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THE MADRAS MEDICAL JOURNAL.

DECEMBER 1922.

CLINICAL NOTES ON FOUR CASES OF PLEURITIC EFFUSION, SEROUS, PURULENT AND BLOODY.

(By Rao Bahadur G. V. James, M.D.,
Civil Surgeon, Tellicherry.)

Case 1.—A Moplah youth, aged 24 years, came into the Tellicherry Hospital on 28th September 1920 with the usual signs and symptoms of Pleurisy with Effusion affecting the right side. The displacements of the liver and heart were quite marked. The pleural cavity was aspirated in the 8th interspace in the posterior axillary line, with a medium sized Trocar and Canula: pale yellow clear fluid measuring $7\frac{1}{4}$ pints was evacuated, followed by immediate relief to the distressing respiratory symptoms which compelled him to seek admission into the hospital. The puncture was sealed up with Tinct. Benzoin Co. and patient put to bed and instructed to lie on his left side for 24 hours. He made an uneventful recovery and left the hospital a fortnight later apparently quite well, with no signs of re-filling of the pleura. Percussion and auscultation revealed normal characteristics. The cause of the effusion was not clear. No signs of Tubercular disease could be made out.

Case 2.—A Hindu male, aged 35 years, was admitted into the hospital on 25th November 1920, with marked dyspnœa and distressing cough, fever, furred tongue, rapid

pulse ; and gave a history of having been ill for past 6 weeks. The right side of the chest presented a bulging appearance with some œdema of the skin. In the sitting-up posture, the lower $\frac{2}{3}$ of the right chest gave absolute dull percussion sounds ; and vesicular murmur, vocal resonance and tactile vocal fremitus were entirely absent. There were crepitations over the apicies of both the lungs and were more marked on the right side. Two days after his admission into the hospital, aspiration was done as in the former case and in the same situation, but a canula of bigger calibre was used. Three pints of thick curdy pus of a yellow colour flowed out. When the flow had stopped, the patient was turned on his healthy side, and 3 ounces of sterile Iodoform Emulsion injected into the pleural cavity and the skin puncture was closed with one suture and Tr. Benzoin Co. sealing. The subsequent progress was fairly satisfactory. Temperature became normal in two days and the respiratory distress was practically relieved ; Iodide and Codliver Oil were ordered after temperature became normal. When he left the hospital after one month's stay, he was in fair health—no fever, no signs of fluid in the pleura but the lower half of the right side of the chest was comparatively dull on percussion and vesicular murmur was indistinct, probably owing to thickened pleura and some adhesions. This man sought admission into the hospital again on 21st February 1921, *i.e.*, about 7 weeks after he left it and his condition then was very bad. He was emaciated and weak, had high fever, pulse rapid and small. The right side of the chest (the former situation) was bulging outwards and the skin over it was oedematous, signs of symptoms of fluid in the pleura were again evident. He was aspirated on the same day of admission with Potain's Aspirator and as the flow was

unsatisfactory an incision was made in the 8th inter-costal space in posterior axillary line and evacuation of thick pus was effected and a drainage tube inserted. No irrigation of the pleural cavity done. There was a good deal of purulent discharge subsequent to the operation and dressings had to be changed twice daily. The patient grew weaker and weaker and died on 27th February 1921 of exhaustion and hectic fever.

Case 3.—A Hindu male, Goldsmith by profession, aged 40 years, was admitted on 5th June 1921.

History.—The illness commenced four months ago, with a severe attack of Influenza complicated with Broncho-pneumonia. The recovery was slow and protracted and a chronic bronchitis supervened as a signal to the disease. Two months prior to his admission into this hospital he developed fever once again which was of a low type and has kept on practically ever since ; and cough had become more severe and harassing and also Dyspnœa.

Condition on admission.—Patient thin and anæmic. Respiration 70 p.m., Pulse 128 p.m. Temp. 102.5 ; was restless. Insomnia was a chief complaint. Physical signs on the right side of the chest were similar to those recorded in the previous cases. Over the apex of the left lung tubular breathing and a few moist rates were heard. Empyema of the right pleura was quite obvious. Aspiration was done in the usual site with a large Trocar and Canula and one pint of thick greenish pus removed and Iodoforum Emulsion 3 ozs. was injected and the puncture sutured and sealed up. The subsequent progress was quite satisfactory for the following four days, the fever subsided, breathing became much easier and fuller. He could sleep and in fact he was doing satisfactorily in every

way. The absolute dullness of the right chest was replaced by a partial resonance ; and feeble breath sounds were audible on the diseased side. From the 5th day onwards, bad signs again gradually set in : temperature began to rise and also the other symptoms with which he came in, manifested themselves once again, though in a lesser degree. He was aspirated a second time on 15th June 1921, through the former puncture hole, but as no fluid was forthcoming this time, an incision 1½ inches long was made into the pleural cavity ; and the pus was thoroughly evacuated and measured 8 ounces ; a silver canula of ½ inch in dimension was inserted and fixed up, to prevent its slipping out. After this second operation Temperature dropped to normal and the patient's condition was once again rendered satisfactory. He was always kept on the diseased side and dressings changed twice a day after washing the wound with Hydrogen Peroxide. Internally Thiocol Grs. 10 with 5 Grs. of Quinine given twice a day and mixture containing Potas Iodide, Belladona and Tinct. Camph. Co. He made a very satisfactory recovery and left the hospital absolutely cured on 7th July 1921, *i.e.*, after a stay of four weeks in the hospital.

Case 4.—Hæmothorax—A Moplah, aged 32 years, was carried to this hospital in great distress from an adjacent village, 6 miles off, on the morning of 23rd July. The right side of the chest was abnormally bulged out, measuring in half circumference at level of nipple 1½ inches more than on the opposite side and the measurement midway between the nipple line and the costal margin showed greater difference, viz. 2½ inches. The patient was restless with extreme dyspnœa ; breathing was 78 times per minute. Temp. 100°F and Pulse 128 per minute. He

could not find comfort in any position. All the physical signs of the presence of several pints of fluid in the right pleural cavity were elicited, the loss of vocal Fremitus being characteristic. The liver was found to be considerably displaced downwards, its lower margin reaching almost to the level of the umbilicus. The history given by his relatives was as follows : The illness commenced about a month previously with a low fever and headache ; the fever left him after two days. A week later slight cough set in and with it, gradual difficulty in breathing. The swelling of the chest was noted only 10 days ago ; subsequently the swelling rapidly increased, leading to greater and greater difficulty in breathing. He had absolutely no sleep for the last one week and could not rest comfortably in any posture. As the symptoms were distressing, an enema was administered, soon after admission and the patient carried to the operation table. A large trocar having a diameter of ½ c.m., was introduced in the 7th interspace in the posterior axillary line, after making a small skin incision of 1 c.m. in length. Bloody fluid gushed out having the color of dark condy's fluid, with a pink tinge about it. The quantity escaped measured 13 pounds. As the fluid was running out, his breathing became easier and the absolute dullness was replaced by a tympanitic resonance (skodaic) evidently due to a large empty pleural cavity filled with air, which probably escaped from a breach on the surface of the lung. The canula was withdrawn when the flow had stopped and the wound sutured up with 2 sutures and sealed up with Benzoin) and fairly tight bandage applied. An intra-muscular injection of 12 grains of Calcium Chloride was given into the gluteal region. Two hours after the operation, Surgical Emphysema of a fearful magnitude developed,

involving the whole body excepting the lower extremities and the scalp. The face and neck assumed a bloated appearance with air infiltration and was horrible to look at. With this Emphysema, breathing became laboured though not exactly distressing. The bloated parts of the body were bandaged carefully with Elastic flannel bandages with the object of limiting as far as possible the spreading Emphysema and the patient was placed in the recumbent posture which he could not assume for the past fortnight. The subsequent treatment consisted in the administration of a mixture containing atropine and Calcium Lactos. The progress was very satisfactory, the Emphysema gradually disappeared and after 3 days he was practically free of it. The Temperature did not rise after the operation and Respiration and pulse became rapidly normal. At present, *i.e.*, 10 days after the operation, the patient remains well, having no signs of re-filling of the pleura. He has a slight dullness over the right side of the chest, which is probably due to thickened pleura, and breath sounds are less clear than on the opposite side. I have brought this case to the notice of the profession, as I consider that cases of hæmothorax are very rare and their causes obscure, as was certainly the case in this particular instance, which I think to be of pneumonia origin, since cure has been obtained at least for the present. I shall be thankful to hear the experience of others with regard to similar cases.

Observations.—(1) All the four cases involved the right side. I am not aware whether literature points to a greater frequency of lesion on this side.

(2) Good results are obtained by conservative lines of treatment. The general rule should be, I think, aspiration with immediate sealing up of the wound, to avoid

infection of the pleura with extraneous organisms. Flushing out the pleural cavity with antiseptics should be avoided. Insufflation of concentrated air or Oxygen into pus cavities, associated with Tubercle bacilli is highly recommended of late and should be tried where facilities for such treatment are available.

(3) The occurrence of a wide spread surgical Emphysema was remarkable as also its equally its speedy disappearance.

A CASE OF PENETRATING WOUND NEAR LEFT EAR CAUSING HEMIPLEGIA, FACIAL PARALYSIS (Rt.) AND APHASIA, TREATED BY OPERATION.

(By Dr. G. D. Gnanamuthu, L.M. & S., Nandyal.)

On 9th October 1921 a strong man, Hindu Fisherman, aged 32, was sent to me by the Sub-Inspector of Police of G—for treatment and granting a wound certificate for a penetrating wound above his left ear said to have been caused on 7th October 1921 by means of a sickle (a curved sharp knife).

Condition on Admission.

