

the desired effect. The result of the copper injections affords clear proof of this, and moreover a tourniquet applied above the ankle produces distinct oedema of the foot. By suitable padding between the bones the damming can be made still more effective.

Lack of cases put a stop to investigations, and as one of those unfortunates who is fast in the grip of the Moloch of military employment I have had no opportunities at present to test further my ideas. Time passes, and incomplete as my results are, I feel it my duty to give others, who are in the position to do so, a chance to follow up the facts elicited, for I feel convinced that the local concentration of drugs, within its limitations, will prove a practical and useful method of dealing with certain diseases. A few conditions where the treatment might be useful, with suggestions as to drugs and technique will now be given.

1. *Tubercular disease of the bones and joints of the extremities.*

(a) Ankle. As for Madura disease; if the ankle joint, the anterior tibial artery should be used.

(b) Hand and wrist. Using either the brachial artery at the bend of the elbow or the ulnar above the wrist. The tourniquet may be applied above the elbow and one obtains very perfect local concentration.

Drugs suggested:—sodium morrhuate—(which will presumably destroy the fatty envelope), and iodine the next day, with the idea of killing the now unprotected bacillus.

2. *Acute septic conditions of the extremities.*

(a) Sepsis of the hand involving the tendons;—as for tubercle. Drugs;—anti-sera in large quantities (to neutralise the toxins), combined with iodine, eusol, or flavine (to destroy organisms).

(b) Acute septic arthritis of the knee-joint, where the only alternative is amputation. Here the femoral artery may be exposed and the same drugs employed as for septic hand, but of course in much larger doses.

3. *Meningeal diseases.*

Tubercular, pneumococcal and septic meningitis are fatal diseases and a new method of treatment is worth a trial. They are therefore considered in some detail.

It is possible to produce considerable congestion of the head by means of mild compression of the neck by a soft muffer. The surgeon should obtain an idea of how much is required by experimenting on himself. It falls far short of impeding respiration in the least. The ideal method for obtaining local concentration in the meninges would be to inject the external carotid artery and obstruct the veins of the neck. This is hardly practical surgery, however, and an alternative method may be employed.

Suggested Technique.

1. Place a rubber tourniquet loosely round the head just above the ears, and throw a muffer or soft hand towel round the neck.

2. Expose the superficial temporal artery near the zygoma and inject the selected remedy.

3. Tighten the tourniquet and muffer.

4. To obtain *vis a tergo* at the point where the artery passes under the tourniquet, raise the latter off the skull for a couple of pulse beats by means of a small hook.

5. With the flat of the hands knead the scalp firmly, and keep up the constriction as long as it is thought the patient can stand it. The rationale of this method depends on the fact that there is free communication between the scalp and meningeal veins through the veins of the diploë.

Drugs suggested are the specific anti-sera and iodine, sodium morrhuate, eusol, flavine and urotropine in conjunction with the necessary surgical procedures such as opening up a mastoid. Only a partial local concentration can be obtained here, and as such cases are desperate, daily injections would probably be necessary.

Other appropriate conditions will readily suggest themselves. In conclusion I wish to express my sincere thanks to Messrs. Chabukswar and Bhumgara of the Indian Medical Department for their able and enthusiastic assistance.

FOUR CASES OF SPOTTED FEVER AT NAGPUR.

By CAPT. A. F. W. DA COSTA, I.M. & S., D.T.M.,
(Bengal).

Residency Road, Nagpur.

ABOUT four years ago, three cases more or less similar to the ones I am about to describe, were reported by Colonel Chapman, then Civil Surgeon of Nagpur, to Colonel Megaw, I.M.S., Director, School of Tropical Medicine, Calcutta, who is particularly interested in this type of disease, the exact causation of which has hitherto not yet been arrived at, although for clinical purposes it comes under the typhus or typhus-like group of fevers.

The temperature charts of my four cases were as shewn.

