.

The Committee emphasises the necessity for providing adequate office staff to relieve the Administrative Medical Officer of purely clerical duties.

It is also of the view that at least 50% of the medical staff should be women-doctors in view of the urgent need for maternity and infant welfare at present.

Non-medical staff means, midwives, sanitary inspectors, health assistants, social workers, fitter mistries and inferior servants.

The total number of beds provided under the scheme for a population of 3 millions is 17,000 or a ratio of 5·67 beds per thousand of the population. The present strength is 73,000 beds for the whole of British India or 0·24 bed per 1,000 population. Comparative figures for other forward countries are as below:

U. S. A.—10·48 beds per 1,000 population.

England and Wales.—7·14 beds per 1,000 population.

The health personnel required to work the scheme is given below:

	Number required to complete the programme.	Number now available.
Doctors ...	223,650	47,500
Nurses ...	680,000 (including P. H. Nurses)	7,750 (including health visitors)
Midwives ...	112,500	5,000
Pharmacists ...	84,375	35

Till the full needs of medical personnel on full-time basis are met, the Committee proposes to utilise private practitioners on part-time work and salary in the Secondary and District H. Q. units, but not in the primary units. Their proportion to the total strength of medical men in these two types of hospitals will normally be about 25 per cent.

If the District H. Q. hospital is a teaching institution, it is considered desirable that there should be a proportion of medical men who combine hospital teaching work with private practice so as to enable them to gain the wider experience that contact with the general public ensures. We have been advised that there is a distinct room for a type of professor who has experience of teaching work and private practice up to the age of about 45 and who then gives up such practice and becomes a whole-time teacher.

Field organisation for the control of certain diseases like malaria, tuberculosis and leprosy is also provided for. It is anticipated that before the long-term programme is completed the advance made in environmental sanitation will have reduced largely the factors favourable to the propagation of the disease.

CHAPTERS FOUR TO SEVEN

The short-term programme—Nutrition of the people—Health Education—Physical Education.

4. The short-term programme of health services:—We hold the view that the health programme demands very high priority in view of the loss which India incurs every year due to avoidable morbidity and mortality. By malaria alone, Sinton estimates the loss at 147 to 187 crores of rupees every year. Yet in drawing up the short-term programme we have not ignored the realities arising from lack of funds and lack of trained personnel. Therefore our initial programme is somewhat in an attenuated form and expected to be developed by stages. The programme is subject to local modifications. It covers two stages of 5 years each and they are intimately concerned with the development of administrative technique suitable to this country. We wish to make it clear that our programme is intended to supplement and not supplant the existing health facilities. Our recommendations however constitute an irreducible minimum.

Our short-term programme for the first ten years is cast on modest lines. Thus, during this period, the District H. Q. organisation provided in our long-term programme will not be brought into existence. Further, the services provided in the primary and secondary health units during the period will not be complete and comprehensive, as we hope they will be in the later stages of our scheme.

Our recommendations cover a province-wide health organisation for both preventive and curative health work.

These will include in each district.

- (1) Primary Health Units.
- (2) Secondary Health Units.
- (3) District Health Unit.
- (4) Special Health Services dealing with malaria, tuberculosis, venereal diseases, leprosy, mental diseases, maternity and child welfare, school health and nutrition.
- (5) Field training centres for teaching institutions.
- (6) Impersonal Health Services including town and village planning, housing, water supply, drainage, professional education and research.

We have come to the conclusion that the new health services, in howsoever attenuated a form they may be started, should be instituted on as wide a territorial basis as possible. The objectives to be reached in each district at the end of the ten-year programme are as hereunder.

	1st Year	Fifth Year	Tenth Year
Number of Primary Units	5	10	25
“ of 30 bed hospitals	1	2	13
“ of Secondary Units	1	1	2
“ of 200 bed hospitals	1	1	1
“ 500 bed hospitals	...	...	1

The personnel of each primary unit in the short-term programme would be as follows:

Medical Officers	... 2	(one of whom must be a woman)
P.H. Nurses	... 4	
Nurse	... 1	
Midwives	... 4	
Trained Dais	... 4	
Sanitary Inspectors	... 2	
Health Assistants	... 2	
Clerks	... 2	
Fitter Mistry	... 1	
Inferior Servants	... 15	
Pharmacist	... 1	
Total	... 38	

The personnel of each secondary unit would be as follows:

Administrative M. O.	... 1	
Dy. A.M.O.	... 1	
Assistant A.M.O. (maternity and child-welfare)	... 1	(woman)
Assistant P. H. Engineer	... 1	
Sanitary Inspectors (Senior)	... 2	
Health Visitors (Senior)	... 2	
Hospital Staff:		
M.O. (Medical Wards)	... 1	One of these will act as superintendent by rotation. One of them must be a woman.
“ (Surgical “)	... 1	
“ (Maternity “)	... 1	
A.M.O. (Laboratory)	... 1	
M.O. (X-ray)	... 1	
A.M.O. (X-ray)	... 1	
House Staff	... 6—2 for each M.O.s in charge of wards.	
Part-time doctors	... 3	One for each M.O.s in charge of wards.
Orthodontal Surgeon	... 1	
Dentists	... 2	
Dental Hygienists	... 4	
Total	... 30	

The start may be made with 5 primary units in each district, each unit covering a population of 40,000 to begin with. On an average, each unit in the initial stage would cover 38 to 136 villages according to the density of the population per square mile. This varies from province to province.

The organisation of the H. Q. of the primary unit may appropriately be designated as the *Primary Health Centre*. This would be the focal point from which the different types of activity will radiate into the area covered by it. This area, for purposes of health administration, may be divided into four circles, one being associated with the H.Q. of the unit. It is essential that the dispensary, the H. Q. maternity and child-welfare organisation and the department of environmental hygiene should work together in intimate association. Therefore the respective necessary buildings should be near each other. This would also help in co-ordinating the work of the different members of the staff.

Of the two doctors in the primary unit, one at least should be a woman and both should attend to curative and preventive work alternately.

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THE SHORT-TERM PROGRAMME

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The work of the health assistants consists in helping the doctors in sterilising instruments, dressing wounds, etc.

The pharmacist will replace the compounder, but till the former is available the compounder has to be employed.

Two clerks are intended to spare the doctors of clerical work.

The woman doctor, the P. H. nurse and the midwife carry the message of health to the homes of the people through numerous contacts which they are bound to establish in the course of their routine work.

The Sanitary Inspector and the inferior servants will be concerned with improving environmental conditions and work under the guidance and supervision of medical officers.

The fitter-mistry's duty will be to help in keeping in good repair tube-wells and other sanitary equipment which will be provided under the health programme.

Services of selected school masters, after a short suitable training, may be utilised till doctors and nurses are available for the examination of school children with a view to improve their standard of personal cleanliness, vaccination, and administration of simple drugs for ordinary complaints.

A health panchayat should be formed in each village, thus securing the villagers' co-operation and help in the village health work. Each member of this panchayat should be assigned a definite task.

The secondary unit will supervise the work of the primary units in all its ramifications, and, at its H. Q., provide medical relief of a higher type than that available in the 30 bed hospitals and dispensaries in the primary units.

The administrative medical officer of the secondary unit should function as a deputy to the officer in charge of District Health Services, at present called the District Health Officer. This officer, under our scheme, will be in charge of both preventive and curative department of medicine and we also envisage the fusion of medical and P. H. Department under one head at the Provincial Capital.

The other administrative officers and assistants will be responsible for the functions indicated by their respective designations.

We attach great importance to the provision of a laboratory service in association with the 200 bed hospital in the secondary unit. We further suggest that this laboratory should provide a diagnostic service, free, for the general practitioners in the area, particularly in relation to infectitious diseases.

A secondary unit is normally expected to cover an area with a population of about 600,000. One such unit should be established contemporaneously with the inauguration of the primary units. The rate of expansion of both primary and secondary units

for the first 10 years is indicated in the following table:

Year.	No. of primary units in a district per 40,000 of population.	Population served.	No. of dispensaries in primary units each having 2 emergency and 2 maternity beds.	No. of 30 bed hospitals in primary units.
1st	5	200,000	5	1
2nd	5	200,000	5	1
3rd	5	200,000	5	1
4th	7	280,000	7	2
5th	10	400,000	10	2
6th	13	520,000	13	5
7th	16	640,000	16	7
8th	19	760,000	19	9
9th	22	880,000	22	11
10th	25	1,000,000	25	13

For the same population in respective years the progress of the secondary units will be as under:

No. of Secondary units.	No. of 200 bed hospitals.	No. of 500 bed hospitals.
1	1	...
1	1	...
1	1	...
1	1	...
1	1	...
1	1	...
2	1	1
2	1	1
2	1	1
2	1	1

The total new provision for hospital beds of all types resulting from the proposals outlined above—apart from special hospitals for tuberculosis, mental diseases and leprosy—will be 109,725 and 279,820 at the end of 5 and 10 years respectively. If to this are added the existing bed accommodation of 73,000 we will have a total bed strength of 183,000 and 353,000 approximately at the end of the first 6 and 10 years.

The distribution of beds (excluding the existing ones) for the 11 provinces will be:

	No. of dispensaries with 4 beds each.	No. of 30 bed hospis.	No. of 200 bed hospis.	No. of 500 bed hospis.
End of the first six years ...	2,293	639	216	Nil.
End of the ten-year period...	3,905	1,990	216	139

The allocation of beds in a 200 bed hospitals is suggested as follows:

Medical	... 45 Beds.
Surgical	... 55 Beds.
Maternity	... 30 Beds.
Infectious Diseases	... 20 Beds.
Pediatrics	... 15 Beds.
Malaria	... 10 Beds.
Tuberculosis	... 10 Beds.
Mental Diseases...	... 10 Beds.
Leprosy	... 5 Beds.

The number of doctors and nurses required under our scheme is given below:

	First 5 years.	First 10 years.
Doctors ...	15,100	29,000
Nurses ...	32,600	80,400

Number of doctors available in British India, number expected to be made available for our scheme and number required to complete our recommendations are given below:

	Graduates.	Licentiates.	Total.
Existing. (Approximate) ...	18,200	29,200	47,400
Expected— (First 5 years) ...	4,565	3,600	8,225
(Second 5 years) ...	16,350	5,572	21,922
Required— First 5 years ...	15,043	...	15,043
Second 5 years ...	29,314	...	29,314

We consider it essential to provide suitable accommodation for the staff of the primary and secondary units. The total expenditure on this head is estimated to cost 48.10 crores during the first five years and 61.67 crores during the next five years. This need not be considered as a drain on public funds since 10% of the salary can be charged as rent from those whose salary is below Rs. 50 a month.

In the more sparsely populated parts of the provinces, it may be found advantageous to provide travelling dispensaries in order to supplement the health services that will be made available to the people through the primary health units.

The provision of ambulance for the transport of patients is important, and we recommend two ambulances, one motor another animal drawn, for each 30 bed hospital.

The objectives of the third five-year plan are:

(1) Hospital accommodation to be raised to 2 beds for every one thousand of population (our first two five-year programme provided only one bed per 1,000 of population).

(2) Expansion of the scheme so as to cover three-quarters of the population of individual districts.

(3) The creation of 12 new colleges in addition to the 43 to be established during the first 10 years.

(4) The establishment of a fourth set of 100 training centres for nurses.

(5) The training of 500 hospital social workers.

Planning of special health services, field training centres and impersonal health services will be described in succeeding chapters.

Dr. Viswanath and Dr. A. H. Butt append a dissenting note to this Section of the report as follows:

The scheme recommended will split up medical relief into two parts. To start with, the scheme will cater for only one-fifth of the population of each district, and eventually may come to serve half of the population. It is supposed to absorb all the output of medical personnel as well as the bulk of the finances. Almost

all the up-to-date buildings, equipment and well-trained personnel will be located in the area of operation of the scheme.

During the greater part of the short-term programme the major part of the country will be still served by the existing organisation. The disparity of amenities provided in these two areas will be too flagrant to escape public notice, and acute discontent and resentment is bound to prevail in areas left outside the new service. Concentration of improved facilities in selected regions seems to be favoured by the majority on two grounds:

(1) Existing personnel lacks the training to make preventive medicine an integral part of medical relief.

(2) Zoning is essential for demonstration of expected results. We regard these two considerations invalid and inappropriate because:

(1) The registered medical profession in India is as well informed as its counterpart in any country. Its weakness is mainly quantitative and not qualitative.

(2) We are strongly opposed to making any areas or population into experimental units, as no system of medical relief which has not already proved to be beneficial should be applied to the people. Besides, the scheme proposed by the majority establish duality of medical administration in each district (between the new and the old order), which is bound to cause considerable friction and ultimately loss of quality of the social service.

5. Nutrition:—Malnutrition produces states of ill-health and lowered physical efficiency, short of actual disease, which are perhaps more important because more wide spread, than disease itself. There is reason to believe that both undernutrition and malnutrition exist widely in the country. From the point of view of quality the main defects of the average Indian diet are (a) insufficiency of proteins of mineral salts and vitamins, (b) insufficient quantity of fat of vegetables or animal origin.

A food policy, therefore, is necessary and this must be firmly based on nutritional science. The general raising of dietary standards is basically an economic problem dependent on the scientific development of agriculture, of industrial resources and of animal husbandry and fisheries. Each province must place before itself the objective of meeting their essential food requirements from its own area to the extent possible and aim at providing an optimum diet for all, irrespective of income. Plans should be laid to reach the objective by forced march, stage by stage, within a specified period of time.

The following specific measures for improving nutrition are suggested:

(1) Public Health organisations must be extended so as to include work in the field of nutrition as one among their recognised functions.

(2) The Central Public Health Department should include a highly trained nutrition specialist with experience of the public health aspects of the subject, who will be in touch with the other experts in public health, both at the Centre and in the Provinces.

(3) In each Province and State, there should be a nutrition officer of the rank and status of an assistant director of health services with suitable staff whose main work shall be (a) study of the composition of food of local importance, (b) diet surveys, (c) investigation of the incidence of malnutrition and deficiency diseases, (d) nutrition research, (e) as information bureau for other departments, and (f) as secretary to the Provincial Nutrition Committee.

(4) The Provincial Nutrition Committee should include experts in nutritional science, agriculture,

animal husbandry, marketing, food administration, economics, etc., to advise Governments on questions of nutrition.

Special attention and arrangements are necessary for:

(1) Prevention of deficiency diseases by specific methods.

(2) Maintaining the nutrition of expectant and nursing mothers.

(3) Feeding of school children at the schools in such a way as to correct the defects in the home diet.

(4) Proper and standard diet should be laid down for children in boarding schools, orphanages, etc., whether under state or private management.

(5) Feeding of employees and labour groups.

(6) Community feeding of urban groups wherever possible.

(7) Provision of cheap well-balanced meals through agencies which supply food to the general population.

(8) Training of specialised nutrition workers and of those who will be in a position to educate the public and do propaganda among the public such as teachers, lawyers, assembly members, etc.

Special measures to increase the production of certain articles of food are also necessary, such as milk, fish and food yeast. Reinforcement of synthetic vitamin in certain foods is necessary to avoid deficiencies in this respect.

The value of processing perishable food-stuffs during local and seasonal gluts is such that the possibility of developing this industry should, in our view, be investigated as a part of the campaign for the improvement of nutrition. Such development will be of the greatest value in connection with milk, milk products and vegetables.

With an increased production of food, provision must simultaneously be made for its storage, transport and distribution. It must be noted that, according to Russel, rats alone are responsible for destruction, each year, of food grains to the extent of about Rs. 2-13-0 per head of the population.

Food inspectorate is highly necessary, whose duties, apart from control of adulteration, should include control of storage depots, technical control of manufacture of processed foods, etc.

We advocate that the principles of the agricultural produce grading and marketing Act should also be applied to non-agricultural food products with the object of improving their quality.

6. Health Education: A great deal of attention is paid to this subject in the West. In England there is a Central Committee for Health Education which works in collaboration with the Ministry of Health. In Australia there is a regular and carefully drawn up course of instruction in health and hygiene prepared in association with the Health Department for all pupil teachers in the training colleges. In America, there is a new development whereby an attempt is made to train a type of individual called

"Health Educator"—a person whose background is that of a teacher to whom additional training in public health is given. In Russia, a large amount of money is spent annually on research and on preparation and execution of schemes calculated to improve and preserve the health of the community.

In India progress in this direction is far too slow. Our recommendations are that Health Education should begin at the primary and not at the secondary and college stage, as it is now, and that Health Publicity Bureau as part of the Central and Provincial Health Departments should be established whose functions should include active promotion of health education among all sections of the people, assistance to Provincial Health Departments in the organisation of health propaganda and publication of an *Indian Health Journal*. We also recommend the establishment of permanent health measures in the larger towns and cities.

The active co-operation of school clubs and societies, the Indian Red Cross and the British Empire Leprosy Relief Association (Indian Council) and other health associations must be sought for and obtained.

The part which a sound Health Administration can play in achieving the purpose of health education should not be forgotten. The doctor, the nurse, the midwife and, in fact, every worker will, in the faithful discharge of their duties, be educating the persons with whom they deal. The instructions so given are bound to be more effective than health talks and cinema or magic lantern demonstrations to large audience.

7. Physical Education: Physical education accounts for a considerable part of the general educational programme in Western countries, U. S. A., Russia, Canada, etc. In India, the tendency has been to place too great an emphasis on the academic side of education. We also lack suitably trained teachers. There are only 5 physical education colleges in India: (1) The Y.M.C.A. College at Madras; (2) Kandivali Training Institute at Bombay; (3) Physical Education College at Hyderabad; (4) The Physical Training Centre at Calcutta; and (5) The Lucknow Physical Education College. During the last 20 years they have trained about 3,000 teachers which is far too small a number for the needs of our country. The first step, therefore, is the starting of more physical education colleges. The second step is a programme (1) for the students in schools and colleges, (2) for the general public.

We desire to emphasise the need for incorporating in the national physical education various forms of physical training, games, sports and folk dances which are prevalent locally in different parts of the country, as these embody the genius of the people for organised recreational activities, and possess much cultural value.

We also desire to see the expansion of the Boys' Scout, Girl Guide, the Junior Red Cross, the Hindustan Scout, the Bengal Bratachari and (similar movements which can make valuable contributions to the well-being and disciplined training of the youth of the country.

CHAPTERS EIGHT TO TEN

Health Services for Mothers and Children—Health Services for School Children—Occupational Health including Industrial Health.

8. Health Services for Mothers and Children:

Our review of the existing health conditions in respect of these sections of population contains abundant evidence to show the importance and urgency of providing adequate measures for the protection of their health. On a conservative estimate, about 200,000 women die annually from causes arising from child birth. The probable estimate of maternal morbidity, based on Blair-Bell's observation on similar conditions in England which records that for every woman dying as a result of pregnancy or child-birth, 20 suffer from impaired health, would be very near 4 millions. As regards child mortality, nearly half the total annual deaths at all ages in British India take place among children under ten years, and that half of the latter is among these under one year of age. It follows therefore that the special steps taken to promote healthy motherhood must include not only medical measures but also certain ancillary services designed to mitigate or remove the socio-economic factors leading to this loss. Our health organisation should deal with mothers and children together and for the sake of continuity of service, the same doctor, midwife, and public health nurse should be responsible for the care of the mother and child. The maternity and child-welfare organisations will be an integral part of the general health service, both in the long and the short term programmes providing domiciliary and institutional service.

Maternity work in the primary unit would be on the following lines. It has been mentioned in the previous chapter that each primary unit will have two doctors, one of whom a woman, 4 P.H. nurses, 4 midwives and four trained dais. In the H.Q. of the primary unit the dispensary would consist of two emergency beds, one of which is for maternity. At the beginning, a 30 bed hospital for a group of four primary units, will have a provision for six maternity beds and four for children. Each primary unit is divided into four circles with a population of 10,000 each. On the basis of 40 births per mille, each circle may be expected to have 400 births per year. At each circle will be stationed a P.H. nurse, a midwife and a trained dai. Each circle staff will, therefore, have to deal with 200 births in a year. At the H.Q. of the primary unit will be available the service of a medical officer who with the aid of the nursing staff should organise a maternity and child welfare centre. He should also hold a weekly clinic. The functions of this centre would be:

- (1) To get in touch with pregnant women and induce them to visit the clinic regularly.
- (2) To provide skilled assistance of a midwife or a dai at the time of delivery, and domiciliary visits for a P.H. nurse for two weeks thereafter.
- (3) If possible, to keep the mother and the child under observation for one year.
- (4) To teach motherscraft by practical demonstrations.

(5) To keep children under observation for 5 years, as far as possible.

(6) To organise occasional talks, by suitable persons, for husbands and fathers in order to secure their co-operation.

(7) To give instructions on birth-control in necessary cases.

In short, this centre should aim at becoming the focus of social activity as far as mothers and children are concerned.

The woman medical officer should visit each of the three circles once a fortnight for instruction and co-ordination.

Maternity work in the secondary unit will be of a higher order of efficiency. There will be at its H.Q. an Assistant Administrative Medical Officer and a senior P.H. nurse. The 200 bed hospital would have a provision for 50 beds for maternity and gynecological cases. It is presumed that at the Provincial H.Q., in the establishment of the director of health services, there would be a woman doctor with wide experience in the organisation of health service for women and children and whose function it would be to promote the development of these services in the districts and to co-ordinate and supervise their activities, and thus ensure a high level of efficiency.

These provisions for each primary and secondary units will, in course of time, be supplemented by the higher type of service which will be made available in the district unit with its 2,500 bedded hospital and Health Centre and corresponding administrative and hospital staff. There will be a deputy to the officer in charge of the District Health Services who will be responsible for this branch of health administration, while she will have her counter-part at the H.Q. of the secondary unit. At these two places there will also be corresponding officers for the supervision of the public health nurses.

By the time the long-term plan is completed the health organisation will have developed sufficiently to provide for a reasonably adequate service, and the population to be served in each primary unit will be relatively reduced to about 10 to 20 thousand. The provision of six midwives, four public health nurses, two women doctors for domiciliary service and one for institutional service, in a population of about 10 to 20 thousand should help to ensure a reasonable measure of health protection.

We recognise that in the early stages the staff employed in the individual primary units may not reach the required standard in respect of numbers or of quality. Women doctors, trained health visitors, P.H. nurses and midwives may not be available to the needed requirements. Less qualified types of personnel have therefore to be employed during the greater part of the short-term programme.

The health services for the nursing mothers and children will fail to produce satisfactory results unless simultaneous measures are undertaken to improve

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HEALTH SERVICES FOR SCHOOL CHILDREN

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their nutrition. In our budget for each primary unit we have suggested the provision of an annual sum of Rs. 3,000 in order to enable the woman medical officer to make suitable additions to the diet of such mothers and children.

It is well recognised that the strain, resulting from over-work will affect a woman's health during pregnancy and post-natal period. We therefore recommend:

(1) Grant of maternity benefit to and compulsory abstention from work six weeks before and six weeks after confinement by all women employed in industry;

(2) Such maternity benefits should also be extended to these women gainfully employed outside their homes.

(3) Provision for home-help by Public Health authority, as is the recognised practice in England and other progressive countries, during the lying-in-period.

We recommend provision for the establishment of nurseries or creches, to relieve the mother, especially the working women, from her responsibility for the care of the child during her hours of work. These nurseries should be attempted, in the first instance, in provincial capitals; these should be open both for industrial and non-industrial section.

We wish to emphasise the importance of local health authority exercising the strictest possible control over the establishment and maintenance of private maternity homes.

While we fully recognise and appreciate the value of voluntary organisations in the field of health, such as the Indian Red Cross Society, we hold the view that their activities should supplement rather than supplant the legitimate functions of Government in this sphere, and they should be controlled and supervised by the Government.

We believe that effective health protection to every one from the pre-natal stage through child-birth and the subsequent years of life to death, can be facilitated by the provision of a health card for every individual which will contain continuous record of the individual's health. This objective cannot be realised immediately, but we venture to put forward this system of individual health card as an objective for the future. The health card would enable the individual to secure continuous medical attention, curative and preventive.

9. Health Services for School Children:

School health services are non-existent in our country today, and where they exist they are mainly in an imperfectly developed stage. The first pre-requisite is that the health functions of the school health service should be under the Health and not under Education department, in view of our proposal for the establishment of a comprehensive national health service which combines in itself curative and preventive functions. Our reasons are:

(1) Medical care of school children should not be isolated from the general health service.

(2) If school health service is developed outside the general health organisation, there will be a duplication of trained personnel and institution. This would be unnecessary and it would not conduce also to the proper development of the national health programme.

The functions of a school health service are:

(1) Preventive and curative measures including detection and treatment of defects and maintenance of school hygiene and sanitation.

(2) Promotion of positive health which includes provision for supplementary food, physical culture, and health education.

The first function should be performed by the health organisation, the second will devolve on the school teachers.

If we are to ensure satisfactory results and develop the school health service along right lines, it is better not to attempt too much at the beginning and thus court the possibility of failure.

We shall first make certain general suggestions regarding the proposed school health organisation and then indicate the stages for its development.

General suggestions:—Just as the female doctor in the primary unit is in charge of the maternity and child-welfare services, so the male medical officer of the same unit should normally be placed in charge of the school health service. The scheme, at first, has to be restricted to primary school children between 6 to 11 years. Thus for each primary unit with a population of 40,000 the likely number of primary school children may come to about 5,100. Since the medical officer of the primary unit has other duties, we suggest that in the initial stages, the scheme may be restricted to the town or village which forms H.Q. of the primary unit; the total number of school children should not exceed 1,000. From each school, two teachers should receive training in health duties who may be given an additional remuneration of Rs. 10 a month for performing health duties.

Progress by stages:—There should be established a field training centre in association with medical college, assisted by a small sub-committee composed of professor of Preventive Medicine, Assistant Director of Health Service in charge of school health and a Deputy of the Director of Public Instruction. This centre should aim at (1) demonstration of the course of training to be adopted for the teachers; (2) development of the technique of health administration; (3) provision for training doctors and nurses in school health work; (4) working out the probable cost of such scheme. This stage will probably be completed in one year.

The second stage would mark the period of extension of the school health programme in the districts. The first step in this stage would be the organisation of training facilities for teachers at the H.Qs. of the secondary unit (the secondary health centre). The second step will be the inauguration of the service at the H.Qs. of the primary units.

In the next two more stages, the scheme would be extended to include (1) the whole area of the individual primary units and (2) the students of high schools and colleges.

School health work in a primary unit would comprise of:

- (1) Medical inspection.
- (2) Provision of medical care, curative and preventive, including dental service.

- (3) Improvement of environmental hygiene.
- (4) Improvement of nutrition of the child.
- (5) Physical education.
- (6) Health education.

In each district, a joint committee of the District Health and District Education Boards should be established and become responsible for the distribution of funds made available to it by the two Boards. It will also serve to bring the influence of public opinion to bear on the working of the school health organisation.

At the provincial H.Qs. there should be a co-ordinating committee of which the Director of Public Instruction and the Director of Health Services should be members. This committee shall advise the Government on all matters relating to school health administration, including the distribution of grants-in-aid, and co-ordinate the activities of the joint committees in the districts within the powers given to it by the Government.

10. Occupational Health, including Industrial Health: Generally speaking, an occupational health service developed by the State should embrace within its scope all persons employed outside their own homes. That is, however, a long-term objective. For the immediate future the Government should concern themselves with measures mainly for industrial workers employed in factories, docks, mines, plantations, transport services and other occupations.

The factors which influence the health of the workers fall into two broad groups:

- (1) Those which are associated with their working environment;
- (2) Those which they share with the rest of the community.

If the dual aspect of the worker's health requirement is kept in mind, it would be clear that the latter cannot be considered as the responsibility of the industrial health organisation. This conception would also help in the clarity of administration procedure in developing both types of services, namely, Industrial and National Health Services, for the benefit of workers and their families.

The aims of an Industrial Health Service, as suggested by a Committee of the Royal College of Physicians, London, are:

- (1) To promote the general health of the worker by the provision of a good working environment;
- (2) To prevent occupational disease;
- (3) To assist in preventing injuries at work;
- (4) To rehabilitate the injured and to resettle the permanently disabled;
- (5) To educate workers in the preservation of health;
- (6) To promote research and investigation in industrial diseases.

It is essential that our proposals for an industrial health service should fit in with our scheme of general health protection of the community. We therefore suggest that the industrial health organisation should form an integral part of the provincial health department and that it should work in close association with

the provincial general health service. The proposed industrial service will not minister to the general needs of the industrial population. This will be performed by the health service of the community as a whole. But as the needs for providing medical relief to the industrial population are urgent, the State may contribute from public funds, towards the provision of special facilities for the medical relief of the industrial population even in advance of the development of the general health programme. We suggest on considerations of equity that the employer and the Government should together be responsible for meeting the cost of the proposed industrial health service and that the worker should be exempt from being made to pay for it. We understand that the creation of a central health insurance fund raised by contributions from Government employers and workers, is under contemplation*. If this comes into being it will be possible to provide two types of complementary health services, as indicated earlier in this chapter, which the worker requires.

While these proposals for an industrial health services will take time to materialise, we put forward, in the meanwhile, certain recommendations for early action.

They are:

- (1) At least four persons out of every 100 workers should be trained in first-aid work.
- (2) It should be the statutory duty of every employer, employing more than 50 women, to provide suitable creches for the children of women workers, to supply free milk to children and to provide facilities for women workers to feed their babies while on duty. In industries employing less than 50 women it should be the responsibility of the local authority to make such provisions.
- (3) Maternity benefits should be granted to women workers.
- (4) Women should not be employed in coal mines.
- (5) Maximum hours of work should be 45 hours a week—8 hours per day for 5 days and 5 hours a day for one day.
- (6) An interval of one hour for mid-day meal exclusive of working hours.
- (7) Reasonable compensation for accident;
- (8) A list of occupational diseases should be prepared.
- (9) Departments of industrial medicine should be established in teaching medical institutions—start being made at the All-India Institute of Hygiene and Public Health.

(10) Housing of the industrial population should be made the primary responsibility of the Governments concerned.

(11) It should be compulsory for industrial establishments to maintain canteens which should provide workers with suitable balanced diet at reasonable cost.

(12) Zoning and location of factories should be permitted only after consideration whether such factories are capable of satisfying all the requirements such as housing, transport for workers and adequate environmental amenities, etc.

* Vide Prof. Adarkar's Report for fuller details. Ed.

(13) Wherever possible, new industries should be distributed in rural areas; if so health problems would be greatly simplified.

(14) All rules relating to industrial hygiene should be enforced.

(15) The minimum age for employment should be 15.

(16) The inspectorate of industrial establishment should be divided into the following three divisions: (1) Engineering, (2) Public Health, (3) Social service. The number of women factory inspectors should be substantially increased.

(17) Unregulated factories and workshops should be discouraged, and eventually scrapped.

CHAPTER ELEVEN

Health Services for certain simple Diseases

11. The existing legal and administrative provisions dealing with communicable diseases are perfunctory. Only the three epidemic diseases, viz., cholera, small-pox and plague, are notifiable. There is often a great delay in the transmission of information regarding an outbreak of cholera or small-pox. Even in those provinces in which the public health organisation has been best developed, e.g., Madras and the U.P., the strength of the health staff available is quite inadequate. The existing legal and administrative provisions for dealing with large scale epidemics are unsatisfactory. The provisions for hospitalisation of serious epidemic cases are meagre. The existing infectious diseases hospitals are poor in every respect—buildings, staff, equipment and laboratory facilities. It is not easy to rectify these defects. Our proposals for a comprehensive health service constitute in our view the only solution to the problem. Even before such a service is established, our short-term proposals will help to start a promising attack on the control of the common epidemic and endemic diseases. Completeness of registration of notifiable diseases and speeding up of reports of outbreaks of epidemic would be achieved if our recommendations on vital statistics are carried out. The primary unit staff, though small at the beginning, should be able to carry out intensively such preventive measures as the sterilisation of water-supplies and protective vaccination. Protected water-supply and the satisfactory disposal of night soil in the areas under our scheme will bring down considerably the incidence of bowel diseases and create a better health environment. It is in regard to the isolation of patients that the earlier stages of the programme will make the least provision. Any approach towards adequacy in this direction can be reached only with a large scale development of hospital accommodation.

Apart from existing provisions to deal with epidemics, we suggest that, as far as funds and trained personnel permit, provision should be made for the maintenance of two or three epidemic squads at the H.Qs. of each district in order that they may be rushed to deal with such outbreaks. In normal times they can be used to provide an itinerant medical service to areas which may be insufficiently served.

Our next suggestion is that the Army with its well manned and equipped health service should be utilised to meet epidemic emergencies.

Special measures for malaria, tuberculosis, small-pox, cholera, plague, leprosy, venereal diseases, hook-

worm, filariasis, guinea-worm, cancer and mental deficiencies and mental diseases are given below.*

Malaria: Sinton has estimated that at least 100 million persons suffer from this disease and at least two million die every year. Measured in terms of money the annual loss may be any where between 147 and 187 crores of rupees. *The tragic feature of the situation is that much of the malaria in the populated areas of the country is man-made.* It is man-made in the sense that the railway embankments cause interference with natural drainage; the burrow-pits which follow the lines of our roads and railways help to provide additional breeding grounds; and the irrigation engineers fail to provide adequate drainage when water is brought into previously dry areas, as in Sind, Madras and Mysore.

Anti-malaria measures fall under two heads: (1) Those which are directed against the transmitter of infection, the mosquito and (2) those which deal with man in his two-fold capacity as a victim of the disease and as a reservoir of infection. Measures directed against the mosquito may again be grouped under two heads: (1) Those which control the breeding and (2) those which are directed against the insect in the adult form.

Breeding of the mosquitoes are controlled by (1) drainage to prevent accumulation of water, (2) canalisation of water channels, (3) removal of vegetation along water channels, (4) selective clearing of the jungle and (5) use of larvicides such as mineral oils, Paris green or D.D.T. We have provided for a small labour force of 15 in each primary unit, one of whose duties will be to see to the carrying out of these minor works while the malarial conditions created by large constructional and irrigation works should be tackled by the State. An assistant public health engineer at the H.Qs. of each secondary unit will plan and execute anti-malarial works. The medical officer and his two public health inspectors at the primary unit will exercise local supervision. These officers would also put into execution measures against the adult mosquito by the spraying of pyrethrum cum D.D.T.

Measures which deal with man, as a victim and as a reservoir of infection are (1) adequate treatment by anti-malarial drugs and (2) protection against the bite by the use of mosquito nets, repellants, screening, etc. A course of plasmoquine treatment, following

* We are omitting from the summary such of the medical points as are already well-known to the profession.

medication for curing an attack, is advocated to reduce the chance of infection being conveyed to mosquitoes.

The following anti-malarial organisations at the centre and in the provinces are suggested :—

The existing Malaria Institute of India may be deemed as the Central Malaria organisations. Its functions are (1) to advise Government on issues relating to malaria, (2) to institute enquiries and investigations on malaria, (3) to undertake systematic research, (4) to carry out epidemiological investigations, (5) to advise upon and assist in carrying out anti-malarial measures, (6) to teach and train officers and others in practical malaria work, and (7) to publish scientific results in the form of journals, guides and bulletins. In view of the large developments that are likely to take place in the activities of malaria organisation the Central Health Department should adequately staff the Malaria Institute of India.

(1) Prov. H.Q. :—

Provincial Malaria Officer	... 1
Entomologist	... 1
Sanitary Engineer	... 1
Overseers	... 4
Draftsman	... 1
Anti-Malaria Officer	... 1
Anti-Malaria Assistant	... 1
Laboratory Assistants	... 5
Insect Collectors	... 8

(2) Deputy Malaria Officers ... 5

(3) Malaria Control Units :—

Anti-Malaria Assistant	... 1
Laboratory Assistants	... 2
Malaria Supervisors	... 5
Mistri	... 1
Labourers	... 25

The number of malaria control units would naturally vary from province to province. The following is suggested: Madars 100; Bombay 60; Bengal 150; U.P. 150; Punjab 60; Bihar 100; Orissa 50; C.P. 100; Assam 80; N.W.F. P. 30; Sind 60; Ajmer Merwara 5; Baluchistan 30; Delhi 2; Coorg 5; Total 982. The estimate of expenditure for the first five years is 9.17 lakhs (non-recurring) and 2.52 crores (recurring); for the second five years 11.10 lakhs (non-recurring) and 3.85 crores (recurring).

While in the small 30 bed hospitals of the primary unit it will be difficult to allot special beds for malaria at the initial stages, we have recommended reservation of 10 and 25 beds in the 200 and 500 bed hospitals of the secondary units respectively. Thus the number of beds available for malaria patients at the end of the ten-year period will be a little over 56,000. By the time our long-term programme is reached, we will have 121,500 beds for malarial patients: Primary units hospital 112,500; Secondary unit hospitals 6,250; District H.Q. hospitals 2,500; total 121,500 beds.

It will be necessary, in the immediate post war period, to train malaria personnel. The training of officers should be carried out in the Malaria Institute of India, and later on in the provincial Malaria Institute. The training of overseers, technicians and

inspectors can be carried out by the provincial malaria organisations. We also suggest the creation of the chairs of malariology in selected medical colleges in order to provide facilities for under-graduate and post-graduate training in the subject as well as to stimulate research.

The need for quinine should be met with in full by encouraging private cinchona plantations.* But before embarking on this programme the possibility of synthetic drugs displacing quinine, wholly or in part, should be kept in view.

Pyrethrum may be cultivated in India. The Director, Malaria Institute, has estimated that in order to make the country self-sufficient, pyrethrum cultivation will have to be extended to about 120,000 acres, so as to produce annually 15,000 tons. D.D.T. is a synthetic preparation. The relationship of D.D.T. to pyrethrum is somewhat similar to that of mapacrine to quinine in the treatment of malaria. A mixture of D.D.T. and pyrethrum seems to be more potent in the killing of mosquitoes than either of them alone.

Tuberculosis: The information available suggests that the incidence of this disease is higher in urban and industrialised areas than in rural regions. With about 2.5 million infective tuberculosis patients in the country the total number of beds available for isolation and treatment is in the neighbourhood of 6,000. The number of tuberculosis trained doctors do not probably exceed 70 or 80 while those who had a short course of four weeks may not be more than 300. Fully trained tuberculosis health visitors are in all probability only about 100.

The attack on the disease should be launched simultaneously in two directions: (1) towards an improvement of the socio-economic conditions and (2) towards an effective control of the spread of infection. The first goes beyond our field of enquiry and depends on the sustained State action for the achievement of definite results. We shall confine our recommendations to the second, viz., the control of the spread of tuberculosis infection.

The necessary measures are:

(1) Isolation of infective patients and provision for adequate treatment for them in order to make them non-infective.

(2) Periodical examination of contacts.

(3) Establishment of after-care colonies.

(4) Homes for incurables.

(5) Provision of adequate number of trained health personnel.

Between half to one million beds are necessary if Dr. Benjamin's estimate of 500,000 annual deaths from this disease is to be made the basis of calculation. While promoting the establishment and maintenance of tuberculosis hospitals, as far as possible, it is clear that our approach to the solution will have to be made on a much broader basis. It will be impossible to provide hospital accommodation for 2.5 to 3 million open cases that are computed to be now in the country. The most satisfactory method of providing

* This is the view of Sir Frederick James, a member of the planning committee.

segregation for a reasonable proportion of the infective patients seems to be through the simultaneous development of a scheme for domiciliary service in addition to tuberculosis clinics, hospitals, after-care colonies, homes for incurables and ancillary welfare services. Regarding poorer patients living in slums, we recommend that, as a part of the anti-tuberculosis campaign, local health authorities should make themselves responsible for construction and maintenance of a number of suitable dwellings into which the patient and members of his family can be removed and accommodated free of charge.

Tuberculosis clinics will form the centre from which both curative and preventive work will spread into the homes of the people.

More advanced cases would be removed to the tuberculosis hospitals.

After-care colonies should be established in close association with every tuberculosis hospital that will be developed under our scheme.

Home for incurables may be developed by philanthropic bodies, but the Government should undertake the responsibility for building and equipping such institutions.

Provisions for anti-tuberculosis work in our short and long-term programme would be as hereunder:

Institutional Service :

The first five-year period :

(1) The establishment of a 200 bed tuberculosis hospital for each unit of 10 million population.

(2) The establishment of a large clinic (to be named as "Main clinic") with facilities for training medical and non-medical tuberculosis personnel where the 200 bed hospital will be created.

(3) The establishment of clinics of a smaller type at the headquarters of each district.

[At the end of this period the number of (1) and (2) will be 33 each and No. (3) 183.]

During the second five-year period, the above will be doubled.

Long-term programme: Number of beds for the treatment of tuberculosis will be: Primary Unit Hospitals 75,000; S.U. Hospitals 75,000; Dt. H.Q. Hospitals 67,500; Total 217,500.

The tuberculosis organisations outlined above provides for peripheral units only at the H.Qs. of the district. One way of extending the activities of this organisation is by providing travelling tuberculosis units based on the district clinics and working into rural areas as far as possible.

While large scale tuberculosis survey is not possible in the near future, limited surveys are recommended to be undertaken by the trained staff of the tuberculosis clinic.

Welfare services form an essential part of the anti-tuberculosis organisation.

We realise fully well that there will always remain opportunities for voluntary effort to play their part, but it is necessary that the respective spheres of action should be clearly demarcated. The duties that are now performed by the Medical Commissioner of

the Tuberculosis Association of India should, in our view, be carried out by an expert staff which should be maintained on the establishment of the Director General of Health Services with the proposed Central Ministry of Health.

Small-pox: For the areas under our scheme vaccination against small-pox should be one of the normal functions of the Public Health Inspectors, nurses and midwives employed in each primary unit. Special staff of vaccinators is not needed.

For the areas outside our scheme, vaccinators may be employed.

Vaccination and re-vaccination must be made compulsory.

Cholera: Of the permanent measures, the most important are the provision of protected water-supplies and satisfactory systems of disposal of night soil. Provincial Governments should direct that those who are responsible for drawing up plans should, in fixing priority, take into consideration the incidence of cholera in individual villages and towns; and in this way the more important centres of cholera prevalence can be brought under control. We have suggested that the provision of protected water supply to the whole population of British India should be completed in a period of about 35 years. Temporary measures include: (1) Notification, (2) Isolation and treatment whenever possible and disinfection of infected materials, (3) Sterilisation of water supplies liable to contamination, (4) Preventive inoculation, (5) Special health measures in respect of festival centres and other places where large number of people congregate, (6) Educational propaganda.

The primary unit staff should be able to carry out, within its area, an effective immunisation of people.

Plague: The necessary measures may be divided into two groups, permanent and seasonal.

Permanent measures are: (1) Construction of rat-proof dwellings, rat-proof grain stores and railway godowns, (2) Control over location of certain trades and industries which attract rats, (3) An improvement of the general sanitary condition of towns and villages.

Seasonal measures are: (1) Rat destruction, (2) Periodical cleaning of homes, (3) Control of movement of goods, specially grain, (4) Preventive inoculation, (5) Evacuation of infected houses, and (6) Treatment of patients.

Opportunity for close association between man and the special rodent responsible for keeping alive plague in the area concerned, is a fundamental factor in the production of this disease in human communities. Widespread outbreaks among such animals may lead to territorial extensions of plague while the transportation of infected animals such as rats and/or infected fleas through grain traffic or in other ways may result in the starting of infection in areas far removed from the endemic focus of the disease.

In India it is the rat which is the vector; in South Africa it is the gerbille, in California the ground squirrel and in South Eastern Siberia and Manchuria it is the tarbagan.

It is in the transmission of bubonic plague that rats and certain type of rat-fleas play their part. Pneumonic plague is conveyed from person to person through air. The large majority of plague in India is of the bubonic type.

As demonstrated in the Cumbum valley experiments, it is possible to construct a rat-proof hut at a cost of less than Rs. 100.

Local authorities must insist on rat-proofing of godowns. Storage of grains in private houses must be controlled. It is equally important to provide rat-proof godowns in railway premises. Local authorities must be vested with full powers to regulate the location of trades and industries which are likely to attract rats. While the residents of an infected house are evacuated, adequate measures to destroy rats and fleas in the personal belongings and other goods of these people should also be undertaken.

Leprosy: Our recommendations for the development anti-leprosy work may be put under four heads.

- (a) Investigation of leprosy as a Public Health problem in local areas.
- (b) Organisation of curative and preventive measures in the areas of largest prevalence.
- (c) Stimulation of voluntary efforts to supplement the work of the public authority.
- (d) Education of the public.

In order to promote work on these lines we put forward the following proposals for the short-term programme, which will constitute a substantial advance on the measures that are now in force for the control of the disease.

- (a) The creation of provincial leprosy organisations.
- (b) An increase of the existing provisions for institutional treatment, out-patient and in-patient.
- (c) Development of group isolation colonies.
- (d) Substantial financial help to voluntary organisation.

The provincial organisations should be under the control of a provincial leprosy officer, assisted by a number of deputies, who would promote preventive and treatment work on the lines indicated above. Epidemiological field investigations should also be undertaken by him.

The leprosy clinics, dealing out-patient treatment, should perform the dual role of spreading remedial and preventive care among the people in the same manner as the Tuberculosis clinic in the campaign against that disease. We recommend that such clinics should be started in association with every hospital proposed at the secondary health centre in those parts of the country where leprosy is prevalent.

The need for considerable increase in the existing provision for in-patient treatment (we have only 14,000 beds now) is evident. We therefore propose an additional 14,000 beds in the first-five-year period and another 14,000 in the next five-year period.

We consider it necessary to provide an annual expenditure of 3 lakhs of rupees to find out the possibilities of developing group isolation during the first

We have no doubt that even with this expansion it will be necessary for voluntary effort to continue unabated in this field and have therefore suggested provision to the extent of Rs. 187.5 lakhs during the first ten years to subsidise such efforts.

The creation of a central leprosy institute will help in many ways. It can help in the training of leprosy workers, promotion of research, development of information service and guidance of provincial governments in the development of their campaign against this disease, if so desired.

The existing legislation regarding leprosy should be modernised in accordance with the new concepts of this disease in its preventive side.

Venereal diseases: We are against compulsory notification. Measures for the control are: (1) Provision of preventive and curative care, (2) Control of prostitution.

Regarding the first, measures required are:

- (1) Free treatment.
- (2) Free facilities for personal prophylaxis.
- (3) Adequate diagnostic facilities.
- (4) Creation and maintenance of a follow-up service.
- (5) Education of the people in regard to the spread and control of this disease.

It seems to us that a special organisation for dealing with venereal diseases should be established in each province as a part of the provincial health department. The creation of the post of a provincial venereal diseases officer, with suitable assistants on the establishment of each provincial Director of Health Services is necessary. It should be the duty of this officer to plan the campaign.

Hook-worm disease: The proposals we have set forth for ensuring adequate provision for night-soil conservancy in rural and urban areas will, if implemented, constitute an important step in the control of this disease. Soil pollution through human excreta and the habit of walking bare-foot constitute the two main factors involved in the spread of this disease. What is therefore needed is that people should be taught how to render these factors inoperative.

Filariasis: Extended research has failed to produce a satisfactory cure of this disease though there is still hope that the modern scientific developments would evolve a specific drug. The only effective measures against this disease are those which are concerned with the control of the carrier species of mosquito. The organisation we have recommended for anti-mosquito measures dealing with malaria should direct its attention to the endemic centres of filariasis also.

Guinea-worm disease: The prevalence of this disease is dependent on opportunities for the infection of water supplies by persons harbouring the worm. Infected water supplies may be dealt with by the application of adequate quantities of lime to such water. It is equally essential to protect water-supplies from such contamination. Our programme for giving safe water-supplies to towns and villages

Cancer: The view that cancer is rare in India is not correct. Our proposals for the short-term programme are: (1) Provision for radium and deep X-ray therapy, in addition to existing centres for such treatment; (2) In addition to the Tata Memorial Cancer Research Hospital at Bombay, three more such institutes are needed to serve north-western and eastern and southern India respectively; (3) The laboratories attached to the hospitals at the secondary health centres and the teaching hospitals; the provincial health laboratories with its regional branches and the special cancer research hospitals, should all help to provide an extended diagnostic service; (4) Drs. Viswanath and Khem Singh Grewal believe, as a result of extensive study of biopsy and autopsy, that chronic irritation plays the largest part in the causation of cancer, and therefore they advocate an educational campaign in regard to the removal, as far as possible, of the causes of such irritation.

Mental diseases and mental deficiency: There is no reason to believe that in India the rate of incidence is in any way less than in England and the U.S.A. Even if the proportion of mental patients be taken as 2 per 1,000 of the population, hospital accommodation should be available for at least 80,000 of mental patients. On the other hand, there are only a little over 10,000 beds for such patients, the ratio being one bed to about 40,000 population. The two most urgent needs are:

- (1) Improvement and augmentation of existing institutional facilities; and
- (2) Provision for the training of different types of mental health workers, including doctors and ancillary personnel.

With this object in view we make the following recommendations:

- (1) The creation of mental health organisations as part of the establishment under the Director-General of Health Services at the Centre and of the Provincial Directors of Health Services.
- (2) The improvement of the existing 17 mental hospitals and the establishment of two new institutions during the first five years and five more during the next five years.

(3) The provision of facilities for training in mental health for medical men in India and abroad and for ancillary personnel in India.

(4) Establishment of a Department of Mental Health in the proposed All-India Medical Institute.

Ref. No. 1: We suggest that steps should be taken without delay, to appoint in the Provincial H.Q. Mental Hospitals fully qualified mental specialists who can perform the dual function of being the superintendent of the mental hospitals and of acting as the adviser to the Director of Health Services on mental health administration. This arrangement is only temporary till qualified mental specialists become available.

Ref. No. 2: We suggest as ultimate objectives (1) hospitals for general mental patients; (2) homes for mental deficient; and (3) homes for incurables and senile cases. For our short-term programme, we suggest that radical improvements should be made in the existing mental hospitals in order to make them conform to modern standards of diagnosis and treatment.

Ref. No. 3: We suggest that as early as possible a course of training for the Diploma in Psychological Medicine should be developed in Bombay and Calcutta in association with the concerned universities. The Lumbini Park Mental Hospital near Calcutta, and the Child-Guidance Clinic of the Sir Dorabji Tata Institute of Social Sciences can be developed to give post-graduate training. A few experienced men may be sent abroad for special training. Ranchi possess facilities for training occupational therapists.

Ref. No. 4: The establishment of a department of mental health in the proposed All-India Medical Institute is calculated to serve—

- (1) The development of facilities for the undergraduate and post-graduate training of doctors in all branches of psychological medicine, and demonstrate the possibility of such training centres in the provinces.
- (2) The promotion of research in mental health.
- (3) Participation in the organisation of a mental health programme for the area in which the institute is located.

CHAPTERS TWELVE TO SIXTEEN

*Town and village planning—Housing, rural and urban Public Health Engineering (water-supply and general sanitation)—Quarantine, International and Internal—Vital Statistics.**

12. Town and Village Planning: The orderly development of urban and rural residential areas has been woefully neglected in the past. The census of 1941 has revealed an accelerated rate of urbanisation and this tendency is growing. Unless measures are taken now to retrieve the errors of the past and to ensure that at least the new towns and cities and other inhabited areas are planned on sound principles, the problem we shall be creating for the future will be even more serious than that which

faces the country today. Our recommendations for the short-term programme are:

- (1) Establishment of directorial authorities in the provinces and the centre. We consider it essential that a Ministry of housing and town and village planning should be established in each province.
- (2) Suitable legislation regarding town planning.
- (3) The Ministry of Housing should have a Provincial Director with regional assistants to control and direct the planning.

* We have made only a cursory summary of these five chapters, giving only the recommendations in bare outline, the needs in respect of these matters.

(4) The establishment of an institute of town and rural planning.

13. Housing, Rural and Urban: Housing and town planning must be considered as being complementary to each other. Existing housing conditions in India present a deplorable picture. Average number of persons living in a house is 5.1 in 1941, 5.0 in 1931, 4.9 in 1921 and 4.9 in 1911. There is practically no control of rural housing. The disintegration of the joint family system, industrialisation, and a rise in the standard of living will result in a demand for housing accommodation not less pressing than that caused by growing population.

Our recommendations are couched in general terms and are mainly concerned with the importance of housing to the planning of health.

They are:

(1) A long-term housing policy, comprehensive in its scope and modern in its outlook.

(2) Planning, execution, and regulation of housing programmes including participation by local authorities and Improvement Trusts in house construction and maintenance.

(3) Grant of financial assistance by long-term loans at low rates of interest and grants-in-aid.

(4) Prescription and enforcement of standards.

(5) Promotion of housing research.

The housing of the people is essentially a State responsibility. The primary responsibility must rest with the Provincial Governments, though it may delegate its powers to Local Bodies and Improvement Trusts. First priority should be given to the needs of the poorer sections of the population having less than, say, Rs. 100 a month. It is difficult to estimate with any precision the cost of housing the population on the basis of proper housing standards. The authors of the Bombay plan estimated a capital cost of Rs. 2,200 crores for the construction of new houses on the basis of an average of 100 sq.ft. accommodation per head.

14. Public Health Engineering: (A) *Water-supply.*—The provision of protected water-supplies was first introduced in Bombay (1856), Calcutta (1865), Madras (1886). The 1939 report of the Public Health Commissioner mentions that only 253 towns out of 1,471 towns in British India possess protected water-supply. This serves only a total population of 12.7 millions. The total capital invested during the last 80 years amounts to less than annas twelve per head of the population and this has been spent in providing water to large towns. Rural water supplies are mostly from wells, tanks, rivers and streams—largely unprotected. The Government would aim at providing the entire population with safe water for drinking and domestic purposes within a period of about 35 years. Our recommendations are:

(1) Creation of central and provincial water drainage boards which should deal simultaneously with water-supply and drainage schemes and whose functions shall be (a) conservation of available sources of water, (b) general planning, (c) maintenance of standards and (d) recommendation of grants-in-aid.

(2) Provision of laboratory facilities at the centre and in the provinces.

(3) Conservation of water on interprovincial basis.

(4) Proper tackling of inter-provincial drainage and river pollution problems*.

The following may be taken as a guide for water-supply programme in the provinces:—

A. 50 per cent of the population should be provided with safe water-supply during the first 20 years and during the next 15 years the scheme should be extended to cover the whole population.

For a smaller village with a population under 1,000 we recommend properly constructed wells with pumps.

A. For a bigger village with a population of 1,000 and over we recommend a piped stand-post water-supply system.

(Priority should be given to cholera endemic areas.)

The cost would be about 14 crores of rupees per annum.

We are against intermittent and dual water-supply as in Calcutta.

(B.) *General Sanitation—Conservancy and Drainage.*—(1) We favour the introduction of the water-carriage system as widely as may be practicable.

(2) For smaller places we recommend the use of septic tanks and soil absorption systems in order to extend the advantages of water borne conservancy over as wide an area as possible.

(3) In all unsewered areas we recommend that, for public latrines, the septic tank type should be employed wherever possible. The effluent from the septic tanks should be distributed in the sub-soil to a reasonable distance before it is permitted to drain in any water course.

(4) In places where soil conditions are suitable, bore-hole latrines can be brought into use.

(5) The disposal of rubbish by incinerators is recommended.

(6) Both sewerage and trade waste, when they emerge after appropriate treatment, should have attained certain standards of purity before they can be permitted to flow in rivers, lakes and seas.

(C) *Control of insects, rodents and other vectors of disease.*—Mosquito and rat control has been dealt with in chapters dealing with malaria and plague. Apart from measures directed against the breeding of flies, we recommend that active steps should be taken to destroy adult flies by the use of D.D.T. and pyrethrum.

(D) Certain trades, such as slaughter of animals, tanning, etc., which are offensive to the community should be controlled regarding location, general sanitation, treatment of trade-waste, etc.

*The Hon'ble Mr. P. N. Saprú appends a dissenting minute to this part of the report. He is against power being given to the Centre to arbitrate and decide on inter-provincial problems of river pollution by trade-waste and sewerage.

March, 1946]

QUARANTINE AND VITAL STATISTICS

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15. Quarantine—International and Internal: In dealing with problems of international health the Central Government should be able to carry out a common policy throughout India.

Internal Quarantine is concerned with the enforcement of measures designed to control the spread of infectious diseases between neighbouring units of administration. We recommend the U.S.A. example. The Central Government should be responsible for the enforcement of all measures necessary to prevent the inter-provincial spread of infectious disease, as advised by the Central Board of Health which would consist of central and provincial ministers of health.

16. Vital Statistics: Vital statistics constitute the foundation on which all constructive work in the field of public health must be built. The defects in our vital statistics, as they are today, are (1) incomplete recording of events, (2) inaccuracy of the registered cause of death and (3) faulty compilation. These are, in turn, due to defective organisation.

For the areas under our scheme we suggest that:

(1) One of the officers of the village health committee, which we have suggested earlier, should concern himself with the vital statistics of his related village or area.

(2) The staff of the primary unit should collect, in the course of their routine duties, information regarding the occurrence of births, deaths, and cases of infectious diseases, and pass it on to the registrar.

(3) Three registration offices in each primary unit should be established.

(4) House-lists prepared during the census operation must be kept up-to-date during the intercensal period. This list should contain information regarding date of birth and sex of every normal resident of the house. Occupation also should be noted.

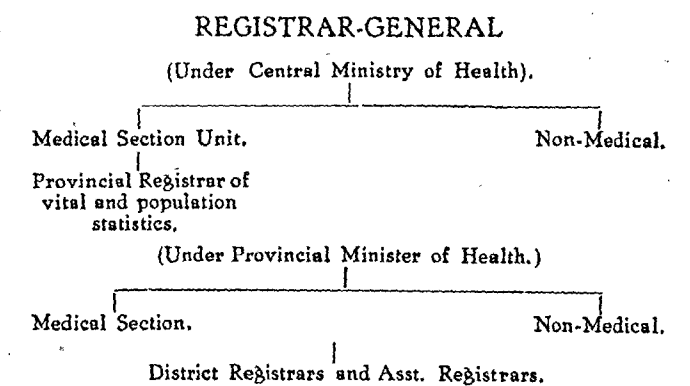
(5) If courts, schools, etc., could be induced to insist on the production of birth and death certificates, the public will begin to feel the necessity for registering births and deaths in their own interest.

(6) We would advise the provincial health authorities to consider seriously the question of revising the list of notifiable diseases. Under existing conditions, we have to draw three lists: (1) one for rural areas and towns under 30,000 population, (2) second for municipalities over 30,000 and up to 50,000 population, (3) third for all other towns and cities. For the

first area, only cholera, small-pox, plague, measles and a few others of which the people are familiar should be made notifiable. The other two lists should include diseases requiring greater medical skill and laboratory facilities for diagnosis.

(7) We recommend compulsory registration of vital statistics, if definite improvement is to be secured.

(8) The vital statistics department should in our view function as a separate department with its own provincial administrative officer and subordinate officers in the districts. The administrative organisation is shown in the tabular form below:—



Registration offices should be placed as close to the people as possible. Every large village or every group of small villages must have its own registration office. The Registrar must be a full time servant, and qualified statisticians will inspect areas under his control. There should be closest co-operation between the Vital Statistics and Health Departments.

Provision of training facilities for statisticians must be made. Our suggestions in this respect are:

(1) Utilise the Indian Statistical Institute in Calcutta for training.

(2) Utilise also the All-India Institute of Hygiene and Public Health, Calcutta and the Singur Health Centre.

(3) Create a chair of Statistics in the proposed All-India Medical Institute.

(4) Instruction in statistics should be introduced in all the Universities.

CHAPTER SEVENTEEN

Structure and functions of Health Organisations at the Centre and in the Provinces.*

The health organisations will consist of the following :

1. A Ministry of Health at the Centre.
2. Ministries of Health in the Provinces.
3. Local area Health administrations.
4. Health Board and Health Council at each of the three levels of administration indicated above.

Following represents in a tabular form the Provincial Administrative Machinery.

PROVINCIAL MINISTRY OF HEALTH.

(Representatives
of the Provincial
Government and
of Local Bodies.)

STATUTORY PRO-
VINCIAL BOARD OF
HEALTH.

MINISTER.

PROVINCIAL
HEALTH COUNCIL.
(Experts.)

DIRECTOR OF HEALTH SERVICES.

General Administration.	Medical Relief.		Public Health	PROFESSIONAL EDUCATION AND RESEARCH.	Public Health Engineering.
	Insurance.	Non-Insurance.			
1. General Administration and co-ordination.	Hospitals, clinics and dispensaries.	Hospitals, clinics and dispensaries.	1. Communicable diseases.	A:— 1. Medical Education including post-graduate education.	1. Water and sewage control.
2. Personnel Section.	Mental Hospls. and clinics.	Mental Hospls. and clinics.	2. Epidemiology.	2. Dental Education.	2. Industrial engineering.
3. Purchase and supplies.	Nursing.	Nursing.	3. Vital Statistics.	3. Pharmaceutical Education.	(a) Control of special safety and occupational hazards.
4. Finance and Accounts	Pharmacy.	Pharmacy.	4. Maternity and child welfare.	4. Engineering Education.	(b) Control of environmental health standards including light, ventilation, heat, noise, etc.
5. Properties.	Rehabilitation.	Rehabilitation.	5. School Health.	5. Nursing Education.	(c) Control of offensive trades and of stream pollution.
6. Transport.			6. Industrial Health.	6. Training of ancillary workers.	(d) Control of smoke nuisance.
7. Workshops.			7. Venereal diseases, tuberculosis and other personal health services.	7. Grants-in-aid.	
8. Chief Clerk's Office.			8. Nutrition.	B:—Research:	
			9. Enforcement of standards for biological products and drugs.	1. Undertaken by Govt.	
			10. Enforcement of standards for food.	(a) Medical Subjects.	
			11. Provincial and Regional Laboratories; production and distribution of biological products.	(b) Engineering and Industrial subjects.	
				(c) Social subjects.	
				(d) Biological subjects including standardisation of biological products.	
				(e) Biostatistical subjects.	
				2. Undertaken by other organisations:	
				(a) Grants-in-aid.	
				(b) Scholarships.	
				(c) Exchanges.	
				3. Survey and planning.	
				4. Library, Journals, publications and translations.	
				C:—Provincial Organisations:	
				1. Provincial Medical Council.	
				2. Provincial Nursing Council.	
				3. Provincial Pharmaceutical Board and Council.	
				4. Provincial Dental Board and Council.	
					4. Supervision of housing.
					5. Control of insects, rodents, etc.
					6. Miscellaneous.
					7. Provincial water and sewage board.

* For the sake of clarity we give, in the summary of this chapter, first, a tabular statement of Central and Provincial Administrative machinery recommended, and then define their status and functions. The third part of the summary would contain the Committee's general observations and recommendations.

Following represents, in a tabular form, the Central Administrative Machinery.

CENTRAL MINISTRY OF HEALTH.

(Representatives
of the Central and
Provincial Gov-
ernments.)

STATUTORY
CENTRAL BOARD
OF HEALTH.

MINISTER.

CENTRAL HEALTH
COUNCIL.
(Experts.)

DIRECTOR-GENERAL OF HEALTH SERVICES.

General Administration.	Medical Relief.		Public Health.	PROFESSIONAL EDUCATION AND RESEARCH.	Public Health Engineering.	Town and Village Planning.
	Insurance.	Non-Insurance.				
1. General Administration and co-ordination.	Hospls., clinics and dispensaries.	Hospls., clinics and dispensaries.	1. Communicable diseases.	A:— 1. Med. Education including post-graduate training.	1. Water Sewage control.	(a) Housing
2. Civil Service personnel section.	Mental Diseases.	Mental Diseases.	2. Nutrition.	2. Dental Education.	2. Environmental hygiene in respect of industry.	(b) Slum Clearance.
3. Purchase and Supplies.	Nursing.	Nursing.	3. School Health, venereal diseases, tuberculosis and other personal health services.	3. Pharmaceutical Education.	(a) Control of Special safety and occupational hazards.	(c) Zoning.
4. Finance and a/c.	Pharmacy.	Pharmacy.	4. Maternity and child welfare.	4. Engineering Education.	(b) Control of environmental health standards including light, ventilation, heat, noise, etc.	
5. Properties.	Medical care for Centrally Administered Areas.	Medical care for Centrally Administered areas.	5. Industrial Health.	5. Nursing Education.	(c) Control of offensive trades and of stream pollution.	
6. Transport.	Rehabilitation.	Rehabilitation.	6. Vital Statistics.	6. Training of auxiliary Workers.	(d) Control of smoke nuisance.	
7. Workshops.			7. International quarantine and international health.	7. Grants-in-aid.		
8. Chief Clerk's Office.			8. International quarantine.	B:—Research:		
			9. Enforcement of standards for biological products and drugs in inter-provincial commerce.	1. Undertaken by Govt.		
			10. Enforcement of standards for food in inter-provincial commerce.	1. Medical Subjects.		
			11. Administration of Central Government areas.	2. Engineering & Industrial subjects.		
			12. Preventive aspects of mercantile marine.	3. Social subjects.		
				4. Biological subjects including standardisation of biological products.		
				5. Biostatistical subjects.		
				II. Undertaken by other organisations.		
				1. Grants-in-aid.		
				2. Scholarships.		
				3. Exchanges.		
				III. Survey and Planning.		
				IV. Library, Journals, Publications, and other translations.		
				C:—All India Organisations:		
				(a) Medical Council of India.		
				(b) Nursing Council of India.		
				(c) All-India Sanitary Institute.		
				(d) All-India Dental Board.		
				(e) All-India Pharmaceutical Board.		
					4. Supervision of housing.	
					5. Control of insects, etc.	
					6. Miscellaneous	
					7. Central water and Sewage Board.	

17. (1) The Central Minister of Health will have under him the Director-General of Health Services and be assisted by a Statutory Central Board of Health made up of Provincial Health Ministers and a Central Health Council made up of experts. The functions of the Central Health Ministry will, among others, include the following:

- (i) To study and plan schemes of health service for the whole country; to revise or modify such schemes from time to time; and to co-ordinate provincial health services.
- (ii) To assist in the provision of proper facilities for the education of medical and auxiliary personnel throughout India.
- (iii) To provide for medical research and the training of research personnel for central purposes and assist such work in the provinces.
- (iv) To co-ordinate the activities of all workers in the field of public health.
- (v) To meet the obligations assumed by the Central Government under the provisions of international treaties.
- (vi) To collect, tabulate, and publish the vital statistics of the various component parts and to direct the vital statistics organisation.
- (vii) To carry out such health measures as are required (i) for the control of inter-provincial spread of communicable diseases, (ii) for the sanitary control of inter-provincial traffic and (iii) for control of food and drugs in inter-provincial commerce.
- (viii) To establish and enforce standards of control for the manufacture and sale of drugs and biological products used in the treatment of diseases.
- (ix) To assist the provincial health organisation technically or financially or both.
- (x) To take such legislative or executive action, as may be provided by the constitution, necessary to safeguard the health of the country.

But the central ministry of health has no power to impose its views on the provinces except in cases referred to in v, vi, vii and x.

(2) The central board of health is intended to provide a forum for the discussion of health policy and for facilitating its execution with the fullest measure of co-operation between the Centre and the Provinces.

(3) The central health council of experts is intended to secure the advice and guidance of technical experts. They may be nominated by the central minister of health.

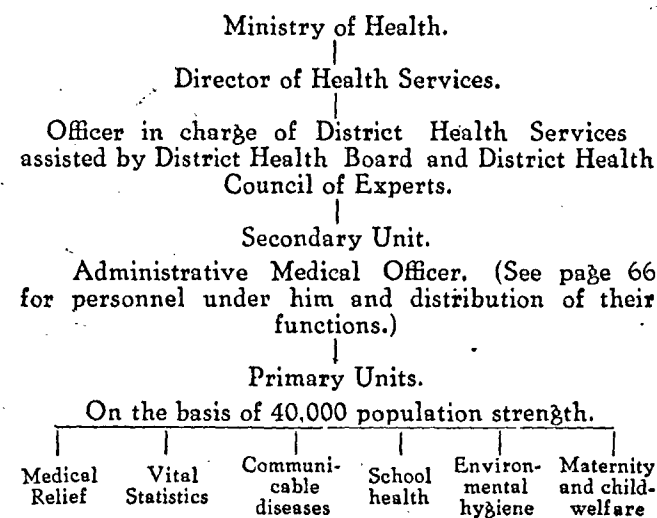
(4) The Director-General of Health Services will have six departments with 14 assistant directors, distributed as follows:—

- | | |
|-------------------------------------|----|
| General Administration | 1. |
| Medical Relief | 2. |
| Public Health | 6. |
| Professional Education and Research | 2. |
| Public Health Engineering | 3. |

Since we have suggested a separate ministry for town and village planning we are not recommending a separate assistant director for this department under the Director-General of Health.

(5) The provincial minister of health will have under him a Director of Health Services with 14 assistant directors for the five departments mentioned in the table, and be assisted by the provincial health board and the provincial health council of experts. The functions of the provincial health minister will be (i) to plan and execute schemes of health services, (ii) to enact regulations dealing with sanitation, disease, control, etc., (iii) to enforce minimum standards of performance of work of health departments, (iv) to maintain a central laboratory and branch laboratories for the standard functions of diagnostic, sanitary and chemical examination; production or procurement of therapeutic and prophylactic preparations, etc., (v) to collect, tabulate and publish vital statistics, (vi) to distribute information regarding preventable diseases, (vii) to maintain the safety and quality of water supplies, (viii) to enforce minimum sanitary standards and milk supplies, (ix) to provide service and to aid industry in the study and control of health hazards due to occupation, (x) to prescribe qualifications for different types of public health personnel.

(6) The following diagram shows the short-term district health organisation.



(7) The main function of the district health board, as in the case of the central and provincial health boards, is to associate public opinion with the formulation of health policy and with its implementation. Representation can be secured by direct election or by election from their own ranks, by the local bodies or by a combination of both. The district collector or the deputy commissioner should be a member of this board as he is in contact with all the departments of the Provincial Government. To this board shall be transferred all the health functions now exercised by the different local bodies included in the area under our scheme. The local bodies will then be left with such functions as education, public works and communications. The function of the district health board will include the discussion and formulation of health policy and distribution of funds

for the different branches of health administration under its charge. We recommend that each local authority should be required by a statutory provision to contribute a fixed proportion of its revenues to the district health board. The board will be subject to such rules as may be framed by the provincial government for the conduct of its business.

(8) The district health council would consist of representatives of the different professions, e.g., doctors, dentists, pharmacists, etc., from the registered members of which the health service will be recruited. This would secure the support of the independent members of the medical and ancillary professions to the development of the health programme.

To us, the provisions of the Government of India Act (1935) are not sacro-sanct and we have no hesitation in saying that, while keeping in view the broad principle that provincial autonomy should, as far as possible, be respected, no limitation set by the present constitution should debar the country from proceeding successfully with the health programme under consideration.

If satisfactory results are to be achieved, it is our considered opinion that mutual consultation and active co-operation between the centre and the provinces should be promoted to the utmost extent possible. It is eminently desirable that the health programme should develop on uniform lines in the different provinces.

The Central Government should demonstrate in a selected area the application of all our proposals in the various fields of health activity. We suggest Delhi Province for this purpose, but the Central Government may choose any area it likes.

The Central Government should help the provinces with grants-in-aid for the promotion of specific lines of health activity. It should also provide, when a province so required, the services of specialists in the different branches of health administration.

We recommend the following principles for the guidance of the authorities concerned in the matter of recruitment and control of the central and the provincial health services:

(1) There should be separate and independent Central and Provincial Health Services Commission appointed and controlled by the Central and Provincial Governments respectively.

(2) The venue of recruitment of all their services, Central and Provincial, should be India.

(3) (a) Posts which pertain to the general health services and the large majority of posts in teaching and research institutions will be restricted to persons living in India, (b) recruitment from outside the country may be necessary, at the initial stages, to fill in a small number of posts in connection with teaching and research institutions. These experts from abroad should be entertained on short-term contracts—from 3 to 5 years in the first instance—by which time every effort should be made to train a suitable Indian.

(4) Recruitment to (a) should be through public service commission, central or provincial as the case may be, by an examination which will include a written test and a viva voce.

(5) If communal representation has to be resorted to, it should not be applied to posts in teaching and research institutions but filled only on merit. In respect of general health services, we suggest that 33 1/3 per cent should be recruited on the basis of merit alone, and the remaining 66 2/3 per cent may be on the basis of communal representations, if need be.

(6) We recommend that a programme of exchange of officers between the centre and the provinces may be planned after mutual consultation. The period of deputation may be about 3 to 5 years. In which case, it may be necessary for the provincial governments to maintain at least a proportion of posts at a level in respect of salary and status to those of the central service.

(7) The highest post in the health service should be open to all who enter it and merit should be the criterion for such promotion. But there is bound to be, in the organisation of the type we envisage, certain posts for which persons with qualifications definitely above the usual standard or of a special character may have to be recruited directly.

(8) The central and provincial health service should be maintained as purely civil organisation.

(9) There should be no reservation of posts, either under the Central or the Provincial Governments, for the Civil Branch of the Indian Medical Service through rules made by the Secretary of State for India under section 246 of the Government of India Act, 1935, or under the provision of any other enactment for certain special categories of that service. Our reasons are: (a) Even in rural areas it should be possible to arrange for efficient service for the British officers and their families from medical men, British or Indian from the nearest urban centre, (b) Reservation of posts in the provinces for the members of the central service is against the principle of provincial autonomy in as much as it compels the provincial governments to accept officers whose ultimate control is vested in the centre and not in the provinces. The continuance of this practice would jeopardise the success of our scheme by creating unnecessary friction between the centre and the provinces, (c) since we have postulated merit as the criterion of selection, it is undesirable to continue the practice of reserving posts, either in the centre or in the provinces, for the members of a particular service.

(10) With reference to the question whether the secretaries to the ministries of health be technical or non-technical officers, the committee has a divided opinion. The majority of us feel that the contact between the technical adviser and minister should not be broken by the intervention of a non-technical secretary to Government, and that the director of health services, in the Centre or in the Province, should himself have the status and function as a secretary to Government. Others feel that a non-technical secretary would be more useful in securing a just and balanced consideration of questions in as much as measures connected with the health and medical services can never, in this country at least, be matters of purely technical concern. If this view prevails with the Government we suggest that any adverse criticism

of the non-technical secretary on a proposal put up by the technical adviser should be shown to the latter in order to enable him to reply to such criticism.

(11) We have been greatly exercised over the scales of salaries to be allowed for in calculating the cost of our proposals. The remuneration of the personnel required accounts for major portion of the overall estimated recurring expenditure, and while two generous a provision on this account may well wreck or at least grievously handicap the implementation of any large scale health scheme, salaries inadequate to attract the type of persons, needed in the required numbers, might have equally disastrous consequences. We consider this subject to be of such complexity and importance that it calls for a comprehensive examination at the hands of an *ad hoc* all-India Committee which should contain medical men. We have made our calculations mostly on existing rates or assumed scales of pay which appears to us *prima facie* as not generally unreasonable. We are however definite on one point: the salaries of the employees of the humbler categories and in the lower grades need to be raised while these at the top may well stand some levelling down. There is also a need for uniform scales of pay, as far as possible, in

all the provinces in the matter of the salaries of their medical and public health services personnel.

(12) We recommend that the central and provincial legislatures should, within their respective spheres, bring together all the provisions for safeguarding the health of the country as a whole, revise, modernise and consolidate them, in order to provide comprehensive Public Health Acts on which future health administration may be built up.

Two of our colleagues (Drs. Viswanath and Butt) do not agree with our views regarding the formation of Central Ministry of Health and Central Health Service and direct recruitment to central and provincial health services. They are against the first because the present Central Government is not based on peoples' acceptance. Regarding recruitment, they deprecate direct recruitment to the higher grades of health service and stress the need for every one entering at the bottom and working his way up through merit. "In order to provide sufficient incentive to do good work, even the highest post should be open to the man on the lowest rungs of the ladder by means of tests from which promising materials can be selected."

The Hon'ble Mr. P. N. Saprú is against provincialisation of services under local authorities. He is also generally against top-heavy administration and conferring of excessive powers to the Central Government in view of the certainty of federal structure of future government with almost complete autonomy to the federating units.