External injury.—There was a penetrating incised wound $\frac{3}{4}$ inch long and $\frac{1}{4}$ inch broad on the left temporo-parietal region 2 inches above the left year. The skull bone seemed, on probing, to be fractured. Patient was unable to answer questions. He could, however, understand what was talked to him. He was conscious. There was marked weakness in the right upper and lower limbs. Motor paralysis. The right side of his face was paralysed. Pulse strong and full, 64 a minute. Pupils normal and

equal on both sides. Respiration normal. The Police thought that he was malingering and tried their best, by persuation and threat, to get a statement from him but failed to get any. The condition of the patient was said to be much the same from the time of injury to the time of admission in the Hospital.

I prepared him for operation and operated on him on 10th October 1921. A flap of scalp was taken near the external injury and bone exposed, a linear fracture was seen in line with the external wound. Trephine was applied and a circular bone taken. The inner table of the bone opposite to the line of fracture, was seen to be broken into small pieces and were depressed. These were very gently removed. There was a tear of half an inch long in the membranes opposite to the wound. There was no active bleeding, but there were blood clots which were gently removed by sponging. After removal of these pieces of bone and blood clots, the trephined piece was replaced and wound closed by layers, with a gauze drainage which was removed after thirty six hours.

Progress.—The man was able to talk more distinctly than before, on the evening of operation, after he recovered from Chloroform. He was regaining the power of speech gradually. He was steadily growing strong in his lower right limb and right upper limb. His speech was getting clear every day and his memory brighter. He was able to give a clear and full statement about his injury, to the Police by 15th November 1921 and was finally discharged cured from the Hospital on 1st December 1921. He was perfectly alright and was doing his daily work in his village, when seen a few months ago in his village.

AN INTERESTING CASE OF OBSTRUCTED LABOUR.

(By Dr. J. R. Cornelius, Ellore.)

A Hindu woman, aged 30 years, was admitted in the Municipal Hospital, Ellore, on 24th June 1922, with a history of having been in labour for three days. She was a multipara—8th pregnancy. At the time of admission patient's temperature was 105, pulse 120. Uterus was tonically contracted. Fætal heart faintly audible and head engaged in the brim of the pelvis. On vaginal examination a hard tumour which was fixed and immoveable almost filling up the passage was felt presenting right in front of the fætal head which was jammed in the pelvis. It was found to be a vesical calculus perpendicularly situated.

As the patient's condition was bad as noted above version was impossible and the child had to be extracted by forceps which could be done only after the removal of the stone per vagina. Child was alive.

Patient's temparature came down after two days and was discharged on the 8th day with a request to come back to have the Vesico-vaginal fistula sutured after two months.

The remarkable feature in this case was that although the stone weighed 5 oz. the patient never had any symptom of stone in the bladder. She said that she always passed urine freely and had no trouble of any kind.

The stone has been sent to the Professor of Midwifery, Medical College, to be kept in the college museum.

KALA-AZAR.

(By Dr. B. Sanjiva Row,
Government Royapuram Hospital, Madras.)

Introductory.—It is not my intention to deal with the subject in any sense exhaustively, but rather to draw attention to some of the less recognised and little known features of the disease. Incidentally I shall give the more recent views on some of the unsettled questions of the disease and at the same time draw freely from current literature on all aspects of the dire malady.

The name of the diseases.—The name Kala-azar which has the sanction of usage is incorrect, the correct name being " Kala-jwor ". The disease is known, it is said, by this latter name because of the dark pigmentation which appears on various parts of the body in a person suffering from the fever. But many cases have no pigmentation at all. The proper meaning of the expression would therefore be, ' Black fever or deadly fever ', *i.e.*, a fever which produces disastrous results. A correct scientific name proposed to be adopted by Brahmachari is " Visceral leishmaniasis " and this name is expected to replace " Kala-azar " eventually.

Geographical Distribution.—The disease has a very wide distribution over many parts of the world. China, Asiatic-Russia, Arabia, Central Africa, South Africa, Central and South America and all regions round the Mediterranean Sea, are all known to be affected.

India.—In India the disease is limited greatly to the eastern parts of the country specially to the districts through which the Ganges and the Brahmaputra rivers flow. In our own presidency it was hitherto thought that the city of Madras was the only endemic area. But

genuine indigenous cases are said to have been reported from Madura, Trichinopoly and Rameswaram. Though these cases have not been scientifically correctly diagnosed, physicians of repute in Madras vouch for the true nature of these cases from the clinical aspects they observed. So far, Bombay and the Punjab have had, it is said, only imported cases. Burma and Malay States too have had imported cases.

History and Epidemiology.—Brahmachari is responsible for the statement that Kala-azar was unknown in India in the days of Sushruta and Nidana. It is supposed that the Mediterranean basin was the original focus and that the disease spread to India *via* Greece and adjoining regions. Evidence for this however is meagre.

Epidemics of the disease have occurred from time to time in Assam and attention was first directed to the ravages of one of such even as long ago as 1869. In 1882 the disease was first described in the Sanitary Reports of Assam. Burdwan, Patna and Hoogly districts were also visited by epidemics of Kala-azar during the period 1854-1875. So far no epidemic has occurred in Madras. This fact inclines Brahmachari to suspect the true nature of the devastating epidemics mentioned above. He holds the opinion that epidemic Kala-azar probably occurred only in Assam and that the other area were affected more with malaria than with Kala-azar.

Etiology.—The causative organism of the disease belongs to the class of ' leishmania '. There are three parasites of this group, namely,—

1. Leishmania donovani.
2. Leishmania infantum.
3. Leishmania tropica.

Leishmania tropica is concerned with cutaneous leishmaniasis and we shall therefore consider only the first two.

Leishmania donovani which is the parasite of Indian Kala-azar has well-known morphological characters. A reference to the plates will recall all these to the reader's mind.

It was in the early part of 1903 that Leishman first described the parasites and in July of the same year Donovan reported the finding of similar bodies independently of Leishman and hence the name.

As may be expected, it was only after the discovery of the parasite that the views regarding the disease as a separate entity became clarified and the various names "Malarial cachexia, Dum-Dum fever, Black fever, etc.," became merged under the name of Kala-azar.

The characters of the parasites as seen in blood will be dealt with later on.

Leishmania infantum.—This is the parasite of Mediterranean Kala-azar or Infantile Kala-azar. Up till recently the disease was thought to be different from Indian Kala-azar, and limited to children only. But it is now evident that the Mediterranean disease attacks adults as well and it can no longer be maintained that Infantile Kala-azar is distinct from the Indian form. Morphological characters of the organism too are similar to those of Leishmania donovani. The mode of transmission of this disease was thought to be through the dog, the canines in the Mediterranean region harbouring the disease to a large extent. No one has yet discovered Kala-azar in dogs in India, though many observers have examined

thousands of animals for this purpose. Even if the canine disease is due to the same organism as that producing Kala-azar in man, it is now evident that dog does not play any essential role in its spread. The disease has most probably the same yet unknown intermediate host as the Indian form.

Mode of transmission.—There is yet no possibility of views regarding this becoming crystallised. Bed bug is still the centre of attraction. Having been comparatively undisturbed from the year 1907 when Patton first made the announcement of its being the intermediate host, it has again begun to receive very great attention, from last year. Mrs. H. Adie announced both in the Medical and in the lay press in January 1921 that, as a result of experiments conducted by her, she was able to demonstrate the active flegellation of the parasite in the cells of the bug. There was however one drawback in the findings; "the appearances recorded occurred in certain bugs which had died after feeding and had been left in saline solution in an incubator for a few days before being examined..... It is unfortunate that a satisfactory evidence of a similar development was not obtained in living healthy bugs though large numbers were examined. It is impossible to resist the conclusion that this development was merely another form of culture which had taken place in the dead and degenerate cells."

In this connection I am tempted to quote the concluding para of a letter on the subject written by Wenyon to the "Lancet" and was published in its issue of February 25, 1922.

"We may conclude, therefore, that the bed bug, though a suspected agent, still awaits the final verdict,

and that unless more tangible and convincing evidence is forthcoming the jury will certainly disagree. Every credit is due to the prosecution for their most careful and exhaustive inquiries which have extended over many years, and which have been stimulated by a desire to rid the world of a harmalparasite, but the elusive bug, which has been acquitted of so many charges, has so far escaped sentence in the case of Kala-azar also. "

Taking that the bed bug is the vector of the parasite, it is interesting to note that infection of human beings is said to occur not by the bite of the bug but by its being crushed on skin accidentally or intentionally. Also the bugs that convey infection must, it is said, be young ones, as only a small percentage of bugs on being infected can remain so. If this has any foundation in truth it will probably explain at least to some extent the very limited endemicity of the disease as compared with the ubiquitous distribution of bugs and the enormous facilities these have of being carried from place to place.

The illness is a house and family disease. It is not a family disease in the sense in which a child inherits it from its parents or has any predilection for it in later life. Members of a family living under the same roof have equal changes of becoming infected and it is therefore pre-eminently a house disease. It is well known that in Madras for example we have in badly infected localities a number of houses in which case after case has occurred.

The following groups are recorded by Knowles :— Mother and nine brothers ; father, sister and three brothers ; wife, daughter, sister and one brother ; mother and two brothers ; two brothers and sister-in-law. This well illustrates what a bad ' house disease ' Kala-azar is.

Knowles carried out experiments to make out if there was any correlation between the cycle of development of the parasite and a nocturnally biting insect. He concludes from these as follows :—Its (parasites) presence or absence is not correlated with the habits of any nocturnal biting insect. If anything, blood films taken at night shew fewer parasites than do films taken in the day-time.

Age.—Most persons are below 30. Even a child of six months may be attacked. At the other extreme a person of about 60 may be affected.

Pathology and Morbid Anatomy.—In advanced cases parasites are widely distributed in the body but the chief centres of parasitic activity are the spleen, the liver and the bone marrow. In the spleen the parasites grow and multiply in the endothelial and macrophagic cells.

