

essential dysmenorrhœa, there was little or no benefit in organic or anatomically determined dysmenorrhœa.

*Precocious sexual maturity.*—Mukherjee (1940) treated a girl, aged 8 years, with enlargement of the breasts, growth of hair in the axillæ and on the pubis, and onset of menstruation, by injections of testosterone propionate 5 mg. twice a week. After a total of 85 mg. the vaginal bleeding stopped, the labia shrank in size and the hair grew sparse. One case is, however, insufficient to draw any conclusions and further work is necessary to arrive at a correct evaluation of this type of treatment in precocious sexual maturity.

*Frigidity.*—As the treatment is known to increase sexual desire in women, it may be used cautiously in the treatment of frigidity.

*Prolongation of pregnancy beyond term.*—Mukherjee (1940) after experiments on guinea-pigs treated one case in a human being. The result was encouraging. If it is confirmed by future work we will have in testosterone propionate a drug which will combat habitual premature birth.

*Inhibition of lactation.*—Mukherjee (1940) treated 18 patients in whom suppression of breast secretion was deemed necessary because of still-birth, neonatal deaths and in one instance tuberculosis of the mother. Complete inhibition of breast milk was obtained in 8 patients in whom the treatment was commenced on the day of the delivery. On the other hand in 6 cases, where testosterone was given on the third day or after, little or no immediate effect was obtained. It would appear that testosterone propionate has little action on the activity of the mammary glands once the secretion has commenced. In 4 nursing mothers inhibition of milk was required one to three weeks after confinement because of neonatal death. In all of them treatment was only partially satisfactory and complete suppression of milk was not possible in spite of intensive treatment.

For an average case the initial dose was 25 mg. followed by 10 mg. at an interval of two days and then further two to six injections of 5 mg. at intervals of four to six days.

*Otosclerosis in the female.*—Bernstien and Gillis (1939) treated 38 unselected cases of otosclerosis with injection of testosterone propionate; 5 to 10 mg. were injected at weekly intervals for a course of 10 to 12 injections. Out of 38 cases treated, 24 improved. The authors conclude that there is some intimate connexion between the gonadal internal secretions and otosclerosis. It may be that there is in otosclerosis an imbalance between the male and female sex hormones, and this can be rectified by the administration of the deficient hormone.

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## TYPHUS FEVER IN BURMA

(WITH RECORD OF THREE CASES)

By R. L. SONI, M.B., B.S., F.R.H.S.

KUNDU (1932) was the first to report typhus from Burma. The next year the second case came from Martin and Anderson (1933). These two cases stimulated investigation into the prevalence and distribution of typhus fevers in Burma. Maitra and Sen Gupta (1936) reporting the result of an investigation showed that 109 cases of typhus fevers distributed over 24 out of the 40 districts in the country were discovered during a period of two and a half years and that cases of 'scrub' and 'shop' typhus were seen to occur indiscriminately in rural and urban areas. Later, Kapila and Maitra (1937) reported a case of scrub typhus from Bhamo. No other cases have been reported from this country.

Our attention was first drawn to this fever in February 1935, when our clinical assistant (case 1) suffered from a continuous fever which on serological investigation was diagnosed as 'shop typhus'. This led us to investigate some of the similar cases seen within the three previous months and two out of these returned with a suggestion of typhus. Our second case occurred in 1936 and the third one in 1940. Brief notes from these three cases are given below:—

*Case 1.*—Clinical assistant, aged 24, complained of fever associated with severe headache and general aches and pains one evening. On examination, temperature was found to be 100°F., pulse 75 per minute full and regular, throat congested, eyes red and face flushed. The fever rose and continued, associated with relatively slow pulse, splitting headache, mental confusion and general restlessness. Bronchitis complicated the picture from the 3rd day and the patient complained of chilly sensation off and on. Blood films taken on the 5th day showed benign tertian malarial infection. Atebrin tablets were administered for 4 days: during this period the patient became delirious and noisy and he continued so for 5 days; on regaining consciousness he was apathetic. On the 10th day the temperature suddenly dropped to normal and he almost collapsed. Adrenalized glucose solution 50 c.cm. given intravenously resuscitated him. Temperature rose again

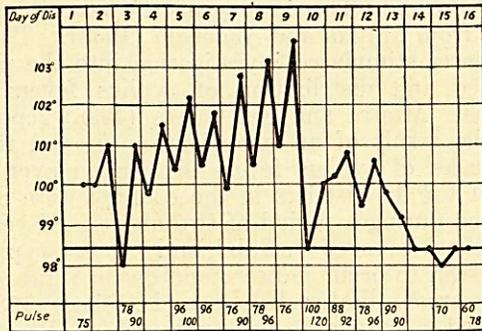
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and came to normal by lysis on the 14th day and thereafter remained normal. No rash was detected. Treatment was mostly symptomatic and convalescence rapid.