CHAPTER EIGHTEEN

Professional Education

18. **Certain General Questions: Target in regard to the number of doctors required.**—Although we have 47,400 registered medical practitioners in British India and although this works out to one doctor for every 6,400 of the population yet, as the larger number of doctors congregate in the cities and larger towns, the country-side is left unserved by any medical men qualified in the scientific system of medicine. For the fulfilment of our long-term programme we require something like 250,000 doctors. For our short-term programme we require about 28,400 doctors. During this period we expect, if our recommendations are accepted, an additional (additional to the existing 47,400) output of 22,000 for the first five years and an equal number for the next five-year period, at the rate of about 4,500 to 5,000 doctors per annum which is very nearly a double of the present output.

Impediments in the way of speedy expansion.—No steps worth mentioning have been till now taken to create a proper post-graduate council of medical education at any of the teaching centres.* Therefore the problem of providing an adequate number of qualified teachers for the medical colleges visualised in our proposals is a serious one. The All-India Medical Institute which we have proposed, if brought into existence, will not only provide a centre for the training of medical teachers but also will combine the provision of the most up-to-date

* Madras University has established such a Council last year and is doing good work in this line. Ed.

hospital facilities for medical education and opportunities for comprehensive research without which teaching and training must fail in their object. For our immediate purposes, we suggest that an endeavour should be made to send about 200 selected members of the profession from the various provinces to countries abroad to acquire a knowledge of modern methods of teaching, particularly in the following branches of study—Anatomy, Physiology, Bio-chemistry, Pathology, Bacteriology and Pharmacology. We hold the view that a teacher should not only possess a high post-graduate qualification but also some recognised research work to his credit. It would be an additional advantage if the teachers had visited foreign universities for at least a minimum period of six months. Young men should be encouraged in increasing numbers to acquire post-graduate qualifications in this country.

Type of the future doctors.—The majority of the members of the Committee are of the view, having regard to the limited resources available for the training of doctors, that it would be of ultimate benefit to the country if our resources are concentrated on the production of one highly trained type of doctor—what we may call "the basic doctor". Our basic doctor's training includes, as an inseparable component, education in the community and preventive aspects of medicine. A lesser trained doctor, with the status of comparative inferiority, will be constantly labouring under a real or fancied sense of grievance. Although the existing licentiates have done yeomen service to the country, yet the Associa-

tion of licentiates have been unanimous in the view that this class of doctors should not be perpetuated. We have accepted this view.

Portal of Entry.—The only channel in India for the grant of medical qualifications should be the universities. We are confirmed by the reasons advanced by the Inter-departmental Committee on Medical Education in Great Britain in support of university medical education.

Co-education.—It is highly desirable that the policy in future should be to encourage co-educational institutions. Women who are not prepared to come out of purdah are not really the fittest material for recruitment to the medical profession.

Admission to Medical Colleges.—Except in Madras, women receive no special encouragement to take to the profession of medicine, nor do they have any definite rule as to the number of women to be admitted.

In Madras, women are exempted from the payment of fees and one-third of admissions are reserved for women. It will be in the national interest if from a quarter to a third of admissions to the medical colleges were reserved for suitably qualified women candidates. In regard to men, a percentage of admission to every medical training institute should be by pure merit alone whatever the test that might be adopted. This may be about one-third of the total vacancies. The rest of the vacancies may be divided among the communities and in the number selected on such communal basis no account should be taken of those who secure admission on the basis of pure merit. The communal proportion should also be subjected to the test of merit.

Cost of Medical Education.—In Russia, medical education is free, and in the United Kingdom the Good-enough Committee has recommended that a third of the admissions should be free. We realise that even partially free medical education must impose a heavy financial burden on the State. But it would be unwise in the interest of the nation not to face the heavy bill that may be involved. In view of the fact that, if our recommendations materialise, it will be possible to absorb the entire output of medical colleges for State Service, we suggest a stipends of Rs. 1,000 a year per student to cover not only the cost of education but also their maintenance during the period of study. This should not be an outright grant but two-thirds of this amount should be recovered from the recipient over a period of 10 years in easy instalments, the balance being written-off. The loan would be free of interest and the individual student should bind himself to the Government to serve at least for 10 years. This subsidy may be extended to about 50 per cent of the entrants and confined to those least capable of paying their own expenses.

Medical Research in Relation to Medical Education.—Every college of medicine should perform the three-fold duties of (a) training undergraduates, (b) training post-graduates in certain spheres of medicine, (c) fostering medical research in teaching centres. We consider the last as so important that the following measures should be taken for this purpose:

(1) A number of promising young graduates should be given scholarships for periods from three to five years to pursue medical research at these institutions.

(2) Those who show special aptitude for and interest in research should have an opening for continuing research as a life work.

(3) There should be at least one full-time member of the staff in charge of medical research to co-ordinate different forms of medical research done at a teaching centre and give guidance when necessary.

(4) The heads of the different departments should have research achievements to their credit. They should not be over-burdened with routine work.

(5) There should be a periodic conference of the teaching staff.

(6) Special equipment and facilities needed for carrying on medical research should be supplied to all teaching centre.

(7) Funds for research must be made available through a central agency.

Size of Medical Colleges and Teaching Hospitals.—The optimum number should be 100 students for a thousand bed hospital. At the initial stages, we have to recommend 120 students, wherever possible. All the hospitals and the college should preferably be in one campus. This applies particularly to the new colleges that would be created under our scheme.

Minute of Dissent.—Six of us * do not support the conclusions of our colleagues that it would be to the greater ultimate benefit of the country if the limited resources available for the training of doctors were concentrated on the production of the most highly trained type. "We agree with our colleagues as to the advantage of having one single type of doctor with a basic 5 years' training. But in view of the overall shortage of doctors we feel that the early realisation of this ideal must be sacrificed to the immediate needs of the country. We do not regard the licentiate as "an imperfectly" or "hastily manufactured" doctor. Although his training is not as complete as that of the basic doctor, yet it has enabled him to render meritorious services in the past. It is possible, as expressed by many distinguished doctors during our discussion, that by suitable modification in the curriculum an effective medical training can be given in 3½ years, including a six months "internship."

Medical Education.—It should be conceded the highest priority in our programme. If the foundation is well and truly laid during the first ten years on the lines suggested by us, we feel that subsequent progress will be possible at a greatly accelerated space.

Under-graduate Education.—The main points underlying the changes recommended is the under-graduate curriculum, are:

(1) Inclusion of principles and methods of teaching which would enable the student to learn and think for himself.

(2) Stress on the co-relation between science and medicine and the fact that both are continually progressing.

* F. E. James, Viswanath, P. N. Saprú, N. M. Joshi, L. K. Maitra, and A. H. Butt.

(3) Exemplification of the principles of pre-clinical subjects by the inclusion of clinical teaching during pre-clinical period and *vice-versa*.

(4) Less dietetic and more lecture-demonstration in the teaching of anatomy and physiology.

(5) The ratio of instructors to students in pre-clinical subjects should be approximately 1: 15.*

(6) Towards the later half of the pre-clinical studies, a course of lectures in elementary psychology and pharmacology should be introduced as well as introduction to pathology.

(7) A short course in the methods of clinical diagnosis, laboratory technique, elements of nursing dietetics, and social medicine should be given at the beginning of the clinical period.

(8) Personal attention to the student in the wards; number of beds in a unit should be at least 40, and 8 or 10 students attached to each unit.

(9) More instruction in micro-biology and parasitology and more importance to autopsy should be given in the teaching of pathology.

(10) Every teaching institutions should have a department of preventive and social medicine and the students given an insight into social medicine by contacts with home and community life.

(11) After the final qualifying period at the end of the 4th year, there should be for every student an internship of one year during which he should work under supervision and out of which three months should be devoted to work in a P.H. unit. He should be conferred the degree only after the completion of internship.

Improvement of old and creation of new Medical Colleges.—Considerable improvements are needed in some of the existing colleges. The following medical schools can be converted into colleges: Poona, Ahmedabad, Darbhanga, the Campbell, Dacca, Jalpaiguri, Nagpur, Mysore and Indore medical schools; also Arya Medical School (Lahore) and National Medical School (Calcutta). New Medical Colleges can be established in the following places: Madras, Coimbatore, Guntur, Coconada, and Calicut (Madras Province). Two at Bombay City; one at Jubbulpore (C.P.); two more at Calcutta; one at Aligarh and another at Ajmer to cover Rajputana. These are additional to the conversion of medical schools into colleges. If all the above colleges (old and new) work at their full strength the total annual intake would be between 4,500 to 5,000.

Post-Graduate Education.—This should be devised to meet two different needs, each important in itself but not connected with each other.

They are:

(a) The training of consultants and specialists.

(b) The training of practitioners desirous of practising a speciality without the definite status of specialists.

In the case of the first, training will naturally involve several years of work in special departments and hospitals under the guidance of a specialist, ex-

tending up to 5 years and leading to a higher qualification such as M. D. or M. S.

In the case of the second, the training will be in the speciality for a period from 12 to 18 months under suitable guidance. Courses should be available in (1) Oto-Rhine Laryngology, (2) Dermatology, (3) Radiology, (4) Ophthalmology, (5) Obstetrics and Gynecology, (6) Venereology, (7) Anaesthetics, (8) Psychiatry, (9) Pediatrics, (10) Tuberculosis, (11) Malariology, (12) Blood Transfusion and Resuscitation. At the end of the course, the candidate should be eligible for a diploma. Resident appointments in the specialities should be available only after the candidates have completed their internship. The proposed All-India Medical Institute would provide post-graduate training of a high order in a large number of subjects in medical and certain other allied sciences. This should be supplemented by the development of existing or new institutions at suitable places in the provinces. While it is desirable that every centre of medical education should attempt to give course of advance training in a large number of subjects, yet it would be more in the interest of real specialisation if the universities were to offer advanced courses only in these subjects for which they have particularly good facilities. Facilities for post-graduate education should be developed on the basis of co-operation between the Central and the Provincial Governments, and the Universities.

To avoid "ill grounded and immature specialisation", we suggest the creation of a special organisation for advising the Governments on the control of the post-graduate medical training centres. This body may be designated as "The Central Committee for post-graduate medical education". The Universities also may establish a "Post-Graduate Council of Medical Education" for regulating post-graduate education in the wide field that falls outside the scope of the Central Committee. The functions of the Central Committee are (1) Technical supervision, (2) to advise on organisation and administration in respect of (a) institutes for special diseases and (b) existing provincial institutions which will be developed as All-India Training Centre. The composition of this Central Committee would be as follows:

Director-general of health service	...	1
Representatives of medical faculties by rotation	...	3
Representatives of the scientific advisory board for medical research	...	2
Representatives of Indian medical council	...	2
Provincial directors of health by rotation	...	5
Two representatives of post-graduate training institute, each of category 1 and 2	...	2
Directors of provincial research institutes	...	4

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It should have a full time secretary. The cost should be shared between the central and the provincial governments.

Refresher courses.—There are several lines along which refresher courses may be arranged.

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(2) Part-time, spread over weeks or months organised on a systematic basis; (a) week-end courses, (b) whole-day courses, (c) half-day courses.

(3) One educational session once a week or fortnight conducted throughout the year.

(4) Short-term posts in a recognised hospital for one to three months.

We recommend that facilities for refresher courses should be developed in all hospitals attached to secondary centres, medical colleges and H. Qs. of the province. Agency responsible for arrangement of these courses should be the provincial government in consultation with the universities.

Special tuition and training in certain subjects.—Tuberculosis, Mental Hygiene and Dietetics—should be given in the under-graduate as well as in post-graduate training period leading to special diplomas or degrees.

Special facilities for licentiates.—The question of affording to the existing licentiates facilities for post-graduate training deserves serious consideration. Two types of such training may be given: (1) Training which will enable them to obtain a university medical degree and (2) Advance training in the different specialities on the lines available for university graduates.

Dental education.—If we were to have one dentist for every 5,000 of the population, we would require 75,000 qualified dentists; and this would necessitate the training of at least 2,500 per year and the establishment of 25 dental colleges each capable of admitting 100 students per year.

We have to make provision for the training of three types of personnel: (1) the Dental Surgeon, (2) the Dental Hygienist, (3) the Dental Mechanic.

The training of dental surgeon should be shared between the medical and Dental Colleges, while the training of the other two classes of personnel should be undertaken entirely by the dental colleges. All the dental colleges should be directly affiliated to a University in order to regularise the conferment of a dental degree, and a separate faculty of dentistry should in each case be created together with a board of studies. The minimum entrance requirements should be the same as those for a degree in medicine but the course is for 4 years only. A separate course of two years' duration may be given for those medical graduates who wish to qualify for an additional degree in dentistry. To secure uniformity of standards in dental education, an All-India Dental Council and also Provincial Dental Councils should be established by legislating an All-India Dental Act for the purpose of registration and reciprocity between the provinces. The State itself must undertake the establishment of a comprehensive dental service to meet the urgent needs of the population. We have provided a dental section to each secondary health unit hospital, and a travelling dental organisation for the area covered by each secondary unit.

There should be a reasonably low level of tuition fees for candidates choosing dental education.

Pharmaceutical education.—We suggest the establishment of an All-India Pharmaceutical Council and Provincial Pharmaceutical Councils for the regu-

lation of pharmaceutical practice, registration of qualified pharmacists, maintenance of disciplinary standard and advising the ministry of health in respect of any regulations for the distribution of drugs.

The following personnel are required to be trained:

(1) The Licentiate Pharmacist.

(2) The Graduate Pharmacist.

(3) The Pharmaceutical Technologist.

The first is intended for dispensary work in chemist shops, dispensaries and hospitals with a two-year course in Chemistry, Biology, Elementary Physics, Pharmacy, Pharmacognosy, Elementary Pharmaceutical Chemistry, Elementary Physiology and Forensic Medicine.

The second is intended to train the smaller number required for manufacturing concerns analytical laboratories, and educational medical institutions. It will be a degree course of three years.

The third is intended for those who desire to take up the manufacture of pharmaceuticals and drugs on a commercial scale. Such candidates, in addition to the graduate course in pharmacy, should have an additional one year in chemical technology, design, equipment, etc. The training should be given by medical colleges affiliated to the universities for those who seek the degree course and the technological colleges affiliated to the universities.

Education of public health personnel.—We require three types of personnel trained in preventive and social medicine:

(1) The Public Health Engineer.

(2) The Public Health Inspector.

(3) The Public Laboratory Workers.

Training in Public Health Engineering should be provided by the Engineering Colleges. But to meet the immediate needs, arrangements should be made at the All-India Institute of Hygiene at Calcutta in collaboration with the Bengal Engineering College and the Calcutta University for immediate training of at least 50 students on an All-India basis. For the first ten years 80 per cent of the admissions should be restricted to specially selected engineers between the ages of 25 and 40 who are already employed in the provinces or States.

Training of the P.H. Inspector is already in vogue, and the present number under employment may be about 5,000. India requires at least 16,000 P.H. Inspectors at the rate of 1 per 25,000 of the population. In order to retain the services of these men—the apostles of health—it will be necessary to offer them adequate rates of pay.

Public health laboratories have not so far undertaken the training of laboratory workers. Such workers should be trained in water analysis, examination and analysis of food-stuffs, problems connected with industrial health, etc.

Training of nurses and midwives.—Unless the existing conditions under which the nurses and midwives work are changed for the better, it is inconceivable that Indian women from the more educated families will enter the nursing profession in appreciable numbers. They should be provided with

better accommodation and amenities; in due course the international standard of one nurse to 2½ beds should be reached.

At present we have 9,500 nurses registered with the various provincial nursing councils. Allowing for wastage and over-lapping of registration, we may not have more than 7,000 nurses today, i.e., one for every 42,260 population. "There are not in the whole of India so many qualified nurses as there are in London alone".

The target to be aimed at is 1 nurse for every 500 of population. This will mean an attempt to raise 20,000 nurses at the end of 5 years.

50,000	"	"	10	"
100,000	"	"	15	"
250,000	"	"	20	"
500,000	"	"	25	"
1,000,000	"	"	30	"

Organisation for the training of nurses should be on modern lines and extended rapidly. It is recommended that there should be two grades, a junior and a senior certified nurse, besides a university degree course in nursing. The junior grade should be ultimately abolished as soon as our preliminary requirements are met.

It is necessary that nurses should be safe-guarded against ill-health and disability incurred by virtue of her duties and there should also be provision for old age.

With the present acute shortage of trained nurses, it is obviously necessary to train in increasing numbers male nurses, and male staff nurses. Their training should be same as is given to women nurses and also their pay and prospects.

Public health nurses and health visitors should also be trained on an uniform and approved standard. About 125,000 public health nurses will be required in British India alone by the time our long-term programme is reached, taking into account the leave reserve necessary for the maintenance of the service.

Midwives.—Soviet Russia holds the midwife in such esteem as the agent who, above all others, entering the homes of very poor, can instill there the principles of health and the care of infants, that an institute has been established for the protection of "motherhood and infancy", the main function of which is to establish standards and supervise curri-

cula for the training of midwives at the schools set up in that country. A two-year course of theoretical and practical training is given.

While the midwife is a standing institution in most countries, it is interesting note that she is almost unknown in the U.S.A.

In India today there are approximately 10,586 certified midwives and 662 assistant midwives registered by the provincial councils. In order to provide one midwife for every 100 births we require about 100,000 midwives.

The training should be made uniform, the period of such training being one year for the certified nurses and 18 months for the midwives.

Hospital social workers.—She is comparatively a new comer in the field of medical service. Her functions are: (1) to obtain social histories of patients, (2) to ensure proper psychological environment to a recovering patient, (3) to bring the resources of the community to bear on the patient's needs, (4) to make a dependent patient a self-reliant member of the community, (5) to carry out social investigations needed to assess the cause of health and illness and the effectiveness of treatment, and (6) to educate the public to take a sensible attitude towards mental health.

Sir Dorabji Tata Graduate School of Social Work in Bombay has two-year graduate course, in addition to the professional and general courses covering the following subjects: family and child-welfare, juvenile and adult delinquency, industrial relations and labour problems, administration of social work, medical lectures for social workers, medical hygiene and psychiatry and social and family case work.

Training of technicians.—Schools for the training of laboratory technicians should be organised by universities, colleges of medicine, well equipped hospitals and public health laboratories. A laboratory technician may qualify himself in either of the following two groups:

(1) Anatomy and Physiology (for work in those departments).

(2) Pathology, Bacteriology and Bio-chemistry (for specific laboratory work).

Period of instruction should be two years. Radiographers should be trained in the Department of Radiology and Physico-electric Therapy. Course two years. No fee should be charged for this training.

CHAPTERS NINETEEN AND TWENTY

Medical Research—All-India Medical Institute.

19. Medical Research: There is urgent need for the improvement, expansion and development of medical research in India in all its branches. The outstanding defect at the present time is that, apart from a few note-worthy exceptions, there is almost complete absence of organised research in medical colleges. The chief cause of this state of affair is due to absence of facilities for training the young, alert

minds of the country in a scientific approach to medical matters. Organised medical research, now depends to a large extent on the Central and Provincial Government institutions, on the small cadre of officers of the Medical Research Department, and on the Indian Research Fund Association* which has hitherto

* Distributes 4 lakhs of Rupees per annum for research which is miserably inadequate to the needs of this sub-continent. Ed.

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EDITOR,
Indian Medical Journal.

March, 1946]

MEDICAL RESEARCH

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functioned mainly through the agency of those officers and institutes. Even here is visible the throttling effects of routine work on research, even in laboratories in which research was intended to be the primary function.

The opportunities available in India for the investigation of many medical and public health problems are as good as there is in any other country. The achievements of the past, for example in researches on malaria, kala-azar, cholera, rabies, plague, leprosy, etc., although good have not yet been commensurate with the unequalled material available for research or with the pressing needs of the country.

Central Organisation for Research.—We are unanimously of opinion that in India, as in other countries, there should be a central body for medical research, enjoying latitude in the formulation of its research policy and complete freedom in the disposal of funds allotted to it. We therefore recommend the constitution of a statutory organisation consisting of—

(1) A Scientific Board which would be the executive machinery of the organisation.

(2) An administrative body which form the link between the Board and the Government of India and exercise general supervision over the working of the organisation.

The composition of the Scientific Board would be as follows:

(a) Medical Research workers of standing and experience.

(b) Representatives of university and medical colleges.

(c) Representatives of principal scientific bodies in India.

(d) Prominent workers in the field of public health and clinical medicine.

(e) Non-medical representatives of allied and fundamental science.

(f) Persons with experience of health administration.

This board should undertake the executive responsibility of the organisation for the furtherance of medical research, assisted by expert advisory committees for special subjects. The administrative body would be composed of:

(a) The Central Minister of Health.

(b) Representatives of Government Departments for agriculture, industry, labour and finance.

(c) One representative of the Council of State.

(d) Two representatives of the Legislative Assembly.

A wholtime secretary, specially selected for his scientific experience and organising abilities, should be appointed for this statutory organisation.

The board would make recommendations regarding the allocation of funds for the furtherance of research to the administrative body in which would be vested the power of giving sanction to such allocation.

We recommend that the Indian Research Fund Association should be merged into this central organisation.**

Medical research in teaching institutions.—There are only two highly organised and developed medical post-graduate teaching institutions in India at present, and they are the Calcutta Tropical School of Medicine and the All-India Institute of Hygiene, Calcutta. The work of the Tropical School is greatly handicapped for want of accommodation, and we suggest that the large, modern and well-equipped laboratory at present occupied by the All-India Institute of Hygiene should be handed over to the Calcutta Tropical School. Another point which we desire to mention in connection with this school is that there is excessive decentralisation of its departments, and these individual departments do not afford a sufficiently broad basis for training purposes and furthermore research work on narrow specialities is liable to be carried out in water-tight compartments. It would probably be more satisfactory if research work is co-ordinated after several of the departments had been amalgamated under better and more direct supervision.

The All-India Institute of Hygiene is much less overcrowded and is organised on a much broader basis, but has so far failed to fulfil one of the primary functions for which it was established, namely, the investigation of methods of applying knowledge of medical protection to large community groups. In future, the chief research activities of the institute should be directed to the solution of the problems of administration designed to facilitate the adoption of practical recommendations by the most efficient methods, and thus serve as a Staff College for administrative health officers.

Research in medical colleges.—A drastic overhaul is necessary. Primary requirements are: an increase in the number of properly trained personnel; the retention of wholtime workers; the provision of adequate emoluments; the liberal provision for study leave; the prohibition of private practice; and the provision of better accommodation and equipment. The other requirements have been discussed and presented in the chapter on professional education.

Recruitment and training of medical research workers.—No extension of medical research will be possible until this requirement is met. The following methods are recommended:—

(1) Provision of scholarships for promising young science graduates in Indian institutions.

(2) Provision of an adequate and annually increasing number of scholarships for young Indian graduates (medical and non-medical) tenable abroad for a period of upto 3 years to enable them to receive advanced training in special fields of students.

(3) Formation of active research centres in universities and medical colleges in India by the appointment of

** Drs. Viswanath and A. H. Bhutt write: One important channel of financial medical research in India has been a quasi-government institution—the Indian Research Fund Association. In our opinion the financial of medical research could be aided effectively and expeditiously by a progressive Government. The argument of less red tape in the working of a quasi-Government organisation is offset by greater scope for nepotism under such an organisation.

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ment of associate professors selected by the Central Medical Research Organisation.

(4) Services of workers of recognised standing should be obtained for short periods for attachment to suitable medical institutions. Their duty will be to conduct research on select subjects in which young scholars and graduates should be associated.

We consider that immediate action should be taken to train selected graduates in research work. Science graduates should be eligible for training in preclinical fields and may be required to attend courses in selected medical subjects for orientation. Medical graduates who have completed their curriculum, except for the intern year, should be eligible for training in the pre-clinical fields if the intern year has been spent in the department concerned. Minimum period of training should be 4 years including the intern year. To implement the above, we specifically recommend:

- (1) The creation of an All-India Medical Institute.
- (2) The establishment of post-graduate training institution in different provincial centres.
- (3) The development of a number of teachers' training departments as a short-term policy to initiate post-war development.

The future of Medical Research in existing Governments Institutions.—The existing institutes have fulfilled important functions in the past. These should not only be continued but extended. To avoid the ever increasing volume of routine work encroaching on the work of fundamental research, it is necessary to decentralise some of the functions of the main institutes by establishing regional laboratories affiliated to the parent body. These laboratories will perform diagnostic laboratory work for hospitals and practitioners, and public health laboratory work such as the examination of water, food stuffs, etc. Functions such as the manufacture of biological products should continue to be the responsibility of the parent institute*. Majority of us are of the view that since a large quantity of basic prophylactic preparations, such as cholera, plague, T.A.B. vaccine and vaccine lymph and anti-rabic vaccine, is of paramount importance to public health authorities in India in protecting the people against epidemics, their production should remain a Government responsibility.

Central Research Institute, Kasauli.—It has many facilities for applied research and provide a suitable location for a model biological station, the primary functions of which should be:

- (1) To manufacture a representative series of biological preparations under optimum conditions so as to provide an ideal standard for the trade.
- (2) To carry out applied research with a view to evolve newer and better products and of improved methods of preparation.
- (3) To provide a training centre for expert technical personnel in work of this kind.
- (4) To act as an institute of serum standardisation.

* Drs. Viswanath and Bhutt are of the opinion that time has come now when manufacture of biological products should be a responsibility of commercial firms under strict Government inspection, to ensure public safety.

The Malaria Institute of India.—This has done valuable work and recommendations as to its future role are briefly given in the chapter dealing with malaria organization.

The Bio-chemical Standardisation Laboratory.—This should form the nucleus of the proposed new Central Drugs Laboratory which should be constituted at the earliest possible date.

King Institute, Guindy (Madras). has set up proposals for its re-organisation which we recommend for other similar institutes in this country. They are: (1) Creation of regional laboratories in Bellary, Madura, Coimbatore and Vizagapatam; * (2) Reorganisation of the parent institute into various departments:

- (1) Diagnostic Department.
- (2) Manufacture of bacterial vaccine, sterile solutions, etc., Department.
- (3) Anti-toxin department.
- (4) Analyst's department.
- (5) Vaccine-lymph department.
- (6) Water-analysis and algal control department.
- (7) Medical bacteriology.
- (8) Blood-bank section.

This institute, at present, is better staffed and equipped for research on filterable viruses than any other in India.

Haffkine Institute, Bombay. has made rapid advances during the past decade and may now be considered as one of the best of its kind. At present, work is in progress to set up new departments such as regional laboratories and training of advanced laboratory technicians. The institute proposes to recruit 12 science graduates each year to undergo a course of training in bacteriology and clinical pathology.

We recommend similar institutions should be developed in other provinces also, particularly in Bengal.

Pasteur Institute, Coonoor. is capable of being developed into an active centre for medical research. Its claim to be the chief centre for rabies research cannot be questioned. At present, the institute is self-supporting but we feel it should receive additional support from other sources such as the proposed Central Medical Research Organisation or the income on the invested capital of the Association of the Pasteur Institute of India. It would also be necessary to increase the staff of the institute, to provide the necessary equipment for the work to be undertaken, and possibly even to extend the available laboratory accommodation.

The continuance in Coonoor of the Nutrition Research Laboratories as a Nutrition Centre for South India and of the South Indian Branch of the Malaria Institute of India is recommended.

Clinical Research.—In spite of the great wealth of clinical material available in India, very little clinical research of high quality has hitherto been undertaken except in Calcutta by the School of Tropical Medicine and Pasteur Institute at Shillong.

* Pasteur Institute of Coonoor would serve the Nilgiri area.

It is highly necessary to create facilities for clinical research in many other centres throughout India.

Adequate provision should also be made for research in social and environmental factors in relation to health and disease.

20. The All-India Medical Institute: We have already detailed our recommendations on the organizations needed in connection with the undergraduate and post-graduate medical education, and the development of medical research. Side by side with these, there should also be established at suitable centres in the different parts of the country a few institutions which will concentrate on quality. Taking into consideration the cost and lack of personnel, we would not suggest creation of more than one institution of this kind at present. But no time should be lost in developing one such centre for which we would suggest the designation of "All-India Medical Institute." Its objects should be:

- (1) To bring together in one place educational facilities of the highest order for the training of all the more important types of health personnel;
- (2) To promote research of the highest type in all branches of study for which this institute would be responsible;
- (3) To provide facilities for advanced post-graduate studies;
- (4) To inspire all persons undergoing training with a missionary zeal for public health work in all its spheres—be it teaching, research, administrative and general work.

In the beginning the institute should aim at providing only medical training in all its branches and also the training of nurses. It should, therefore, have as its integral part, a medical college with its teaching hospitals and laboratories as well as a college to provide the highest type of nursing education. Later on, dental education, public health engineering, medical zoology in its different branches and certain other subjects in which the non-medical man performs important health functions may be added. A chair in the History of Medicine may be provided for this institute, as this would undoubtedly promote the cultural value of medical education. Students to this institute should be selected on an All-India basis and on merit only.

Men and women recruited to the teaching staff should be of the highest order in every respect.

Just as the establishment of the Johns Hopkin Medical School at Baltimore in U.S.A., more than 30 years ago, had a powerful stimulating effect on the development of medical education in that country, so also we believe and are quite confident, that if this institute is developed on proper lines it will profoundly influence medical education in India.

We recommend that the Central Government should be responsible for the establishment and maintenance of this institute.

The organisation and control of this institute should be vested in

- (1) A governing body;
- (2) A medical faculty.

The functions of the governing body will be (1) allocation of funds and (2) laying down of general administrative policy. It would be composed of 11 members in addition to the chairman:

- (1) Chairman—(The first one to be appointed by the Central Government. Later, he may be appointed by the governing body itself) ... 1
- (2) Vice-Chancellor of the University in whose area the institute is located ... 1
- (3) Two Vice-Chancellors of other Universities by rotation ... 2
- (4) President of the Indian Medical Council. 1
- (5) Another Member of the Indian Medical Council nominated by the Council ... 1
- (6) The president of the All-India Nursing Council ... 1
- (7) Two distinguished non-medical scientist nominated by the Inter-University Board ... 2
- (8) One representative nominated by the Central Health Board ... 1
- (9) The Director-General of Health Services ... 1
- (10) The Director, All-India Medical Institute (Member-Secretary) ... 1

Total ... 12

The medical faculty would be composed of the staff of the institute and in charge of the technical and scientific side.*

We envisage that an institution of this type should have considerable freedom to develop its own activities independently and without the delaying and hampering effect that strict government control may entail. It is also essential, in the interests of growth of academic freedom, that the institute should be free from the routine administrative control of a Department of Government.†

Recruitment of the staff should be on merit only, to be secured within India if possible or from abroad if necessary. The foreign experts may be engaged on a short-term contract and it should be made plain in the contract that every attempt should be made to train a suitable Indian within the period of the contract. There should be no reservation of post for members of any service.

* Similar arrangement is in force in the John Hopkin Medical School, Baltimore.

† The Hon. Mr. P. N. Saprú does not agree to the suggestion that the shaping of the institute in its technical aspect should be entrusted solely to the Director and professors of the institute acting as a medical faculty.

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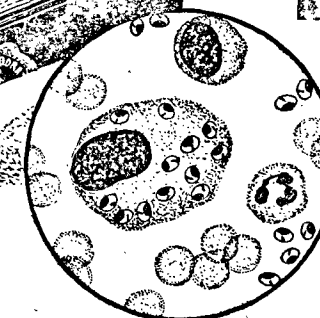
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Health Organisation for Delhi Province and Other Matters
—Regulations of the Profession responsible for Health Services.

21. Health Organisation for Delhi Province: We are anxious to ensure that a social experiment of a comprehensive nature should be started, if possible, in the Delhi Province. We have selected Delhi because it is a compact province of 574 square miles with a population of 11 lakhs,* of which a very large proportion (8 lakhs) are living in the two cities of New Delhi and Delhi. Besides, it is the H.Q. of the Central Ministry of Health and the venue of the proposed All-India Medical Institute.

In this demonstration centre certain modifications of our general recommendations are necessary in view of the need that, even from the very beginning, it should function at a high level of efficiency. These modifications are:

(1) Each primary unit will cover a population of 20 thousand instead of 40,000 in other provinces.

(2) The primary unit dispensary will have five emergency beds as against two and the 30 bed hospital will serve a population on 60,000 as against 160,000 in other provinces.

(3) The rural population of 300,000 in Delhi Province should be divided into 15 primary units which will constitute a secondary unit at the H.Qs. of which there will be a secondary health unit.

(4) In New Delhi and Delhi city, there will be primary units on the basis of 25,000 to 40,000 population with a urban secondary health unit.

(5) There will be a single health authority for the Delhi Province—Delhi Provincial Health Board. The health functions of the Delhi Municipalities should be merged in this Board, although we generally recommended that municipalities over 200,000 population may develop their own health organisation.

The structure and function of the Delhi Provincial Health Board would be as hereunder:

(1) As in the District Health Board, local authorities and elected representatives of the people would be represented in this Board, with Commissioner of Delhi as its first Chairman. (Later elected.)

(2) The Board must have a large measure of autonomy, subject to provisions against any material departure from the general health policy laid down by the provincial ministry of health or against any serious neglect of the Board's functions to the detriment of local health administration.

Other details should be worked out by the authorities after study of local conditions and needs.

At the beginning, it would be in the interest of efficiency if a certain number of higher posts such as those of the Director of Health Services and his chief assistants is filled in by persons of approved ability in the technical and administrative spheres who will be

seconded from the Central Health Services or from one of the Provincial Health Services. The full strength of Deputy and Assistant Directors of Health recommended for other provinces will not be required for the Delhi Province.

The new services proposed for Delhi will only supplement and not supplant the existing organisations for affording health protection to the people, as it is the case in other provinces.

Provincial Health Council experts should be modelled and worked, as recommended by us for other provinces.

The existing Local Bodies of the Delhi province will contribute a certain percentage of income from all sources other than Government grants (30 per cent in respect of municipalities and 12½ per cent in the case of rural health authorities as recommended for other provinces) while the additional money required should be found by the Central Government.

Other Matters; Drugs and medical requisite; Supplies.—We have had evidence to show how grave has been the lack in this country of availability of essential drugs for the public health workers and the dispenser of medical aid. In many cases, even when they are available, they are offered at unconscionable prices, because a single firm had managed to secure the monopoly of its supply. Example: the operation of the Internal Kina Bureau offer a flagrant object lesson in the cynical triumph of commercial principles over the needs of suffering humanity. Until the advent of the war, there was no organised attempt to see that the requirements of this country in the matter of drug supply were adequately met. But the stimulus which the war gave proved effective, and this at any cost should be maintained. An *ad hoc* body may be appointed to examine the question of supply and manufacture of drugs in all its aspects.

Control.—The importance of maintaining adequate standards of purity and potency in the drugs and medicines can hardly be over emphasised. The Drugs Act of 1940 should be brought into operation throughout the country and rigidly enforced with the least practicable delay.

Indigenous systems of medicine.—We have already recommended the establishment of a chair of history of medicine in the proposed All-India Medical Institute and suggested that one of its functions should be a study of the indigenous systems of medicine in view of the importance of investigating the extent to which they can contribute to the sum total of medical knowledge. We are definitely of the view that there are certain aspects of health protection which can be secured wholly or at any rate largely, only through the scientific system of medicine which cannot be regarded either as Eastern or Western. It is for the provincial governments to consider, after necessary investigations, under what conditions the practice of these systems should be permitted and whether it is necessary either during some interim period, or as a

permanent measure, to utilise them in their schemes of medical relief.

22. Regulations of the profession:—The Indian Medical Council, as at present constituted, has no register and its supervision restricted to certain medical qualifications which are granted by Indian universities and which are in the first schedule of the Act. We consider this position as unsatisfactory. The difficulty which was responsible for the dropping of the proposal for an All-India Medical Register in 1933, namely, the existence of the graduate and licentiate types of medical men, will also disappear in due course. We therefore recommend the establishment of an All-India Medical Register *when the training of licentiates ceases throughout the country.** Dr. Viswanath considers that in such a register all the existing graduates and licentiates should be eligible for inclusion.

We consider it desirable that provision should be made for the right of appeal in disciplinary cases to the Medical Council of India and then to the Federal Court of Judicature. Drs. Viswanath and A. H. Butt are of the view that the functions as at present, exercised by the Provincial Medical Councils and the All-India Medical Council are properly discharged and there is no need for any further change. Regarding regulations for those not in possession of qualifications in modern scientific medicine, we recommend as follows:

(1) The Provincial Government should enact such legislation as to provide that no person shall be entitled to use the style or appellation of "Doctor" other than those who (a) hold the doctor's degree of faculty of a University recognised by the State or (b) are practitioners qualified to practise modern scientific medicine.

(2) With regard to the question whether they could prescribe B.P. drugs, we consider that no restrictive action is necessary so long as the drug prescribed is innocuous. Legislation (Rule 64 of Drugs Rules 1944 under Drugs Act) will be shortly in force by which a prescription which includes a poisonous substance or a drug which has been scheduled as a drug of addiction shall only be dispensed upon a prescription of a registered medical practitioner. Any further restrictive legislation is of doubtful advisability and practicability.

(3) With regard to the question whether practitioners of the indigenous systems of medicine should be recognised by provincial governments, if they decide to recognise them, may enact legislation on the Bombay Model. Organisation and regulations in respect of these systems should be made by the leading authorities of these systems.

Regulations of the dental profession.—Legislation should be enacted to establish the Central and Provincial Dental Councils. The former should be charged with the duty of recognising training institutions, creating and maintaining dental registers and with disciplinary regulation of the dental profession, subject to appeal and co-ordination of the activities of the Provincial Councils.

Regulation of the nursing profession.—There is an urgent need for the creation of an All-India Nursing Council to co-ordinate the activities of the Provincial Councils, to lay down minimum educational standards and to safe-guard their maintenance.

* We rather think the other way. If, and only if, an All-India Medical Register is established including the existing licentiates, the licentiate education would cease. Otherwise neither the licentiate education would cease nor a Register could be established in consequence.—Ed.

Regulation of the pharmaceutical profession.—There should be established an All-India Pharmaceutical Council and Provincial Pharmaceutical Councils. These should have representatives of pharmaceutical trade, education and other pharmaceutical interests. Their functions are:

(1) To maintain a register of qualified pharmacists.

(2) To maintain the standard of education.

(3) To specify the drug establishments or hospitals where apprenticeship training may be undertaken.

(4) To conduct and maintain the standard of examination.

(5) To maintain disciplinary control over registered pharmacists' practitioners.

(6) To advise the ministry of health in regard to regulation of drugs, etc., and connected legislation.

The central council would direct and co-ordinate the activities of the Provincial Councils. The central council should maintain a register of all qualified pharmacists in two schedules (a) containing the names of graduate pharmacists, (b) of licentiate pharmacists. The Provincial Councils also should maintain a register inclusive of (a) and (b) and student pharmacist and those who had long standing practice without any recognised dental qualification. The latter should be admitted after a practical examination. The last two categories, however, would not be eligible to enter the central council.

All disciplinary action is subject to appeal to the Central Council and then to the Federal Court.

The drug rules (1944) under the Drug Act (1940) should be promulgated either before or concurrently with the proposed pharmaceutical legislation.

Every institution and commercial firm engaged in handling poisonous drugs should be compelled to employ a person who is registered as pharmacist or student pharmacist.*

Employment of demobilised medical and health and nursing personnel.—We are of the view that this reservoir of personnel render them particularly suited to employment in civil health services. *The licentiates in the I.A.M.C. should be equally eligible as the medical graduates without any distinction other than that dictated by individual merit and ability.* The dental officers of the I.A.D.C. may well be employed in the dental clinic of the secondary units and travelling dental clinics. So also the officers and rank file of the nursing order.*

Drs. Viswanath and A. H. Butt are of the view that it is important and necessary to secure, in advance, for the civil medical services of the country the employment of every willing member of the medical personnel to be released by the army. Security of employment for this trained personnel must be assured in clear and categorical terms.

* Student pharmacist is one who has successfully completed the requirements of the licentiate or the degree course and is undergoing the apprenticeship course.

* Indian Military Nursing Services; Auxiliary Nursing Service; Auxiliary Nursing Service fully trained male nurses; Partially trained male and female nurses; Improvers; Nursing orderlies; these constitute the nursing services of the Indian Army.

* 1941 census gives 998,000 for the Delhi province, of which 300,000 constitute rural and 618,000 urban population. The present estimate of 8 lakhs takes into account the increase in population due to wartime developments.

We strongly suggest that representatives of the Indian Medical Association and the All-India Medical Licentiates' Association should be included in the central and the provincial re-settlement committees.

A committee of standards.—In view of the heavy constructional programme which will have to be formulated to supply the new accommodation required by our proposals as well as for structural alteration to existing buildings, and for the supply of vast number of fittings of all kinds to laboratories, health centres, hospitals, etc., it seems desirable that some system of standardisation should be evolved which will introduce order into what may otherwise tend to become chaos. So it is essential that a committee of standards for medical institutions and equipment should be linked with the appropriate section in the Central Ministry of Health.

Re-employment of persons who have reached the age of superannuation.—In view of the general inadequacy of existing health personnel, and, in some cases, of the entire absence of certain classes of professional and technical workers, we recommend that such officers and workers may be retained till they attain their 60th year. But this should be subject to the following provisions:

(1) This should not stand in the way of normal promotions of the younger members of the service.

(2) The superannuated officers must be made to retire and then re-employed on an year's basis but subject to renewal and to medical fitness.

Population problem and alcohol in relation to health.—We consider that studies in population

problems should be organised and conducted on a broad basis of collaboration between Registrar-General and the Provincial Registrars with their staff of trained statisticians, the Central and the Provincial Health Departments and the Departments of Economics, Sociology, Statistics and Genetics in our universities. Some of us are of the opinion that on health and economic grounds, contraception is justified in the interest of the individual and the community and that the State should provide facilities for imparting knowledge regarding birth control when desired for such reason. There should be an attempt to restrict the consumption of alcohol on as wide a scale as possible.

A medical library service.—We are told that there is at present no medical library in India with more than 11,000 volumes, apart from bound numbers of periodicals, while the library in the office of the D.G., I.M.S. contains only 20,000 volumes. The Washington Library has 420,000; Leningrad 600,000; Paris 500,000; Royal Society of London 160,000 volumes. It seems to us not unreasonable that we should recommend the establishment in India of a Central Library providing, in the first instance, for the housing of 60,000 to 100,000 volumes. This should be established in association with the All-India Medical Institute. We are fully persuaded that, in order to put the proposed service on a sure foundation, it will be necessary for an exploratory survey of the facilities existing in the U. K., U.S.A. and elsewhere to be undertaken by one or two officers deputed for the purpose.

CHAPTERS TWENTY-THREE AND TWENTY-FOUR

Legislation—Financial Implications of our Proposals.

23. Legislation: Without going into details, we shall in this chapter refer to the more important matters requiring sanction of legislature under the following heads:

(i) *Formation and execution of a national health policy and the co-ordination of central and provincial health activities:*

(a) Establishment of a Statutory Board of Health with Central Minister of Health as Chairman and Provincial Ministers of Health as members.

(b) Provision to the extent of enabling the Central Government to intervene, without delay and effectively, in provincial health administration in circumstances in which dereliction of duty by a provincial government jeopardises the health not only of those under its charge but also of those in adjoining areas.

(ii) *Improvement of provincial health administration: statutory sanction will be required for:*

(a) The creation of district health boards.

(b) The provision of power to the Minister of Health to enforce compliance by the board with the policy laid down by him.

(c) Provincialisation of all classes of health workers and conferment of powers upon the provincial governments, similar to those that now exist in the province of Madras, whereby the head of the P. H. Department can recommend specification by the local health authorities in particular directions.

(d) In the areas outside our scheme, the provincialisation of those classes of health personnel which are now recruited and maintained on a provincial basis and the provision of powers referred to in (c) above.

(iii) *Special legal provision for enabling local authorities to control infectious diseases and the purity and quality of the community's food supply.*

(iv) *Legislation in connection with other proposals:*

(a) Establishment of the All-India Medical Institute.

(b) Establishment and maintenance of institutions in the provinces for providing on an All-India basis, post-graduate training facilities of a high order.

(c) Establishment of the central and provincial water and drainage boards.

(v) *Consolidated public health acts, central and provincial.*

24. Financial Implications of our Proposals: If the rates of expenditure now incurred by the provincial governments on their medical and public health departments were to be taken even as an approximate guide to determine the financial limits of our proposals, any attempt to build a satisfactory scheme of health services would be foredoomed.

In Great Britain, the *per capita* expenditure of medical and public health (1934-35) was Rs. 54.8.9 and in the U.S.A. (1938) Rs. 51.6.3 whereas in India for the British Province (1944-45) was, on an average 5.9 annas.

The national income *per capita* for British India is Rs. 62.2.3 as against Rs. 1,049.6.5 for Great Britain and Rs. 1,371.7.3 for the U.S.A.

The percentage of expenditure on medical relief and public health to the total provincial expenditure is about 5 per cent (1944-45) whereas in Great Britain it was about 20.4 (1934-35) and the U.S.A. 13.8 (1938).

The following table of combined expenditure on medical relief and P.H. activities in the province during 1944-45 will give an idea as to the rate of expenditure *per capita* and percentage of health expenditure to the total expenditure, represented in the table below as 1 and 2 items respectively:—

PROVINCE.	1 item.	2 item.
Madras ...	6.2	4.7
Bombay ...	10.5	4.5
Bengal ...	7.1	5.7
U. P. ...	3.9	4.9
Punjab ...	6.1	5.1
Bihar ...	3.2	7.3
C. P. and Berar ...	2.8	3.1
Assam ...	5.4	6.2
N. W. F. P. ...	7.7	5.0
Orissa ...	3.4	5.9
Sind ...	8.2	2.5
	(In Annas)	

Taking into account all considerations and on the basis of population of 315 millions during the next 5 years and 337.5 millions during the second five-year period our budget would work out the following *per capita* cost:—

First 5 years. Rs. 1.3-11.	Second 5 years. 2.6-6.	First 10 years. 1.13-6.
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The following tables would give the approximate cost in respect of our proposals for British India:—

NON-RECURRING EXPENDITURE

	1st 5 years (in crores) Rs.	2nd 5 years (in crores) Rs.	1st 10 years (in crores) Rs.
(1) Personal health services including directional organisations associated with the ministries of health in the centre and in the provinces ...	80.88	118.64	199.52
(2) Professional education ...	22.45	19.85	42.31
(3) Expenditure on other items ...	50.42	50.20	100.62
	153.75	188.69	342.45
(4) Centre ...	9.22	11.32	20.55
(5) British India as a whole ...	162.97	200.01	363.00

RECURRING EXPENDITURE

(1) Personal Health Services ...	116.09	250.02	366.12
(2) Professional Education ...	32.00	35.24	67.24
(3) Expenditure on other items ...	4.54	12.32	16.86
(4) Leave Reserve ...	7.83	15.08	22.90
	160.46	312.66	473.12
(5) Centre ...	9.63	18.76	28.39
(6) British India as a whole ...	170.09	331.42	501.51
(7) Payment towards amortisation of non-recurring expenditure	25.76	74.54	100.00
Total ...	195.85	405.96	601.51
Average annual expenditure average estimated population of British India ...	315 millions.	337.5 millions.	326.25 millions.
Annual per capita expenditure ...	Rs. 1.3-11	Rs. 2.6-6	Rs. 1.13-6

It must be noted that these estimates include almost but not all the items of expenditure.

Economy may be achieved if neighbouring provinces can co-operate in the joint development of certain types of institutions and in the establishment of facilities for the carrying out of various purposes under our scheme. In regard to the establishment of drainage and water boards, it may be advantageous

and economical if neighbouring provinces establish a common board.

On the assumption that non-recurring expenditure will be met from loans, we have provided for their amortisation in a period of 30 years at 3½ per cent interest.

If the provincial governments are prepared to increase the money spent on health to 15 per cent of their total expenditure, we believe that a considerable advance will have been made in providing the required funds for the proposed health programme—this cannot be considered an unduly high figure. A self-imposed or better still, a statutory obligation on government to spend a minimum of 15 per cent of their revenues on health administration can, in the circumstances, be hardly considered an excessive demand.

We do not feel competent to discuss taxation policy or to recommend specific forms of raising revenue. But we do however believe that the existing resources of the Government, could be augmented to a material extent, and do strongly recommend that a substantial portion of revenues should be devoted to the development of the health and other programmes which are essential for the betterment of national life and of nation's health.

We are informed that the estimates of construction prepared by the P.W.D. are excessive and instances have been brought to our notice in which private agencies have been able to carry out new building work at less than 50 per cent of the P.W.D. estimates. This calls for careful investigation, as considerations having far reaching consequences for development in many spheres are involved.

If India is to develop a modern health organisation a scale of expenditure much in advance of what the provinces have been incurring, is inevitable. We have therefore planned our short-term programme undeterred by the cramping limitations of existing provincial expenditure and with our main considera-

tion directed to the development of a plan which would ensure, through its execution, a demonstrable improvement of the public health. Even so, our plan is in no way extravagant or unreasonable from the financial point of view.

We cannot but emphasise too strongly the fact that one of the effective means of increasing national productive capacity is improvement of public health.

In our view, our short-time health programme provides only a minimum standard of achievement in the different fields of health development which the Government should keep as objectives to be attained within the first ten years.

We desire to stress the organic unity of our programme and feel that it should be accepted and executed in its entirety.

We would strongly deprecate any attempt, on the plea of lack of funds, to isolate specific parts of the scheme and to give effect to them without taking into consideration the inter-relationships of the component parts of our programme.

We therefore look forward to a pooling of resources and of personnel, as far as circumstances permit, in the joint task that lies before the Government.

NEWS AND NOTES

The Congress Medical Mission to Malaya is leaving Calcutta by the end of this month. Those who are willing to offer their services may kindly write to: DR. A. N. Roy, General Secretary, A. I. M. L. A., 27, Dixon Lane, Calcutta.

The Resolutions of the Standing Committee Meeting (A. I. M. L. A.) held on the 4th and 5th instant will be published in our next issue.

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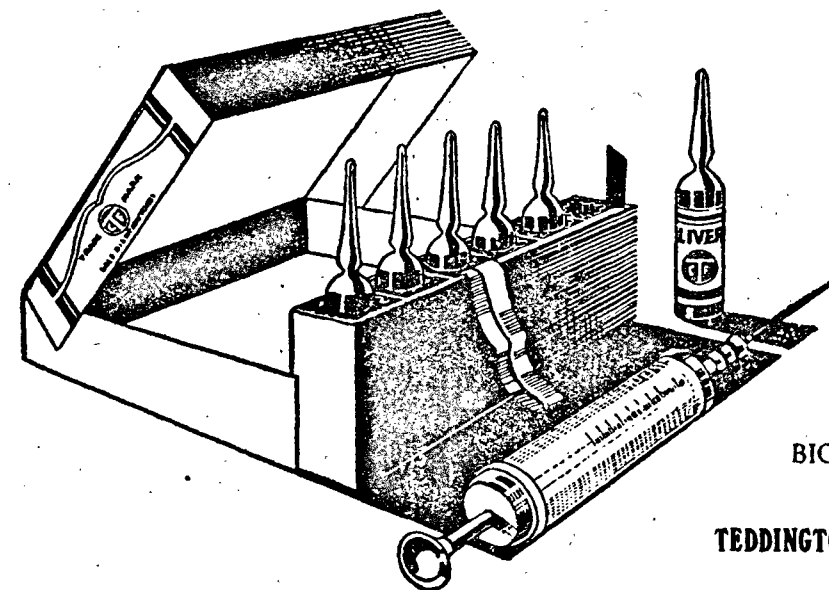
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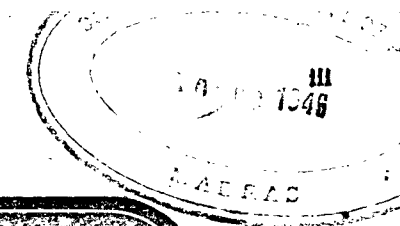
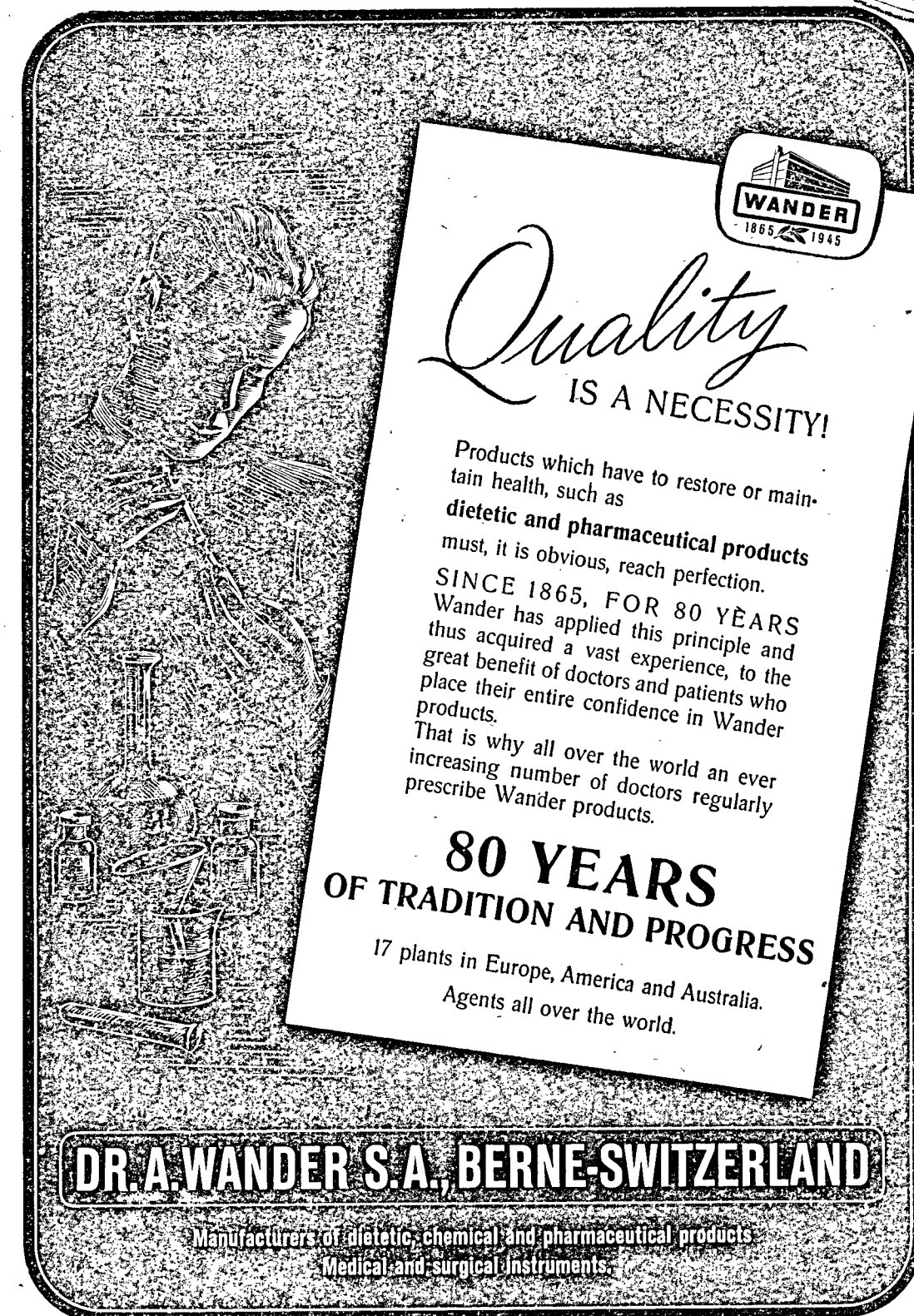


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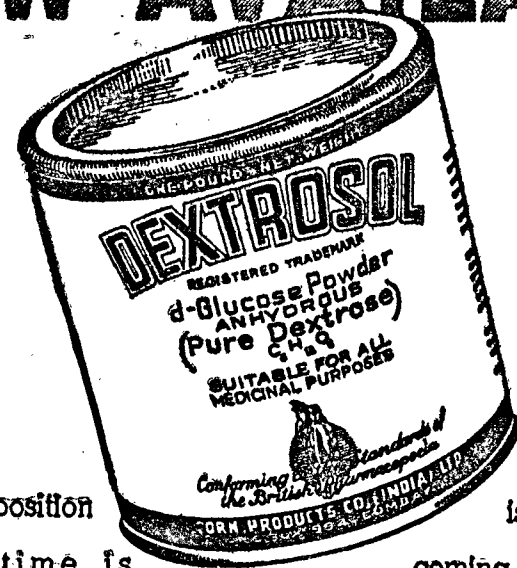


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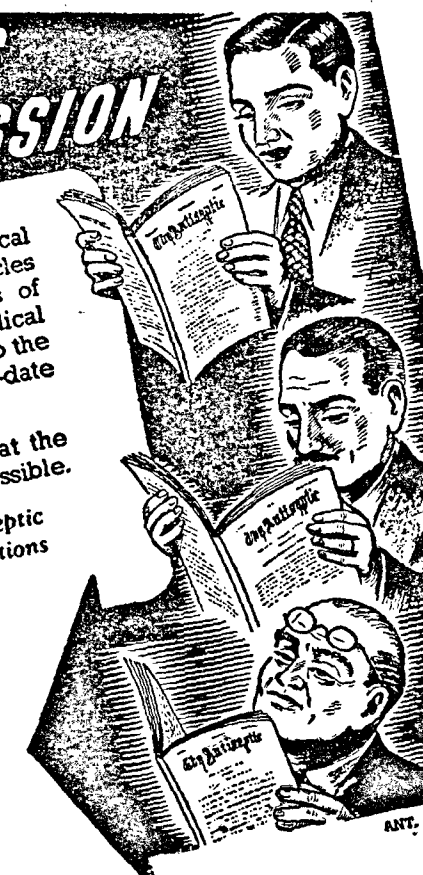
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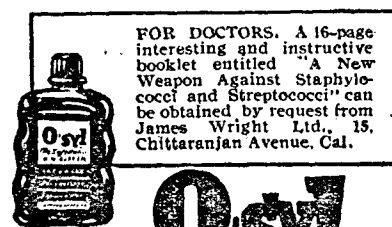
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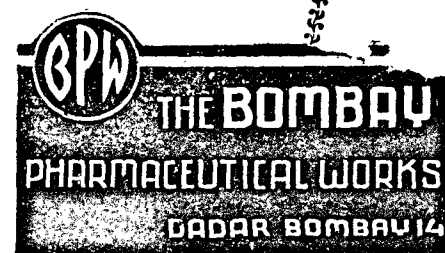
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References: 1. Carrel and Dehelly Military Medical Manuals, "The Treatment of Infected Wounds," 2nd Edition (1918), p. 24. 2. Hospital Treatment of Burns, E.M.S. Memorandum, No. 8 (Revised). H.M.S.O., Edinburgh, 1943, p. 31.

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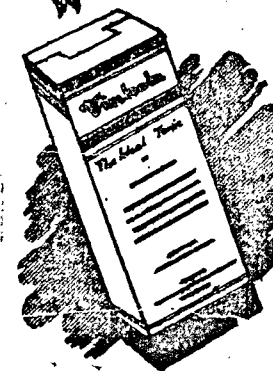


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(Journal of the All-India Medical Licentiates' Association)

Vol. 40. Madras: April 15, 1946. No. 4

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Vol. 40. Madras, April 15, 1946. No. 4.

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OUR MONTHLY SURVEY.

WHICH IS TRUE? All kinds of rumours are in the air. Some say that I.A.M.C. has been scrapped and the old I.M.S. and the I.M.D. would be restarted in the Indian Army. Some say that I.A.M.C. may be retained but the admission to it will be confined to only graduates in medicine. It is said that no licentiates in medicine except those very few who acted as Major-Specialists in the war-time would be eligible to the peace-time medical corps of the Indian Army. In the face of these conflicting rumours we are not in a position to make our comments with any due sense of reality. It is high time that the Government of India should come forward and state in categorical terms how they are going to fit the war-time I.A.M.C. into the peace-time Indian Army. What has happened to the suggestion of the C-in-C that the I.A.M.C. should be made a permanent institution of the Indian Army unconnected with the civil side? As an organisation which helped in the medical recruitment, the All-India Medical Licentiates' Association is entitled to know how the Central Government is going to deal with the I.A.M.C. and with its licentiate officers who desire to take up permanent commission.

Acute Disappointment: We would be false to ourselves if we do not inform the Government that there is very acute disappointment among the demobilised licentiate medical officers of the I.A.M.C. The reasons are obvious. Those who had a lien in the subordinate medical service are asked to revert to the status-quo-ante with "its menial pay and status" as

Sir Jolly characterised it so truly. Those permanent I.M.D. Officers who were given temporary commission in the I.A.M.C. are now asked either to resign or to revert to the old cadre of I.M.D. At present, the private practitioners who joined the I.A.M.C. are nowhere in the picture of resettlement. The position of those officers in the I.A.M.C. special cadre is also quite unenviable, because they cannot hope for better treatment than the King's Commissioned Officers in the I.A.M.C. who themselves are now relegated to the subordinate medical service.

The Government cannot shirk its Responsibility: When the Association accepted the task of recruitment, it made it quite clear to the Government that it had undertaken this work in the hope that it would help in obtaining for the licentiates the same status in civil service as is usually given to the medical graduates. That the Association legitimately entertained this hope is proved by the pronouncements of high placed medical officers, provincial as well as central, which were published in the I.A.M.C. Special Number of the *Journal*, January 1945. All these sentiments seem to have evaporated into thin air when the time for award has come for fulfilment. But could the Government shirk its responsibility at this stage without exposing itself to the charge of betrayal? We do hope, whilst there is still time, that wiser counsels would prevail and that the licentiate medical officers of the I.A.M.C. are not relegated to the subordinate medical service and that they are resettled in civil life in consonance with their military status as King's Commissioned Officers.

A Typical Instance of Injustice: We understand that those sub-assistant surgeons in Bihar who were liable for military duty but who were not selected for such duty owing to physical unfitness are now being disbanded, although most of them have put in more than 15 or 20 years of service. The natural process would have been their absorption into the permanent service but they are sent out without any mercy, now that the war emergency is over. A Congress Government is going to be established in this province within the next few days. We would strongly suggest to the Bihar Provincial Branch of the A.I.M.L.A. to approach the National Government for redress. We are quite confident that if the matter is placed before the new government in a proper way it could be settled amicably.

Unctuous Performances: We have been reliably informed that the Administrative Medical Officers of the British Indian Provinces met at New Delhi in November 1945 and recommended unanimously that there should be a common designation of medical officer to both medical licentiates and graduates in service and that none of them should be started on less than Rs. 150 and Rs. 250 respectively. It is hailed by a few of us as a revolutionary recommendation! If the main demand of the Association is one medical service, one status and one pay for all its incumbents, it is very difficult to reconcile this position with the supposed recommendations of the A.M.O.s' Conference. We have no doubt in our mind that these are merely unctuous performances sympathetic in tone but unsubstantial in contents.

What should be the Licentiates' Attitude? Mahatma Gandhi advised the R.I.N. Ratings to resign if their condition was humiliating but not to take the law into their own hands. In tendering this advice he said "We must non-co-operate with everything humiliating. The R.I.N. Ratings joined with their eyes open. Discrimination stares one in the face. It cannot be avoided if one enters the service which is designed to keep India under subjection. One may, one ought, to try to mend the conditions. *That is possible only upto a point.*" We humbly tender the same advice to those licentiates who are in service and those who desire to join it. The Association has tried to mend the demeaning conditions of service in the subordinate medical cadre, and, in our view, failed in its attempts. It believed too much in official platitudes and allowed itself to be overwhelmed by praises. We earnestly appeal to the licentiates not to join any subordinate service but take to private practice where there is every scope for work and earning. That is the considered verdict of the last meeting of the Standing Committee of the A.I.M.L.A., the proceedings of which are published elsewhere in this issue. Our specific advice to the demobilised licentiate medical officers is this: If they are not offered a permanent place in the provincial civil medical service, they should protest in writing and enter private practice. It is true that private practice is an up-hill work to those who have passed middle age. We recognise this difficulty. But there is no other way of escape. The Association has urged again and again on the provincial governments to abolish their subordinate medical service and institute in its place one composite medical service open to all registered medical practitioners on the basis of competitive examination. They may or may not abolish the subordinate medical service, but it is bound to die if no licentiates seek its service. They have succeeded in abolishing the medical schools in most of the provinces. They could equally well succeed in the abolition of the subordinate medical service if they do not join it at all. It is our considered opinion, based on experience of 25 years, that the real future of the licentiates, now that most of the medical schools are abolished, lies in the field of private practice and not in any salaried service.

ADDRESSES and ARTICLES.

The art of seeing.

BY DR. R. S. AGARWAL,
Eye Specialist, Delhi.

We have requested Dr. R. S. Agarwal to write a series of articles in the *Journal* with a view to acquaint our readers with his views on the natural methods of correcting the defects of eye-sight. He has kindly accepted our invitation, for which we are much indebted.

Like Dr. Bates of America, Dr. Agarwal is a pioneer in our country in advancing and advocating his belief and practice that a good percentage of defective vision is due to eye-strain, the cause of which may be in the eye or in the mind acting in a vicious circle, and that normal vision can be restored if the eye and mental strain is removed by methods which he has been practising for more than 15 years, and which he would illustrate and expound in the serial articles under publication.

His main thesis is set out in the first article,

"We do not make any effort to hear or to smell. Similarly the eye performs its functions. So, when the function of the eye and mind is natural, without effort on the part of the person, the art of seeing is perfect. But if their function is carried out with any effort due to any reason, the art of seeing is disturbed."

We are aware that his ideas are not accepted by the leaders of the profession. No wonder: the fate of pioneers in every field of original work has been hard throughout the long history of mankind. But their perseverance ultimately ends in the triumph of most of their ideas. Dr. Agarwal is prepared to demonstrably prove what he believes, says and practises. He is running an Eye Clinic at 15, Darya Ganj, Delhi. Such of our readers who want a training in his methods of correcting defective eye-sight without glasses may kindly write to him. We also understand that a generous patient of Dr. Agarwal has offered a stipend of Rs. 100 each a month for three months for two doctors who want to undergo this training.

The drain on the country in terms of money is about rupees two crores per annum on account of purchase of imported lenses and frames. Most of this drain could be avoided if defective vision can be corrected by natural methods as advocated by Dr. Agarwal. But that depends on the acceptance of his methods by the practitioners in this country.

We trust that the present publication would evoke their interest and that at least a few from each province would take advantage of Dr. Agarwal's offer of training them in his technique and methods of correcting defective eye-sight. (Ed.)

The mind plays an important part in the art of seeing. The eye receives the images of objects like a camera and the mind interprets these images. What we see is the interpretation of the retinal images by the mind. For example, look at the white centre of the 'O' and compare the whiteness of the centre of the 'O' with the whiteness of the margin of the paper; you would note that white centre of the letter 'O' appears whiter than the margin of the paper. In fact the white centre of the 'O' is of the same shade of white as the margin of the paper but the white centre of the 'O' is seen whiter. This is because the mind interprets the image from the eye in this way.

The natural function of both eye and mind is effortless like other sensory organs—ear and nose. We do not make any effort to hear or to smell, similarly the eye performs its function. So when the function of the eye and mind is natural, without effort on the part of the person, the art of seeing is perfect; but if their function is carried out with an effort due to any reason, the art of seeing is disturbed. When the art of seeing is perfect, the eye adjusts its focus correctly at different distances, far and near, and the mind is able to interpret the correct image of the eye perfectly. If the eye is out of focus or if the mind is under strain due to any cause vision becomes defective. If focussing is incorrect for distance, as usually happens in shortsight or myopia, vision is defective for distance. If focussing is imperfect for reading as is usually in old age, vision is imperfect for near objects. If focussing is bad both for distant and near objects as is usually found in hypermetropia, astigmatism and other eye diseases, vision is bad both for distant and near objects.

The eye is a miniature camera and it adjusts its focus at varying distances like a camera. We adjust the camera by moving its body forward and backward to get the correct focus. The eye also, like the camera, adjusts its focus by a change in the length of the eyeball. In one respect, however, there is a great difference between the eye and the camera. The camera plate is equally sensitive in every part; while the retina of the eye has a point of maximum sensitivity, and every part of the retina is less sensitive

in proportion as it is removed from the point of maximum sensitiveness. The point of maximum sensitiveness is called the "macula lutea" in medical terms. This point is the seat of clearest vision. As we move away from this spot, the acuteness of visual perception rapidly decreases. The eye with normal sight, therefore, sees one part of everything it looks at best and everything else worse, in proportion to the shifting of the image from the point of maximum vision. For example, look at the right hand corner of the book and note that the right hand corner of the book appears more distinct than the other corners. Therefore, the normal eye sees only the part of the thing best on which it fixes itself and the other parts of the thing not so well. This quality of the eye is called central fixation.

In the art of seeing, central fixation is very important. When the eye possesses central fixation, the art of seeing is perfect, the eye is at rest and can be used indefinitely without fatigue. Central fixation is perfect when the eye is able to regard a very small point better than another such a point placed by its side.

Loss of central fixation means imperfect seeing, and when it is habitual leads to all sort of abnormal conditions and is, in fact, at the bottom of most eye troubles. By improving central fixation the art of seeing is improved, but the limits of improvement depend upon the degree of central fixation. The benefits of central fixation in the art of seeing are so great that I am unable to set any limits to its possibilities and that the subject merits further investigation.

Causes of loss of central fixation.—Any thing which strains the mind will affect the eyes; or any thing which strains the eye will affect the mind. When there is strain of the mind and eyes, central fixation is always affected. The extent of loss of central fixation depends on the degree of strain. The strain may be without pain and discomfort and the patient may not be aware of it, or the strain may be followed by pain and discomfort.

Strain of the mind means loss of mental control as one usually experiences under worries, anxieties, noise, fear, unfamiliar sounds, physical discomforts, restless sleep, wrong imagination, etc. Strain of the eye means loss of central fixation as usually happens in regarding unfamiliar objects, maps, prints and it is why one gets fatigue by seeing pictures or other objects in a museum. Trying to see an object equally distinct in all its parts, or trying to see two or more objects or letters equally distinct at one time lessens the sensitiveness of "macula lutea". Habit of incorrect focussing at distant or near objects leads to strain. Fixing the sight at one point for more than a second depresses the acuteness of vision; one can easily experience this fact by fixing the sight on a small letter of the book.

How to improve central fixation.—You cannot see anything with perfect sight unless you have seen it before. When the eye looks at an unfamiliar object it always strains more or less to see that object, and central fixation is always lost; sight becomes defective temporarily. When the eye regards a familiar object, however, the effect is quite otherwise. Not only can it be regarded without strain, but the strain of looking later at unfamiliar objects is lessened.

This fact furnishes us with a means of overcoming the strain which may lower the central fixation under different conditions of life. Daily exercise in distant vision with the Snellen test card at about 10 feet or 15 feet distance has proved to be a very effective method to improve central fixation and to prevent and cure errors of refraction.

First, place the chart at a distance where you see the medium size letters clearly. Look at the bottom or the top of each letter and note that the part of the letter regarded appears more distinct. If the part regarded does not appear more distinct close the eyes, remember the black or white colour without effort, and you will feel a sensation of relaxation. Then open the eyes for a moment and note that the part of the letter regarded appears more distinct than the rest of the letter. In this way you can then practise central fixation on the smaller letters also. Gradually increase the distance of the chart to 10 or 15 feet and practise central fixation on the smaller letters. Eyes may be frequently closed to remember the black or white colour.

A school boy had one-third of the normal vision. He was told that perfect sight was only possible by improving central fixation at the distant objects. This could be achieved by regarding one letter of the distant card at a time or by regarding a small part of each letter in turn. It was important to regard one letter on a line in such a manner that the one following it appeared less distinct. In a few minutes this was accomplished. The next step required more concentration, namely, to acquire the ability to see the top of a small letter better than the bottom or to see the left side of a small letter better than the right side of the small letter.

It was difficult for him because he had a strong tendency or inclination to attempt to see a number of letters simultaneously or to regard all part of one letter at the same moment. Frequently by closing the eyes and remembering the black colour he became able to regard the part of the letter best. At first he practised on the chart at three feet distance but gradually the distance of the chart was increased to 10 feet. In a week's time it was found that the vision had improved from 1/3 to normal vision.

Hence for the art of seeing, a Snellen test card may be hung on the wall and every member of the family may exercise on it daily for a few minutes. In schools and colleges, the test card is to be placed on the wall of each class room and the students should read it daily from their seats with each eye separately.

Why was the Snellen test card preferred to improve the sight? Snellen eye test card has letters of different sizes according to certain measurements. It enables the person to know when an improper strain or effort to see was made. It is only when the eyes are properly adjusted for distant vision that central fixation could be done and the small letters could be read. With other distant objects children and others have great difficulty in knowing when the focus was adjusted accurately. One could practise on calendar letters if Snellen eye chart is not available. If the reader wants further details, study of my book "MIND AND VISION" may be helpful.

(2)

The Truth About Myopia

A doctor friend had heard much about the benefits of Dr. Bates' methods for the prevention and cure of errors of refraction, practised in my Institute. He came to see me with his son who was suffering from myopia. His vision of each eye was 6/12. Before I could start his son's treatment he wanted to discuss about the causes of myopia. I said, "well, I would like to know your views first about the cause of myopia." He explained that myopia is caused by the excessive use of the eyes for near work which causes strain on the eyes. In children since the coats of the eye are softer in youth than in later years, they are unable to withstand the increased tension in the eye produced by near work. Due to the increased tension the eyeball elongates and myopia is produced.

"It means in near work the lens becomes more convex hence the ciliary muscle is under excessive strain. Myopia cannot develop in adults because the coats of the eye are quite strong. Persons who do not use their eyes for near work do not suffer from myopia." I said.

"Yes."

"The following facts are worth considering," I said:

"(1) The excessive use of the eyes for near work first increases the convexity of the lens and then elongates the eyeball. Therefore, the change should be present in the shape of the lens when myopia is present but according to the supposed theory the eyeball elongates and not the lens in myopia.

(2) When there is excessive strain on the eyes constantly the child should feel the symptoms of strain which are absent in most of the cases who develop myopia.

(3) Myopia frequently develops in adults and is observed in peasants who do not use the eyes for near work."

The doctor was puzzled with my arguments. I showed him the following remarks of the prominent ophthalmologists about the production of myopia:

"A satisfactory explanation of the mechanism by which near work produces myopia has not yet been given: Tschering physiological Optics P. 86."

"It is not yet determined how near work changes the longitudinal structure of the eye:—Eversbusch: The Diseases of Children Vol. VII. P. 291."

The doctor's curiosity increased and he was naturally anxious to know the truth about the cause of myopia. I explained to him that the cause of myopia is in making an effort to see the distant objects, and not the strain at the near work. Looking at the distant objects under strain increases the length of the eyeball, hence right focussing is disturbed. The elongation of the eyeball takes place by the action of the oblique muscles on the outside of the eyeball. These muscles immediately contract when there is strain in seeing distant objects and relax or function normally when the eye is free from strain. Dr. Bates' experiments about this theory are very convincing.

To demonstrate practically I called a boy patient into the darkroom. His complaint was headache while reading. I examined the eyes of this patient at a

distance of six feet with the plane mirror of the retinoscope. The patient looked at the blank wall without strain, the retinoscope indicated that the eye was normal. Then I asked the boy to try to read the letters of the Snellen test card which was placed on the wall in front of him. The letters were faintly visible as the light was very dim. As the boy made an effort to read the letters, the movement of the shadow stopped. Then the boy looked at a point on his index finger-nail at about ten inches distance in such a way that the pupil could be examined by the retinoscope. The shadow began to move in the same direction. Again the boy looked at the blank wall without trying to see, the shadow moved in the same direction.

