

exclusively in the hands of women, say our critics. Foreign artists coming to America protest now and then that the demands and tastes of a too feminine audience impose restrictions which are narrowing. But there is the question, too, what will this body of educated womanhood mean in the next generation, in the impress it puts upon its children, in the standards of moral and civic living it will maintain? The sentiment of American women, who now have the vote, for Prohibition and for the outlawry of war is a fact to be reckoned with, a sentiment which the educated woman is especially potent in maintaining. This situation in one country of an excess of educated women over men, opens wide vistas of thought and hope for the future.

KALA AZAR.

BY MISS PETTIGREW.

(Read at the Nursing Conference in Madras.)

Kala-azar is one of the most prevalent diseases in Bengal and Assam, affecting mostly small insanitary rural communities. Although there was no clinical record of the disease it can be traced back as far as 150 years. Reports of it come from different countries—China, Russia, Africa and Italy. Until a few years ago it went under the name of chronic malaria, and unhappily in some districts it is masquerading under that name still. It shows itself both in epidemic and endemic forms. As regards India, the whole of Bengal is endemic, but in Assam and Madras it takes the form of an epidemic.

On the whole there seems to be a decided tendency of this disease to attack children and young people. The highest percentage has been recorded between the ages of 10 and 20. Both sexes are equally susceptible.

There is some difference of opinion as regards the incubation period. But the generally accepted idea is six weeks to three months. It is common to find that several members of one family have suffered, though not necessarily consecutively, as in the ordinary infectious diseases. To eradicate this disease from an infected village it is necessary to remove and segregate the inhabitants.

The organism was discovered almost simultaneously by Leishman and Donovan in 1903, and hence it gets its name, the Leishman-Donovan body. The carrier of the disease however is still indefinite, but the bed and plant bugs are the two suspected insects. It is possible that the disease may be transmitted by the excreta and secretions of those infected.

Emaciation and weakness are the typical symptoms of a patient suffering, let us say, for six months: the hair is dry, dull and scanty; the skin tight with increased pigmentation, especially round the mouth and temples. This blackening of the skin is the origin of the name Kala-azar, *i.e.*, black fever. Visible pulsation of the carotids may be marked, while the pulsation of the heart may be observed through the thin chest wall.

The spleen and liver are invariably enlarged, the former in many cases extending down to the symphysis, the latter in Kala-azar is soft as compared with the hard and knotty malarial liver.

The initial fever is often acute and resembles enteric, and the history given is that the patient has had enteric, has recovered but is still having fever.

Even at the "enteric stage" it will be found that the patient has a clear tongue and little loss of appetite.

In a second type we have a history of fever which has resisted quinine treatment or only yielded temporarily to it. After the acute stage is past, the fever continues but without rigor, and very often the patient is not conscious that he has fever. He may pass through a quiescent stage lasting a fortnight or so, after which the fever returns. The chart presents a distinct swing in the rise and fall of temperature in the active and quiescent stages.

A third type is also usual in which the patient is unable to give any definite history of fever. He merely feels "ill," with an occasional attack of fever, and complains of having frequent dysentery.

One of the most common complications of Kala-azar is dysentery which seldom yields to emetine, this condition should not be treated with salts. The most effective and safe treatment is an astringent, such as Pulv. Creta. Aromaticus $\bar{s}$ opii (gr. 6-12, one after every motion).

Bronchial and pulmonary pneumonia are also common complications, from which if patients recover they seem to benefit, although this will only be temporary if the treatment is not continued. Cancrum oris is another complication which sometimes end fatally. We have had one or two instances of this in patients who stopped treatment too soon, and returned with a bad cancrum oris. In one case the slough ate into the jugular vein and the boy practically bled to death. The treatment for the latter is local, the part affected may be very gently syringed with Eusol, and a mouth wash given every two or three hours. The general treatment in these cases is often hindered.