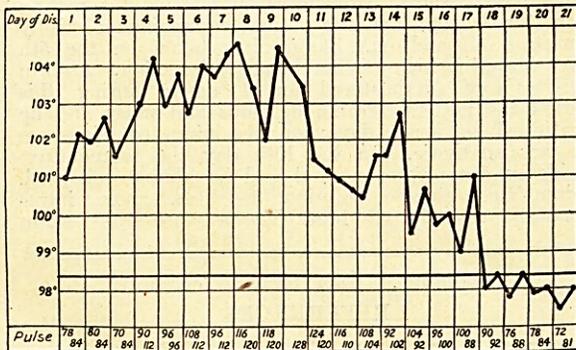
Case 1.



The patient was clean in his habits. No lice were detected on his person nor did he remember having been bitten by any insects, apart from mosquitoes, within a fortnight. However it may be noted that for 3 days, 10 days prior to the onset of fever, he had engineered and personally supervised an intensive rat drive.

Case 2.—Doctor, aged 33, was taken ill with slight shivering and severe dengue-like aches and pains. The temperature kept on rising and general restlessness became marked. On the 4th day, consciousness became dulled and towards evening the pulse was imperceptible but it improved with adrenalin administered intravenously. Retention of urine occurred during the 2 following days and the catheterized urine had a trace of albumin. Blood pressure at the time was 110 mm. Hg. systolic, 80 mm. Hg. diastolic. On the 6th day, a profuse rash, rather itchy, was noticed on the trunk and limbs, and the restlessness

Case 2.



became more marked. Heart, which had functional extra-systoles even in health, became more irregular the following day and towards evening the pulse again began to fail and unconsciousness supervened, but adrenalin once again set the condition right.

On the 8th day, in a semi-conscious condition, he was shifted to a hospital 70 miles south and 2 days later to Rangoon General Hospital, another 75 miles southward. Repeated examination of the blood showed no malarial parasites. Red cell count was 4,000,000 and leucocytes 4,000. The rash, quite diffuse on the back, had begun to fade by the 11th day. Treatment was mostly symptomatic.

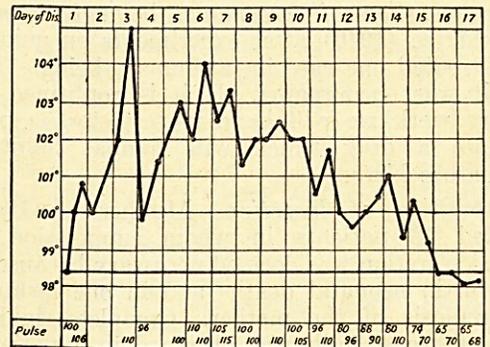
On the 18th day the temperature dropped to normal and remained so thereafter. But, as the heart resented movements, becoming irregular even on sitting, another five weeks had to be spent in bed. Quinidine in small doses was helpful. Apart from musculo-spiral neuralgia

(right side) which occurred at this stage the improvement was steady. Later, a change to the hills for a couple of months rapidly recuperated his health.

There were no lice on the patient, nor history of any special insect bite.

Case 3.—Female, aged 20 years, had a complete abortion in the third month and was feeling quite comfortable. Six days later she felt slightly indisposed: she had slight cold and temperature was 100°F. The next day she passed a large clot *per vaginam*. The temperature kept on rising and on the 3rd day it suddenly went up to 105°F. Vaginal examination revealed loaded rectum, profuse leucorrhœa unstained with blood, os closed and uterus in normal position though soft. An enema relieved her of pain in the lower part of abdomen. Urine was found free from albumin and blood examination revealed no malarial parasites. Hæmoglobin at this stage was 80 per cent. Though in view of the antecedent abortion attention was focused on the uterus, it was considered advisable to 'wait and watch' and avoid intervention for the time.

Case 3.



The next morning temperature dropped to 99.8°F. but rose again and followed a continuous course for another 12 days, by the end of which period it arrived at normal by lysis and remained normal after that.