These facts were observed by the doctor also. No special skill was required to make this demonstration. I told him that Dr. Bates strongly recommended all physicians, teachers and others, interested in the welfare of the eyes of school children, to obtain a retinoscope and learn by practical demonstration that many school children and adults did not usually adjust their eyes accurately for distant vision. By doing this, one obtained a grasp of the subject which would be of material benefit.

To demonstrate clinically that strain in near work does not cause myopia but improves the sight for distance I called the doctor's son and noted down his vision 10/30 without glasses. I gave him fine photographic reduction print to read as near to his eyes as easily possible. After a few minutes' reading the photographic type reduction at about four inches distance I instructed the boy to read the Snellen test card again. His eyesight had temporarily improved, and the vision 10/20 was recorded, and the chart letters appeared clearer than before.

The doctor friend understood that straining the eyes to see at long distances produced myopia, while by making an effort to see at the near point continuously the eyes became farsighted. Now he wanted to begin the treatment of his son. I educated his son how to blink rightly and directed him how to focus correctly on the Snellen test card at three feet distance by the help of central fixation exercises.

I explained to the boy that when he looked at the bottom of the letter 'C' the whole letter was visible but the bottom appeared more distinct, than the top part of 'C' and when he looked to the left part of the letter, the left part appeared more distinct than the rest part of the 'C'. When he shifted his sight from bottom to top and top to bottom, the part of the letter on which he focussed appeared more distinct and blacker than the part of the letter on which he did not focus his sight. In this way he practised on smaller letter also. At times he found it difficult to note the part regarded more distinct, but after closing the eyes for about a minute and remembering the black or white colour he was able to note the clearness in the part of the letter regarded. The chart was gradually shifted to ten feet. Sometime the boy outlined the letters while his eyes were closed and then occasionally looked at the card letters. The boy improved his sight to 10/15 in an hour's time. This improvement was temporary, so I advised the doctor to help his son in the way I helped him.

(3)

A Case of Hypermetropia and Glaucoma.

An English lady aged 61 came to the clinic with her physician. The surgeons of her town were of opinion that she had incipient cataract in her eyes though they had not examined her with the ophthalmoscope. When the patient entered the consulting room I noted that her whole body seemed to be tense, the eyes widely open having staring look, the forehead full of wrinkles, the whole feature of the face and eyes indicated that she was under a great mental strain. Before I put any question to her about her eyes I asked her to keep her eyes closed. I had a good conversation with her and she related her good days in England with her friends. A few minutes pleasant talk produced a sense of relaxation in her nerves. I then wanted to know something about her eyes.

She had good distant vision till the age of 55 and she was using lenses of plus three spherical for reading. She was an avid reader, and read late in the nights inspite of the strain that she often felt in reading. For about one and a half years she was noticing gradual deterioration in her sight for distant and near objects and the glasses did not help her in reading. Everything appeared foggy. She complained of pain in the back of the eyeballs, heaviness in the head, throbbing sensation in the temples, halo around light. Occasionally the pain aggravated in sleep and made her very uncomfortable. She was afraid of blindness as two of her aunts had suffered from similar pain and dimness in vision and had lost their sight inspite of medical aid. "Probably they suffered from glaucoma", she said. She was seeing floating specks which she could multiply and could see them just as clearly with her eyes closed as she could with open eyes. Field of vision was almost normal. Eyeballs seemed to be harder than normal to the fingers. Tension with the tonometer could not be taken as she refused the use of any instrument in her eyes, pupils reacted to light.

The vision on the Snellen test card was 6/60 in each eye but she could read 6/6 with plus three spherical. Near vision was very poor. She could read letters of half an inch size of Snellen reading type No. 5 at nine to twelve inches without glasses, but with plus five spherical she could read diamond type or Snellen type No. 1. Though she could read alright with glasses, yet the letter seemed to be covered with a thin mist.

To determine the sensitiveness of macula lutea I placed the Snellen test card at three feet distance from her eyes and asked her if the letter regarded appeared more distinct than the other letters of the line. She said, "I see the other letters, not directly regarded, more distinct than the letter on which I fix my sight." This indicated that the macula lutea of each eye had become less sensitive and the area of the retina away from the macula lutea was more sensitive than the macula lutea. Loss of sensitiveness of macula lutea is the sign of great strain and is found more or less in all cases of hypermetropia and glaucoma. When the eyes are normal the letter or part of the letter regarded appears best, and it means that the macula lutea is very sensitive.

In the dark room examination the ophthalmoscope revealed a small cupping in the optic disc of both the

eyes. Usually so much cupping is not present in the normal eyes but it is difficult to say that it was glaucomatous cupping as some normal eyes have such deep cupping also. The ophthalmoscope revealed one thing important. When I was examining the right eye I asked the patient to look at the distance with the left eye. The disc seemed to be stationary or made big jerks at long intervals. The left eye disc also showed similar movements. This indicated that the eyeballs were more or less stationary. In the normal eyes the disc appears to make short and rapid movements. The movements of this indicate that the eyeball makes short and rapid movements which are not conspicuous. The blood vessels were quite distinct with a lens of plus two or three. The media was quite clear and no sign of cataract appeared even under a high magnifying lens.

I explained to the patient's physician the following facts:

(1) The patient has acquired hypermetropia in old age.

(2) As a result of hypermetropia and mental strain premonitory symptoms of glaucoma seem to be developing.

(3) The eyeballs have become more or less stationary as a result of the spasm in the external eye muscles.

(4) The macula lutea has lost its maximum sensitiveness hence the objects appear to be covered with mist.

(5) The eyes, the mind and the nerves of the whole body are under a great strain.

(6) There is no sign of cataract.

(7) The treatment which will benefit hypermetropia will yield good and quick results and make the symptoms of glaucoma subside and improve the eyesight.

The fact that his patient had acquired hypermetropia in old age was a great surprise to the physician as he had read that hypermetropia was a congenital condition and formation of the eyeball could not be altered and that the lens could not be the cause of so much hypermetropia as it lost its elasticity in old age. He wanted explanation. I told him that probably every ophthalmologist came across such cases in whom there was increase of hypermetropia in old age. These cases do not tally with the theory of accommodation or rather prove to be a stumbling block, hence they are ignored or some plausible explanation is given. According to Dr. Bates theory, accommodation is controlled by the external eye muscles and hypermetropia can be acquired by the contraction of the recti muscles at any age. His theory has not been accepted by leaders of medical science as yet though Dr. Bates experiments are very convincing. However, I did not want to enter into a discussion on this topic. The cause of hypermetropia or contraction of the recti muscles was strain or an effort to see in near work. To prove practically I called a boy patient in the dark-room. This patient had myopia of half degree. The patient looked at a distance and the retinoscope with the plane mirror indicated that the shadow was more or less stationary. Then I asked the boy to look at a point placed on his

nail of the forefinger at about three inches distance. He held a finger in such a way that the eye could be examined by the retinoscope at six feet distance. He made strenuous effort to see the point but was not successful. The retinoscope indicated that the shadow was moving in the same direction. The doctor himself examined this fact and realized how strain in reading could create hypermetropia. He understood that his patient had gained the habit of making an effort to see letters and had forgotten that the normal function of the eyes was effortless like other sense organs. This caused strain and produced spasm in the muscles and hypermetropia. Now the doctor anxiously waited how I could benefit hypermetropia and relieve the symptoms of glaucoma.

The lady patient believed that in old age every one lost eye sight, hence it was difficult to improve her sight. I said to her, "Well, the eye is one of the sensory organs and it functions without any effort like the ears or nose. Do the ears become defective in old age except in rare cases? If not, why should the eye? The strain or an effort to see is the cause of defective sight. The rest for the eyes and mind is the right treatment." This argument appealed to her and she showed a desire for taking the treatment.

I chalked out the treatment keeping in view two considerations: (1) to improve the general health of the eye, (2) to relieve the strain by some relaxation methods. Everyone can experience that when the legs are stationary in standing a sort of strain and discomfort is felt, but so long as the legs make rhythmic and gentle movements, there is no feeling of strain. It means rhythmic and gentle movements relieve the strain. The normal eye is at rest when it is moving to prevent the stare or strain. If the normal eye stares at a letter the eye becomes more or less stationary and strain is felt. So to create rhythmic movements in the eyeballs I asked the patient to stand with the feet about one foot apart and turn the body to the right—at the same time lifting the heel of the left foot. The head and eyes moved with the body. She felt that the front objects appeared to move in the opposite direction, but she paid no attention to the apparent movement of the stationary objects. After 5 minutes' practice she felt relief in the pain of the eyeballs and heaviness in the head.

I then put her in the sun which was not hot at that time; she faced the sun with the eyes closed and gently moved her head and body from side to side in order to avoid discomfort from the heat. Then I focussed the light with the aid of the sun glass on the closed eyelids, which at first was disagreeable. While using the sun glass I moved it rapidly from side to side so that concentrated rays might not cause burning sensation. She enjoyed the sun for about ten minutes.

After sun treatment she came to the shade, sat comfortably, closed the eyes and covered them with the palms of hands, avoiding any pressure on the eyeballs. A cushion was tucked below her elbows. While closing the eyes in this way she imagined flower plants, green grass fields, etc. Imagination of green colour was very soothing to her. As her memory for such objects was very good she felt as if it was all dark before her eyes.

For one week this sort of treatment continued three or four times a day. Feeling of pain, throbbing

sensation, floating specks, heaviness in the head had completely disappeared but there was no appreciable change in the vision. I added then the practice on the Snellen test card having white letters and black background as the Snellen test card with black letters and white background caused strain to her eyes. She moved her sight from side to side of the letters and noted that the letter appeared to move in the opposite direction. First she practised at three feet and then gradually increased the distance to fifteen feet. The improvement in vision began to come slowly. In the midst of the practice some modifications were frequently made so that one type of practice might not become cumbersome to her.

To improve the reading sight I took the help of white line. If one can imagine a thin white line in this white space below the letters of the test type, it is very helpful. This thin white line is only imagined, it is not seen because the line is not really there. It is valuable in the treatment of hypermetropia and astigmatism.

The patient could not imagine the white line, so she was told to close her eyes and think of series of white objects as white cloth, white clouds, white paint. She then opened her eyes and looked at the white spaces, imagining them to be as white as white paint. As she shifted her sight from one end of the white line to the other she blinked, and at times closed the eyes for half a minute to improve the imagination of white. By practising in this way she made no effort to see the letters, but the letters which could not be seen before appeared black and distinct. At times, she tried to imagine the white line and at the same time tried to see the black letters; and as this was the wrong way, she felt strain and the blackness of the letters faded.

The result of this treatment after one month was that she became able to read Snellen reading type No. 2 at ten inches without glasses. Her distant vision improved from 6/60 to 6/9. The mist completely disappeared and her feeling was as if she had a new pair of eyes. Her whole body became alert and relaxed and she appeared quite cheerful. To prevent any relapse I advised to read the fine print daily by shifting the sight in between the lines of print and blink frequently. She often studied my book, *mind and vision*, to know the details of relaxation methods.

Lathyrism in the Central Provinces

By Dr. MARTIN LUDLAM, M.B., Ch.B. (EDIN.),
Friends' Mission Hospital, Itarsi

A small investigation was carried out by two of us near the village centre of Babai in the Hoshangabad District of the C. P. in order to find out what could be learnt of the extent, cause, prevention and cure of the cases of lathyrism occurring in that area. The time at our disposal was limited to two days and our means of transport to two bicycles, hence only a very inadequate picture of the true situation can be given. Moreover it should be understood that as our coming was unheralded the cases we saw were only those who

happended to be present in their own homes as we passed.

Five villages were visited and a total of about 50 cases of lathyrism were seen, of whom 43 were more closely examined.

All ages from 5 years upwards and both sexes were affected. 14 of the cases were under 15 years of age but only 4 women were seen with the disease. The poorer section of the community was mostly affected and especially those whose means of livelihood was only indirectly from the land. The cause of the condition was unquestionably associated with the consumption of large quantities of teora dal (a kind of pea) normally used for the feeding of cattle but also consumed in greater or lesser quantities by the villagers depending on the availability and price of better class grains. The disease occurred among those who were paid in cash and those who were paid in kind; those who were paid in kind (teora dal) could not avoid the disease, and those who were paid in cash could buy only those grains which were available, namely teora dal. It should be clearly understood that the villagers knew perfectly well the cause of their lameness, though some people (unaffected) and who were possibly interested in the growing of the incriminated grain either blamed consumption of butter-milk with the dal, or else the consumption of a kind grass. We found no foundation for such alternative suggestions.

The time at our disposal did not allow us to examine or question those who, though eating large amounts of the dal, yet did not suffer any apparent ill effects. Those who were affected had been eating the dal in small amounts for many years, and in considerable quantities for the past three years. The average duration of lameness was fifteen to eighteen months though some had been affected as long as three years and others as short a time as three months. To quote the villager, they said that they had been eating almost nothing but teora dal "since the dearth period" which of course coincided with the dislocation of transport, and scarcity of grains, etc., brought on by the threat of a Japanese invasion, the August disturbances, and the Bengal famine. Conditions were aggravated by poor jawar and wheat crops, lack of alternative seeds, procurement of grain by the Government, mainly for the towns, and the indifference of the landowners. Nevertheless, these people were not apparently under-nourished, nor were they suffering from any obvious deficiency diseases, and some of them were remarkable for their powerful build and good muscular development.

The symptoms of the disease were little different from those usually described in the textbooks. The onset was always fairly rapid, the first symptom often being pain in one or other thigh with weakness of one or both legs. Within eight to ten days the disability became severe and bilateral in distribution, but always confined to the lower limbs. Some time the onset came with dramatic suddenness so that the patient collapsed; sometimes patients actually bled for bringing on the condition.

Examination revealed in all cases the presence of a spastic paresis involving all the muscles of the legs.

The patellar reflex was always extremely exaggerated, and patellar clonus sometimes and ankle clonus always could be elicited. The plantar response was extensor. Ordinary sensation (hot and cold not tested) seemed unimpaired. Joint sense in the lower extremities remained good and even in a most severe case vibration sense was not impaired. This severe case who could just walk and no more, had incontinence of both urine and faeces. The abdominal reflexes were always impaired in proportion to the severity of the condition. In the cases examined there was no obvious disability or abnormality of the reflexes in the upper extremities. As this time we saw no cases who were actually bedridden; most could move fairly quickly with the aid of one stick, while the worst cases could only make slow laborious progress with the aid of two sticks. The attitude of most was cheerful and perhaps rather fatalistic.

Summary and Comments: The investigations revealed that the consumption of large quantities of teora dal daily over a long period (more than 3-6 months) causes in most cases a spastic paresis of the lower extremities. The consumption of the dal in small quantities ($\frac{1}{2}$ of the total grain consumed) over long periods does no harm.

The onset of the condition is rapid, and we fear, irreversible. The signs indicate that the posterior columns of the spinal cord are not affected but that the disease is mostly confined to the pyramidal tracts. It does not seem that the disease is primarily due to any vitamin deficiency but that the lesion is produced by a toxic principle in the diet. The poison may be cumulative in action, being analogous to digitalis in this respect. Because of the rapid onset and irreversibility of the condition it may be that the precipitating cause of the spinal lesion is vascular in nature. The fact that women seem much less liable to the disease may be due to the fact that the female nervous system has for some reason a greater resistance to the toxin. One woman seen, stated that she had actually recovered from the disease but this case was quite unique; on examination there was no apparent lameness but the reflexes were markedly exaggerated.

The preventability of the disease, the poor prognosis, and the otherwise excellent physical condition of the patients makes the disease especially tragic. Unfortunately patients rarely stay in hospital long enough for one to form a proper estimate of the best kind of treatment. In this connection we should add that we have been treating two patients in our hospital for the past 4 weeks. Each of them has been lame for about 15 months. The treatment has been the provision of an Indian diet (a not very good diet) avoiding teora dal, and the administration of yeast, ascorbic acid, shark liver oil daily, thus providing maintenance doses of the main essential vitamins. One of the patients was severely anaemic (Hb 50%), so in addition, this patient received iron and liver injections in full doses. The first patient has shown little or no improvement; but the anaemic patient who at first was almost bedridden, improved rapidly, and can now walk short distances at a reasonably fast rate with the aid of one stick. We cannot say however that this is due to retrogression of the spinal lesion.

In conclusion we should like to point out that this lameness although certainly associated with the consumption of teora dal, or more correctly lathyrus sativus, may not be actually due to this plant, as is suggested in some textbooks (we only have textbooks for reference). At the same time we understand that the nutrition experts in this country are not of the

opinion that this condition is directly due to the consumption of this grain, and not due to the consumption of an allied but contaminating grain. Certainly no one who has seen teora dal as sold in the bazar or growing in the fields would think there could be any other grain accidentally associated with it.

Blood Uric Acid and Chloride in Thirty Cases of Pneumonia.

DR. P. K. BANERJEE, B.Sc., M.B., Dept. of Physiology, Carmichael Medical College, Calcutta.

Introduction:—Blood chloride and uric acid have been noted in thirty cases of pneumonia during and after illness and following results have been noted:—

Case No.	Religion	Sex	Age	During Illness		One week after Illness	
				Blood Uric Acid	Blood Chloride	Blood Uric Acid	Blood Chloride
1	H	M	28 years	4.5 mEq	470 mEq	3.3 mEq	520 mEq
2	H	M	21 "	4 "	495 "	2.9 "	500 "
3	H	M	24 "	3.8 "	485 "	3.4 "	515 "
4	H	M	22 "	4.2 "	450 "	3.2 "	470 "
5	H	M	32 "	3.9 "	483 "	3.1 "	495 "
6	H	M	18 "	3.8 "	460 "	3.2 "	495 "
7	H	M	26 "	4.1 "	480 "	2.9 "	510 "
8	H	M	24 "	3.95 "	470 "	3.65 "	510 "
9	H	M	34 "	4.12 "	480 "	3.42 "	495 "
10	H	M	16 "	4.1 "	460 "	3.40 "	500 "
11	H	M	24 "	6.2 "	490 "	4.1 "	520 "
12	H	M	28 "	4.2 "	470 "	3.45 "	490 "
13	H	M	24 "	3.95 "	490 "	3.2 "	500 "
14	H	M	62 "	5.9 "	440 "	4.1 "	510 "
15	H	M	46 "	4.7 "	470 "	3.1 "	500 "
16	H	M	22 "	4.2 "	490 "	3.3 "	510 "
17	H	M	20 "	3.8 "	410 "	3 "	470 "
18	H	M	22 "	4.1 "	450 "	3.2 "	480 "
19	H	M	18 "	4.1 "	475 "	3.8 "	520 "
20	H	M	28 "	3.7 "	490 "	3.64 "	490 "
21	H	M	24 "	3.4 "	480 "	3.2 "	520 "
22	H	M	20 "	3.9 "	485 "	3.4 "	510 "
23	H	M	31 "	4.2 "	420 "	3.8 "	440 "
24	H	M	56 "	4.8 "	480 "	3.7 "	510 "
25	H	M	48 "	4.1 "	490 "	3.9 "	490 "
26	H	M	36 "	4.1 "	500 "	3.7 "	500 "
27	H	M	40 "	3.9 "	480 "	3.6 "	510 "
28	H	M	13 "	3.4 "	470 "	3 "	490 "
29	H	M	19 "	3.9 "	490 "	3.7 "	520 "
30	H	M	22 "	3.8 "	470 "	3.24 "	510 "

Conclusion:—The patients were kept on liquid diet during the illness; glucose and saline were given 2-3 pints a day for sip but blood chlorides in all the patients were definitely low. Blood uric acid was also high during the illness. The excretion of chloride was also noted in many and it was seen to be definitely low. Uric acid excretion were also noted and the uric acid excretion in all the patients were very high particularly during the 7th, 8th, 9th days, i.e., just before and during the crisis. The fall of blood chloride cannot be attributed to definite cause except some deficiency or function of suprarenal cortex.

The increase of blood uric acid and increased excretion of uric acid in urine is due to the breakdown of more nucleoprotein. This nucleoprotein is derived from the nuclei of the leucocytes which are broken down and also due to disintegration of the exudate in the alveoli. After the illness the blood chloride comes down to normal and chloride excretion in the urine rises. Blood uric acid falls and comes to normal figure and its excretion diminishes.

References:—Physiological chemistry—Hawk (Ed. 1942)
Carmichael Medical College Magazine—P. K. Banerjee (Vol. XI 1941).
Recent advances in Medicine—Beaumont and Dodd (Ed. 1940).
Text book of the practice of Medicine—Price and others (Ed. V).
Medical Encyclopaedia.

Pyrogenic Reaction

By Dr. B. B. GUHA,

215, Sir Bhalchandra Road,
Lamba Building, Matunga, Bombay.

The unforeseen and undesirable reactions after intravenous injections have long been known in clinical medicine. Such reactions occur only to cause a great discomfort to the patient and displeasure to the physician and sometimes constitute a cause of real anxiety particularly when the condition of the patient is low. With the increasing use of blood transfusion, glucose and saline injections the hazards of intravenous therapy have warranted a careful investigation of its cause and remedy by the medical and pharmaceutical profession.

The high rise in temperature, chill, rigour, etc., after intravenous injections, were considered to be due either to the chemical nature of the drug or variations in the pH of the solution or the speed with which the injection was given and the fever was formerly known as protein fever, salvarsan fever, salt fever, etc. However, in 1911, Weschelman demonstrated that arsenic salt dissolved in one sample of water produced reaction whereas the same stuff when dissolved in another sample of water, which was freshly prepared, was absolutely free from any sequence. Such findings made a new revelation regarding the conclusions of the after-effects of intravenous therapy, and many others later on corroborated the observation of Weschelman. Hort and Penfold asserted that the development of untoward effects after the intravenous administration of a liquid could be avoided if the solution were prepared with the fresh distilled water from zena glass apparatus. An elaborate and exhaustive study of the subject was made by Siebert and coworkers, who made it clear that fever, chill, nausea, vomiting, etc., were due to the use of contaminated water in the preparation of the solution. They isolated and identified an organism from distilled water and subsequently two groups of organisms (*P. aeruginosa*) from river water, which in their opinion were responsible for producing the filterable pyrogenic substances. They contended that distilled water used within 24 hours of its manufacture remains pyrogen-free but later on gets contaminated. Further researches by Rademaker and associates were in full agreement with those of Siebert's and some outlines were prepared for the manufacture of pyrogen-free parenteral solution. Banks demonstrated that introduction into the system of a living or dead product of bacterial growth or cultures of *pseudomonas scissa* or *urae* were the causative factors of hyperpyrexia reaction and that contaminated water could be made responsible for the whole trouble.

Basing on the results of long research works on pyrogen which was considered to be a complex protein body, official rules were set up in America to prepare high grade water free from any bacterial or microscopic growth as well as products of metabolic processes of such growth. Instructions have been laid down in Pharmacopeia for the preparation and storage of distilled water, as in the absence of proper

Distilled water can be made pyrogen-free by double or triple distillation according to pharmacopeal process or any other suitable method, but the water which will be conserved for future use should be sterilized within 2 hours of its manufacture. Further, the triple distilled water plant should be cleansed periodically otherwise triple distillation will not offer any greater advantage than single distillation for the preparation of parenteral solutions. Cotui of the New York University College of Medicine does not fully agree with the former conception regarding the chemical identity of pyrogen and stated that in the light of latest research made by him and other immunologists pyrogen does not appear to be a protein body. Laboratory results obtained by them identify pyrogen with the bacterial antigen. Further, pyrogen being extremely potent in very minute dose puts the scale down on the side of lesser possibility of its being a protein body.

It was ascertained that 5 mgms of total "N" per 100 c.c. of a contaminated liquid, which caused typical pyrogenic reaction in rabbits weighing 1500–3000 gms could be diluted 5000 times and still produce reaction. In view of the different observations by different group of workers the knowledge regarding its chemical composition calls for further elucidation.

Cotui moreover points out that not only water-borne organisms but air-borne organisms are equally responsible for the contamination of injectable preparations, that is to say, any germ can produce pyrogen. Though it is universally agreed that water is the main source of contamination and the modern pharmacists take all precautions to use a high grade water in the preparation of the solution, cotui strikes a note of warning that such contamination may also come from the chemicals. He has pointed out that organic chemicals may serve as a medium for microbial growth and steady development of pyrogen occurs in substances like dextrose, sodicitras, amino-acids, etc., and even the inorganic salts are liable to contamination.

The credit of introducing animal test for pyrogen estimation goes to Siebert and has since been universally adopted in a modified form. Realising the importance of the problem, the matter has devolved upon a committee comprising the U.S.A. National Institute of Health and the Administration of Food and Drug in collaboration with several other non-official experts, to devise a standard method of detecting pyrogen in parenteral solution. Pyrogen solutions were prepared from 2 strains of *pseudomonas aeruginosa* and in spite of the lack of positive proof about the relationship of pyrogen with nitrogen, the total 'N' content of the solution was accepted as the criterion in its assay. The thermic response of the maximum dilution of the pyrogenic solution was compared with that of pyrogen-free saline solution and it was established that any rise in temperature beyond 0.8°C (1.5°F) could indicate a positive sign of pyrogen. Comprehensive and precise rules were stipulated by the committee regarding the animal test of pyrogen with respect to the housing of animals, suitability of the animals for test, feeding of the animals, the manner in which the temperature to be taken before and after injection, the quantity of solution to be injected and the number of animals to

reveal any development of immunity or hypersensitivity of the animals with pyrogen, it was allowed that the same animals could be put to test after a minimum interval of 2 days. Commenting on the standard method of pyrogen test Cotui says that in the light of latest findings the approved official method deserves some modification and in support of his theory he has shown by his experimental data that pyrogen of different bacteria react differently in men and animals, the maximum pyrogenic dose for the rabbits with one kind of pyrogen, on per kg. basis, is not the same for men and vice versa. Next point is that the use of 5 rabbits for each test in his opinion, shows a lack of confidence and pyrogenicity being a relative problem the use of a fixed dose of 10 c.c. on per kg basis does not conform with the very wide range in the therapeutic application of intravenous medicaments, which varies from a few ccs to a few litres.

Moreover, tests with massive doses and repeat tests with the same dose and on the same number of animals, in the event of doubtful results in the first test, do not appear to be an economical proposition. Cotui suggests that 3 out of 5 rabbits used for the test should be given, on per kilogramme basis, a quality relative to the maximum pushed in man. Two other rabbits will be given 2 and 4 times the above dose, taking it for granted that man is 4 times sensitive than the rabbit. The comparative study of the thermic response in the 5 tested rabbits will not only determine the absence or presence of pyrogen but will also indicate the quantitative value of it.

As hyperpyrexia in rabbits may also be due to improper handling of the animals at the time of injection, bleeding, excitation of the animal while taking temperature, etc., Cotui and his associates suggested that a positive proof of pyrogen can be obtained from blood examination. They noticed a marked leucopenia within 45 minutes of the entry of the pyrogenic solution into the circulation, which lasts for about one hour and a half.

Another important fact has been brought to our knowledge by Cotui that intravenous medications do not endanger life in as much as there is a very wide limit between the M.L.D. and near lethal dose, which will never reach even in infusion fluids. However, he has suggested certain methods for the removal of pyrogen by chemical and physical means. He mentions that strong acid or alkali and prolonged heating will destroy the pyrogen but since such procedures cannot usually be adopted with regard to intravenous solution, removal by adsorption method would appear to be the best one. Charcoal, Kaolin, etc., can remove pyrogen but the quantity thus removed could not be ascertained, therefore, their use could not inspire any confidence. After a great deal of research and estimation of the size of pyrogen Cotui and his co-workers concluded that the filtration of a parenteral solution through a specially prepared asbestos pad was the best and the most suitable means to make the solution pyrogen free.

But it should be remembered that the pyrogen free solution can become contaminated in the course of further manipulation and therefore to put in the words of Walter, "There are two requisites for the safe supply of parenteral solution, (1) pure raw

materials, (2) centralized responsibility of cleanliness in the preparation of solutions and apparatus."

Conclusion.—(1) Pyrexia with chill and rigor after intravenous administration of a parenteral liquid is due to the presence of pyrogen in the solution.

(2) Water is not the only source of pyrogen as believed before, the raw materials used in the preparation of the solution are also the contributing factors.

(3) All germs can produce pyrogen.

(4) Filtration through specially prepared asbestos pad has been advocated as the best way of purifying the contaminated liquid.

(5) Only the application of rigorous aseptic measure in the manufacture of intravenous solutions can insure the freedom from pyrogenic contamination.

References: (1) Remington's Practice of Pharmacy.
(2) Cicily Chapman *Quarterly Journal of Pharmacy and Pharmacology*, September 1942.
(3) Welch et al. *Ibid* 1943.
(4) Henry Welch, *J. A. P. A.*, March 1943.
(5) Cotui. *Ibid*, March 1944.

War-Neorosis and Psycho-Therapy.

Dr. J. S. NALAPPA,

256, Dindigul Road of Madura.

Craftsman-Fitter No. 110471, S. D. Chellapa of Heavy Section, Indian Electric Mechanical Engineering, 76 (M) workshop, was discharged from the Military Service, on 18-10-45 being unfit for further service on medical grounds, from Jubbulpore Head Quarters.

Past History.—He was recruited in 1941 from Messrs. Addison & Co., Madras. After an intensive training in war-technique and jungle war-fare in the tropical forest of Mysore, his workshop company was drafted to the Arakan Front in January 1944. After the fall of Akyab, his unit served to capture Mandalay. With liberation of Rangoon by allied forces in May 1945, his company was sent back to India in June 1945, on 24 days leave, via Akyab to Calcutta, by sea. During the voyage, in spite of the convoy that accompanied the relief, the troop-ship in the front line of the steamers he was travelling, was torpedoed. He saw the chase and sinking of the Japanese submarine by the British Navy. With no further incident, he reached home in Madura, South India. During the vacation he was quite at home with every one except his father who could not succeed to arrange his son's marriage.

Four days before the expiry of the leave, a definite change came over him. He began to feel the rigorous life and harrowing scenes of the battle-field and at nights he had disturbed sleep. He was telling his brothers that they would not see him any more as he was sure, that his workshop would be ordered to the front again in Burma. However, he hurried to join his unit at Tarapuram, Salem District, South India, being the collecting centre for his workshop, and left Madura by train, on 12-7-45, two days before the expiry of his leave. What happened to him from that

day of his departure, nobody in his house knew till 24-10-45, when his father received a letter from his elder sister Mrs. Rethinam Muthiah living in No. 27, Venkatagramani Street, Chinthathripet, Madras, requesting him to come to Madras and take his son home and adding that he was handed over to her by two military orderlies from Jubbulpore and his son was seriously ill. His father brought him to Madura on 27-10-45.

Present history.—On the 15th November 1945, when seen, the patient was found well fed and there was no emaciation. He was an "automaton". All the autonomous functions of the body were interrupted. He attended to them as the demand arose from the organs concerned. All the time he was lying on his bed, with his eye lids very tightly closed, head hung on his chest, utterly oblivious of external world. He was deaf and when hungry or thirsty he called out by a single word "food-water". Nothing else he uttered and he was mute for all practical purposes. His face was sad and depicted a picture of meditation. He could not stand or use his limbs due to tremor. He was insensitive to pain. His eyes were examined by Dr. J. S. Victor, the Eye Specialist, and found normal. Physical examination revealed nothing abnormal.

Diagnosis.—"War-Neurosis", otherwise called "Shell shock" or "Operational fatigue".

Treatment.—He was treated every morning between 9 and 10 a.m. Every day, after inducing hypnotic sleep, the following suggestions noted against each day were specially stressed on that particular day, in addition to the repetition of all other suggestions already given in the previous days. It is to be noted that a great latitude in use of words is allowed to the "suggester" to bring home his purpose to the patient so as to produce the particular and specific effect.

15-11-45.—"Sleep at 9 p.m. and wake up at 6 a.m. Open your eyes, be cheerful, happy and jovial".

Reaction.—He attempted to open his eyes occasionally during the day. He slept at 9 p.m. and woke up at 8 a.m. as usual.

16-11-45 (2nd sitting).—"Open your eyes and talk with others. Sit up. Read the Psalm I in the Bible."

Reaction.—Slept soundly from 9 p.m. and woke up at 6 a.m.

17-11-45.—"Your head is calm, cool and clear."

Reaction.—He opened his eyes now and then.

18-11-45.—No treatment was given.

Reaction.—He was sitting on his bed for a few minutes with his eyes opened. He had a deep sleep in the night.

19-11-45.—"Get up out of your bed and move about in the house. Your brain is calm, cool and clear."

Reaction.—He refused to take his food at noon as it did not suit his taste being a vegetable diet and continued to starve till next morning.

20-11-45 (5th sitting).—"Obey and honour your parents. Do not be obstinate."

N.B.—With difficulty, he was awakened after treatment.

Reaction.—He took his feeds with his eyes opened full well. He slept few hours during the day and soundly in the night. He was sitting about 15 minutes on his bed after each meal. He was keeping his eyes fully opened for observation.

21-11-45.—He had a full look at me when I entered his room and put out his tongue when directed and co-operated to relax his body.

Suggested as follows.—"Observe what is going on in the house. Give hearty welcome to all the visitors. Love your relatives. Be happy and love all at home."

N.B.—He very easily woke up after treatment.

Reaction.—He sat up after each meal for a longer time and tried to speak. He had his eyes fully opened every now and then.

22-11-45.—"Mental peace—Future prosperity in life and work."

Reaction.—He sat for half an hour after each meal.

23-11-45 (8th sitting).—"Hold your head high and keep your neck straight and well poised. Open your mouth and speak. Call for your parents and speak to them."

Reaction.—He was sitting for a longer time than other days.

24-11-45.—Have your face shaved at 11 a.m.

Reaction.—Nothing special to add. He refused to be shaved by a barber.

25-11-45.—No new suggestions were given and old ones were repeated.

Reaction.—He did not sleep the whole day. He moved out of his bed in the evening and sat in a chair nearby and began to read silently his brother's books for about half an hour.

The slow progress under suggestion fell far short of expectation. The reactions were merely mechanical. The sole aim of the treatment was to bring his consciousness to the threshold of his daily life and thereby allow his will power to dominate. To attain this purpose, it was necessary to break down the restraining "Psychical Barrier" and cause what is technically termed "Psychical Explosion" which clears the impediments that were submerging his volition and thereby lift the depression hanging very heavily on his conscious mind.

As I was thinking of this case, in the mid-night of the 25-11-45, I was prompted by a sudden inspiration to touch on his socio-sexual life and rouse him to react to be a man in every aspect of his wakeful and vigilant life.

26-11-45 was the 11th day of treatment. Armed with this new weapon of attack which I may specially call "Psychical Atomic Bomb" and backed by plenty of fervent prayer for God's guidance and help, the following suggestions were emphasised "Rouse yourself form your bed. Be a man. Get yourself ready to earn, save, and marry and to lead a model life as a son and a loving husband. Cheer up, and shake off lethargy. Be active. Your mind is calm and cool and clear."

The father was instructed to invite the patient to attend the family prayer meeting at 7-30 p.m. every evening.

Reaction.—At about 10 a.m. just half an hour after the treatment, as he was lying on his bed he heard something snapping inside his head at the top of his forehead, and running towards the centre of his head. As if a miracle was performed, immediately his mind cleared, senses returned, and consciousness was regained. He felt that he was lying on a bed in the middle of the day. So he jumped out of his bed and realised that he was in his home. On seeing his brother, he anxiously enquired if he had overstayed his leave and when he should rejoin his duty. On being told that he had already been discharged from the military service and therefore he need not be anxious about it, he was surprised and his face brightened. Hearing him talking, his parents were amazed at the miraculous recovery of their "son who was dead and is alive again. He was lost and is found". He assured them of his perfect recovery with sound mind and body. After having a shave and his bath, he read the 1st and 23rd Psalms in the Bible and said his prayers. Then, he narrated them of his military life in detail in the Arakan Front and Burma forest till the capture of Mandalay Town. After taking his midday meal, he began to talk to all at home. Questions and queries from his parents brought out his providential escape from torpedo attack in June 1945.

27-11-45.—The next day of his recovery, as I entered into his house, he greeted me with a hearty "Good morning". He sat on his bed and said:

"I am alright now. I am the only one that was cured early and so soon. There are many in Jubbulpore Base Hospital who are mad, eat even leaves and pass motions in their bed. I read the 1st Psalm and the 23rd Psalm and other portions in the Bible."

When questioned, he could only remember his joining his unit at Tarapuram on 12-7-45 and waking up yesterday noon in his home (26-11-45). The history of his life during this intermediate period, was a complete blank and he could not recollect anything.

With 6 more sittings at regulated long intervals the treatment was discontinued on 20-12-45.

His life is now normal from that forenoon. He was restored to his parents as a loving son and as earning member of that family.

REMARKS.

1. The object of this almost a verbatim report of the case, is intended

- to create an interest among your readers, to take up the practice of psycho-therapy;
- to serve as an outline of procedure to the beginners, adopting this line of treatment;
- for experienced experts of psychiatry for their correction and criticism.

2. In this case, there was no co-operation of the patient—neither any opposition from him. He was quite passive. The treatment was successful.

3. The unbroken continuity of the autonomous functions of the body kept him alive. There was no loss of weight.

4. This is classified as a case of "hysterical reaction" resulting in "amnesia, deafness and mutism,"

combined with "depression and tremor". He broke down with acute battle experience, as his workshop was behind the firing lines; and open trenches were the order of the day. Due to relentless repetition without any hope of relief, he cracked under the "shell fire". He endured several battles before being overwhelmed.

5. No psycho-analysis was attempted either under hypnosis or by intravenous injection of sodium pentothal to elicit his battle experience or find out the cause of his breakdown, as advocated by psychiatrists.

6. The success in this case is not a criterion of standard-treatment of every "psychiatric battle casualty."

REFERENCE:

- Pearce—*Practitioner*, January 1945—Clinical aspects of Psychiatric problem in the Army.
Bible—Luke 15, 24.
Narco-Synthesis—*Readers Digest*—July 45—Col. Grindler's method adopted by Major John, Spiegel (U.S.A.)

An Outline of Health Services for the Poona District.

(BY DR. V. D. SATHAYE, B.Sc., L.C.P.S., Poona)

Poona District has been selected for the study of the health problems and for the preliminary working of health services, because it is neither backward from the point of education nor is it much advanced from the point of industrialisation.

The following tables indicate the present state of health in the District and money spent on medical and public health services:—

TABLE I.

Areas.	Population (1941).	Total expenditure, excluding conservancy and water-supply.	Total recorded morbidity.
Towns ...	362,401	Rs. 6,21,656	182,101
Rural ...	982,886	Rs. 77,283	402,737
Whole District ...	1,345,287	Rs. 6,98,939	584,838

TABLE II.
Mortality (1941).

Areas.	Cholera.	Small-pox	Fever.	Reveal Diseases.	Injury.	Respiratory	Other cases.	Total.
Urban ...	43	39	2,352	739	104	2,751	3,994	9,948
Rural ...	738	231 (Plague 4)	9,366	1,664	341	4,708	7,143	24,165
Whole District ...	781	270 (Plague 4)	11,718	2,403	445	7,459	11,137	34,113

Total Number of Beds: Towns 604; Villages 136. For the whole district 740.

The existing organisations of Public Health and Medical Relief have not been originally formulated on sound principles. They are temporary in nature and scope, lacking co-ordination and finance,

These however could be re-oriented by converting the present centres of medical relief into Health Centres and institution of such new centres in the hitherto unserved areas of the district.

Such a scheme of Health Centres will not be impracticable financially for the Government.

The present Taluka Medical Relief Centres (S. M. S. Dispensaries, S. M. P. Centres and D. L. B. Ayurvedic dispensaries) will function as Health Centres dealing with community and individual medicine, offering domiciliary and institutional services.

At present the district of Poona has got 33 dispensaries and this number may be increased to 40, thus giving us 40 Primary Health Centres.

Primary Health Centres.

Each Primary Health Centre would cover a population of 25,000 and an area of 144 square miles. It should be centrally situated so that the distance to the Centre from any place within this area is not more than 6 miles.

Each primary centre is divided into 4 sub-centres of maternity and child-welfare, each in charge of a trained Dai. Each sub-centre will comprise of 36 square miles with a minimum population of 500. Expected monthly morbidity is 1,000, out of which there may be about 100 pregnancies.

Each Primary Centre should have the following minimum establishment:—

Staff.	Remuneration per month.
ONE M. O. ...	Rs. 100-10-300 plus Rs. 25 P.T.A.*
Resident Staff:	
ONE clerk compounder ...	Rs. 25-2-60.
ONE Nurse ...	Rs. 25-3/2-70 plus Rs. 10 U.A.†
ONE Dai ...	Rs. 15-1-20 plus Rs. 5 U.A.
Mobile Staff:	
ONE Sanitary Inspector ...	Rs. 40-3-70 plus Rs. 10 P.T.A.
ONE Vaccinator ...	Rs. 25-5/2-60 plus Rs. 5 P.T.A.
ONE Health Visitor ...	Rs. 40-5-60 plus Rs. 5 U.A., plus Rs. 10 P.T.A.
Four Dais ...	Rs. 15-1-20.
Four Servants ...	Rs. 15-1/2-25.

Diet and Medicines: Rs. 1,200 annually. Vaccine lymphs, cholera vaccine and public health appliances: Rs. 1,230 annually.

The first year budget of expenditure would approximately come to about Rs. 8,000 (Establishment Rs. 3,436 and other expenditure Rs. 2,400).

To this may be added Rs. 2,000 as a provision for leave reserve, provident fund, etc.

Thus the total approximate expenditure on each primary centre is Rs. 10,000; for 40 such centres Rs. 4,00,000.

There should be a provision of 4 to 6 beds at each primary centre for emergency, maternity and other serious cases. We may begin our work in rented quarters in the initial stages.

Functions of the Primary Health Centres.

(1) Medical Treatment, domiciliary and institutional.

* P. T. A. = Permanent travelling allowance.

† U. A. = Uniform allowance.

(2) Maternity and child welfare work: ante-natal, post-natal.

(3) Treatment of emergency cases of infectious diseases and maternity.

(4) School hygiene, medical inspection with the aid of teachers. Health and nutrition survey. Protection of water-supply.

(5) Permanent control measures for malaria, cholera, plague. To conduct mass vaccination, inoculation, disinfection measures and to give radical curative treatment to patients at the houses in case of infectious diseases.

(6) To collect samples for bacteriological, clinical, pathological and entomological purposes and forward them to sub-divisional laboratories for examination.

(7) To inspect and supervise the work of health visitors, sanitary inspectors and the staff under them.

(8) To scrutinise birth, death and epidemic registers and compile the statistics.

(9) Impart public health education by giving talks and holding village meetings.

(10) To utilise resident staff in emergency for out-door work also.

(11) To find out tuberculosis cases in early stages and to guide in necessary treatment.

(12) To call for ambulance from sub-divisional hospital and to direct serious or complicated cases for treatment.

(13) To keep clinical records in standard forms for research work.

(14) The medical officer to visit 10 or 15 villages in the area of the centre every month for health work and supervision.

Secondary Health Centres or Sub-Divisional Hospitals.

Scope of sub-divisional hospitals.—To treat serious and complicated cases directed for treatment by primary health centres and to supervise their public health centres. Hospital is to be located in a central place so that each health centre should be at equal distance, and it should be provided with X-ray, clinical and bacteriological laboratory and ambulance service and to treat serious cases or do major operations; to examine samples sent by the centres. Each Sub-Divisional Hospital will be controlling 12 to 16 primary health centres. Accommodation in Sub-Divisional Hospital: beds for infectious diseases—10; Maternity, Gynaecology—15; Medical—25 (Separate ward of 5 beds for open T. B. cases.) Surgical—25; Total—75.

Staff of the Sub-Divisional Hospital.

1 M.O. in charge sub-Divl. Hospital ...	Rs. 300-20-500 plus 75 P.T.A.
4 Assistant M.Os. ...	Rs. 100-10-300 " 25 each for X-ray and Lab. allowance.
2 Compounders ...	Rs. 30-2-60
1 Clerk ...	Rs. 40-2-60
1 Steward ...	Rs. 75-5-90
10 Ward Boys ...	Rs. 15-1-20
6 Sweepers ...	Rs. 15-1-20
2 Peons ...	Rs. 15-1-25
1 Lab. Assistant ...	Rs. 20-1-30
1 Asst. Health Officer and Bacteriologist ...	Rs. 250-20-500 plus 75 P.T.A.
1 Lady Doctor ...	Rs. 100-10-300
12 Nurses ...	Rs. 40-5-70 plus Rs. 10 Uniform allowance.

1 Matron	...	Rs. 80-5-100 plus Rs. 10 Uniform allowance.
1 Ambulance with driver and cleaner	...	Rs. 1,400 a year.
Medicines and Chemicals	...	Rs. 4,000 a year.
Diet	...	Rs. 4,000 a year.
Clothings	...	Rs. 1,000 a year.
Average mean expenditure including leave reserve, Provident fund—Rs. 52,900.		

Functions of the Sub-Divisional Hospitals:—The Medical Officer in charge of the hospital will be responsible for administration, supervision and organisation of hospital and public health centres in his charge.

2. The Medical officer in charge of sub-divisional hospital and the Assistant Health officer will maintain birth, death and epidemic registers; constantly study problems of health of the people in the sub-division and suggest ways and means to improve it.

3. To maintain morbidity and mortality records in proper form so that clinical data so collected may guide preventive measures of the area.

4. To form popular health committees for public health services.

5. To train primary school teachers to teach healthy habits to the scholars and to carry instructions of treatment of school children given by the medical officers.

Each sub-divisional hospital will be in charge of 1,783 sq. miles or approximately three to six lacs of people and 10 to 16 health centres.

Every case will be subjected to laboratory test, etc., on basis of clinical evidence.

There will be needed 3 sub-divisional hospitals in Poona District of which Poona Sassoon Hospital should be considered the Chief Hospital with District staff consisting of consultants. This staff of consultants should visit weekly other sub-divisional hospitals for major operations in the beginning to train the resident staff there.

All scientific and statistical compilations of the district should be done under instructions of the Civil Surgeon of the present hospital who is the head of the District Medical and Public Health organisation for administration and scientific work.

The following table gives a summary of the proposed distribution of services and expenditure:—

Area.	Population in lakhs.	Hospital.	Primary Health Centre.	Beds.	Average annual expenditure in lakhs.
Poona City	4	Sassoon	6	462	6'80
Haveli, Maval, Mulshi, parts of Khed Sirur, Dhond, Burandue, (a radius of 40 miles)	2	"	12	...	...
Junnar, Khed, Ambegaon, Sirur and Dhond.	2	one hospital of 75 beds	10	135	1'52
Indapur, Bhimthadi, parts of Purandur, Dhond, and Sirur	4	"	12	147	1'72
Total	13	3 hospals.	40	744	10'04

Inauguration of sub-divisional hospitals and conversion of rural dispensaries into and opening of new Public Health Centres involve an expenditure of 2 lacs (one lac for 2 hospitals and the rest for equipping the present relief centres or opening the new public health centres) which can be met from 2 lacs 30 thousand rupees to be incurred annually on post-war medical and public health schemes in Poona District.

The proposed scheme will function with an amount of rupees 8 lacs. At present nearly 7 lacs are spent by the Government and the local authorities and only a lac more will have to be provided for from the post-war funds meant for this purpose amounting Rs. 2,30,000.

The scale of pay of 47 Ayurvedic Medical Practitioners may be fixed at Rs. 75 to 150 plus Rs. 25 P.T.A. instead of Rs. 100-10-300. Most of the Ayurvedic Medical Practitioners can be trained to fulfil the functions of medical officers in charge of public health centres. This will result in saving of rupees 6,000 in the present expenditure of the proposed scheme as there are a number of Ayurvedic Medical Practitioners in charge of rural relief centres.

In this scheme 15 members in each centre, i.e., 600 in the district; will be constantly engaged in protecting the health of the Poona District population and reducing morbidity and mortality from preventable diseases. Appreciable benefit can be expected by the district at the end of the 4th year of the working of the scheme.

This scheme is capable of winning the confidence of people and of further expansion and enable us to tackle the complicated problem of the social diseases.

CLINICAL NOTES

Penicillin in a case of Progressive Ascending Paralysis of Landry's Type: BY DR. AHIBHUSAN BERA, L.M.F., L.T.M., Village Jukhia, P. O. Haria, Midnapore:

Patient:—P.B.G., a Hindu male, aged 20 years, gives history of chicken pox about 2 years back. No history of malaria or any specific disease. Mother died of cholera, when he was only 8 years old. Father, apparently in good health, gives history of syphilis; but there are no signs of inherited infection in the patient.

History of present illness:—On 26-10-45 morning, while leaving his bed, the patient felt out of sorts, with some rigidity of neck muscles. Three or four hours later, he got slight head-ache of a dull type, and a sense of pain in the loins. At about 3 p.m., he complained of delay in voidance of urine; and head-ache increased. Pulse rate 60 p.m. No rise of temperature. He was, then, getting homoeopathic treatment. Next day, about 10 a.m., he felt a sense of constriction in the chest, with no other alteration.

On the 28th morning, he felt much better. Bowels moved twice with free micturition. He could yet walk about un-aided. At about 2 p.m., he was reading a book in the sitting position on his bed. After a while, as he tried to get up, he failed to do so, owing to a sense of heaviness and weakness in the left leg.

I was called in at 3 p.m., and found the patient conscious, but somewhat restless and dyspnoeic. His left leg was totally paralysed, and the left arm showed gradual paralysis. There were no sensory troubles, and no loss of sensation in the paralysed limbs. But all reflexes, both superficial and deep, were lost in the affected side. Tongue heavily coated. Eyes congested; but no pupillary changes, both equally reacting to light. The temperature of the sound side was 97.5° F, being a degree higher than that of the other side. Pulse regular, 60 p.m. Respiration short and shallow, 30 p.m. Homoeopathic treatment was still continued, as the guardians of the patient were unwilling to change the line of treatment. At 5 p.m., the upper extremity was completely paralysed. There was burning sensation on the sound side and numbness on the affected side. Deep reflexes of the sound side also were very sluggish. Dyspnoea increased. P: R=58:30.

On 29-10-45 at about 1 a.m., the patient developed cough with frothy expectoration, which became almost incessant towards sun-rise. P: R=80:40. Gradually the patient looked apathetic and his pulse rate increased. The temperature of the affected side was now one degree F. higher than that of the other side, the latter being 97° F. The left half of the chest showed marked diminution of movement, with sinking of ribs and intercostal spaces. Sense of constriction around the chest was very marked. The patient was all along lying on the affected side. Tonsils were much enlarged and throat congested. Voluntary power of micturition and defaecation was lost. Head-ache and rigidity of neck muscles diminished and the condition of the patient became definitely worse.

Blood Report: Poly. 84%, Lympho. 8%, Large Hyaline. 6%, Eosino. 2%, R.B.C. 4,500,000 (millions), W.B.C. 10,000 (thousands). No M.P.

At about 3 p.m., the respiration became sighing in type with occasional Cheyne-Stoke's character. Voice began to fail. And the patient felt a sense of suffocation and impending death. But his consciousness was quite clear. At this stage, the patient came under my treatment; and seeing the hopeless nature of the case, I decided to give a trial to the wonder-drug "Penicillin" (supplied by Messrs. B.W. & Co.).

At first I gave him 1/100 gr. of atropine hypodermically, followed, within 15 minutes, by 15,000 units of Penicillin, dissolved in normal saline, intramuscularly, together with an 1/100 gr. tab. of atropine sulph. by mouth. Since then, Penicillin was repeated every 4 hours in doses of 10,000 units, till a total of 200,000 units was reached, the last injection being given at 7 p.m., on 1-11-45. Only one more injection of atropine 1/100 gr. was given with the 3rd dose of Penicillin, i.e., at 11 p.m., 29-10-45. All sorts of further medication, either internal or external, were withheld, with the idea of testing the value of Penicillin in this disease.

The response was dramatic. Within one hour of the commencement of treatment, improvement was noticed, with diminution of restlessness and dyspnoea. By the next morning, condition of the throat improved and cough disappeared. Towards the evening the paralysed arm gradually regained its motor power. The collapsed chest began to expand and showed some

motility. P: R=84:27. Catheterisation was no longer necessary. By the 5th Nov. the patient could walk with the help of a stick and P: R became normal. Now he was given a course of Beplex Tablets (A.F.D.) t.d. for rapid recuperation. And he was all right within a week.

Points of interest in the case:—(1) No temperature, (2) No sensory disturbances, (3) No pupillary changes, (4) No loss of consciousness, (5) Rapidly developing hemiplegia with early slowing of pulse, (6) Unilateral affection of thoracic muscles, (7) Sphincter-troubles, (8) Sore-throat, (9) Response to Penicillin.

Cibazol in Bacillary Dysentery: BY DR. G. T. KHARE, M.B., B.S., Dhantoli, Nagpur:

I have tried this drug—Cibazol tablets—on a number of cases of Bacillary Dysentery with such gratifying results that I feel that the details of some of these would be of interest to the general practitioner.

1. Female patient, aged about 24 years, was suffering for 2½ months from dysentery. She had 6 injections of Emetine without any result, used to get 9–10 motions per day when she was brought to me. She was pregnant 6½ months. I gave Cibazol one tablet every 4 hours, followed by soda bicarb 2x after ½ hour. 4 tablets per day were given. Her motions became less after 24 hours and she was free from all the symptoms after 5 days. Her stools to the naked eye were greenish in colour with lot of mucous and microscopic examination showed a number of pus cells in each field.

2. Child, aged 6 years, female, was getting number of stools about 80–100 per day for 2 days with mucous and blood and very severe griping just at the time of passing motion. Was getting high fever also for 2 days. On examination I found the child very restless and toxic with dry tongue, temperature 102°F. During examination she had one motion and just after 10 minutes she had another. There was mucous tinged with blood and no faecal matter. I gave her Cibazol 1/3rd tablet with soda bicarb 2.iii made into one powder to be given every 3rd hour with plenty of water. She was given only barley water. After 12 hours her motions became less, about one per hour, temperature also dropped down in the night. She got sleep for about 2 hours at a time in all about 6 hours. In the morning when I examined her she was fresh. There was no temperature. I prescribed the same dose of powder and in 3 days she was completely cured. In this case microscopic examination was not done but the clinical picture of the case left no doubt as to the diagnosis of bacillary dysentery.

3. Child, aged 2 years, female, was brought to me with temperature and dysentery for 2 days, temperature 103°F. Motions every 15 minutes with severe griping as to make her toss about. She was given about ½ tablet with soda bicarb 2.ii made into powder to be given every 3 hours. Her stool report microscopically showed a typical picture of bacillary dysentery. After 24 hours the stools were reduced to about 10 per day and she was completely relieved of all the symptoms in 4 days. She was given plenty of water to drink.

Sulphonamide Anuria: BY DR. T. N. RAI, *Medical Officer, Windham Hospital, Jodhpur:*

Case: Patient, named Abdul Aziz, aged 15 years, Mohamadan, male, admitted to Windham Hospital in surgical ward for osteomyelitis right leg on 29-12-45 at 2 p.m. Sulphonamide 2 tablets t.d.s. given to him from date of admission and was operated. On 9-1-46 he showed signs of pain over back and fullness in the loins and there was complete anuria. Sulphonamide stopped on 10-1-46. Alkaline mixture and plenty of barley water given. Hot water bath, soap water enema and fomentations over loin region given. Bladder was catheterised but there was no urine. On 10-1-46 hot pack and cupping to loins applied but no relief. Intravenous glucose with normal saline (G.N.S.) given but no urine was passed. Pain over back and loin continued. Patient more prostrated and became weak; at 6 p.m. cystoscopy and ureteral catheterization done and catheter tied in. Patient passed about 24 oz. of urine overnight and fair quantity since morning.

Urine sent for complete examination:

Colour	Yellow	Puscells	Nil
Reaction	Alkaline	Epi-cells	Present
Sp. gravity	Quantity less	Crystals	Triple phosphate
Albumin	Present	Casts	Nil
Phosphate	Nil	Bacteria	Nil
Sugar	Nil	Culture	Nil
Red cells	Present	...	...

Pain over loins was much less, general condition was weak. Gradually the symptoms subsided and he began to pass urine normally. Point of interest is that this seems to be a case of sulphonamide anuria.

I am much indebted to our Principal Medical Officer Dr. J. N. Madan, F.R.C.S. (England).

Use of Sulphadiazine during an attack of Influenza: By DR. BASHIR MAHMOOD, *Medical Practitioner, Poonch (Kashmir).*

During the present winter I have been getting cases of influenza. Some of the sulpha drugs in common use were used but the results were very disappointing. Some of the cases were given Sulfanilamide but there was hardly any relief. Sulphapyridine was tried in many cases but there was very little relief.

The disease had by this time broken out in an epidemic form. Then I used Sulphadiazine and the results were as under:—

I treated 160 cases of different forms of influenza. Out of them 128 were cured. Some of them did not report after a day or two otherwise the results would have been more than 80 per cent.

I treated 20 cases of pneumonia who had developed the disease during the attack of influenza. Out of them 16 were cured. Two out of the rest had to be given Sulphathiazole and got cured but the rest of them (two) died—one of the reasons of their death being that they and their attendants were not following my directions properly.

I had four cases of coryza who were getting frequent attacks of it since years and years. Almost all the known remedies including courses of vaccines were given but there was no relief. Then I gave them Sulphadiazine. Out of them one, the most resistant case, got cured in one day. Two more got cured by three days' treatment with the drug but one of them got no relief.

As to the toxic effects of the drug there were none except vomiting in a few cases and temporary anuria in 2 babies. The reason why there were so few toxic effects was that I was giving only 4 tablets daily to adults and comparatively smaller doses to children.

The dose I would recommend for adults is 4 tablets in a day (one tablet every 2 hours). I saw very good results with this dosage than with bigger doses.

SELECTIONS

The Prognosis of Chronic Miliary Tuberculosis in Children; BY R. B. ILLING. (*From the British Journal of Tuberculosis, Jan. 1946.*)

The study of haematogenous tuberculosis in children is of particular interest, for a large proportion of the deaths in primary tuberculosis are due to a bloodstream spread. Thus Richards, reviewing 445 children suffering from primary tuberculosis, or pleural effusions, found that 10 out of 16 deaths were due to miliary tuberculosis or meningitis. On the other hand it is recognised that extensions of the disease by the bloodstream, which are far from fatal, occur not uncommonly in such cases (Ghon); and there is now ample evidence that, even when an extensive dissemination of the disease occurs in this way, the prognosis is not necessarily a hopeless one as was once supposed. However, although many cases of chronic miliary tuberculosis have been published, few writers have commented in more than general terms upon the prognosis or upon the factors which influence it.

By far the most authoritative and comprehensive statement on this subject was made by Hoyle and Vaizey, who reviewed the prognosis of 64 cases, both adults and children. They concluded that their cases fell into three groups. In group one the course was similar to that of acute miliary tuberculosis and death took place in less than six months. In the second group the disease was eventually fatal, but the patients survived for more than six months and remissions lasting up to a year were often present. In both groups death was usually due either to acute tuberculous meningitis or tuberculous toxæmia. The third group contained those cases where the disease became quiescent or arrested. They included in this group only those patients who were observed to be well two years from the last date of symptoms.

In an effort to facilitate the assessment of prognosis in this disease, 21 new cases have been reviewed. They were all children from 1 to 14 years of age, suffering from tuberculosis, who had had a gross haematogenous dissemination of the disease into both lungs but had survived for a minimum period of three

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months from confirmation of the diagnosis by radiographs. Of these cases, 6 were under the writer's care, 5 he was able to observe through the kindness of his colleagues, and the remaining 10 were taken from the records of High Wood Hospital from 1939-1944.

The three-month period mentioned above is a purely arbitrary one. In practice, however, it serves a useful purpose, as survival for as long as this separates such patients quite definitely from those with classical acute miliary tuberculosis. It also serves to bring these cases into line with those of other writers who have used a similar method of selection.

Course of the Miliary Lung Lesions.

Of the 21 cases, 7 showed no definite change in the X-ray appearances while under observation. These 7 were observed for less than six months, and during the time 6 of them died. The other was taken from hospital against advice after two months' observation.

Twelve of the 21 cases showed radiological retrogression and resolution of the lesions. This was a gradual process which could be followed by serial radiography. In 9 of the 12 it progressed until no definite abnormality could be detected in the final pictures, although the normal lung markings were often more pronounced than usual. The resolution took a variable time to accomplish, but it is impossible to say exactly how long, since radiographs had not been taken at the actual commencement of the disease. The period while under observation varied from eight to twelve months before resolution appeared to be complete.

In one case, following a staphylococcal pneumonia, multiple small cavities developed at the left apex. The miliary lesions, after remaining unchanged in appearance for many months, now appear to be coalescing.

The remaining case healed by the less common method of massive calcification of the lesions. The original lesions were larger than is usual and the case is probably one of those described by Armand-Delille as the "lenticular" type. Calcification started after sixteen months of observation and is probably still continuing, three years later.

Course of the Disease.

Of the 21 cases, 8 have died. They lived for 3 months, 3 months, 4 months, 5 months, 5 months, 5½ months, 14 months and 7 years and 9 months respectively.

The first 6 of these cases are best described as subacute miliary tuberculosis. They all died in less than six months. The children were toxæmic and developed a hectic temperature. As the disease progressed the temperature and the blood sedimentation rate tended to rise, while there was a corresponding steady deterioration in their general condition from start to finish. Indeed, they differed from acute miliary tuberculosis mainly in a longer period of survival.

The seventh case was exceptional. At her first examination, she was found to have a large, thin-walled cavity in the apex of her left lung besides a diffuse miliary mottling in both lungs. Seven months

later a further cavity developed in her right apex and tubercle bacilli were found in her sputum, although the miliary lesions appeared to have partially resolved. Although these lesions continued to resolve, the cavities increased in size and further cavities developed on the left side. Two months after induction of a left artificial pneumothorax she had a left spontaneous pneumothorax; and she died a month later from that with a concurrent broncho-pleural fistula. By that time radiographs showed no signs of any remaining miliary disease, a remarkable happening considering the fatal course.

The eighth case has such particular interest that it deserves more detailed record.

Case History.—A girl, aged 12, whose father was known to have pulmonary tuberculosis with a positive sputum, was admitted with a pyrexia of sudden onset which had been present for three months. She had a slight cough, a very small amount of sputum, and looked pale and under-nourished. There were no abnormal physical signs in her chest, but a radiograph showed dense, miliary mottling in all zones of both lung fields with the density greatest towards the apices. The first sputum examination showed scanty tubercle bacilli. No further bacilli were found in twenty-one subsequent examinations. The Mantoux test was positive (1: 10,000).

Her temperature remained irregular (99-100·6°F.) for the first four months after admission. It then settled for four months, only to rise again when she developed a sternal abscess. Four months later her miliary lesions had cleared completely and her temperature had settled once more. During the next fourteen months she had three exacerbations of temperature, each lasting a fortnight, and at the end of that time she had developed spinal caries. She also had albumen in her urine, although no tubercle bacilli could be found.

She was transferred to an orthopaedic hospital and treated on a spinal frame for three years. At the end of that time she had bilateral renal tuberculosis. She spent more than eighteen months in two subsequent hospitals, but her general condition showed a steady deterioration. She was finally discharged to her home still deteriorating and she died eleven months later from a terminal tuberculous meningitis (seven years and nine months after the clinical onset of her disease).

Thirteen of the cases are still alive. They have all survived for more than six months: 11 have survived for more than 1 year, 6 for more than 2 years and 4 for more than 4 years—that is to say, for 4 years, 4 years, 5½ years, and 11½ years respectively.

TABLE I.

8. Deaths After—	3 mths.	4 mths.	5-6 mths.	14 mths.	7 yrs.	9 mths.
	2	1	3	1	1	1

13. Survivors Observed for—	6-12 mths.	1-2 yrs.	2-4 yrs.	4-6 yrs.	11 yrs. +
	2	5	2	3	1

Age Groups of 21 Cases (Deaths in Parenthesis).	0-2 yrs.	2-5 yrs.	5-10 yrs.	10-15 yrs.	Total.
	4 (1)	4 (1)	6 (1)	7 (5)	21 (8)

Age Groups of 32 Other Cases from the Literature.	0-2 yrs.	2-5 yrs.	5-10 yrs.	10-15 yrs.	Total.
	6 (4)	3 (1)	15 (7)	8 (5)	32 (17)

Factors which might affect the Prognosis.

In an endeavour to investigate the influence, if any, which age might have on this condition, the 21 cases were divided into four age groups. Thirty-two further cases of this disease in children were taken from the literature and similarly arranged for comparison (see Table I). Although nothing definite can be deduced from such a small number of cases, these two groups show that recovery occurs at any of the ages under consideration and that the mortality

appears to be greater rather than less among the older children (10-15 years).

Over the same 53 cases the sex incidence was almost exactly equal (27 boys and 26 girls), and of this total 15 boys and 14 girls were still alive when last observed. There was no evidence therefore, that the sex of a child has any influence on, the prognosis.

It would be reasonable to suppose that any factor which tended to increase the mass of the bloodstream invasion would worsen the prognosis. Close contact with a case of open tuberculosis would be one such hypothetical factor. Of the 21 cases in the present series, 8 had a definite history of close contact with tuberculous relatives. Only 2 of these 8 died, so that here at any rate close contact had no such evil effect upon the outlook.

These eight cases are also interesting in that they were probably due to the human type of bacillus. It has been suggested (Hoyle and Vaizey) that the bovine type of bacillus may be the predominant organism for the chronic military tuberculosis occurring in childhood, since Blacklock has shown that the human type of infection is more virulent where generalization of the disease in children is concerned. Unfortunately it is extremely difficult to isolate the organism from cases of military disease and no definite evidence one way or the other has yet been presented.

TABLE II.—ASSOCIATED TUBERCULOUS LESIONS
(Occurred in 16 of the 21 Cases.)

<i>Chest.</i>			
Enlarged glands	..	..	17 cases
Hilar and paratracheal	..	..	11 cases
Hilar	..	..	4 "
Paratracheal	..	..	2 "
Primary focus	..	..	2 "
Pleural effusion	..	..	5 "
Atelectasis	..	..	2 "
Post-primary cavities	..	..	2 "
Staphylococcal pneumonia	..	..	1 case
Chronic phthisis	..	..	1 "
<i>Other Organs.</i>			
Cervical gland	..	..	4 cases
Tuberculosis of joints or bone	..	..	3 "
Urogenital tuberculosis	..	..	1 case
Tuberculides of skin	..	..	2 cases
Lupus	..	..	1 case
Interstitial keratitis	..	..	1 "
Phlyctenular conjunctivitis	..	..	3 cases

Associated Tuberculosis Lesions.

Seventeen cases had enlargement of glands in the chest. In 13 of these the paratracheal glands were involved. In 2 cases a primary focus was also present.

Five cases had pleural effusions and in 1 of these the effusion was bilateral. Four of these 5 died. In 2 of them the effusion was a terminal event, but in 2 others it had probably been present from the commencement of the disease. The case with the bilateral effusion is alive and improving, having been followed for eight months. The prognosis of such cases was considered to be grave by Fernandes, who described 6 cases, 5 of which developed military tuberculosis and died. This sequence is by no means invariable where children are concerned, as shown by the 69 cases of pleural effusion in children analysed by Richards. Four of these had bilateral effusions and

all recovered. It is possible, however, that the relatively benign pleural effusions of childhood, even when bilateral, are not usually due to a bloodstream spread, and it is this, when it occurs, which worsens the prognosis.

Two cases had atelectasis. One of these had a right upper lobe segmental collapse which completely re-expanded in four months. The second had a massive atelectasis involving the whole of the left lung, as was confirmed by tomographs, and still present more than three years later. The military lesions in the other lung appeared to resolve a year ago.

Two cases developed post-primary cavities. The first had small cavities at the right apex and a positive sputum when first examined. The cavities, therefore, may have preceded her military disease. The other one, however, already described, developed cavities while under observation. There is no doubt, therefore, that they did in fact develop from actual areas of military disease.

In one case already mentioned, following a staphylococcal pneumonia, multiple small cavities developed at the left apex and the sputum contained staphylococci during the following months. The child is still ill eighteen months after the military spread and the lesions appear to be coalescing.

One case, now followed for nearly twelve years, has developed an extremely chronic form of phthisis. Infiltration began to appear seven years after the commencement of her disease and then began to spread slowly. At the same time, three nodules of lupus developed on her face. The lung condition has remained stationary, however, during the past two years. The lupus nodules are still present.

Four cases had enlarged cervical glands. One of these had recurrent enlargement of these glands continuing over four years. She healed her military lesions by calcification and also deposited calcium in many of the healing glands. Three and a half years after the start of the disease she developed a retro-pharyngeal abscess from breaking down glands and this is still slowly subsiding.

Three cases developed focal tuberculous lesions in other parts of the body. These included: a sternal abscess, spinal caries, bilateral tuberculous kidneys, tuberculous ankle, tuberculous synovitis of wrist and tuberculous synovitis of knee. Two had tuberculides of the skin.

Among other associated conditions there was 1 case of interstitial keratitis and 3 of phlyctenular conjunctivitis.

Discussion

No boundary can be drawn between acute and chronic military tuberculosis and every gradation between the most acute and the most chronic type of case can occur in children as well as adults. In general, where chronic military tuberculosis is concerned, the intensity and extent of the original bloodstream spread, estimated clinically by considering the child's appearance, temperature chart, pulse chart, weight chart, and the blood sedimentation rate, is the best guide to the immediate prognosis.

With a sudden onset and considerable toxæmia an early death is the likeliest outcome, for it is the toxæmia or a meningitis which kills during the first few months. Improvement, if it occurs, is likely to be temporary. At the other extreme, the "silent" apyrexial type of the disease, often with insignificant symptoms and perhaps discovered only when the child is radiographed as a contact, has a comparatively good prognosis and tends to progress uneventfully to complete cure. Five cases in the present series came into this category.

The intermediate type of case is thus the most difficult to assess. The one described in detail above, who died seven years and nine months after the onset of her disease, provides a good example. In spite of the initial toxæmia, the child improved and the military lesions gradually disappeared. But the danger of fresh hæmatogenous disease was shown again and again by a sternal abscess, spinal caries and renal tuberculosis in succession, and finally by a fatal meningitis.

It is impossible to say, with certainty, that the danger of a fresh exacerbation is over in any case of chronic military disease. However, Hoyle and Vaizey, after a careful study of 14 cases which had survived for more than six months, but which eventually died having shown at least a temporary improvement, concluded that remissions were only likely to be permanent if they lasted for more than two years. No exception to this conclusion was found among the cases in the present series.

The most likely situation for the focus which gives rise to the initial hæmatogenous disease is a paratracheal gland—the last lymph obstacle between the primary focus and the systemic veins. During the initial hæmatogenous dissemination of organisms a proportion of bacilli probably filter through the network of lung capillaries and, entering the main circulation, pass to any part of the body. Munro suggests that, when focal tuberculous lesions arise later in other organs, they are due to an exacerbation of tubercles formed during this first military spread. Fish, however, showed histologically that recurrent spread to the lung does occur, and it is very probable that, at least in some cases, focal tuberculosis elsewhere in the body is caused by a chronic dribbling focus which gives rise to small, recurring, hæmatogenous spreads.

It is interesting to note, therefore, that Fish described a widening of the upper mediastinum in the X-rays of 8 out of his 10 cases, and in 3 of these he found at necropsy that the widening was due to caseating paratracheal glands. Enlarged glands were noted in the chest radiographs in 17 of the 21 cases in the present series, and in 13 of these high paratracheal glands were enlarged. In one case a paratracheal gland was observed to be greatly enlarged six weeks before the military disease occurred. There is, therefore, presumptive evidence that the paratracheal glands may often be the site of the focus responsible for infecting the bloodstream. The point of note that emerges here is that enlarged, high, paratracheal glands in children with primary tuberculosis should probably be regarded as a danger signal and as a sign for careful treatment. Whether military disease has

already appeared or not the child should be regarded as particularly liable to it until such time as these glands can be seen to have returned to their normal size.

Report on Cholera studies in Calcutta

Value of Chemotherapy in the Treatment of Cholera and use of Blood Plasma in Cholera Collapse.

EPIDEMIOLOGY UNIT NO. 50¹

(From Naval Medical Bulletin, December 1945)

With a view toward improving upon the methods of cholera therapy, a controlled experiment on the treatment of cholera in a highly endemic or epidemic area of India was undertaken. After a preliminary survey, arrangements were made with the Government of India, the School of Tropical Medicine, Calcutta, and the Campbell Hospital for Infectious Diseases, Calcutta, to carry out such an investigation in conjunction with work they were doing in this field. A brief summary of the study, taken from the report of Epidemiology Unit No. 50, is presented here.

Plans were made to investigate approximately 400 cases of cholera under several methods of therapy. The patients were taken in rotation as they were admitted to the hospital and assigned to the following groups according to the treatment given: (A) sulfaquanidine; (B) control; (C) sulfadiazine; (D) penicillin; and (E) sulfadiazine and penicillin combined. This random sampling method was followed throughout the experiment.

All patients, including the controls, received supportive treatment in the form of intravenous hypertonic and normal saline solution and oral stimulants as indicated to offset dehydration, emaciation, and circulatory failure.

Group A received supportive treatment and in addition 3 gm. of sulfaquanidine in white paper packets, every 4 hours for 3 days and twice daily for the next 3 days, until a total of approximately 72 gm. had been given.

Group B (control) received supportive treatment and in addition an inert substance (3 gm. of calcium carbonate in brown paper packets every 4 hours for 3 days) to simulate the powders given the other groups (thereby eliminating any doubts between patients as to the type of treatment they were receiving).

Group C was given supportive treatment and in addition sulfadiazine in yellow paper packets in the following dosage: One gm. every 4 hours for the first day and 2 gm. every 4 hours for the following 2 days, making a total of 30 gm. for the 3 days.

Group D received supportive treatment and penicillin dissolved in normal saline solution, administered intramuscularly. Adults were given an initial dose of 100,000 units, and 25,000 units every 4 hours thereafter for a total of 200,000 units. In some cases, when the patient remained toxic, the treatment was extended until a total of three or four hundred thousand units had been given. Children under 10

¹Commander Julius M. Amberson (MC) U.S.N.R. in charge.

years of age received 25,000 units for all doses including the initial one.

Group E received the combined treatments of groups C and D.

The majority of patients treated were drawn from the poor, uneducated classes of Calcutta. A total of 421 patients was treated, 49 of whom were subsequently determined not to have had cholera, leaving 372 cases of clinical cholera for evaluation in the study.

The noncholera cases were fairly evenly distributed among the various groups, which were divided as follows:

Groups	Total Cases	Cholera Cases
A Sulfaguanidine	118	104
B Control	62	52
C Sulfadiazine	116	101
D Penicillin	62	57
E Penicillin and sulfadiazine	63	58

Patients were admitted to groups A and C for two weeks longer than to the other groups in order to secure additional data for analysis. They presented various degrees of symptoms and physical signs which for purposes of classification were grouped into three types as follows:

1. *Ambulatory patients or simple diarrhoea cases.*—These patients evidenced good circulation, and experienced no vomiting; bowel movements were effortless and few in number; there was slight dehydration only, and no suppression of urine. One saline infusion would usually suffice and the sulfonamide drugs assured early recovery.

2. *Typical or severe cholera.*—This type may be subdivided into two groups.

The first is characterized by severe purging and vomiting from 15 to 20 times a day. The urine is suppressed; muscle cramps, dehydration, general prostration, sunken face with an anxious expression, "pinched" nose, and weak and husky voice are all evident. The eyes are sunken, suffused, and listless, and the pulse is feeble and rapid. The patient is extremely thirsty and begs for water. Abdominal pain is rarely present and when seen, other enteric pathogens must be suspected.

The second type is the classic cholera shock or collapse case. This is the vasomotor type in which all the above symptoms are present and in addition there is circulatory collapse. The patient is acutely ill and usually cannot respond to questions, or if he can, it is with the weakest and smallest husky voice conceivable. The pulse is imperceptible, and the heart sounds are practically inaudible. The skin is moist with a cool sweat; the face is sunken, and the eyes are sunken, suffused and listless. The skin of the hands and feet are shrunken to a degree that ridges and valleys are formed all over these parts; the lips and finger nails have a peculiar dusky hue in the brown-skinned Indian; the nose is "pinched" at the alae; and the patient is restless and often will be gasping for air.

