river to Saltsjobaden where we were entertained to a magnificent dinner. The beauty of the capital earned a happy tribute from General Ferri of the Italian Medical Services, who likened it to a "large edition of his own lovely Venice"—a tribute which we all thought fair enough.

NOTES ON A SMALL EPIDEMIC OF PARATYPHOID "A" FEVER

BY

Captain S. COPE, M.D.
Royal Army Medical Corps
Graded Physician

AND

Brigadier R. A. BENNETT, M.D., F.R.C.P.Edin.
Consultant Physician F.E.L.F.

The diagnosis of continued fever, especially in the Tropics, is beset with many difficulties. In many of these fevers, physical signs are few or absent, and the clinical picture may not fit in with any of the recognised causes of prolonged pyrexia. In a few, the localising signs of miliary tuberculosis, or some form of septicæmia sooner or later point to a correct diagnosis but, in quite a large number, the fever ends, the patient gets well, and the cause forever remains a mystery.

The conscientious and scientific doctor, for want of laboratory confirmation, is forced to classify these undiagnosed fevers as long-term P.U.O., a diagnosis which is unpopular both with the doctor himself, and the medical authorities, and is of little comfort to the patient, unless he be one of those people who like to boast that they have had a disease which has baffled all the experts.

In the military hospitals in South-East Asia, in 1946 and 1947, there were well over 100 cases of long-term P.U.O. diagnosed in British Troops alone.

The majority of prolonged fevers with indefinite signs and symptoms are usually considered to be enteric group infections, but in the absence of positive blood, stool or urine cultures, or a rising Widal, medical officers are reluctant to diagnose them as such.

We thought, therefore, that it would be of interest, and possibly instructive, to record a small epidemic of eleven cases of paratyphoid A fever which occurred in a British unit stationed in Singapore.

The cases were so mild, and often the symptoms so vague, that, had they been sporadic cases, the clinical picture would probably not have suggested an enteric group infection, and lacking laboratory confirmation they would have swelled the ranks of the pyrexias of uncertain origin.

It is not the intention to describe each case in detail, but rather to choose the salient features from eleven proved cases, giving a general view of the clinical features of this epidemic.

The first consideration of any long-term P.U.O. is presumably the type of temperature chart, this being itself often suggestive of a diagnosis. Although one cannot say that the chart in paratyphoid "A" fever is as diagnostically suggestive as that of malaria or dengue, yet even in this small series of cases
there were certain features in common which we felt, in retrospect, to be of assistance in diagnosis. The fever varied in duration from six to thirty-two days; in two cases the fever subsided during the first week of the illness; in two cases during the second week; in four cases the fever lasted into the fourth week, and the remaining three cases became afebrile early in the fifth week. After remission of the pyrexia occasional slight recrudescences from 99° to 100° F. lasting up to forty-eight hours were apparent in some cases for a further week or so.

The characteristic feature was the presence of a consistent "spiky" tendency throughout the pyrexial period, all charts showing this feature. Although there was some irregularity, the temperature tended to be normal or nearly so in the mornings rising to 102° to 104° F. in the late afternoons, subsiding again by the following morning. Towards the end of the illness the maximum daily temperature was gradually reduced until fever ceased. A typical chart is produced below. Although we were impressed with this "spiky" feature of the temperature charts in this epidemic, we do not wish to imply that it has a great diagnostic value.

One or two of the charts were misleading, as, for example, in one case where the fever was rarely above 100° F., but lasted twenty-five days, and the chart reproduced below to show the similarity to malaria. Inspection of the charts will show the slow pulse of this type of fever. In general, the pulse was below ninety per minute and commonly between sixty and seventy. In other ways, the pulse was normal, being regular, of good tone and volume, the dicrotic element prominent in typhoid fever being absent. There were no other cardiovascular signs at any stage of the illness, and the blood-pressure was well maintained.

The early symptomatology of the disease in these cases was extremely vague, furnishing no clue to the underlying nature of the infection. Headache was common in all cases. It varied in site from frontal to occipital, and in duration from two to five days. In no case did it last longer than five days, nor did it recur. At no time was it severe, nor did it interfere with the patients’ activities before admission to hospital. It is of interest to note that three patients complained of pain behind the eyeballs, aggravated by movement of the eyes, but the generalized pains of dengue were not present at any stage.

The only striking symptom was anorexia. It appeared at the very onset often preceding all other symptoms, and was extremely persistent, not uncommonly lasting well beyond the febrile period, causing the patient some alarm, and being his main complaint. This one symptom was so marked that we felt it to be almost diagnostic in a patient, who, despite a fever of two or three weeks’ duration, otherwise felt quite fit, and could not comprehend why he was being kept in bed.

In one case only was the complaint of an “enteric” nature, the patient having prolonged diarrhoea. The remainder of the patients either observed no change in their bowel habits, or had mild constipation. Despite the absence of any intestinal symptoms, in four of the patients, the stool culture was positive.

Apart from mild nausea and vomiting in the odd case, no other symptoms were present apart from those described above.
The most helpful sign to be elicited was the presence of a palpable spleen. This was present in five of the patients: it was easily palpable, firm, and with a minimum of tenderness, resembling more the spleen of recurrent malaria than that of enteric group fever.

Rose spots were absent, one patient only developing any form of rash—a vesicular rash on the flanks and abdomen appearing on the first day of illness and lasting for a few days only.

The white blood count was never raised, occasionally normal but commonly showing a relative lymphocytosis. The following are figures from two of the cases:

Total W.B.C. 5,000 per c.mm. Differential: Polynuclears 40 per cent, lymphocytes 55 per cent, eosinophils 2 per cent, mononuclears 2 per cent, basophils 1 per cent.

Total W.B.C. 6,100 per c.mm. Differential: Polynuclears 36 per cent, lymphocytes 63 per cent, eosinophils 1 per cent.

It may be of interest to indicate in tabular form the laboratory results in these cases. Some of the cases shown with negative stool and urine subsequently excreted the organisms during convalescence showing the importance of persistent investigation not only for academic purposes but for the safety of other members of the unit to which they will return.

In no case was the Widal test of any assistance in diagnosis.

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<th>Case</th>
<th>Blood culture</th>
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**SUMMARY**

A small epidemic of paratyphoid "A" fever is described in which the main clinical features were a "spiky" temperature chart, with a slow pulse, a mild onset and a mild course marked by a persistent anorexia.

It is well known that fevers of the enteric group are sometimes very difficult to diagnose clinically, and we feel that the description of this small epidemic illustrates the importance of persevering with laboratory aids to diagnosis even in the mildest continued fevers.

We wish to thank Colonel C. P. Chambers, O.C., Military Hospital, Singapore, and Brigadier T. Young, O.B.E., D.M.S., F.E.L.F., for permission to send this article for publication.
Similarity to Malaria.

A typical chart is produced above.