The disease is essentially an infection of the vascular-endothelium. Swollen endothelial cells rupture and thus set free parasites which in turn are picked up by phagocytic and other cells of blood. They are thus carried to all parts of the body. In bone marrow they are in the same cells as in the spleen. They may also be found in polymorphonuclear and mononuclear leucocytes and small myclocytes.

Incubation period.—The infecting agent not being known it is obvious that the incubation period cannot with any certainty be estimated. Under the circumstances different observers fix it differently and wide variations are only to be expected. The shortest period mentioned is twenty days. This case was one of the first cases at the London School of Tropical Medicine and the period between the time of arrival of the patient in the endemic area

and the onset of fever was calculated to be only twenty days. One of Brahmachari's cases is said to have developed the disease after a stay of only one month in an endemic area.

At the other extreme we have cases which are said to have had an incubation period of fifteen months or longer. Sprawson states that in some of the Mesopotamian cases the incubation period was two years or over.

As in most of other matters, the truth probably lies between these two extremes and we may take it that most cases begin to show symptoms after a few months' stay in an endemic area. In this connection I may give the two following cases in both of which I had facilities for observing this aspect of the disease :—

Case I.—A boy of about 15 years was sent from Tumkur (an admittedly non-endemic area) for post typhoid neurasthenia into the Royapuram Hospital in July 1918. That the illness he had previous to admission was entire fever, was confirmed by serum reaction and clinical features. He was treated for this condition and got sufficiently well to be discharged, when it was discovered that there was nobody in Madras to whom he could go. He was willing to go into the Monegar Choultry and accordingly sent into it as an inmate about the end of August. From here he used to be admitted into the chronic wards for malaria and finally about November remained there with a continuous fever. He was then seen and was taken into the general wards. This was about December and it was then clear that he had Kala-azar. The clinical diagnosis was afterwards confirmed by finding the parasite in peripheral blood.

In this case it is clear that the incubation period could not exceed three months in any case.

Case II.—B. R., a native of Vizagapatam District (again an acceptedly non-endemic area), got admitted into the Medical School in the 1st year class in July 1921. He came to Madras for the first time. He was in the Royapuram Hospital on one or two occasions for malaria and stayed only a few days each time. From about November onwards he was said to have been in indifferent health with slight fever now and then and got finally admitted into the hospital on 15th March 1922 for continuous fever. This appeared to be very much like enteric fever. Features of this disease not being well marked and serum reaction being negative Kala-azar was suspected and later confirmed by the examination of the spleen puncture material.

In this case, again, the incubation period could not have been more than six months.

Signs and Symptoms.—There are many modes of onset of the disease. Early diagnosis being of utmost importance it is hardly necessary to state that if this is to be accomplished, one should be thoroughly familiar with all the protean types of onset. Not only may the disease put on the garb of some other disease but what is likely to be a greater handicap is that it very frequently begins insidiously.

The clinical features in a fairly advanced case are usually constant and constitute--

1. Irregular pyrexia,
2. Progressive enlargement of spleen,
3. Enlargement of liver, and
4. Emaciation.

When we add to the above the invariable freedom of the gastro-intestinal system from any symptoms, the likelihood of pigmentation over parts of body and the liability to complications like cancrum oris and dysentery, we will have given a clinical picture most frequently encountered with. But each of the features has its own variations and a few details are worth mentioning.

I. Fever.—Brahmachari quoting Rogers says, there are as many as seven types of fever. Of these double remittent fever, low remittent fever, low intermittent fever and high continued fever constitute more than 77 per cent. of cases. The most important character of the fever is its variability. Another character specially in early cases is the occurrence of two rises in the course of 24 hours. Regarding this feature Rogers says, " This I have never seen in undoubted typhoid and other fevers and I am compelled to regard it practically as pathognomonic of Kala-azar. The great diagnostic value of these double rises is that they very frequently occur in the early stages of the disease, when there are no other characteristic features present, although they may appear at any time in its course. " For these two rises to be perceived the ordinary fourth hourly chart is sometimes not enough. Temperature may have to be charted on a 3rd hourly or even a 2nd hourly chart. After the two rises the temperature may remit or intermit. The rises generally occur one before midnight and the other before noon. Even when the temparature curve is apparently continuous so as to arouse a suspicion of enteric fever careful observation with a view to detect these two rises very often saves a mistaken diagnosis. As early cases are very frequently thought to be typhoid fever two other diagnostic features

may be mentioned and these are the want of gastro-intestinal symptoms even with high fever and secondly the clarity of the mind of the patient. It was these two features that made me think of Kala-azar very early in the course of the disease in the case of the medical student mentioned above (vide case II). Serum reaction is sometimes the deciding test and I have never seen a case of Kala-azar give possitive agglutination test in high dilutions.

The opposite kind of error, namely, mistaking typhoid fever for Kala-azar is sometimes committed. To put a Kala-azar patient on typhoid regime of treatment is not harmful but to treat a patient of typhoid as you would one of Kala-azar is obviously harmful and may lead to serious consequences. The following case illustrates this aspect :—

Case III.—A boy about 10 years of age, was admitted into the first Physician's Wards of General Hospital, in the early part of 1912 for fever. At this period a ' Kala-azar commission ' existed, and members of this used to bring cases from outside and keep them in the hospital. As no specific treatment was then known, those in charge of wards did practically nothing for these cases, except giving them liberal diet. This boy was brought by this commission and was therefore thought to be a case of Kala-azar. He was receiving ' Half diet ' of the hospital with some extras. He showed no features of enteric fever but had a large spleen, fairly good appetite and high remittent fever. He was in hospital for about a week. While I was on my rounds one morning (I happened to be Assistant to the First Physician then) I noticed that he was apparently very ill with a distended abdomen.

I examined him and suspected that something serious had occurred. He could not be saved and Post-mortem examination showed perforation of an enteric ulser.

It is hardly necessary to state that 'dual control', as in many other human affairs, was responsible for this disastrous result. A mistake of this kind can doubtless not be common nowadays but the possibility of our being led astray must be realised by all of us.

A malarial type of onset is also said to be common. Personally I know of very few cases that gave history of definite malarial onset. So far as Madras is concerned there is no demarkation between malarial area and Kala-azar area. Also a definitely malarial subject may later develop Kala-azar. From these two facts it will be clear that a malarial history even if given cannot entirely be relied upon. It is a different matter if a patient is observed with rigors, sweating, etc., and a diagnosis of Kala-azar is reached.

Rigors and sweating during some time of the course of the disease and not necessarily at the onset are also known to occur. I know of one such case.

Case IV.—An Anglo-Indian girl about 15 years of age, was more or less in the final stages of the disease and used to have severe rigors with temperature going up to 105° F. and sometimes even up to 106° F. and coming down later to normal with profuse diaphoresis. Of course, malaria was excluded both by blood examination and also by the ineffectual treatment with quinine. The patient later succumbed to the disease.

I shall have occasion to refer to this case under treatment.

Apart from such exceptions I think it is a good rule to bear in mind that shivering and sweating should be looked upon as being caused by some complication or some intercurrent affection. Most often malaria itself is the intercurrent disease and I remember of many cases where a blood examination explained the rigors and sweating that were noticed.

Another disease which may be simulated by early Kala-azar is pulmonary tuberculosis. Even early in the course of the disease bronchitis may be present. Knowles in a total of 86 cases had 7 who had definite febrile bronchitis. "In no instance could T. B. be found in the sputum. One patient with hæmoptysis was repeatedly examined; and the sputum finally inoculated into a guinea-pig with negative results."

I had one case which puzzled me a great deal in this respect. It is of great interest in other respects also.

Case V.—K. N. a Malayalee Hindu, aged 35 years who was attached to the Civil Jail, Madras, was in the Royapuram Hospital as an in-patient on two or three occasions during the year 1918-1919 for suspected pleurisy, staying each time only a few days and returning to his usual work. He had a well marked scoliosis. On 22nd December 1920 he came into Hospital again with fever and troublesome cough. Some emaciation and slight œdema about ankles were also noticed. In view of the previous history nothing but pulmonary tuberculosis was thought of. Examination of lungs showed rales scattled over both lungs but sputum was repeatedly negative, for T. B. and elastic tissue. Micrococcus catarrhalis, strepto cocci, and staphylo cocci were seen together with

some pus cells. Spleen was just palpable below costal margin and was observed to be gradually getting bigger. Some allowance on this behalf had to be made owing to the deformed state of his spine. Treatment being of little avail and fever persisting, Kala-azar was suspected. T. curve was carefully studied and later diagnosis was confirmed by examining spleen puncture material. (This procedure was undoubtedly not easy in this case and reference to this aspect will be made again under splenic puncture).

The patient had attacks of hæmoptysis and died of broncho-pneumonia on 15th February 1921. He was far too advanced for proper treatment and the respiratory condition was also a great impediment for carrying out the same.

In addition to the above types of fever Brahmachari says he has observed triple quotidian pyrexia in some cases and that in some others the fever may be definitely hectic in type.

A variable period of apyrexia after about of fever of any of the above types is also well known and such periods may be frequently interspersed in the course of the disease.

II. Enlargement of Spleen.—Along with fever enlargement of spleen is one of the cardinal features of Kala-azar. Very early in the course of the disease the organ becomes palpable and what is more important progressively enlarges. In almost all cases admitted into the hospital it is usually at or below the level of the umbilicus, more frequently the latter. Fairly commonly too, the enlargement is so great that the organ fills the whole of the left side of the abdomen and even descends into the

pelvis. In Rogers' series 10 per cent. belonged to this class, while 85 per cent. were of the first category. In acute and early cases the organ is fairly soft, but in advanced cases it may become hard.

During apyrexial period there may be some diminution in the size of the spleen but more often the cause of decreasing size is a sharp attack of diarrhœa or dysentery.