Upon attempts to administer intravenous fluids, the veins are found to be collapsed and difficult to enter. When entered, the dark tarry blood will rapidly clot in the needle if there is any delay in administration of the intravenous fluid. The blood pressure of these patients is impossible to obtain. After they are brought out of shock, the blood pressure is sometimes as low as 80/40. The urine is suppressed, and the temperature is subnormal. Diarrhoea and vomiting are profuse, painless, and effortless.

3. *Dry cholera.*—This is a very rare type of cholera with extreme toxemia and practically no purging or vomiting. There is an apparent ileus; the bowels are laden with rice-water stools, and death shortly ensues. These cases are often misdiagnosed as cases of poisoning rather than cholera. Autopsy reveals rice-water stools in the small intestine, clots of blood in the right side of the heart, hyperemic kidneys, tarry dark blood, dark thick muscles, and fluid in the pericardium. Culturing of the intestinal contents yields the cholera vibrio.

The true cholera vibrios dealt with in the investigation of these cases were the subtypes, Inaba and Ogawa. The Ogawa strain was by far the more common, with 154 agglutinable cases as compared with 5 agglutinable Inaba cases.

It became apparent during the investigation that the usefulness of the therapeutic agents could not be fully established in the acutely ill patients because of the rapid progression into a state of shock, collapse, or death before the drug could be effective in combating the infection.

The salines administered were sufficient to offset dehydration, but the patients would lapse into shock and die of circulatory collapse. These patients were cyanotic; the pulse was imperceptible, and the heart sounds were inaudible. They were vomiting much watery fluid and effortlessly passing large quantities of fluid from the bowel. The blood flowed with difficulty in the veins and frequent plugging of the intravenous saline needle was experienced.

Use of Blood Plasma

Facilities for accurate biochemic study of the body fluids retained and lost were not available; however it was deemed advisable to use blood plasma as a supportive measure to combat shock and prevent collapse. The results with plasma were impressive. The circulatory response was marked, the heart sounds became strong, and cyanosis disappeared quickly. The moribund patients who, prior to the use of blood plasma would have died, revived and began calling in Hindi, "paanee, paanee" (water water).

The introduction of the plasma factor into a group had lowered the death rate of that particular group so as to give undue credit to the value of the drug used. It was believed that a much more accurate picture could be obtained by reclassifying all treated cases and placing them into three groups as follows:

(1) Patients treated with plasma in addition to chemotherapy.

(2) Patients receiving chemotherapy alone, i.e., penicillin, sulfadiazine, sulfaguanidine, or penicillin and sulfadiazine combined.

(3) A control group consisting of all patients who had received no treatment, in sufficient treatment or supportive treatment only.

The number of deaths and survivals in each group was then determined and the results are given below. Three deaths which occurred are listed in the "lived" category because they had definitely recovered from cholera but died later of other causes. (One of these patients died from biliary blockage and heart failure 8 days after admission, another from pernicious anemia 6 days after admission, and the last one died of an embolism 6 days after admission).

Results in all cases			
Outcome	Plasma plus chemotherapy	Chemotherapy alone	Control
Lived	35	274	37
Died	0	3	23
Death rate	0%	1.1%	38.3%

The value of chemotherapy is clearly apparent. The administration of plasma in addition to chemotherapy completely eliminates the small percentage of deaths which occurs with chemotherapy alone.

The dramatic effect of plasma is still more evident if the frank shock or collapse cases are segregated and tabulated. There were in all 78 severely ill patient who came under this classification.

Results in shock or collapse cases			
Outcome	Plasma plus chemotherapy	Chemotherapy alone	Control
Lived	35	16	1
Died	0	3	23
Death rate	0%	15.8%	95.8%

The table clearly indicates that death is almost a certainty in cholera patients admitted in a state of collapse unless proper treatment is immediately instituted.

Chemotherapy with supportive treatment will effectively lower the expected death rate in cholera; however the addition of adequate amounts of blood plasma to the therapy of cholera will definitely assure recovery.

Prothrombin Liver Function Test: HOLLIS K. RUSSELL, Commander (MC) U.S.N.R. (From *Naval Medical Bulletin*, December 1945).

Accuracy in distinguishing between functional disturbances of the liver and organic liver disease has been difficult by clinical methods in common use. In 1941 Andrus advocated the use of vitamin K parenterally, with prothrombin estimation before and after the injection, as a method of measuring liver function. In his series of 40 cases this test proved to be extremely accurate in differentiating jaundice of intrahepatic origin from that of extrahepatic origin. This communication deals with the results of this test in 32 cases of liver disease.

In each case the degree of jaundice at the time of the prothrombin liver function test was established by performing an icterus index on fasting serum. Following the initial prothrombin estimation, 2 mg. of 2-methyl-1-4-naphthoquinone was administered intramuscularly. At the expiration of 48 hours a subsequent prothrombin estimation was performed. The method used for estimating prothrombin was a modification of Quick's method, using Russell viper venom as the thromboplastic substance.

Twenty-three of the cases were also studied by the bromsulfalein test.

In all instances the initial prothrombin level was decreased below normal. For purposes of analysis a normal response was indicated when the plasma prothrombin level increased 10 per cent or more 48 hours following the parenteral administration of 2-methyl-1-4-naphthoquinone. The table reveals the initial prothrombin time, the prothrombin time 48 hours after the parenteral injection, the type of response, the icterus index at the time the functional test was performed, the results of the bromsulfalein test, and the final clinical or anatomic diagnosis.

Case number	Initial prothrombin time (seconds)	Prothrombin time following vitamin K (seconds)	Pro-thrombin response	Icterus index	Bromsulfalein test	Clinical (1) or anatomic (2) diagnosis
1	55	30	Normal	61	Negative	Infectious hepatitis (1)
2	61	41	"	72	"	"
3	43	30	"	40	"	"
4	71	49	"	159	"	"
5	53	45	"	55	"	"
6	48	38	"	56	"	"
7	38	32	"	42	"	"
8	59	39	"	54	"	"
9	50	37	"	66	"	"
10	42	38	"	96	"	"
11	38	28	"	71	"	"
12	46	32	"	81	"	"
13	37	29	"	60	"	"
14	41	29	"	93	"	"
15	51	49	Abnormal	143	90 percent dye ret	"
16	79	75	"	133	55 percent dye ret	"
17	127	72	Normal	96	"	Icterus gravis (1)
18	50	37	"	44	Negative	Chr. cholecystitis with lithiasis (1)
19	67	45	"	196	"	Stone in ampulla (1)
20	28	20	"	48	Negative	Infectious mononucleosis (1)
21	72	44	"	10	"	Gastrocolic fistula (carcinoma) (2)
22	86	92	Abnormal	77	"	Acute necrosis—liver (sulfadiazine) (2)
23	91	110	"	156	"	Suppurative cholangitis with liver abscesses (2)
24	160	171	"	60	Negative	Toxic necrosis liver (sulfanilamide) (2)
25	132	128	"	72	"	Post-vaccinal liver necrosis (2)
26	72	87	"	162	"	Toxic necrosis liver; sulfanilamide in abdomen (2)
27	80	77	"	31	"	Eclampsia (2)
28	72	70	"	12	"	Methyl alcohol poisoning with focal liver necrosis (2)
29	32	29	"	18	10 percent dye ret	Cirrhosis (1)
30	35	32	"	15	12 percent dye ret	Cirrhosis (1)
31	37	35	"	21	21 percent dye ret	Cirrhosis (1)
32	66	60	"	212	"	Cholelithiasis with cholangitis and liver abscesses (2)
	104	99	"	235	"	"

In 14 of 16 cases of infectious hepatitis the response of the prothrombin liver function test was normal. These cases were mild, with an average hospital stay of 18 days, followed by complete recovery and return to duty. The bromsulfalein test in these cases revealed no dye retention. In two instances of infectious hepatitis the prothrombin liver function test was abnormal and the bromsulfalein test revealed 55 per cent and 90 per cent dye retention respectively. Both of these patients had protracted septic courses which necessitated their return to the States for further study and disposition.

Five patients with extrahepatic jaundice gave normal prothrombin liver function results, and 13 with organic intrahepatic disease gave abnormal results.

In two instances the final diagnosis was established at operation and in nine instances at autopsy. Surgical intervention in one case established a diagnosis of choledocholithiasis with cholangitis. It was impossible to remove all of the stones because they extended into the hepatic ducts. After a protracted illness the patient developed liver abscesses, and another prothrombin liver function test after his course became septic revealed evidence of more extensive liver disease, the initial prothrombin level being lower and the response negligible. In all types of liver disease the test was valuable in estimating the degree of liver damage and was therefore helpful in prognosis.

Conclusion

1. The prothrombin liver function test is a simple and accurate means of distinguishing between jaundice due to extrahepatic conditions and that due to severe intrahepatic disease.

2. It serves to indicate the degree of liver damage and hence is of value in estimating prognosis.

Typhoid and Paratyphoid Fever: Experience with 84 Cases: BY C. H. HODGSON, M.D. (*From the "Proceedings of the Staff Meetings of the Mayo Clinic," July 25, 1945.*)

Until 1939, I presume, my experience with typhoid fever paralleled that of the average physician in this country. I had seen perhaps half a dozen cases. Since that time I have had the opportunity of studying eighty-four cases of typhoid and paratyphoid fever on my own medical service at the British-American Hospital in Lima, Peru.

In seventy-one of the eighty-four cases in my group the diagnosis was typhoid fever, in ten paratyphoid fever, in two a mixed infection of typhoid and paratyphoid, and in one the type was not classified. With each new patient came new problems, and a disease which once had seemed relatively simple little by little came to seem more and more complex.

Besides the group of eighty-four cases, I encountered at least another twenty-five to thirty in which strong clinical evidence of typhoid fever was found but in which positive laboratory proof of the disease was lacking. In many other cases which I studied, typhoid had to be considered seriously before it was eliminated. Malta fever, virus pneumonia, malaria and dysentery were the most common illnesses con-

fusing the picture. Even in this country, where typhoid fever is so rare, I believe it should be considered in any case of acute fever of unexplained origin when the fever lasts more than one week, especially if the leukocyte count is normal or low. I say this because I have seen two cases of typhoid fever in Minnesota, in the fourth week of the illness in which typhoid had not been considered.

Characteristically, the leukocyte count is low in cases of typhoid fever. Even in the presence of complications, such as pneumonia or perforation, the count may be low. The leukocyte count, therefore, cannot always be depended on to indicate that some serious complication has arisen.

From this point onward I shall consider mainly the observations in the seventy-one cases of typhoid fever with only a brief paragraph on paratyphoid fever.

Typhoid Fever

Effect of vaccination.—One of the most interesting features of this group was the large number of patients who had been vaccinated previously. Twelve of the 71 patients who had pure typhoid fever (17 p.c.) had had three injections of typhoid vaccine within three years of the onset of the disease. On the average the severity of the disease was only a little less great than in the non-vaccinated group, and the duration of the fever averaged only six days less. One of the vaccinated patients died. He was just at the end of the protective period of three years. This incidence (17 per cent.) of vaccinated persons among the total group of patients who had typhoid fever brings up several interesting questions. It is known that vaccine does not give absolute protection. How much protection it gives is not clear from my studies, but the high percentage of 17 per cent. indicates the need for a review of the whole problem of vaccination. The patients, themselves, seldom knew what type of vaccine they had received other than that it was for typhoid. It is probable that not all the vaccine was effective, but the patients thought they were protected. Many persons who have been vaccinated believe that they are under absolute protection and, therefore, disregard the ordinary precautions regarding food and water. Persons who receive typhoid vaccine should be cautioned that they must take no more chances than persons who are not vaccinated. I do not mean to infer from these remarks that vaccine has no value. At least it offers some protection, but I do wish to point out that it does not give absolute protection.

Complications.—Complications in typhoid fever are frequent and troublesome. In thirty-six (51 per cent.) of my seventy-one cases of typhoid fever, complications of clinical importance, although they were not necessarily severe or dangerous, developed. The complications make typhoid the treacherous disease that it is. In order to discover them early, attention must be paid to every complaint of the patient, regardless of how minor it may seem. Some of the most severe complications are ushered in with relatively minor discomfort.

I shall skip rather hurriedly through some of the more notable complications which I encountered in the group of patients with typhoid fever. Involve-

ment of the nervous system occurred as follows: in twelve cases there was severe delirium; in two, definite but temporary psychosis; and in two, peripheral neuritis and demonstrable neurologic changes. The respiratory system was involved rather frequently: five patients had lobar pneumonia; two had large pleural effusions; and several had severe bronchitis. Cough severe enough to be distressing was mentioned in about half of the cases. With regard to cardiac complications, I do not believe they are as frequent as generally supposed. Four of my patients had cardiac weakness of clinical importance. Even the most severely ill seemed to have excellent cardiac reserve, although severe toxicity and a long illness put a terrific strain on the heart. One patient who had mitral endocarditis went through a rather severe course of typhoid fever without an appreciable effect on the heart. It was of particular interest to me that no permanent cardiac damage was observed in any of the patients who recovered. One patient who died had pericarditis with effusion, a contributory cause of death. This condition was apparently secondary to lobar pneumonia.

Haemorrhage is the most common gastro-intestinal complication of typhoid fever. Sixteen of my patients had gross bleeding. In six it was mild, and in ten it was of moderate or severe degree. The tendency to haemorrhage is not always related to the severity of the illness, but is entirely unpredictable. The physician must be ready at all times to handle this dangerous situation. Two of my patients had intestinal perforation with peritonitis, one of whom had four distinct perforations with the development of two faecal fistulas. Five others had hepatitis with jaundice. Two had definite acute cholecystitis; the acute cholecystitis became chronic in one of these cases. Although I will not take time for details, there is no doubt in my mind that in this one case the typhoid fever was directly responsible for the chronic cholecystitis.

Arthritis, which is a distressing and serious complication, occurred in five of the patients who had typhoid fever. One patient had purulent arthritis of the hip, which was operated on two years after the acute illness and typhoid bacilli (*Eberthella typhosa*) were recovered from the pus at the time of operation. Generally, the arthritis involved more than one joint. One of these five patients had severe spondylitis with partial destruction of the vertebrae. In a sixth case a case of mixed infection of typhoid and paratyphoid, severe spondylitis involved the first and second lumbar vertebrae with partial destruction of the vertebral bodies. In these two cases of spondylitis the pain, although persistent, was never severe. These cases of spondylitis give another example of how necessary it is to pay attention to every complaint, regardless of how minimal it may seem. I had occasion to see other patients aside from this group who had destructive arthritis due to typhoid. Certainly, the joint complications are among the worst in this disease.

Abscesses are another troublesome occurrence. They may be practically anywhere in the body. Abscesses, some of them large, painful and deep, and others rather superficial, developed in 21 per cent. of my seventy-one cases of typhoid fever.

Typhoid during pregnancy usually results in abortion or miscarriage. Two patients were pregnant. One of them aborted and one went on to a normal delivery.

After this brief review of the large number of severe complications in such a small series of cases, it is hard for one not to have a great deal of respect for this disease. I know of no illness which demands the patience or the versatility of the physician that typhoid fever does. I would take issue with any statement that typhoid is largely a nursing problem. The physician must be able to diagnose and treat complications in any field of internal medicine if he wishes success. He must be ready for an emergency at any time, and he must be able to interpret the patient's symptoms although they appear of little importance. One of the most amazing observations is the ability of some patients to survive in the face of an apparently hopeless illness. They will survive the most dire complications after a prolonged illness of extreme toxicity. They may even remain moribund for several days and yet live to enjoy good health again. The physician, therefore, must never lose hope nor give up treatment.

Mortality.—There were five deaths (6 per cent.) in the entire series of eighty-four cases of typhoid and paratyphoid fever. Four deaths occurred in cases of typhoid fever and one from an unclassified type of fever of this group. The deaths in the typhoid group alone were 5.6 per cent. The figures on mortality rate for typhoid fever vary greatly, but generally are given as around 10 per cent. It is higher among children and the aged. The causes of death of my five patients were as follows: (1) toxæmia and previous dehydration; (2) intestinal perforation, peritonitis and intestinal haemorrhage (death occurred twelve hours after operation); (3) bilateral lobar pneumonia, pericarditis with effusion and complete intestinal paralysis; and (4) four intestinal perforations, generalized peritonitis, subphrenic abscesses, two faecal fistulas and prolonged massive intestinal haemorrhages. In the fifth case, the one in which the type of disease was unclassified, the patient died of massive intestinal haemorrhage.

Treatment.—There is nothing new in the specific treatment of typhoid fever. Sulphaquanidine has been discarded because it neither affects the course of the disease nor reverses to negative a positive stool culture. It has no effect on *Eberthella typhosa*.

General measures for management of typhoid are relatively simple but important. A nutritious, high vitamin, low residue, palatable diet is essential. No longer does the old starvation liquid diet have a place. Supplemental administration of vitamins is indicated. It is gratifying to carry a patient through a severe toxæmic course of typhoid fever and have him maintain normal weight and healthy appearance in spite of it all. At times the maintenance of a good appearance and weight is difficult as anorexia is common, but persistence will generally win out. Patients with typhoid fever need 3 to 4 liters of liquid daily. They lose large quantities during the profuse sweating. They quickly tire of fruit juices, and thus milk drinks, non-alcoholic beer, ginger-ale and other soft drinks must be used in order to give them some variety. Large amounts of salt are lost in the sweat-

ing, and it is advisable to add about two teaspoons of salt (4 gm.) to the daily diet. Hydrotherapy adds to the comfort of the patient at times, but is not always necessary.

Delirium demands no more than careful watching in addition to general measures. Delirious patients are not generally troublesome, but lie quietly in bed talking to themselves and picking at the bed clothes. Rarely are restraints necessary. Only one of my patients became maniacal. Peripheral neuritis is apparently less common than before the vitamin era, and spontaneous recovery generally follows after several months. Bronchitis with severe cough is common and disturbing. The usual measures are employed. Pneumonia may be due to the typhoid bacillus, but frequently is due to pneumococci or other organisms. Penicillin and the sulphonamides are, of course, indicated. When the heart needs some help, stimulants and digitalis may be necessary. Gastrointestinal haemorrhage demands transfusion if at all severe. All typhoid patients, regardless of the severity of the illness, should be grouped and a donor made available, as one cannot predict when this dangerous complication may arise. Transfusion often is indicated for secondary anaemia or severe prolonged toxicity as well as following haemorrhage. Perforation requires immediate operation, of course. Although the mortality rate from perforation is high, it is often remarked how relatively well typhoid patients stand operations. Operation, then, is worthy of trial in these cases, because death will ensue unless the perforation is closed. In the treatment of meteorism one new drug of definite value is prostigmine. Meteorism is a very distressing complication, and is often a precursor to perforation or haemorrhage. Distention is well controlled in a large percentage of cases by the use of prostigmine if it is given early and no perforation has occurred.

Pyuria may exist without symptoms referable to the bladder or kidney and responds to urinary antisepsis depending on the causative organism. Febrile albuminuria needs no specific treatment. Many other disturbances, such as abscess, pain in the joints, sudamina, stomatitis, oesophagitis, hepatitis and so forth need careful attention. It is amazing how well patients may tolerate their severe chills and rapid rise and fall in temperature and yet become greatly discouraged and uncomfortable from some minor complication, such as a small boil, oesophagitis or constipation.

Paratyphoid Fever

Paratyphoid fever is indistinguishable clinically from typhoid and, though generally less severe, it may be just as malignant. The mortality rate is lower. All the complications of typhoid may occur in paratyphoid fever, though less frequently as a rule. However, in six of my ten cases of paratyphoid fever, complications occurred. Abortion occurred in one case. One patient had stomatitis and phlebitis; one had stomatitis, oesophagitis and peripheral neuritis with neurologic changes; one had severe stomatitis; one had bilateral pneumonia with pericardial effusion and acute transitory arthritis of the shoulder and cervical portion of the spinal column; still another had delirium, became semicomatose and had hepatitis with jaundice. From this brief survey it is obvious that

paratyphoid deserves more attention than I am giving it in this paper.

Comment.

Two points should be brought out in particular: (1) that typhoid fever is an exceedingly complex and difficult illness to handle, and (2) that it involves diagnosis and treatment in every branch of internal medicine, thereby taxing the versatility of the internist. He must be able not only to diagnose and treat the complications, but fully as important, he must know the value of leaving the patient alone. This is one good rule in the treatment of typhoid fever: leave the patient alone unless he definitely needs some assistance. Although there is as yet no specific treatment, I believe that useful adjuncts to treatment are now available which will bring about a definite reduction in mortality. The availability of blood transfusions and good parenteral solutions; the proper use of the sulphonamides and penicillin in treatment of secondary complications, such as pneumonia and peritonitis; prostigmine for meteorism; improved surgical methods and potent vitamins perhaps all will contribute to a lower mortality if properly used.

(Courtesy: G. P. Australia, December 1945.)

The Use of D.D.T. in Medical and Health problems: BY H. S. GEAR, M.D., D.P.H. (From *The South African Medical Association Journal*, August 25, 1945.)

The following notes on the use of D.D.T. in medical and health problems have been written in the hope that they may assist other in their field work with this remarkable insecticide. The information is based on field work undertaken by the British Army Hygiene Organization, with which I had the privilege to serve, and on literature, originating mainly from the British War Office, to which I was given access. This literature, though no longer on the secret list, has not yet been published. Both the British and American original work on D.D.T. of military necessity, falls under this category, so that, unfortunately, due and full acknowledgment to most contributors is impossible at present.

A. The Nature of D.D.T.

The pure synthetic insecticide is para-para-dichlorodiphenyl-trichlorethane, which is a white granular substance. It is very usefully soluble in many organic solvents, mineral and vegetable oils, such as benzene, acetone, methyl salicylate, ether, fuel and kerosene oils, etc. It is a stable compound. Its insecticidal effect is achieved by contact. It is neither fumigant nor repellent. An important practical point is that at present most products labelled as D.D.T. include compounds related to para-para D.D.T. as impurities. These effect insecticidal power to a greater or lesser extent.

Administrative action requiring standards for commercial products is therefore obviously an early need. Similarly, research work will be of very restricted value unless the degree of purity is known and stated in reports. Emulsions with all their advantages have been developed but are not yet generally available.

B. Toxicity.

Buxton gives a refreshing declaration on the assessment of toxicological reports. Some of these refer to toxic effects on mammals when absorbed under experimental conditions, especially in oily solutions. However, the normal contact of hundreds of thousands of soldiers with D.D.T. impregnated clothing, of thousands of civilians dusted with D.D.T., and of thousands of manufacturing and distribution workers has had no harmful results.

Buxton states: "My conclusion, given without reserve and in simple words, is that D.D.T., used as an insecticide, is quite safe".

C. Application of D.D.T. as an Insecticide.

In the British Army, D.D.T. has already been used in the field:—

(a) against lice both in the form of impregnated clothing, as in the 21st Army Group, and in the form of individual dusting of the clothing of labourers in the Middle East Force;

(b) against mosquitoes in the form of the adulticidal spray distributed by the usual means in the Middle East and Italy, and, in addition, by aeroplane spraying in Burma and other areas in the Far East; and

(c) against mosquitoes, flies, sandflies, fleas, cockroaches and bugs in the form of "residual spray" effects on walls and ceilings of dwellings, and, in some instances, in the form of dust applied to harbourages.

This practical trial has amply confirmed the laboratory and field experimental work that D.D.T. is the most generally effective insecticide for dealing with insects of medical importance yet produced. However, indiscriminate splashing about of D.D.T. solutions or emulsions, or vague dusting of D.D.T. powders especially by untrained individuals, to deal with their own insect pests is neither efficient or economical. It is an insecticide which, like any other, must be applied intelligently, taking cognisance of its properties as well as the habits of insect pests to secure the best results. Above all, continuous research work of the field type is required, not only to extend the basic general knowledge of the phenomenal qualities of D.D.T., but to evolve methods of application most suitable to local conditions.

(i) Lice

Before D.D.T. was available, Colonel Richmond, in charge of the Military Hygiene organization in the Middle East, had concluded, early in 1943, that the simplest and most effective method of delousing the hundreds of thousands of labourers in the Army there would be by a dusting procedure using a "gun". As such labourers usually retained and wore one set of clothing continuously, day and night, until they fell off, dusting such clothing with an insecticide, it was argued, might have some persistent effect. It was decided to try the method, and, recalling the simplicity of the cyanogas dusting pump, used by the Union Health Department against rodents, a sample was obtained and flown to Cairo. It was fairly effective in trial, but a new idea of using a modified hand dusting gun then emerged and was subsequently adopted as the simplest, cheapest and yet effective method. The insecticide used at that stage was the British Army Anti-lice powder, known as A L 63. The American Typhus Commission, then in Cairo, was

approached, and it assisted and eventually undertook most of the experimental work. Members of the Commission used this method with D.D.T. at Naples, where they participated in the final stages of dealing with a typhus outbreak.

The method now in use and applicable, say, to dealing with Native populations, especially in rural districts, is as follows: A powder of 10 per cent. D.D.T. in neutral talc or pyrophyllite is obtained. Considerable technical difficulties exist in grinding D.D.T. and securing even mixture with its diluent. The distribution of the 10 per cent powder is either by a hand or motor-operated dust "gun." One simple hand-gun used in the Middle East was similar in general outline and construction to a "Flit" gun. Its container and mechanism were adjusted for discharging powder and not liquid. Another "gun," which was used, was the agricultural hand gun as employed for dust-spraying of trees and plants. The "Hudson-Admiral" model is a type.

Where large numbers of individuals have to be treated, a "battery of such guns" can be operated by an air compressor. The ordinary compressor to be found in garages and as used for spraying fruit is all that is required.

In applying dust by this method, using hand or power "guns," an important advantage is that the individuals pass along in a queue and are treated within a few seconds each without any removal of clothing. Approximately 1½–2 ozs. of the dust per person is used, being blown in a fixed routine into the hat, up each arm, between each layer of clothing, down the neck, in front and back, between each layer of clothing, and down the lower garments front and back similarly. Teams of ordinary labourers can quickly be trained so as to deal with thousands a day provided a fixed routine is adopted. Blankets and other kit can be systematically dusted simultaneously to the personal treatment so that all lice are killed.

One little practical "tip" is that the projecting end of the discharge or outlet tube should be covered with adhesive tape. This will protect the arms and body of the treated individuals from being scratched.

Apart from this mass method, self-dusting, for small detached groups can be arranged by the issue of "pepper pots," with which each individual dusts his own clothing and kit.

Such methods of dusting produce an effect lasting approximately three weeks, so that hatching lice are also ultimately killed.

(ii) Mosquitoes

D. D. T. has been used against both adult and larval forms of Anophelines. It is emerging as one of the most powerful control measures of malaria.

Against larval forms it is generally used as 5 per cent in oil. It is applied in the various ways already familiar in anti-malarial work, viz., spraying as a film over the affected water, or by drip can, etc. It is to be noted that, apart from any action the oily vehicle may itself have on anopheline or other larvae, the D.D.T. is extremely toxic. The practical benefit lies in the consequently much reduced quantities of oil necessary to spread over mosquito-breeding waters. The reduction may be as much as twenty times, though enough oily solution is necessary to ensure the spread of a film over the area in question. Calcul-

ations of quantities may be based on a broad average of about one gallon of 5 per cent. D.D.T. in oil per acre, though naturally the usual local factors of vegetation, etc., are to be taken into account.

In both Italy and Burma the 5 per cent. D.D.T. in oil has been sprayed from aeroplanes. Presumably certain difficult swampy terrain will be most effectively dealt with by this method, if general mosquito control over the whole area is essential.

Against adults, both the usual spraying method and the residual spray effect have been developed. The spray is achieved by the ordinary methods, of which the hand-pump is the most generally used. In large barracks, institutions, etc., there is, of course, a place for power-operated pumps. The spray to destroy adults varies in composition, but a common one contains pyrethrum 0.05 per cent and D.D.T., 0.3 per cent. D.D.T. in kerosene. The pyrethrins have value in this formula for their "knock-down" effect.

The more remarkable development of D.D.T. against adult mosquitoes lies in the so-called residual spray application. This depends upon the extraordinary toxic effect of D.D.T. deposited in a film on surfaces on which insects alight. For weeks after application insects are poisoned. The film is secured by spraying enough of a 5 per cent kerosene solution to deposit approximately 100 mgms. of D.D.T. per square foot.

Appliances to spray surfaces such as walls, ceilings, eaves, etc., have varied. Hand "guns" motor operated pumps, and knapsack sprayers have all been used. Much adjustment of apparatus, such as size of nozzle, distance of nozzle from surface, speed of pumping, is required to secure the film desired. Roughly, this will be obtained if the spray visibly moistens the surface without actually causing liquid to "run".

As used in Italy as reported by Brigadier George MacDonald, Consultant Malariologist to the Central Mediterranean Force, the use of D.D.T. as a residual insecticide has been remarkable. Anopheline prevalence was reduced to negligible numbers in the areas treated for weeks afterwards.

(iii) Domestic and other flies

The spray given above for the use against adult mosquitoes is also effective against flies.

However, the remarkable instrument D.D.T. offers in dealing with the fly problem lies in its use as a residual insecticide. Films are deposited on walls and other resting-places such as garbage receptacles, etc., favoured by flies in the way described above against mosquitoes. Food should be covered during the proceedings in such places as kitchens, etc. Flies coming into contact with such films, even weeks after their deposition, in trials reported from various parts of the world, have been killed. Most interesting special applications to cow stables and even to the animals themselves of D.D.T. residual insecticide have also been reported. Buxton, too, indicates the probable part to be played by this method in dealing with Glossina.

(iv) Other Arthropods

Of other insects of medical importance, it is already known that the bug is susceptible to D.D.T. Here D.D.T.'s effect is, as on other insects, due to contact and not to any fumigant powder. D.D.T. is

therefore to be applied as a dust or a residual film to bug harbourages. Its part in the deverminization of slums and the maintenance of housing vermin-free should therefore not be overlooked.

An important insect is the flea, because of its casual relationship to plague. It, too, is extremely susceptible to D.D.T. applied to its haunts and breeding-places as a dust or residual film. Its value against ticks has apparently still to be investigated. (Courtesy: G. P. Australia, December 15, 1945).

Heredity vs. Disease: BY C. D. DARLINGTON, D.Sc., F.R.S. (From Science, November 1945).

No two individuals are alike. We are quite used to that idea as applied to man. In fact, it expresses what we mean by individuals. We are less used to the idea, however, that in nature this rule holds for almost all plants and animals. No two mice and no two mayweeds in nature are quite the same. It often happens, to be sure, that plants multiply by runners or bulbs. And when they multiply in this way the products are all the same so that one individual looks like many. But it is only in man's hands that this multiplication of individuals seriously alters the case.

When they are healthy the differences between individuals may be hard to see. But when the mouse or the mayweed is attacked by disease invisible differences come to light. One mouse or one mayweed is more resistant, another more susceptible, to the germ or mildew or insect that attacks it. And the difference is hereditary. In plants this is easily shown by the differences between standard cultivated varieties in resistance to fungus and insect pests. Sometimes this resistance is due to a specific reaction, an over-susceptibility, of the victim. And sometimes, particularly with plants that are being attacked by insects, tougher growth, such as is provided by an extra set of chromosomes, is the means of resistance.

Hereditary differences in the resistance of animals are confused by their own special method of reaction to disease and by very great differences in susceptibility to such a disease as diphtheria during development. The animal has a defence mechanism which enables it to throw off a light attack and which remains with it to repel a second attack. It acquires immunity. There are, however, hereditary differences underlying this defence mechanism itself. They are revealed by the well-known and characteristic differences in susceptibility to disease amongst different races of poultry, cattle and man. British breeds of livestock fail in different degrees to compete with native breeds in the tropics, as has now been realised at some expense. All breeds are fitted by heredity to their own country or even distinct and part of their fitness consists in resistance to disease.

In man we have an especially convenient and rigorous way of showing the cause of these differences. There are identical twins which are really the same individual broken into two at the first cell division. Amongst these twins, even when separated in their lives, remarkable agree-

ment is found in the incidence of disease wherever the immediate cause is universal. Thus with tuberculosis, infection is universal but a dangerous attack sporadic. Identical twins are often attacked within a few months of one another. And they are often attacked even in the same part of the same lung. Cancer is not usually due to infection at all but to a kind of internal mutation to which individuals differ in liability. As many as 36 out of 38 cases of cancer in identical twins showed symptoms in both of the twins—and often within a few months of one another. Thus the differences in resistance to tuberculosis and in liability to cancer are hereditary.

Now, wherever there are hereditary differences affecting survival, selection must alter the character of the population. We must therefore suppose that, when a great pandemic, like the plagues that ravaged Europe between 1664 and 1720, wipes out a large part of the population, not only is the surviving population less likely to be attacked by the same disease owing to direct immunisation, but also the survivors' children by selection are, on the whole, less susceptible. The whole race is altered. It is altered or *adapted*, as we say, to meet the danger it has faced and may have to face again.

Human Diseases

The human race itself, as well as crops and cattle, is continually by selection discovering new methods of defence. The results you can see very well when a species is split in two groups which neither mate nor mingle, as mankind was split before the discovery of America. Each half had its own diseases and was separately fitted to deal with them and with them only. When the two halves were rejoined their diseases were added together. Each half suffered. In his ship Columbus brought back from the New World at least one disease, syphilis, which swept Europe, Asia and Africa with a virulence which only many generations of selection for resistance have checked. In the same way, when the South Sea Islands were opened up to trade with us, the usually mild European complaint of measles ravaged those little isolated communities which had never had the opportunity of acquiring resistance by selection and killed off as many as a quarter in one year. The small isolated group suffers from new contact with a large one because it has previously been so well protected. That is one reason, and the main reason, why primitive peoples always suffer from contact with what we call civilisation.

It is on this simple Darwinian principle of the selection of the fittest that a great deal of modern plant and animal breeding has been based. Wheats have been bred with the hereditary character of resisting the rust disease. Likewise potatoes which resist blight or wart disease and apples which resist the woolly aphis. It was only when we had done all this that we ran up against a snag. Amongst the millions of rust fungi which had been living on our wheat fields were a few which knew how to attack our resistant wheat. These few had the whole field to themselves and quickly replaced their weaker brethren. Evidently the rusts were

individuals also. No two of them were alike and in breeding tougher wheat we had also been breeding tougher and more effective rusts.

The same kind of warfare is going on all the time in nature. The microbe or the insect is continually by mutation and selection discovering, so to speak, new methods of attack. Bacteria themselves suffer from diseases. They are attacked by still smaller disease organisms, the viruses, or bacteriophages, discovered in 1915. In a culture of bacteria which is being attacked in this way we can get a bird's-eye view of the whole battle. One stroke of mutation by which the bacterium becomes immune to the virus is followed by a counter-stroke when the virus changes to a form capable of attacking the changed bacterium. And so the struggle goes on. Adaptation and counter-adaptation succeed one another in the laboratory culture just as in the wide world.

Man has used this device of setting a still smaller pest on to the larger. Striking victories have been won by getting a red spider to eat down the prickly-pear in Australia and by collecting parasites which will destroy aphids. This weapon, however, will not meet all cases. Of more general use is the chemical killer.

Since the introduction of Bordeaux mixture to kill the blight of the grape vine, the use of insecticides, fungicides and bactericides have spread over the whole world and new types appear every year. Their use is a standard part of the cultivation of most fruit and many arable crops in advanced countries. But even this weapon is liable to break in our hands. Cyanide fumigation and arsenate spraying have been used against scale-insects in lemon groves and codling moths in apple orchards with powerful effects—at least for three or four years. But then something new happened. The parasite seemed to have become resistant to the effects of the poison. New races of parasite had been bred by the resistant survivors which no longer succumbed to the chemical attack.

Every new drug or poison, of course, sweeps all before it. Sulphonamides at first proved fatal to many bacteria, even to the hitherto unconquered *Gonococcus*. But after two years' success new races of *Gonococcus* appeared which resisted the drugs and left us as badly off as ever. A little while ago a compound was invented which killed a mould damaging fabric. Its successful application for a couple of years resulted in the appearance of a new mould which lived on the compound that was meant to destroy it. Again, penicillin has marvellous effects on innumerable enemies of mankind. But those bacteria which are not entirely killed by penicillin leave survivors whose progeny resist the drug and multiply in spite of it. When the bacterial world has recovered from the shock of penicillin it will fight back. We must be prepared for a set-back.

How are we to cope with this situation? In man and animals we already know one method of dealing with bacteria and viruses, the method of prophylactic vaccination or inoculation invented by the Turks, improved by Jenner and enormously developed by Pasteur. The method depends on

preparing the defence before the attack is made. The potential victim is given a model attack which enables his blood to manufacture "antibodies" which will put the invader—virus or bacterium—out of action before it has gained a foothold. The strategy works well where the invader is constant. But if the invader is variable his variation enables him to get through with a part of his forces intact. This is probably the trouble with certain virus diseases such as the common cold and influenza.

The remedy then is clear. We must not seek to select, or even produce, the perfect plant and then trust to our static defences to protect it. We must at once set about replacing it by another and yet another kind. We must restore seed production and we must restore diversity to our crops.

There are many ways of doing this. In potatoes and bananas it is being done by crossing with the wild species from which our cultivated plants were long ago derived. In sugarcane it is being done by providing a regular succession of new varieties as each old one goes down. In maize it is being done by regularly crossing two inbred strains and growing only the hybrid as a crop. In raspberries it is being done by raising each plant from hybrid seed like the maize and replacing the plant by a new seedling after only a few years instead of waiting for the inevitable disaster before doing anything. In animals it is being done by crossing locally adapted races with improved but non-adapted European stocks.

In all these practices we see a sharp change of outlook. In place of the curative methods of human treatment which are necessary for man because he cannot be experimentally bred and which have until now been thought appropriate and sufficient for crops and stocks, we are altering the crops and stocks themselves. In place of cure we have genetic prevention. In place of the older medicine we have a more profound biology. Indeed, we are now reaping the harvest, the long neglected harvest, of Darwinism. It is a kind of Darwinism that would have surprised Darwin. Not least it would have surprised him in showing that the application of his theories of survival was necessary to the survival of agriculture.

MEDICAL RESEARCH IN INDIA

(Continued from February, 1946, Issue Page 45)

Leprosy enquiry at the School of Tropical Medicine, Calcutta.

Work has been done on several different lines. Cases of leprosy are divided into two groups, neural and lepromatous, and the clinical features, prognosis, etc., in these two groups are now well known and clearly defined. The neural cases show good prognosis and the lepromatous cases a relatively poor one. The clinical studies under this enquiry have been mainly concerned with detailed study of the relatively small number of cases which cannot be classified as either neural or lepromatous, and in which accurate prognosis is difficult. The report gives details of this study and stresses the value of the improved form of the lepromin test in classification and prognosis. Attempts to prepare from the leprosy bacilli a substance which will give specific leprosy tests have not been successful, the test at present being of value in prognosis and not in diagnosis. Attempts

to prepare a reacting substance of similar properties from acidfast bacilli other than the leprosy bacillus are recorded but success has not been attained. The specific nature of the substance isolated by other workers from the urine of bacteriologically positive cases has been investigated; the work completely failed to confirm the presence of any specific reacting substance.

Therapeutic studies have included a study of the use of iodised hydriocarpus oil instead of the creosoted hydriocarpus oil which is generally used, the creosote being no longer available.

Sulphapyridine (M & B 693) which has shown an inhibitory effect on the rat leprosy bacillus in the test tube was tested in rats with rat leprosy and was found to have no influence on the disease.

Epidemiological studies included a thorough leprosy re-survey of the area under the Leprosy Investigation Centre, Bankura. The re-survey showed little difference from the findings of the survey in 1937. There is no rapid increase in this area, one of the most highly endemic areas of India. Several thorough surveys of small selected areas in different parts of India have been carried out by workers under the Indian Council of the B. E. L. R. A. (British Empire Leprosy Research Association) in order to study regional variations in leprosy.

Leprosy enquiry at the Lady Willingdon Leprosy Sanatorium, Chingleput, Madras.

Studies of the epidemiology of leprosy with a view to preventive work have been carried out in certain selected villages in North Arcot and elsewhere in the Madras Presidency. The factors influencing the spread of leprosy were closely studied. One factor of importance which is illustrated both in South Arcot and in the above villages is that leprosy is frequently introduced in the first instance as a result of close marriage relationship between a heavily infected village and one in which the incidence is low or non-existent. The mere proximity of a village to one in which there is a heavy incidence has no influence on the spread of leprosy in the less affected village. The incidence of leprosy in a group of villages, all within a radius of five miles, varied from nil to 124 per thousand. The village with the highest incidence (124 lepers per 1,000) has a village three furlongs away with no leprosy. Another village with an incidence of leprosy of 43.8 per 1,000, has a village less than 30 yards away with no leprosy, although the inhabitants of the latter village work in the village with leprosy. This work carried out in these villages stresses the fact that the greatest factor in introduction and maintenance of leprosy is contact with open cases. Proximity of an infected village, poor economic conditions, or predisposing diseases seem to play little or no part in the spread of leprosy.

Clinical studies have been concerned with the correlation of the clinical signs with the changes in the skin and other tissues produced by the leprosy bacilli. Therapeutic experiments on the trial of new remedies have so far given inconclusive results. Studies to indicate more clearly the best dosage of hydriocarpus remedies showed that a combination of intradermal and subcutaneous injections appeared to be the best. There seemed to be no advantage in giving a very high dosage. Studies of the Wassermann test in leprosy and its response to treatment indicate that the leprosy itself and not syphilis was frequently the cause of the positive Wassermann and Kahn test.

Plague.

Plague researches at the Haffkine Institute, Bombay.

The value of sulphathiazole and sulphadiazine (belonging to the sulphonamide group of drugs) was assessed in a trial carried out at Poona. Cases of bubonic plague treated with sulphathiazole had a mortality of 21.3 per cent, cases treated with sulphadiazine a mortality of 12.3 per cent whereas control cases—given the usual hospital treatment, i.e., iodine injected into the blood—had a mortality of 53.6 per cent. The results of the treatment in septicaemic cases was even more striking; the mortality in sulphathiazole series was 37.5 per cent, in sulphadiazine series 20.9 per cent and in the controls 91.0 per cent. No serious ill effects were encountered in cases treated with either of the two drugs (this is a very real advance in the treatment of this much dreaded disease).

The other line of research at the Haffkine Institute was the development of a new plague vaccine. This consists of a vaccine prepared in a new broth medium. The protective power (in animal experiments) of this vaccine was twice as great as the original Haffkine vaccine and slightly more than agar vaccine. Its toxicity was low and keeping properties better than the phenol preserved agar vaccine.

Plague enquiry in the Salem District, Madras.

The enquiry studied the prevailing rodents and their fleas contributing to the endemicity of bubonic plague. The "flea index" for different species of rat fleas was worked out. A study of rodent nests was made and the fleas in them identified and in this way the preferential environmental conditions favouring the numerical prevalence of the respective fleas established. In addition to this rodent and flea survey, vigorous cyanogas fumigation was carried out in all the villages in the experimental area. There was noticeable reduction in the incidence of plague in spite of the somewhat restricted application of cyanogas due to restricted supplies. Five hundred and sixty four cases were treated with sulphathiazole and allied groups of drugs. Of these, 194 cases were treated with sulphathiazole with a mortality of 29 per cent.

Pharmacology.

Indigenous drugs enquiry at the School of Tropical Medicine, Calcutta.

A miscellaneous group of 10 indigenous drugs were tested for their active principles and their properties recorded. Of them two were of particular value and interest, *Daemia extensa*, a plant known as 'chagabanti' in Bengal and a reputed drug in the indigenous system was found to contain a substance which has the properties of raising blood pressure and contracting the uterus of animals. The other drug that has been studied extensively is *Kaempferia serpentina*, one of the active principles of which has the opposite effect to the above drug. The active principles have been isolated—the blood pressure lowering principle is an alkaloid and the hypnotic (sleep producing) principle is contained in the resin. A study of the amount of the resin in this plant growing in different parts of India was made and the resin content was found to vary between 1.14 to 1.8 per cent. In addition five drugs claimed to be anti-malaria remedies were tried in malaria cases. None of these was of any definite value.

Indigenous drugs enquiry at the Drug Research Laboratory, Jammu, Kashmir.

The chemistry and pharmacological action of a number of indigenous drugs have been recorded. The effect of drying pyrethrum under different conditions was studied. The highest yield of pyrethrum was from flowers dried partly in the sun and partly in the shade. A number of essential-oil bearing plants growing wild in Kashmir State were examined for their essential-oil content. Other work included the preparation for the press of the book on the survey of medicinal and poisonous plants of India. Indian medicinal plants have been grouped under the following 4 categories: (a) Medicinal plants used in the western pharmacopoeias and their substitutes growing in India. (b) Plants used in western medicine and recognized in the extra pharmacopoeias. (c) Important plants used in indigenous medicine. (d) Plants with alleged medicinal properties.

From the vast data that has been gathered from herbaria in India and through extensive work in the field, the exact distribution for groups (a) and (b) is being worked out. The work under (a) has been practically completed and is now being got ready for publication in form of a monograph entitled "Distribution of the British Pharmacopoeial Drugs of vegetable origin and their substitutes growing in India with exact localities of actual collection". A number of substitutes have been described for drugs not available in India and for those which grow scarcely in a state of nature. The exact localities of those plants which are found in India as well as of their substitutes have been given.

Pharmacological enquiry at the Haffkine Institute, Bombay.

Three new synthetic anti-malarial drugs, (belonging to the sulphonamide group of drugs), were investigated in rhesus monkeys injected with *Plasmodium Knowlesi*. All the three drugs showed anti-malarial property but in all three this property was inferior to that of sulphathiazole administered similarly and in comparable doses. Experiments in immunity in monkey malaria were also carried out. By replacing to a large extent (about 80 per cent) the blood of an immune large size monkey with the blood of an ordinary monkey susceptible to monkey malaria and then immediately infecting this large sized monkey with malaria parasites, a typical fatal malaria attack was produced. This experiment showed that the immunity in the large size monkey was "cellular" and not "humoral". This enquiry was closed in October 1944.

Filariasis enquiry at the School of Tropical Medicine, Calcutta.

Field studies were carried out in Bengal and in the Central Provinces of the incidence of filarial infection and of the vector

mosquito. Most filarial infections were due to *Wuchereria bancrofti* but in one area *W. malayi* was found. Studies of the periodicity of the microfilaria have been carried out and several different drugs (including some of the popular local indigenous remedies and the modern synthetic compounds) have been tested in treatment of filarial infection, all with unsatisfactory or inconclusive results.

Enquiry on filterable viruses at the King Institute, Guindy.

Studies were made regarding the relative value of small-pox vaccine grown on chick membrane and the usual calf lymph small-pox vaccine in the prevention of small-pox. In the absence of epidemics of small-pox in the area, however, assessment has not been possible. Other matters studied included the production of agglutination of red cells by chick membrane vaccinia virus; attempts to adapt a mouse strain of virus to eggs which failed; attempts to isolate the virus of anterior poliomyelitis and of infective hepatitis.

Kala-azar enquiry at the Pasteur Institute, Shillong.

Experiments were directed to infect white mice with sandflies (the transmitting agent of Kala-azar) fed on Kala-azar cases. Seven experiments were performed and in one of the seven animals infection took place and the infecting organism of Kala-azar was demonstrated in the spleen of the mouse. Other studies included a study of the behaviour of the sandfly. The longevity of sandflies maintained under different conditions of blood feeds, temperature and humidity was studied. These observations show that there is no hibernation in the strict sense but with the lowering of temperature, the development stages are prolonged to double the time taken in the incubator (body temperature), thus explaining the small catches of adults in the cold months. For this work 24,141 sandflies were bred in the laboratory. The reaction of the gut of these minute (about 1/12 inch in length) hairy humped-back flies was estimated by a delicate method and found to be between 7.2 and 7.6, i.e., slightly towards the alkaline side.

Enquiry on typhus at the Haffkine Institute, Bombay.

The work of this enquiry has been mainly centred on the study of XK typhus (often referred to as scrub typhus, mite typhus, or tsutsugamushi typhus and the type of typhus fever which is of importance in the tropics). In collaboration with the military authorities strains of XK typhus organisms were isolated using white mouse for the isolation and maintenance of these strains. Duck eggs were used for the cultivation of the causative organisms. With the strains isolated batches of mice were infected and representative compounds (synthesised in the Haffkine Institute) of the sulphonamide group of drugs tried in the treatment of the experimental infection. None of the drugs tested had any therapeutic value. An analysis of symptoms of typhus cases occurring in Bombay was made. Of the 63 cases, 47 were among Indians and 16 among Europeans. The average duration of fever among the Indians was 13.5 days and among the Europeans 15.5 days. Rash was present in 13 cases, 10 being Indians and 3 Europeans. There was only one death in the series, giving a mortality of 1.6 per cent. One strain of typhus, X19 in type (the classical epidemic typhus) was isolated in Bombay. The relation between this strain and similar strains from the U.S.A. was examined by animal experiments. The typhus strain of Bombay is much less virulent than the American strain—a finding in accordance with the clinical observation that typhus in Bombay is a mild disease. During this work improvements in the methods of diagnosis have been worked out and a method of rapid bed-side diagnosis introduced. Typhus in Kashmir was studied. The positive Weil-Felix reactions (a test for the diagnosis of typhus) in pregnancy and cancer reported in recent medical literature was not confirmed by tests carried out in Bombay.

Enquiry into vaccine lymph (small-pox vaccine) in the Department of Public Health, Bombay.

The methods of reducing the bacterial content in small-pox calf lymph vaccine were examined. Various purifying agents in different concentrations were used. The results obtained show that the usual method of purifying by using glycerine and chloroforming give the best results. Further work is in progress. Data was also collected as to the average duration of immunity after successful vaccination with small-pox vaccine lymph, with less than 5 years interval between vaccinations all individuals show full or partial immunity, with intervals of 6 to 10 years. 76.9 per cent are immune or partially immune and 23.1 per cent are susceptible (that is, have no immunity to small-pox infection).

REVIEWS

Silver Jubilee Number of the National Medical College, Bombay, 1946, Price Re. 1.

This is a delightful little volume of 48 pages, containing an article on "The Idea and its Evolution" by the Founder of the College, Dr. D. D. Sathaye, F.R.F.P.S. He started this College in 1920 in response to the National movement of boycott of the British sponsored schools and colleges. Those who mocked at his idea became subsequently his admirers. The one particular feature of this institution, so long as he was its principal, was its Ayurvedic Department in which the students were taught, as a part of the allopathic medical course, the fundamentals of the theory and practice of Ayurveda. But we are not sure whether the college has continued to teach Ayurveda since Dr. Sathaye's resignation in 1925. If it has discontinued it is highly regrettable. We have always maintained in these columns that the only way of bridging the gulf between the traditional medicine of our country and the Modern Medicine is by introducing the study of Ayurveda as an integral part of the University medical curricula.

Souvenir of the 12th Bengal Provincial Medical Licentiate's Conference, Howrah.

We heartily congratulate the Reception Committee of this Conference in having been able to publish a Souvenir which, in our opinion, is the best of its kind published during 1945 by any medical organisation. It contains all information about Howrah.

Campbell Medical School Reunion, 1946, Presidential Address by Dr. Kalidas Prasanna Sen.

Dr. Kali Prasanna makes a strong plea for a more practical and less academic type of medical education in his brilliant presidential address.

As one of its old students, he is very glad that Campbell Medical School is going to be affiliated to the University but he thinks there is absolutely no need to change the name from Campbell Medical School to Campbell Medical College. And he is right.

LETTERS TO THE EDITOR

THE GLARING OMISSIONS IN THE 'BORE COMMITTEE'S REPORT.

While I pay ungrudging tribute to the members of this Committee, whose endeavours have culminated in a comprehensive survey of the existing conditions of health and of health organisations and an equally comprehensive recommendations which would, if acted upon, ultimately restore national health, I must however frankly point out certain glaring omissions, which, had the Committee faced them squarely and tackled them boldly would have resulted in more acceptable and workable recommendations. Let me take up these omissions seriatim.

(1) The Report mentions in the earlier chapters that there are at present, 73,000 beds in British Indian Provinces. It has recommended an addition of 109,725 in the first fifth year and 279,820 beds at the end of the tenth year of planning. It would have been more enlightening if the Committee has shown some data regarding the beds available and beds actually occupied in rural and urban areas separately. So far as my experience in the Punjab goes, I find that more work and more beds in full, or even overflow, occupation characterise the rural hospitals and dispensaries than their urban counterparts where a number of beds always remain vacant, notwithstanding larger staff and better

equipment in these hospitals. I think, therefore, that unless and until the causes that have led to this position are full gone into and remedied, mere increase in bed accommodation would not solve the problem.

(2) The Report mentions that for the working of the first two five-year plans, 15,000 and 29,000 doctors are required. For this purpose it has suggested the creation of more and more medical colleges. Theoretically this problem seems to be simple. But really it is not so; because, to my mind, it is not so much a question of more and more doctors but it is fundamentally a question of well-treated and properly remunerated doctors, who, because they are well treated, would be a sufficient inspiration to impell young men to take to medical education. We have now about 47,500 medical men. Out of whom nearly 30,000 are medical licentiates. It is well known that they have been shabbily treated in every respect with no justification whatsoever. Today none of them are desirous or anxious to enter any kind of paid service because of such treatment. There is no guarantee that this fate would not overtake "the basic doctor" suggested to be created in the medical colleges. It would have therefore been more pointed and satisfactory had this Committee laid down, that the existing licentiates would be given the same status and emoluments as the "basic doctor" in the newly suggested health organisations and that the scale of pay should be such as would attract medical men to its new Services. There is no reason why this Committee should not have openly recommended that the medical licentiates should be treated in the Service in the same way as the 'basic doctor', since the licentiates also have put in 4 or 4½ years course of medical education—practically the same duration of training recommended for the 'basic doctor', namely 4 years of academic study and one year of internship.

(3) The Report has also made no reference to the immediate propriety of recognition of the licentiates, by the Indian Medical Council, even in terms of the 1940 resolution of this council itself. I am sure that the members of this committee are aware of the services of the medical licentiates in the establishment and upkeep of national health. Yet they have made no positive mention of this fact—the fact, namely, that practically all the dispensaries and hospitals in the rural and semi urban areas are held in charge by the Licentiates and that they have thus been, for the last 100 years, messengers of hope and relief to the suffering rural humanity in this country. If the members of the Committee had been true to facts or had appreciated these facts in proper perspective, they would have been lead to strongly differ from the authorities for the non-recognition of the licentiates by the Medical Council of India and to recommend a forthwith recognition on the sheer merit of the case. It is difficult to say whether this omission has been deliberate and intentional or otherwise. In any case, the omission is too glaringly unjust and invidious.

These three cardinal omissions may not seem very important to some. But if they ponder a

and find out the secret of success of any revolutionary planning of National Health, they come to know that proper treatment of medical and health personnel is as important as the training itself; secondly that restoration of proper treatment of existing medical and health personnel the only sure premium against the recurrence invidious treatment in the personnel of the proposed new health services.

MANOHARLAL KAPUR,
President, A.I.M.L.A.

SOCIAL FUNCTIONS

Farewell Address to Lieut. General Sir James Bennet Hance, K.C.I.E., M.D., B.Ch. (Camb.) M.R.C.S., F.R.C.S., (Edin), O.B.E., K.H.S., I.M.S., Director-General, Indian Medical Service, given by The All-India Medical Licentiates' Association on the evening of 5th March 1946, the full text of which is given below:

Sir,

On behalf of the All-India Medical Licentiates' Association which represents about 40,000 medical licentiates of this country, we bid you a sincere and hearty farewell on the eve of your relinquishing the present charge and of taking over the charge of the office of the Medical Adviser to the Secretary of State for India. We also bid Lady Hance an equally sincere and hearty farewell, who, along with you, has been taking a lively interest in the welfare of the medical licentiates of our country.

Ours, we assure you, Sir, is no formal farewell. During the last two years, yourself and our Association have been so intimately thrown together that we feel we are parting from a sincere friend, who always evinced keen interest in the problems specific to the Licentiates as a class, and wished them success in the achievement of their objective. In spite of the multiplicity of affairs in which your high office engaged you, your door was always open to us and your broad smile and willingness to help us, coupled with your understanding of the problems we had and the tact and outstanding ability with which you guided us through our difficulties, always had our sincerest admiration. By your convincing advocacy, you have induced the authorities concerned to make the licentiates eligible for the specialist and the graded specialist cadre of the I.A.M.C., and to obtain a reduced course of training for those I.A.M.C. licentiate officers who desire to obtain the M.B.B.S. degree. As a measure of post-war re-organisation in the Civil Medical Services in the provinces, you have particularly in the last conference of the Administrative Medical Officers done your best to do justice to the cause of the medical licentiates of this country. Your courteous dealing, sympathetic heart, and helping attitude have endeared you to one and all of our class and we acknowledge with deepest gratitude all you did to promote the cause so dear to us.

In your message to the I.A.M.C. Special Number of the Indian Medical Journal you said: "The licentiates should not only endeavour to retain what has been achieved but by a continued service of a high order so establish their position that when the time for post-war reconstruction comes, their claims to take their rightful place in the comity of medical men in the country cannot be resisted".

You know well, Sir, that our Association has been endeavouring towards this end for the last 40 years. Although the future of the licentiates is still in the formative stage, yet we shall continue to strive, with undiminished hopes of success, to achieve the chief objective of our Association, namely, abolition of compartmentalism in medical education, medical service and medical registration, and establishment of real equality between all the members of the profession.

We do hope, Sir, that from your new office as Medical Adviser to the Secretary of State for India, you would continue to feel for and help us in the achievement of this objective which as you will agree, is the only way for professional unity and advancement in this country. Public and professional opinion is already in our favour. We are confident that it will not be too long

before the growing strength of this opinion would wipe out the lingering prejudices against the much delayed re-orientation of men and values in the medical profession of this country.

Once again, Sir, we acknowledge with gratitude what you have done for the medical licentiates, and the opportunities you gave to the executives of the Association for the expression of their views on their behalf.

While bidding Lady Hance and you a hearty farewell, we take this opportunity to sincerely welcome your successor, Major General Hay. We assure him that our Association would continue to render him the same cooperation which it has offered to his predecessors in office.

We remain,
Sir,
Yours truly,
MANOHARLAL KAPUR,
President,

for Members of the Standing Committee,
All-India Medical Licentiates' Association.

Lt.-General Sir James Bennet Hance, D.G., I.M.S., replied to the Welcome Address as follows:—

Rai Sahib Dr. Manoharlal Kapur and Members of the Standing Committee of the All-India Medical Licentiates' Association.

First of all, I should like, if you and she will permit me, to associate myself with the tribute you have paid to my wife. I know better than most how constant her interest has been in everything connected with the medical profession in this country and especially with the licentiate body and how much she values the friendships which we have formed with members of that class.

On my own behalf I would thank you very warmly for the very kind words in which you have alluded to such assistance as I have been able to give during my service to the licentiates and to your Association. I can in all sincerity claim that I have been a constant friend of the licentiate class during my service in this country; and I have had very good reason to be so, for I owe much to the members of this class and have learnt much from them. I have served with them in war and peace, and shall always preserve the happiest memories of the loyalty and devotion to duty in the field of those with whom I served in war, and of loyal officers and good colleagues in the more peaceful phases of my service. Some of those with whom I have had the privilege of serving are men of the highest professional ability, who could have risen to any heights in their profession had it not been for the millstone of the licentiate qualification which placed graduation and postgraduate study both financially and administratively beyond their reach.

It is therefore a source of peculiar satisfaction to me that the war which has so recently terminated has seen the licentiate rise to the rightful position of one possessing a registrable medical qualification—that of a commissioned medical officer. It is also a source of great gratification to me to know that members of your community have attained specialist status in the military medical services; and it is of course well known that some licentiates in civil employ have acquired extensive recognition as experts in the various branches of our profession, notably in eye surgery, anaesthetics, radiology and, in one outstanding instance, in medical research.

Having said what I have, it might sound ungracious when I express the wish that in the very near future education for the licentiate qualification will be finally and permanently terminated; but I am emboldened to do so by the knowledge that this is also your fervent wish, towards the attainment of which you have constantly striven over many years.

The compartmentalism to which you have referred in your address, whatever its advantages may or may not have been in the past, is now an anachronism; and I share to the full your ambition for the establishment of real equality in medical education, in the medical services and in medical registration between all members of the profession. This being so it gives me peculiar pleasure to be able to inform you that the Government of India in consultation with the Government of Bengal and the authorities in Calcutta University have under immediate consideration the establishment of an educational institution in Calcutta directed solely to the purpose of providing opportunities for licentiate officers and ex-officers of the I.A.M.C., to avail themselves of the concessions given by the Medical Council of India and to proceed to a University Degree. This timely gesture of assistance to

those licentiates who answered your clarion call for service in an emergency is tangible evidence of the appreciation of Government of their spirit of service.

I am also delighted to be able to announce that this appreciation is shared to the full by the profession in England and that the Examining Board of the Royal College of Physicians of London and the Royal College of Surgeons of England have made the following announcement regarding concessions to officers of the I.M.S., or of the I.A.M.C., who are not graduates in Medicine and Surgery of a University recognised under its Regulations and who desire to take the diplomas of the Royal Colleges. Such officers may be admissible to the several examinations solely on account of their war service as under:—

I. For the diplomas of L.R.C.P., M.R.C.S.

"An officer of the I.M.S., or of the I.A.M.C., who produces a personal recommendation from the Director of Medical Services to the effect that he is in every way a suitable candidate will, subject to the production of evidence of his medical qualifications, be admissible without any further certificates to Part I of the First L.R.C.P., M.R.C.S., examination (anatomy and physiology). When he has passed Part I he will be required to complete twelve months clinical work in a recognised general hospital either in this country or overseas, and to pass Part II of the First Examination (pharmacology and materia medica) before admission to the Final Examination."

As you are aware the examinations of the Conjoint Board of the Royal Colleges are held four times a year and this means that duly selected licentiate officers have the opportunity of acquiring the conjoint qualification in a period of from 15 to 18 months.

II. For any of the postgraduate diplomas granted jointly by the two Royal Colleges.

"An officer of the I.M.S., or of the I.A.M.C., who produces a personal recommendation from the Director of Medical Services to the effect that he is in every way a suitable candidate will, subject to the production of evidence of his medical qualification and on complying with the requirements regarding appointments, courses, etc., laid down in the regulations for the several postgraduate diplomas, be admissible to the examinations."

You will, I am sure, agree with me when I express the opinion that whatever facilities may or may not become available to the general body of licentiates for proceeding to graduation, it is but fitting that one institution at least should confine itself solely to those who answered the call and to whose performance in the field, on the lines of the communication and at the base, the increased prestige of the licentiate class is mainly due.

Finally, I can assure you that my interest in your progress will certainly not cease with my departure from India; and that in the future, as in the past, anything that I can legitimately do to further and promote the interests of the medical licentiates of India will be gladly done.

And so, in our turn, my wife and I would like to wish you, and through you the medical men and women whom you represent, Godspeed, good fortune and a worthy and leading part in the impending health development of this great subcontinent of India.

Referring to Dr. Manoharlal Kapur he said:

"Mr. President, I thank you for your invaluable services. I greatly appreciate your loyalty and devotion to your work. Your industry has been exemplary and has always evoked my appreciation. I sincerely trust that in the post-war development of Health in this country, your services will be available and you may be connected with it in some capacity or other. There is no doubt in my mind that your services in that connection will be beneficial in every way. I need only add that the success of the recruitment drive in India was largely due to you and your colleagues of the Standing Committee."

Rai Sahib Dr. Manoharlal Kapur, President, All-India Medical Licentiates' Association, 79, Darya Ganj, Delhi, has sent the following letter to the Secretary, British Cabinet Mission, New Delhi, under date 22nd March 1946.

May I, on behalf of the All-India Medical Licentiates' Association extend to the members of the British Cabinet Mission a hearty and sincere welcome to this country and wish them every success in their work.

My Association is the oldest Medical Association in this country and represents the interests and welfare of about 30,000 medical licentiates.

It may be of interest to the members of the Mission to know, that, during the war just happily ended in Victory to the allied cause, my Association actively and fully participated in recruitment to the Indian Army Medical Corps by directing its numerous branches and provincial leaders to personally undertake the work of recruitment. That the help of the Association in this respect has been valuable and useful has been acknowledged both by the Government of India and the authorities of the Indian Army.

Should the members of the Mission have time at their disposal, after finishing their labours, the executives of the Association would be happy to make personal acquaintance with them. If a reply is possible before 12th April 1946, it may kindly be sent to me, care of Inspector-General of Civil Hospitals, Assam, Shillong. If a reply is made after the 12th April 1946, it may be sent to my Delhi address given at the top of this letter.

Rai Sahib Dr. Manoharlal Kapur, President, All-India Medical Licentiates' Association, 79, Darya Ganj, Delhi has addressed the following communication to the Private Secretary to His Excellency the Governor of Punjab, Lahore, under date 27th February 1946.

I. I have the honour to submit the following few lines and trust the same will receive His Excellency's early and favourable consideration:

1. The All-India Medical Licentiates' Association is one of the few public organizations in India, which during the second world-wide war, took the responsibility of doing intensive propaganda for the recruitment of medical licentiates to the Army and succeeded in addressing through its leaders thousands of meetings throughout the length and breadth of the country, to achieve this goal.

2. Rumours are circulating in the Province that the revised scale of pay, now shortly being introduced by the Punjab Government, will be based on the belief that the wide gulf of difference between the medical graduates and licentiates must be maintained as before. If it comes true, Sir, it will be a rude shock to all concerned who will be convinced that in spite of their devotional loyalty to the Crown and to their duties in the Military and Civil during the war, they could not win justice.

3. The Government of India, after serious consideration of our case and through enquiries through the members of the British Medical Mission who visited India under the leadership of Dr. Soutter, decided to grant the following terms to medical men in India under one corps, i.e., the I.A.M.C.

(a) Medical Graduates ... Rs. 450 p. m.
(b) Medical Licentiates ... Rs. 400 p. m.; after six months, Rs. 450 p. m.

4. There are rumours that in the last Conference of the Administrative Medical Heads of various Provinces, held under the Chairmanship of the Director-General of the Indian Medical Service, in the month of November 1945, it was decided—

(i) to recommend Rs. 150 per mensem as the minimum starting pay for a medical licentiate in Service; and
(ii) to abolish the rank of Sub-Assistant Surgeon and to substitute one rank for all grades of medical men in Service.

5. Due to the special skill exhibited by medical licentiates in service, during the last 25 years, the Punjab Province has won the same reputation in eye surgery as Vienna in Europe.

II. In the name of justice, I appeal to His Excellency the Governor of the Punjab to do justice to the medical licentiates in service before their case is finally decided by the Punjab Government.

ASSOCIATION NOTES

Chittagong (Bengal).—Meeting held on 3-1-46. Dr. B. Sil occupied the Chair. Following resolutions were passed:

(1) This meeting places on record the sad demise of Dr. Sachin Ghosh who was on relief duty in a rural area.

(2) This meeting sincerely hopes that Dr. J. P. Biswas, President of this Branch, who is seriously ill at Calcutta may soon be restored to health and prays to God for his early recovery.

Gorakhpur (U.P.).—A monthly meeting was held on 16-12-45 at Dr. A. S. Bhalla's residence. 7 members were present.

Proceedings: (1) Minutes of the last meeting were read and confirmed after slight amendments; (2) Ref.: The letter from

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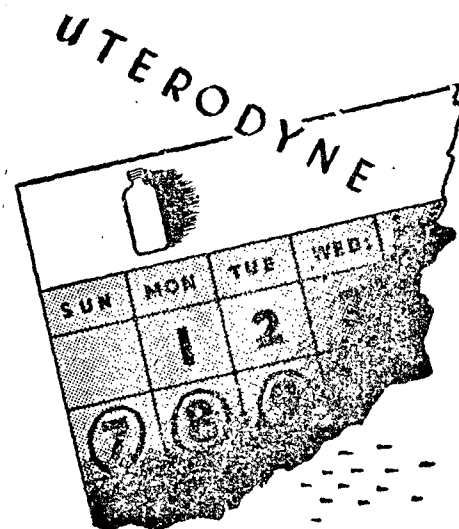
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Dr. A. S. Gupta, L. P. H., about a certain personal grievance, this meeting resolves to refer it back to him for clarification of his points; (3) Salary of the part-time peon was restored to Rs. 2 per mensem.

Dr. Bhalla presented a case report on Tuberculosis. There was a lively discussion on this case report.

Calcutta.—The annual general meeting of the above Branch was held on 16th December 1945, at 7-30 p.m., at its office premises. Dr. A. N. Roy was in the Chair.

Dr. J. Majumdar, Joint Honorary Secretary, observed in his report while giving a summary of the working of the Association that owing to lack of interest and of active participation in public health problems the Association could not create strong public opinion on its movements.

Dr. Majumdar said also that a sense of collective interest should be cultivated among the members which alone would lead to an united medical profession in India irrespective of qualifications and which only can lead to the solution of professional and public health problems of the country.

The following office-bearers and the members of the Executive Committee were elected for the year 1945-46 :—

The office-bearers and the members of the Executive Committee :

President :—Dr. A. M. Malik, 2, Chittaranjan Avenue.

Vice-President :—Dr. K. C. Chakravarty 9, Taltola Avenue.

Honorary Secretary :—Dr. J. Majumdar, 1, Janak Road, Ballygunge.

Hon. Jt. Secretary :—Dr. D. C. Sinha, 6A, Surendra Nath Banerjee Road.

Members :

Dr. A. N. Roy 4-B, Prabati Chakravarty Lane, Kalighat.

„ Naren Bhattacharjee, 28, Harrison Road.

„ Semar Roy Chowdhury, 53-A, Chakraberis Road, North Bhowanipore.

„ Ardhendu Ganguly, 14/29, Garishata Road, Ballygunge.

„ Sachin Sen, 112, Narkeldanga, Main Road.

„ U. R. Bannerjee, B. & A. Rly. Dispy. Harkeldanga.

„ Saili Dutt, 70, Chowringhee Road.

„ Q. M. Hasranat, 82/1/A, Dilkhuse Street, Post Circus.

„ Dr. Rathin Nag, 18/45, Dover Lane, (Lower Flat), Post Rashbehari Avenue

Members of the Provincial Standing Committee :

Dr. J. Majumdar, 1, Janak Road, Ballygunge, Calcutta.

Dr. Semar Roy Chowdhury, 53A, Chakraberis Road, North Bhowanipore, Calcutta.

Member of the Central Standing Committee :

Dr. Jyotirmoy Majumdar, 1, Janak Road, Ballygunge, Calcutta.

The following resolutions were passed unanimously :

1. This meeting requests the Calcutta University to reconsider its decision regarding the condensed M.B. Course for medical licentiates and to limit the same to two years' course of study as per recommendations of the Medical Council of India and to keep the scheme in operation till the introduction of uniform standard of medical education in the province is made.

2. While thanking the authorities of the Carmichael Medical College and of the Calcutta Medical College for implementing the University regulations of condensed M.B. Course and thus giving facilities to the medical licentiates for going in for M.B. Degree of Calcutta University after undergoing the condensed course, this Association requests them to reduce the tuition fees which is considered prohibitive and fix them on par with that of their regular students.

3. While reiterating its principle of introducing uniform minimum standard of medical education in India the Association urges upon the Government of Bengal to implement the same by upgrading all the Medical Schools to the standard of colleges, without further delay preferably before 1947, as per recommendation of the Education Experts Committee of the Medical Council of India.

4. While considering the problem of existing poor medical aid to the people of this country and serious consequences to the people, this meeting requests the Government of Bengal to consider and draft a definite practical scheme to provide medical service by retaining all serving medicos, whether in civil or military, in temporary or emergency service, so that their services may be utilised for medical aid to the masses.

5. This meeting observes with great concern the gradual deterioration of national health and requests the Government of Bengal to take serious view of this matter, and, as a first measure make available to the public minimum requirements of diet approved by the nutritional experts, particularly fat and protein, viz., fish and milk, specially for the babies and nursing mothers.

6. In view of the great possibilities of having a stronger organization at Calcutta by campaigning among the medical licentiates on professional and public health problems, this Branch requests the Central Association to grant Rs. 500 for the above purposes, and trusts, in return it will make the Association Finance much stronger.

7. The meeting learns with concern the helpless state of some of its members and therefore proposes to open a fund under the caption of "Members' Aid Fund" for the benefit of such members and to form a committee for its implementation.

8. Considering the great possibilities of a strong organization at Calcutta this meeting requests the Reception Committee of the 33rd Annual All-India Medical Licentiates' Conference to offer its surplus balance, if any, to the Calcutta Branch of the Association.

9. This meeting urges upon the Government of India to make the I.A.M.C. permanent.

10. This meeting, considering the great and efficient services rendered by the medical licentiates in the I.A.M.C., further requests the Government to offer permanent commission to those licentiates who desire to take up army career.

11. The following budget be recommended for sanction.

Proposed budget for 1945-46.

Income :—	300 × 4	Rs. 1,200
Expenses :—		
Postage	...	120
Stationery	...	25
Conveyance	...	30
Part-time Bearers pay	...	36
Part-time Clerk's pay	...	180
Propaganda	...	400
Miscellaneous	...	30
Total	...	821

Annual Report (Summary) :—

The Annual report of the year 1944-45 of the Calcutta Branch reviews the work of the Association from November 1944 to November 1945.

The report that is placed before you was approved by the meeting of the Executive Committee held on 14th December 1945. During the year under review five general and seven special meetings were held to consider various problems affecting the members of the Association in particular and the medical profession and the public health problem in general.

A summary of working of the branch given below will show that the Executive Committee took up in right earnest all matters that were brought to its notice by the members of the Association.

(1) While the Branch congratulated the authorities of the Carmichael Medical College for admitting the licentiates to appear for M.B.B.S., it also appealed to the Bengal Government and other appropriate authorities—

(a) to see that the Calcutta Medical College also follows suit;

(b) to remove the discrepancy in fees between regular students and the licentiates;

(c) to give effect to the resolution of the Indian Medical Council (28-3-44) which allowed the Universities to hold only 18 months, course for those I.A.M.C. officers who had training at the A. M. T. Centres;

(d) to confine the course to two and not to two and half years as at present.

(2) We held two special general meetings to focus the attention of the Government on the importance of unifying medical education and of upgrading the existing medical schools into colleges.

(3) We formed a sub-Committee to go into the service conditions of licentiates in the Government and Railway employment. This sub-committee has recommended abolition of compartmentalism in service, and giving of equal opportunities for all, on the model of the I.A.M.C.

(4) The Branch undertook the responsibility of holding the A.I.M.L.A. Conference which proved to be a great success.

(5) We organised a volunteer corps to perform mass vaccination during the last small-pox epidemic and to serve the injured people of Calcutta on the occasion of police firing in November 1945.

(6) We advised the House staff of the Calcutta Medical Institute to call-off their strike on our assurance that the Branch would take up the matter with the authorities.

(7) We met the chief medical officer, B. & A. Railway and requested him to fill the vacant post of Bacteriologist at B.R.

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8. Certificate in Laboratory Techniques.

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Shing Hospital on the basis of merit and experience and not of high qualification only. He had agreed to consider our request and to recommend accordingly to the Railway Board.

(8) We met the D. P. H. in deputation and presented to him a scheme of release and allotment of quinine to practitioners. We are glad to note that our scheme has been put into action.

(9) We felicitated Drs. A. D. Mukherjee, and A. N. Roy on their election to the Medical Council and Dr. A. C. Chakravarty on his nomination to the State Medical Faculty.

We gave a hearty send-off to our President Drs. Malik and D. P. Sadhu on the eve of their departure to Europe and America. Taking advantage of this opportunity our General Secretary Dr. A. N. Roy empowered Dr. A. Malik on behalf of the Association to interview the Secretary of State for India and the President of the British Medical Council and to represent to them our Association's cause in the matter of higher education and of the recognition of the licentiate qualification by the B. M. C. and I. M. C.