Oedema of the face, feet and hands makes the treatment more difficult, but it must not be stopped. The Oedema in the majority of cases subsides, except of those in the last stages. Albumen is seldom present in the urine.

For definite diagnosis one of the several tests is necessary. The most satisfactory perhaps is the spleen puncture, but all doctors do not care to do it. Several hundreds have been done in Kalna Hospital with only one fatal result. A soft spleen should be avoided, and after puncture the spleen should be held in position for an hour.

The formalin serum test is also diagnostic, although a positive reaction is sometimes found in phthisis also. 5 cc. of venal blood is extracted and put into a sterile minim glass. This is allowed to stand till the serum separates. The serum is then poured into a small test tube and one drop of formalin added. If positive the serum will become viscid, a minute or two later will set, and then will gradually become opalescent. After two minutes the whole of the serum will change into a solid opaque substance like the white of a hard boiled egg. If negative the serum remains clear and fluid. In chronic malaria it becomes solid but remains clear.

Diagnosis should be certain before treatment begins as it is difficult to confirm after.

It was a happy day for India when Sir Leonard Rogers and Dr. Muir of Kalna followed up the Kala-azar treatment (begun in Italy), of intervenus injections of Tartar Emetic. Previous to this while research work, which had

as yet no definite success, was going on, patients were admitted to hospital in deplorable conditions. The prognosis of these was hopeless but one felt death might be made somewhat easier for them. Of the Antimony salts, the sodium Tartrate is the most satisfactory, being less toxic and more soluble.

The initial dose is $\cdot 5\frac{1}{2}$ cc. of a 2 % solution. This should be increased by $\cdot 5\frac{1}{2}$ cc. every injection, *i.e.*, every other day, rising to a maximum of 5 cc.

Coughing, vomiting, or dizziness counter-indicates an increase of dose. It is necessary that injections be given on an empty stomach, otherwise patients suffer immediately from nausea or actual vomiting.

Pregnancy does not hinder the patient from being treated. It has never been found that the child has incurred the disease.

The treatment, generally three months, is a long one, it is sometimes difficult to persuade patients to continue it so long, but as a rule we find that the majority are willing to go on even although they have long distances to walk. To emphasise the importance of the injections internal medicine is often refused.

Cases with complications, such as heart, dysentery, cancrum oris, are, as a rule, only too willing to become in-patients. A high temperature from Kala-azar does not seem to have the same prostrating effect as fever from other diseases, this may account for the late stage in which many come to hospital for the first time.

On admission to hospital, patients are weighed, blood pressure and blood count taken. In order to detect the daily double rise so typical of Kala-azar the temperature is charted three hourly. The spleen and liver are outlined with pure carbolic. This is done so that the decrease in size of these organs may be the better followed; the psychological effect on the patient, however, is infinitely greater than any clinical merit attained thereby. To see the spleen decrease in size encourages the patient to continue what otherwise might seem a wearisome course of treatment.

It is important in the nursing of Kala-azar that patients in the later stages have complete rest in bed. Particular attention must be paid to their mouths, three hourly Eusol or Permanganate of Potassium mouth washes given and Tincture Iodine applied to the gums if necessary. As long as fever continues, the diet should consist of milk and congealed. Kala-azar patients have an appetite of repute, it is necessary therefore to keep them on a restricted diet, as otherwise they consume more than they can digest and dysentery sets in with a fatal termination in some cases.

Interspersed with the routine treatment of Antimony, injections of T.C.C.O. [Turpentine (1), Camphor (1), Creosote (1), Olive Oil ($\cdot 2\frac{1}{2}$)] are often given as a leucocyte producer. It is very antiseptic and safe and the spleen in many cases yields to it. The injection may cause a reaction but the Antimony treatment should be continued in spite of this.

Those who possess enough patience to continue the minimum three months' treatment are fully rewarded, and it is gratifying to see patients who were admitted to hospital in a debilitated and weakly condition go home with round plump faces and decidedly increased in weight.