Very rarely even in advanced cases spleen may not be enlarged or only slightly so being just palpable below costal arch. Dodds Price working in Assam has reported some such cases in whose blood leishmania donovani could be found. Personally I have seen only one such case.

Case VI.—A boy K, five years of age, was brought to the Royapuram Hospital on 14th July 1922 with a sore inside the cheek near lower jaw. The history was that he had a gum boil and that the sore had not healed. Those that saw him thought that he was a case of some septic condition probably necrosis of lower jaw and the boy was therefore admitted into the Surgical Wards, where a further history of fever of about two months was obtained. It was also noticed that there was no necrosis and the condition was thought to be cancrum oris. There was a fairly high remittent fever. The boy was transferred to the medical side on 20th July 1922.

On examination I found to my great surprise that the boy had no enlargement of spleen at all. The other features of Kala-azar were however well marked and a blood examination also confirmed suspicion, though the parasite itself was not found. There was no leucocytosis. Three intravenous injections of tatar emetic were given

in small quantity and the local condition was attended to. A few days after the third injection the boy became worse and showed signs of cardiac failure. He was removed from the hospital on 3rd August 1922 and later died the same day.

This case presents many interesting features :—

(1) There was no enlargement of spleen,

(2) Onset of a serious complication, cancrum oris, more or less at the very commencement of the illness and

(3) The very short course of the disease.

I shall refer to the last two features under complications and course of disease.

III. Enlargement of the liver.—This is not so constant a feature as enlargement of the spleen. Usually the organ reaches two fingers' breadth below the costal arch but may be less and only be just palpable.

In some cases the liver becomes cirrhotic. Rogers describing it says it is " of a peculiar type " and of the intra-lobular variety. The liver is said to be abnormally smooth but on section exceedingly tough. Such patients develop ascites and are likely to be mistaken for so-called Banti's disease. I had one such case under my care.

Case VII.—A ward boy was an in-patient in the Royapuram Hospital during 1918 for Kala-azar. He received the usual treatment and progressed favourably and was discharged. Returning after some time with a huge abdomen he was found to have cirrhosis of the liver but was absolutely free from fever or other signs or Kala-azar. He was tapped a number of times but went home and later succumbed to the disease.

Two other features worthy of note in this case were the very close resemblance of the fever of onset to enteric fever and secondly the early diagnosis made by puncturing spleen which was only a little over a finger's breadth below costal margin.

IV. Emaciation.—Kala-azar is essentially a wasting disease and this in spite of the fact that the patient can eat well and digest well. The continuous high fever produces emaciation. As the disease progresses emaciation increases and in advanced cases the thin face, wasted limbs, prominent ribs and a protruberent abdomen mostly occupied by an enlarged spleen and liver, combine to make up such a characteristic clinical picture that the disease can often be diagnosed by inspection of the patient alone.

Œdema.—About the ankles is common in advanced cases and sometimes there is general anasarca. Both may appear early and serous effusions may also occur. All these may be cardiac in origin or due to anæmia, a high grade of which is seen in some cases. Nephritis may also produce them. Œdema or anasarca may appear suddenly during treatment and reference will be made to these later.

When a patient seen for the first time has marked œdema or anasarca the difficulty of diagnosis is evidently great. Fluid may have to be removed before enlargement of spleen and liver can be made out. Urinalysis may have to be done to exclude nephritis.

Case VIII.—A girl of about 8 years was admitted into the General Hospital in the early part of 1913 with general anasarca, marked puffiness of face and ascites. There was no fever for some days after admission. Abdominal

distress being great, paracentesis abdominis was done. When the fluid had drained it was found that there was a much enlarged spleen and a slightly enlarged liver. Later there was fever also and blood examination revealed the presence of leishmania donovani. The case was so much like nephritis that the idea of Kala-azar could not be entertained in the beginning.

Blood in Kala-Azar.

Blood changes in the disease are of great importance. They are not only of immense help in diagnosis but are also a guide for prognosis and for judging the effects of treatment. The changes may be considered under the following headings :—

1. Parasites in blood,
2. S. G. of blood,
3. R. B. C. count,
4. Hæmoglobin index,
5. Total leucocyte count,
6. Differential leucocyte count,
7. Coagulability of blood and
8. Alkalinity of blood.

(1) *Parasites in blood.*—Opinions as to positive findings still vary a great deal. Madras is still looked upon as obtaining the greatest percentage of successful results and Donovan and Patton are freely quoted in support of this contention. There is no doubt that patient and arduous search of dozens of properly taken and properly stained films from each single patient is bound to increase the percentage of positive findings of anybody's series of Cases but to state 'I have never yet failed in finding parasites in Madras cases, except in one instance,

I have, on several occasions, seen Kala-azar cases from Calcutta and I have also found the parasite in the peripheral blood' appears to be extravagant even to workers in Madras. In Assam and Bengal the percentage of positive findings has varied from 11 to 45. It should also be mentioned that the latter figure has been reached by Knowles after a considerable personal attention was paid to the matter and after examining an average of about 10 films from each patient ! Brahmachari says, 'In my experience the cases of Kala-azar in whose peripheral blood the parasites are found are very rare...In two cases only I could find L. D. bodies inside polymorphonuclear leucocytes out of hundreds of cases examined by me.' 'Dr. Muir of Kulna writes that he has abandoned peripheral blood examination as a method of diagnosis, as the results are so disappointing and spleen puncture so much more reliable.'

In my own experience I have seen parasites in peripheral blood in only five cases out of fifty odd cases that have been under my care. This number includes both early and advanced cases and only a few films were examined in each case as part of the usual routine daily duties.

As a rule parasites are more usually found in advanced cases and in cases with dysentery, with pneumonia or other inflammatory complication. This however is not constant and Knowles records negative findings even in cases nearing death.

Whilst it is usual for one or more parasites to be seen scattered in the protoplasm of the mononuclears and polymorphonuclears, Knowles records finding of what he terms

'Schizogony rosettes' in the large hyaline, transitional or endothelial cells. He also records finding of free forms both singly and in clusters of from two to ten in the peripheral blood. So far as I am aware, these two observations have not been recorded by any other worker.

No parasites have so far been found in the basophilic or eosinophile cells or lymphocytes. The number of parasites that may be seen in one Leucocyte varies and according to figures given by Knowles they appear to be usually more numerous in mononuclears than in polymorphs. The maximum number recorded by him in a polymorph is 25 whilst 45 is the maximum for a mono. In a recent case I saw 17 parasites in a large hyaline in the peripheral blood.

2. *S. G. of blood.*—Kala-azar being a blood disease every aspect of blood is worth consideration. It would therefore appear curious that so far very few observers have turned their attention to this aspect of blood. Knowles for the first time records 32 cases in which specific gravity of blood was taken. He finds that this varied from 1025 to 1051, the mean being only 1041.

3. *R. B. C. count.*—As progressive anæmia is one of the features of the disease the count is diminished, the diminution varying with the stage of the disease. Early cases give a count of about 4 million per c. mm. of blood and advanced cases have only about 1½ million in the same quantity of blood. Usually the count is from 2 to 2½ millions. Some cases show severe anæmia even in a few months after the onset of the disease.

4. *Hæmoglobin index*—The reduction of hæmoglobin is proportionate to the reduction of R. B. C and may

vary from 15 to 40 per cent. The colour index averages 0.6.

5. *Total leucocyte count* is a very important diagnostic aid. There is a well marked leucopenia even in early cases. Leucocytes may vary from 1000 to 2500 per c. mm. of blood. Leucopenia is as a rule more severe and more constant than in malaria. When any complication is present there may be leucocytosis though this is not constant.

6. *Differential leucocyte count* is of greater diagnostic value than the total count and the decrease in the polymorphonulears at once attracts one's attention. The polymorphs are less than 50 per cent. while the large mononuclears and transitionals mount up to 20 per cent. or more. Polymorphs may be only 40 per cent. or even 35 per cent. Knowles finds cosinophiles also increased even in the absence of causes that provoke this phenomenon. This is said to be specially marked in cases that are improving under treatment.

While on the subject of differential count it is worth while referring to the causes which bring about these changes. It is thought that the polymorphonuclears are phagocytic in action and hence get worn out in the struggle, thus producing a diminution in their proportion to the other cells. The mononuclears and transitionals, on the other hand, are considered to be 'host cells' and in these the parasites are thought to live and multiply as in the endothelial cells generally throughout the body. It is because of these functions, it is said, that the parasite when met with in the latter type of cell 'stains better with deeper chromatim and bluer cytoplasm and more sharply

defined cell outline than when met with in the polymorph leucocytes.' Also active and dividing forms, *i.e.*, rosettes are said to be met with only in large hyalines and not in the polymorphs.

7. *Coagulability of blood* is decreased and in advanced cases very much so. The change is most marked in anæmic cases and specially with purpura.

8. *The alkalinity of blood* is also decreased.

Complications.

Cancrum oris is the most frequent complication. Pyorrhœa and gingivitis so often exist in patients and should be considered as strongly predisposing to this. It is usually a late complication but it may occur quite early in the course of the disease. It is also a serious complication. In case VI the complication appeared to have developed in about a month from the time of the onset of the disease. One of Brahmachari's cases is said to have developed it on the 10th day of the disease !

Other septic complications, such as abscesses, otitis media, sloughing of scrotum, etc., also occur.

Remembering the great reduction in the polymorphs of blood it is no wonder that there exists such a liability to the occurrence of these complications. On the other hand it is really surprising that one does not encounter them more frequently.

Rogers finds that children are more usually the subjects of these than adults—an experience which is shared by many others—and correlates it with the more extreme reduction of polymorphs in children than in adults. It is commonly believed that if a patient survives these septic

complications the original disease itself is eradicated. This does not hold good in all cases or very often the improvement observed is only slight or transitory. I shall refer to a case illustrating this aspect presently.