(10) We have enlisted 72 new members this year.

We feel that our Association should open a I.N.A. Fund to aid the members of our Association who have been rendered helpless for their joining the I. N. A. (J. Majumdar and Salil Dutt—Secretaries.)

Kishorjanj (Bengal):—General Body meeting held on 20-9-1945.

1. Proceedings of the last meeting read and confirmed.

2. This meeting of the members of the Kishorjanj branch, A.I.M.L.A., strongly protests against the non-inclusion of medical licentiates within the purview of the Indian Medical Council Act of 1935, who form the bulk of the medical profession in India. We strongly urge the Government of India to amend the said Act and undo the wrong done to the medical licentiates.

3. Resolved that Dr. P. K. Chakraborty and Dr. R. N. Chakraborty be elected as members of the Provincial Standing Committee from this branch.

4. Resolved that Dr. A. D. Mukherjee be elected provincial president of the Bengal Branch for the next session.

5. Resolved that Dr. B. Choudhury be elected Secretary, provincial branch of the next session.

Budge-Budge (Bengal): 1. Proceedings of the ordinary meeting held on 27-10-45 at 5 P. M. at the Budge Budge chest clinic. Seven members were present with Dr. A. N. Roy in the chair.

(1) Proceedings of the last meeting read and confirmed.

(2) A reminder should be sent to the manager of Commilla Bank to send the necessary papers for changing the signatures of the account.

(3) Resolved that a postal savings account be opened in the local post office with the monthly subscriptions, in the name of the Secretary and joint Secretary, leaving Rs. 5 always with the treasurer for current expenses.

(4) It appears from the letter No. 1067, dated 28-9-45 of the editor I.M.J. that he has not received copy of the resolutions of the meeting held on 14-5-45 from the General Secretary for publication. Resolved that the General Secretary should be informed of it.

(5) In the 2nd round of the Presidential election for the 12th session of the Bengal Provincial Conference, this branch recommends the name of Dr. A. D. Mukherjee of Calcutta Branch.

(6) Dr. N. B. Sarker cited an interesting case the discussion on which was postponed for the next meeting.

2. Proceedings of the ordinary meeting held on 25-11-45. Eight members were present. Dr. N. B. Sarker was voted to the Chair.

(1) Proceedings of the last meeting read and confirmed.

(2) The letter from the Honorary Secretary, Calcutta Branch, was read. The endeavour of the branch was highly appreciated. The Secretary was requested to convey thanks to the branch.

It was further resolved that all our members should be informed of the matter. Other items of the agenda were postponed for the next meeting.

3. Proceedings of the ordinary meeting held on 29-12-45. Seven members were present. Dr. A. N. Roy was in the Chair.

(1) Proceedings of the last meeting read and confirmed.

(2) Resolved at Dr. D. N. Ghose be elected delegate for the next Provincial Conference at Howrah and delegation fee be paid from the association fund.

(3) This meeting sanction Rs. 10 towards contribution to the conference.

4. Proceedings of the ordinary meeting held on 13-1-46. 8 members were present. Dr. A. N. Roy was in the Chair.

(1) Proceedings of the last meeting read and confirmed.

(2) Resolved that all the members be requested to attend the Provincial Conference at Howrah. The President is authorised to make a list of the members intending to join the functions to advise the Secretary at least a week before to enable him to make necessary arrangement for conveyance.

(3) Dr. Ray, President, cited a case for discussion; the members took interest in it and requested Dr. Ray to refer to the Association Journal inviting opinion from its readers.

Silchar (Assam):

Annual report of the Silchar branch, for the year 1944-45. At the beginning of the year under report there were 32 members, 24 new members were enlisted and 4 were transferred during the year.

Meetings:—1. One special and 10 ordinary general meetings were held and scientific articles were read and discussed in nine of them. The scientific section was almost always presided by the Civil Surgeon, Cachar, to whom I offer my thanks. Anti-Indian Medical Council Day was observed as usual.

Account:

	Rs.	a.	p.
Receipt.			
Opening balance	...	232	6 3
Subscription realised	...	156	0 0
Local subscription	...	33	12 0
From Treasurer	...	19	0 0
From other sources	...	5	0 0
Total	...	446	2 3

Expenditure.

Remitted to Treasurer	...	156	0 0
Postage	...	18	0 0
M. O. commission	...	2	10 0
Repairs to Typewriter	...	28	0 0
Entertainment	...	47	6 0
Others	...	6	2 0

Total	...	258	2 0
Closing balance	...	188	0 3

In Bank	...	158	6 3
In Hand	...	29	10 0

Dr. L. K. Barooah and Capt. A. Majumdar, T. R. Os. attended one of the meetings of this branch.

I waited in a deputation on the I.G.C.H., Assam, during his short visit to this town and various grievances of the class were put before him. He gave me a very patient hearing and assured me he would see to the matters.

I offer my best thanks to all the Office-bearers and to my colleagues who ungrudgingly extended their helping hand and without whose co-operation it would not have been possible for me to carry out the duty entrusted to me. I again appeal to all of them to enlist new members so that not a single licentiate is left out of the fold of the Association.

2. Minutes of a meeting of the Silchar branch held on the 29th December 1945.

Dr. M. R. Chakrabarty presided.

(1) Minutes of the last meeting were read and confirmed.

(2) Dr. K. Purkayastha and Dr. S. P. Nath are elected as delegates to the next provincial conference.

(3) Circular letter of the Provincial Secretary re-Annual Provincial Conference was read and the Secretary was authorised to take action.

(4) The meeting ended with a vote of thanks to the Chair.

3. Minutes of an ordinary general meeting of the Silchar Branch held on 19-1-46. 23 members were present.

Major P. H. Cummins, I.M.S., Civil Surgeon, Cachar was in the Chair.

Dr. S. Dutta read a short article on B. dysentery. Some of the doctors took part in discussion. The President laid special stress on mixed infection and pointed out the importance of pure water supply and fly danger. He described the Horrocks' Test, a simple method, to find out how much sterilizing powder is required to sterilized 100 gallons of water and expressed the hope to give a demonstration at a subsequent meeting. He also stated that D.D.T., when available for civil purposes, will be an excellent stuff for killing flies.

The meeting ended with a vote of thanks to the Chair.

Dr. M. R. Chakrabarty then presided and the following resolutions were carried out:—

(1) Minutes of the last meeting were read and confirmed.

(2) Account up-to-date was checked and passed.

(3) Minutes of the Reception Committee were read and confirmed.

Nadia Branch:—A meeting was held on 30-12-45, in the house of Dr. K. R. Ray at 6 p.m., 6 members were present.

Resolutions passed:—

1. The proceedings of the last meeting were read and confirmed.

2. The circular No. 6 dated 3-12-45 from the Provincial Secretary was placed on the table and discussed.

(a) It was resolved that a sum of Rs. 10 be sent to the Secretary, Howrah Branch, as pecuniary assistance for their Conference.

(b) It was resolved that Dr. B. C. Bhadra and Dr. K. R. Ray, and on their inability, Dr. D. Basu and Dr. Joy Nath Ray be elected as delegates for the ensuing Howrah Provincial Conference.

(c) It was resolved that a sum of Rs. 5 be sent to the Provincial Secretary, Bengal for the memorial fund of late Dr. A. B. Mukherjee.

(d) Resolved that since several newly recruited Assistant Surgeons having no experience are being posted to Sadar Hospitals which were so long being managed by senior and efficient Sub-Assistant Surgeons, this branch urges upon the Government not to overlook the meritorious services rendered by the latter.

(e) **Quarters for Sub-Assistant Surgeons:**—It is a matter of great regret to learn that all the quarters up till now occupied by S.A.S., attached to the Sadar Hospitals are being given to the Assistant Surgeons though there is a post of S.A.S., also at those hospitals. This meeting urges on the Government not to deprive the S. A. Surgeons of the privileges hitherto enjoyed by them.

3. The accounts for the months of August, September, October, November and December 1945 were examined and passed.

4. After some scientific discussions, the meeting dissolved after vote of thanks to the Chair at about 8-30 p.m.

Labac Centre (Assam):—A meeting of the Medical Licentiates of the Labac centre was held at the residence of Dr. Paul, Senior Assistant Medical Officer, Labac Centre Hospital on the 20th December 1945 at 2 p.m., 5 Doctors were present.

Proposed by Dr. Dutta and seconded by Dr. Chakrabarty. Dr. H. C. Paul took the Chair.

Dr. S. P. Nath addressed the house and explained the aims and objects of the Association and also what it has been doing for the class. He appealed to all present to increase its strength by enrolling themselves as members. It was so pleasing that they readily responded to the call and that ten members were enrolled at the spot, four other doctors being already members. He thanked Dr. Paul for so kindly organising this meeting at such a short notice and the other doctors for their enthusiasm.

A new branch was opened and the following office-bearers were elected.

1. **President**—Dr. G. C. Paul, Labac Central Hospital, P. O. Dewan.

2. **Secretary and Treasurer.**—Dr. S. C. Ghosh, Dewan T.E., P.O. Dewan, Cachar.

3. **Auditor.**—Dr. P. K. Bose, Lallong T. E.

Members of the Standing Committee:—Above named office-bearers and Drs. N. K. Lodhi, J. N. Bhattacharjee, K. D. Paul.

Bilaspore (C.P.):—Minutes of the emergent meeting held on 14th November 1945 at 5 p.m. at Dr. P. H. Sant's place. 6 members were present. The letter of the Provincial Secretary dated 3rd November was read. It was resolved that Doctors P. H. Sant and E. N. Pande be nominated as the members of A.I.M.L.A. Standing Committee.

A Committee Meeting of the above Association was held at 'Woodlands' Madras, at 7-30 p.m. on Friday, the 9th November 1945, with Dr. P. B. Anangarachari, President in the Chair. 8 members were present.

The minutes of the previous meeting were read and passed. The accounts for the months of September and October 1945 amounting to Rs. 32 were passed unanimously.

Then the Committee discussed letter No. 8 from the General Secretary regarding the holding of next Annual Conference. The Madras Branch has decided to invite the Annual Conference of the A.I.M.L.A., during the ensuing "Easter". Necessary arrangements will be made after the decision of the Standing Committee Meeting.

Regarding the holding of the General Body Meeting, the Secretary expressed the desire to have the meeting conducted during the course of the next month when he will be in a position to get ready the printed annual report.

Dr. D. V. Venkappa, the Provincial Secretary, was requested by the members of the Managing Committee to forward the letter of the Madras Branch Secretary, with his recommendation, to the General Secretary, regarding the conveyance allowance in connection with the enrolment of members to the Madras Branch.

Dr. C. S. Govinda Pillai, M.B., Ch. B., L.R.C.P. & S., D.P.H., (Edin.) Health Officer, Corporation of Madras, attended the meeting by special invitation.

Dr. C. G. Pandit, Director, King Institute, Guindy, who was also specially invited could not attend owing to unavoidable circumstances.

The members were then entertained to a dinner by Dr. Avadhani.

During the course of the dinner Dr. K. Rama, Rao, the Secretary, thanked the Health Officer, in having so kindly responded to the invitation of the Association and said that an Association of this nature would be of mutual advantage to all in solving the numerous problems that face the medical profession, specially matters relating to Post-war Public Health Security.

Tinsukia (Assam): A meeting was held at Tinsukia Jala Hospital on 16-12-45 at 4 p.m.

Dr. D. Bhattacharjee was on the Chair.

Minutes of the last meeting were confirmed. The Provincial Secretary's letter and the memorandum for a medical college in the province were read and discussed. Collections for the purpose was approved by all.

Provincial Conference: To be held at Silchar this year

Nominations could not be sent as the list of candidates were not yet received from the Provincial Secretary. The Secretary has also been authorised to collect contributions for the Provincial Conference and send the same to the Treasurer. The following were elected as delegates (more might be sent later on).

1. Dr. S. Ganguli, 2. Dr. K. L. Sen.

The Branch Secretary appealed to the members to accept his resignation. It was accepted.

Dr. D. Bhattacharjee of Tinsukia was elected the Secretary. The election of other office-bearers was withheld till the next meeting.

Chhindwara Mining Area (C.P.):—A meeting was held at Barkui on 13-1-46, with Dr. Banerji as president.

Proceedings:—1. Dr. Tembhekar gave a resume of the Deputation organised by the members of the Provincial Standing Committee and led by Dr. Kulkarni, the Provincial President to the I. G. C. H. at Nagpur on the 8th January 1946 and of the Tea party to General Hance, D.G., I.M.S., and other guests.

2. It was proposed that this Branch should contact the doctors in other Mining Areas of C. P. and form a C.P. Mining Area Medical Association under the A.I.M.L.A.

3. Resolved that the Annual District Conference be convened by this branch in the 3rd week of May 1946.

4. Members were taken round the Bharkui Hospital after a tea.

Narayanganj (Bengal):—1. Annual General Meeting held on 16-9-45. Dr. U. C. Gosh presided.

The following annual report presented by the Secretary. Dr. A. C. Sen Gupta was adopted unanimously.

This Branch is in its fifth year of its existence. It worked for the unification of Medical Education and abolition of medical schools. It helped in the I.A.M.C recruitment. Its members did relief work during the last epidemic. Seven meetings were held during the year. In one of the meetings we recorded the sad demise of Dr. S. Kundu, our ex-president. The number of members now on roll is 28. The branch donated Rs. 50 as follows:

Rs. 15 to Dr. A. B. Mukharji Memorial Fund.

Rs. 15 to Budge-Budge Conference.

Rs. 20 to Calcutta Conference.

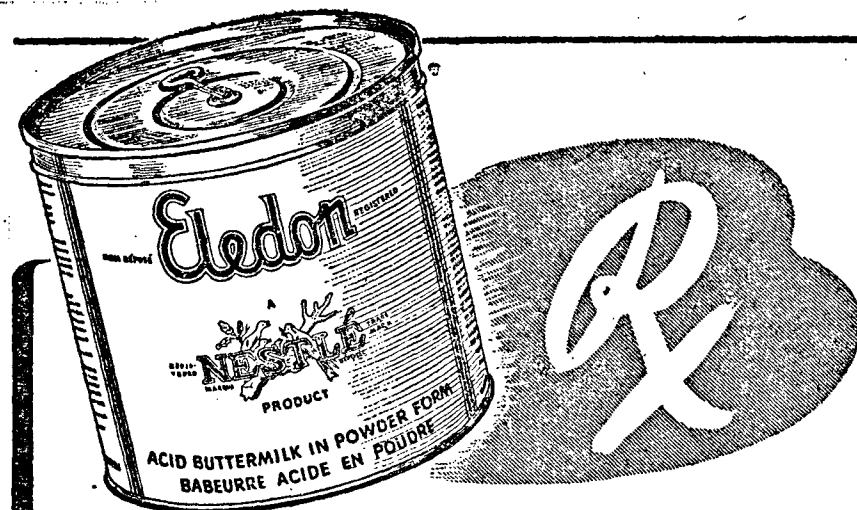
2. General Meeting held on 7-10-45 with Dr. U. C. Ghosh in the Chair. Resolved that in view of the information from the Provincial Secretary that already two branches have invited the Conference, this branch refrains from taking any decision, but hopes that, if the Conference is not held anywhere, it would be given a chance to hold it at suitable time.

Burdwan (Bengal):—A meeting of the members of this branch was held on the 21st day of December 1945 at 7-30 p.m. in the Burdwan Medical Association room. Dr. Gunananda Mukerjee was in the chair. 15 members were present.

(1) Proceedings of the last meeting were read and confirmed.

(2) Resolved that the following members be elected as delegates from this Branch to the 12th Bengal Provincial Conference of A. I. M. L. A. to be held at Howrah.

(i) Dr. G. Mukherjee,
(ii) Dr. C. S. Chatterjee,
(iii) Dr. A. Sen Gupta.



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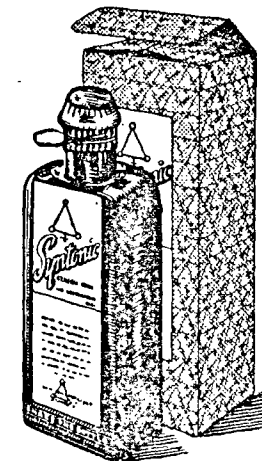
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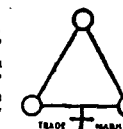
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(3) The Secretary is requested to communicate with the Provincial Secretary regarding the delegation fee proposed by the Howrah Branch which has no precedence, in spite of the usual monetary contributions from the Branches.

(4) Resolved that C.B. for Rs. 10 from May 1945 to November 1945 be passed.

(5) Scientific discussions on the uses of PENICILLIN in resistant cases of syphilis were held.

C. P. and Berar Provincial Branch :—The first meeting of the Provincial Standing Committee of C. P. and Berar Branch was held at Nagpur on Sunday the 6th January 1946, at 6-30 p.m., at the office (Sitaburdi) of the Provincial President, Dr. G. K. Kulkarni the Provincial President was in the chair and the following members were present:—

1. Dr. G. K. Kulkarni ... President
2. " D. B. Bhate ... Provincial Secretary.
3. " N. B. Tembhekar ... Prov. Joint Secretary.
4. " S. R. Sahu, A.M.O. ... Chhindwara.
5. " R. P. Verma, Medical Practitioner ... Chhindwara.
6. " W. J. Fadnis, A.M.O. ... Jamai.
7. " S. N. Sanyal ... Nagpur.
8. " B. P. Murarka, Branch Secretary ... Bilaspore.
9. " R. P. Pande, Medical Practitioner ... Akaltara.

The following points were discussed and resolutions passed:

1. The President first read out and explained the memorandum presented by the deputation to the D.G., I.M.S., Delhi.

2. The draft memorandum to be presented to the I.G.C.H., Nagpur was read and accepted.

3. It was resolved that the following persons be authorised to form into a deputation to wait on the I.G.C.H., Nagpur.

1. Dr. G. K. Kulkarni ... Prov. President.
2. " D. B. Bhate ... Prov. Secretary.
3. " N. B. Tembhekar ... Joint Secretary.
4. " S. R. Sahu.
5. " S. N. Sanyal.

4. It was resolved that a Tea Party be given to Major-General Hance, D.G.I.M.S.

5. Since the charge of the Provincial Secretary could not be handed over before the Standing Committee meeting of the A.I.M.L.A., which was held on 25th of November 1945, at Delhi, on account of heavy work in connection with the Provincial Conference and since the interim arrangements had to be made for one member for proper representation on the A.I.M.L.A., from this province, this meeting of the members of the Standing Committee resolves that the procedure of electing the Provincial President as a member of the Standing Committee of the A.I.M.L.A., be followed in the interest of the Association.

6. This meeting of the Standing Committee is of emphatic opinion that there must be a permanent advance of Rs. 50 (fifty) with the Provincial Secretary and an equal amount with the Provincial President for the better working of the Association and for the quick payment of the branch Secretaries' contingent bills which are so long delayed causing great inconvenience to them.

7. It was resolved that letter heads and other stationery requisites should be supplied by the Provincial President immediately so as to remove the long-felt want of these items.

8. This meeting is completely one with Dr. Kulkarni's views (explained by him in detail) in respect of the amalgamation of our Association with that of A.I.M.L.A., as per copy given to the Provincial Secretary and which is already sent to the G. S.

9. This meeting regrets to learn that the Chairman, Reception Committee of the Bilaspore conference has omitted to mention the election results in the proceedings sent to I.M.J., for publication. This meeting therefore requests the Provincial Secretary to send the election results to the Editor I.M.J. for publication.

10. This meeting regrets further to learn that the accounts of Bilaspore conference have not been sent to the Provincial Secretary. This meeting therefore requests the Chairman of the Reception Committee to submit them to the Provincial Secretary for his scrutiny and for being forwarded to the I.M.J. for publication.

11. This meeting resolves that the following persons be congratulated on their decoration:

- Major-General Hance for ... K.C.I.E.
Dr. Tuli, Dy. D.P.H. for ... M.B.E.
Col. Jathar, I.G.P. for ... Knighthood.
Dr. G. R. Chopra, A.M.O. for ... Rai Sahab.

with a vote of thanks for the excellent arrangement made by the President, the meeting terminated.

*Already published. Ed.

†Recently received for publication. Ed.

Memorandum submitted by the Standing Committee (C. P.) to the Inspector-General of Civil Hospitals, C. P. and Berar, Nagpur, Dr. G. K. Kulkarni lead the deputation. —On behalf of the C.P. and Berar Branch of the All-India Medical Licentiates' Association, we the members of the deputation thank you very much for the opportunity you have given us to welcome you to this Province. We offer you our fullest co-operation in all matters concerning our profession.

We also thank you very much for the opportunity afforded to us for putting before you our longstanding grievances which have not been cared for in spite of high praises showered on us from the lowest to the highest officials and also in spite of our proving ourselves beyond even a shadow of doubt as capable as any member of the profession. Thus, if you excuse us Sir, to put it plainly: *All the praise has proved so far to be only a lip-sympathy.* For example, only three seats have been reserved from out of the cadre of nearly four hundred Medical Licentiates in service for promotion to the rank of Assistant Surgeon. Unfortunately again, these Licentiates are invariably promoted just at the time of their retirement. They do not gain pecuniarily or in any other way. Actually they are put to loss and inconvenience because they are transferred from the place where they have established their reputation and a little practice to a place where they are unknown.

Even this, temporary and trifling pecuniary gain does not count towards pension unless the requirements of the pension rules are fulfilled. But these requirements cannot be fulfilled because these licentiates have to retire soon. This is an example of lip sympathy for the Licentiates who have proved their competency by fulfilling all the conditions laid down for their promotion to the rank of Assistant Surgeons. There are many other points such as allowances and privileges which also demand fair settlement as early as possible.

May we suggest to you, Sir, that a Medical Licentiate should start with a certain initial pay, say Rs. 150 with an annual increment of Rs. ten reaching Rs. 200 within five years. The Medical Graduate may start with rupees 200 straightway, and then both should have all rights and privileges equal. The example of I.A.M.C. can be very usefully followed.

The representation of the Medical Licentiates in the Provincial Medical Council is very inadequate when their numerical strength is taken into consideration, it is keeping the majority in a minority with all possible risk to its interest. We, therefore, request that the Licentiates should be adequately represented not only in the Provincial Medical Council but also in all the Committees that may have been formed and that may be formed hereafter.

Our position in Jail Department is, Sir, very lamentable. In spite of our professional knowledge and experience we are treated as inferiors to much less educated jailors and the jail staff. This sort of injustice is inconceivable to any reasonable mind and it must be immediately remedied. The condition of the living quarters for the Licentiates attached to jails is really very pitiable.

We congratulate the Government of C. P. and Berar on their decision to open a Medical College at Nagpur and take this opportunity to request them through you to reserve certain number of seats, say ten, for the sons and daughters of the Medical Licentiates. Representation of the licentiates in the "Medical Faculty" will go a long way to safeguard their interest.

We thank you, Sir, once over again for giving us this opportunity and patient hearing.

G. K. Kulkarni, D. B. Bhate, N. B. Tembhekar, S. R. Sahu, S. N. Sanyal, Deputationists. Nagpur, Dated, 8th Jan. 1946.

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The 34th All-India Medical Licentiates' Conference, Poona, 1946.

The 34th Conference of the All-India Medical Licentiates' Association will be held in Poona in October 1946. The provisional dates are 19th, 20th and 21st October 1946.

An influential Reception Committee has been formed with Dr. G. P. Tendulkar as Chairman, Dr. V. G. Paranjape as General Secretary and Dr. M. M. Ashtaputre and Dr. S. M. Damle as Jt. General Secretaries.

Further details will be published in the Journal from time to time.

502, Narayanpeth,
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Y. G. PARANJAPE,
General Secretary.

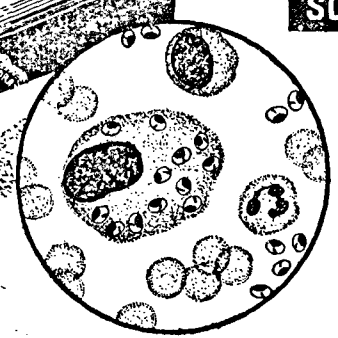
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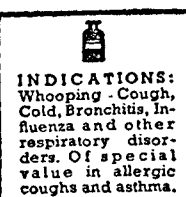
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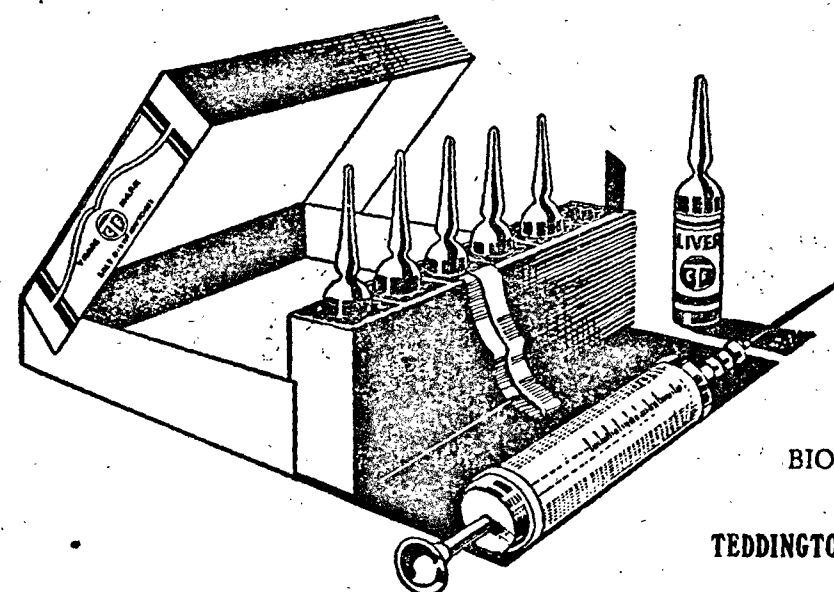
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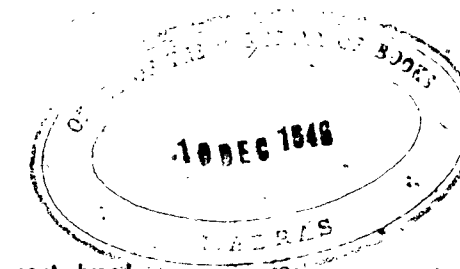
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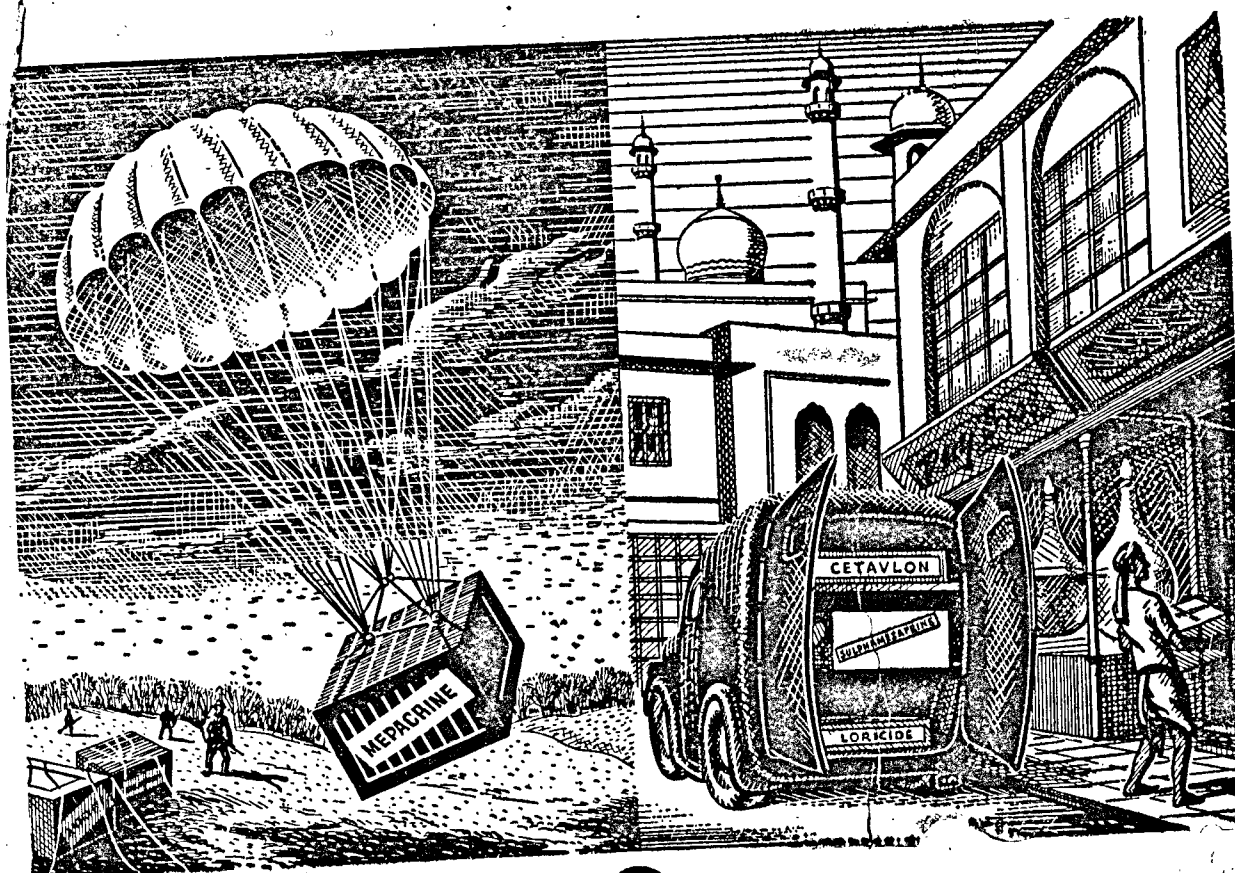


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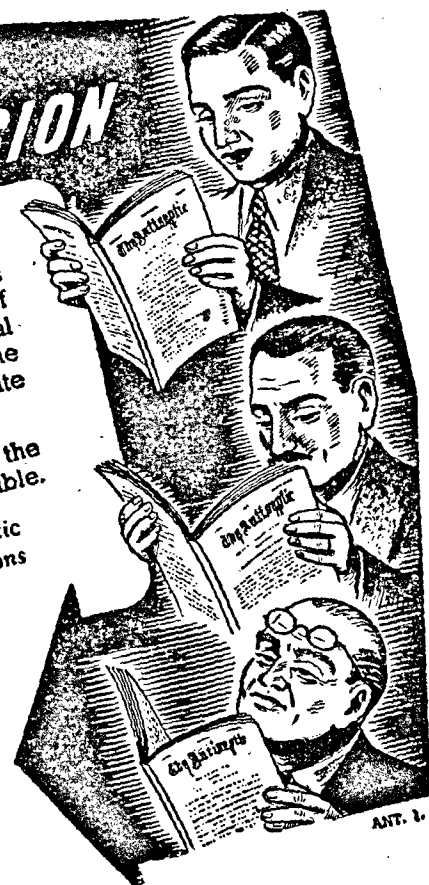
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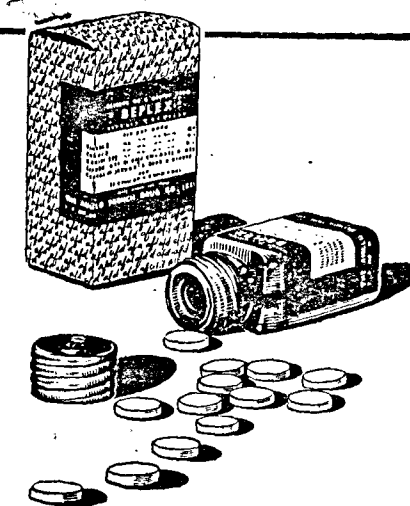
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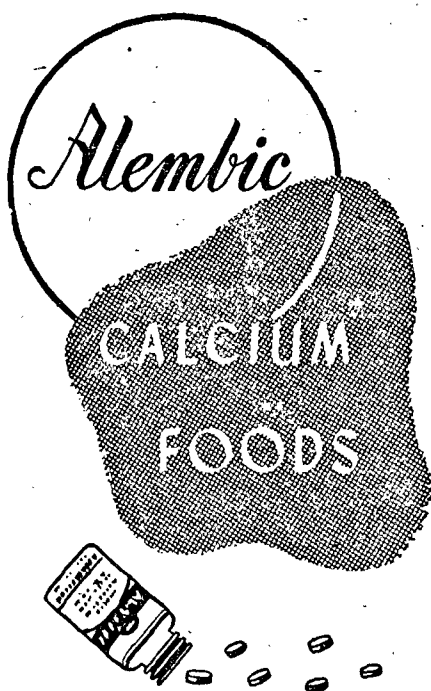
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2. "The Local Treatment of Burns." *British Medical Journal*, July 12th, 1941, pp. 41-45.

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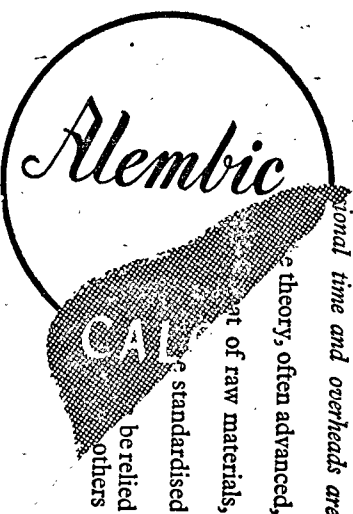
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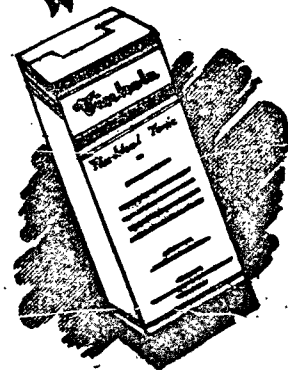
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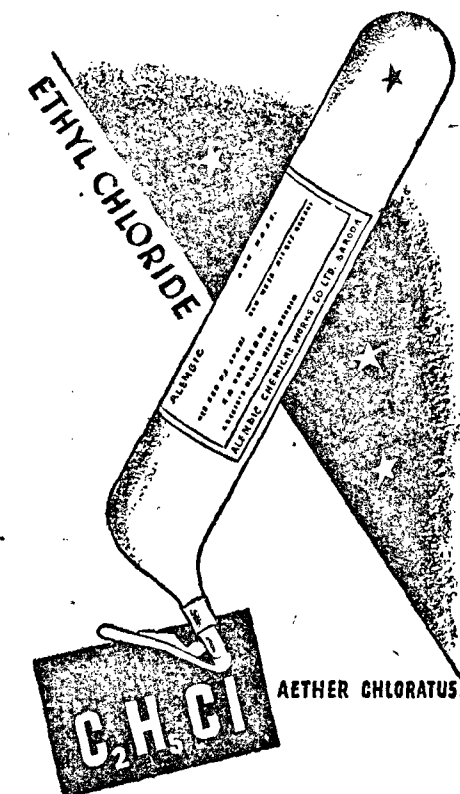
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(Journal of the All-India Medical Licentiate's Association)

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Indian Medical Journal

(Journal of the All-India Medical Licentiate's Association)

Vol. 40. Madras, May 15, 1946 No. 5.

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OUR MONTHLY SURVEY.

The 24th Session of the Indian Medical Council.—We are publishing elsewhere in this Issue the proceedings of this session of the Council and the address of its President Dr. Abraham S. Erulkar. A perusal of the same would show to our readers its achievements and hopes, its limitations and handicaps. "It has failed to secure 'honour abroad' because the politicians who created this Council did not arm it with sufficient powers. The same politicians will have to see to it that our honour abroad is not at a discount"—so observes the President in the course of his address. The failure of the politicians, in our view, was not only confined to this aspect of the Council's external functions but extends to the aspects of its internal functions also. If one studies the scope, the constitution and the composition of this Council, the truth of our observation will become obvious. This failure of the politicians in enacting a simulacrum of a Medical Council for India is of course patent. But what surprises us is that this Council has not since its inception raised an effective protest against this perverse arrangement and repudiated it by action. It is no doubt true that its presidents, before and now, have been narrating a doleful story of humiliation and resentment and chafing under restraint, but yet they have been submitting to it with specious complaisance. Only Dr. Deshmukh of Bombay had the boldness to resign his membership and refused to associate himself with this Council which denied recognition to the licentiate's qualification and which had no power to establish fair reciprocity with foreign medical councils.

If the then members of the Council also had acted likewise, the politicians would have rectified their mistakes and the Government dared not allowed the Act to continue in its crippled state. Mere lament is useless if it is not followed by energetic action.

All-India Medical Register.—The Council has recommended the institution of a Register but it will be divided into three groups:

- (1) Those holding qualification included in the schedules of the Act.
- (2) Those practising modern system of Scientific medicine in British India and possess qualifications granted by Licencing Bodies in the British India.
- (3) Those Indian Nationals who hold foreign qualifications not recognised by the Indian Medical Council and registered by the Provincial Medical Councils.

It is stated that, in the Council's considered view, this arrangement "is not only a decided advance on the previous position but under the limitations of the existing conditions has the merit of meeting all the various points of view in the country." This is not a permanent arrangement but will remain only till such date when there is a minimum standard of medical qualification established throughout the country. We can justify this position only on the policy that "half a loaf is better than none." But we doubt very much whether this loaf, half though it be, is going to be a loaf or a stone. It would be no less than a stone if the persons under group (2) and (3) are not given a reasonable representation in the Council. There is no mention about this point in the proceedings. This requires clarification. We hope the President of the Council would elucidate this matter in clear terms so that the organised profession may give its considered opinion and take such action as would fructify this opinion. So far as we are aware the opinion of the organised profession has been clear from the very beginning. By organised profession we mean the All-India Medical Licentiate's Association and the Indian Medical Association. Both of them are for the establishment of an All-India Medical register where there will be only one group, and not three as recommended by the Council in its last session; the licentiate to be included in this group till a specified date, say 1949 or 1950. The advantages of this suggestion as compared to the present recommendation of the Council are obvious. If it is boldly stated that the licentiate's qualification would be recognised only up to a certain point of time, it would unfailingly expedite the abolition of the few remaining medical schools. But if it is stated that the licentiate would be grouped separately till such time as all the medical schools in the country are abolished, both this grouping in the Register as well as some medical schools would get a lease of comparative permanence much against our best wishes and expectation. We earnestly entreat the President and the members of the Council to consider the question from this point of view and to change their present decision in conformity with the view of the organised profession which is more purposeful and dignified. A Register in compartments, such as the ones we are having in the provinces, is against the spirit of a statutory medical

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register and has, so far as we know, no precedent in any other country. It is not a specific but only a palliative remedy, and when a specific remedy is available it would be meaningless to resort to palliatives.

Concession to Licentiatees.—Twice in his address, has Dr. Erulkar appealed to the universities to afford facilities for the licentiatees to obtain their M.B., B.S. degree on the lines suggested by the Council. He has also appealed to the universities' representatives in the Council to use their influence in this matter. We are thankful to him for this appeal, and we hope his appeal would be respected by the Universities. Except Calcutta, Madras and Andhra—and perhaps Bombay also—other universities are still to open its portals to the licentiatees. Their ostensible plea has been inadequacy of provision in teaching staff and accommodation of seats to meet the extra admissions. The real reason, however, is sheer prejudice. It is a sample of the not uncommon uncharity of one Indian against another Indian—a symptom of 'slave mentality'. We hope that in the New India that is emerging such uncharity would have no place at least in academic circles and that our Universities would encourage learning, in the Arts and in the Professions, on broad principles of admission to their portals subject, of course, to the maintenance of proper standards. Shibboleths must not, however, be mistaken for standards.

M. C. P. S. of Bombay.—If the M. C. P. S. could be put on the First Schedule of the Act—and in our view rightly put—we fail to see why corresponding qualifications like D. M. S. of Madras and M. S. M. F. of the Punjab, the U. P. and Bengal should not be given the same recognition. The D. M. S. qualification is now defunct in Madras, but those who hold that qualification cannot therefore be left in the lurch. The syllabus of that qualification can be scrutinised by the Council and recognition given on the basis of that scrutiny. As regards the other qualifications, the Council may inspect and take suitable action according to the results of that inspection. Perhaps the State Medical Faculties of these provinces have been sleeping over this matter. It is time they wake up and apply to the Medical Council to inspect the standards set up by them for the conferment of the M. S. M. F. qualification.

"Efficiency at Home"—When in 1933 we questioned the propriety and utility of enacting a medical council without its fundamental functions and parts, namely, establishment and maintenance of a uniform minimum standard and a medical register, we were told that the main purpose of the Council was to enable it to obtain fair reciprocity between itself and its foreign counterparts in so far as the University medical degrees were concerned. So, the late Sir Fazli Hussain, the author of this Act, ushered it rather flamboyantly with what has now proved to be unattainable objectives: *Efficiency at Home and Honour Abroad*. We would not grudge Dr. Erulkar the satisfaction of thinking that though 'honour abroad' is at a discount yet 'efficiency at home' has been achieved. What, after all, has been achieved during the last 12 years is a somewhat systematic co-ordination of the medical standards of teaching and examination of the various universities, and maintenance of the standard by a process of periodic internal inspection and by external

recognition. This, in our view, is not such a great achievement as to warrant self-satisfaction or self-approbation in as much as the scope of the Act did not cover the medical schools, which, at the time passing of the Act, were producing more medical men than the colleges. The Council has not yet stated or formulated frankly what would constitute a uniform minimum standard of medical education and qualification for our country. Its present preamble is: "establishment of a uniform minimum standard of higher qualification in Medicine for all provinces". We may ask frankly Dr. Erulkar and his colleagues in the Council whether they, with this preamble as the background, really expect at any time to achieve either efficiency at home or honour abroad. Twelve years of experience should be an eye-opener to them, unless they want to blind themselves by the fervour of false imagination or to veil the truth by sub-conscious prejudice. The first essential thing, therefore, is to change this preamble so as to indicate that this Council's essential function is to establish and maintain a uniform minimum standard of qualification in medicine, and then to set about doing things in right earnest.

"Honour Abroad"—It is well known that this was the primary motive that brought this Council into being. But this is still far from being realised. It is unable to remove from its second schedule two of the British qualifications which have been considered by this Council as below the standard. Nor has it been able to get the recognition of the General Medical Council for the Andhra University medical degrees and for the medical degrees of the Patna and Calcutta Universities granted after 1935 and 1936 respectively. Nor are the Medical Councils of other countries willing directly to recognise our Council except three small politically insignificant countries, Burma, Malta and New Zealand. Dr. Erulkar assures the G. M. C. that there is plenty of goodwill on this side and trusts that differences will be settled in future on this basis. Really speaking, however, it is purely a question of the independence of our country. When other countries, including Great Britain, come to know that our Council can enforce its decisions, then they will, of their own accord, seek reciprocal recognition. Till then, it would do good to our soul if we do not talk or think about "honour abroad", and least of all to try to enter into any kind of negotiations with any foreign medical council. From a spiritual point of view, it is more or less a nemesis of retribution. The Council refused to recognise the vast bulk of medical men in its own country—the medical licentiatees—in the hope that the rest of the profession which constitute but a small part of it—the medical graduates—may be recognised by other countries. The result of this injury to one's own soul has inevitably manifested itself in this manner. If the soul of the Indian Medical Council is to be made integral and whole, those who are in power should see that this injury is removed. The laws of nature are supreme and irresistible and are not governed by our reactions to profit and loss and pain and pleasure. The more the Medical Council of India recognises this plain spiritual truth, the larger will be its integrality and greater its prestige at home and abroad. We are glad to record that it has begun to recognise this truth, though tardily and not in a fully conscious spirit.

[May, 1946]

FLOATING SPECKS—AGARWAL

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Bhore Committee and the Council.—It is contemplated by the Council either to call a special session or a meeting of its executive council to consider the recommendations of the Bhore Committee in so far as they concern it. We would suggest to the President, Dr. Erulkar, to invite a representative each of the Indian Medical Association and the All-India Medical Licentiatees' Association to assist him in this deliberation. This would enable the council to acquaint itself with the views of the organised profession on so important a matter which affects it vitally. Two considerations would naturally arise in the discussion of Bhore Committee's report *vis-a-vis*—the Indian Medical Council. The are:

- (1) Whether the conception of the 'Basic Doctor' and the standard set up to evolve him is acceptable, and
- (2) What should be the statutory relationship between the Provincial Medical Councils and the Indian Medical Council.

We earnestly hope that the discussion of these matters would lead to a proper decision and to the acceptance of that decision by the profession in general.

Abolition of the Licentiate Teaching.—In the course of the presidential address, Dr. Erulkar claims that the Medical Council of India has been largely responsible for the abolition of the licentiate teaching in the country. Historically, this is, we are afraid, an incorrect statement. Since 1910, long long before the Indian Medical Council Act was passed the Licentiatees' Association has been pressing on the authorities for abolition of the licentiate education. If its suggestion had been followed, the Medical Council of India would have been born as a healthy child in 1933. Its suggestion however was not taken seriously. The result was the birth of a monster—an evolutionary freak. Since 1933, the Licentiatees' Association re-doubled its activities in the matter and succeeded, largely due to its own persistence and endeavours, in abolishing medical schools in many of the provinces. Therefore Dr. Erulkar is not justified in stating that the Medical Council has been largely responsible for the abolition of the Medical schools. The help of the Council in this matter has been too feeble. Often, we have urged the Council, in these columns, to state boldly that its present standard shall be the uniform minimum standard for our country in future, and thus help the Licentiatees' Association in its endeavour to abolish the medical schools in every province. But the Council did nothing of this kind. Now that most of the Provinces have abolished the medical schools, the Council claims that this is its handiwork. O tempora! O Mores!

ADDRESSES and ARTICLES.

(4)

Floating Specks

BY DR. R. S. AGARWAL, Eye Specialist, Delhi.

Many persons suffering from imperfect sight especially myopia complain of specks floating before the eyes: these are called in medical terms 'muscae

volitantes" or "flying flies". They are usually dark or black and can be of any colour also, and sometimes they appear like white bubbles. They move somewhat rapidly, usually in curved lines, before the eyes and always appear to be just beyond the point of fixation of sight. If one tries to look at them directly, they seem to move a little farther away; hence their name is "flying flies". They may have any shape. They are annoying, and sometimes alarm the patient.

Usually floating specks appear at one time and disappear at another time, but they are often present while one looks towards a uniform white surface. Sometimes they appear when the eyes are closed, even in extreme cases there are periods, short or long, when they are not seen with the eyes open.

The literature on the subject is full of speculations as to the origin of floating specks. Floating specks are supposed to be due to the presence of moving, floating opacities in the vitreous. They have been attributed to disturbances of the circulation, the digestion and the kidneys and are also supposed to be an evidence of incipient insanity.

Important Points:

As regards the view that the floating specks are due to the presence of floating vitreous opacities errors of refraction and physical disturbances, the following points are worth considering:

(1) The vitreous humour is a jelly-like substance. Can the opacities float in a jelly? Take the vitreous of a goat's eyeball, put some particles of different substances, shake the vitreous. It will be noted that the particles stick to the jelly and hardly make any movement. How then the opacities could move about freely in the vitreous?

(2) Though they are present usually in high myopia, they are absent in many high myopic cases. On the other hand they may appear before the eyes of persons of fairly good vision or in cases of little errors of refraction. Hence error of refraction is not the cause.

(3) They may be present in some cases suffering from disturbances of circulation, digestion and the kidneys, but they are absent also in most cases suffering from such disturbances even in more aggravated state. Further, they are also present in persons who have no such disturbance and are quite healthy. These facts do not tally with the idea that the floating specks are due to disturbances in the system.

(4) If the floating specks are due to floating vitreous opacities then we can safely say that the trouble is an organic one and that the floating specks ought to be seen with the aid of an ophthalmoscope or retinoscope, and that the patient should be able to see them before the eyes when they are open. They should not be seen when the eyes are closed because the retina is sensitive only to light and floating specks can be seen only when the retina is functioning.

On examination by ophthalmoscope or retinoscope these floating opacities are not found and the vitreous is found to be quite clear. Moores Ball writes in his *Modern Ophthalmology*: "Muscae volitantes show no opacities to the ophthalmoscope. They are exceedingly annoying, and often remain in spite of the

correction of refraction errors and attention to the general health." Moreover, the patient may see them with the eyes closed or in darkness, and may not see them at times when the eyes are open. These facts do not harmonise with the theory that the floating specks are due to the presence of floating vitreous opacities.

Suppose there is an opacity in the vitreous of one eye the other eye is alright. The vitreous opacity will not be seen as a speck because the mind has the faculty of fusing the images of both the eyes. Even if the good eye is covered, the vitreous opacity will not be seen as a speck unless it is quite big, dense and in the centre of vision, because the mind has the natural tendency to ignore to see the opacities in the form of speck or specks, just as when there is an opacity on the cornea or on the lens or when the retina has a blind spot, the mind does not perceive a speck before the eye as a result of the opacity or the blind spot. It is why many patients suffering from incipient cataract, keratitis punctate, central opacity of cornea, do not complain of speck or specks before the eye though the vision may be defective due to such organic changes. I quote below two cases of vitreous opacities, who did not complain of specks before the eyes.

"In 1894, A. H. Banson of Dublin reported the case of a man, aged 62 years, with normal vision, whose right vitreous humour was studded everywhere with small, smooth, fixed spheres of a light cream colour". (Translation of the Ophthalmological Society of the United Kingdom, Vol. XIV, 1894, p.101.

Regarding the presence of animal parasite, cysticercus, in the vitreous, Moores Ball writes, "In many instances the patient complains only of loss of vision". (Modern Ophthalmology.)

Then What Can Be The Cause ?

The truth about the floating specks is that they are the result of a strain of the mind, and when the mind is disturbed for any reason, floating specks are likely to occur. This strain is different from that which causes errors of refraction. In all cases of floating specks it will be found that central fixation is lost partially or completely. By central fixation I mean that the letter or part of the letter regarded is seen best. For example, there is a small letter E on the Snellen test card; when the top arm of E is regarded at ten feet or more, it is seen more distinct than the bottom arm of E, and when the bottom arm is regarded it is seen clearer than the top arm.

As a matter of fact the specks are never seen except when the eyes and mind are under a strain, and they always disappear when the strain is relieved. If one can see a small letter on the Snellen test card at ten feet or more with central fixation and then remember it mentally by central fixation, the specks will immediately disappear or cease to move; but if one tries to remember two or more letters equally well at one time, they will reappear and move. *The trouble of floating specks is wholly functional and not an organic one.*

Persons who have fairly good vision and see floating specks also suffer from strain. They do not possess good vision all the time. Their central fixation is frequently disturbed by seeing unfamiliar objects, wrong use of the eyes, worries, physical discomforts, lack of good sleep, etc. Floating specks may be present before one eye and not before the other, because there are two separate eyes, each function-

ing separately, one may strain and the other not. All relaxation methods are helpful in relieving the strain.

Patients who usually see floating specks while looking at a white wall or white clouds suffer from strain. Most people who did not see floating specks before, can see floating specks when they look at the sun, or any uniformly bright surface, like a sheet of white paper upon which the sun is shining. This is because most people strain when they look at surfaces of this kind.

The floating specks are present in cases of disturbances of digestion, heart and kidneys because these diseases cause strain on the mind, and if the eyes and mind strain in such a way as to cause the presence of floating specks, they will appear, otherwise not.

Patients who are benefited by correction of errors of refraction or by the treatment of the general system are those in whom the strain which makes one see floating specks is somehow relieved along with the correction of errors of refraction or the treatment of the general system.

Why is a patient suffering from floating specks declared to be suffering from vitreous opacities? There are several possibilities.

- (1) If the opacity is actually present in the vitreous, it will not be seen as a speck unless the opacity is dense and big enough in front of the central vision. The patient in whom there is the presence of the vitreous opacity usually suffers from floating specks as well. The mistake is to conclude from this that floating specks are due to the vitreous opacity.
- (2) Opacities in the vitreous may not be found but the doctor explains to the patient that the floating specks are due to the presence of vitreous opacities. It is only for the satisfaction of the patient.
- (3) Declaration of the presence of vitreous opacity may be because the doctor himself suffers from this trouble and hence sees it in the patient's eye, or his mind is already hypnotised by the opinions of great authorities.

Treatment :

Usually the strain that causes floating specks is easily relieved. Most cases suffering from floating specks have been benefited by the relief of strain with the aid of central fixation exercises as devised by Dr. W. H. Bates, M.D., of America. Some cases were cured in a very short time, a day or week, while others took longer time. Seldom there were cases who took very long time, a year or more, for the partial or complete cure.

In the treatment of floating specks it is very important at first to convince the patient that the trouble of floating specks is merely functional and that there is nothing wrong organically in the eye. The patient is warned not to try with the eyes whether he can see floating specks and is advised to ignore their presence altogether, putting no importance to their presence. Correction of errors of refraction with or without glasses and treatment of physical discomfort help in relieving the strain.

Case Reports :—A patient who was a member of the Viceroy's Executive Council, complained of floating specks before

the right eye, especially when he felt tired in the office. He consulted three eminent eye specialists; one of them did not find anything wrong in the eye while the others said that the floating specks were due to the presence of vitreous opacities. He was thoroughly examined and nothing abnormal was found by the examination of urine and blood.

I examined his eyes with the ophthalmoscope and under a strong magnifying glass but I could find no opacities in the vitreous. The patient was suffering from high myopia and using two pairs of glasses, one for distance and the other for reading. I told the patient that there was nothing wrong with his eye. He did not believe me as he was actually seeing floating specks, and because his mind had already been impressed by the opinion of doctors of great reputation. So in order to convince him about my opinion I had to argue with him thus :

"What is the nature of vitreous? Is it not a jelly-like substance?"

"Yes."

"Could a thing, however small, float in a jelly-like substance?"

"No."

"You say floating specks are present especially when you feel tired and only before the right eye. I think they are not present in the morning when the mind is fresh or when you do not attend the office." I said.

"Yes, that is right."

"If the opacities are present in the vitreous, they ought to be present all the time when the eyes are open, and should not disappear when the mind is at rest under certain conditions. Therefore, your trouble is purely functional and can be relieved temporarily in a few minutes by central fixation exercises."

I gave him a book and asked him if he could regard the first word of a sentence more distinctly than the other words. When he regarded the first word with his right eye the word was seen worse than the other words. When the word was regarded with the left eye it was seen as well as other words.

I told him to close his eyes and remember black or white colour which he could easily remember. He could remember coal-tar colour and felt his eyes and mind relaxed. Then he opened his left eye and looked at the first word for a fraction of a second and noted the word regarded blacker than the others. He then opened the right eye for a fraction of a second but could not note more blackness in the first word. So he closed the eye soon and by frequent repetition he became able to see the word regarded blacker and more distinct than the other words, with each eye separately.

He then practised central fixation on the letters of Snellen test card, and shifted his sight from bottom to top and top to bottom of every letter and noted the part of the letter regarded blacker than the opposite part. In this way he practised even on the smallest letters with each eye.

Then he stood before a window and began to swing a little from side to side gently. He did not care to see anything but merely shifted his sight on the background without any effort to see. He could easily note that the bars of the window appeared to move in a direction opposite to his body movement. At times, he closed his eyes and visualised

mentally that the window bars were moving in the opposite direction. The patient enjoyed the sun treatment and palming. Gentle blinking was being performed when the eyes were open.

By half an hour practice the floating specks disappeared altogether.

Dr. Bates mentions a very interesting case of floating specks in his book. The patient was a physician who had been seen by many nerve and eye specialists before he came to Dr. Bates, and who consulted him at last, not because he had any faith in his methods but because nothing else remained to be done. He had worn glasses prescribed by different doctors without benefit and frequently suffered from headache. Floating specks caused great uneasiness in his surgery work. His treatment proved to be very difficult as his logic was wonderful, apparently unanswerable and yet utterly wrong. His loss of central fixation was of such a high degree that when he looked at a point forty five degrees to one side of the big C on the Snellen test card he saw the letter just as black as when he directly looked at it. He could not be convinced that this was an abnormal symptom. If he saw the letter, he argued he must see it as black as it really is, because he was not colour-blind. Finally after some treatment by Dr. Bates, he became able to look away from one of the smaller letters on the Snellen test card and see it worse than when he looked directly at it. When he attained central fixation on the small letters he experienced a wonderful feeling of rest and floating specks disappeared. Frequently he looked at a blank wall and remembered mentally a small black dot. After some days' practice his sight became normal, and he obtained complete relief from the floating specks and the headache.

(5)

Vision Under Adverse Conditions.

The ocular hygiene teaches us to protect the eyes from various influences which are very often difficult to avoid, and those who indulge in them are supposed to be ruining their eyes. Bright lights, dim lights, sudden fluctuations of light, fine print, reading in moving vehicles, reading lying down, going to the movies, etc., have long been considered "bad for the eyes", and much literature has been published about their supposedly direful effects. These ideas are diametrically opposed to the truth. When the eyes are properly used, vision under adverse conditions not only does not injure them, but is an actual benefit, because a greater degree of relaxation is required to see under such conditions than under more favourable ones. It is true that such adverse conditions may at first cause some discomfort, even to persons with normal vision; but a careful study of the facts has demonstrated that only persons with imperfect sight suffer seriously from them, and that such persons, if they practise central fixation, quickly become accustomed to it and obtain great benefit.

Bright Light :—The eye is made to react to the light and naturally it acquires the ability to take care of itself under extreme conditions of illumination. Still the medical profession and the lay public remain in fear of strong lights. Extraordinary precautions are

taken in houses and outside by means of umbrellas, hats, dark glasses, eye shades and bandages. If actually some disease is present, it is no uncommon thing for patients to be kept for weeks, months and years in dark rooms, or with bandages over their eyes.

About this universal fear Dr. J. Herbert Parsons of the Royal Ophthalmic Hospital of London, addressing a meeting of the Ophthalmological Section of the American Medical Association in 1910 said that Ophthalmologists, if they were honest with themselves, "must confess to a lamentable ignorance of the conditions which render bright light deleterious to the eyes". Since then Verhoeff and Bell have reported an exhaustive series of experiments which indicate that the danger of injury to the eye from light radiation as such has been "very greatly exaggerated". It cannot be denied, of course, that brilliant sources of light sometimes produce unpleasant temporary symptoms; but as regards definite pathological effects or permanent impairment of vision from exposure to light alone, Drs. Verhoeff and Bell were unable to find, either clinically or experimentally, anything of a positive nature.

It is not light but darkness that is harmful to the eyes. Prolonged exclusion from the light always lowers the vision, and may produce serious inflammatory conditions. Among young children living in dark houses this is a somewhat frequent cause of ulcers upon the cornea, which ultimately destroy the sight. Daily exposure of the eyes closed to the sun or strong electric light improves the health of the eye, relieves most of the discomforts, and is a great benefit in the inflammatory conditions of the eye.

Dim Light.—Children are usually cautioned by their parents and teachers not to read in a dim light. In fact there is a universal fear that reading or doing fine work in a dim light is very harmful to eyes. However, this fact is unfounded. So long as the light is sufficient so that one can see without discomfort this practice of reading in the dim light is not only harmless, but may be beneficial.

Sudden Fluctuations of Light.—Sudden contrasts of light are supposed to be particularly harmful to the eye, but there is no evidence to support such beliefs. Sudden fluctuations of light undoubtedly cause discomfort to many persons, but I have found them actually beneficial instead of being injurious. Persons with imperfect sight suffer great inconvenience, resulting in lowered vision, from changes in the intensity of the light; but the lowered vision is always temporary, and if the eye is persistently exposed to these conditions, the sight is benefited. Such practices as reading alternately in a bright and a dim light, or going from a dark room to a well lighted one, and *vice versa* are to be recommended. Even such rapid and violent fluctuations of light as those involved in the production of the moving picture are, in the long run, beneficial to all eyes.

Fine Print.—It is a common belief that reading fine print is very harmful to the eyes and most writers have stated that fine print is a strain to the eyesight, and is the cause of myopia. Everyone knows that Chinese and Japanese use very large print and suffer most from myopia and I think, there is no nation in the world that has so much myopia. Dr. W. H. Bates has

made many remarkable discoveries relative to the prevention and cure of imperfect sight without the aid of glasses. Among the most important of these discoveries and one that has proved again and again is the following:

Fine print is a benefit to the eye, large print is a menace.

Large print is detrimental to perfect sight because the eye tries to see the whole letter at once. When one is looking at an object, for instance, a chair, the object blurs if the whole is seen at once. You cannot possibly see the arms, legs, back and body of a chair all at once. If you either see the back first or the seat the object remains clear. This is central fixation, that is, seeing best where you are looking, and this central fixation is usually lost in reading large print.

Very fine print reading cannot be done unless the eyes are relaxed and central fixation is good. Children might be bored by books in excessively small print; but there is no reason for supposing that their eyes or any other eyes, would be harmed by such type. On the contrary, the reading of fine print, when it can be done without discomfort, has invariably proved to be beneficial and the dimmer the light in which it can be read, and the closer to the eyes it can be held, the greater the benefit. The reason is that fine print cannot be read in a dim light and close to the eyes unless the eyes are relaxed, whereas large print can be read in a good light and at ordinary reading distance although the eyes may be under a strain. Some people find it beneficial to imagine the white spaces between the lines of print, whiter than the margin. When one imagines the white spaces perfectly white, the print becomes very black and legible. Daily reading of fine print is a benefit to the eye. Persons who cannot read them are benefited simply by moving the sight on white spaces in between the lines of print or by looking at them.

Reading in Moving Vehicles.—Persons who wish to preserve their eye sight are frequently warned not to read in moving vehicles; but since under modern conditions of life many persons have to spend a large part of their time in moving vehicles, and many of them have no other time to read, it is useless to expect that they will ever discontinue the practice. Fortunately the theory of its injuriousness is not borne out by the facts. When the object regarded is moved more or less rapidly, strain and lowered vision are, at first, always produced; but this is always temporary, and ultimately the vision is improved by the practice.

Reading While Lying Down.—There is probably no visual habit against which we have been more persistently warned than that of reading in a recumbent posture. Many plausible reasons have been advanced for its supposed injuriousness; but so delightful is the practice that few probably, have ever been deterred from it by fear of the consequences. As in the case of the use of the eyes under other difficult conditions, it is a good thing to be able to read lying down, and the ability to do it improves with practice. In an upright position, with a good light coming over the left shoulder, one can read

with the eyes under a considerable degree of strain; but in a recumbent posture, with the light and the angle of the page to the eye unfavourable, one cannot read unless one relaxes. Anyone who can read lying down without discomfort is not likely to have any difficulty in reading under ordinary conditions.

Going to the Movies.—Cinematograph pictures are commonly supposed to be very injurious to the eyes; and it is a fact that they often cause much discomfort and lowering of vision. They can, however, be made a means of improving sight. When they hurt the eyes it is because the subject strains to see them. If this tendency to strain can be overcome, the vision is always benefited, and if the practice of viewing the pictures is continued long enough, many eye troubles are cured.

I always advise many eye-patients to go to the movies frequently, become accustomed to the flickering light and learn to look at the picture without strain. They are advised to keep the upper lids down in the position of rest and to blink frequently. They are warned not to stare. If the pictures hurt the eyes I instruct them to look away to the dark for a while, then look at a corner of the picture; look away again, and then look a little nearer to the centre; and so on. In this way the patients soon become able to look directly at the picture without discomfort. When this does not help, I ask them to try palming for five minutes or longer, that is, to close the eyes and cover them with the palms avoiding any pressure of the eyeballs and then recall the memory of black colour or the episode. The fact is that vision under difficult condition is good mental training. The mind may be disturbed at first by the unfavourable environment; but after it has become accustomed to such environments, the mental control, and, consequently, the eyesight is improved.

The use and abuse of Midwifery Forceps

BY LT.-COL. K. S. FITCH, O.B.E., F.R.C.S.,
(EDN.), I.M.S.*

The somewhat stereotyped and ill-sounding title is chosen with a purpose, for there can be no other surgical instrument of more help to the practitioner than midwifery forceps when properly and timely used; nor can there be a more dangerous and destructive weapon when improperly used. As it is truly said of fire it can also be said of the forceps that "it is a good servant but a bad master". Those who practise obstetrics should therefore make themselves masters of this instrument and not become its slaves.

It is of interest to recall that midwifery forceps have been in use for many years. In the year 1720 A.D. straight forceps were used, and in Paris in 1751 curved ones were evolved from the original straight pattern. At about this same time Smellie of London produced an instrument somewhat similar to the modern one of which it was the fore-runner. We find

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that for 200 years forcep deliveries have been practised, and during that period indications and contra indications for the use of forceps have been evolved as experience dictated, and these have been embodied in text-books of obstetrics and in the systematic teaching of midwifery. Yet the untimely and wrongful employment of this old-established instrument even at this present time results in much avoidable mortality and morbidity.

I would like to read to you extracts from modern text-books which will make the preceding paragraph only too plain. In Munro-Kerrs "Operative Obstetrics" (1937 Edition) we find the following:

"The story of the cases admitted as failed forceps to our large Maternity Hospitals is a very sad one even today, and this in spite of the fact that for 20 or 30 years all obstetric teachers have continuously cautioned their students against injudicious employment of forceps".

In the Glasgow Royal Maternity and Women's Hospital during 1933, 70 such cases were admitted with 5 deaths from rupture of uterus and sepsis. 15 other cases had sepsis and 33 infants were born dead."

"During the same year in a hospital at Newcastle there were 40 failed forceps with a maternal mortality of 5.4% and a foetal mortality of 62.5%".

"In Scotland a report on maternal mortality states that in a large series of cases investigated 25 confinements, sometimes after repeated attempts at delivery with forceps outside (one case as many as 6 attempts), an easy low forcep delivery was effected in hospital after adequate time had been allowed for full dilatation and moulding".

Please pay special note to this last sentence "time allowed for dilatation and moulding", for, therein lies the most important factor of this dismal recital.

An American Author writes graphically: "The forceps a much abused instrument—many mistakes and misuses of this instrument are accountable for maternal and foetal injuries—of all the appliances at our command none is more useful and yet none more lamentably used. When those who are inexperienced resort to forceps bad results will follow. Mistakes mean lacerations, traumatism, haemorrhage, sepsis and often death, while caution, experience and knowledge mean success".

Thus this author conveys to the reader in no uncertain terms a warning that the practitioner who embarks on an instrumental delivery with forceps is steering no easy course but one fraught with grave dangers, and the successful ending of the operation depends entirely on his own care, skill, and judgment. Note especially the reference to inexperience as I will deal with this aspect later.

I would add to the above warning the rider that failure in forcep delivery prejudices or precludes safe delivery by Caesarean Section or by a further attempt with forceps, when, and if, the patient be admitted to hospital after the failure has occurred. The hospital staff then have often only one possible treatment to adopt, that of perforation or other mutilating operation on a patient who is often exhausted and already

septic following clumsy and unsuccessful attempts at instrumental delivery. It is regrettable but true that the general practitioner must shoulder much of the responsibility for this state of affairs, though in this country the dai and the prejudices of the relatives are frequently to blame.

In this paper I wish to consider how and when forceps should be used, and what are the more obvious causes of "failed forceps".

Before going on to these considerations I would remind you of the 3 types of forceps—

- (1) Axis traction.
- (2) Forceps without traction rod.
- (3) Kiellands.

The first two have each 2 curves, a cephalic to fit the foetal head, and a pelvic to accommodate the forceps in the curvature of the birth passage. Kiellands forceps have a particular use which will be mentioned later. A description of the various makes with their advantages and disadvantages is not relevant here.

Let us now commence the real subject-matter of this paper. Let us visualise the stage set for the greatest drama in human life—childbirth.

The central figures are naturally the mother and child, the next in importance the medical attendant and then the nurse. Finally do not forget those others behind the scenes—the mother-in-law, the husband, other relatives, and friends. I want you to remember these as they may play an important part in this drama, either for good or for evil, in their influence on the doctor and patient, and in their help or interference. Let us consider in turn these players in our drama, and how they are connected with the use of forceps in delivery.

Firstly, *the mother and child.*

Every text-book of obstetrics will give the reader various indications for forcep delivery and Munro-Kerr's classification is a useful one to follow. These indications are:—

1. **Faults in the forces in the second stage of Labour.**—That is, inertia with consequent delay in the birth of the child but having no mechanical cause such as disproportion, occipito-posterior position and the like. Opinion is somewhat divided as to the exact indication for forceps under this heading.

If there is inertia and maternal or foetal distress then interference with forceps becomes necessary; but otherwise, is one to refrain from such interference in all other circumstances and for an indefinite time?

I would advise you to leave the case alone for 2 hours—or even 3 hours—and to apply forceps after this period if there is no further advance. During the 2 or 3 hours of waiting a frequent watch must be kept on the mother's pulse and foetal heart. Distress on the part of either would indicate that the labour must be terminated. If the head is already on the perineum when the pains cease there is no necessity to wait and you can effect an easy delivery with low forceps. It is in this case a matter of just helping the head over the perineum.

2. **Faults in the maternal passages.**—These include tumours, for which Caesarean Section may be indicated, and rigidity of the perineum. Delivery

with forceps for a hold-up of the foetal head due to perineal rigidity will often be necessary and episiotomy will pave the way and protect the perineum.

Another difficulty in this category is a minor degree of disproportion due to contracted pelvis but if forceps are applied in such a case a tentative attempt should be made first to see if the head will descend when pulled on. Undue force must not be used and the practitioner should not persist if he finds that descent is not occurring. It is of great importance not to attempt delivery in these cases by brute force and it is quite inadmissible to attempt a forcep delivery where the head is floating and will not engage.

3. **Faults in the child.**—Under this heading are included minor degrees of disproportion due to a large foetal head or post maturity, occipito-posterior and face presentations, and deficient flexion of the head. Forceps are also sometimes used for the after-coming head in a breech delivery, and to deliver the head in a Caesarean Section.

Some details regarding deficient flexion of the head are worth noting. On pelvic examination this condition is liable to be mistaken for disproportion and the label "contracted pelvis" is then erroneously applied to it. In the second stage if there is no advance of the head although the uterine contractions are strong and there is no disproportion deficient flexion should be borne in mind but the attendant should also make sure which way the occiput is lying as the case may be an occipito-posterior presentation. In the case of deficient flexion forcep delivery will be necessary and is usually effected easily after flexion of the head by a hand in the vagina.

Occipito-posterior presentations will usually rectify themselves if given a chance but non-descent of the head at the reasonable interval or rotation of the occiput into the hollow of the sacrum warrants intervention. Forceps may be applied after manual rotation of the head, turning the presentation into an occipito-anterior, and this is the best procedure. It is, however, often very difficult or impossible to keep the head in its corrected position whilst the forceps are being applied and Kiellands Forceps are designed for turning the head in occipito-posterior positions but require expert use. Sometimes it is possible to deliver an occipito-posterior as such but in doing so there is danger of severe perineal laceration. Caesarean Section is another form of treatment for this condition if facilities for operation are available at the time.

4. **Where the life of mother is at stake:**—Conditions such as eclampsia, heart disease, obstetric exhaustion, haemorrhage, and threatened rupture of the uterus, may cause maternal distress shown by a raised pulse rate and perhaps some pyrexia, and they call for rapid forcep delivery when the second stage is reached.

5. **When there is danger to the child:**—During labour the attendant must watch the foetal heart; a decrease or increase below or above normal limits portends foetal distress and, if marked, rapid delivery should be effected. One should think of the possibility of a prolapsed cord when there is evidence of foetal distress.

In all these indications there is nothing vastly difficult that cannot be assessed correctly by a careful and intelligent practitioner. Experience naturally will help the doctor to assess the situation accurately and individual cases may try his judgment to the utmost. The most difficult cases for decision are those of minor disproportion and of persistent occipito-posterior presentation. What is the amount of disproportion for which forceps delivery may be justified as opposed to Caesarean Section? This cannot be categorically stated in so many centimetres or other unit of measurement, but can be learnt only by experience. There should be no pronounced overlap of the head in relation to the pubis and plenty of time should be allowed for moulding to take place.

The conditions which must be fulfilled before applying forceps are these:—

(a) **A fully dilated os:**—This obviously necessary condition is disregarded in a remarkable number of cases; or is it more often a question of bad diagnosis? When I was a resident in a large Maternity Hospital I was impressed by the large number of "Failed Forceps" cases admitted with the os not fully dilated—indeed some had but a small degree of dilatation.

(b) The membranes must be ruptured.

(c) The presentation must be a suitable one, i.e., vertex, or face-after-coming head.

(d) There must not be too great a degree of disproportion.

(e) The head must be engaged.

(f) Good anaesthesia.

(g) The woman in a suitable position.

(h) Empty bladder and bowel whenever possible.

(i) **Asepsis.** Often a difficult matter in many of the conditions under which the operation has to be carried out.

Here one may be permitted to digress; to leave the patient and child and to consider briefly the important part which training must play and how lack of training is in part the cause of bad operative midwifery. Earlier in this paper I drew special attention to the word "inexperience". The experience which the general practitioner gains in the art of obstetrics varies widely. Some have large midwifery practices and are men of great and wide experience. To them I would not presume to offer advice. Many others, however, are but casual obstetricians.

In these days, and in this country particularly, much is said and written regarding training in obstetrics. That this training is inadequate in many schools, and could be improved in all schools, cannot be gainsaid. The student is given no opportunity to apply forceps except on a dummy figure. I have been a post-graduate student in three renowned midwifery hospitals, and in none was I allowed to apply forceps and in only one even to deliver cases and those normal ones. Until I was a resident in a Maternity Hospital I had only delivered normal cases. It is an unfortunate fact that the student can learn little by watching some one else do a forcep delivery because

the palpation of the foetal head and the actual application of forceps to that head are hidden save to the operator's sense of touch. Yet the student is considered, after passing his final examination, to be capable of conducting such a delivery. Only by doing midwifery house appointment can this inexperience be rectified as things are at present and there is obviously only room for a limited number of these appointments. There is scope for revision of our existing midwifery training, and I believe that nothing but benefit would result if students were allowed to perform forcep deliveries under strict supervision of a competent teacher. These remarks also apply to post-graduate training.

Points in Technique.—Firstly the medical man has to determine whether or not forceps are indicated. I have already detailed the indications and it remains only to emphasise the importance of allowing ample time for the patient to deliver herself, provided no maternal or foetal distress is evident. Having made up his mind that forceps are necessary the doctor must then make sure that the necessary conditions are fulfilled which permit the employment of the instrument.

The os must be fully dilated, and these words should be hung over the bed of every man who has charge of obstetric cases. It must be ascertained that the head is not floating.

Next, the bowels and bladder are emptied. A full rectum means a messy and potentially septic operation, and a full bladder often delays descent of the head. The patient is then anaesthetised and put into the lithotomy position which is the most convenient one and can be maintained by a simple portable strap. Instruments have already been boiled up, the perineum and operator's hands cleaned and scrubbed up (a douche is not advised). Before applying the forceps it is advisable to "iron out" the vulva and perineum.

After application of the forceps a steady strong pull is taken with the wrists and forearms. If the forceps slip they should be reapplied but if they continue to slip the diagnosis should be revised.

No undue force should be used to complete delivery nor should several attempts at delivery be made. With good application of the blades, correct line of pull, a steady firm pull with the arms and not with the whole of the body, it should be evident almost at once whether or not there is any responding descent of the foetal head. If there is not, then it is of no avail to put the forceps on time again, or to pull with the strength of despair in the hope that sheer brute force will deliver the child. One reasonable attempt at instrumental delivery still allows the possibility of a Caesarean Section to be carried out at the nearest hospital.

The delivery must not be hurried unless there is a definite reason for haste. When the head bulges the perineum the traction rods are removed and the head is gently slid over the perineum and so out of the vulva. An assistant, if available, should support the perineum whilst this is being done. With slowness and care it is possible to deliver a primiparous patient without any tear.

When the head is just about to come out of the vulva it is a good practice to remove the forceps blades

and by pressing the surrounding lips of the vulva the head will be found to slip out. It should not be allowed to come out with a sudden jerk as this might damage the perineum.