Case 1.—Mr. T. P. D., Anglo-Indian, aged 42 years, an engine driver, residing in railway quarters built on a big plain 3 miles from Nagpur.

On the 4th July, 1923, he returned from work with a severe headache, to which he is often subject, and took a powder of caffeine and aspirin.

The subsequent temperature chart is as shewn. The course of the disease was marked by marked constipation and insomnia, the latter often of a severe charac-

ter, requiring injections of scopalamine and even of morphia to control it.

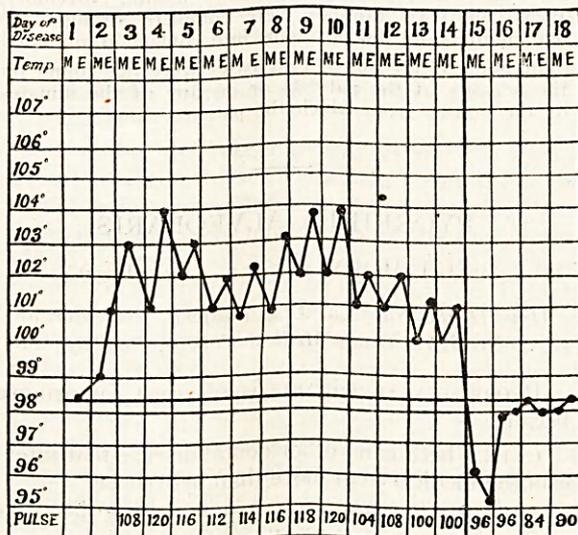
On the 5th day of illness a rash appeared, patchy in character, on the abdomen and back. On sponging it was noticed more on the lower limbs, also on the face, trunk and upper limbs, but was absent from the hands and the soles of the feet. The liver and spleen were both enlarged. There was never delirium, but on the 12th day of illness subsultus tendinium was noticed. The pulse, as shewn, varied in general with the temperature.

On the 15th day of illness the temperature suddenly dropped to 96°F. at 6 a.m., and at midnight it was 95°F. in the axilla. There was profuse perspiration and hot water bottles had to be given.

He was given a chlorine mixture throughout, and magnesium sulphate for the constipation, which was severe and which lasted for many days after the fever had left him. The rash was marked and persisted for two months after the cessation of the fever.

On lumbar puncture, results in both films and cultures were negative. Blood culture and the Widal reaction gave negative results. Urine examination shewed

Case I.



nothing of interest. No Weil-Felix reaction was possible, as no strain of *B. proteus* X 19 was then available.

The patient made a rapid recovery and resumed work early in September. It may be of interest to note that he had a dog full of ticks, which used to crawl about the house.

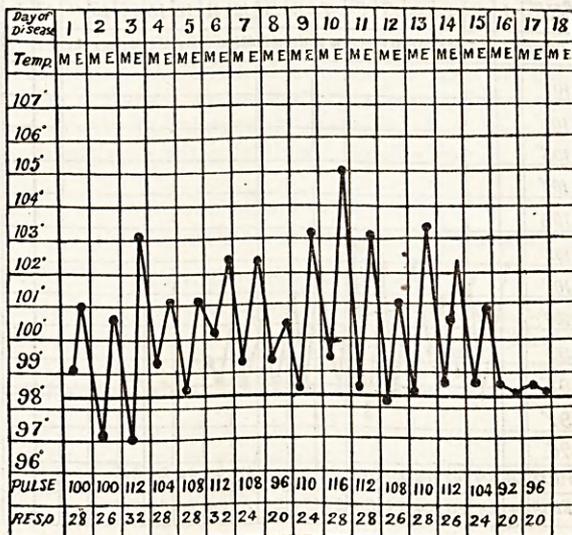
Case 2.—Master M. D., aged 5 years, the son of Case 1, returned home from the railway school at noon on the 14th November, 1923, complaining of severe headache and pain in the limbs. The temperature was 99°F., and subsequently as shewn in the chart.