A roseolar rash was noted on the trunk on the 6th day. The eruption was scanty and short-lived. There was no marked restlessness at any stage, abdominal reflexes were sluggish in the second week and towards the end of that week anæmia was appreciable and hæmoglobin was found 45 per cent on the 14th day.

Prontosil album tablets orally and omnadin intramuscularly were used besides the symptomatic treatment. Toxæmia was not appreciable in this case, nor was there any mental confusion. In fact the patient was, except on the 3rd, 4th and 5th days of the disease, quite comfortable and cheerful throughout. To combat the rapidly developing anæmia she was put on liver extract and iron orally. Convalescence was rapid and uneventful.

To save space, additional information on the three cases is given in the appended table and temperature charts.

Comments.—The onset in the first two cases was marked by severe headache and distressing aches and pains in limbs and back, but in the third case there was only slight cold and indisposition to begin with. The toxæmia, restlessness, muscular prostration, mental confusion and delirium that followed were found to be in direct proportion to the initial aches and pains. The severity of these symptoms, however, appeared to have no relation to the height of temperature, for in the third case though temperature was high and sustained, these distressing symptoms were absent or extremely mild. Whether the comfortable course in the third case was due to the

mild onset or to the use of the prontosil album tablets it is hard to say. Omnadin was administered in the second and the third cases: it had practically no influence on the course of the second case: it is just possible it had no influence on the third even. If prontosil was responsible for the comfortable course in the third case, it was anyway definite that it had no appreciable influence on the temperature chart. Rather it could be held responsible for the anæmia that was noted to develop in that case following its use.

A study of the temperature charts is also of interest. All the three charts depict more or less continuous temperature interrupted by a sort of transient pseudo-crisis occurring a few days in advance of the actual termination by lysis or crisis. The pseudo-crisis was quite marked in case 1. Moreover in that case the undulations on the temperature chart from the 2nd to the

medical case could easily be mistaken for a serious obstetric emergency.

The rash was not a constant feature in these cases. It was profuse in case 2, mild in case 3 and absent in case 1. In none of the cases were lice detected, nor was there history elicited of any special insect bite for a fortnight preceding the onset. In case 1, the rat drive 10 days prior to the onset is of some interest. Goyal (1941) describes an enzootic of typhus fever in wild rats of Calcutta. Though the rat strain he worked with was considered non-pathogenic to man, it is just conceivable that there may be strains in rats of some localities pathogenic to men.

*Acknowledgments.*—Our thanks are due to the Pasteur Institute, Rangoon, for examining the sera for Widal and Weil-Felix tests, and also to the authorities of the Rangoon General Hospital

TABLE  
Results of laboratory investigations

Case number	Day of disease when examination done	Widal tests	LABORATORY FINDINGS							Additional notes
			Urine				Weil-Felix tests			
			Reaction	Albumin	Russo reaction	Diazo test	OXK	OX19	OX2	
1	5th ..	..	Ac.	—	+	—	..	..	..	Malarial parasites also found.
	12th ..	..	Ac.	++	+	+	..	..	..	
	16th ..	..	Ac.	+	+	+	..	..	..	
	18th ..	—	..	..	..	..	+ 1 : 34	+ 1 : 340	+ 1 : 64	
2	6th ..	..	Ac.	+	+	—	..	..	..	Tenth day urine examination revealed epithelial cells, some pus cells, but no casts.
	8th ..	—	Al.	+	..	..	— 1 : 50	— 1 : 50	— 1 : 50	
	10th ..	..	Ac.	+	..	..	..	..	..	
	14th ..	T + 1 : 600 TO + 1 : 100 A + B —	..	..	..	..	+ 1 : 30	+ 1 : 375	+ 1 : 750	
3	4th ..	..	Ac.	—	+	—	..	..	..	Hæmoglobin percentage on 6th day = 80 per cent.
	6th ..	..	Ac.	—	+	—	..	..	..	
	10th ..	—	..	..	..	..	— 1 : 50	+ 1 : 300	— 1 : 50	
	12th ..	..	Ac.	—	—	+	..	..	..	

9th day are quite suggestive of the malaria complicating the picture. The acute peak, so very prominent in the temperature chart for case 3 on the 3rd day, may be due to some toxins released into the general circulation by the contraction of the uterus following the expulsion of the last remaining clot from its cavity.

It is also of interest to note that the abortion preceded the onset by 6 days in case 3; this was a serious trap to mislead diagnosis. A

for permission to use the hospital records of case 2.

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