The direction of pull which must be employed is of great importance. A common fault is to start pulling a high or mid-forcep application with the blades pointing too much towards the ceiling. This brings the head up against the pubis and no amount of pulling will bring it down. A reference to the diagrams in a midwifery text-book will make this apparent. Only when the head has passed under the symphysis and is bulging the perineum should the operator change his line of pull and gradually sweep the handles round in an arc till they point up towards the ceiling. The earlier pull, when the head is high, is to be made in a direction well towards the perineum and is more easily carried out with axis traction forceps but if axis traction are not available Pajot's manoeuvre should be practised.

I have been over some of the ground in this interesting and important subject and have tried to show where the pitfalls are. Before closing, a word must be added with regard to outside interference by well-intentioned but ignorant lay people. They are the father, mother-in-law, sympathetic friends and relatives who often by their pestering drive worried medical attendant into the fatal error of attempting to cut short a labour by forcep delivery against all the rules of good obstetrics. How frequent this is I cannot tell you but I suspect that it accounts for a number of "Failed Forceps". It must be acknowledged that the busy practitioner, with dozens of other calls on his time, will sometimes put on forceps when no obstetric reason indicates such a procedure, merely to hasten the close of the case and so to be off to the next.

I can only suggest a firm stand against those who pester and cry out for the labour to be speedily terminated at all costs. No medical man should allow himself to be talked into doing something which he knows to be inadvisable and which may lead to disaster. It is not easy, especially when the patient adds her entreaty in between pains and couples it with insinuations that no other doctor would allow her to suffer so, but it is the only line to adopt; it is one which will enable the tired medical man to round off his work with a live baby, a happy mother, and a proud father.

Finally, ante-natal care is not a panacea for all obstetric evils—almost universal ante-natal supervision in western countries had not eliminated all cases of obstetric difficulty, but it goes a long way towards the prevention of obstetric difficulties and prevention, as we are all taught from boyhood upwards, is better than cure.

References.

- (1) Munro-Kerr, J. M. "Operative Obstetrics" 1937 [Edn. Bailliere Tindall, and Cox, London.
- (2) Edgar "Practice of Obstetrics" 1926. 6th Edn. Oxford University Press, London.
- (3) Ibid.
- (4) Loc. cit.

The Value of Sulphathiazole* in Acute Bacillary Dysentery

BY DR. BRIJ-MOHAN BHARADWAJ,

Balak Ram Medical College, Lahore.

Bacillary dysentery is the commoner of the two types of dysentery met with in the northern part of India. Various workers have shown a high prevalence as much as 88 per cent of all cases of dysentery being of bacillary origin. The Flexner and Shiga strains of dysentery are the ones usually met with in this part of the country as other workers have already shown (Major S. M. K. Mullick in 1928), but other strains are not altogether absent. Again the occurrence of mixed infections should not be lost sight of and so the mere isolation of the Entamoeba Histolytica or the blood and mucus present in the stool on a naked eye examination does not preclude further investigations of the case.

Examination of the Stools:—Microscopical examination of the stool showing exudates highly cellular in nature with pus cells, macrophage cells, entire red blood cells and very little faecal matter in a muco-dysenteric stool are highly characteristic of bacillary dysentery. As Chesterman writes in the *Practitioner*, bacillary dysentery exudate in the early stages is typical clear mucus tightly packed with cells. Red cells vary in number but are fresh and often in rouleaux. Polymorphonuclear cells with cytoplasm and even ingested red cells occur. Their relative absence of motility, even on a warm stage, helps to distinguish them from amoebae. Fairley and Boyd lay down another useful dictum which runs as follows: "any case suddenly developing colicky abdominal pain, urgent diarrhoea with flakes of mucus or naked eye blood and mucus in the stools and fever should be regarded as bacillary dysentery until proved otherwise. A bacillary type of exudate even in the absence of positive culture of Bac. Dysentery is regarded as diagnostic if reported in such a case". These dicta have been kept in mind in my series of cases.

Bacteriological Examination of Stools:—Out of my series of 78 cases, 70 were of bacillary dysentery and the remaining 8 were of a mixed infection. Out of the 70 positive cases of bacillary dysentery, cultures were attempted in a few but due to the unavailability of proper media owing to the war conditions the results obtained were not very satisfactory and hence this very important laboratory examination had to be omitted. Out of the total number of cultures attempted 50 per cent were positive for Flexner; 40 per cent for the Shiga strain and the remaining were not very well typed. My investigations have been based chiefly on the microscopic and naked eye examination of the stools. It must be emphasised anyhow that in most cases the culture reports were not available until the acute manifestations of the disease had subsided.

Sigmoidoscopic Examination:—None of the patients yielded result to a sigmoidoscopic examination during the acute phase of the disease.

*Sulphathiazole of the Brand "Cibazol" was used only.

Out of these cases, 23 brought a diagnosis of "Healed Bacillary Dysentery Ulcers" while in the remaining 3 cases nothing could be discovered; the mucous membrane appearing quite healthy throughout the tract visualised. Cultures that were attempted from the swabs taken gave no growths.

Main Signs and Symptoms:—All the patients came with fever varying from 100-103.5 F., griping, distension of the abdomen with the passage of blood and mucus in the stools whose number varied from 10-15 in a mild case and from 15-30 in a case of severe infection.

A few cases complained of severe cramps and muscular pains all over the body, but they were relieved after the first twenty-four hours of treatment.

Treatment of Bacillary Dysentery (Acute):—The use of sulphonamides in the treatment of bacillary dysentery is not particularly new. The value of the different compounds of this group of drugs on the course of acute, chronic or the carrier state of bacillary dysentery has been well established by several workers in different parts of the world during the last few years. Different groups of workers in different parts of the globe tried different compounds on different strains of bacillary dysentery using different dosages and gave different results. Hence it is that today there is no consensus of opinion on the choice of a sulphonamide for a particular strain; or a compound for general use in a bacillary type of dysentery for the busy general practitioner with his poor clientele, who cannot afford the amenities of detailed laboratory examinations, etc.

Jones *et al* in 1939 and Revenel in 1941 have had good results with Sulphanilamide; Welch in 1940, Bell and Reiter *et al* in 1942, Paulley in 1942 and Inder Singh *et al* in 1944 speak very favourably of Sulphapyridine. Lyons in 1941, Anderson and Cruickshank in the same year, Fairley and Boyd in 1942 and Austin C. Clay in 1943 reported satisfactory results with Sulphaguanidine after the pioneer work of Marshal and his colleagues in 1941 on this compound. Poth Knotts and his colleagues in 1942 had good results with Succinylsulphathiazole. Smyth *et al* in 1943 consider this compound as the drug of choice in the treatment of bacillary dysentery (acute) while Roberts and Daniels writing in their report on Succinylsulphathiazole in the treatment of bacillary dysentery with a control group say: "There was no significant difference in the number of stools or duration of diarrhoea in the two groups. It was obvious that Succinyl sulphathiazole produced no amelioration of symptom nor did it shorten the course of the illness in this outbreak."

Sulphathiazole according to the finding of Ferriman and Mackenzie in 1944 is a valuable drug in severe cases, as it relieves discomfort more rapidly. Excellent results have been obtained with this drug, more so in children, as reported by Cooper and his colleagues, Anderson, Taylor and Chingetal. Recently Iswariah and Kutumbhia, in 1945 reported favourably on the results with Sulphathiazole as compared with Sulphanilamide and sulphaguanidine. Elsenoff H. M. *et al* in their observations on the control of bacillary dysentery with Sulphadiazine places this drug second to Sulphathiazole. Other workers have used Sulphadiazine in

the treatment of bacillary dysentery with not too definite results. Recently reports have appeared in the medical press both at home and abroad, Ghosh and Bose 1945 and Swyer and Yang 1945, attesting to the value of Sulphanil-benzamide in the treatment of bacillary dysentery. Another compound Phthalyl sulphathiazole which is a condensation product of sulphathiazole and Phthalic Anhydride is also highly spoken of. This compound possesses roughly twice the activity of Succinylsulphathiazole as compared to their respective bacteriostatic activities, when measured by their activity to suppress the coliform organisms—Poth, E. J. and Rose C. A. 1944. The promises held out with this compound are indeed very encouraging.

In my review of cases, Sulphathiazole has given very good results in these particular cases; my conclusions are just the same as those already formed by Hardy and Watts in 1944 in the United States of America who had reviewed 1,500 cases; that Sulphathiazole is effective, acts quicker and is less dangerous.

Dosage of Sulphathiazole as employed by me.—For an adult patient two tablets (each 0.5 Gm.) start and then 6 (six) tablets divided over three equal doses on the first day. The next day 4 (four) tablets divided over four equal doses. On the third day and the fourth day 4 (four) tablet thrice daily each day. Thus the patient received a total of 18 tablets over a period of four days.

For children a smaller dose is given varying with the child's age and weight.

An alkaline powder containing 20 grs. each of Soda Bicarb and Soda Citras with 5 grs. of Soda Chloride and 2 drs. of Glucose-D was given thrice daily throughout the period of treatment.

A control group of fifteen cases were kept pairing with another fifteen of nearly the same severity coming from the same locality and taking the same type of diet. One group was given Sulphathiazole in the above dosage in powder form and the control group was given Calcium Carbonate in powder of the same weight. The observations made are detailed in Table No. 1. Briefly, it was observed that those treated with Sulphathiazole gave a definitely better response than the control group, the distressing symptoms that were present were greatly alleviated within the first twenty-four hours and these cases were well much earlier.

General Treatment.—Same as for any acute illness. All the patients were forced to take from 5-6 pints of fluids every day, to combat any dehydration. The fluids offered to them were warmed; barley, lime-juice, weak tea, thin soups, sharbat anjbar, plain tap water or glucose water. Any particular case complaining of great distress, high temperature, severe abdominal pain was given immediately a subcutaneous injection of morphine gr. 1/4 with atropine gr. 1/1000 in 1cc distilled water.

Diet.—Fluid diet was given for the first two days and then the patient was brought back to his normal diet within another three days.

Results of Sulphathiazole Therapy.—There was rapid relief from discomfort. Marked improve-

and unless detected and checked early, is incurable. In countries where reliable statistics are maintained it is found to be the second or the third greatest cause of death. For the dead we can do nothing; for the living we must bend every effort to restore them to health.

Prevention

As in any other condition, so in cancer, prevention is better than cure. As the cause of cancer is not very evident and is probably not one, prevention cannot be clearly laid out. Still some general precautions go a very long way to lessen the occurrence of cancer and avoiding the great danger to the patient.

Cancer is peculiarly a personal problem and cannot be checked or controlled by medical men alone. Every person has to do something to conquer it.

Cancer begins without being felt or giving any trouble. Patient complains only after a lump is seen or felt by hand or presses other parts; or the wound produced cause pain or bleeding. It is always desirable that the diagnosis be made early for getting a possible cure. However, consideration of the more important types, specially which seem likely to be influenced by the preventive measures, can be taken into account.

Breast Cancer

The main causes of the cancer of the breast are old standing inflammation and stagnation of milk and other secretions. A family history of breast cancer should be taken as a caution. Women who have or have had cancer of breast should avoid pregnancy. Women who receive treatment with ovarian extracts over considerable time should get periodic examination of the breasts and inner organs done. Suppression of lactation is to be strongly disapproved. Particular attention should be given to a large group of young women who develop chronic inflammation of the breast. Massage, heat and breast pump do a good deal in such cases. Proper medical attention will save many women from cancer of breast. Bleeding nipple should never be neglected. Probably 50% are cases of cancer. Tight brassiers must be condemned as unhygienic. Scars of old abscesses require attention as a possible source of cancer.

Cancer of the breast can best be avoided by:—

- (1) Preventing congestion and stagnation of milk in lactating mothers.
- (2) Eliminating restrictive or irritating brassiers.
- (3) Medical attention to any deformity, asymmetry, lump or bleeding from the breast.

Mammary cancer is to a great degree a preventable disease and a systematic campaign directed towards its prevention is very necessary.

Skin Cancer

Of all the forms it is the easiest to diagnose and to cure. Uncleanliness leading to stoppage of gland ducts and aided by bacterial infection and chemical irritation is an important cause of many skin cancers. The remedy is soap and water and scrubbing. Ex-

posure to sun-shine, winds and irritating dusts give rise to innumerable freckles, lentigines, pigmented warts, etc., which slowly lead to a large group of skin cancers. Protection against them is instinctive. Soot, tar, paraffin, acids and other chemical irritants add a small quota to skin cancers.

Tuberculosis, syphilis, eczema, infected wounds, sinuses, chronic ulcers and all forms of chronic inflammations and infections of skin, if continued long enough tend to lead to cancer. Burn scars when infected and healing is interrupted, develop cancer.

The suspicious mole should simply be removed to save a great number of deaths from melanoma. A mole on the face, shoulder, feet or wherever injury is inevitable, should be removed. Change in the size, colour or growth of hair on a mole indicates activity and generally calls for removal.

Cancer of the skin can be best avoided by:—

- (1) Constant cleanliness; keeping the pores well open.
- (2) Medical attention to warts and moles, which are liable to get prolonged irritation or when they show rapid change in any way.

Cancer of the Oesophagus and Stomach

That the mortality in the cases of the cancer of the oesophagus is practically 100% and probably 98% for that of the stomach and the fact that early diagnosis is difficult, urge the necessity for the efforts toward prevention.

Abuse of tobacco and alcohol stand first as causes of cancer of the oesophagus, while dental diseases and improper mastication are very prominent. Difficulty in swallowing is usually the first complaint. For the stomach bad teeth are again the most important factor, while rapid eating of hot foods, irregularity of meals, lack of water and diseases of the stomach and intestines, are prominent, but abuse of alcohol and tobacco are not particularly noted. Usually in people over 40 years of age any vague distress in the stomach not relieved by treatment for indigestion, the possibility of cancer must be considered. So the cancer of the gullet and stomach can be best avoided by:—

- (1) Not bolting hot imperfectly masticated food.
- (2) Moderation in food, drink and smoking.
- (3) Keeping the mouth, teeth and gullet clean.

Cancer of the mouth

Cancers of the lip, tongue and gullet (pharynx) are among the most preventable forms of the disease. Lip cancer follows irritation from cigarettes, hot pipes in excess, chronic cuts, burns from heat, chemicals and sun-light, and occasionally by simple wounds specially by the teeth. Wounds in the cheeks, broken and ragged teeth, dental decay, pyorrhoea, catarrh of mouth, old tonsillitis, tuberculous and syphilitic mouth infection are amongst the common causes. Chewing betel-nut and tobacco are injurious in many ways. Electrical and mechanical irritation from metallic fillings and dental plates is of definite hazard. The universal use of soap and water, and daily scrubbing of teeth and cheek, and cleaning the

ryngeal covering by soap particles should be gently recommended as the best preventive for mouth cancer.

Cancer of the larynx is mainly caused by the use of tobacco and abuse of voice and the victims of this disease have had abundant warnings in the form of persisting hoarseness of voice.

Cancer of the mouth can best be avoided by:—

- (1) Keeping greased cracked lips.
- (2) Removal of bad teeth.
- (3) Use of tobacco, if at all, to a minimum. White spots on the tongue of heavy smokers call for urgent attention.
- (4) Keeping the teeth and mouth cavity clean.
- (5) Examination by doctor of the throat for any hoarseness of voice of more than 10 days duration.

Cancer of the womb

The significance of bleeding, specially at an age when the courses are about to stop, is grave. Cancer of the neck of the womb or cervix, is a disease of childbearing women. The average number of births in such women is five. Irritating vaginal antiseptics are to be avoided. Frequent examination and proper treatment is the only remedy. Cancer of the body of the womb or uterus, is a disease of the childless women and its control lies not in prevention but in early diagnosis and treatment. Pain seldom accompanies early cases.

The best way to avoid cancer of the womb is by:—

- (1) Proper care of the parts after childbirth.
- (2) Periodic examination by specialist at least once a year.
- (3) Proper treatment for any abnormal discharge from the vagina.

Cancer Rectum

It has high mortality and curative measures are difficult. Chronic constipation does not seem to be a cause. Tenesmus, bloody stools, loss of weight and finally obstruction are the complaints. Piles may also be present. In early diagnosis lies the chief hope for reduction in the mortality from rectal cancer.

Cancer of the internal organs

Stones in the urinary bladder, gall bladder, prostatic ducts, ducts of the pancreas and of the salivary glands are responsible for a certain number of cancers of these organs and this fact forms basis for the early correction of these conditions. Most thyroid cancers follow a long continued benign growth.

General Predisposing Causes

Heredity appears prominently in certain skin and bone cancers and occasionally in breast cancer. Families in which these diseases have been frequent should not intermarry. Stomach and industrial cancers are familial probably due to dietary and other habits, e.g., the Japanese have a high incidence of cancer of the stomach. Cancer of the penis is practi-

cally unknown in circumscised persons. Overweight and lack of exercise increase the tendency to cancer.

The best that can be recommended in the present states of our knowledge is:—

(1) Inculcation of the importance of habit of moderation in eating, drinking, exercise and exposure to all forms of irritation.

(2) The importance of bodily cleanliness as a preventive of cancer. The liberal use of soap and water on body and all accessible body cavities is probably the best single preventive in preventable cancer.

(3) The family doctor should be visited for periodic health examination once a year and the dentist every six months.

(4) To encourage your children to have healthy habits of cleanliness, regularity of sleep and bowel cleanliness.

Facilities to Licentiate Officers of the I.M.S. & I.A.M.C., for admission to the conjoint and other post-graduate diploma examinations conducted jointly by the two Royal Colleges.

The Royal College of Physicians of London and the Council of the Royal College of Surgeons of England have approved a recommendation of the Committee of Management of the Examinations Board in England to the effect that officers of the I.M.S., or of the I.A.M.C., who are not graduates in medicine and surgery of a University recognised under the regulations of the Board and who desire to take the diplomas of the Royal Colleges, may be admissible to the several examinations by means of special facilities granted solely on account of their War Service, as under:—

I. For the diplomas of L.R.C.P., M.R.C.S.

An officer of the I.M.S., or of the I.A.M.C., who produces a personal recommendation from the Director of Medical Services to the effect that he is in every way a suitable candidate, will be subject to the production of evidence of his medical qualification be admissible without any further certificates to Part I of the First L.R.C.P., M.R.C.S., examination (anatomy and physiology). When he has passed Part I he will be required to complete twelve months' clinical work in a recognised general hospital either in this country or overseas, and to pass Part II of the First examination (pharmacology and materia medica) before admission to the Final examination.

II. For any of the post-graduate diplomas granted jointly by the two Royal Colleges:

An officer of the I.M.S., or of the I.A.M.C., who produces a personal recommendation from the Director of Medical Services to the effect that he is in every way a suitable candidate, will be subject to the production of evidence of his medical qualification and on complying with the requirements regarding appointments, courses, etc., laid down in the regulations for the several post-graduate diplomas, be admissible to the examinations.

CORRESPONDENCE

AFTERMATH AND OURSELVES

The war is over, but yet the terms of Peace for us we see none. There has been no directives issued by the Central Government, no declaration made, no cut and dry programme chalked out by the Provincial Governments as to the future employment of the demobilised Licentiate I.A.M.C. Officers.

It is now becoming more and more evident that the Government is all for perpetuation of the old classes and compartments in the Service and Profession. To relegate and reinstate these Licentiates in the old subordinate position is a tragic disregard of human justice.

A condensed M. B. Course has been prescribed for the Licentiate as the panacea of their ills. This is no remedy, though it is a very clever manoeuvre to divert us from the main issue and thus divide and weaken our demand of equal recognition with the medical graduates. This concession has been given all the big air and noise, blessings and good wishes, but I see nothing but mockery in it.

This condensed course we are told has been provided in recognition of the services rendered to the Army by the Licentiate. This was available to them even before the war!

But most of the Licentiate officers specially drafted to the army from the civil are between the age of 35 to 40. They have their own standing, liabilities, education of children and family expenses. During the 2 to 2½ years of study they will be granted, if lucky, leave without pay and will have to spend about Rs. 5,000 to meet the expenses of their stay and study in Calcutta for this much boomed condensed course. Those in service do not even get any gratuity on release because of their lean on civil jobs.

As King's commissioned officers in the army we have shared the same responsibility, same dangers and difficulties; carried out the same duties and undergone the same general and specialist training to get a specialist job along with the graduates of Indian and Foreign Universities. We have worked independently as medical officers in the Army medical service side by side with those graduates, and every body would agree that a medical officer's job in the army is a highly responsible one. It is for the Army authorities to say about the quality and efficiency of our work. Now in civil life we are asked to go back and serve in the old subordinate position again—under the same graduate friends with whom we worked so long in the army on equal terms and stood on the same level of recognition.

This subordinate service should be abolished and Licentiate should be given independent charges of wards, dispensaries and hospitals in the same manner and extent as the medical graduates. Bungling is showing its hood again, promises are being liquidated; the spirit of domination of one class over another is slowly but firmly establishing its grip and I am sure pledges will be broken. Like Cowper I am compelled to utter:

"What ardently I wished I long believed
but disappointed still was still deceived. . ."

The report of the Bhoré Committee appears to give a commendable plan and a welcome innovation. I do not know whether in the employment of medical personnel in all the proposed Primary, Secondary and District Centres the Licentiate would again be relegated to the subordinate position. I can assure that there would be no dearth of fully trained and well qualified Licentiate, who have worked with honour and distinction in various FIELD AMBULANCES, MOBILE SURGICAL, MOBILE XRAY FIELD LABORATORIES AND ANTI-MALARIA UNITS, and as Regimental Medical Officers in the hill tracts of UKHROL, in the hills of KOHIMA, in the plains of IMPHAL, in the jungles of ARAKAN and BURMA and in the deserts of AFRICA under worse conditions, provided the authorities seek real men and do not run after men with big degrees and diplomas.

I am now firmly convinced that the days of humble petitions, loyal prayers and pious resolutions are over. What I would suggest by way of action is to form one Indian Medical Association, act with one voice and one mind and to associate ourselves with nationalistic activities. Our men should enter the Central and the Provincial legislatures. Capt. S. L. Roy.

Proceedings of the Standing Committee Meeting of the All-India Medical Licentiate's Association, held in Delhi on the 4th and 5th March 1946 at the Residence of the President, 79, Daryaganj, Delhi.

The President, Dr. Manohar Lal Kapur, was in the chair.

The following members were present:—

Drs. R. S. Monohar Lal Kapur, S. A. Bokhary, K. C. Wohra, A. R. Luthra, S. L. Rawal, R. S. R. L. Lal, Chaudhury Hardoo Singh Varma, Capt. B. Sahaya, B. B. Lal Dishit, Dinakar Rao, A. D. Mukharji, A. N. Roy, S. P. Nith, H. K. Chaudhury, G. K. Kulkarni, G. V. Dawoo, S. R. Sahu, S. N. Kalkar,

R. A. Bhagwant, V. V. Oak, V. D. Sathaye, U. B. Narayan Rao, A. Viswanathan, Dr. D. V. Venkappa, C. N. M. Naidu, M. D. Pustake, V. M. Bahulkar, Drs. J. Mojundar, L. K. Barua, and Gulham Mustafa Ahamad joined the deliberations later on.

President:—I have no words to thank you all, most sincerely, for the honour you have done to your own Association by taking so much trouble in coming to this place undergoing so many inconveniences and much sacrifice. I assure you that ever since I have been in office of this Association, my personal policy has been always to love all, more so my critics, and on this basis I carried on for full six years as General Secretary. Gentlemen, let me, for your kind information, and specially for the kind information of members who did not attend the last Standing committee, tell you about some of the resolutions which were passed at the last Standing Committee meeting. All the resolutions, it may be noted, were passed unanimously, after frank discussion. I am prepared to clear any misunderstanding of the same, if any.

The first item in the agenda which will engage our attention today is the one referring to our deputation to U. K. The idea behind our proposal to visit the U. K. was to expose the whole injustice that is being done to the medical licentiate of this country. You will be glad to learn that our resolution regarding deputation to the U. K. has, in a way, borne fruit which we could not have expected so soon. If we would have gone to England and returned to India with the same result, I am sure you would have received the deputation in Bombay with cheers. I would now read out for your information the latest concessions granted by the examining Board (in England) of the Royal College of Physicians and Surgeons. (Published on page 147 of this issue.)

General Hance has always been most sympathetic to our demands. This is the man who has most sincerely helped us, who inspired all the Inspectors-General and Directors of Public Health and impressed on them that the time has come when there should be no difference between the medical graduates and the licentiate, and that

(i) subordinate services must be abolished immediately, and

(ii) medical licentiate should never be given less than Rs. 150 per month to start with.

This is the time when we should stand united. This is not the time when we should be quarrelling between ourselves. Some members suggest that this is not the time to pass resolutions but that we must give them a fight. Can we fight with arms? I will be the last person to ask any member of the Standing Committee not to bring any contentious resolutions for consideration. Let me assure you that I would give all facilities for proper discussion.

Regarding the resolution on the Indian Medical Journal we never had any intention to move the Journal and its Editor to Delhi immediately or before the Poona Conference. The idea was to have a Record Office and to have it attached to the Indian Medical Journal, after securing accommodation, and after obtaining the sanction of our next conference.

I would earnestly appeal to you to discuss all resolutions dispassionately, and to arrive at final decisions in the best interests of the Association.

In the end, I would remind you all that this is the time for postwar reconstruction. We must be alert. We must meet the provincial Ministers of Health and explain to them the justification of our demands. In each provincial headquarters as well as the district headquarters we should meet the authorities concerned. I am not suggesting all this to get any credit for myself, but to see that work along right lines is carried on in the best interest of our class and our Association. With your support and co-operation, I shall leave no stone unturned to enhance the prestige of our Association.

The following resolutions were discussed and passed unanimously during its sessions:

(1) Farewell Address to Lt. General J. B. Hance, D.G., I.M.S.: read the draft address prepared in pursuance of Resolution No. 4 of the last Standing Committee Meeting; Resolved that it be approved and presented to the D.G., I.M.S., by the President on behalf of the Standing Committee at the social function to be held at the Hotel Imperial on the 5th inst. at 5 p.m. (Address is published in April 1946 issue of the I. M. J., page 127).

(2) I.A.M.C. and Demobilisation:

This meeting records with concern that although demobilisation has long commenced the Government of India have not yet announced their policy regarding the permanency of I.A.M.C., vis-a-vis the position of Licentiate who have served the Army during the strenuous period of world War II, which lack of settled policy is borne out by the fact that a large number of demobilised Licentiate Officers of I.A.M.C. are being relegated to their former ranks in I.M.D., and provincial subordinate medical services. This meeting urges upon the Government of India to announce the

(i) permanency of I.A.M.C.

(ii) abolition of I.M.D.

(iii) eligibility of licentiate to permanent commission in I.A.M.C.

(iv) absorption of I.M.D. officers transferred to I.A.M.C. (Special section) into the permanent I.A.M.C.

(v) absorption of I.M.D. officers who held temporary commission in I.A.M.C. into permanent I.A.M.C.

(vi) to direct the Provincial Governments to provide the demobilised commissioned Licentiate officers with permanent posts in provincial medical service.

(vii) to allow the temporary I.A.M.C. officers to retain the ranks which they were enjoying at the time of demobilisation.

Government of India be further requested that the emergency Medical Officers in the Special Section of the I.A.M.C. be given the honorary rank of Captain on demobilisation, and that no differentiation should be made between them and the medical officers of the I.A.M.C. holding emergency commission, in the matter of resettling them in civil jobs.

(3) Resettlement of demobilised Licentiate Medical Officers.

The Association is of considered opinion that for a satisfactory and equitable resettlement, the abolition of subordinate medical service is an essential and unavoidable pre-requisite. The abolition of this service is already overdue. The Association therefore, urges upon the Provincial Governments and the Indian States to abolish the subordinate service and to institute in its place one unified service with the initial minimum salary of Rs. 150 per mensem as said to have been recommended by the Conference of the A. M. Os. in November 1945.

The Association would advise the Medical Licentiate of this country not to accept any jobs on less than Rs. 150 per mensem, to start with, or jobs which are derogatory to their self-respect as members of the profession, but to enter practice where there is a splendid opportunity for service as well as for earning.

(4) This meeting urges upon the Government of India to

(i) absorb such of those I. M. D. officers who became prisoners of war (in various theatres) in the commissioned ranks of I.A.M.C. with retrospective effect;

(ii) grant amnesty as per Geneva convention of League of Nations to the Medical Personnel of I.N.A. still held in detention.

(5) In view of the authorities of the Royal College of Physicians and Surgeons, London, having agreed to permit the Licentiate who have served in the war, (in the I.M.S. or the I.A.M.C.) to study and appear for conjoint Board Examinations, and also for Post-graduate diplomas, this meeting of the Standing Committee resolves to defer the question of Association's deputation to the U. K. to the consideration of the next Conference of the Association.

In the meanwhile, the Standing Committee resolves to request the authorities of the Royal College to permit the Civil Medical Licentiate also to enjoy the concession for higher medical education—undergraduate and post-graduate—recently granted to demobilised licentiate personnel of the I. M. S. and the I.A.M.C.

(6) Resolved that sum of Rs. 450 be sanctioned for expenses in connection with the Farewell function and at home to Lt. General J. B. Hance, D. G., I.M.S., and that the offer of the President to stand the expenses for the boarding of the members of the Standing Committee be gratefully accepted.

(7) Resolved that Rs. 200 be sanctioned to the Provincial Secretary, Central India and Rajputana for propaganda and deputation to the State authorities for expounding the cause of the licentiate in that area.

(8) In order to meet the increased work in the office of the Indian Medical Journal resolved to sanction the appointment of an additional clerk till Poona Conference on Rs. 55 a month to this office.

(9) Resolved that a sub-committee consisting of Dr. A. N. Roy, Dr. V. D. Sathaye, Dr. G. K. Kulkarni, Dr. A. D. Mukharji and Dr. A. Viswanathan, be authorised to draft an amendment to Indian Medical Council Act and the same be placed before the mem-

bers of the Standing Committee for approval before submission to party leaders of the Central Legislative Assembly for action.

(10) Resolved that the following sub-Committee be formed to consider the Bhore Committee's Report and to submit its observations for the approval of the Standing Committee before submission to the Government.

Members of the Sub-Committee :

President, General Secretary and Drs. A. Viswanathan, A. D. Mukharji, Kulkarni and Sathaye.

(11) Resolved that this Standing Committee of the A.I.M.I.A. do advise its members to help the Congress Medical Mission to Malaya in all possible ways open to them, either by pecuniary contribution or by offering their personal services, and that the General Secretary be requested to send a circular to the Branches to this effect.

MEDICAL COUNCIL OF INDIA

The Medical Council of India met for its Twenty-fourth Session at New Delhi on the 23rd March 1946. The President, Dr. Abraham S. Erulkar, M.D., was in the chair.

The Council elected Dr. K. S. Ray as its Vice-President. Rai Bahadur Dr. B. N. Vyas, General Hay and Colonel Bharucha were elected to be members of the Executive Committee.

Amongst the several important matters discussed by the Council, the question of the establishment of an All-India Medical Register which has been agitating the Indian Medical world for a considerable time was one of the most important. The Council had discussed this question at several of its previous sessions and had made certain recommendations which have been considered by the Provincial Governments as well as by the Provincial Medical Councils. During this Session, the Council gave further consideration to the various points raised by these authorities. As the result of these deliberations, the Council has made certain additions to their previous recommendations, and the All-India Register will now include all persons holding qualifications on the Schedules of the Indian Medical Council Act and those practising modern system of scientific medicine in British India and possess qualifications granted by Licensing Bodies in British India together with those Indian Nationals, who hold foreign qualifications not recognised by the Indian Medical Council but recognised and registered by Provincial Medical Councils. These will be divided into three groups and this distinction will remain till such date when there is one minimum standard of medical qualifications established throughout the country. The Council were of the considered view that this was not only a decided advance on the previous position but under the limitations of the existing conditions had the merit of meeting all the various points of view in the country.

The Council also deliberated on the question of the recognition of the medical degree granted by the Agra University. Their inspectors had already

reported on the courses of Instruction as well as the various examinations held by the University. The University authorities' observations on the reports of these Inspectors were before the Council. The Council has now appointed two of its members to act as Visitors and to report to the Council as to how far the recommendations by their Inspectors have been carried out.

The question of the consideration of the Bhore Committee Report has been referred to the Executive Committee, a special session of which is being held shortly for the purpose.

The next meeting of the Council has been fixed for the 19th of October 1946.

President's Address at the Twenty-fourth Session of the Medical Council of India.

Members of the Council,

I welcome you to-day to the twenty-fourth Session of this Council. This is the first occasion on which it is my privilege to address you, and in doing so, I am highly sensible of the honour you have done me by electing me the President of the Council and of the high standard of this office which has been created by my predecessors. I appreciate the nice things that have been said about me by our Vice-President Dr. Vyas, who has been my colleague in the Council and the Executive Committee from the beginning.

2. I have careful thought to the question as to whether these addresses were necessary. I am convinced that the Presidential Address, the practice of which was started in the year 1936 by our first President Sir Cuthbert Sprawson, afforded to the members of this Council and the public a concise survey of the activities of the Council. They also afford an opportunity for the President to make public announcements on important matters affecting the medical profession. I am, therefore, of the opinion that the practice established by my predecessors in this office should be continued.

3. You must have learnt with regret the retirement of General Hance, now Sir James Hance, and in consequence of his resignation from this Council. You will, I am sure, join me in a cordial expression of the appreciation of his services to the Medical Council of India and of our good wishes for his health and well being in his retirement.

4. I welcome General Hay, the new Director-General, Indian Medical Service, to the Council in the vacancy caused by the resignation of Sir James Hance; as also Dr. Sen Gupta, representing the medical graduates of Central Provinces and Berar and Colonel L. K. Ledger, representing the Government of Central Provinces and Berar.

5. As reported to you at the last session, the inspection of the Hyderabad Medical College affiliated to the Osmania University was carried out on behalf of this Council by Colonel Jalal Shah and Dr. S. N. Mathur in April last year and their reports were forwarded to the Hyderabad State Medical Council for observations. These are still awaited.

6. Your Executive Committee have considered the Inspectors' reports on the Professional Examinations for the M. B., B. S., degree to the Agra University together with the observations of the University thereon. Their recommendation is being submitted to you to-day.

7. With regard to the establishment of an All-India Medical Register, replies from all the Provincial Medical Councils have been received in connection with the note prepared by Dr. Bidhan Chandra Roy. This matter has received further consideration of your Executive Committee and their recommendation on the subject is being submitted to you to-day.

8. The Administrative Medical Heads of the Provinces have been addressed to furnish us with a list of the existing medical schools in their respective provinces still imparting instruction for the Licentiate standard. They have also been requested to intimate as to which schools are being raised to the University standard.

9. The latest recommendations of your Council regarding concessions to be granted to the Licentiate to enable them to take

M. B., B. S., degrees of the Universities have been forwarded to all the British Indian Universities on our First Schedule. I appeal to the representatives of the Universities to use their influence to obtain these concessions for the Licentiate.

10. It is useful to review at intervals our achievements and our failures so that in the light of experience we may better plan our future.

11. This Council was created under the Indian Medical Council Act of 1933 and first met in 1934. The record of our achievements at home since then is certainly creditable. We have been able to "establish a uniform minimum standard of higher qualifications in medicine for all provinces." To achieve this we laid down minimum standard of professional education and of professional examination; carried out a series of inspections of the Universities in British India, advised them whenever necessary, laid down the qualifications required for teachers and examiners—framed the courses of study for Inter. Science Students in the Basic Sciences of Chemistry, Physics and Biology suitable for Medical Students. The extensive literature produced by our inspectors, visitors and experts is itself a valuable mine of information on medical education in India, and is worth publishing in a separate volume, as nowhere else is such information available.

12. We have been largely responsible for the abolition of the licentiate teaching in many of our provinces and the conversion of some of the medical schools of the licentiate standard to the colleges affiliated to the Universities. One of the non-University qualifications is already on our First Schedule as a result of our inspection—namely, M. C. P. S. of Bombay. We are trying with some success—to persuade the Universities to give special concessions to the Licentiate to enable them to take the M.B., B.S. degrees of the Universities. We have gone beyond the limits of British India into the Indian States of Hyderabad and Mysore, inspecting their Universities, giving all the advice we could give to raise their standards sufficiently enough to come in line with the Universities in British India and thus establish reciprocity.

13. What about our efforts to secure honour abroad?

It is true that this Council was soon able to establish relations with General Medical Council which may be called truly reciprocal as far as most of the Universities on Schedule I are concerned. But the General Medical Council recognises the degrees of the Patna University when granted on or before 11th May 1935 and those of Calcutta University when granted on or before 16th October 1936. Andhra University degrees are not recognised at all. Thus anyone on the British Register may practise in any part of British India including Andhra Desh but no graduate of the Andhra University, and not all the graduates of the Calcutta and Patna Universities can practise in Great Britain. Indeed though we have found two British qualifications not upto our standard, we have been so far unable to remove these from our Schedule II. This position cannot be said to be fair—nor can we call it perfect reciprocity. I trust we will be able to settle these differences with the General Medical Council in the near future. I assure the G.M.C. that there is plenty of goodwill on our side.

14. When we turn to other countries, we cannot but feel humiliation and resentment at the attitude of these countries. Even in India itself our graduates cannot practice in French India whilst practitioners with French India qualifications can do so in British India and this, in spite of correspondence since 1936 and in spite of the appeals of your Executive Committee and the resolutions of the Madras Medical Council endorsed by other Provincial Councils, to enact suitable legislation to "prevent practitioners from French India from practising in British India".

15. In 1936, we opened negotiations with a whole lot of countries to establish reciprocity with them. Only four were willing to have reciprocity directly with us, fourteen insisted on indirect reciprocity through General Medical Council of Great Britain, whilst the rest did not choose even to reply. We then agreed to indirect reciprocity in 1937. Experience soon taught us that this was neither workable nor consistent with our honour. At our recommendation therefore in 1940 the Government of India abolished indirect reciprocity. To-day, we have direct reciprocity with three countries only Burma, Malta and New Zealand—Burma rather grudgingly and very ungraciously.

16. This Council has tried its best to secure honour abroad. It has failed because the politicians who created this Council did not arm it with sufficient powers. The same politicians will have to see to it that our honour abroad is not at a discount. I for one have often wondered what is the sense of reciprocity—direct or indirect

with countries that will not allow Indian Nationals to settle there even though, they may recognise our Indian degrees. The negotiations that are going on just now with South Africa seem to me futile and undignified. It is for you to decide your attitude on such questions in the future; but I cannot but speak out what is on my mind and most likely on yours.

17. What of the future? We will have to see that the efficiency attained at home is maintained and further strengthened in the light of our and world experience. We have before us now the Bhore Committee Report, and fortunately we have amongst us some who were members of that Committee and helped to shape that report. We will study it carefully. A statement has been drawn up by our Secretary in connection with the recommendations of the Bhore Committee Report as far as they concern the Medical Council of India. This statement will be printed and supplied not only to the Members of this Council but also the heads of various medical institutions and Universities so that it may help them to study the four volumes of the Bhore Committee Report. After this, in case a reference is made to us by the Central Government as to our opinion on the Bhore Committee Report, we hope to have a special meeting of the Executive Committee somewhere at the end of July and, if necessary, if the matter is very urgent we may have to call a special meeting of this Council to consider the recommendations of the Bhore Committee as far as they concern this Council. We hope, therefore, that the statement that will be sent out to you, will be helpful in studying the recommendations of the Bhore Committee.

18. It is now 12 years since we inspected the Universities and a fresh inspection is overdue, more particularly as new medical colleges are being added.

19. We will continue our efforts to have an all India Medical Register. We must bring about adjustments of the functions of the Provincial Councils with ours. We must approach the Central Government to give us proper safeguards and sufficient powers, so that reciprocity shall be fair.

Statement of Receipts, Payments of Provincial Conference of All-India Medical Licentiate's Association, Central Provinces and Berar, Bilaspur held in October 1945.

No.	Particulars of Receipt.	Amount.
Rs.	A.	P.
1.	Reception Committee Membership subscription Rs. 10 and above	552 14 0
2.	Donations from Medical Members	106 0 0
3.	Donations from non-Medical Members—	
(1)	Mr. T. Y. Dehankar, Pleader	160 0 0
(2)	Seth Ahmad Hazi Umar	
(3)	Seth Abdul Gani	
4.	Receipt from Medical Exhibition:—	
(a)	By rent of Stalls 7x50/ 350 0 0	
(b)	By Advertisement on Enclosure files (Ciba, Cipla, and May and Baker)	275 0 0
(c)	By Guard of Honour Lock 42 0 0 (Asia Drug Co., Calcutta.)	567 0 0
5.	Part Sale of Cloth purchased to Mission Hospital, Bilaspur	120 0 0
6.	Miscellaneous (Refund received from Central India Electric Company, out of Advance given for Temporary Elec. Connection)	25 0 0
	Total Receipt	1,530 14 0

No.	Particulars of Expenditure	Amount.
Rs.	A.	P.
1.	Badges for Volunteers and others	19 11 9
2.	Medical Exhibition Stall Expenditure:—	
(a)	Decoration of Stall and Town Hall	93 0 0
(b)	Temporary Electric Connection	50 0 0
(c)	Construction of Stalls	220 0 0
(d)	Electric Material on hire bulbs, etc.	45 8 0
(e)	Lock Guard of Honour	42 2 2
(f)	Cloth for Stall purchased	307 0 0

3. Stationary	...	30	11	0
4. Printing Expenses:—				
(a) Printing Charges for Chairman Reception Committee's Address, Provincial Secretary's Report, and Inaugural Address	...	61	0	0
(b) Printing Presidential Address of Dr. A. D. Mukarji, Calcutta	...	45	0	0
(c) Printing invitations and three appeals	...	30	0	0
(d) Printing Letter of thanks two pages	...	27	2	0
5. Postage stamps for correspondence, telephonic calls, telegrams up to 10-12-45	...	138	14	9
6. Railway fare and expenses for conveyance:—				
(a) Railway fare to the President.	...	55	0	0
(b) " " Messenger to Nagpur	...	10	8	0
(c) Railway fare to Singing Party from Nagpur	...	25	0	0
(d) Tonga and other conveyance charges	...	26	4	0
7. Remuneration to clerks for typing, correspondence, etc., etc.	...	60	0	0
8. Miscellaneous (two Breakfasts and light refreshments at Masonic Hall, tea, refreshments, and meals at delegates camp; at Home at Town Hall; Pansupari, replacement of things lost broken; servants, coolies, etc., etc.)	...	239	9	0
Total Expenditure	...	1,526	6	6
Closing Balance	...	4	7	6
Grand Total	...	1,530	14	0

(Sd.) P. H. SANT,
Chairman.

Reception Committee, Provincial
Conference, A.I.M.L.A., Bilaspur.

PROVINCIAL CONFERENCES

11th Assam Provincial Conference, A.I.M.L.A.

It was held at Silchar on the 15th, 16th and 17th February 1945. An exhibition of medical products and preparations was also held. This was opened by Major S. J. Vere Fox, Chief Medical Officer, Labac Central Hospital. The following manufacturing firms participated in the exhibition.

1. Birla Laboratories.
2. Oriental Medical Stores.
3. May and Baker (India), Ltd.
4. Sadhana Ausadhalaya.
5. Ranjan Laboratory (Dacca)
6. Dragon Chemical Works.
7. Gluconate Co., Ltd.
8. Brahmachari Research Institute.
9. Stadco.
10. Public Health Department, Assam.

The Scientific Section was presided over by Major P. H. Cummins, I.M.S. The following papers were presented for discussion:

- (1) Procedure to be adopted in diagnosing comatose patients with or without pyrexia—By Dr. M. H. Hazarika.

- (2) A Review of 105 cases of Cerebro Spinal Meningitis—By Dr. H. K. Chakravarty.

- (3) Human Ameba—By Dr. D. N. Chakravarty.

- (4) Psychology of Criminals and Crime in relation to age, climate, etc.—By Dr. S. P. Nath.

- (5) The Pharmaceutical Industry in India—By Dr. N. R. Choudhury.

- (6) Developmental Anatomy of sex-organs—By Dr. K. N. Das.

- (7) Sutika—by Dr. A. H. Chatterji.

The Conference was opened by Col. S. L. Bhatia, C.I.E., M.C., I.M.S., I.G.C.H., Assam, and the following is the text of his address.

The medical licentiates, whom your Association represents, constitute about 66% of the entire medical profession in India. They are the backbone of the profession, and have a glorious record of good work to their credit. They have made a handsome contribution to medical relief, especially in the rural areas. During the war, they joined the Army in large numbers and rendered yeoman service, for which they have earned our gratitude. The part played by our Assam Licentiates during the war was most praiseworthy. The formation of the Indian Army Medical Corps was a great landmark in the history of Army Medical Service in India, and likewise in the future status of the Licentiates. The I.A.M.C. gave them greater opportunities than ever to show their merit, and I have heard nothing but praise about the manner in which they discharged their duties. Here in Assam, they served also in certain organisations of a quasi-military nature, such as the Civil Porter Corps, A.R.P., etc., which were most vital to the war effort. In all these organisations, their work was splendid and we are proud of them. I take this opportunity to offer all medical licentiates, particularly those from Assam, our sincere appreciation and grateful thanks.

The licentiate doctors have won honour and glory on the field of battle, in hospitals and dispensaries, in rural and urban areas. They are however not content with their past achievements and quite rightly so. For instance, I know, there is a strong desire amongst them to raise the standard of medical education. This is very laudable. I have devoted a large part of my life to medical education and I assure you that nothing would please me more to see this standard improved and brought up to the desired level. This matter is under active consideration.

There are many other matters relating to the future status and prospects of the licentiate doctors, in which we are all deeply interested namely, improvements in the conditions of service, registration by the Medical Council of India, etc. Personally so far as it lies in my power, may I say I will do my very best to help you. After all, we all belong to the same profession, and cherish and pursue the same ideals.

You all know, that while the war was on, seeing the destruction that was going on, we all dreamt of a new and better world. The time has now come to give practical shape to our dreams. To what extent the better world of the future will be new remains to be seen. There are numerous schemes of post war reconstruction designed to make the people healthier

and more prosperous. In the Medical and Public Health Departments in Assam, we have a number of plans, which, it is hoped, will be launched before long. You would not expect me to go into them now, but there are two matters, which I would particularly like to refer to:—

(a) *The need for a Nursing Service.*—In our hospitals, there are hardly any nurses. Some Nursing Sisters there are who belong to the various religious orders. They are doing very noble and splendid work, but their number is very small. I would like to see a properly constituted nursing service in the Province to give proper nursing aid in our hospitals. We need public health nurses and health visitors also to help us in the prevention of disease.

The Assam Nursing Council, which was established recently, has started functioning. The registration of nurses has commenced. We propose to start a number of training centres for nurses. I strongly appeal to the educated young ladies of Assam to come forward in adequate numbers to join this noble profession.

(b) *The need of facilities for Post-Graduate work.*—Our medical officers and medical practitioners need postgraduate and refresher courses to acquaint themselves with the latest developments of medical services, and to specialise in its various branches.

Recently the Government have decided to give 5 scholarships for post-graduate studies abroad in medical subjects. Applications for these have been invited. I hope, it may be possible to extend these facilities further in the near future.

We are all anxiously awaiting the publication of the full report and recommendations of the Health Survey and Development Committee of the Government of India, under the Chairmanship of Sir Joseph Bhore. This committee was appointed in 1943, and has been considering the whole question of medical relief in the country. In framing our future plans of development these recommendations will be extremely helpful.

Last year, I had the honour of representing the medical profession as a member of the Indian Scientific Mission, and visited the United States of America and Canada. There I saw a large number of Universities and Medical Schools, as well as Research Institutes, and met many distinguished members of the medical profession. The medical education in the United States today is of a very high order, and that country is now taking a leading part in medical research. But this was not the case 40 or 50 years ago. At that time the conditions there in these respect were probably no better than what they are in India now. But during this period the United States of America has made most remarkable progress.

As Professor Sigerist has rightly remarked, in any country which is opened to western civilisation, we can distinguish three successive stages in its relation to medicine. During the first stage, trained physicians have to be imported or the sons of the soil have to be sent abroad to study medicine. During the second stage, the training can be imparted at home, and the number of physicians is increased, but not much research work is done. During the third stage, research work is introduced and is pursued

actively. America has advanced along these lines, and we discern a similar process at work in India. In colonial times, and even in the 19th century, American medical students went to Europe for their academic education. Then followed the countless medical schools, most of them of very indifferent sort. Finally with the opening of Johns Hopkins Medical School at Baltimore in 1893, there was established a scientific centre of first rank, and with it the beginning of organised medical research. Medical education and medical research were intimately correlated and both became an integral part of the University. This school showed the way to the future development of medicine in America. Its success was due to the great teachers there, William H. Welch, William Stewart Halsted, William Osler, Howard A. Kelly and Newell Martin.

Other factors which helped to raise the standard of medicine in America were: (a) the establishment of the Rockefeller Institute for Medical Research, (b) the establishment of State Boards of Medical examiners, (c) Abraham Flexner's report on medical education in America, in which he forcibly pointed out the defects then existing, and (d) the American Medical Association which exercised a great moral authority, and has played an important part in the improvement of medical education there.

One important lesson which we can learn from America is that if you have one first class University medical school, it can raise the standard in the other medical schools and consequently the entire quality of medical relief in the country. This is equally true of both preventive and curative medicine. We should aim at having another Johns Hopkins on Indian soil.

We physicians are called upon to treat and cure many dreadful diseases, for instance, Tuberculosis, Cancer, Pneumonia, Cerebrospinal fever, etc. No stigma is attached to the sufferers, not even if they suffer from venereal disease. But there are two diseases, the sufferers from which are generally despised, I refer to leprosy and mental disease. May I put in a word for them?

Leprosy is a chronic infection, which is not very contagious, much less so than tuberculosis. But traditionally the society both in Europe and Asia has always looked down upon the leper. In fact there is no disease which has more humiliating effect on the patient than leprosy. Contagiousness alone could not be the chief reason. I suppose the other reasons may be that the victim is mutilated and deformed, there is foul smell from the sores, and that the disease is believed to be incurable. An impression also prevails that it is a punishment for sins committed. In the middle ages, the church took upon itself to look after the lepers. The lepers were segregated. Segregation meant expulsion from human society. The leper are still segregated. The society is not afraid of tuberculosis but leprosy is a source of terror. Speaking generally the treatment they get in the Leper Hospitals is far short of what is considered desirable.

Mental disease forms also a sad chapter in the history of medicine, for the reason that like the leper the insane has not been treated properly by the society. Although psychology has made some progress during the last 30 years, we still do not know much

about the manner in which the normal and diseased mind works. Physicians in the past have concerned themselves largely with organic disease and have relegated the treatment of mental disease, generally to the priest. But our attitude has steadily changed and we now realise that mental disease does concern the physician and not the priest.

The leper and the insane in India, speaking generally, do not get adequate medical attention. I appeal to you, and through you to all my countrymen to have pity on them and to see that they get the benefit which modern medical science, imperfect as it is, has to offer. I must confess that while going round the hospitals and jails in Assam, nothing excites my compassion more than to see these unfortunate sufferers, and particularly if an insane person is afflicted with leprosy. It is a matter of urgency, that we should fully appreciate the present position and do something to ameliorate it.

Gentlemen, the country is in need of more doctors and doctors who are well trained, nurses, midwives, health visitors, technicians, etc. There are great problems of medical relief staring us in the face all over India both in rural and in urban areas. It is our bounden duty to help wholeheartedly towards their solution. So far as this province is concerned, I feel sure, I have your help and co-operation.

In the course of my travels, I have been constantly made aware of the fact, that medicine is international, and knows no distinction of race, creed or colour. It is the only world wide profession, following everywhere the same methods, actuated by the same ideals, and pursuing the same ends. There is a unity in its aims, the prevention of diseases by discovering their causes and the cure and relief of sickness and suffering. In bringing about a feeling of concord and brotherhood of mankind the physician (I refer to the word physician in its broadest sense) has a great part to play. It is the physician, who I strongly feel, will eventually bring that Grace and Charity to this distracted world of ours, without which life on the planet will become precarious and worthless. For do we not know, that due to the passions of mankind, and with the aid of physical science, it is possible to blow up this earth literally to atoms?

Let us then all live and work together like brothers in mutual harmony, peace and goodwill in the interest of our science. Let us march forward and fulfil our mission as practitioners of the Healing Art with faith, hope and charity, with faith in the ultimate benign aim of our science, with hope which will strengthen all our efforts, and with charity, in which as men of science to be worthy of our vocation, we must live, move and have our being.

And now, Gentlemen, I have much pleasure in inaugurating this Conference, and I wish you all the very best of success in your deliberations.

Dr. S. K. DATTA, Chairman of the Reception Committee then delivered his Address extracts from which are given below:

Brother delegates, Ladies and Gentlemen,

Your gracious acceptance of our invitation has made my heart full with gratitude and I, on behalf of the Reception Committee, extend my warmest welcome to you all. It is really a pleasure and a privilege for

which I am extremely thankful to the members of the Committee as I know I am not worthy of the trust, they have reposed in me.

The Licentiates of Assam have contributed their best to the war efforts by joining the Indian Army Medical Corps, Civil Porter Corps, and similar other organisations. The Civilian Officers, Practitioners, Railway, Tea Garden and other Local Body employees also faced added burden forced on them at the time of scarcity and insecure conditions of life in general, which responsibility they gracefully shouldered. Ladies and Gentlemen, you remember when the prices of commodities rose up to 500 per cent, if not more, this poorly paid class of officers were the worst sufferers—half clad, half fed. I am constrained to say, we the Licentiates in Assam hold the most unfortunate position of having hardly received any recognition from the Government and authorities of the Local Bodies, Railways and Tea Gardens. Reward is a thing unknown to us for our merits. These authorities have failed to redress our grievances. Ladies and gentlemen, is there any department except that of ours where really competent subordinate officers are not recognised for promotion to the higher rank in consideration of their meritorious services? In this connection, it is not out of place to mention that when epidemics break out, it is the Licentiates who are called upon to give immediate relief to the suffering humanity and that at the risk of their lives and many have actually lost their lives in harness without Government coming to succour of their helpless families. It pains us most to draw your pointed attention to the fact that while out of 14 Civil Surgeoncies in the Province 11 were enjoyed by the members of the Assam Medical Service Senior, not a single member of the Assam Medical Service Junior was probably thought fit to act even as Assistant Surgeon during the period of great emergency, when graduates fresh from college, with no practical experience whatsoever, were recruited and allowed to hold charges of important Sub-divisions; though in the Army, Licentiates were granted King's Commission almost on par with the graduates who discharged their duties most creditably in all theatres of the war and were highly spoken of. With all emphasis I command I declare from this platform that we demand nothing less than equality of status and opportunities. No longer should there be any Subordinate Medical Service, this should be wiped out once and for all; and I am sure in giving out this declaration, I am voicing the opinion of the profession in general.

While almost all other Provinces have abolished their Medical Schools in conformity with unanimous verdict of the profession here in Assam the door of the manufactory of the Medical Licentiates has yet been kept open and we earnestly hope that Government will forthwith take proper steps to establish University Medical education in the province.

One more point and I will finish. The Black Act, I mean the Indian Medical Council Act, was passed through the anvil of the Central Legislature in the year 1933 against the vehement protest of the medical Licentiates in particular and the medical profession in general. Out of 62,000 registered medical practitioners nearly 40,000 are medical licentiates. Where is the medical profession of India without the licentiates and is it not therefore a misnomer to call this Council as the Medical Council of India?

Dr. J. N. Roy, President-elect, delivered his address, extracts from which are given below:—

Ladies, Gentlemen and brother delegates,

Problems of the Licentiates

There are only three main problems of licentiates that await solution. They are:—

(1) Recognition of the licentiate qualification by the Indian Medical Council as per its own resolution of October 1940.

(2) Reorganisation of the Provincial Medical Council on the Madras model which has abolished castes and compartments in its register, by having only one electorate of the profession and one register of medical practitioners in alphabetical order instead of qualification-wise.

(3) Institution of one civil service in the provinces to which all registered practitioners would be eligible and into which all the existing sub-assistant surgeons should be absorbed on an equitable basis, thus resulting in the abolition of the subordinate cadre.

It is only when these problems are satisfactorily solved, the status of the licentiates would improve and the opportunities for equality in the profession between the graduates and the licentiates would be widened and broad-based. It is gratifying to note that the Indian Medical Association also is endeavouring to solve these problems to the satisfaction of the licentiates. What remains to be done is the initiative which the Government must undertake in these matters on which the organised profession has already repeatedly expressed its unambiguous and unanimous views.

The October 1940 resolution of the Indian Medical Council has requested the Government of India to amend the Indian Medical Council Act in such a way as to bring about the establishment of an All India Medical Register including the licentiates till the year 1947. This resolution envisages two things:

(1) Inclusion of the licentiate qualification in Schedule I of the Act—qualification obtained till the year 1947—and of the licentiates in the proposed all India Register.

(2) Abolition of the licentiate type of education by the year 1947.

Now that almost all the provinces have abolished there is no reason why the Government of India should not amend the Act as advised by the Indian Medical Council itself. It is learnt that some persons with vested interests are apprehensive that if the Act is so amended the licentiates would swamp the Medical Council by the sheer weight of their number and thereby be instrumental in lowering the standard of Medical Education. As the *Indian Medical Journal* has commented: "Who stood for the abolition of medical schools and who successfully worked for it? It is the All-India Medical Licentiates' Association and nobody else. At the Government of India Conference on medical school education held in November 1938, it was the licentiate representatives who solidly stood for abolition of medical schools while the graduate representative pleaded passionately for the

continuance of medical school education. How then can any one say that if the existing licentiates are given representation in the Council they would lower the standard. This is sheer hypocrisy. As for the licentiates capturing the majority of seats in the Council it is impossible under the existing rules as they would not get more than 7 seats in a house of 30 because the only electorate through which a licentiate can contest is the provincial medical register of which there are not more than seven in this country." I hope the Government would not yield to the siren voice of the few interested persons but amend the Act as desired by the unanimous voice of the profession.

As regards the reorganisation of the Provincial Medical Council, the last Congress Government of Madras has already set an example. I do hope that our new Assam Government will follow it and amend the Assam Medical Registration Act so as to bring out one common register and one common electorate of the profession. Out of the 13 members of the Madras Medical Council seven are elected by the Registered Medical Practitioners, three by the University Medical Faculties and three by nomination. The President of the Council is elected by its members. We on this side may be legitimately proud of this arrangement by which it was possible for the Madras Medical Council to elect a licentiate unanimously as its president.

Institution of one Provincial Civil Medical Service is as important as the amendment of the Indian Medical Council Act and of the Provincial Medical Registration Act in the manner outlined above. In fact it is the logical sequence of such amendments. Over and above this, is the fact that the reorganisation of the Army Medical Service into one composite corps—called the Indian Army Medical Corps—has set an example to the Civil Government in the Provinces—an example of equity and equal opportunities to both graduates and licentiates. The Provincial Governments, including the Assam Government, cannot escape this obligation by any excuse on their part. The work of the licentiate officers of the I.A.M.C. has shown that the medical licentiates are as capable as any other medical man in this country and elsewhere. The Military Authorities have expressed this in so many words of tribute and acknowledgment. The Health Advisory Board and Development Committee, presided over by Sir Joseph Bhore, has definitely stated in its recommendations that *the Medical licentiates should be equally eligible as the medical graduates without any distinction other than that dictated by individual merit and ability*, in the employment of Health and Medical Services of this country. I am also reliably informed that the recent conference of the Administrative Medical Officers of the British Indian Provinces which met in November last has unanimously come to the conclusion that there should be only one type of Civil Medical Service in the provinces under one designation as Medical Officer, and not as Assistant or Sub-Assistant Surgeon, and there should be only one scale of pay from Rs. 175 to Rs. 450 or thereabouts. These are recent opinions based on recent experiences, and not on the old ones of Col. Bryson or Ex-Viceory Chelmsford whom we were accustomed to quote in the previous decades. I would therefore appeal to our Government in

Assam—the newly formed Government—to recognise the current authoritative opinion and to face the realities of the situation by creating one composite medical service to which all the registered medical practitioners should be eligible, and selection made on the basis of a competitive examination. This would entail the abolition of the subordinate medical service—what in our province is called Assam Medical Service junior. The question may be asked: how should the incumbents of this service be disposed? Should those be disbanded or absorbed? I answer this question, subject to your approval and final decision, in this manner. Let all those who have put in more than 10 years service be given an antedate of 50 per cent of the period of their service and start as Assistant Surgeons on the corresponding scale of pay. Let all those who have put in ten years of service or under, be subject to a competitive examination as if they are new entrants to the proposed unitary type of provincial civil medical service. Those who pass the test may be given the same 50 per cent ante-date as is given to seniors, and those who do not pass the test may be disbanded. The motive underlying my proposal is to show to the Government that we ask for no favour and that we depend on our merit only. But this answer is subject to any modification which this conference may desire in its collective wisdom and deliberation. It is up to you to give the answer to the Government and help it to come to a right conclusion on this aspect of the question. It is well-known that the Licentiates have never fought shy of competitive examinations, or any examination to which they are permitted; and that a very great majority of them come out successful, and a good number of them with credit and distinction. On the other hand the truth is the other way round: the examining authorities—be they universities or other bodies—refuse to admit the licentiates to sit for their examinations because of their hidden fear that they would emerge successful in large numbers, rather in larger numbers than those for whom these examinations are primarily intended.

What I have said with reference to the medical service applies with equal suitability to the public Health Service in this province, and also to the Medical Services of the Railways and Tea Estates.

I have purposely refrained from tackling the grievances of the Sub-Assistant Surgeons in this province such as those pertaining to their pay, prospects, promotions. We have, I believe, outgrown those grievances, as their solution, even were it possible, would not result in the achievement of our chief objective: namely, abolition of subordinate service and the institution in its place of one composite service with equal eligibility for all registered medical practitioners.

Re-employment of I. A. M. C. Licentiate Medical Officers.

So far, neither the Central Government nor any provincial Government has made any categorical and clear statement regarding their re-employment in the civil medical service of the country. No doubt re-settlement committees are being formed in every pro-

vince, but there seems to be no policy or principle behind this move. I think it is necessary and important to secure *in advance* for the civil medical service of this province, also for other provinces, the employment of every willing member of the medical personnel to be released by the army. So far as the licentiate Army Medical Officers are concerned, I can say without any fear of contradiction that they would not accept anything less than a gazetted medical appointment, and that the Government would be doing sheer injustice if anything less is offered to them. In the words of General Sir Gordon J. Jolly: "The Medical Licentiates have made good and established their position as medical officers. Never can they, as a class, be thrust back to their former sub-ordinate status and menial pay".* Others in high position and authority have expressed equally strong opinions. Time has now come to translate them into action. I do sincerely hope that those from Assam who joined the I. A. M. C. would be given jobs suitable to their army status and rank, and not shoved into the dark and dreary corridors of subordinate medical or public health service. Our Association, as one which has unreservedly co-operated with the Government in the matter of medical recruitment to the Indian Army, has a natural right to demand of the Government to let it know what plans it has made for the re-employment of those officers and to allow its representatives to take part in the activities of its Medical Re-settlement Committees.

Conversion of the Dibrugarh Medical School into a College.

That medical education should be of the unitary type and through a one-portal system has been strongly and continuously advocated by our Association during the last 20 years. As a result of its endeavours and the response of certain Provincial Governments, it was possible to convert the medical schools in Madras the U. P., the Punjab, Orissa and C. P., into University Medical Colleges. Bombay Government also has begun to move in this matter. Even the Bengal Government is now committed to the principle of converting some of its medical Schools into Colleges. I would therefore appeal to the Government of Assam to convert the Dibrugarh Medical School into a college with the least possible delay. At the same time, University for Assam should be established with a medical faculty, so that we may not continue to depend on the Calcutta University. It is not necessary for me to repeat all the arguments in favour of my proposals, as the Government of Assam are already aware of them. The question is: when are they going to do it? I sincerely trust that the newly elected Government of our province will set itself to this important task of providing it with a University and a medical college at an early date, also the cost of medical education should be considerably reduced. In Russia medical education is free. In the United Kingdom the Good-enough Committee on Medical Education (1945) has recommended that at least a third of the admission should be free. In our country where the average income per capita is not more than Rs. 62-3-3 per annum (or about Rs. 5 a month or about annas three a day) and where there is a great dearth of qualified medical men, it is all the more necessary that either the medical education

* Indian Medical Journal, Jan. 1945, I. A. M. C. Special Number.

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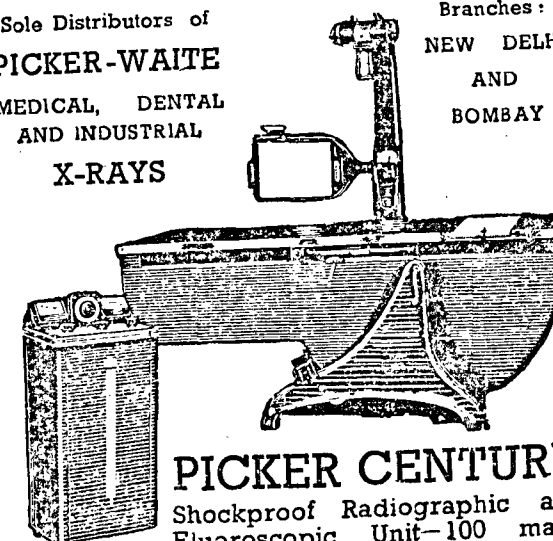
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The 34th All-India Medical Licentiates' Association Conference, Poona, 1946.

The 34th Conference of the All-India Medical Licentiates' Association will be held at Poona in October 1946. The provisional dates are 19th, 20th and 21st October 1946.

An influential Reception Committee has been formed with Dr. G. P. Tendulkar as Chairman, Dr. V. G. Paranjape as General Secretary and Dr. M. M. Ashtaputre and Dr. S. M. Damle as Jt. General Secretaries.

Further details will be published in the Journal from time to time.

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ould be free or, if it is not possible, its cost should reasonably reduced and a third of the admission be free. I hope this aspect of the subject would be kept in mind when the medical school is converted to a college.

Problems of National Health

The Health Survey and Development Committee of the Central Government has concluded its deliberations on 15th December 1945. The recommendations of this Committee are going to be published very soon. I also understand that the Editor of the *Indian Medical Journal* would publish a Special Number in March '46 giving a comprehensive summary of this Committee's recommendations to enable the members of the profession to judge for themselves how far these recommendations meet the needs of the situation and how best the organised profession can help the Government and the people in re-habilitating the decaying health of the Nation. From press reports and personal information I have been able to gather from some of the members of this committee, I find that it has planned the organisation of national health service on a comprehensive scale, and it is quite possible that it will find acceptance with the profession, and the public and the Provincial Governments.

What every province requires is a comprehensive health and medical service beginning from the villages, passing through town and ending at the provincial headquarters in an ascending scale of equipment and efficiency. The planning Committee has divided its programme into two parts: The long term programme and the two short term programmes of five years each.

I hope the Assam Government would study carefully the Planning Committee's report and initiate a comprehensive National Health Service on the lines suggested by this Committee with such modifications as our conditions require. Our province has been most affected by the War, since it was a base of operation. The health and nutrition of our people are affected by all accounts in consequence of their war-torn conditions. I may take this opportunity to assure the Government of Assam that our Association would render it such help as lay in its power in its task of organising the health service of this province as recommended by the Central Planning Committee.

Conclusion

I now came to the end of my address. I hope I have effectively reviewed the problems that face us and the solutions to those problems that have been put forward by the organised profession. I think I have not exaggerated any of the issues I have discussed but stated them truthfully and with a due sense of proportion. The licentiates of my province are common with our comrades in other provinces, have absolutely no axe to grind; otherwise they would not have chosen to stand for the abolition of medical schools. Their only desire is that the existing licentiates should be integrated to the level of practitioners recognised by the Indian Medical Council on the basis of their merit and actual and acknowledged achievements in the profession. After this point their interests become indissolubly merged in a common pool of endeavour towards the achievement of a comprehensive national health service for our people, the licentiates of Assam, let me repeat once again,

are prepared to co-operate with the Government of their province in the development of Assam University and Medical College and in the organisation of a comprehensive health service for the benefit of our people.

I thank you for your patient hearing.

The following office-bearers were elected unanimously:—

1. *President* ... Dr. J. N. Roy, Gauhati.
2. *Vice-President* ... Md. K. Rehman, Gauhati.
3. *Provincial Secretary* Dr. S. P. Nath, Police Hospital, Silchar.
4. *Provincial Organising Secretary* ... Dr. G. S. Das, Gauhati.
5. *Asstt. Secretary* ... B. Chakravarty, Sylhet Town.
6. *Treasurer* ... Dr. S. K. Dutta, Silchar.
7. *Auditor* ... K. Purkayastha, Silchar.

Members of the Standing Committee:

<i>Gauhati</i>	...	Dr. G. S. Das.
	...	" S. C. Chakravarty.
<i>Gauhati Railway</i>	...	" C. L. Banerjee.
	...	" Naba Kr. Ghosh.
<i>Tezpur</i>	...	" Probodh Kr. Dey.
	...	" Lalit Mohon Choudhury.
<i>Manjaldai</i>	...	" Haranath Hazarika.
	...	" Ratneswar Saharia.
<i>Dhubri</i>	...	" Nurul Huda.
	...	" Phani Bhusan Ghosh.
<i>Barpeta</i>	...	" Bhagaban Das.
	...	" Jiban Ch. Medhi.
<i>Nowgong</i>	...	" Lalit Kr. Barooa.
	...	" Hongshadhar Nath.
<i>Jorhat</i>	...	" M. H. Hazarika.
	...	" S. K. Sen.
<i>Dibrugarh</i>	...	" S. C. Barooa.
	...	" K. L. Ghosh.
<i>Tinsukia</i>	...	" D. Bhattecherjee.
	...	" Bhadury.
<i>Tingri-Valley</i>	...	" S. C. Dutta.
<i>Moriani</i>	...	" Kamal Gagai.
	...	" Nawab Danish Md.
<i>Digboi</i>	...	" Ratnakanta Bhuiyan.
	...	" M. Ali Choudhury.
<i>Golaighat</i>	...	" Binandi Ch. Sarma.
	...	" Chandradhar Choudhury.
<i>Silchar</i>	...	" S. K. Dutta.
	...	" K. R. Purkayastha.
<i>Juri-Valley</i>	...	" K. N. Das.
	...	" K. C. Ghosh.
<i>Sylhet</i>	...	" N. C. Roy.
	...	" A. Purkayastha.
<i>Shillong</i>	...	" B. Ganguly.
	...	" Bimal Ranjan Dey.

Resolutions moved and passed at the Open Conference of the 11th Session of the Assam Provincial Conference of the A.I.M.L.A., on 17th February 1946.

1. Resolved that this conference records its deep sense of sorrow at the death of (a) Sir U. N. Brahmachari, (b) Rai Saheb Dr. Kalimohan Sen; (c) Dr. Sam-

bhūnath Datta, (d) Dr. Tarini Kishore Roy, (e) Dr. Hirendra Ch. Endow, (f) Dr. Jitendra Nath Sen, (g) Dr. Bhabani Ch. Das and prays for the peace of the departed souls. Sir Brahmachari was the pioneer of Urea Stibamine treatment and his death is a great loss to the medical profession;

further resolved that copies of this resolution be sent to the members of the bereaved families.

Moved from the Chair and carried unanimously all standing and observing silence.

2. Resolved that the Government of Assam be requested to take immediate steps for the conversion of the B. W. Medical School, Dibrugarh into a Medical College in pursuance of the recommendation of the Indian Medical Council and the Medical Education Committee of 1938.

Moved by Dr. G. S. Das. Carried unanimously.

3. Resolved that whereas medical relief is hopelessly inadequate in this country and one medical institution at Dibrugarh is quite insufficient to produce adequate number of medical men to meet the requirements of Assam and whereas of all places in Assam, Sylhet abounds in number and variety of clinical materials so essentially necessary for teaching purpose and in view of the fact that suitable and commodious buildings with fixtures for laboratories, classes, dissection hall, hostels, etc., for a medical school had already been constructed and long lying unutilised for the purpose with sufficient adjoining vacant and acquired land for hospitals and also in conformity with the recommendations of the Bore Committee, this conference most fervently urges upon the Government of Assam to resume the incomplete work at Sylhet which was suspended and thereby to start a Medical College there forthwith.

Moved by Dr. B. Chakrabarty. Carried unanimously.

4. Resolved that Government be moved to abolish the designation of Sub-Assistant Surgeon and Assistant Surgeon which are in true sense untenable in the present day of scientific culture and medical ethics and that these designations be changed to that of Medical Officers in all services—Government, Railway, Tea Garden and Local Bodies.

Moved by Dr. B. B. Sen Gupta. Carried unanimously.

5. Resolved that the Indian Tea Association be moved to change the designation of A.M.O., which is untenable in the true sense of meaning in the present day of scientific culture and medical ethics, to that of Medical Officer. Following this, the senior Medical Officer be designated as the Chief Medical Officer or Principal Medical Officer of the Tea Estate.

Copy of this resolution be forwarded to Government, Railway authority and I.T.A.

Moved by Dr. B. B. Sen Gupta. Carried unanimously.

6. Resolved that Government be moved to amend the regulations regarding issue of License for opening new pharmacies in such a way so that the Registered Medical Practitioners be exempted from obtaining such License.

Moved by Dr. M. H. Hazarika. Carried unanimously.

7. Resolved that the Government be moved to institute a survey of the medical personnel in all registered Tea Estates of Assam and to adopt strict measures for employment of only Registered Practitioners as M. O., in pursuance of the Assam Medical Act.

Moved by Dr. M. H. Hazarika. Carried unanimously.

8. Whereas the Local and Municipal Boards are always seriously concerned with medical relief and public health measures of their respective areas and whereas there is no statutory provision for inclusion in such Boards of any private and independent practitioner and in view of the open secret that the Government Medical Officers in their capacity as ex-officio members of such Local Bodies have to work under various limitations and sometimes even against heavy odds,

this conference requests the Government of Assam to allot at least one of the seats of the nominated members in each Board to a member of the independent medical profession of the respective area to be elected by the members of that area and for this purpose to make necessary amendment in the Local Self Government Manual.

Moved by Dr. N. C. Roy. Carried unanimously.

9. Resolved that this conference requests the Heads of the Education and Public Health departments of Assam to introduce regular periodical health examination of the students of all educational institutions with immediate issue of a report of each individual student to his guardian and publication of an annual summary of the results of such examinations and to carry out this programme, Inspectors of Health Examination of students be appointed.

Moved by Dr. B. Chakrabarty. Carried unanimously.

10. Resolved that this conference requests the Public Health department of Assam to organise and undertake

(a) periodical Health Exhibition including maternity, child welfare and First Aid in every district, and sub-divisional town and rural areas so that an exhibition is held at each centre at an interval of not more than three years;

(b) Health survey of the whole province and publication of reports on the same, separately for urban and rural areas so that for each district one survey is made and report is published at intervals of not more than two years.

Moved by Dr. N. C. Roy. Carried unanimously.

11. Resolved that this association recommends to the Indian Tea Association to introduce the system of granting study leave with full pay to the desiring medical practitioners of Tea Estates and to depute them for special post-graduate training in recognised institutions at Companies' expense.

Moved by Dr. S. P. Nath. Carried unanimously.

12. In view of the most unsatisfactory and inadequate scale of pay and the service conditions of the Medical Officers under Local Fund employ, be it resolved that the Hon'ble Premier, the Hon'ble Minister-in-Charge L.S.G., and Medical department,

the Hon'ble Minister-in-charge Finance Department and all Boards be moved to adopt immediate measures to introduce the scale of pay and service conditions similar to that of Assam Medical Service;

and to deal with the above, a sub-committee be formed with the following members, with power to co-opt for interviewing the authorities concerned and for suggesting ways and means for redress of various grievances of the Local Fund Employees.

Sub-Committee:—

1. Dr. Subodh Ch. Bhattacharjee, South Sylhet Secretary.

2. Dr. Kshirode Ranjan Purkayastha, Algaipur.

3. Dr. Phani Bhusan Ghosh, Dhubri.

4. Dr. Krishna Prasad Singha, Lala.

Moved by Dr. S. K. Datta. Carried unanimously.