Pneumonia is the next most serious complication. It may be lobar or lobular in type, more frequently the latter. It is usually a late complication and often proves fatal. Leucocytosis may occur and lead to survival of the patient, as in the above complication. But often leucocytosis is absent or degree of this not marked. The absence of leucocytosis is, in fact, one of the distinguishing features of this pneumonia as compared with ordinary pneumonia. Absence of leucocytosis is also a feature of the septic complication. When the patient recovers from pneumonia he does not always get rid of Kala-azar as the following case shows.

Case IX.—M., a young man of 18 years of age, came into the Royapuram Hospital on 18th March 1922 with lobar pneumonia of the right side. The previous history was that he had a few injections, after which he left the hospital. He developed the complication at home and came into the hospital on the 5th day of illness. On admission he was very ill and had the typical appearance of an advanced Kala-azar patient with several patechiæ over parts of the body. He was very anæmic and had all the usual signs and symptoms of lobar pneumonia. Blood was examined but showed no leucocytosis. He had high fever ranging from 102° F. to 103·6° F. and a high degree of toxæmia. All considered, the complication was expected to prove a terminal event in the course of the disease. But luckily for the patient the stimulating treatment that was

adopted helped him to tide over the illness and on the 10th day of the disease temp. reached normal, and he gradually gained strength.

I was keeping a watch over temp, spleen and liver to ascertain if Kala-azar had been cured. But in about 15 days later, the patien' began to have irregular fever often showing two rises in a day and the spleen and the liver remained where they were at the time of admission. Liver puncture was made on 17th April 1922 and Leishmania found in the material thus obtained. Specific treatment was begun on 23rd April 1922 and as it was said that he had only a few injections in the Royapettah hospital I wished to take him through the whole course watching the effects of the drug. While half through the course he began to develop cancrum oris on the right side. He had spongy gums and some pyorrhœa and with all the prophylactic care that was taken this complication could not be prevented. This time, however, I was more hopeful and looked to the specific remedy as well as to the now fairly well developed resistance of the patient to overcome this complication. I was however disappointed with regard to one factor ; this time too there was no leucocytosis in blood. Energetic treatment for the mouth condition and the pushing on with tartar emetic gradually, fulfilled my hopes, but with some sacrifice. The whole of the upper jaw gradually came away in bits and by the time the patient left the hospital on 23rd July 1922 he was a partially jawless man. This sacrifice however was more than compensated for by the facts that he was free from fever for over 1½ months and that the spleen which was below the level of umbilicus on admission was just palpable below the costal margin. He had gained in weight and

was 11 lbs. more than at the time of admission. His general health was now good and his blood condition was also much improved. The total quantity of drug given in this case was 2.14 grammes.

The points of interest in this case are many :—

(1) Recovery from lobar pneumonia,
(2) Recovery from cancrum oris,
(3) These in spite of the fact that no leucocytosis accompanied them,
(4) Effect of the specific remedy and
(5) Recovery from the serious complications and finally from the disease itself even though there was a high grade of anæmia and numerous patechiæ. This can only be put down to (4) as the complications.

Other complications—are dysentery, diarrhœa, bronchitis, pleurisy, pulmonary tuberculosis, cirrhosis of the liver and jaundice. To œdema and anasarca I have already made reference under emaciation. Albuminuria and nephritis may also occur.

Hæmorrhages.—I wish to make a special reference to this complication. It is usually associated with a high degree of anæmia and is also a late complication. Most patients have spongy gums and a little oozing from them even in early cases but this loss assumes a grave complexion when it is a hæmorrhagic complication. The oozing is constant so that the patient's pillows get stained and his saliva is mixed with watery blood. Patechiæ are seen scattered over different parts specially over legs, arms, chest, abdomen and face. A few appear to-day and a

few to-morrow and so on, so that the colour changes in these can definitely be followed from day to day. They vary in size and may be as small as a pin's head or as large as a split pea. The coagulability of blood in these cases is very much delayed and blood itself is extremely watery. From a pricked finger any number of drops of pale watery blood can be obtained with only the slightest of pressure. Also the mark left by the pin is there for days and can be clearly made out. If by chance the patient's limbs or other parts of body get hurt in any way even lightly the region becomes markedly blue and ecchymosed. Very alarming are these conditions, as showing to what extent the blood has become degenerated! More important however is the bearing the occurrence of patechiæ has over prognosis. In my experience all the cases I have seen with patechiæ have proved fatal and the only exception to this is case IX. The complication is a danger signal and a fatal termination has occurred in all cases in a short time after the complication was noticed. Rogers refers to its bad prognostic import and says, "five of the six cases in which hæmorrhages occurred died in hospital, the remaining one was discharged in a very bad condition and was lost sight of. In fact, I know of no case which recovered after well marked purpura had appeared." Epistaxis, hæmoptysis, profuse bleeding from cancrum oris, hæmatemesis, malæna and even cerebral hæmorrhage are other manifestations of this complication. In case V there was hæmoptysis in the last stages.

(*To be continued.*)

RESOLUTIONS OF MEDICAL COUNCIL.

Resolutions of the General Medical Council in regard to Professional Education adopted by the General Medical Council on May 25 & 26, 1922.

To come into operation in January 1923.

Every Medical Student at the commencement of his studies should be registered in the Medical Students' Register, to the manner and under the conditions by the Council.

Pre-Registration Examination in Chemistry and Physics.

Before registration as a student or commencement of the regular Medical Curriculum every person shall be required to pass, in addition to an approved examination in general education, an examination or examinations, conducted or approved by one of the Licensing Bodies in the following subjects :—

(1) Physics (theoretical and practical), including the elementary mechanics of solids and fluids, the elements of Heat, Light, Sound, Electricity and Magnetism. (This course should not include Bio-Physics or the clinical applications of Physics which are to be taken in the Medical Curriculum.)

(2) Chemistry (theoretical and practical). The elements of Science. (This course should not include Bio-Chemistry Pharmacological Chemistry, or the clinical applications of Chemistry, which are to be taken in the Medical Curriculum.)

Medical Curriculum.

With regard to the course of study and examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the knowledge and skill requisite for the

efficient practice of Medicine, Surgery, and Midwifery, the Council recommends as follows :—

1. The period of professional study, between the date of registration as a medical student and the date of the Final Examination for any Diploma, which entitles its holder to be registered under the Medical Acts, should be a period of certified study during not less than five academic years, in the last three years of which clinical subjects shall be studied.

In every course of professional study and examinations the following subjects should be included :—

(*i*) Elements of General Biology. A course of instruction including practical work, in the fundamental facts of Vegetable and Animal structure, life history and function : and an introduction to the study of Embryology. (The course of instruction may be taken before registration.)

(*ii*) Chemistry, Physics, and Biology. Introduction in these subjects in their application to Medicine.

(*iii*) Human Anatomy and Human Physiology. These courses should include :—

(*a*) Dissection of the entire body.
(*b*) Histology.
(*c*) Elements of Human Embryology.
(*d*) Bio-Chemistry and Bio-Physics.

(*iv*) Elementary Bacteriology. A course in this subject should be taken before the student undertakes his regular clinical appointments (viii) 2 : (ix) (2).

(*v*) Pathology. Courses of instruction in (*a*) General and Special Pathology and Morbid Anatomy ; (*b*) Clinical Pathology. Each student should be required to have received practical instruction.

(*vi*) Pharmacology and Materia Medica. Including Pharmacological Chemistry. A course, including practical work should be taken concurrently with courses of clinical instruction.

(*vii*) Forensic Medicine, Hygiene and Public Health. Course of instruction in these subjects should be taken concurrently with the latter stages of clinical instruction.

(*viii*) Medicine, including applied Anatomy and Physiology, Clinical Pathology and Therapeutics, comprising ;

1. A course of systematic instruction in the principles and practice of Medicine ;
2. A medical Clinical Clerkship for a period of six months, of which at least three months must have been spent in the Hospital wards ;
3. Lectures or Demonstrations in Clinical Medicine, and attendance on general in-patient and out-patient medical practice, during seven terms, which may be concurrent with the terms prescribed under (*ix*) 4 ;
4. Instruction in applied Anatomy and Physiology, and in Clinical Pathology ;
5. Instruction in Therapeutics and Prescribing, including Pharmacological and Physical Therapeutics and Methods of Treatment by Vaccines and Sera ;
6. Instruction in the following subjects, viz.:—
   (*a*) Children's Diseases.
   (*b*) Acute Infectious Diseases (" Fevers ").
   (*c*) Tuberculosis.
   (*d*) Mental Diseases.
   (*e*) Diseases of the Skin.
   (*f*) Theory and Practice of Vaccination.

(*ix*) Surgery, including applied Anatomy and Physiology and Clinical Pathology, comprising :—

1. A course of systematic instruction in the principles and practice of Surgery.

2. A surgical Dressership for a period of six months, of which at least three months must have been spent in the Hospital wards ;

3. Practical instruction in Surgical Methods, including Mechano-Therapeutics ;

4. Lectures or Demonstrations in Clinical Surgery, and attendance on general in-patient and out-patient Surgical Practice, during seven terms, which may be concurrent with the terms prescribed in (*viii*) 3 ;

5. Instruction in the Administration of Anæsthetics, the candidate being certified to have administered Anæsthetics on at least ten occasions ;

6. A course of instruction in Operative Surgery ;

7. Instruction in Applied Anatomy and Physiology, and Clinical Pathology ;

8. Instruction in the following subjects, viz.:—

(*a*) Diseases of the Eye-Refraction, use of Ophthal-moscope ;

(*b*) Diseases of the Ear, Throat, and Nose, use of Otoscope, Laryngoscope and Rhinoscope ;

(*c*) Radiology.

