TROPICAL FEVERS OF SHORT DURATION

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The obscure short fevers of the tropics fall into two main groups:—
(1) Atypical or abortive attacks of known diseases.
(2) Fevers which have still to be described.

The closer the co-operation between the clinician and the pathologist, and the more searching their investigations, the smaller will be the proportion of cases finally allotted to the second group.

Mild and aborting enteric and paratyphoid fevers, particularly when modified by foregoing inoculation, have been found masquerading under a variety of local names; in one district a short fever known as "coast fever," and usually considered a distinct entity, was shown by one of us to be merely mild enteric and paratyphoid fever. This applies also to undulant fever, and indeed to any febrile disease where infection is reduced to the lowest degree of virulence and the patient in a state just short of complete resistance.

The initial attack of simple malaria may be characterized by a short continued fever, without the classical paroxysms of the disease, and at this stage parasites may be sparse in the peripheral blood, and exceedingly difficult to detect; this type of onset caused considerable diagnostic difficulty in the Shanghai Defence Force, especially as the locality was stated to be malaria free, and early cases were regarded as possible examples of a condition known there as "Shanghai Fever" until their true nature was determined.

Yet another variety of short fever common in the tropics appears to be due to a disturbance of body metabolism by heat, and evidenced by a febrile reaction short of heat stroke; crops of such short fevers may be encountered particularly after children's parties where violent games have been played under a hot sun, an experience which recalls the opinion held by some tropical practitioners of the old school, that in many cases of enteric fever the disease can be cut short at the beginning by a sharp purge.

Dengue and phlebotomus fever are recognized by most authorities as definite short fevers, although, when analysed, they are so far from being definite that attempts to estimate the immunity to second attacks are unsatisfactory owing to confusion with clinically similar types of fever. In Malta, where there is very little indigenous malaria, only about 10

1 Paper read at the Fifth International Congress of Military Medicine and Pharmacy, London.
per cent of visitors to the island suffer from second attacks of phlebotomus fever, so that supposed recurring attacks of phlebotomus fever elsewhere probably indicate mistaken diagnosis, the real infection being malaria, relapsing fever, enterica or undulant fever, occasionally hepatic amebiasis. In this connexion it may be stated that frequently those persons showing considerable dermal reaction at the site of phlebotomus bites do not contract the fever; this fact suggests an immunity akin to fixation abscess.

Influenza, even in the tropics, is a source of diagnostic confusion, for the coryza may not be a deciding factor, and, though the relative lymphocytosis of influenza chiefly concerns the small variety, while that of phlebotomus fever and dengue is of the larger type, the expected working error in the technique of blood-counts is sufficient usually to nullify aid in this direction. At times outbreaks of phlebotomus fever show as early symptoms, colic, diarrhœa, pharyngitis or bronchitis, and are apt to be mistaken for cases of dysentery or influenza. Inquiries into certain of these outbreaks have revealed the fact that patients who presented these leading symptoms had suffered, at some little time previously, from either dysentery or naso-pharyngeal catarrh. The reappearance of these symptoms may be explained as arising from a general congestion of the body which picks out the weakened parts; the congestion being produced partly by the vasodilatation which accompanies phlebotomus and other fevers, and partly by the hot humid atmosphere which occurs frequently during the phlebotomus season.

Recent investigations have shown the importance of spirochætosis as a cause of short fevers in various tropical countries. A series of leptospora, whether distinct species or only variants of the same, can give rise to fever of a variety of types; the fever may be insignificant and never reach 100° F. or may be more marked, lasting three days or longer, and run a continuous, intermittent or saddle-backed course, with or without relapses. The more severe infections show jaundice, sometimes of a toxic haemorrhagic type. Injection of the conjunctiva and a trace of albumin in the urine seem to be constant signs even in the milder cases. In some of the Malaya series the symptoms were so like dengue that Fletcher considers that some part of the dengue recorded there is really spirochætosis. Leptospora can readily be isolated from the blood during the first seven days of the disease, and from the urine from about the fifteenth day to the twenty-fifth. The relationship of the various leptospora isolated in such infections is the subject of controversy; some workers consider that they all represent one species of free-living spirochæte, acquired in the first place probably from contaminated water, the variations in virulence and in reaction to serological tests being produced by differences in passage, soil, temperature and humidity. Others hold that a series of different species of leptospora is involved, and to these supposed species distinctive names have been given. It is wise perhaps at the present stage of knowledge to be conservative and look upon all leptospiral infections as probably representing gradations of Weil's disease.
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The question arises, is there any simple practical method by which the average worker can distinguish the more severe forms of phlebotomus fever and dengue from the milder cases of Weil's disease, other than by cultural and animal inoculations. Fortunately there is. One of us carried out lengthy investigations into the blood-pictures of the pyrexias commonly met with in the tropics. The results obtained in many cases simply confirmed the findings of other investigators. Briefly, if the fever is of acute onset, and provided the examination of blood-films has excluded the presence of the malaria parasite, or the spirochæte of relapsing fever, then a leucopenia with a relative increase of large lymphocytes points to phlebotomus fever or dengue, whereas a leucocytosis accompanied by an absolute and relative increase of the polymorphonuclears suggests that the pyrexia belongs to the Weil's disease group.

The leucopenia (4,000 per cubic millimetre) lasts for the first three to five days of disease, followed by a leucocytosis shooting up to 15,000 to 20,000 per cubic millimetre, on or about the tenth day of disease. This leucocytosis is transient and disappears in the course of two or three days. The lowest point in the leucopenia occurs six to nine hours after the onset of the pyrexia and is a useful aid to early diagnosis. The differential leucocyte count shows a decrease in the number of polymorphonuclear leucocytes, and an increase of the lymphocytes, especially of the large variety. The eosinophils disappear during the fever and return with defervescence. A late eosinophilia in dengue has been described; it is more commonly seen in Egypt and the Far East than in the Mediterranean littoral—in other words, this post-dengue eosinophilia is found in areas known to be heavily infected with helminthic disease, and may merely indicate a return of the blood picture to its pre-febrile condition.

Furthermore, as Young in West Africa showed, Weil's disease can be distinguished from yellow fever by estimating the amount of albumin in the urine even during the first forty-eight hours of illness—a large amount of albumin indicates yellow fever. Thus a case of suspected Weil's disease showing a solid clot of albumin when submitted to the boiling test is in reality one of yellow fever, and conversely a supposed yellow fever patient with little or no albuminuria is probably suffering from Weil's disease.

The difficulties in sorting out the true undifferentiated short fevers are intensified by an unwillingness to acknowledge failure; this is particularly in evidence in Government services where those responsible for hospital records sometimes prefer a doubtful or even an erroneous diagnosis to none at all. But when every known and available diagnostic test has been tried thoroughly without result, the pyrexia in question is really one of "unknown origin," and this label should be applied, instead of knowingly or subconsciously elevating to causal rank some sign that is only a result of the unknown infection, for at present the "tonsillitis" of one station may be equivalent to the "myalgia" of another, and to the "sandfly fever" of a third, all really representing the same undetermined disease.