13. This conference is of opinion that no fruitful purpose will be served by sending a delegation to the U. K. on behalf of the Association at a huge expense and the members of the Standing Committee of the A.I.M.L.A., be requested to drop the idea or to refer it to the annual conference of the All-India Association.

Moved by Dr. G. S. Das. Carried unanimously.

14. Resolved that a Sub-Committee with the following members, with powers to co-opt, be formed to negotiate with the higher Railway Medical authorities regarding the grievances of the Licentiate serving in the State Railways.

Sub-Committee:—

1. Dr. Paresh Ranjan Purkayastha, Badarpur Secretary.

2. Dr. Sontosh Kumar Roy.

3. Dr. Amiya Banerjee, Gauhati.

Moved by Dr. R. B. Sircar. Carried unanimously.

15. Resolved that the Government of Assam be requested to promote a certain percentage of the Urban Health Officers and the Sub-Divisional Medical Officers of the Public Health department to the rank of District Medical Officers of Health.

Moved by Dr. S. P. Nath. Carried unanimously.

16. Resolved that the Government of Assam, be moved to count the temporary period of services of all the Sub-Assistant Surgeons of the Public Health department towards their increment of pay with retrospective effect.

Moved by Dr. M. Chakrabarty. Carried unanimously.

17. Resolved that the Government of Assam be requested to recognise all the Sub-Divisional Medical Officers of Health as Gazetted Officers.

Moved by Dr. M. Chakrabarty. Carried unanimously.

18. Resolved that this conference requests the I.T.A. and the B.M.A. to adopt the revised scale of salary, etc., of the existing A.M.Os. in Tea Estates as suggested by this Association in the 10th Provincial Conference held at Gauhati in 1945 as hereunder: Initial pay Rs. 150; annual increment Rs. 10 to Rs. 300.

Further resolved that a sub-committee with the following members with power to co-opt, be formed, to deal with the above subject:

1. Dr. D. N. Chakrabarty, Burnie Braes T. E., Salchakra P.O., Secretary.

2. Dr. Kshitish Ch. Ghosh, Juri.
3. Dr. S. C. Datta, Tingri Valley.
4. Dr. K. N. Das, Sagarjal T. E.
5. Dr. S. K. Sen, Jorhat.
6. Dr. S. C. Ghosh, Dewan T. E.

Moved by Dr. K. N. Das, carried unanimously.

19. In view of the fact that the Doctors in charge of the Subsidised Dispensaries have to work under various limitations with a meagre subsidy but with equal responsibilities as the doctors of the Local Bodies, it is resolved that the Government be requested to convert all the subsidised dispensaries to full fledged Local Board Dispensaries and to absorb the existing Medical Officers in the permanent establishment of the Local Bodies.

Moved by Dr. S. L. Poddar. Carried unanimously.

20. Resolved that the Government be requested.

(a) to confer upon the Licentiate of the Civil Medical and Public Health departments released from Military service, proper status befitting their rank in the Army and to count the period of their service in the Army as double service towards seniority, pay and pension;

(b) to give proper facilities to the licentiate who were not in any service prior to their joining the Army, for employment in the Civil Medical and Public Health departments, Railway, Tea Estates and similar other concerns.

Moved by Dr. B. B. Sen Gupta. Carried unanimously.

21. Resolved that this conference records the deep sense of gratitude and offers heartfelt thanks to

(a) The Hon'ble Mvi. A. Matlib Majumdar, Minister L. S. G. for his kindly gracing the conference by his presence;

(b) Col. and Mrs. S. L. Bhatia for honouring the Association by inaugurating the conference at the sacrifice of their personal conveniences;

(c) Major T. D. Ahmed, I.M.S., Director of Public Health, Assam for his invaluable help rendered to the Exhibition and personally attending the conference;

(d) Major and Mrs. Cummins for encouraging us by their presence and presiding over the scientific section;

(e) Khan Saheb Mufizur Rahman, Superintendent, Normal School, his staff and students for very kindly placing the Institution at our disposal for the purpose of the Conference at the sacrifice of their personal comforts;

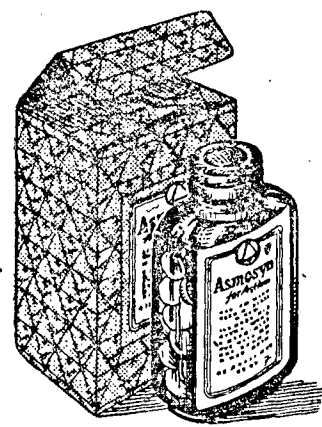
(f) Various Firms who participated in the Conference and especially to Messrs. Oriental Medical Stores, Silchar and Birla Laboratories, Calcutta for their excellent Tea and Dinner respectively;

(g) Lt. A. M. Chaudhury Chairman, Municipal Board; Chairman, Local Board; volunteers and workers for their invaluable help rendered; and to

(h) Miss Parimal Dass, Miss Purnima Devi and party for their excellent entertainment in the conference.

(Proceedings of Behar and Bengal Provincial Conferences would be published in our next issue)

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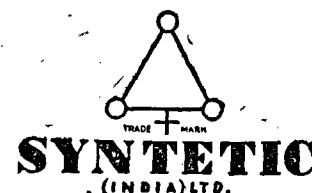
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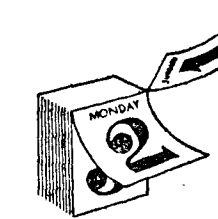


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Dionine 3	Yellow oxide of Mercury 1	Yellow oxide of Mercury 2
Soda Salicyles 3	Fatty Vehicle to 100	Fatty Vehicle to 100
Fatty Vehicle to 100		

Anti-leucoma Eye ointment consisting of low percentage of Dionine and yellow oxide of Mercury is useful for mild opacities of the cornea while Anti-leucoma (strong) and Thiosinamine mixed is useful for thick opacities of the cornea, Keratitis of all forms, etc.

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draw the attention of members of the medical profession to the following specialities, designed under expert medical advice in their laboratories, for the causal and symptomatic treatment of the menopausal syndrome and certain other conditions due to ovarian follicular hypofunction.

"MENOPAX" TABLETS

In 'Menopax' tablets prescribers have found a fully reliable compound oestrogenic sedative, which has proved its value in the relief and maintenance of menopausal cases. It embodies the causal activity of stilboestrol dipropionate—employing modern low-dosage therapy—with the central tranquillising action of 'Isobrom.'

The full formula is:

Stilboestrol Dipropionate	0.05 mgm.
Isobrom*	1.00 gr.
Theobroma	0.50 gr.
Calcium Lactate	1.50 gr.
Menthol	0.50 mgm.

*Isobrom is a combination of bromisovalerylurea and bromethylbutylurea (Carbromal) in equimolecular proportions.

"MENOPAX" antipruritic CREAM

The local application of stilboestrol has proved in the highest degree beneficial for the treatment of pruritus vulvae and related conditions due to ovarian follicular hypofunction. Nevertheless, oestrogenic therapy alone can provide no immediate relief of the distress and discomfort.

What is essential is a therapy embodying the local action of oestrogens in promoting tissue nutrition and regeneration, plus an efficient and prolonged local anaesthetic effect.

These factors have been adequately considered in the formulation of 'Menopax' Antipruritic Cream, which like the tablets, provides causal and symptomatic treatment.

Applied to the affected parts, the cream relieves irritation almost at once, soothes and heals excoriations and ensures a more normal nutrition of the tissues by augmenting the deficient local supply of oestrogens.

The full formula is:

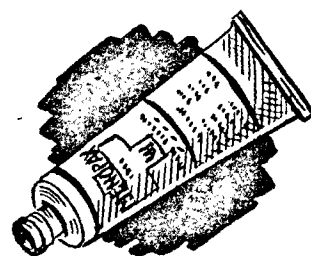
Amethocaine	0.5 per cent.
Benzocaine	5.0 "
Stilboestrol	0.1 "
Zinc Oxide	10.0 "
Camphor	2.0 "
Terpineol	1.0 "
Emulgent Wax	30.0 "

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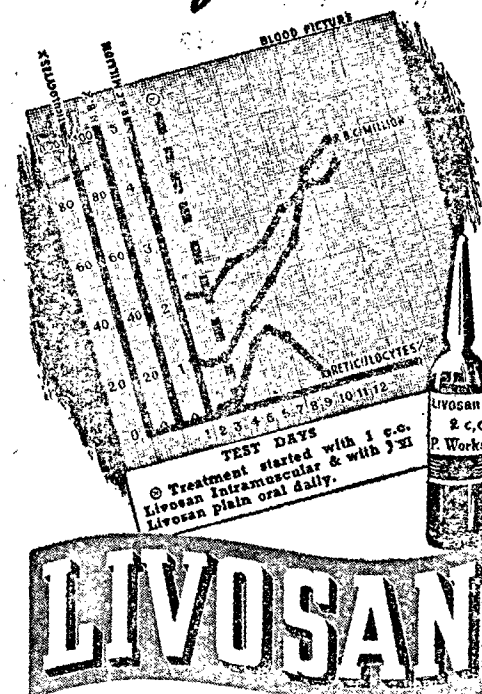
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A total extract of liver in a highly concentrated and purified state, conserving all the active constituents of liver including vitamin B. Patronized for its exceptional potency by many Govt., Civil, Military and Mission Hospitals and thousands of doctors. 2 cc of Livosan is equivalent to 1000 grams of fresh liver taken orally and absorbed.

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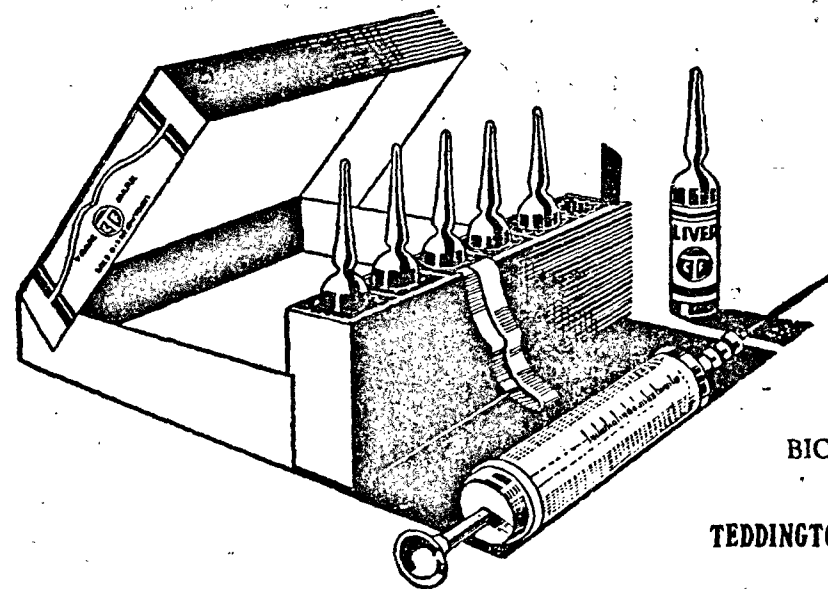
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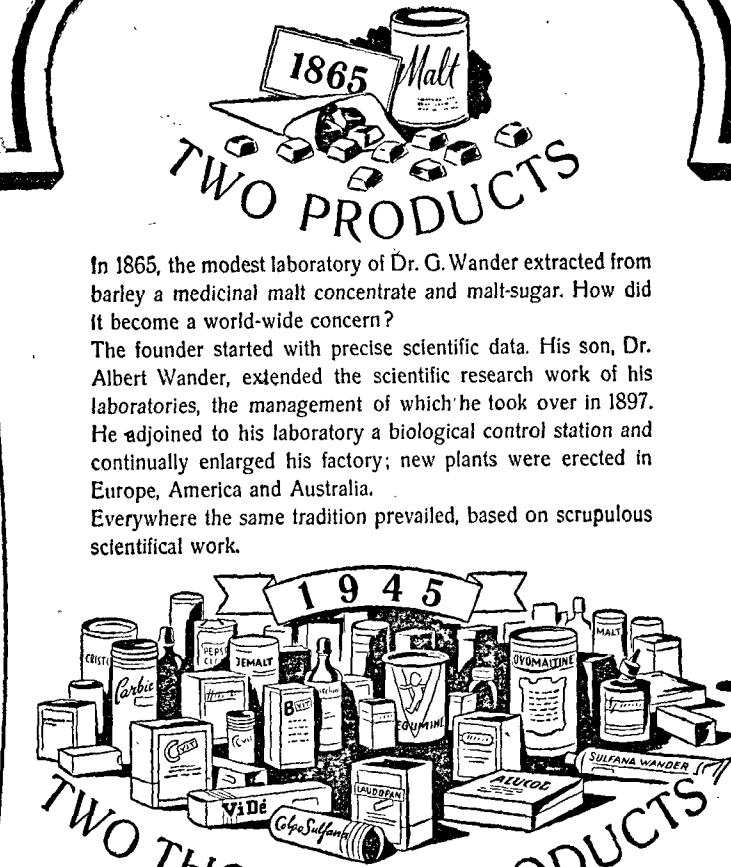
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Vol. 40, No. 6
June 15, 1946

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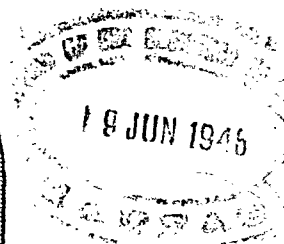
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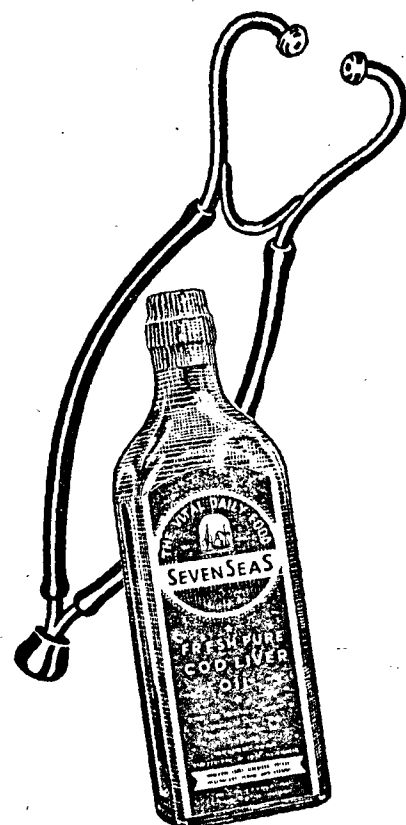
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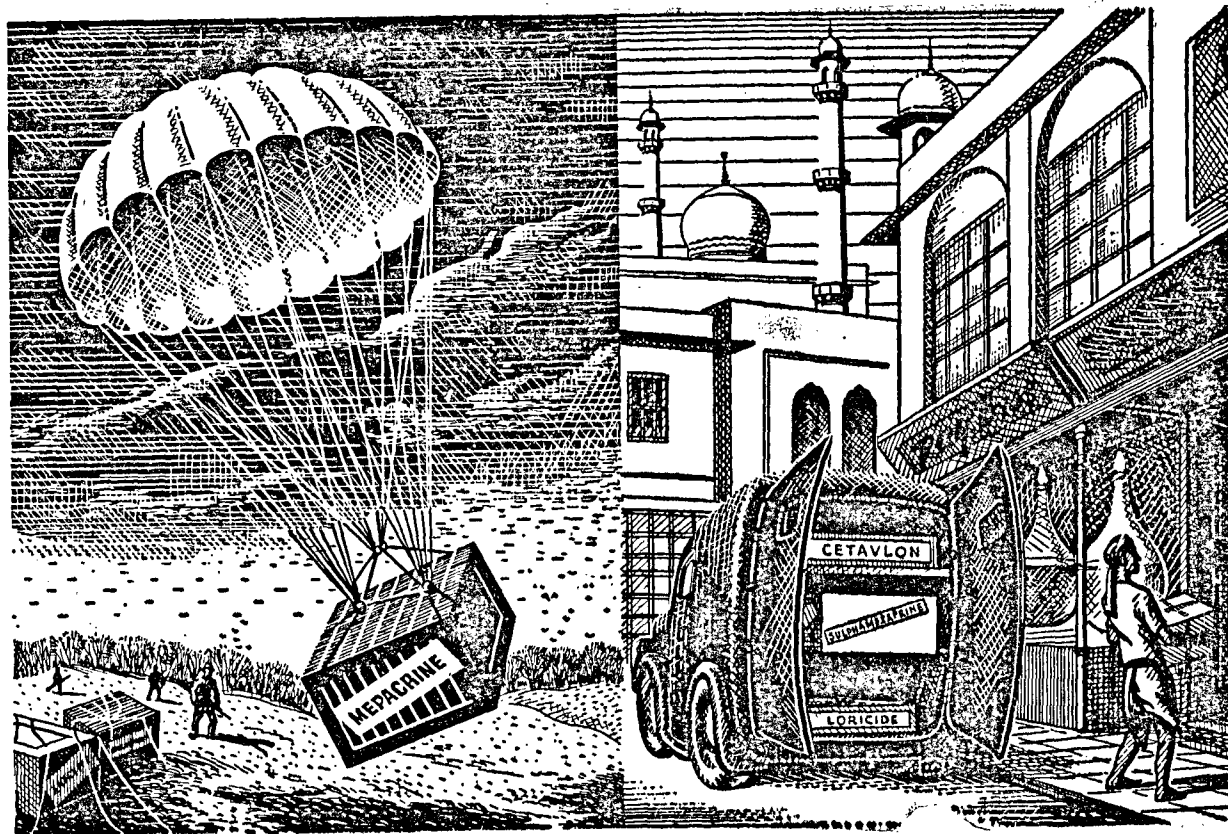
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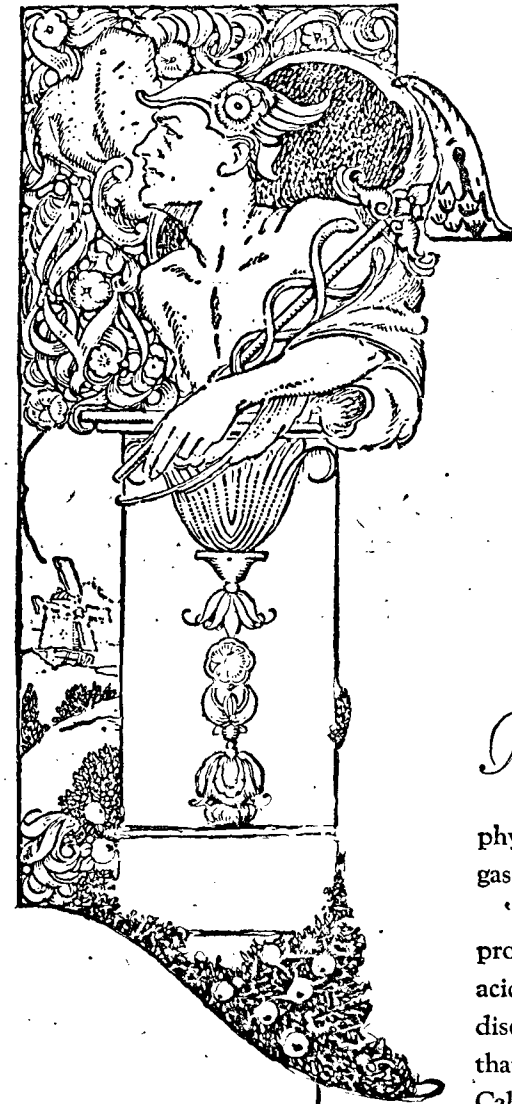


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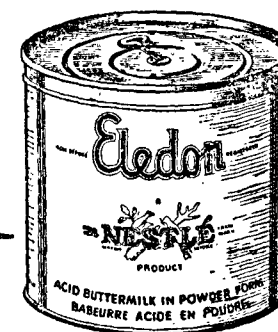
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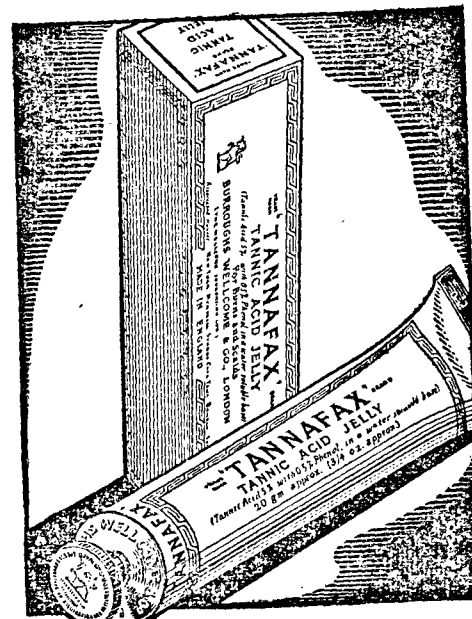
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The full formula is:

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Isobrom *	1.00 gr.
Theobroma	0.50 gr.
Calcium Lactate	1.50 gr.
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*Isobrom is a combination of bromisovalerylurea and bromethylbutylurea (Carbromal) in equimolecular proportions.

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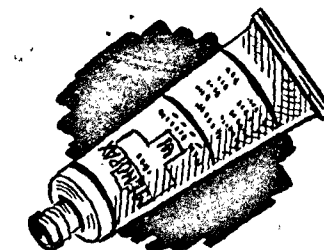
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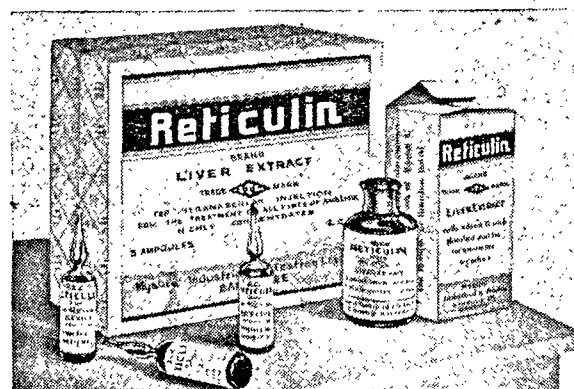
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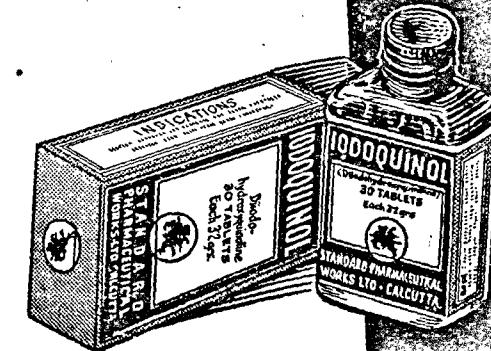
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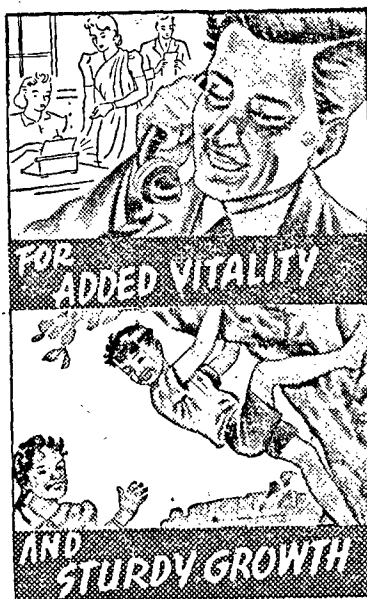
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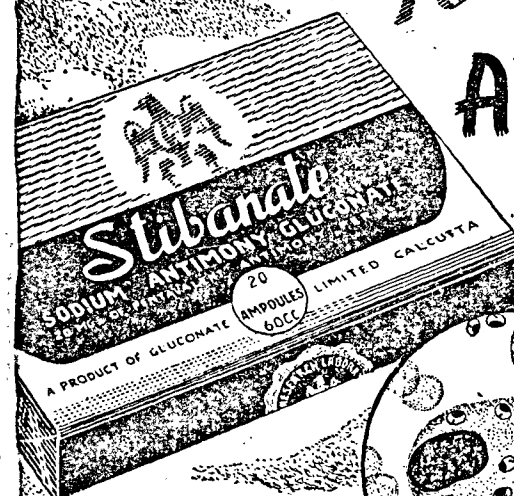
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Indian Medical Journal

(Journal of the All-India Medical Licentiates' Association)

Vol. 40. Madras: June 15, 1946. No. 6

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All-India Medical Licentiates' Association

Bombay Provincial Branch

NOTICE.

The dates of the 34th Conference of the A.I.M.L.A. have been fixed as 19th, 20th and 21st October 1946. Members are therefore requested to send any scientific papers to be read in the Conference before the 1st October 1946 to the Secretary Scientific Committee, A.I.M.L.A. Conference, 502, Narayan Peth, Poona 2. Further details will be communicated to the authors concerned after the papers are received. It is also intended to arrange a Symposium on "The problems of Nutrition in India" with the help of experts in the field. Any member who has done some work on some aspect of nutrition and intends to take part in the symposium, may kindly communicate regarding the same to the Secretary as early as possible.

G. S. PENDSE,
Joint Secretary,
Scientific Committee, A.I.M.L.A., Co.

Indian Medical Journal

(Journal of the All-India Medical Licentiates' Association)

Vol. 40. Madras, June 15, 1946. No. 6.

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OUR MONTHLY SURVEY.

Paper Scarcity Again.—While we were hoping to give our readers a varied fare and more number of pages this year, and thus try slowly to re-establish the pre-war condition of the *Journal*, the Government of India have withdrawn, with effect from April, the 25 per cent increase, on the plea that the stock of news-print is too small to permit even this concession. Besides, the Government have advised the fortnightly and monthly periodicals to revert to the use of Indian Print. But even Indian Print does not seem to be available in sufficient quantities. The anomaly of the situation is that, in some months, supply of paper is not available even against the permitted quota. Quota, therefore, is no guarantee that the paper would be made available to the quota holder. We hoped that paper situation would gradually improve this year, but the actual position does not warrant any such hope. We are informed that the Indian Paper Mills are more or less producing pre-war quantities. If so, why is there so much difficulty in securing even a few reams of paper? Each province seems to have its own rules of control and distribution. Madras rules seem to be too strict, perhaps because the provincial quota is too small. We earnestly request the Congress Ministry of Madras to go into this question in full detail and see that the periodicals in this province get their fair share of paper supply. Meanwhile we have no other option but to come again in reduced number of pages till such time as paper becomes available in sufficient quantity. The whole of 1943 and 1944 was a miserable period for us, and while we were retrieving our position in the early

months of this year and hoping to make good our obligations in this matter, the paper supply has suddenly taken a bad turn. We therefore appeal again to our readers to bear with us for a while if the *Journal* comes with reduced number of pages for some time more.

Relationship of Provincial Medical Councils with the Indian Medical Council.—Dr. Abraham Erulkar, President of the I.M.C., hinted* that "we must bring about adjustments of the functions of the Provincial Councils with ours." The Bhore Committee has also suggested the need for establishing proper relationship between the Central and the Provincial Councils. Although statutorily speaking, the Provincial Medical Councils have every right to set up standards of medical education and impose the same on the Universities under its jurisdiction, yet none of them effectually exercised this power; and since the I.M.C. Act (1933), they have virtually, if not legally, handed over this power to the Indian Medical Council. Even the power to lay down standards of licentiate medical education has become extinct with the abolition of the medical schools in most of the provinces. The only work these councils have at present is with regard to the regulation of ethical standard of practice and disciplinary action in cases of breach of such standards. In fact, the Indian Medical Council has become supreme in all important matters, so supreme that the existence and usefulness of the provincial medical councils has not been felt at all by the profession as a whole, or by the individual practitioner. And if the proposed all-India Medical Register comes into being, even the little lingering importance of the provincial medical councils would vanish in thin air. We do not therefore clearly understand what Dr. Erulkar or the Bhore Committee mean when they say there is an imminent need for adjustment of functions between the Provincial councils and the Central Council.

The first pre-requisite for the establishment of proper relationship between these councils is lacking. The Indian Medical Council is not recognising the licentiate qualification which the Provincial councils are recognising. No fair relationship can therefore be established between the Centre and the Provinces, till the Indian Medical Council chooses to recognise all the qualifications now recognised by the Provincial Medical Councils. Even granting the possibility of adjusting this difference, the provincial councils would naturally be reluctant to become subordinate bodies of the Indian Medical Council where the representatives of the former are not more than seven as against 23 from other sources. We therefore hope that the Provincial Medical Councils would not allow themselves to be deluded by the pleas of the Indian Medical Council for "co-operation and adjustment of functions". On the other hand we would urge on these Provincial Councils to exercise their statutory power of controlling and regulating medical education within their respective jurisdiction, instead of leaving this subject wholly to the Indian Medical Council, as they unfortunately do at present. Unless they chose to vigorously exercise their statutory duties, they would tend to become the satellites of the Indian

* Presidential address, vide *Ind. Med. Jr.*, May 1946 p. 151.

Medical Council which, in fact, they are even now unconsciously. Our aim should be to make the Indian Medical Council really representative of the Provincial Medical Councils and to make it function only in respect of foreign reciprocity, but not to make it a monarch of all its survey.

ADDRESSES AND ARTICLES

(6)

Effect of Solar Eclipse upon the Eye.

BY DR. R. S. AGARWAL,

Eye Specialist, Delhi.

A College student stared at the solar eclipse for about fifteen minutes with both eyes open. Just after seeing the eclipse everything seemed to be blurred, covered with smoke, with the right eye. Next day something like a whirling flower composed of white and dark specks appeared all the time before the eyes even when they were closed. Whirling was very fast for the first three days. On the fifth day the patient felt a black speck bigger than the sun, before his eyes all the time. While seeing sign-boards, sticks, parallel bars or other straight things, he felt them distorted. The lines of print seemed to be curved, and the letters dim. The black speck varied in size according to the distance at which he saw it. At ten feet its size was one and a half inches in diameter; and at one foot its diameter was less than half the centimeter. He consulted many doctors and the opinion was: "Part of the retina was burnt, and the defect would remain permanent. Use dark glasses."

After examining the eyes of this patient, I explained to him that I differed from this opinion. The resulting blind area (Scotoma) and other symptoms were not due, as was commonly supposed, to any organic change in the eye but were the result of a strain of the mind and eyes while seeing the solar eclipse. A return to normal was quite possible, and the prompt relief of the symptoms mentioned would follow the relief of eye strain. This proved that the abnormal conditions were the result not of the bright light of the sun, but of the strain. I said, "The vision is a process of mental interpretation. The picture which the mind sees is not the impression on the retina, but a mental interpretation of it. To the mind objects seen appear to be in an upright position, but the picture on the retina is upside down. When the sight is normal the margins and openings of black letters on a white card appear whiter than the rest of the card, but this, of course, is not the fact, the whole background being of the same whiteness. When the imagination is perfect the mind is always perfectly relaxed and nothing can harm the eyes and sight. By relaxation of the mind some persons can look at the sun for sufficient time without any discomfort or loss of vision. When the eyes and mind are under strain, the imagination is imperfect. The mind, in short, adds, imperfection to the imperfect retinal image. A great part of the phenomena of imperfect sight is therefore, imaginary and not in any way to be accounted for by the derangements of the visual apparatus."

121. q. 121. 121. 121. 121. 121.

My conversation impressed the patient and he was confident now about his cure. He had a good memory and it seemed to me easy to help him because good memory is a great aid to eyesight if it can be rightly applied. When he closed his eyes and covered them with the palms, avoiding any pressure upon the eyeballs, I asked him if he could imagine that he was writing his name with pen and ink on a sheet of white paper. He said he could do that quite easily. I directed him to spell his whole name and then imagine each letter, and to place an imaginary dot at the end of his name. I asked him next to forget about his name and remember the dot. The patient was able to remember the dot and remarked that the dot appeared to move in various directions with a slow, short, easy swing. Memory of a black dot may be difficult for many patients and other relaxation methods may be tried for them. After ten minutes when the patient opened his eyes he felt a cooling sensation in his eyes and relief of his discomfort. He frequently closed the eyes and covered them with the palms for ten or fifteen minutes each time, and usually remembered a black dot but sometimes he liked to recall the memory of other things as the colour of his black shoes and white trousers and his familiar game badminton.

While practising on the Snellen test card the patient glanced at the white centres of the letters instead of fixing the sight on the blackness of the letters. At times he closed the eyes for a minute or longer, remembering white snow, white paint, a white cloud in the sky. This enabled him to observe that the white centres of the letters appeared whiter than the margin of the card; and as the white centres appeared whiter, the blackness also increased, and subsequently the letter became perfectly distinct. His reading sight was soon improved when he moved his sight on the white spaces first below the lines of the print without making any effort to look at the letters. Gentle blinking was a great help.

Within a few days the sight became normal and distortion of straight things disappeared, but the black speck faded gradually and it took about one month when the speck disappeared completely.

(2) Another patient, a Sanyasi, having normal vision stared at the mid-day sun just to attain some mental power. After a few minutes when he took the sight away from the sun he began to see the sun on everything which he saw. When he closed his eyes the sun was visible in his imagination. This became a great discomfort to him because the true form and colour of the object was not visible due to the appearance of the sun on the object. Reading and writing became almost impossible. It was declared by the doctors that the condition of his eyes could not be improved as the retina of the eyes was damaged.

The Sanyasi was a man of determination and he dared to challenge the doctors' opinion. In the night when the moon was shining he looked at the moon for at least an hour with the idea that the cooling rays of the moon would neutralize the effect of the heat rays of the sun. While looking at the moon he mentally imagined the moon. The Sanyasi made himself alright within three days. To confirm that his discovery about the treatment was genuine he again made his eyes worse by looking at the sun and began to see the sun on all things. Again he repeated his

experiment and looked at the moon in the same way and made his eyes alright.

(3) To another patient, after seeing the solar eclipse, a yellow coloured speck appeared before the eyes. The black letters on the Snellen test card and on the book appeared to be grey. Reading sight had sufficiently deteriorated, letters appeared very irregular. Multiple images were frequently seen.

I advised this patient to cut all his activities and remain in a green room for about a week. When questioned whether the green or smoke coloured goggles could serve the purpose of the green room. I said that they could be somewhat useful but complete relaxation was not possible as the goggles could not relieve the mental strain which was underlying the imperfect functioning of the eyes. Moreover when the goggles became misty and dirty the patient did not care to clean them as he was not conscious. It was a wrong belief that goggles kept the eyes safe from dust because the dust which entered inside could not come out hence there was accumulation of dust on the eyes and goggles. Being the son of a rich man a room was soon made of green shade by putting nice green curtains. As green colour is very soothing to the eyes this patient felt some relief. While remaining in the green room he washed his eyes with cold water by dipping his face in a basin full of water and then practised palming about five or six times a day. In the early morning the patient went out for walking with bare feet on the green grass. The mild dew touching his soles of the feet created a cooling sensation in the brain and helped in the relaxation of the mind. In a week's time the yellow speck completely disappeared but the sight for reading was not yet quite good. To improve the sight I directed the patient to practise central fixation on the various charts given in my book 'Central Fixation as an Aid to Eye Sight.' After a few days not only ordinary reading became quite comfortable but the patient could also read even the finest print without any discomfort.

(7)

Eye Troubles in old age—Causes.

Most people have difficulty in reading books or newspapers, when they arrive at the middle age and they are dependent upon their glasses. The decline of near vision usually goes on increasing and higher power glasses are used. Sometimes the sight declines very rapidly and the patient changes his glasses to higher powers quite frequently till no more power can be added to the glasses and still the patient suffers from discomfort in reading; and if the patient does not get cataract, glaucoma, or inflammation of the retina, he may think himself fortunate. Patients when they complain about worsening of the sight and discomforts the doctor satisfies them by saying that it was due to old age or by merely changing the glasses. He thinks he cannot tackle the case successfully.

Many other patients at the middle age suffer from other serious eye diseases as choroiditis, retinitis, optic atrophy, optic neuritis, etc.; and it is a general belief that syphilis is the cause of such eye diseases and antisyphilitic treatment is to be adopted even when there is no history of syphilis or the blood examination is negative. Most of these cases become worse in spite of persistent treatment. The fact is that very few cases are affected by syphilis and cured by

antisyphilitic treatment; in a majority of them the cause is not detected and the treatment fails.

It has become a usual practice to advise extraction of teeth when there is inflammation of the inside of the eyeball in old age, and at times when no cause of deterioration of sight is observed. This hit is usually made when the physician finds no other fault except pyorrhoia. When the teeth are extracted the patient very seldom gets any benefit. Of course, bad teeth should be attended to, but a drastic step of getting the teeth extracted immediately often proves useless.

Some patients complain of smarting sensation in the eye, pain in the eyeballs, redness in the eyes, or discomfort after sleep, and it is usual to diagnose and treat such cases as trachoma; usually no permanent benefit comes by such treatment. Long treatment with caustics adds more complications.

Almost all persons suffering from eye troubles in old age acquire hypermetropia and have its symptoms. Eighty per cent of eye troubles are caused by hypermetropia. When hypermetropia is present the eye is under strain and the sensitiveness of the macula lutea becomes defective. The result is that the eyes lose its acute vision and central fixation. One can observe that when he looks at the first word, or the first letter, of a sentence he does not see best where he is looking; that he sees other words, or other letters, just as well as or better than the one he is looking at. He can also observe that the harder he tries to see the worse he sees. It may be a surprise to many a reader that hypermetropia is the cause of most eye troubles in old age, but it is a fact because the treatment which prevents and causes hypermetropia proves very beneficial in all such eye troubles.

In the early stages of the serious eye diseases in old age they are readily curable because the vision is only slightly affected and the treatment which cures hypermetropia is the treatment which prevents serious eye diseases. Cataract and glaucoma can be prevented or cured in many cases by treatment which cures hypermetropia. It should be emphasised that early treatment of hypermetropia yields quicker, more continuous results than later treatment.

Ophthalmologists have almost universally believed that absolute glaucoma is not curable by any form of treatment. It can be demonstrated that glaucoma is caused by strain—the strain of hypermetropia. When this strain is relieved or corrected, glaucoma usually improves. This treatment is more successful than operation or eye drops. An old patient with hypermetropia refraction was noticing gradual deterioration in sight for distance and near. Every thing appeared foggy. She complained of pain in the back of the eyeballs, heaviness in the head, throbbing sensation in the temples, floating specks before the eyes and halo around light. Glasses failed to relieve the discomforts. The patient was given the treatment of relieving the strain of hypermetropia by central fixation exercises and other relaxation exercises as devised by Dr. Bates and as practised by me with some modification. The result of the treatment was that within a few days the sight began to improve and the discomforts began to become less, and in a month's treatment the vision improved from 6/60 to 6/9. The mist and floating specks completely disappeared. Reading with lower power of glasses became quite comfortable,

Patients suffering from optic atrophy, optic neuritis, choroiditis, and retinitis have been benefited. A patient suffering from early optic atrophy was found suffering from hypermetropia also. Headache was the prominent symptom in his case. The medical men were trying to neutralize the effect of hypermetropia by prescribing glasses, but did not try to remove the cause of hypermetropia, that is, strain at the near point. New methods of treatment are not given any encouragement. A specialist in the old methods would stand up and say: "If I fail no one else can succeed; I know all there is to know about the eye." If one claims to give benefit to a case of optic atrophy, he is regarded as a charlatan. This patient was greatly benefited by the relaxation methods for the cure of hypermetropia.

Many people complain that when they wake up in the morning, they are suffering from pain in their eyes and head. They often feel as weary as though they had been working hard all night long. Many of them do not recover from the pain and fatigue until after they have been up for an hour or longer. Their vision also may be found to be reduced to a very considerable degree. If the eyes of such patients are examined with the ophthalmoscope while they are asleep, a strain can readily be observed. When the patients are told that rest or relaxation will relieve the strain and cure their eye troubles, they ask why sleep, which is a state of rest, does not do so. The truth, however, is that eyes are rarely completely relaxed in sleep. If they are under a strain when one is awake, that strain will certainly be continued during sleep, to a greater or less degree. This is why people wake up in the morning with eyes more tired than at any other time or even with severe headaches. A lady patient of a royal family had good eye sight but she often had strain in reading and writing. She often suffered from redness in the eyes after sleep and after seeing the cinema. The doctors treated her for trachoma for a sufficiently long time. This patient was given my treatment which benefits hypermetropia and was educated in the right ways of reading and writing. Before and after sleep she was asked to practice relaxation exercise for a few minutes. Within few days she became perfectly alright. One day when she went to see the cinema and got no redness or strain she was surprised to note the benefit.

When patients complain of eye troubles, they are often advised not to use the eyes. It seems to be a wrong idea. The eye is one of the sensory organs and performs the act of seeing whenever it is open whether the person wants to see or not. The eyes were made to see, and if when they are open they do not see, it is because they are under such a great strain that they cannot see. The remedy is not to avoid either near work or distant vision, but to get rid of the strain which underlies the imperfect functioning of the eye at both points.

Since hypermetropia is so common and produces so many different kinds of eye trouble—imperfect sight, pain, dizziness, and other nervous symptoms to a greater extent than do other causes of refraction—it is well to understand as much as we can of the occurrence, symptoms, prevention, and cure of hypermetropia. I think it is a mistake to condemn the simple methods of relieving the hypermetropia.

Disorders of Blood Pressure

BY

DR. D. N. BANERJEE, M.B. (Cal.), M.D. (Berlin)
Carmichael Medical College, Calcutta.

By blood pressure is meant the lateral pressure exerted by the circulating blood on the walls of the vessel which contains it. In recording and evaluating the blood pressure of an individual, the pressure in the brachial artery is generally reckoned, as different parts of the vascular system show great difference in blood pressure. Blood pressure is generally recorded under two heads (1) the *systolic pressure*, and (2) the *diastolic pressure*. The systolic pressure chiefly indicates the force of the heart and the condition of the arterial wall, while the diastolic pressure gives a fair measure of the condition of peripheral resistance. The difference between the systolic and diastolic pressures gives the *pulse pressure*. The pulse pressure represents the actual driving force which propels the blood to the periphery. This is thus a measure of the work done by the heart and the strain to which the vessel walls are subjected with the passage of each pulse wave. The blood pressure in healthy subjects varies considerably with age and weight. Normally it rises from birth to adolescence. Subsequently, it may remain relatively stationary or may rise slightly. The mean blood pressure at 3 years for both sexes are about 85/60 mm. of Hg.; 115/75 in women and 120/80 in men in early adult life; 135/90 during the ages between 50 and 60. The average upper limit of blood pressure in an adult may be taken to be 135/90; a figure of 140-150/90-100 may be taken to be a border line case of high blood pressure, while a pressure 150/100 or over, when at rest may be taken definitely as hypertension. It is curious that such a figure is often found when the pressure is measured for the first time, as during examination for life assurance with no other signs of disease present. In these cases, blood pressure reading alone cannot help to determine whether it is physiological or pathological. Associated history, response to exertion both physical and mental will often decide the question. A very rough idea of the average blood pressure of an individual may be obtained by Dally's formula—systolic pressure = $100 + \frac{1}{4}$ of age and diastolic pressure = $75 + \frac{1}{4}$ of age.

There are four fundamental bases which regulate the blood pressure normally, viz. :—

- (1) Contractile force of the heart,
- (2) Condition of vessel walls,
- (3) Peripheral resistance to blood stream caused by vasomotor nervous system.
- (4) The volume, physical condition and viscosity of blood. Among the above factors peripheral resistance is the most important.

During the cardiac cycle the blood pressure in the arteries reaches its highest and lowest level during systolic and diastolic periods respectively. The rise of arterial pressure may be due to (a) increased output of the heart, (b) increased viscosity of the blood or (c) increased peripheral resistance due to the narrowing of the small arteries and arterioles. Of these factors the commonest cause of the rise of the blood

pressure is the narrowness of the blood vessels and this vascular narrowing is produced mainly by chemical effect than by nervous mechanism. Thus the degree of increased diastolic pressure is an approximate index of the degree of arterial constriction. The peripheral resistance is derived mainly from the arterioles and to a lesser extent from the capillaries. The arterioles are under the control of the vasomotor centre which sends fibres to the cervical cord and the vasoconstrictor fibres then pass out in the sympathetic nervous system.

The change of an intermittent blood flow from the ventricle into a continuous flow in the arteries is due to the distention of aorta during systole to accommodate a large quantity of blood at the time of ventricular output. During ventricular systole the blood pressure rises to such an extent that it is quite sufficient to distend the aorta and its larger branches to accommodate the ventricular output. Hence the pulse pressure may be increased either from augmented amount of blood expelled at each heart beat or from increased rigidity of the aorta and its larger branches. Increased blood pressure at each cardiac beat may probably be the cause of the high pulse pressure in cases of regurgitation of aorta, thyrotoxicosis, complete heart block and certain emotional conditions. Increased rigidity of the aorta and its branches may be the cause of systolic hypertension in which the systolic pressure is raised with normal diastolic pressure. This condition is often found in advanced ages, angina pectoris, intermittent claudication and certain diseases of the large arteries.

It has been observed that when the diastolic pressure is elevated the systolic pressure is increased to an even greater degree. Because during ventricular systole a greater rise of blood pressure is needed for the aorta in order to accommodate the amount of blood received in that time.

Hypertension

An increased blood pressure, like an increased body temperature or an increased metabolic rate, is a symptom and not a disease and it may be the manifestation of more than one pathological process. The blood pressure usually varies according to the circumstances. It may increase by exercise, mental strain, emotion and pain. Again, the degree of increase also varies with different stimulations and with different individuals. In cases of hypertension in such diseases as nephritis, eclampsia, endocrine disorders, etc., the cause of high blood pressure is obvious. But there remains a group of cases, rather forming a large percentage of cases of hypertension, where no primary cause can be made out. The term hypertension or essential hypertension is given to this group of cases where no primary cause is apparent. In this condition, raised blood pressure and sometimes cardiac hypertrophy are the only findings. The manifestations occurring during the subsequent course of the disease are mainly those due to complications of hypertension and not of the disturbance underlying the process. The early stage of the syndrome is often symptomless. The syndrome in general, follows a course which is termed either (a) benign hypertension or (b) malignant hypertension, of which the former type is more common.

(a) *Benign hypertension*—The patient is generally in the forties or fifties, complaining of headache, breathlessness, angina pectoris, coronary thrombosis, disturbance of vision, or suffering from cerebral vascular disturbance. Blood pressure is over 150/100 or much in excess of that. The heart may show hypertrophy in accordance with the raised pressure. Retina may show irregularity of the arteries or even arteriosclerotic retinitis but never evidence of albuminuric retinitis. Urine is almost normal and may show trace of albumin and a few casts. Renal function may show slight impairment and the patient rarely dies of uraemia. Death is generally due to cardiac failure, apoplexy or intercurrent disease, e.g., pneumonia. The above syndrome does not necessarily mean that the individual will not live long. Although their expectation of life is in general less than normal, yet they often live to a ripe old age without much disturbance. On account of this tendency this type of hypertension is termed benign hypertension.

(b) *Malignant hypertension*—In this type of hypertension, on the other hand, the patient is generally much younger, often in his thirties with much increase in the diastolic pressure, generally over 130 mm. of Hg. In the early stages, the clinical picture is that of benign hypertension but as the disease advances, the kidney function deteriorates rapidly with presence of albumen, casts, often blood. Albuminuric retinitis develops and the death takes place of uraemia unless previously dead of cardiac failure or apoplexy. The death usually takes place in less than a year from the onset of albuminuric retinitis.

Etiology of Essential Hypertension

A great amount of controversy exists regarding the question whether benign and malignant forms of hypertension are essentially different affections or both represent different stages of the same pathological process. It is evident that albuminuric retinitis in malignant hypertension is undoubtedly due to severe hypertension. This indicates that the difference between benign hypertension and malignant hypertension is essentially in intensity and not in kind. The main difference lies in the fact that essential hypertension represents a collection of cases, the primary lesion in which is not always the same. The present opinion goes to show that renal ischemia is predominantly the causative factor.

The chief etiological factor may be different in different cases. Hypertensive diathesis, i.e., overwork, anxiety neurosis, worry, mental strain, etc., are responsible for a fairly large group of cases. A familial tendency to hypertension is a very common feature in essential hypertension. Both the sexes are equally affected.

Rise of blood pressure may be classified under two headings—renal and non-renal hypertension. Blood pressure is raised in various primary renal diseases. The cause of rise of blood pressure is due to the obstruction or inadequate blood supply into the kidneys producing an ischaemic condition of the kidneys. So it is believed that the essential renal hypertension occurs from the same cause. The most important primary renal diseases in which blood pressure is raised are acute and chronic glomerulonephritis, pyelonephritis and polycystic renal diseases. Renal

tuberculosis, hydro and pyonephrosis, on the other hand, rarely show hypertension. All sorts of obstruction in the urinary system or reduction of blood supply to the kidneys from any condition may cause rise of blood pressure. It has been suggested that the ischaemic kidneys liberate pressor substance which produces general vasoconstriction resulting in rise of blood pressure. Though this pressor substance may be found in small quantities in urine but it cannot be separated from blood. It has been observed that if some blood from an individual of high blood pressure is transfused to an anaemic patient the tension of blood of the patient is not increased. So it has been concluded that the pressor substances are absorbed or made stable by arterial endothelial cells.

Hypertension of non-renal origin is produced from two main causes, e.g., (1) disturbances of the endocrine glands and (2) disorders of the vasomotor system. Under endocrine disturbances (a) basophilic adenoma of the pituitary gland, (b) tumour of the adrenal gland, (c) hyperthyroidism, (d) menopause and (e) obesity may be mentioned. Under vasomotor disorders (a) increased intracranial pressure, (b) psychic disturbances and (c) complete heart block may be mentioned.

It has been observed in some cases of pregnant women that they are apt to suffer from hypertension during pregnancy but the pressure comes to the former level after delivery. Raised blood pressure during the first three months of pregnancy is associated with the symptom of pregnancy kidney, e.g., edema and albuminuria and occasionally with extreme hypertension and eclampsia. In this condition symptoms disappear quickly after delivery but if the raised pressure persists for over three years there is every possibility that the hypertension will remain permanently. This is generally seen in about 50% of cases.

Secondary hypertension is produced under (1) renal diseases, e.g., glomerulonephritis, pyelonephritis etc., (2) nervous affections, e.g., tumours or other lesions of the brain which tend to increase intracranial pressure and brain diseases such as bulbar poliomyelitis, etc., (3) endocrine disorders, e.g., tumours of the pituitary, adrenal, ovary etc., (4) disorders of the vascular system, e.g., periarteritis nodosa and obstructive arteriosclerosis of renal artery, coarctation of aorta etc., (5) lead poisoning.

Modern observers are of opinion that hypertension may develop as a result of inadequate blood supply to the kidneys without any apparent gross or histological change in the kidneys. But it is very difficult to ascertain whether the renal vascular changes are primary or secondary which are responsible for hypertension. Some authors state that as malignant hypertension is not a specific disease but a syndrome, so the pathological findings of the kidneys will show different changes in different patients.

It has already been mentioned that general vasoconstriction is produced due to pressor substance derived from ischaemic kidneys. The diseases of the cerebrum may also produce hypertension by destroying vasodilator centre in medulla. It has been experimentally proved that the origin of hypertension is not nervous but chemical. If it is due to nervous origin the blood flow should be increased within the arteries, in hypertensive persons, provided that the controlling

capacity of vasomotor nervous system is removed by increasing the body temperature. But it has been observed that no such increase in blood pressure is observed in hypotensive subjects. Hence it is concluded that general vasoconstriction is not due to nervous origin. This experiment sets a strong proof that the origin of hypertension is mainly due to chemical factor which may elevate blood pressure by general vasoconstriction. This aspect has been observed in essential hypertension both in benign and malignant forms.

From these observations it may be suggested that though vasomotor nervous system has controlling influence over local blood flow by the effect of vasoconstriction or vasorelaxation according to the demands of the particular parts of the body, general vasoconstriction is mainly the effect of some chemical or hormonal pressor substance which plays an important role in producing hypertension and this substance is, perhaps, derived from the cortex of the ischaemic kidneys or from some other parts of the body. The hormonal factor is probably due to the effect of hyperactivity of the suprarenal and pituitary glands and the central factor is caused by arteriosclerotic changes of the vasomotor centres in the brain and medulla.

The renal, hormonal and central causative factors are correlated with vasoconstrictor mechanism and they may present singly or combindly, but generally all of them are present in the same case in different distribution.

Effect of high blood pressure

Effects of high blood pressure are essentially the consequences of the processes leading to hypertension and of prolonged hypertension itself. Thus arterial changes, e.g., in arteriosclerosis very often lead to high blood pressure and conversely hypertension due to other causes accentuate arteriosclerosis. The complications of hypertension are mainly those of arterial or arteriolar in origin.

A. *Arterial complications*—Hypertension generally produces arteriosclerosis with or without angiospasm of the (a) cardiac, (b) cerebral, (c) retinal and (d) femoral arteries.

(a) *Arteriosclerosis of the cardiac (coronary) arteries* may lead to angina pectoris or coronary thrombosis. Hypertrophy of the heart, particularly of the left ventricle, takes place due to increased work consequent on high arterial pressure. Failure of this compensatory hypertrophy results in congestive type of cardiac failure with oedema, enlarged liver, engorged cervical veins with or without auricular fibrillation. Failure of left ventricle may also produce acute pulmonary oedema or cardiac asthma.

(b) *Arteriosclerosis of the cerebral vessels* may lead to severe headache, cerebral haemorrhage or thrombosis or diffuse cerebral degeneration. Severe hypertension may produce hypertensive encephalopathy i.e., epileptiform fits, coma, blindness, aphasia, transient disturbances of cerebral functions, transient paralysis, etc.

(c) *Retinal vascular changes* usually result from prolonged hypertension. Retinal vascular changes are of two types—(i) arteriosclerotic retinitis and

(ii) *albuminuric retinitis*. These two types are quite distinct in their manifestation. (i) *Arteriosclerotic retinitis* generally occurs in elderly persons with long-continued moderate hypertension—the so-called benign form of hypertension in which albuminuric form never occurs. This type is generally unilateral and rarely shows papilloedema. (ii) *The albuminuric retinitis* generally occurs in younger individuals suffering from long-continued severe hypertension and is characterised by retinal oedema, papilloedema, haemorrhages, macular star-figure and cottonwool patches. This type is generally found in malignant hypertension or in hypertension due to chronic nephritis and eclampsia and usually ends fatally within a year excepting in cases of eclampsia.

(d) *Femoral vascular changes* lead to intermittent claudication or gangrene.

(e) *Angiospasmic conditions* are generally temporary with or without secondary oedema. This leads to temporary paresis, numbness, aphasia, vertigo or even blindness lasting for a few minutes or few hours. Occasionally the patient may show hemiplegia, coma, convulsions, simulating cerebral haemorrhage or thrombosis. All these symptoms may be even alarming but they very often pass off completely in course of hours or days leaving little or no trace behind. A temporary angiospasmic attack may, however, be followed by actual haemorrhage or thrombosis. Angiospasm of one or more of the above vessels may take place one after the other but with complete recovery.

B. *Arteriolar complications*—The arterioles, particularly of the kidneys, are invariably affected. Necrosis followed by organisation of all the coats of the arteriole takes place resulting in obliteration of the lumen of the vessel. The afferent glomerular arterioles are generally affected leading to necrosis and destruction of the glomerulus and the tubule. Widespread destructive processes in the kidney are found in all cases of malignant hypertension.

Arterial and arteriolar complications have been described in detail under arteriosclerosis (coronary sclerosis, retinal sclerosis, cerebral sclerosis and arteriosclerosis of the kidney.)

Hypotension

The field of hypotension is practically limited in comparison with that of hypertension. If the condition is not under the influence of any serious infective cause or if there be no organic defect, the prognosis is favourable in spite of severe attack. The contractile portion of the vascular system is mainly composed by capillaries, the intrinsic tone of which can be altered by nervous or chemical influences. If the capillary of any part of the body is blocked the blood volume is extremely reduced resulting in hypotension.

Hypotension may occur from (1) surgical shock, anaphylactic shock or intoxication. It produces dilatation and congestion of the large veins of the splanchnic area resulting in the anaemia of medulla. Shock does not result from muscular lesion but from paralysis of the peripheral vasomotor nerves. The same result is observed if small doses of histamine or peptone is injected intravenously. (2) Loss of circulating blood, e.g., in haemorrhages, anaemias or loss of body water, e.g., in cholera and other affections

producing dehydration. (3) *Acute infectious diseases*, e.g., enteric fever, pneumonia, diphtheria, influenza, etc. (4) *Food deficiency diseases*, e.g., epidemic dropsy, avitaminosis, rickets, etc. (5) *Endocrine disturbance*, e.g., Addison's disease, Graves disease. (6) *Cardiac affections*, e.g., coronary occlusion, congenital heart disease, toxic myocarditis any disease causing weakness of the left ventricle. (7) *Nervous affection*, e.g., neurasthenia, cerebral thrombosis.

Manifestations of hypotension are innumerable in their variety such as nervous, cardiovascular, gastrointestinal symptoms. Hypotension may be functional, postural, mechanical or terminal. In functional hypotension the patients complain of asthenia, insomnia, irritability of temper, mental depression, dyspepsia etc. Mechanical hypotension occurs after diarrhoea, haemorrhage, excessive sweating etc. Terminal hypotension is found in the last stage of diseases. In majority of cases it has been observed that the symptoms of hypotension are closely related with posture of the individual. Weakness, vertigo, blurring of vision, syncope, nausea or vomiting etc., are often met with in standing posture. In severe cerebral anaemia such profound fall of blood pressure may be present resulting in dizziness, convulsion or heart failure. The diastolic fall of pressure may be out of proportion to the systolic pressure due to the constant out flow of the blood from the arteries during the period of long diastole.

In case of fainting the early manifestations as dizziness of vision, a sense of uncertainty or actual giddiness, uneasy sensations in the praecordium or epigastrium and frequent nausea are remarkable. The patient may be unconscious for a few seconds or minutes.

In many cases muscular rigidity following spasm of the head and upper extremities may result. In these cases unconsciousness usually supervenes during the fall of pulse rate because the mean arterial pressure is lowered independently and simultaneously. The fall of pulse rate associated with lowered force of the heart beat indicates the disorders of the inhibitory mechanism and so the attacks are of vagal in origin.

Some observers suggest that there are two types of hypotension—(1) the athletic and (2) the asthenic. Various changes of posture bring about anaemia of the centres of medulla of both the types of individuals. They believe that it is not hypotension itself but an unstable vasomotor mechanism which is responsible for the manifestations.

Inguinal Hernia*

By Dr. K. DALEPPA, L.M.P., L.T.M.,

Demonstrator in Surgery, Darbhanga Medical School.

Surgical anatomy:—The inguinal canal reaches from the internal to the external abdominal ring, it is about 1½ inches long and slopes downwards and inwards. Its anterior wall is formed by the aponeurosis of the external oblique in which the opening known as the external ring lies. The upper part of the anterior wall of the canal is reinforced by the fibres of the

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internal oblique arising from the Poupart's ligament. The posterior wall of the canal is formed throughout by the transversalis fascia and for its inner half also by the fibres of the conjoint tendon just before they blend with the sheath of the rectus. The roof is formed by the fibres of the internal oblique and transversalis muscles arching over the canal. The floor is formed by the upper surface of Poupart's ligament, and to a certain extent also by the Gimbernat's ligament. The deep epigastric artery lies immediately below and to the inner side of the internal abdominal ring.

Immediately below the upper and the outer end of the inguinal canal, and separated from it only by Poupart's ligament lie the external iliac artery and vein. It will be seen that when the abdominal muscles contract and strain is put on the inguinal canal, the arched fibres of the internal oblique straighten out and descend so as to obliterate the inguinal canal and fortify its posterior wall.

The inguinal canal contains the spermatic cord and the round ligament in the two sexes respectively together with ilio-inguinal nerve and the gluteal branch of the genito-crural nerve.

An inguinal hernia is the term given to a hernial protrusion which occurs in the neighbourhood of and close to the inguinal canal, the hernia in most cases actually passes down the inguinal canal and leaves that canal through the external inguinal ring. There are two main varieties of inguinal hernia:—

- (1) The oblique or indirect.
- (2) Direct inguinal hernia.

(1) *The oblique hernia* leaves the abdomen through the internal inguinal ring and to the outer side of the deep epigastric artery, and passes down inside the inguinal canal to leave it at the external inguinal ring. When it descends into the scrotum or labium in the female, it is called as scrotal or labial hernia complete. If it appears at the external inguinal ring it is called as bubonocoele. Inguinal hernia is by far the commonest form seen.

(2) *Direct inguinal Hernia*:—This type of hernia although it ultimately passes through the external abdominal ring, do not pass the whole length of the inguinal canal nor do they leave the abdomen through the internal ring. They force their way through the lower part of the conjoint tendon, thus entering the lower part of the inguinal canal and passing out through the external ring, traversing the space known as Hesselbach's triangle.

Types:—Several different types of oblique inguinal hernia are seen.

- (1) Congenital inguinal Hernia.

(2) *Infantile Hernia*. This is a rare type of hernia which can be recognised only at operation. It is thought to be due to the funicular process becoming shut off from the abdominal cavity at the top only, in the neighbourhood of the internal ring while it remains patent below and communicates with the tunica vaginalis.

- (3) Acquired inguinal Hernia.

- (4) Hernia with an undescended testis.

Direct inguinal Hernia :—

Two varieties are described.

- (1) External direct.
- (2) Internal direct.

Differential Diagnosis :—

(1) *Enlarged glands*: they are not likely to be sufficiently high up to resemble an inguinal hernia; they have no true expansile impulse on coughing.

(2) *An undescended testis*:—Can be recognised by its shape, its characteristic sensation on pressure and one side of the scrotum will be empty.

(3) *An encysted hydrocele of the cord*.

(4) *An abscess coming from within the abdomen and pointing in the canal*.

(5) *Tumours of fat or fibrous tissue arising within the inguinal canal and projecting downwards*.

(6) *When the swelling has entered the scrotum it may bear a superficial resemblance to a hydrocele, varicocele or a swelling of the testis or epididymis*.

(7) *It must not be forgotten that an inguinal hernia frequently co-exists on either one or both the sides with other scrotal swellings such as hydrocele or varicocele*.

Treatment:—The treatment of an inguinal hernia consists either in a radical operation for its cure or in relief by means of a truss.

There is no doubt that in nearly all cases operation is the most satisfactory treatment.

The radical cure of hernia by operation is undoubtedly the method of choice and its results are excellent if the cases are properly selected and the operation properly performed. The mortality is negligible.

There are however certain very strong contra-indications for operation:—

(1) *Constitutional diseases* such as phthisis, diabetes, chronic nephritis, tabes etc.

(2) *In enormously large irreducible hernia* (chance of recurrence).

Very many different operations have been devised but I will describe only a few of those most commonly in use:—

Bassini's and Foster's Operation:—These two Operations are exactly the same with the exception of one small step and are undoubtedly the most commonly performed.

The necessary preparation having been made 4 inches skin incision is made parallel to the inner half of the Poupart's ligament and along the line of the inguinal canal.

The skin and superficial and deep fascia are cut through, the bleeding points are tied. The aponeurosis of the external oblique is then cleaned and incised through the length of the incision. The two edges of the aponeurosis are then separated, the spermatic cord will then be seen, the sac which lies in the middle of it must be identified by its white shining appearance and often by noting its rounded border near its fundus. Once the sac is identified it must be cleaned by its covering right up to its neck, and this is usually

rendered easier if the sac is opened and a finger passed inside it, while great care must be taken not to damage the vas or the spermatic artery and veins. Afterwards through the opening in the sac we pass a finger up into the abdomen, in order to be certain that there are no structures within it before it is tied and cut away.

If the contents of the sac are irreducible, adhesions must be set free and the bowel if adherent carefully separated and reduced. Omentum in a hernial sac if adherent should be removed by being tied in separate small bunches and cut below the ligatures, bleeding from the cut omentum after reduction into the abdomen is by no means uncommon and it is very serious.

Then the sac is cleaned right up to its neck; while doing this if the sac is dragged upon unduly, sometimes the bladder may be drawn into the wound and may be damaged. Then the neck of the sac is tied with strong catgut and the sac may be cut away $\frac{1}{2}$ an inch below the ligature. Then the ligatured portion of the neck of the sac is transfixed to the internal oblique muscle arching the inguinal canal. Then the inguinal canal is reinforced by stitching the conjoint tendon with the Poupart's ligament with 3 or 4 interrupted catgut sutures; at this point the two operations differ; in Bassini's the spermatic cord is held up over this floor, whereas in Foster's operation the spermatic cord is allowed to drop back behind this floor prepared by stitching the conjoint tendon with Poupart's ligament.

The external oblique aponeurosis is then sutured together and then over it the skin is sutured in the ordinary way.

There is one most important principle in the operation for an inguinal hernia and that is that the sac, right up to and including its neck must be completely obliterated and removed and transfixed. The second most important principle is that the weak spot afforded by the inguinal canal must be strengthened and closed by some living tissue; grafts of living tissue have recently been employed for this purpose. The graft is cut from the fascia lata using strips of fascia as sutures as advocated by Gallie. (Gallie's operation).

After treatment and complications:—After operation, the wound should be dressed with a sterile dressing with a tight spica bandage to support the groin. It need not be re-dressed until the 9th day, when the sutures are removed. But care must be taken during these days that the dressing is not soiled with urine etc. The patient should stay in bed for a period of 20 to 22 days according to his age and condition of his abdominal wall. The complications of the operation are those of any other abdominal operation. Special mention should be made of retention of urine. Haematomata following the operation is not uncommon and is due to imperfect haemostasis, and if one is found in scrotum it should be suspended; sometimes they may become very large, but always it is absorbed in time and on no account should they be opened.

Infant Feeding.*

By Dr. D. N. MUKHERJEE L.M.P. (CAMPBELL),
Assistant Medical Officer, Tata Iron & Steel Company
Limited, Jamshedpur Hospital.

This is a vast subject but I have only tried to describe the salient points from several authorities with my observations.

Infant Feeding From Birth To Weaning :—

Breast feeding:—This is the natural way of feeding infant and undoubtedly the best under normal conditions of mother and child.

Mother's Milk:—The one and only food perfectly nourishing and digestible to the baby. It is perfectly clean, uncontaminated, child gets it at body temperature and gives the greatest security to the child against intestinal disturbances and infections which are the commonest troubles with the new born babies. It contains all the vitamins which are essential to health. Fat emulsion in human milk is finer and so easy to digest. 70 to 80 per cent of human milk is assimilated in contrast to 60 per cent in artificial feeding. Lactose of breast milk helps in myelination of nerves fibres. Amount of lactose present in breast milk is just sufficient to be a mild aperient for the baby. Lecithin is more in human milk. Iron content of human milk is four times more than that present in the cow's milk. During first 9 months of lactation it is just sufficient to prevent secondary anaemia which is so common in artificially fed infants. Mother passes on protective substances in her first milk "Colostrum" whereby infant gains immunity either partial or complete against various diseases. "The opsonic index of Colostrum is often higher than that of the normal blood". Hence it is most desirable that the infant should not be deprived of this all important first milk if for reason of health mother is debarred from nursing her baby. Colostrum by its aperient properties cleanses the infants' bowels of meconium. Digestion of Colostrum is easier than breast milk.

Composition of milk and Colostrum.

	Colostrum.	Milk.
1. Water	88	88
2. Protein	3	1.5
3. Fat	3	3.5
4. Sugar	5	6.5
5. Salts	0.4	0.2

The exercise of suckling is very beneficial to the baby. It helps to produce well-formed mouth, pharynx, teeth and prevents the infants from catarrhal infections. Nursing the baby, mother gets opportunity to understand her infant intimately and to appreciate its requirements and also to notice any early signs of sickness. It also helps complete involution of uterus. Mortality is higher in bottle fed babies.

Time of Nursing and number of feeds per day

8 hourly	1st 24 hours.
6 hourly	2nd "
4 hourly	3rd day
3 hourly	4th day

* Paper read at the Behar A. I. M. L. A. Conference on 27-1-46.

First three months:—Time to be devoted to breast feeding: at the beginning both breasts are to be used at each feed. As the lactation improves the feed in the second breast is diminished gradually until only one breast is used at each feed to be emptied completely by the baby, otherwise the milk remaining in the breast is to be squeezed out completely by mother herself or to be drawn out by breast pumps. This promotes secretion of the breast.

With regular establishment of lactation the baby is to be fed every 3rd hourly between 6 a.m. to 10 p.m. No night feeding should be permitted except during the first week. On the first two days before lactation is fully established infants are found to be fretful due to thirst owing to loss of fluid by the kidneys, skin and lungs. So plain sterile water or any sweetened water (such as honey and water) or dil water a teaspoonful at a time to be allowed just after being nursed to replace fluid lost, otherwise the baby would not suck breast vigorously which is an essential stimulus to secretion of breast milk. Infant adapts itself to this routine wonderfully during the first three months of its life without requiring any attention between 10 P.M. to 6 A. M. A little drink of boiled or sweetened water (honey and water) may be all that is necessary if the baby appears to be fretful and restless at night. In hot season an ounce or two of plain boiled water to be given occasionally apart from feeding.

From 3rd to 6th month:—An attempt is made to increase the interval between feeds to 4 hours gradually, 5 feeds in a day and last feed to be given at 10 p.m. This not only trains the child to obtain much sleep at night but at the same time allows mother to get sufficient rest at night which is of value to her.

The quantity of mother's milk secreted at each feed varies with the age of the child. 1st week one oz. per feed. By 3rd month average secretion rises up to 4 oz. at the 6th month 6 to 7 oz., provided the mother is keeping good health and regular habits of exercise and at the same time having good nourishing food rich in Vitamins. The great indication that the breast milk is quite satisfactory to the baby will be found in its gain in weight which should be at least 4 oz. per week in the early months and should be double of its weight at birth at the age of 6 months and three times the weight at birth at the end of the year.

Experience shows that in some part of this period some of the mothers fail to yield sufficient quantity of milk to meet the adequate requirements of the baby as evidenced by failure to gain in weight or loss of weight on the part of the baby or if it becomes fretful, restless, cries before and after nursing, skin looks dry and lax, fontanelle depressed; urine scanty and dark, stools hard and coated with mucus. When the above symptoms appear and at the same time nothing is interfering with the efficient suction by the baby bringing this nutritional failure such as tight abdominal binder, thrush, tonsillitis and nasal catarrh, supplementary feed either by spoon or bottle to be given in addition to mother's milk.

Supplementary feeding:—Supplementary feeding may be given by entirely replacing one or two breast feeds or by giving the baby small amount immediately

after being nursed by mother each time. This may be given in place of midday and 6 p.m. breast feeds. At each feed baby should be allowed to empty both breasts completely in about 15 to 20 minutes. The quantity of supplementary food required must be gauged by test feeding. Test feed should be done over 24 hours period, at least twice a week. The progress of the infant's weight will testify to the sufficiency of the supplementary feed. Test feeds are carried out by weighing the infant at the beginning of the feed and again at the end of it. Difference in weight shows the amount of milk the infant has drawn up. It is important to see that the baby's napkins are not changed before the second weighing as any urine or feces voided during the meal will be contained in the napkin. Caloric value of mother's milk is 20 per oz. Cow's milk to be diluted in proportion of 2 parts of milk and one part of water with the addition of a level teaspoonful of cane sugar to every 4 oz. of the above mixture. This should not be made too sweet; otherwise baby will not take to breast. Caloric value of ordinary sugar is 120 per oz. Caloric value of such mixture will be about 20 per oz. There is no necessity of adding glucose or lactose to the milk mixture which is sometimes not well tolerated and at the same time it is rather costly. If ordinary sugar causes digestive disturbances or constipation dextrimaltose such as Mellins food may be given a teaspoonful for every 2½ oz. of milk. The caloric value of dextrimaltose is 120 per oz. During summer months proportion of milk mixture should be 1½ part of milk and one part of water as infants cannot digest fat well in hot weather. The caloric value of such mixture will come to about 17 per oz. Average capacity of the stomach of the infant is about 4 oz. per feed at the 3rd month which increases by an oz. per month till the end of the 8th month. During this period a couple of teaspoonful of orange juice or any other citrus fruit juice diluted with twice the quantity of boiled and cooled water may be given to the infant in between the nursing 2 or 3 times a day.

Diet from the 6th month till Weaning:—Breast feeding to be continued as before. Now attempt should may be made to substitute one of the breast feeds with a bottle or spoon feed regularly to prepare the infant for weaning and to give opportunity for its independent existence and at the same time more rest to mother. The amount per feed is increased to 8½ oz. towards the later part of this period. With eruptions of first two teeth which invariably appear at this age, cereals are added to the diet from this time, over and above the breast feeding. At this period starch digesting ferment is present in sufficient quantity to digest starchy food effectively and also starch digesting ferment of the pancreas makes its appearance in intestinal juice. One of the following starchy food may be added to the diet:—Heaped teaspoonful of patent barely or groat, safo, Satti, food rice powder, heaped teaspoonful of dextrimalt, Mellin's food, a table spoonful of bread crumbs and milk, a couple of teaspoonful of fresh coconut milk. The addition of cereal food to the diet is to be made tentatively and at the same time constant watch to be kept on the character of stool for any signs of intolerance. All milk should be brought to boil in double saucepan, cereals to be cooked directly for 20 minutes in a pint of water. Towards the later part

of this period semi solid food such as sooji, konjee, porridge prepared in milk, smashed potatoes, soft boiled rice, dal soup are to be added to the diet. Fresh fruit juice to be given as usual with increased quantity.

Guidance for the mother during the period of lactation:—To maintain the adequate supply of milk to the needs of the baby, mother should keep to regular habits of feeding the baby. Baby should be even awakened when time for feeding is due and to be kept awake all through while suckling. Promiscuous feeding is strictly forbidden.

Some of the babies are bolter. They suck vigorously and violently and takes the feed too quickly, so restriction with the fingers on the nipple to impede the flow will be necessary. Feed obtained without much effort lacks in psychic stimulus necessary to gastric secretion; moreover too large an amount of milk may be drawn in with subsequent digestive disturbance and regurgitation. While suckling, the baby swallows air which causes wind colic and gastric disturbances. So after each nursing, baby is supported on the shoulder and his back and patted gently till the wind is heard to come out, or to be placed on his left side which also helps the expulsion of wind. Mother should rest for 15 minutes before each nursing and also have a glassful of water half an hour before. Nipples should be sponged before and after each nursing with a piece of boric cotton soaked in boiled water or with plain cotton soaked in saturated sol. of boric lotion, then to be dried thoroughly. Breast should be massaged gently from base to the nipple twice every day and to be sponged with hot and cold water alternately for 15 minutes.

Position of mother during nursing:—This should be most comfortable to the baby as well as to mother. While lying down mother should turn towards the side of the breast to be used and baby's head to be kept raised and at the same time she should see that nothing interferes with easy breathing of the child. While sitting, semi erect position is the best. In this position, baby gets more nourishment due to gravitation and at the same time swallowing is easy for him. Baby draws in milk without much muscular effort which is very feeble at this age. She should avoid worries and anxieties which diminish the quantity of milk.

Drink 2 to 3 pints of water per day and take plenty of milk or milk and rice gruel—the latter is supposed to increase the quantity of milk as is seen amongst the mothers of aboriginal people of this part of the country. Taking of certain amount of Gur also increases the quality and quantity of milk. The habit of drinking water will keep her bowels active which is very essential for the health of the baby and mother. Avoid alcoholic drinks and salts as purgatives, these decrease the quantity of milk; moreover as being excreted through milk cause looseness of stools to baby. A tendency to constipation can easily be avoided by taking 2 to 4 teaspoonful refined Isaphgul husk in a big cupful of water or in as the last thing at night. She should rest for four in bed after midday feed.

Diet:—As for diet, till she has left the bed, her should be light but nourishing. Later she can ordinary diet with sufficiency of good and whole-

some food including fresh fruits, green leafy vegetables, butter, ghee, milk and egg. She should avoid uncooked vegetables, salads, radishes, too much onions, too much potatoes, cauliflowers, tinned food and rich curries or whatever disagrees with her, would affect her milk and upset the baby. Condiments and spices are allowed in moderation. When she is up, she should go for a gentle exercise like walking in the open air for an hour every day. Where this is not possible, she should have herself massaged regularly every day.