Subsequently he shewed constipation, severe headache, and restlessness. On the 3rd day a few red spots were noticed on the legs and calves, but were thought to be mosquito bites. Blood films did not shew malarial parasites, and quinine had no effect upon the fever. There was tympanites, for which turpentine stupes were ordered.

On the 4th day of illness the boy was flushed and the rash appeared on the face and extremities; the next day it was well marked all over the body. On the 6th day the patient was transferred to the Nagpur

Medical School Hospital, where the headache, restlessness and sleeplessness continued, despite treatment. The tongue was coated and foul with a reddish, moist tip. Further examinations for malaria were without

Case II.



result. There was acute pain in the nape of the neck, and some rigidity.

On the 7th and 8th days of illness the pain all over the body was so severe that the boy could not bear to be touched. Stretching the lower limbs caused pain in the abdomen and limbs.

On the 17th day the temperature dropped to normal, and remained thereafter normal. The rash faded considerably and the spots had entirely cleared up by the end of the third week in December, i.e., just a month after the appearance of the rash. There was no profuse sweating with the termination of the fever, as in Case 1. The pulse was slow and intermittent after the fever had ceased.

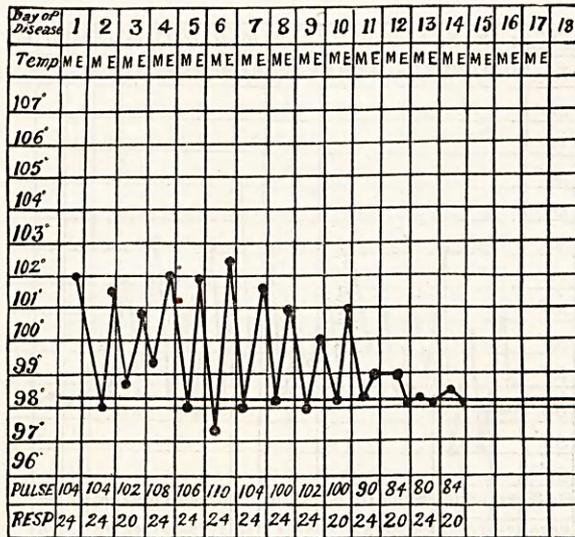
Blood culture gave negative results, as also did the Widal reaction. The urine shewed nothing particular, the diazo reaction being negative. The differential leucocyte count was as follows:—Polymorphonuclears 45 per cent.; lymphocytes 36 per cent.; large mononuclears 18 per cent.; eosinophiles 1 per cent. The total leucocyte count was 9,687 per c.mm. The serum agglutinated to a titre of 1 in 25 with *B. proteus* X 19, but not at higher dilutions.

Case 3.—Master D. D., the eldest son of Case 1, fell ill whilst Case 2 was in hospital, on the 20th November, 1923, with fever, a temperature of 102°F. and headache. Examination of the blood failed to shew malarial parasites and quinine was without effect. Headache, constipation and pain in the joints were marked features of the case throughout. This case however was the mildest of the first three. The liver became slightly palpable and tender, but the spleen was not palpable.

On the 2nd day of illness a rash appeared on the face and hands, and the next day was generalised all over the body, but was less marked than in Case 2. The rash appeared to fade on the 6th day, but again became prominent on the 8th day, by which time he was sleeping soundly. It faded by the 10th December. The temperature became normal on the 13th day of illness; thereafter there was some temporary irregularity and intermission of the pulse, which cleared up under digitalis and strychnine.

The blood culture and Widal reaction gave negative results. The Weil-Felix reaction gave a positive agglutination at 1 in 25, but not at higher dilutions.