(*d*) Venereal Diseases ;

(*e*) Orthopædies, if this is not included in the course of Surgery, or of Surgical Methods.

(*f*) Midwifery and Disease of Women. Instruction during a period of two terms, comprising :—

1. Courses of systematic instruction in the principles and practice of Obstetrics and Gynæcology.

2. Lectures or Demonstrations in Clinical Obstetrics and Gynæcology, and attendance on in-patient and out-patient Gynæcological Practice.

3. Instruction in the following Subjects, viz.:—

(*a*) Ante-natal conditions.

(*b*) Infant Hygiene.

4. Every student should, after attending the courses of systematic instruction in the principles and practice of Surgery and of Obstetrics, give continuous attendance on Obstetrical Hospital Practice, under the supervision of a competent Officer for a period of three months, during one month of which, at least, he should perform the duties of an intern-student in a lying-in-hospital or ward. He should attend during the period twenty cases of labour and adequate supervision. Extern or District Maternity work should not be taken until the student has personally delivered at least five cases in the lying-in-Hospital or ward, to the satisfaction of his teacher.

A certificate of having attended twenty cases of Labour should state that the student has personally attended each case during the course of labour, meeting the necessary abdominal and other examinations, under the supervision of the certifying officer, who should describe his official position and state how many of the twenty cases were conducted in the Hospital.

Additional Resolution.

(*a*) That throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of Medicine ;

(*b*) That licensing body should make adequate arrangements for the effective correlation of the several subjects of study throughout its curriculum ;

(*c*) That the teaching of Anatomy and Physiology should include as a regular part of the Courses the demonstration on the living human body of structure and function.

(*d*) That the Curriculum should be so arranged that a minimum period of three years shall in every case be available for study after the completion by the student of the Professional Examinations in Anatomy and Physiology held at the close of the second year ;

(*e*) That the Curriculum should be so framed as to afford sufficient opportunities for the study, during the last three years of the course, of Physics, Chemistry, Biology, Anatomy, and Physiology, in their practical applications to Medicine, Surgery, and Midwifery, and that the Student's knowledge of these applications should be subject to test in the Final Examination ;

(*f*) That before the student is admitted to his clinical appointments he should have received practical instruction in Clinical methods and in the recognition and interpretations of physical signs ;

(*g*) That instruction should be given, in the courses of Forensic and Public Health or otherwise, on the duties which devolve upon Practitioners in their relation to the State; and on the generally recognised rules of Medical Ethics. Attention should be called to all Notices on these subjects issued by the General Medical Council.

NOTES AND COMMENTS.

The following is published by the Government of Madras in the Local Self-Government (Public Health) Department :—

G.O. No. 1385, *P.H.*, 11*th October* 1922.

Health propaganda.

Work done in June and July 1922—The Director of Public Health's report recorded.

READ—the following paper :—

Letter from Major A. J. H. RUSSELL, M.D., D.P.H., I.M.S., Director of Public Health, Madras, to the Secretary to Government, Local Self-Government (Public Health) Department, dated Madras, the 23rd August 1922, No. R. 1163–1.

(Propaganda work done in district boards and municipalities—Brief report for June and July 1922—Reference —G.O. No. 859, P.H., dated 17th June 1922.)

In paragraph 32 of G.O. No. 1354-A, P.H., dated 19th October 1922, the general lines in which propaganda work in the districts should be carried on were indicated, and in G.O. No. 859, P.H., dated 17th June 1922, the Director of Public Health was asked to submit every month a very brief report on the work carried on the above lines. The chairmen of all the municipalities, the presidents of district boards and the District Health Officers newly appointed were all circularized on 26th June 1922 to forward to this office not later than the 7th of every month a brief report of the propaganda work done in the previous month.

2. From the replies so far received for June and July 1922, a brief resume of which is appended herewith, it is obvious that few districts are taking any vigorous steps, or have given the serious attention which the subject requires.

3. Doubtless little can be expected from local bodies from their own initiative. Definite results may however be expected after the scheme of appointing District Health Officers for every district with adequate staff is given effect to.

4. A report on the propaganda work in the districts for August 1922 will be submitted as soon as sufficient number of replies have been received from the local bodies.

ENCLOSURE.

Brief report on propaganda work carried on in this Presidency during June and July 1922.

Name of local body.	Propaganda work done during June 1922.	July 1922.
	Districts.	
1. Trichinopoly (District Health Officer).	Sanitary Inspectors of disbanded cholera parties who are posted for district health work attended to health propaganda work in villages of certain taluks of the district. Their main work consists in lecturing about the causes, mode of transmission and simple precautionary measures to be adopted against water-borne diseases and other epidemics. Importance of general sanitation, personal hygiene, water tidiness and the necessity for a protected water-supply were pointed out to the people. As there was an epidemic of relapsing fever in certain taluks, the etiology mode of transmission of the disease and the role played by lice, bugs and tick in its spread and the importance of a campaign against these vermin by personal cleanliness, removal of hair, frequent change of clothing, etc., were explained to the inhabitants of the infected areas. The work was carried out in the taluks of Karur, Perambalur, Trichinopoly, Kulittalai, Udaiyarpalayam, Musiri and Lalgudi.	Same as in June 1922 in certain villages of other taluks. A talk about malaria was given in Kulittalai taluk where there was an epidemic. Importance of good water-supply and the causes of the water-borne diseases formed the general subjects of the lecturers.
2. Tinnevelly (President, District Board).	Nil.	Propaganda work on maternity and infant welfare only.
3. Kistna (District Health Officer).	Delivered lectures in twenty-three centres on general cleanliness, cholera, small-pox, influenza, protected water-supply, malaria, advantages of vaccination and of registration of births and deaths and hookworm disease.	Delivered lectures in fifty-one centres on guinea worm disease, tuberculosis, dysentery, diarrhœa, impurities of air and evils of inhaling impure air—other than those lectured during June 1922.

Name of local body.	Propaganda work done during 1922.
	*Municipalities.**
1. Cuddalore ..	Propaganda work—Nil. The municipal council is contributing a sum of Rs. 100 annually towards the maternity and infant welfare association. Hygiene is being taught in high schools.
2. Trichinopoly ..	Magic lantern lectures were delivered on the following subjects in Tamil :—(1) Milk supply, (2) insects in relation to transmission of diseases, (3) small-pox, (4) cholera, (5) hookworm.

* Propaganda work during June 1922—Nil.

Brief report on propaganda work carried on in this Presidency during June and July 1922—contd.

Municipalities—contd.

Name of local body.	Propaganda work done during 1922.
3. Hindupur ..	Instructions were given to school children on hygiene and contagious and infectious diseases. The local vaccinator has been asked to deliver lectures to the public on the advantages of revaccination.
4. Bellary ..	A health committee has been organized and the members go about advising the public to be clean and neat.
5. Cocanada ..	Hygiene and physiology are being taught to the school boys.
6. Bodinayakanur ..	Lectures on 'prevention of plague' were given as the town is threatened with that epidemic disease.

Recorded.

(By order of the Government, Ministry of Local Self-Government.)

F. J. RICHARDS,
Secretary to Government.

REVIEWS AND REPORTS.

The Prescriber—Special Number—Endocrinology—(1) Thyroid and parathyroids—Vol. XVI—No. 193, October 1922—Price 4s. and 6d.

This special number is a complete review of the entire literature of the past twenty months on thyroid and parathyroids in the shape of editorials, original communications, tests for thyroid activity, thyroid and parathyroid therapy, abstracts from the literature, books on thyroid gland, Bibliographical index 1921-22, etc. A scientific understanding of Endocrinology is quite essential and many helpful deductions can be made from the state of the thyroid and perhaps the physician of the future will feel the thyroid instead of the pulse.

The relation of hyperthyroidism with acute tuberculosis, acute rheumatism, acute diabetes, secondary syphilis, acute gonorrhœa and acute suppurative appendicitis and the relation of hypothyroidism with tertiary syphilis and its treatment are discussed.

The clinical aspect of thyroid activity in acute infections is well worth studying. The Surgical and X-Ray treatment in Grave's disease should be limited to those cases where there are special indications: ordinarily the chronic infections as septic tonsils, colonic disturbances, rheumatism, chronic appendicitis should be dealt with.

The relation of Thyroid to the Thymus is well deserving of study and further research work is necessary. Thyroid therapy is of value in keratcornis, interstitial keratitis, Blepharitis. Thyriod therapy is now based on a rational basis and further work has to be done for the use of non-specific cases. Parathyroid therapy is still in its infancy. It has to be realised that hypothyroidism is associated with deficiency of other endocrines. It is not enough to diagnose hypothyroidism but the underlying cause should be discovered. We have indicated above enough of the value of this special number to the consultant (physician, surgeon, alienist, ophthalmalogist, the radiographer) and to the general practitioner alike.

N. S. N.

"Infantile Cirrhosis of Liver" by Santosh Kumar Mukerji, M.B., M.R.A.S., with a foreword by Major-General B. H. Deare, I.M.S., pp. 95, Price Rs. 2, paper cover, published by the Indian Medical Record Book Depot, Calcutta :—

This is the first book on this subject and medical practitioners in South India will find in this book all the available information on this subject.

Those who will like to do post-graduate work also will be greatly benefited by a summary of the available information and the author's experiences. The book has 8 figures on the morbid anatomy and pathology as given by Dr. J. Gibbons in Scientific Memoirs, Part VI. 1891.

Recently a practitioner in Madras who analyses 250 cases of this disease was told that the form of the disease which occurs in Bengal may differ from the disease as it occurs here.

We find that in Bengal " The disease is rare in the country " and that it occurs more in cities but in South India the disease is met with more in the villages, that the incidence is more common in the non-malarious districts of the Presidency, that the malarious districts of Ceded districts are said to be free from this disease. Both the male and female children are equally affected by the disease.