Menstruation won't debar her from nursing the baby but in pregnancy nursing should be discontinued. Baby's weight should be taken every week in the early period and fortnightly later on with the same clothing and at the same time. Where there is a maternity clinic mother should take advantage of this for proper guidance and welfare of the baby.

References

- (1) Disease of Children by Bruce Williamson.
- (2) Diseases of Infancy and childhood by Wilfred Sheldon.
- (3) Birch's management and medical treatment of children, in India and Tropics by Lieut. Col. E. H. Vere Hodge.
- (4) The care of children in the Tropics by E. C. Spaar.
- (5) A text book of Midwifery in the Tropics by V.B. Green Armytage and P. C. Dutta.
- (6) The care and management of baby—The universal Home Doctor.

Maternity and Child Welfare (in an Industrial Town)*

DR. MISS ISRAEL, L.C.P.S. (Bom.)

The great importance for providing of Maternity and Child Welfare service for the promotion of the well-being of the people is now widely recognised, and the value of the service got from these centres is acknowledged by many. In some areas, where these units have been started, they have made very good progress and the benefits derived from them are obvious. On the other hand, in other places there has been no progress at all, and the reason very often for this is that the work has not been taken on with the enthusiasm and earnestness it requires. The aim of the Doctor in charge of these welfare centres is to help the people to realise the value of methods that will help them to improve their health and keep them healthy.

I will now give a short sketch of what the activities of a centre should include. In what I have to say there is nothing new or original but I have got together some suggestions and ideas which have been put forward by others who have had much experience and which I think could be put into practice and made a great success.

These activities of the unit should include *Ante-natal care*. The object of educating and advising the mother is to make her independent in the way of keeping good health. For this it is essential to have an adequate and well trained maternity service. We know ante-natal care means the keeping

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of continuous supervision on the health of the expectant mother and aims at making the period of pregnancy natural and healthy, to keep the woman under observation with the idea of detecting abnormalities and treating them before they become dangerous. One other aim in this care is also to help the woman to have a strong and healthy baby and to make the confinement as natural and painless as possible.

We all know how important this is. Our infant mortality rates and maternal mortality rates are very high. It is well known that 30 per cent of infants die in the 1st week of life and 50 per cent in 1st month of life. It has been shown in areas where ante-natal care through welfare centres is carried out that these mortality figures have been brought down considerably. We see in our every day practice any number of cases of women dying of anaemia, prolonged labour, eclampsia, etc., which could all have been avoided and treated with ante-natal cure. It is also the experience of all of us that a large majority of people are inclined to put off treatment or seek medical advice, either because they are too busy and find little time to think about health or for some other reason, only when the person is perceptibly ill and often when the illness has progressed too far and a great deal of damage done. It is because of this that the other essential factor in ante-natal care is the provision of a well trained staff to do home visiting. For realising our aim of maternity and child welfare, the title itself of which is significant in placing emphasis on prevention rather than on treatment, individual approach is the main method. Home visiting is called the 'back-bone' of these activities. This home visiting helps to keep in touch with pregnant women, to carry on health supervision, give personal advice from time to time on proper diet and the hygiene of pregnancy. Only by visiting the home can one judge if the advice given at the centre can be practically carried out. Only a visit to the home can give a chance to meet the family, discover the views of the husband and the mother-in-law. If the objects are explained to them, often we find those who were non-co-operative, co-operating. It is essential to have the co-operation of both mother and the family. A co-operative mother who does not get any encouragement at home attends regularly for some time, but it does not last; but if the husband understands and helps her, the response to advice is better. Visit to the home reveals certain social customs that prevent woman seeking medical advice. Some can't come as they have no male escort, others that can come only by rickshaw or carriage or still others who cannot come out because of strict purdah. These problems face one among the poor and the lower middle class. Home visiting will give the opportunity to see these women and give them advice and help. These social customs can be cured only by educating the men, and this too can be done during home visiting. All this, as said before, greatly helps to reduce the abnormalities of pregnancy. Arrangements for treatment before permanent damage is caused to the health of the mother and child can be made. One more thing of great importance is that by home visiting help to the family to get a trained attendant for the confinement can also be made.

Next in importance is *Maternity work* which consists of a trained maternity service for providing clean

midwifery in the houses for normal cases and providing expert help or hospital treatment for cases that cannot be safely confined at home. It is important that the same person be responsible for both the ante-natal care and the attendance when required at confinement. It is also a well recognised fact now that all pregnant women should have medical supervision in addition to that of the health visitor or midwife. It is absolutely necessary that the medical attendant in charge of this Clinic must keep in touch as far as possible with modern medical developments and regularly attend refresher courses. Without this, full justice cannot be done to the centre.

It has been estimated that one midwife or health visitor can serve an area of 1½ mile with a population of 4,000 having 120 births a year; or for a population of 10,000 having 350 births a year you need one midwife and 2 trained Dais. It is far more beneficial to have a limited number on the roll of the health visitor, whom she is able to see regularly and give a proper start in life than have a large number which are only occasionally seen.

When talking of having a trained maternity service, the vital problem of the Dai faces one. The untrained Dai has to be replaced by a more educated and better class of worker. This ought to be the object of all health authorities in all the provinces. The training of Dais so far has not been very successful. There are still many obstacles to be overcome. The confidence of the old untrained Dais cannot be got. They are afraid of legislation once they are trained and feel that it will restrict their scope of work. It is absolutely impossible to prohibit untrained Dais from attending to confinements until we can provide sufficient trained workers to attend to every woman. The training of Dais must be the work of these health centres.

The other remark one would like to make when talking about maternity service is about maternity hospitals and homes. With our changing social life we find women, all over, in increasing numbers demanding admission into maternity hospitals. They find this frees them from their domestic difficulties and eases their burden. Besides the cost is less than when they have the confinement at home. It should, be remembered that no institution can be properly managed if it is over-crowded and often more justice and help can be given to patients by refusing admission. Very many small maternity homes are badly run and so small maternity homes have got a bad reputation.

Greatly allied to the ante-natal work is the *Post natal care*—by this is meant the supervision of the health of the nursing mother. On the health and happiness of the mother depends the health of the child. A mother unconsciously conveys to her child her own emotional state, so ill health of the mother which causes anxiety and worry make an unhealthy and fretful child. Another factor of vital importance for the nursing mother is that an adequate diet should be maintained.

The next activity is the issuing of *Instructions to mothers on the care of the new born* and bringing up their babies in the right way, good habits where food, sleep, bath, bowels and cleanliness are concerned if taught to the baby from the 1st day of life will

greatly help to have a healthy child. A number of children we find are artificially fed. It is absolutely necessary to see that no infant is weaned unnecessarily. If artificial feeding is essential milk mixtures are best as they are physiologically sound. For maintaining the health of the infant fresh milk mixtures in infant feeding are a great help to the medical profession. On the health of the child depends the future character of the individual. The character of an individual is formed during the first six years of life. Physical ill health or discomfort in a child affects the mental health. In the child the body and mind is one and not separated as in the adult into physical and psychological. Inner security, self confidence of the adult depend on his having felt physically secure in infancy. A healthy happy mother is only capable of giving this to her infant. So in securing ideal health of both mother and child you can safe-guard the future of the child. For this it is essential to have the co-operation of the mother. If she is ignorant, careless and unreliable, your best efforts will fail. Successful motherhood no doubt depends on the woman being a happy wife and having good relationship with her husband.

The next item in the activities of the centre is one of great importance our country to I am referring to *Birth Control and family planning*. This subject is being discussed as a social problem. Our country with such a vast population nearing 400 millions is in need of the spread of the knowledge of wise parenthood and limited families and needs guidance and help in this. This is especially necessary among the poor from both the medical and economic point of view. The great rise in the cost of living and the scarcity of basic food stuffs is a major problem for our over populated and poverty stricken country. This has far reaching effects on the health of the women and children. The number of abortions and premature deliveries are up considerably going these years. Deterioration in the standard of living has led to a remarkable increase in the infant mortality rate.

The next very big item is the *Infant Welfare work*, with the object of safeguarding child life and health. In the United Kingdom this good work has been recognised and these welfare services are used to ensure the proper distribution and use of not only diet supplements like milk, other strengthening foods like suji, soup, vegetables, fruits, but also extra clothing to expectant mothers and infants is given. It is very important to make the people realise that all this is being done not in the way of charity, but with an educational purpose. Creches, where food and clothes are supplied, here too the idea is to develop good habits. Minor treatment is given to children and advice when things are more serious and to see that the treatment is carried out. One factor that needs to be stressed and taught to our women is the early introduction of solids in infant feeding. Another important need is the spreading of a sound knowledge of nutritional requirements. In the past very little importance was given to nutritional disorders and its effects on proper growth, we find now that over 50% of children show at least slight signs of rickets and Vit. C deficiency. Frequency of other deficiencies of Vit. A and B as shown by roughened skin, granulation eyes, angular stomatitis is definitely about 70%.

In this area one sees a remarkably large number of Vit. A deficiency cases affecting the eyes. On enquiry into the diets of school children we find not only are valuable types of foods like vegetables, fruit and milk missing from the diet but that a large majority of children go without meal during the day and if the meals were taken, they were poorly selected. Ways and means for improving the nutrition of the child to improve the health of the child must be found if the health and growth of the future generation is to be safe-guarded.

The next activity of the centre is *Health Lectures* lectures to mothers and fathers on parent-craft. Talks to girls about to be married to show them the important part they are going to play. Health propaganda by lectures, cinemas, literatures and reading rooms. It is very necessary to instill in people the principle that prevention is more important than cure. This depends on a healthy environment. A healthy population is one of the nation's greatest assets.

The last but not the least activity of the centre which I will just mention is Anti-venereal work.

In winding up I will just make a few remarks. The number of Maternity and Child Welfare Centres in India is very small in comparison with the population. So, the channel for the distribution of all these activities is not available. Centres should be started where they do not exist. In an industrial area one has the great advantage for the development of these centres as you have control over the mothers through the employees and financially too they are better off. The very great disadvantage is that you are dealing with a shifting population. The industrial worker of India in the majority of cases is a peasant who returns to his village at intervals. Another thing is that it is not creditable to us that we do not know more of nutritional requirements and other factors that improve health. More progress is needed to prevent disease and to raise the standard of health. We need to carry on a campaign to arouse the public to the importance of good nutrition standards for maintaining health and for developing services which can reach the families in their homes.

Tuberculoid Leprosy*

DR. A. T. ROY

Medical Officer, Purulia Leper Home and Hospital.

Col. Acton described leprosy as one of the Seven Plagues of the tropical countries and surely it is so. Lots of work have been done in connection with this disease in its different aspects, but as you all will, most probably, be interested in the most favourable side of it and as the time will not be ample to describe it in full, I shall only deal with that most interesting type, namely, *Tuberculoid Type* of Leprosy.

So long anaesthetic and lepromatous types were known and described in books but this new type,

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though a subtype of Neural has every clinical sign of its own. It starts abruptly and becomes arrested also very soon in six months or so.

Its Nomenclature:—Its nomenclature as tubercloid type baffles many because it has no connection with tuberculosis. It has been named so, because of the giant cells, play a very important role. This type of disease develops in those who have got the infection and at the same time possess a great resisting power against leprosy. At this stage the giant cells shut up the process of infection. So the disease, though comes but some times very virulently, becomes arrested in a very short period.

Progress.—It may start very slowly as one or two small macules and may die out even without treatment. It may also start very abruptly as very much raised erythematous macules and may die out slowly. Again it may develop very abruptly and very acutely. The raised erythematous patches start to be denuded one after another and all the patches become ulcerated and the patient looks like case of burn of 4th degree. This type is called the *ulcerative tubercloid type*. This type is not very common in India. Recently I saw one Marwari lady suffering from this type. She died on the 10th day without developing any other symptoms. There is still another sub-type in this tubercloid type and that is *Scaly Type*. In this type also the disease may start abruptly. It may develop slowly too. The raised patches start shredding scales. The prognosis in this type is as good as the main tubercloid type. So we have at present two subtypes namely, *ulcerative* and *Scaly* types under the tubercloid type which is again a branch of the Neural type. Unlike the Lepromatous type these patients can stand very high doses of Hydriocarpus Oil even upto 25 c.c. in a week. Sometimes with a very high resistance power Nerve abscesses are formed. I have seen as many as nine abscesses in the nerves in a patient at one and the same time. I have also seen a patient with a very big abscess in the Brachial Nerve, in whom no sign of the disease could be traced when the nerve abscess was treated.

Intermediate Type

Another New Type:—This type has not yet been put forward in the International Conference. Dr. Cochrane has worked on this and has published a paper though it has not yet been recognized in general. In this, histological appearance shows both giant cells and the cells of Virchow. The latter is characteristic of the lepromatous type while the former is only of neural type. The case clinically looks as lepromatous type but really it is not. The prognosis here is also better than lepromatous type and it takes some 18 months to be arrested.

Conclusion:—In conclusion, I desire to say that the old saying "Once a case of Leprosy is always a case of Leprosy" should no longer be allowed to have any place in the mind of the physicians or the patients. With the advancement of knowledge in this direction and with the spirit of sacrifice amongst the innumerable workers at least this point has been reached that though no specific in its proper sense has yet been discovered, yet if timely care is taken, the disease is definitely arrested and under suitable medical treat-

ment is cured in many instances. So the public and the physicians should not term it as Un-Clean and the patients should not hide their disease but should rush forward to the proper physicians at its advent. It would be the duty of us, the physicians, to influence the public opinion and drive out from the minds of general public the idea of Un-Cleanliness that attaches to this disease.

Accidental Poisoning By Carbon Monoxide (Carbonic Oxide Gas)

BY DR. C. V. JAM, L.R.P.S.,

Kurchera, Marwar.

Carbon Monoxide is a colourless, tasteless, inodorous gas. It is prepared by the decomposition of certain organic substances and is formed whenever carbon is burned with an insufficient supply of air or oxygen. It is found as a gaseous product from charcoal, stoves, lime kilns, gas engines and charcoal 'Sagaries' or 'Angethi'.

This gas is highly poisonous as it readily combines with haemoglobin to form carboxy haemoglobin which has a direct toxic effect on the brain. This also hinders or prevents the internal respiration, i.e., haemoglobin combining with oxygen. And thus anaemia is produced giving rise to symptoms as dizziness, noises in the ears, paralysis and insensibility followed by coma and if not properly treated death supervenes depending upon the amount of gas inhaled and the time of exposure.

Accidental poisoning from this gas is very common in India. In winter season the charcoal 'Sagaries' and 'Angethis' with fuels burning in them are common. And in villages and old cities, people stay in ill-ventilated houses. Poisoning from this gas is commonly met with among such people in winter season when they keep themselves closed in rooms with poor ventilation with 'Angethis' burning and possibly a lamp also burning in the room. The air in such a room is quite insufficient to bring about complete oxidation of the carbonic oxide gas evolved out as a result of burning of charcoal and lamp. Eventually the air in the room gets saturated with carbonic oxide gas. The people who sleep in the room breathe in this gas and fall victim to its poisoning effects. Here I wish to give below the clinical notes on two cases which I came across about two months back.

On one night at about 3 A. M. I was called upon to see two cases who were husband and wife and were reported to be unconscious and breathing fast. On reaching the spot I observed that both the husband and wife were lying on a cot, unconscious and were breathing fast. The Angethi was lying extinguished near the cot. The room had no ventilators but only a window which too was closed. On enquires I learnt that both husband and wife were alright at bed time. They had closed the window and the door to prevent the room from cold and the Angethi was kept burning to keep the room warm. Evidently I suspected the

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cases to be those of carbon monoxide poisoning. This was further confirmed by me by the other signs and symptoms, namely, insensibility, fast respiration, very fast and feeble pulse, dilated pupils, flushed face with whole body lying in a state of flaccid paralysis.

On suspecting the cases to be those of carbon monoxide, the patients were instantly removed to the fresh atmosphere and hurriedly all the tight clothings of the chest were loosened to enable them to breathe freely. Artificial respiration was started to ensure rhythmic respiration and throat was cleaned well with a hot water swab and thus all the secretion and mucus was removed off the throat. Respiratory and cardiac stimulants like coramine and strychnine grain 1/100, digitalin gr. 1/100 with 1/2 c. c. Adrenaline were injected subcutaneously. Patients were kept warm with blankets and hotwater bottles to prevent collapse. Coramine was again repeated after half an hour and gradually the patients started improving. On gaining little consciousness, they were given hot strong tea to drink. With four or five days complete rest and bromide mixture, they were completely cured.

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Misuse of Morphine

Evidence is mounting that morphine has a single legitimate use; namely the relief of severe pain, a view that is widely accepted but too little put into practice, says Henry K Beecher, consultant in anaesthesia and resuscitation, Mediterranean Theater of Operations. Causes of morphine misuse or overdosage, according to him are:

1. Failure to appreciate that nearly the safe maximum analgesic effect of morphine can be produced by $\frac{1}{4}$ grain and that $\frac{1}{4}$ grain can produce serious depression in small persons or those whose tolerance may have been lessened by wounds. An otherwise modest dose may become an overdose in a given case.
2. Failure to realize that subcutaneous injections of morphine will be only poorly absorbed, if at all, when the peripheral circulation is sluggish or inactive, as a result of cold or low systemic blood pressure. Failure to get pain relief from the unabsorbed morphine leads to the administration of a second or third dose, all of which may be absorbed at one time when the peripheral circulation is re-established as a result of resuscitative measures.
3. The incorrect belief that extensive wounds are inevitably associated with severe pain often leads to needless use of morphine. At Anzio, only a quarter of the severely wounded patients said, in response to a direct question, that they were having enough pain to want pain relief medication.
4. Administration of morphine for conditions that will not respond satisfactorily to the agent, however large the dose, is a common error. Specifically, the use of morphine to treat the restlessness associated with bleeding, with anoxia, or with hysteria cannot be soundly defended. The use of morphine in shock, except for the treatment of severe pain is contraindicated. Morphine is occasionally administered when other agents (barbiturate sedation, for example) are far better.—BEECHER, H. K.: Editorial: Misuse of morphine as therapeutic agent. *Surgeon, Gynec. and Obst.* 81: 461-462, October 1945.

A New Antimalarial Drug

Through the courtesy of Dr. J. Needham of the British Scientific Office in Chungking, samples of two indigenous plants regarded locally as of value in the treatment of malaria have been obtained and tested in experimental animals.

One of these, *Fraxinus malacophylla*, was found to be without action on *Plasmodium gallinaceum* in chicks. Contrary to the report of Liuet no alkaloid could be found in the bark.

The other, of a second plant, known locally as *chang shan* and reputed to be *Dichroa febrifuga*, Lour., was ground and extracted with water and with dilute acid. Neither extract at a concentra-

tion where 1 cc. corresponded to 1 gm. of dry root gave the usual alkaloidal reactions, but both showed considerable activity against a trophozoite-induced infection of *P. gallinaceum* in chicks. The growth of exoerythrocytic forms was not prevented by the extract.—TONKIN, I. M., and WORK, T. S.: New antimalarial drug. *Nature* 156: 630, November 24, 1945.

Inhibitory Action of Sulfonamides

In view of the fact that it has been shown that the cytochrome-cytochrome oxidase system is concerned in the synthesis of diiodotyrosine and thyroxine, a study was made to determine whether an interference with this enzyme system could account for the inhibitory effects of the sulfonamides and their derivatives and of thiourea and its derivatives upon the incorporation of inorganic iodide into diiodotyrosine and thyroxine by surviving thyroid slices.

No marked effect upon the oxygen consumption of surviving sheep-thyroid slices was observed when they were suspended in a Ringer medium containing the sulfonamides, or the p-amino aromatic acids, or thiourea, or thiouracil, or allylthiourea. It is therefore concluded that these compounds do not interfere with the cytochrome-cytochrome oxidase system in thyroid tissue.—LERNER, A. R., and CHIAKOFF, I. L.: Influence of goitrogenic compounds (sulfonamides and their derivatives, thiourea and its derivatives) on respiration of thyroid tissue. *Endocrinology* 37: 363-368, November 1945.

Shock in Craniocerebral Injury

Shock is rarely the result of craniocerebral injury. Its presence usually indicates bleeding or trauma in other parts of the body. In these cases the head should not be placed lower than the trunk and the extremities, because this position will aggravate intracranial bleeding. Otherwise shock associated with craniocerebral injuries should be treated without regard to the brain injury. Blood and plasma should be given as needed until the blood pressure levels approximate normal.—SCARFF, J. E.: Surgical treatment of injuries of brain, spinal cord, and peripheral nerves. *Surgeon, Gynec. and Obst.* 81: 405-424, October 1945.

Surgical Aspect of Intestinal Amebiasis and Appendicitis

Clinically, acute cecal amebiasis and acute appendicitis have much in common and differential diagnosis may be difficult, but in view of the special risks of operation in cases of cecal amebiasis, every endeavor should be made to obtain a clinical diagnosis, emphasizes Britain's Lt.-Col. Philip Hawe. He bases his conclusions on 450 cases of intestinal amebiasis observed at a British general hospital in South India. If exploration proves necessary, manipulation of the cecum should be avoided as far as possible, and unless the appendix is obviously in a dangerous condition, it should not be removed if amebiasis is found; emetine should be given at once after operation.

However suggestive of acute appendicitis, operation should not be advised in any case with an inflammatory mass until cecal amebiasis has been excluded. Amebic appendicitis is regarded for purpose of diagnosis and treatment as an extension of cecal amebiasis; unless complicated by abscess or perforation, it is a medical disease.

Unsuspected intestinal amebiasis and postdysenteric conditions of nonappendicular origin often give rise to symptoms very suggestive of chronic appendicitis. Operation is occasionally required for residual appendicular disease following cecal amebiasis.—HAWE, P.: Surgical aspect of intestinal amebiasis. *Surgeon, Gynec. and Obst.* 81: 387-404, October 1945.

Streptomycin and Tuberculosis

The results reported in this paper clearly show that streptomycin exerts a marked suppressive effect on experimental pulmonary tuberculosis of the mouse. That the infection is not completely suppressed is shown by the presence of microscopic lesions containing tubercle bacilli. However the infecting dose of tubercle bacilli was large and the period of treatment relatively short. Furthermore since streptomycin is rapidly excreted from the body it is possible that, with the limited number of daily injections used, contact between the antibiotic and the tubercle bacilli in the tissue, occurred for only a portion of each 24-hour period. Smaller amounts of streptomycin, especially if given more frequently, might be equally effective.

In terms of units the amount of streptomycin used in the successful experiment was large, 120,000 units per kilo, but was apparently well within toxic limits since no deleterious effects were noted.

These results with streptomycin further indicate that mice may be suitable animals to use when testing chemotherapeutic agents in vivo against human type tubercle bacilli. (The authors

administered streptomycin subcutaneously.)—YOUmans, G. P., and MCCARTER, J. C.: Streptomycin in experimental tuberculosis; its effect on tuberculous infections in mice produced by *M. tuberculosis* var. *hominis*. *Am. Rev. Tuberc.* 52: 432-439, November 1945.

Scar Tissue Formation

Cicatrization is an ideal form of union when epithelization, granulation tissue growth, and absorption are balanced. Normal resorption prevents excessive fibrosis and therefore maintains adequate lymph and blood circulation in the wound. When the by-products of healing remain unabsorbed, cicatrization ceases, granulation tissue shrinks and epithelization is retarded. The fibrosis then interferes with the blood and lymph supply and inhibits further granulation. The untoward result is a large inelastic scar.

The excess of fibrous tissue exerts pressure on the surrounding structures which show atrophic changes. Interference with epithelization is caused by abnormal granulation tissue. The normal epithelial rim measures from 3 to 6 millimeters. The progress of healing is measured by making serial drawings of the rim on cellophane.

Wound healing is hastened by the use of preserved animal tissue grafts. The grafts are placed on granulating wounds or introduced as subcutaneous implants. The preparation of the tissue has been centralized in the Medical Institute at Saratov and the material distributed to several evacuation hospitals. The treatment of wounds by chemically processed tissue has exerted a beneficial influence on scar formation.—KRAUZE, N. I.: Control of scar tissue formation in treatment of wounds, *Am. Rev. Soviet Med.* 2: 542, August 1945.

Epidemic Hepatitis in a Combat Zone

The icterus index is not a reliable guide in determining either the activity of hepatitis or the degree of hepatic functional impairment following an attack of epidemic hepatitis. That is, the degree of icterus does not always indicate the severity of hepatic damage. The icterus index is, however, useful in following the course of the disease. The hippuric acid test of hepatic function frequently indicates residual hepatic functional impairment long after the icterus index has returned to normal. Also the sedimentation rate is useful in determining the residual activity of the hepatitis and frequently remains elevated for several weeks after the icterus index has returned to normal.

These conclusions were drawn from observations on 238 unselected patients with hepatitis and jaundice seen in an Army general hospital in Italy over a 6-month period. An additional 17 patients having hepatitis without jaundice were studied. All cases were verified by various clinical and laboratory methods. An icterus index of at least 16 was arbitrarily set as the lower limit indicating the presence of jaundice; milder forms of the disease were thus excluded. There was one death in the series.

The clinical characteristics of epidemic hepatitis with jaundice were found to be not essentially different from those of catarrhal jaundice. Clinically it is similar to postvaccinal hepatitis, but differs in the frequent occurrence of chills, fever, and lymphadenopathy, and in the relative absence of dermatitis, anemia, and mental reactions.

Epidemic hepatitis is frequently a serious disease which by its seemingly benign course may mislead both the patient and clinician. A prolonged convalescent period and conservative management are important in treatment.—FINKS, R. M., and BLUMBERG, R. W.: Epidemic hepatitis with and without jaundice; some clinical studies on 235 patients among troops in a combat zone, *Arch. Int. Med.* 76: 102-113, August 1945.

Gastric Juice in Treatment of Ulcer

The gastric juice of normal volunteer subjects was fed to a series of patients with uncomplicated peptic ulcer. The normal gastric juice was neutralized, filtered, and preserved with tricresol. Relief of peptic ulcer symptoms resulted.—MORRISON, L. M.: Peptic ulcer disappearance after feedings of normal human gastric juice. *Am. J. Digest. Dis.* 12: 323-327, October 1945.

Present Trends in Medicine

There seems no doubt that a man's physical state affects his feelings and his behaviour and conversely that his feelings and his behaviour affect his physical state. The disturbances of disease and the corrective efforts of therapeutics can work in either direction. "Organic" and "functional" are no longer distinct; still less are they synonymous with "important" and "unimportant." This principle is not to be taught in a short specialist

course on psychologic medicine; if it is accepted as sound, it must pervade the wards, the outpatient department, the lecture rooms, and the examinations. As yet the issue has not been squarely faced. The profession as a whole has not fully realized that if it undertakes to treat patients whose disorders are psychogenic, it must attempt to influence their feelings and their behaviour. It must learn how to "move" people, their minds, not just their bowels. It must concern itself with their morals and their religion, not merely as tolerant observer but as operator. Medicine indeed is likely to find itself charged with a role that has hitherto been accorded to the church. If so, the implications for medical education are heavy.—AITKEN, R. S.: Teaching of medicine. *Lancet* 2: 225-229, August 25, 1945.

[The above extracts are reproduced with due acknowledgment from *Naval Medical Bulletin U.S.A.*, February and March 1946.]

LETTERS TO THE EDITOR

Injection of Green Coconut Water as a Substitute for Saline

I like to draw the attention of my fellow brothers to the following:—

Whether "Green Coconut" water can be used as a substitute for Saline in the treatment of cholera and allied disorders.

My experiments with the same are as follows:

1. I injected sub-cutaneously 20 c.c. of G. C. water to one of my goats on the first day. Second day, I injected 40 c.c. and on the third day, I injected 50 c.c. of the same. The goat did not show any toxic symptom.

2. Afterwards, I took myself, 10 c.c. of the G. C. water sub-cutaneously and I noticed the following:—

(i) Injection is absolutely painless.

(ii) Within 10 minutes it was completely absorbed.

3. I got an attack of severe type of "Diarhoea" some days ago, when I took an injection of 20 c.c. of G. C. water sub-cutaneously and by mouth the usual drugs and I was completely cured.

In every case fresh G. C. water was used.

P.O. Bhangapali,
Dr. Jalpaiguri,
10th April, 1946.

A. KARGUPTA,
Medical Officer Huchuludange Union
Board Dispensary.

Disillusioned

The war has ended and with it has ended all the hopes and aspirations for a bright future on which the Licentiate were banking during the critical phases of the war. At the end of the hostilities I stand fully convinced that the inauguration of I.A.M.C., was a hoax and a stunt to augment recruiting of candidates and this was achieved. This view of mine is amply borne out by the chronology of events given below:—

(1) If I am correctly informed, there was a letter issued immediately after the formation of I.A.M.C., to the effect that all commissioned officers of the medical services whether from I.M.S. or late I.M.D. should use only letters I.A.M.C. after their names and use shoulder titles of the same initials. Unfortunately this was a short-lived thing. The caste system crept in and the I.A.M.C. Officers of the I.M.S. were allowed to write I.M.S./I.A.M.C. after their names, whereas Licentiate Commissioned Officers began to be distinguished by the letters I.A.M.C. alone. This was the start of the thing and all along subsequently a vigorous distinction was allowed to be maintained between the two classes, leaving alone the better privileges in the way of heavy sums as overseas pay, etc., that were enjoyed by our graduate colleagues.

(2) A circular letter has been issued by the G.H.Q. authorities which, in most unambiguous terms, directs the Ex-Regular I.M.D. officers to choose between the following two alternatives:—

(a) Either to revert to the former status held before commission.

(b) or to go on retirement on the same rates that they would have drawn had they not been commissioned.

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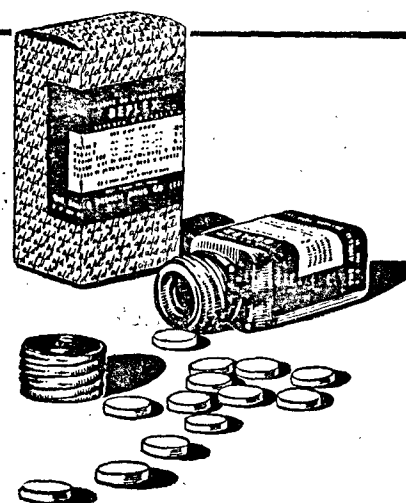
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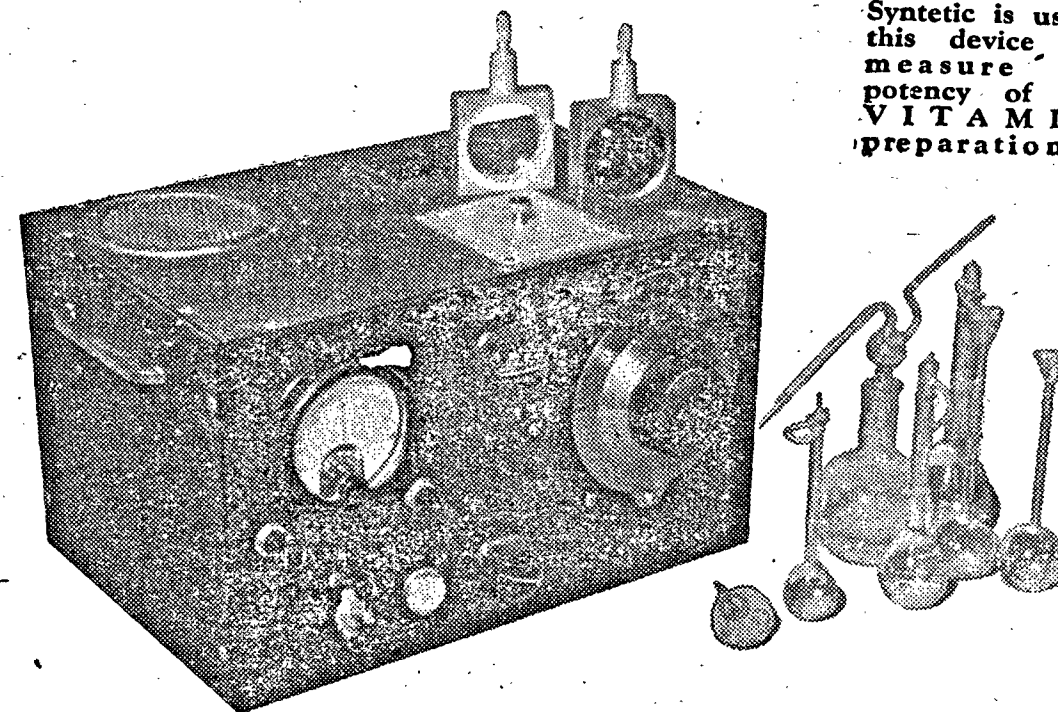
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June, 1946]

LETTERS TO THE EDITOR

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There is no clue anywhere to show that any of them however efficient would be given any chance to stay on in the commissioned status.

(3) I.A.M.C. Licentiate Commissioned officers who held a lien on their civil jobs have been the next victims of the Release Bomb thrown by the Demi Gods of the Army. Most of them have already been released and others are to follow suit. The army is throwing them out under the pretext that their services are now urgently required by the Provincial Governments. Have you by any chance cared to know what awaits these one-time army heroes in the Province? It is the same S.A.S. cadre with its ridiculously absurd prospects—no matter whatever may have been their achievements in the army. May I ask: where have those loud and tall promises so solemnly made by the D.G., I.M.S., D.M.S. and various other medical administrative heads that "the Licentiates cannot be hurled back again to their former status of S.A.S. if they join the Army in numbers now." Vanished with Victory? This was trumpeted among the Licentiates through your special I.A.M.C. issue of the Journal. The medical administrative heads from SIMLA down to the smallest Provinces and their henchmen were busy painting pictures of establishing a paradise on earth for Licentiates in the Post-war world. Your Journal too which had all along stood for the just rights of Licentiates could not escape this infection and carried on a full throated propaganda for recruitment. In return for this, the Army, if I am not wrong, purchased copies of your I.A.M.C. NUMBER and distributed copies amongst its Licentiate officers *Gratis*. This was carried on at such a rate that not a single copy of this Number was even left with you. Nowhere in these promises, if my memory does not fail me, I remember to have read that Licentiates in post-war medical world will either have to undergo M.B.B.S. course or revert again to S.A.S. It was a common pronouncement by all concerned that S.A.S. cadre would be abolished altogether in Post-war medical organisations. The enchanting advertisements appearing during the war under caption "Licentiates for Humanity" enamoured us in numbers to get into the Commission to do our bit with others, but little did we know then of the future.

(4) Permanent Commission in the I.A.M.C. was also promised for able I.A.M.C. Officers in Post War Army medical organisation. There is no talk of this now and do you know that a confidential circular has been issued to all administrative medical heads in Army emphasising that in recommending candidates for permanent Commission, cases of I.A.M.C. (Licentiates) Officers should not be taken into account as a general rule—exceptions however may be made in only some isolated and most outstanding cases? What will be the criterion of judging these isolated outstanding cases, has till this day not been defined, with the result that in all probability no I.A.M.C. Licentiate Officer has been recommended. On a searching examination of this above mentioned circular one can very well understand what its implications are; put in plain and simple words, it is a case of keeping off the Licentiates from this. Why this invidious distinction between Graduates and Licentiates now? Have not the Licentiate Officers in the army worked ably and efficiently as recognised and graded specialists as compared to their local and foreign qualified Graduates colleagues? I must here say that it came as a rude shock to the orthodox Pandits at Delhi when they found the Licentiate commissioned Officers hitherto, considered by them as out-castes, stepping in as specialists after being certified fit by the respective chief consultants who unfortunately for the authorities were all R.A.M.C. Officers having full and final say in their speciality. They (R.A.M.C. Officers) were ignorant of the prevailing medical caste system in India and as such did not know anything of our previous life cycle. To cover up their shame and keep the Licentiates down the authorities at Delhi managed to issue a Circular emphasising the need of recommending only candidates with foreign qualifications or with vast professional and clinical experience for specialists' appointments and thus were able to exclude to a great extent aspiring Licentiates as they could not possibly have either. It will be worth mentioning here that this circular affected only Indians as in case of Britishers the authorities in Delhi had no say—War Office, London being their final judge. Have not the average Licentiate General Duty Officers proved as capable in the general routine and professional works as an average graduate? The medical records maintained will amply support my statement if any one cares to challenge them. May I now ask a question that if we were able to do the war time professional work with skill and ability with our simple licentiate qualification, then why our ability to do the civilian part of it with the same qualification is being challenged now? I do not see the sense in asking us to do M.B.B.S. now. There will be many amongst us who will do it but what about a large number of seniors who on account of their age and other circum-

stances will not be able to take up M.B.B.S., although they served the H.M.C., in its hour of need ungrudgingly and as efficiently and conscientiously as any of their juniors. May I know what is being done for them? Will these ex-I.C.O.S's. (not King's Commissioned Officers as your Journal described them), Majors, Captains and Lts., be relegated to the same S.A.S. cadre? If so, is this justice, fair play and democracy? Is it the reward for all our incere services?

May I ask what the Association has been doing for this? I see no signs of activity or agitation anywhere. I cannot say why and how this spirit of helplessness and despondency has enveloped the one time selfless champions of the cause. This gives rise to many misgivings. Is it some official subsidy that has forced them to seclusion or are they not aware of the facts facing the Licentiates? Why this silence at such a critical moment when a country wide propaganda even more vigorous than of the recruitment day is needed? The leaders of the Association owe an answer to their numerous followers. The Journal as the mouthpiece of the class owes an answer.

Finally I close this letter of mine with an appeal to you to give this letter wide publicity amongst the members of the class by publishing it in the Journal.

Sun Hat, P.O. & Dt. } (Sd.) GRISH CHANDRA MAHANTY,
Balasore (Orissa), } Capt. I.A.M.C. (On release).

We may inform the correspondent that the Standing Committee meetings of the Association held during the year have carefully gone into these questions and submitted suitable recommendations to the Government.

The correspondent's idea of official subsidy is fantastic. The Association is too democratic and its leaders too sincere to submit themselves to such sinister influence. If the work of the Association in these matters has not produced satisfactory results, it is due to reasons beyond its control. But it shall continue to do its duty despite disappointments and failures. If the correspondent has been reading the editorials of the Journal carefully, he would not have failed to find that it has been fearlessly exposing the just claims of the Licentiates and exposing the vagaries of the authorities in no uncertain manner.

The Association helped the Government in medical recruitment in the honest belief that this help would be reciprocated by them by dealing with the Licentiates fairly and squarely in the post-war period. The lack of response by the Government is obvious by thousand signs, but the motive of the Association in helping the Government was clean and clear. It is our earnest belief, even now, that by so helping, we have advanced the strength of our cause and the hopes for its success. Time will show the truth of this belief.—Ed.

Bombay University and Post Graduate Diplomas for the Licentiates.

The attitude of the Bombay University towards the Licentiates has been briefly described by Dr. P. C. Nanavaty in the I.M.J., of February, 1946, but he has not said anything about the Post-Graduate Courses.

Nearly a year and a half ago, the University of Bombay instituted Diploma Courses in Venereology and Dermatology, Anaesthesia, E.N.T., Diseases, Radiology, etc., but these courses have been kept as the exclusive preserve of medical Graduates. Licentiates are not at all allowed to take up these courses. In Madras Province, all Registered Medical Practitioners—Graduates and Licentiates—are allowed to take up T.D.D., D.M.R., L.O., and other Courses. Why not in Bombay?

In spite of this deplorable attitude of the Bombay University, the A.I.M.L.A. Branches in Bombay Province and the Central organisation seem to be keeping mum over this affair; and so also the I.M.A.; none of them seem to have lifted their little finger in wiping out this latest insult hurled on the Licentiates of this Province. On the other hand, the A.I.M.L.A. Branches at Madras, Vellore, etc., have been the foremost to lodge their protest against the above quoted attitude of the Bombay University.

I appeal, through the columns of your valuable Journal, to the A.I.M.L.A.—both central and Bombay Branches—to wake up from their slumber and take this matter up with the Congress Ministry of our Province.

Ahmedabad.

P. R. PANDIT,
Captain (Late of I.A.M.C.)

We may inform the Correspondent that none of the post-graduate diplomas of the Madras University are open for the Licentiates as his letter implies. The diploma as he refers to are given by the Madras Government, not by the Madras University, and here too Licentiates are not eligible for the D.O., and D.G.O., but only for L.O., and L.G.O. There is no such differentiation, however, in regard to T.D.D., and D.M.R., diplomas. It is therefore obvious that the resolution of the Madras and the Vellore Branches to which the correspondent makes a reference is a 'mis-fire'. In fact, not only Bombay but no University in India allows the licentiates to appear for and earn its post-graduate medical diplomas. That this is unfair and invidious is a different matter altogether.

We understand that the College of Physicians and Surgeons, Bombay, have instituted post-graduate diplomas in ophthalmology, Pediatrics, Midwifery and Gynaecology, etc., to which the licentiates are eligible. They are more or less on par with similar diplomas offered by the Government of Madras.

We, however, agree with the basic idea of the correspondent that in the matter of post-graduate medical diplomas, given by the Universities or by any other Bodies, all registered medical practitioners should be equally eligible.—Ed.

Grievances of the Government Sub-Assistant Surgeons in Madras

Their grievances may not be overlooked simply because they do not take recourse to the modern way of redressing them by strikes, etc. They as a peaceful class do not go in for strikes as then the whole work concerning the life of the people will suffer. If this class is not required, it is but just that they should be retired once for all on full pension and gratuity at least paying one month's average pay for every year of completed service as compensation for premature retirement. If they are indispensable, then this class may be treated on par with others.

War is over. All those who are posted for war services are put above the heads of the seniors. The seniors were not sent for war because they were age-barred. Is it their fault that the war has come at a later date? Some were found unfit physically. These people had to lose their health in attending to Cholera, Plague, agency and other duties. Is not the Government responsible for the low health of these licentiates? Further, at a certain stage, it was said that these seniors will not be taken for war duty as the civil work would suffer.

In the interest of fairness, the following should be adopted to redress the grievances of the licentiates and the seniors in particular.

1. All those who have attained the minimum of Assistant Surgeon's pay must be promoted to Assistant Surgeon cadre in accordance to strict seniority, irrespective of any other consideration, with retrospective effect from the date of attaining such minimum pay for the purpose of fixing up the present pay and for future promotion and seniority for higher promotion.
2. All those who have not attained the minimum pay of Assistant Surgeons but have done War service or declared unfit for Military duty should be promoted to the rank of Assistant Surgeon with the starting pay of an Assistant Surgeon.
3. All others including temporary people irrespective of qualifications should be kept as Sub-Assistant Surgeon till vacancies arise in the higher cadre.
4. Direct recruitment to the Provincial cadre shall cease except in rare cases who possess Post-Graduate degrees.

The A.I.M.L.A., has been eye washed by offering Assistant Surgeon posts to the war returned people in return for its active propaganda. But what about these seniors who were not called for war service, or found unfit for the same? Why graduates who have not got any hold in the department even were brought and put above the heads of the Senior Sub-Assistant Surgeons, though the licentiates proved in no way inferior, professionally or administratively. Is it because they have no hand in the administration? May the authorities concerned now at least do justice to the licentiates class which has proved its worth beyond doubt or cavil.

Kaikalur,
Nellore District,
5th April 1946.

P. SATYANARAYANA RAO,

PROVINCIAL CONFERENCES

(Continued from page 159 of May issue)

First Behar Provincial Conference A.I.M.L.A.

This was held at Chaibasa on 27th and 28th January 1946.

Delegates from the following Branches were present: Jamshedpur, Purulia, Bhagalpur, Darbhanga and Chaibasa. Members and visitors also attended in good numbers.

Owing to the unavoidable absence of Dr. D. P. Dhar, the sitting president, Dr. D. N. Mukharji was elected unanimously to preside over this Conference.

Owing to the unavoidable absence of Dr. R. C. Prasad, Provincial Secretary, his report was read out by Dr. P. C. Sen.

Dr. N. C. Majumdar, Civil Surgeon of Singhbhum opened the Conference and in the course of his address he observed as follows:

Gentlemen and Comrades,

Health is the foundation on which New India will have to be built. Proverbial "India of Plenty" lies prostrate with poverty, penury and pestilence. In the economic and social security Scheme of "India to Be" the Medical and Public Health rehabilitation require immediate attention.

Problems of Maternal and Infantile mortality, scourges of Tuberculosis, Leprosy, Venereal Diseases, Malaria, Kala-Azar, Cholera, Small-pox, Dysentery, have been engaging the attention of the Government though means and procedure of dealing with them are not very adequate. Lack of financial help and lack of public interest, in these vital efforts reflect what is India at present.

Malnutrition and illnutrition arising from quantitative and qualitative defects in diet have made a considerable percentage of the population easily susceptible to various diseases and the plight of poor daily wage earners and landless agriculturists in sickness in unemployment, disablement and old age is very pitiable.

Medical men have dedicated their lives in the service of suffering humanity. You have to inspire others to co-operate with you. Without the help of other allied social workers, you cannot do much. Statesmen and Economists, Scientists and Reformers, Government and the governed in the increased consciousness of their social responsibilities should stand by you.

United you should give solemn expression to your desire to have adequate means and opportunities and professional securities to help others to enjoy life and work with vigour.

Pray as if everything depended on Him and Work and Work as if everything depended on you.

With these words I have pleasure to declare the Conference open.

Dr. Ramachandra Prasad,* Provincial Secretary then presented the following Report regarding the activities of the Behar Branch of the A.I.M.L.A.

As early as 1932 our Association in Behar worked vigorously and could manage to hold the annual conference of our all-India organization. The present President Dr. Dhar was then Provincial Secretary who with his unique zeal and love for the association invited the all-India Conference at Darbhanga which was successfully celebrated under the Presidentship of Col. Cook the then I. G., C. H. of Behar. Dr. Dhar was able to organise Muzaffarpur Branch also.

Chapra Branch was established and started by me and Dr. S. Banerjee of Chapra, Sadar Hospital in 1930. Since then it is working regularly under the guidance of our able Branch Secretary Dr. B. Gupta who is at present Joint General Secretary of our mother Association.

This is the available history of our provincial branch. Present activities of provincial branch begins after the Agra Annual Conference. I became Provincial Secretary here. Since then I have travelled several times through the province of Behar and Orissa and have tried to infuse energy in each branch. Some of the branches work regularly and show signs of life while others prefer deep slumber and cannot possibly be aroused even by great jerks.

The latest and recent branch is our Chaibasa branch which is very active and appears to be breathing full oxygenated air. The working of this branch is before you all, and perhaps you will all agree that this branch is the most energetic one in the whole province. This branch has 55 members. I really admire, rather I am jealous of Dr. P. C. Sen who has managed to enrol so many members inspite of want of time due to his roaring practice. He is a jewel of our Association. Equally wonderful is Dr. R. De. This doctor has unparalleled power of organisation and unique strength to work day and night to make this conference successful. I praise his mental strength and physical power and unimaginable patience which had led this conference to a happy end. Had he not been holding the reins of Reception Committee certainly this conference would have been postponed. I thank this doctor whole-heartedly.

Another equally good branch is Chapra (Saran) under the able control of Dr. B. Gupta who has got 58 members in his district. Dr. Gupta is one of the old members and has sacrificed everything possible to maintain the position and prestige of our provincial body. He has represented Behar at each conference. He is very silent and tested soldier amongst us. His work has been appreciated and he has been made Joint General Secretary of the Parent Association.

Dr. D. P. Srivastava of Bhagalpore has been working vigorously since the start of his branch and is adoring the chair of Branch Secretary very energetically with great zeal. He managed to

* Dr. P. C. Sen read the report on his behalf.

hold District Conference which was graced by our present President Rai Sahab Dr. M. L. Kapoor. Due to his honest labour, Bhagalpore Branch was established and is shining upto now.

Dr. K. Dalleppa, Secretary of Darbhanga Branch has done what is humanly possible to further the cause of Licentiates in his district. He is carrying on the work assisted by our old friends Dr. Damari Lal, Dr. Bhawani Chakravarty and Dr. Agarwala.

Dr. Sarju Prasad, Motihari Secretary, is another asset of our association. He has very ably taken up the cause of recently provincialized hospital doctors. He is a man of exceptional merit, and is brave, and always a great fighter of our cause.

Muzaffarpur Branch had been working nicely but recently it appears to have become a little cold. But I cannot forget Drs. B. Sarkar, A. Ghose, H. Ansari, Dr. B. P. Hor, present secretary, B. Dayal & Singh who assisted in its reorganisation.

In Behar we have the following branches—14 in number. 1. Chapra, 2. Mutihari, 3. Muzaffarpur, 4. Darbhanga, 5. Samastipore, 6. Katihar, 7. Bhagalpore, 8. Arrah, 9. Gaya, 10. Daltonganj, 11. Purulia, 12. Jamshedpore, 13. Cuttack, 14. Puri.

Of these, Jamshedpore Branch which is very close to this place has worked very nicely. But lately this branch is not showing life. Previously this Branch was working just like Chaibasa Branch. Perhaps they are dejected as we could not help them in alleviating their grievances. Certainly their grievances are genuine and real. It is a matter of great sorrow and pity that neither I nor the Mother Association could help these friends. For this I propose that a deputation might be formed by this conference to represent the cause of this branch and see the agent as well as the Directors of Tata at Bombay.

Our province has responded very well to the recruitment of Medical Licentiates to the Indian Army Medical Corps. We have contributed about 115 doctors, the same number as Graduates. All Branch Secretaries in Behar have worked to the best of their capabilities and have done good propaganda for recruitment. I thank them all. It was due to the sympathetic attitude of Col. Spackman that we could manage to have so many recruits in Behar where National Congress practically rules the hearts of the people. I have visited all places and towns for recruitment as our Association collaborated in war endeavours to secure medical recruits. We did this with the belief that the fate and position of the Licentiates would improve in future and not for personal interests. From President downwards every body tried their best to help the Government in their defence and medical organisation. But very few people appreciated this work. Perhaps Col. Spackman realized this and honoured Dr. G. S. Pathak by promoting him to the rank of Assistant Surgeon and making him Rai Sahab also.

But unfortunately, in the absence of Col. Spackman, Government of Behar has done a great injustice to the recently provincialised Licentiates

working in Hospitals. To ask senior doctors to appear before a selection Board for a New Service is the highest possible injustice ever known, as these have already spent three-fourths of their lives in service of the people. Such steps are not wise simply to provide for a few war returned doctors. Demobilised doctors should be provided with better jobs. To offer a post of Sub-Assistant Surgeon to a Captain will be a great degradation of the Licentiate or Graduate. Nothing less than an assistant surgeon's post should be provided for them.

Most humiliating is the pay, salary or remuneration of Licentiates in Behar. Pay here varies from Rs. 45 to 65 as a start. Can any body imagine that a doctor can maintain himself and his family with this pay? I think Rs. 200 should be the minimum initial pay. If our employers do not agree to this, we should prefer to start as private practitioners. It is useless to accept a post where starvation-faces us and insults are levelled.

Last point I want to mention is about the subject of amalgamation of our Association with the I. M. A. Unity is certainly desirable. Licentiates have done all in their power to bring about unity. They have consistently stood for the abolition of Medical schools so that the standard of medical education may be uniformly high throughout the country. Yet, the Medical graduates in the Indian Medical Council want to sail alone without us. Most of the members of the I. M. C. are also members of the I. M. A. Have they resigned as a protest against our non-recognition? Why then this talk of amalgamation. I think the initiative lies with the I. M. A. and not with us.

Dr. Radharam De, Secretary of the Reception Committee, welcomed the Delegates and Visitors, as follows:

On behalf of the Reception Committee of the first Bihar Provincial Licentiates Conference I extend to you all a hearty welcome to this romantic land of seven hundred hills.

We are proud that this forgotten corner of the Province should have been selected as the venue of the first Conference of this kind in Bihar. We in this part of the world are far away from the currents and cross-currents of the complicated trends of present day civilization. Many do not know us—indeed many do not know that there is a place on the earth called Chaibasa—and therefore we do not get the tiny little recognition that our heart craves for and which we humbly feel we do deserve. But we are content, like the silent neem trees among which we live, to work in silence trying to fulfil the behests of God to serve humanity to the best of our light and conscience. You will have noticed by the bazar road tired neem-trees silently doing their work and drowsily reclining against memories of moments that measure eternity. These neem trees reflect our feelings. We here, in this neglected corner, tired yet dutiful, get solace from the reflection that one solid good deed is well worth many a life time. We love the music of silence and are happy to have

you here to share our joys. The present civilization is unfortunately drifting away, slowly yet sadly, from the paths of God. We, therefore, in this sleepy hamlet of Chaibasa, are proud of our visions of God in the blue hills around us and in the divinity of Nature as far as the eyes can reach. Ladies and gentlemen, you will suffer a great many inconveniences for lack of facilities to which you are naturally accustomed. I, on behalf of the Reception Committee, apologise to you for our inability to do anything better, but I have the fullest confidence that the glorious vision of Nature's beauty that Singhbhum offers you, here and en-route, will more than compensate for the material discomforts.

We meet here at a time when many subjects are agitating our minds. The first that comes uppermost to me is the recent dispensation of the Government in provincialising the hospitals that were being managed by Local Bodies. We had hoped that much good would come out of this policy of Government. But to our regret we find that the lot of medical officers concerned has been worsened rather than bettered. In the first place we have all been taken on a temporary basis with the Sword of Damocles ever hanging above our heads. We do not know what may happen to us to-morrow. Under Local Bodies we were receiving the benefits of Provident Fund and we were hoping that we would under the Government receive benefits of pension. But curiously enough we have been made to stand in midstream being able to reach neither this shore nor that. This, I submit, is hardly a fair way to do the thing. We medical officers are commonly accused of too much professionalism. It is said that we care too much for money and too little for the humanitarian outlook. It is forgotten, however, that medical men are also men and that like other men or even like animals, they have also to eat, to live before they can serve others. But here is the policy of Government by which we are deprived of even a living wage. We therefore are forced to seek for money in our profession. It must be regarded as the elementary duty of Government to keep us reasonably well-fed so that we can devote our body and mind to the service of humanity which really is our proud privilege and work.

Another important and immediate issue is the consequence of impending demobilisation of I. A. M. C. personnel. The problem that arises is twofold. One is—what will be the prospects of those demobilised? In the Army they have been receiving a scale of salaries which is not available in the civil departments. Government had promised to consider their case. But I am not aware that anything has yet been done though the demobilisation is, from all appearances, imminent.

The second problem is—what will happen to those medical officers who have taken the place of those sent to the Army. This is a bigger problem of the two and is causing greater concern to the medical profession. It is only fair that these worthy men, who offered their services to the Government and to the country at a time when

the need was desperate, should not be thrown overboard, as soon as better times arrive. I think I am voicing the feelings of this Conference when I say that it will be a major wrong done to the profession and society if adequate consideration is not given by Government to the cases of these men who made recruitment to the Army possible.

I must not omit to mention that medical officers under the Local Bodies do not receive fair deal. In the first place their pay is very low, secondly, they are not given the opportunities of postgraduate training or of study leave which is commonly given in Government institutions. The conditions of grant of leave, etc. are also extremely unsatisfactory. They have no representation in the medical sub-committees of the Boards. The conference will undoubtedly join me in raising a voice of protest against such conditions of service. We appeal to the Local Bodies to realise the existing deplorable state of affairs and to take steps to remedy these.

I take this opportunity of extending our warm appreciation of the kind co-operation and help received by the Reception Committee from the Tata Branch. Without their generous help and friendly co-operation we would not be able to do even the little that we have done.

We owe our thanks also to the Additional Deputy Commissioner, for his kindly permitting us to hold the Conference in this Hall and also to Dr. N. C. Majumdar for his so kindly taking the trouble to inaugurate this Conference.

We would have done a little more to lessen your inconvenience if some unfortunate circumstances had not intervened. We were getting along in our modest way with the preparations for the Conference when suddenly a bomb shell came from the Provincial President asking us to postpone. We felt greatly wronged and appealed to the All-India President. In this uncertainty as you will appreciate we could not have the heart to continue the preparations. Fortunately the All-India President decided in favour of the Conference. His telegram to this effect was received only on the 18th instant. And thus we are here before you with whatever broken beats of arrangements that we could make.

In conclusion I once more thank you, brother, delegates, Ladies and gentlemen, for the pains you have taken to come to this far-off place of ours at so much physical inconvenience to you. Chaibasa will always gratefully remember this eventful day.

Dr. D. N. Mukharjee delivered his Presidential Address:

Visitors, Delegates, Ladies and Gentlemen,

It is indeed a proud privilege and I deem it a great honour, you all have bestowed on me the responsible duty of the president of the Provincial conference, the first of its kind in the Province. I remember our annual conference once held about eighteen years ago, in Laheria Sari (Dharbanga). So long Bihar was deprived of the benefit of holding any of our conferences to discuss the ways and means to tackle the various problems affecting the

licentiates and to move the matter to the authorities concerned. Bihar has got her own problems which are quite different from those of other provinces in India. I assure you that through your co-operation and good-will, I shall always remain alert to the interest of our profession. I dare say, I shall try my best to carry on with your support the arduous job with which I am now entrusted. In our medical profession it is a great pleasure that we all big and small are united to discuss jointly matters of interest to our profession. As such, may, I therefore, fervently appeal to you all assembled today to extend your helping hand with all your might to advance the dignity of our profession? Our province of Bihar has no doubt assumed an important place in the All-India Medical Association, and, if you have enthusiasm you can surpass any other province of India by having the largest number of members in our Association and by maximum scientific contributions in the periodicals and journals to prove our efficiency and merit that Bihar is not lagging far behind in the sphere of our activity.

Ladies and gentlemen, there are some election frays which we experience day to day in all the walks of our life, but we forget everything when the results are announced. In our Association also it is not an exception. Now that everything is over, let us closely study the events and the various critical problems we are boldly to face, before we can do something substantial. Our Association has got a part to play as it did in the last great world war and our services in various fields of medicine, surgery and public health were never questioned by the highest authorities of our profession, some of whom, we can legitimately claim as "Friends of our class"—by their genuine interest and sympathy to the advancement of the Licentiates group. We all are meant to serve the people at large—the teeming millions with whom we are linked up. Thus we from the major bulk of our medical profession. We serve the poor, the middle class and upper class, and also the Europeans but our services are still left unrecognised by the authorities. We are meant only to serve in the critical periods like famine, epidemic and earthquakes at the very risk or our lives. We are the pioneers in introducing the scientific medicines in our country to the remotest corner of inaccessible villages where pleasure cars cannot ply and which are practically cut off from the rest of the outside world. Such is the environment where our men are carrying on the noble tradition, without the least scope for earning a name and fame, which is decidedly easier in a town.

The raising of the standard of the only medical school at Darbhanga and its conversion into a college is, no doubt, a move in the right direction on the part of our Government, as it had ultimately to agree to the pressing legitimate demands of our Association. Happily, the dual system of education, with which we were so long handicapped and confronted, has now ceased to function. But it is deplorable that some leading members of our profession, in the last annual conference at Muzaffur-

pore have opened the necessity of a medical school in the province and have gone so far as to suggest the Government to have a medical school at Jamshedpur taking the advantages of Tatas Main Hospital. Our Association therefore makes an emphatic protest against such a resolution and appeals to the Government to consider patiently such a project. The Good-Enough Mission, as you all are well aware, has commended the abolition of Licensing Corporations and the affiliation of every medical school in the United Kingdom as an integral part of an University. India is in turmoil and we must have many changes soon. The vast majority of men, who are regarded as backbones in the profession, cannot be deprived of fair and just treatment, at the hands of a few, and I believe, our class will act as torchbearers when the question of postwar reconstruction scheme actually comes into operation.

Let us not forget in this connection the sympathy and good-will of eminent men like Dr. Tirumurthy of Madras and Dr. Deshmukh of Bombay. The former has spoken that "The Licentiate have been the sport of all in India, and that the Indian Medical graduates have not actively helped the fruition of the aspirations of the licentiates during the many years of their strenuous struggle for rank and respect; and that the attitude of the Universities and of the Indian Medical Council has been far from being helpful or encouraging."

Dr. Deshmukh who had the honour of serving as one of the active members of the Indian Medical Council expressed his indignation at the attitude of the Council in not allowing the licentiates for entry in the All India Medical Council and he thus refused to serve the Council by remarking: "After fighting for the right to manage our education in our own way, and failing, I refused to attend the meetings of that wretched body to which matters of the Indian self respect were trivial. One had only to consider the injustice of debarring our own non-University doctors while obsequiously recognising the foreign licentiate diplomas like L.R.C.P., L.S.A."

The Provincial Medical services either in public health or in civil hospitals or in Railways have become a monopoly for the graduates, and strangely, stray cases of one or two in the whole province from our class to such appointments can in no way satisfy us and we strongly appeal to the Government, the Local Bodies and Railway authorities to amend such existing rules and let the appointments be based on experience, competition and fair amount of justice.

Ladies and gentlemen, let us not forget in this connection, our fellow brethren, who have so long supported our Association and who have advanced our cause so far, and are no longer in this world. Whether in the civil employ or in the military or under the local body or private firms let us all remember them and give them our deepest homage. Unfortunately we are not in a position to include their names in the list as our Secretary is absent today, else it was our first duty to send our deepest condolence to the bereaved family

members. Let us all observe silence for 2 minutes in their memory and let us pray to God "May their souls rest in peace."

As our Secretary is not here, we cannot give you an exact figure of the number of Licentiates recruited in I.A.M.C., but we think Bihar was not lagging far behind the other provinces in this respect. Happily, the war is over, and now we are in doubt as to what would be the future of our fellow brothers who joined the war and have been repatriated. Government has no doubt reserved some vacancies for suitable men but we should appeal to Government to solve the problem, in a fundamental manner. Undoubtedly many will not be provided and our Association should therefore agitate through press and on platforms how the question can be solved better.

As the question of preserving health is one of the primary national problem, it is of utmost importance that, in any planning whatsoever, the frequent epidemics, with which our province has to face year after year, should be adequately dealt with and no room should be left to prevent such epidemics which are preventable in nature. The medical and public health expenditure in our province per capita per annum as revealed in 1939-40 is a ridiculous figure of 0-1-7 against 0-5-9 of Bombay, 0-4-2 of Madras, 0-4-0 of Punjab, 0-3-8 of Assam, 0-5-1 of North West Frontier province and 0-2-7 of Bengal. Moreover our province is confronted with floods and earthquakes, the after effects of which as you all know are terrible epidemics. Now we are facing the question the difficulties of which we are to tackle with a paltry amount of 0-1-7 and the results are best known to everybody. Therefore through the leaders of the province we should see that there is an increase in the expenditure for the advancement of the health of our people.

In Bihar the provision for undergoing University training by the Licentiates as in Bengal and Madras has not yet been adopted and we, therefore, appeal to the Vice-Chancellor of the Patna University and the Government to amend the University regulations forthwith so that Licentiates willing for higher studies should not be deprived of such benefit. The Madras University has introduced refresher course for all the general practitioners of the province, and we urge our University to follow Madras in this matter.

In most cases our fellow practitioners engaged in preventive aspect of medicine are not properly paid. In fact, they are looked down by the public and the authorities concerned. They are not encouraged by the State or the Local Bodies and there appears to be no prospects before them. Thus these men, who are silently doing good work, even, at times, at the very risk of lives, are often neglected. In most of the cases they are debarred from private practice and no compensatory allowance is given which they legitimately deserve.

It is worth-while to mention in this connection the deplorable state of affairs existing in the Medical Service of Tatas Iron & Steel Co. so far as licentiates are concerned. You all know their

life long services in making present Hospital so popular. After a record period of service of two decades one has to remain satisfied with his lot having no future prospect for him. Their services and merit as well are well recognised but they are doomed not to have any promotion. The recruitment of licentiates has entirely been stopped for reasons best known to the authorities.

Our Association therefore strongly urges the Board of Directors to reconsider their decision and thus remove the long felt grievances of licentiates so long serving under them.

The Scientific Section was presided by Dr. A. Aswini Kumar Mitra, the following papers were read.

1. Maternity and Child Welfare by Dr. L. Israil, Lady Doctor, Tinsplate Company, Golmuri.
2. "Infant feeding" by Dr. D. N. Mukharjee, L. M. F., Asst. Medical Officer, Tata Iron and Steel Co., Ltd., Jamshedpur.
3. "Leprosy" by Dr. A. T. Roy, L. M. F., Medical Officer, Lepet Asylum, Purulia.
4. "Tropical Ulcer" by Dr. Radharaman De, L. M. F., Second Medical Officer, Sadar Hospital, Chaibasa.
5. "Inguinal Hernia" by Dr. K. Dalipha, L. M. F., Demonstrator, Darbhanga Medical School, Laheriasarai.
6. "Penicillin" by Dr. Damrila, L. M. P., Demonstrator, Darbhanga Medical School, Laheriasarai.

Resolutions Passed:

1. Resolved that 50% of the vacancies under Government Local Bodies, District Boards, Native States, Private institutions and Railways be given to the demobilised army medical men and 50% to the civil medical men.
2. Considered the question of position and scale of pay for demobilised I. A. M. C. officers, and resolved that the officers (Licentiates) demobilised from the I.A.M.C. should be absorbed in the services with same pay and status as those of the demobilised medical graduates (I. A. M. C.).
3. Resolved that in the Government service, the scale of pay and status of the Licentiates should be similar to that of graduates in the same service; and in case of other institutions, e.g., Local Bodies, Private institutions and Native States and Railways, the scale of pay of the Licentiates should be not less than that of the graduates serving under the Government.
4. Resolved that Government be moved to abolish the subordinate medical service and maintain one uniform Provincial Medical Cadre.
5. That in view of the fact that Government have already decided to abolish the Darbhanga Medical School and to raise it to a Medical College, it is resolved that Government be requested to expedite the same.

It is further resolved that the Licentiates in general should be allowed to undergo a compartmental course not exceeding two years to complete degree course.

Also that at least a minimum of 50 per cent seats be reserved in both the Medical Colleges in Bihar, which is to be filled up by the Licentiate candidates.

6. The item regarding moving Government for the abolition of the designation of Sub-Assistant Surgeon was deleted out by the house.

7. (a) Resolved that the medical officers who may be requested to do the epidemic works from time to time should be given a compensatory allowance for doing their extra duty as per instruction of Government and the Government be approached to see that the instruction guiding the same is enforced on the employees concerned who may require the services of the medical officers for epidemic duty.

7. (b) Resolved that the doctors engaged in Public Health Department either under Government or under the Local Bodies, or Railways and who are debarred from private practice should be given a substantial compensatory allowance in lieu of private practice.

8. The agenda regarding deputation of I. A. M. C. officers for higher studies in foreign countries was deleted by the house.

9. Resolved that Government be approached for the appointment of Licentiates also, as Personal Assistant to the Inspector General of Civil Hospitals, Bihar.

10. It is resolved that the following members do form a Committee to await on deputation to the Inspector General of Civil Hospitals, Bihar, and the Agent, the Tata Iron and Steel Co. Ltd., Jamshedpur for putting up grievances of the Licentiates.

1. Provincial President.
2. Provincial Secretary.
3. A member from Jamshedpur Branch.
4. Dr. K. N. Dalipha (Provincial Subordinate Medical Service.)
5. A member serving under the Local Body of this Province.
6. Dr. D. P. Dhart, Ex-Provincial President, will be the Chairman of Deputation.

11. Considered the question of amalgamation of this Association with the Indian Medical Association.

Resolved that the matter may be left with the Parent Body and the Sub-Committee formed by them for considering this particular question.

12. Resolved that Orissa, if so likes, can have their own Provincial Organisation to administer their own branches.

13. Resolved that Government be approached to nominate a medical man in the Provincial Assembly to ventilate the grievances of the medical profession of the Province in the Assembly and the Council.

14. Resolved that the authorities be approached for reducing the period of training to Licentiates as Post-Graduate course in the Darbhanga Medical School from three months to two months as has been done in the case of the graduates.

15. Resolved that Government be requested to exempt the Registered Medical Practitioners from obtaining a Purchaser's License under the Drugs Control Order, 1943.

16. Resolved that the Inspector General of Civil Hospitals, Bihar and the heads of the Local Bodies, Private companies, Railway boards and Native States, be requested to grant special leave to doctors serving under them for attending the Conference of the Association.

17. It is resolved that the Government be requested to provide the Licentiates with higher qualifications like D. T. M. and D. P. H. in the Provincial Medical Service.

Open session was attended by all the Delegates and members. All 17 resolutions were read and unanimously passed.

Election of Office-Bearers:

1. Dr. Bankum Chandra Bose, Chief Medical Officer, Tinsplate Co. of India Ltd., Golmuri, was unanimously elected President of the Bihar Branch for 1946.
2. Dr. K. N. Dalipha-Demonstrator, Darbhanga Medical School was unanimously elected Vice-President of the Bihar Branch for 1946.
3. In the election of Provincial Secretary, the following members were proposed and seconded:—
(a) Dr. Nikhil Chandra Benerjee — secured 6 votes
(b) Dr. B. N. Mazumdar " 4 "
(c) Dr. K. Mukerjee " 3 "

The names were put vote and Dr. Nikhil Chandra Benerjee got the majority of votes and elected Secretary of the Bihar Provincial Branch for the year 1946.

4. Dr. L. C. Sinha, Private Practitioner, Darbhanga was unanimously elected Joint Secretary and Treasurer.

5. The members of the Standing Committee were elected as below:—

- | | |
|------------|--------------------------|
| Purulia | 1. Dr. A. T. Roy |
| | 2. " A. N. Sarkar |
| Jamshedpur | 3. " H. N. Chandra |
| | 4. " Israil |
| Bhagalpur | 5. " D. P. Srivastava |
| | 6. " T. P. Choudhury |
| Darbhanga | 7. " Shibsanker Prasad |
| | 8. " Tulasanker Prasad |
| Chaibasa | 9. " R. R. De |
| | 10. " Secretary (Branch) |

12th Session of the Bengal Provincial Medical Licentiate's Conference held at Howrah on the 6th and 27th January 1946.

On the 26th January 1946, the Conference met at Howrah. Delegates and visitors from the following branches attended the conference: Calcutta, Howrah, 24 Parganas, Budge, Burdwan, Midnapore, Tangail, Hooghly, Mymensingh, Narayanganj, Rangpur, Pabna, Noakhali and Asansol.

After the opening song Dr. M. C. Chatterjee, Vice-Chairman, Reception Committee, welcomed the delegates and visitors on behalf of Dr. Jibananda Mukherjee, Chairman, Reception Committee, who was unable to attend the conference owing to serious illness.

Then Mr. Sailo Kumar Mukherjee, Chairman, Howrah Municipality, in a nice little speech welcomed the delegates and visitors on behalf of the Howrah Municipality.

At the request of the Vice-Chairman, Reception Committee, Dr. Sundari Mohan Das inaugurated the Conference and the Exhibition with a neat speech.

Dr. B. Lahary, Jt. Secretary, Reception Committee and the Howrah Branch, then formally proposed Dr. A. D. Mukharji to preside over the conference which was seconded by Dr. B. Chaudhuri, Provincial Secretary. The President was then garlanded.

Dr. J. K. Roy, Jt. Secretary, Reception Committee and the Howrah Branch, read out messages of those who expressed their inability to join the conference but wished it all success.

The Provincial Secretary read out his annual report.

The President then delivered his address.

Lt.-Col. J. C. De, I. M. S. (Retired), then addressed the conference with a nice speech and dwelt on the various aspects of public health, medical education and medical needs of the country. Dr. A. N. Roy, General Secretary, A.I.M.L.A., Dr. A. M. Malik, ex-Provincial President and Dr. A. C. Sen Gupta of Narayanganj also addressed the conference.

Thereafter a tea party was held by the courtesy of Messrs. Oriental Research and Chemical Laboratory Limited and the exhibition stalls were visited.

After musical entertainments and Dinner by the courtesy of Messrs. Bengal Chemical and Pharmaceutical Works Ltd., the Subjects Committee met and carried its deliberations upto 10-30 a.m.

The Scientific Session commenced at 9 a.m. on the 27th January and Lt.-Col. J. C. De presided. As many as twelve interesting papers on various subjects were read and discussed. Some interesting X-Ray plates were also demonstrated.

The delegates and visitors were then taken to Dass Nagar by the authorities of the Asia Drug Co. Ltd., and served them with a sumptuous Lunch after their visit to the factory.

Dr. Jibananda Mukherji, Chairman of the Reception Committee, delivered the following Address:

SISTER AND BROTHER DELEGATES, LADIES AND GENTLEMEN,

At the outset I must thank my colleagues of the Howrah branch of the Association for conferring on me the unique honour of the chairmanship of the Reception Committee of the 12th Bengal Provincial Medical Licentiate's Conference. I cordially welcome you all, on behalf of the Reception Committee, to this industrial town of Howrah. As my health has recently broken down, I will not be able to stand long before you and deliver my speech for which I apologise to you all. I also have no intention to detain you long and encroach upon your valuable time as you are all eager to hear the speech of our worthy president of this Conference, who is our helmsman and a glory to our profession and who will elaborately deal with the vital points regarding various aspects of our profession.

Though Howrah is the end town of Bengal, its sanitation and health is not up to the mark, due to the negligence of the Municipal authorities, as our previous chairman was busy with his Ministerial duties at the Secretariat and could not look properly to the interests of the inhabitants. His place has been taken up by Mr. Salla Kumar Mukherjee who has been elected chairman of the Howrah Municipality. He is young, energetic and a Congressman. We expect much from him, as the war having ceased, we expect things restoring to normal, Mr. Mukherjee just after occupying the chair evinced some interest regarding the health of the town and ascertained the opinion of the leading Medical Practitioners of Howrah at a meeting held in his office and I hope during his regime he will permanently form an advisory committee for sanitation and health of the town with leading practitioners of this city.

Howrah is famous for Botanical Gardens, Shibpur Engineering College, Howrah Bridge and Belur Math. Dassnagar has also added to its attraction.

Gentlemen, the lives of Indians are not so important in the eyes of Government and so they have created two classes of Doctors for the people but time has come when this should be stopped. The Licentiate by joining I. A. M. C. and as Medical Officers in A.R.P. have proved their efficiency, and performed their responsible duties shoulder to shoulder with Graduates. Government should not ignore us and should change the Medical Act to include the names of all Licentiate in the Indian Medical register to be created under Medical council of India. They cannot withhold our claims anymore as by getting full fledged emergency commission in the war, which has just ended, we have acquired our right for the entry of our names in the All India Register.

To be continued in the next Issue.

what MILTON is . . .

4. NOT EUSOL*

Milton is not Eusol. Milton is prepared by the electrolysis of sodium chloride in solution, stabilised by a special process and standardised at 1% of sodium hypochlorite. It is non-irritant.

"Eusol B.P.C.," says an independent investigator, "is often incorrectly regarded as a sodium hypochlorite whereas it is really a solution of chlorinated lime buffered with boric acid. It is therefore no substitute for sodium hypochlorite and it is well known to possess irritant properties towards the human skin."

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"Chemically prepared varieties such as Eusol or Dakin's Solution have more irritant end-products. Milton was thus used as it filled requirements."

"Eusol for treatment in the wards has been replaced by Milton Solution in the strength of 1 in 20 . . ."

"It" (slight pain after washing with Milton) "was not comparable to the pain of Eusol dressings on a raw surface . . ."

For unvarying strength and low alkalinity the choice is Milton—not Eusol.

References: 1. "Treatment of Burns by Envelope Irrigation." *British Medical Journal*, July 12th, 1941, pp. 46-48. 2. "Experiences in an E.M.S. Base Hospital." *Edinburgh Medical Journal*, January, 1942, p. 25. 3. "Treatment of Burns in Air Raid Victims." *Nursing Times*, January 31st, 1942, p. 75.

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* The fourth of a series of advertisements written specially to correct various misconceptions and to explain how and why Milton differs from all other hypochlorite antiseptics.

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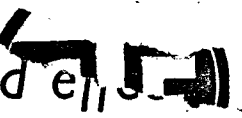
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