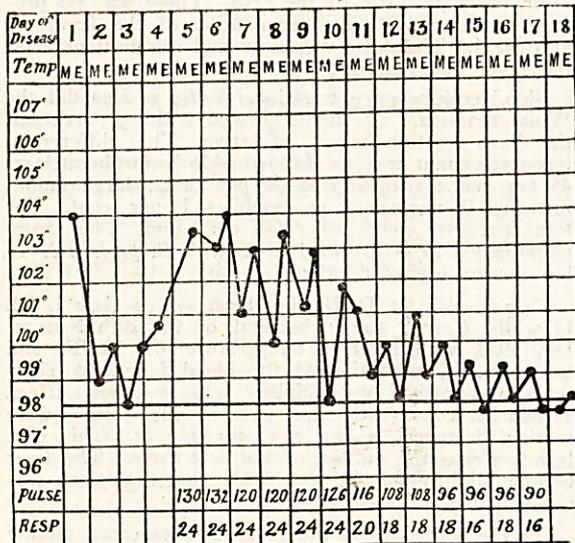
Case III.



Recapitulating these cases, that of Case 1, the father, was the worst in the severity of the attack and the persistence of the rash. Case 2 was milder, and Case 3 the mildest of the three. The rash lasted over two months in Case 1, nearly five weeks in Case 2, and only three weeks in Case 3.

Case 4.—Mrs. J. B., European, aged 28 years, in India only since February 1922, had been in Pachmari

Case IV.



from April to October 1923, and had given birth to a healthy child in September of the same year. She had a dog full of ticks, and about the end of September her husband noticed a tick on his wife's cheek and removed it, but it was not known how long the tick had been there.

On the 14th November 1923 she had fever with rigor and headache. The next day her left knee was stiff

and after this all the joints of the body commenced to ache. On the 16th she noticed a few red spots resembling mosquito bites on her face and the eyes were red. I first saw her on my return from camp on the 18th when I found her walking about the house, with a flushed face, nursing her baby, but with a temperature of 104°F. and a full and bounding pulse of 120. Both husband and wife had suffered from malaria when in Pachmari. Blood examination shewed no malarial parasites and the fever did not yield to quinine administration.

Up to the 8th day of illness there were only a few spots on the palms of the hands and soles of the feet and on the face. Later the rash became very abundant on the face and extremities, but was here less bright and marked than on the trunk. There was considerable sweating at nights, but no restlessness or delirium. The liver was normal but the spleen a little enlarged.

Blood culture was with negative results, also the Widal reaction. Several blood examinations failed to shew malarial parasites. The Weil-Felix reaction was also negative.

She lived in a military bungalow in part of the civil station of Nagpur, about four miles away from the home of Cases 1 to 3; but, curiously enough, the last three cases all occurred in the same month, November, 1923. The two families were complete strangers to one another and did not come into contact in any way.

In none of the above four cases were lice found on the persons of the patients or on any of the inmates of the houses from which the patients came.

PYORRHŒA ALVEOLARIS.

By J. J. MODY, L.M. & S., L.D.S. (Eng.),

Hon. Dental Surgeon, J. J. Hospital, Professor of Dentistry, Grant Medical College, Bombay.

PYORRHŒA ALVEOLARIS is of great importance because—

- (1) There is no other dental disease that interests the medical man more than pyorrhœa.
- (2) It is so prevalent that he comes across it almost every day of his life.
- (3) There are very few diseases (dental, medical or surgical) that are so disastrous to the general health.
- (4) Yet there is no other disease of which medical men know less than of pyorrhœa.

Causes—1. Sluggishness of the end-organ character of the blood circulation in the alveolus.

2. Accumulation of tartar which irritates, inflames, and gradually destroys the gum tissue.

3. Accumulation of food-stuffs under the free margin of the tartar and of the gum tissue which is being destroyed by the tartar.

The above causes predispose, i.e., prepare the part for the advent of the disease, and

4. The infection by bacterial accumulation ultimately starts it.

Pathology.—If I were asked to describe briefly the nature of this disease I would say that "pyorrhœa is a filth disease," i.e., a disease excited and