Cultural examination of the blood in the early stages could have been undertaken: breast milk of mothers of afflicted children might have been analysed to find out the exact defects.

On page 50 we find the statement " Rickets is a disease of European children;" we should recognise that rickets is quite often seen in this country.

Is there any evidence of carbohydrate excess in food as in Diabetes by estimation of percentage of sugar in Blood ? If the disease is of the nature of toxæmia, why should there be difference in the cirrhosis of Liver in adults as seen in strict vegetarians and tea totallers and between this disease.

The exact distribution of this disease has still to be exactly worked out. We hope this book will stimulate medical practitioners, health officers, and infant welfare doctors to report and record the cases in their areas.

" All cases which were put strictly on breast milk or goats' milk and were given vegetable Chola-gogues from the beginning were cured." Author records 377 cases. We would like the calf's urine to be replaced by urea if it is proved to be of any value.

The author has to be congratulated on the production of a handy book on this subject, which is a great advantage to the young practitioner who is not likely to consult Dr. Sen's and Dr. Gibbon's original work. The author would suggest the name of intercellular cirrhosis in place of biliary cirrhosis.

We hope that the Madras Corporation and the infant welfare centres where the disease is fairly common will also show statistics of infantile cirrhosis of liver.

N. S. N.

We have received from Messrs. Sri Krishnan Bros., Madras, a copy of " Eye-sight by one who knows it." The pamphlet will be of great value to the lay public in seeking the help of the Ophthalmalogist.

N. S. N.

SERVICE NOTES.

3rd October 1922.

Leave.—No. 692.—Mr. S. Jesudoss, B.A., M.B. & C.M., D.P.H., F.R.C.S., leave on average pay for two months with effect from the 13th August 1922 under rule 81 of the Fundamental Rules.

Appointments—No. 693.—M.R.Ry. R. Adisesha Ayyar Avargal, L.M.S., B.S.SC., Assistant Director of Public Health (Vital Statistics), will be in charge of the Central Range in addition to his own duties as a temporary measure pending relief by Mr. K. T. Matthew.

No. 694.—Mr. K. T. Matthew, L.M.S., L.R.C.P. & S., D.P.H., Assistant Director of Public Health (Fairs and Festivals), will, on return from leave, act as Assistant Director of Public Health, Central Range, in addition to his duties during the absence on leave of Mr. S. Jesudoss.

Leave.—M.R.Ry. N. Mangesh Rao Avargal, M.B.C.M., Civil Assistant Surgeon, Assistant to District Medical and Sanitary Officer, South Kanara, is granted leave on average pay for three weeks from 4th August 1922 under the Fundamental Rules.

Posting.—In supersession of this office order R. No. 3474-E., dated 23rd September 1922, M.R.Ry. D. Kanakasabhesan Avargal, L.M.S., Civil Assistant Surgeon, on termination of the special duty at the Central Jail, Coimbatore, is posted to the Medical College, Madras, *vice* M.R.Ry. N. S. Ramaswami Avargal, M.B.B.S., Civil Assistant Surgeon, applied for leave.

Posting.—In modification of previous orders, M.R.Ry. B. Srinivasa Acharya Avargal, B.A., L.M.S., Temporary Civil Assistant Surgeon, on relief at Local Fund Hospital, Tindivanam, to act as Assistant to District Medical and Sanitary Officer, Bellary, *vice* M.R.Ry. T. S. Ramakrishna Ayyar Avargal, L.M.S., Civil Assistant Surgeon, on leave.

Services placed.—In modification of previous orders, M.R.Ry. K. E. Pothan Avargal, L.M.S., Civil Assistant Surgeon, on return from leave, is placed at the disposal of the Chairman, Municipal Council, Bimlipatam, *vice* M.R.Ry. E. A. Varada Ayyar Avargal, L.M.S., Civil Assistant Surgeon, applied for leave.

Leave.—M.R.Ry. S. Muthukumaraswami Pillai Avargal, B.A., M.B.B.S., Temporary Civil Assistant Surgeon, is granted privilege leave for one month and twenty-eight days from 10th August 1922, prior to termination of his services.

10th October 1922.

Leave—No. 704.—Mrs. Mary O'Brien Beadon, M.B.B.S., W.M.S.I., Superintendent, Government Victoria Hospital for Caste and Gosha Women, Triplicane, leave for one month from the 6th September 1922.

No. 705.—Miss M. Stewart, M.B., CH.B., W.M.S.I., to act as Superintendent, Government Victoria Caste and Gosha Hospital, Triplicane, during the absence of Mrs. M. O'Brien Beadon on leave.

Leave.—M.R.Ry. E. A. Varada Ayyar Avargal, L.M.S., Civil Assistant Surgeon, attached to Municipal Hospital, Bimilipatam, is granted leave on average pay for one month from 12th September 1922, under the Fundamental Rules.

Posting.—M.R.Ry. E. A. Varada Ayyar Avargal, L.M.S., Civil Assistant Surgeon, on the expiry of leave, is posted to the Government General Hospital, Madras, on reserve duty until further orders.

17th October 1922.

Appointments—No. 721.—Major Arthur Charles Ingram, I.M.S., to be Professor of Physiology, Medical College, Surgeon, Third District, and Second Physician, General Hospital, Madras, with effect from the date of retirement of Lieut.-Col. C. Donovan, I.M.S., from service.

Confirmations.—With reference to G. O. No. 1453 P. H., dated 1st November 1921, the following Temporary Civil Assistant Surgeons are confirmed as Civil Assistant Surgeons in the department with retrospective effect from 1st July 1921 :—

Mr. P. V. Cheriyan, M.B.B.S., Temporary Civil Assistant Surgeon—Assistant to the Professor of Biology, Medical College, Madras.

Mr. P. V. Francis, B.A., M.B.B.S., Temporary Civil Assistant Surgeon—Police Hospital, Malappuram.

M.R.Ry. A. R. Parasuram Avargal, L.M.S., Temporary Civil Assistant Surgeon—Royapetta Hospital, Madras.

Mr. W. C. Thomas, L.M.S., Temporary Civil Assistant Surgeon—Reserve duty, Government Maternity Hospital, Madras.

25th October 1922.

Extensions of Leave—No. 736.—Khan Sahib Muhammad Aziz-ul-lah Sahib Bahadur, B.A., M.B.C.M., extension of leave on average pay for one month and twelve days from 11th November 1922, with permission to affix the Christmas holidays to his leave.

No. 737.—Lieutenant-Colonel W. J. Niblock, I.M.S., has been granted an extension of leave on medical certificate for three months from 15th November 1922.

Permitted to return—No. 738.—Mr. K. T. Matthew, L.M.S., D.HY., D.P.H., is permitted to return to duty before the expiry of his leave.

Posting.—Mr. W. C. Thomas, L.M.S., Civil Assistant Surgeon, on reserve duty at the Government Maternity Hospital, Madras, is transferred to the Government General Hospital, Madras, temporarily, *vice* Mr. A. C. Bartley, Military Assistant Surgeon on other duty, in the X-ray Department of the Government General Hospital, Madras.

Mr. N. B. Morris, F.R.F.P.S., D.P.H., D.T.M. & H., Civil Assistant Surgeon, on reserve duty in the Medical College, Madras, to be Assistant to the Professor of Surgery, Medical College, Madras, *vice* M.R.Ry. A. Narayana Menon Avargal, M.B., B.S., Temporary Civil Assistant Surgeon, given notice of discharge.

Services placed.—M.R.Ry. P. Bhavani Rao Avargal, M.B.C.M., Civil Assistant Surgeon, from reserve duty, Government Headquarter Hospital, Mangalore, is placed at the disposal of the President, District Board, South Kanara, *vice* Mr. C. K. Joseph, M.B.C.M., Civil Assistant Surgeon, applied for leave.

Transfer.—Mr. W. C. Thomas, L.M.S., Civil Assistant Surgeon, on relief at the Government General Hospital, Madras, is transferred to the Government Maternity Hospital, Madras, on reserve duty until further orders.

Posting.—Captain C. Oommen, M.B.B.S., I.M.S. (T.C.) on demobilization, is re-entertained as a Temporary Civil Assistant Surgeon and posted to the Government General Hospital, Madras, *vice* Mr. W. C. Thomas, L.M.S., Civil Assistant Surgeon.

31st October 1922.

Extension of Leave—No. 750.—The leave on average pay granted to Major R. E. Wright, I.M.S., in notification No. 464 published on page 317 of Part I-A of the *Fort St. George Gazette*, dated the 27th June 1922, is extended by one day.

Permitted to return—No. 751.—M.R.Ry. P. S. Chandrasekhara Ayyar Avargal, B.A., M.D., is permitted to return to duty before the expiry of the leave granted to him and to resume his permanent appointment of Director, Tuberculosis Institute, and Superintendent, Tuberculosis Hospital, Madras.

Leave.—In modification of previous orders, M.R.Ry. V. K. Kochu Krishna Menon Avargal, M.B., B.S., Civil Assistant Surgeon attached to Local Fund Hospital, Vayitri, Malabar district, is granted leave on average pay for one month from 1st May 1922.

M.R.Ry. A. Srinivasalu Nayudu Garu, B.A., L.M.S., undergoing Health Officer's training in the Medical College, Madras, is granted leave on average pay for twenty-three days from 1st August 1922 under the Fundamental Rules.

Leave.—M.R.Ry. N. Bhavani Shankar Rao Avargal, M.B.B.S., Temporary Civil Assistant Surgeon, acting Assistant to the Professor of Biology, Medical College, Madras, is granted privilege leave for two months and fourteen days from 13th September 1922 prior to termination of his services.

Extension of Leave.—M.R.Ry. E. A. Varada Ayyar Avargal, L.M.S., is granted extension of leave on average pay for one month under the Fundamental Rules from 12th October 1922.

Services placed.—M.R.Ry. K. M. Mathulla Avargal, L.M.S., Civil Assistant Surgeon, on the expiry of leave, is replaced at the disposal of the President, District Board, Nellore, for Local Fund Hospital, Venkatagiri, *vice* M.R.Ry. D. Hari Rao Garu, M.B. B.S., transferred.

M.R.Ry. D. Hari Rao Garu, M.B.B.S., Temporary Civil Assistant Surgeon, on relief at the Local Fund Hospital, Venkatagiri, is placed at the disposal of the President, District Board, Vizagapatam, for Local Fund Hospital, Palkonda.

7th November 1922.

Leave—No. 761.—Lieutenant-Colonel William Reith John Scroggie, C.I.E., I.M.S., leave on average pay for eight months from 18th November 1922 or from the date of relief.

Leave.—Mr. H. S. Hensman, M.R.C.S., L.R.C.P., L.M.S., Medical Officer, Alipuram Jail, Bellary, is granted leave on average pay for one month from date of relief by Military Assistant Surgeon H. C. Berlie, I.M.D.

Leave.—Mr. C. K. Joseph, M.B.C.M., Civil Assistant Surgeon, is granted leave on average pay for one month from date of relief at Local Fund Hospital, Udipi, South Kanara district, under rule 81 of the Fundamental Rules.

Posting.—M.R.Ry. L. S. Ramachandran Avargal, M.B., B.S., Temporary Civil Assistant Surgeon and trained Health Officer, is considered to have been on reserve duty at the office of the Surgeon-General with the Government of Madras from 19th May 1922 to 7th June 1922 (both days inclusive).

Leave.—M.R.Ry. C. A. Sivaraman Avargal, L.M.S., Civil Assistant Surgeon, attached to Government Tuberculosis Hospital, Madras, is granted leave on average pay for six months under the Fundamental Rules, from the date of relief.

14th November 1922.

Appointments—No. 769.—Lieutenant-Colonel Thomas Henry Symons, O.B.E., I.M.S., on return from leave, to act as Professor of Surgery, Medical College, and First Surgeon and Superintendent, General Hospital, Madras.

No. 770.—Major Ernest William Charles Bradfield, O.B.E., I.M.S., on relief by Lieutenant-Colonel Symons, to resume his permanent appointment of Third Surgeon, General Hospital, Madras.

No. 771.—Lieutenant-Colonel Leonard Hirsch, C.I.E., I.M.S., on relief by Major E. W. C. Bradfield, O.B.E., I.M.S., to do reserve duty in the General Hospital, Madras, and to continue to hold the Minor Professorship of Medical Jurisprudence, Medical College, Madras, till he goes on leave.

No. 772.—Major E. W. C. Bradfield, O.B.E., I.M.S., to act as Second Surgeon, General Hospital, with Port and Marine duties and as Professor of Medical Jurisprudence, Medical College, Madras, with effect from the date of taking charge, *vice* Lieutenant-Colonels Scroggie and Hirsch proceeding on leave.

No. 773.—Major Krishnan Gopinath Pandalai, I.M.S., to act as Third Surgeon, General Hospital and Professor of Biology, Medical College, Madras, with effect from the date of taking charge.

Appointment.—First-class Military Assistant Surgeon H. C. Berlie, M.R.C.S., D.T.M., I.M.D., on transfer to Madras Civil, is appointed as Medical Officer, Alipuram Jail, Bellary Cantonment.

Posting.—Mr. W. C. Thomas, L.M.S. Civil Assistant Surgeon, on reserve duty at the Government Maternity Hospital, Madras, is posted to the Government Tuberculosis Hospital, Madras, *vice* M.R.Ry. C. A. Sivarama Ayyar Avargal, L.M.S., Civil Assistant Surgeon, granted leave.

Postings.—M.R.Ry. B. Dayananda Rao Avargal, L.M.S., Civil Assistant Surgeon, on return from leave, is placed at the disposal of the President, District Board, Chingleput, *vice* A. M. Muhiuddin Sahib Bahadur, M.B. & B.S., Temporary Civil Assistant Surgeon, transferred.

A. M. Muhiuddin Sahib Bahadur, M.B. & B.S., Temporary Civil Assistant Surgeon, on relief at the Local Fund Hospital, Tiruvallur (Chingleput District), is posted to the Government General Hospital, Madras, on reserve duty for a period *not* exceeding one month.

Transfer.—M.R.Ry. D. Kanakasabeshan Avargal, L.M.S., Civil Assistant Surgeon (on relief at the Medical College, Madras), to the Government General Hospital, Madras, temporarily to fill a vacancy caused by the transfer of Captain E. R. Mahoney, I.M.D., to Cannanore.

21st November 1922.

Leave.—No. 790.—Mr. Rajayya Robert Williams, B.A., M.B., C.M., leave on average pay for six months from the 9th September 1922.

Appointment.—No. 791.—M.R.Ry. Rao Bahadur Thalakoti Madhathil Kunju Nedungadi Avargal, I.M.S., to act as personal Assistant to the Surgeon-General with the Government of Madras, with effect from the date of taking charge.

Leave.—M.R.Ry. A. Narayana Menon Avargal, M.B.B.S., Temporary Civil Assistant Surgeon, acting Assistant to the Professor of Surgery, Medical College, Madras, is granted privilege leave for one month and five days from 23rd October 1922 afternoon prior to termination of his services.

Posting.—In continuation of this office order No. R. 3878-E, dated 9th November 1922, Mr. W. C. Thomas, L.M.S., Civil Assistant Surgeon, on relief at the Government Maternity Hospital, Madras, is kept on reserve duty at the Government Tuberculosis Hospital, Madras, until he takes over charge from M.R.Ry. C. A. Sivarama Ayyar Avargal, L.M.S., Civil Assistant Surgeon proceeding on leave.

Posting.—M.R.Ry. J. Dhairyam Avargal, L.M.S., Temporary Civil Assistant Surgeon, was compulsorily re-called from leave and placed at the disposal of the District Medical and Sanitary Officer, Agency Division, Vizagapatam, for litari duty, Narasapatam.

24th November 1922.

Leave.—*No.* 804.—M.R.Ry. Sarukkai Ranga Acharya Avargal, M.B., C.M., leave on average pay for four months and on half average pay for eight months from date of relief.

No. 805.—Lieutenant-Colonel Leonard Hirsch, C.I.E., I.M.S., leave for one year composed of leave on average pay for two months and twenty-two days and leave on half average pay for the remaining period with effect from 24th November 1922 or date of relief.

Extension of Leave.—*No.* 806.—Lieutenant-Colonel Diwan Ganpat Rai, I.M.S., extension of leave on half average pay up to 29th January 1923.

Appointments.—*No.* 807.—M.R.Ry. George Ommen Pothan Avargal, M.B., C.M., to resume his acting appointment as District Medical and Sanitary Officer, Cuddapah, on return from leave.

Mr. C. M. Philip, L.M.S., Civil Assistant Surgeon, on relief at the Office of the Surgeon, Third District, Madras, is appointed as Assistant to the District Medical and Sanitary Officer, Coimbatore, *vice* Mr. M. P. Peters, L.M.S., Civil Assistant Surgeon, transferred.

Service placed.—Mr. M. P. Peters, L.M.S., Civil Assistant Surgeon, on relief at the Office of the District Medical and Sanitary Officer, Coimbatore, is placed at the disposal of the President, District Board, Coimbatore, *vice* M.R.Ry. K. Madhava Nayak Avargal, L.M.S., Civil Assistant Surgeon, transferred.

Posting.—Mr. F. D'Netto, M.B., B.S., Civil Assistant Surgeon, Assistant to the Third Physician, Government General Hospital, Madras, is appointed to act as Senior Assistant Surgeon in the same institution, *vice* Captain E. R. Mahoney, I.M.D., transferred,

ASSOCIATION DIARY.

November 11th—"At Home" to meet Dr. Rao Bahadur T. M. K. Nedungadi, Vice-President of the Association, on his appointment as P. A. to S. G.

December 9th—Address by Dr. P. S. Chandra Sekhar, B.A., M.D., on "Experiences of my European tour."

December 28th—Address by Dr. D. N. Maitra, M.B., (Lecturer on Tropical Surgery, School of Tropical Medicine, Calcutta), on "Simple methods of Surgery."

January 6th—A special meeting to consider a matter of urgent importance, *viz.*, the rumoured reduction in the pay, prospects and allowances of the members of the Madras Medical Service.

January 25th—Address by Dr. M. R. Guruswamy Mudaliar, B.A., M.D., on "Modern theories of renal inefficiency and their treatment."

TO OUR MEMBERS.

We beg to remind the members of our Association that the Journal and other Publications of our Association are sent *free* to every member of the Association, and that it is only for the convenience of recovering the arrears of subscription, from such of those whose annual dues remain unpaid till towards the last quarter of the year, that a copy of our publication (Journal, Annual Report, or the like) is sent to them per V.P.P. for the amount or subscription due. We are, however, sorry to note that a large number of copies sent last time per V.P.P. to our members who were still in arrears were returned to us unclaimed with the result that our finances are now in a poor condition due to the large amount of subscription still remaining unpaid. We now beg to request our members who did not claim their last V.P.P. issues and are still in arrears of their subscription, to send the same, as early as convenient, to the Secretary, Madras Medical Association, C/o Messrs. Hoe & Co., Stringer's Street, Madras, E. In case the arrears are not received before the next issue is out, the same will be sent per V.P.P. for the amount due ; it is earnestly requested that members will accept the V.P.Ps. when it is sent to them or inform us beforehand that they do not wish to continue as members. We need hardly say that the good which our Association can do in the cause of our service and the profession depends chiefly on the number of our active members as well as on our financial stability. May we appeal to our members to ensure to us both these vital needs ?

TO LET