considering the shortness of the acute stage, but many managed to recover sufficiently to return to light duty after fourteen days.

CLINICAL NOTES ON PHLEBOTOMUS FEVER.

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PHLEBOTOMUS FEVER occurred in Macedonia as an epidemic which attacked certain units camped in the vicinity of some old ruined buildings.

The *Phlebotomus papatasi* fly was very numerous in the tents and dug-outs, and bites were inflicted both by day and night. Exposed parts were most affected—the

CHART 1.

CHART 2.

CHART 3.

backs of the hands, the forearms, especially the flexor surfaces, the ankles, and the face. A small irritable papule was produced; in one case the papules were so numerous as to simulate a definite rash.

It was found impossible to make any accurate observations as to the fly's radius of action, but whether by actual flight, or more probably by conveyance on wagons and limbers, it was certainly not less than 300 yards, or more than 500.

The Incubation Period.—This varied from four to six days, and was marked by a feeling of malaise and irritability of temper.

The onset was almost invariably sudden, and was usually accompanied by slight shivering; no definite

fur on the dorsum, but was clean at the tip and at the edges. The pulse was in many cases slow; rates of 55 and 50 were common, and in one case the rate fell to 40 during both of two attacks.

The temperature usually rose suddenly to 103° (105° was the highest noted), remained between 102° and 103° for about twenty-four to thirty-six hours, terminating, in the large majority of cases, by a critical fall, and remaining subnormal for three or four days.

The temperature charts showed three main types, depending on the fall and subsequent course of the temperature curve. In the accompanying charts the whole pyrexial period is not shown.

1. Curve showing a critical fall, or much more rarely a gradual one, on the second, third, or fourth day, and remaining subsequently subnormal or normal. (See Chart 1.)

2. Curve showing a critical fall to normal or subnormal, followed by a further rise, either immediate or after a day

or two, the temperature remaining up for one or two days. (See Charts 2 and 3.)

3. Curve showing a critical fall, followed by more than one post-critical rise of temperature occurring at irregular intervals. (See Charts 4 and 5.)

Course.—The prostration became more and more marked as the pyrexia continued, and by the time it subsided might have become very severe. The headache disappeared with the fall of temperature, but the backache and the pains in the limbs frequently persisted for several days afterwards; in several cases the pain only became marked after the fall in temperature had taken place. The slowness of the pulse often persisted for four or five days after the temperature fell. Appetite returned gradually,

CHART 4.

CHART 5.

rigors, however, were observed in any case. A slight degree of nasal catarrh, lasting for the first day or two of the fever, occurred in some.

Symptoms.—Severe headache, either frontal or post-orbital, was invariable; abdominal discomfort—not amounting to pain—backache (very marked in some cases), pains in the limbs, and anorexia usually accompanied it.

Signs.—The face was usually uniformly flushed, but though this flush was in no way typical, it did not in any way suggest the dark, flushed, bloated facies of relapsing fever. The conjunctivæ were injected, but the amount of injection varied, being in some cases extremely marked and hardly noticeable in others. It bore no relation to the severity of the infection. The eyeballs were usually tender on palpation. The tongue showed a thick brownish

but convalescence was slow, and the patient remained debilitated for a week or ten days or even more.

The complications observed were:

Conjunctivitis.—This was quite severe in one case.

Epistaxis.—This occurred in several cases.

Sore Throat.—This, associated with faucial injection, was observed in several cases.

Vomiting.—This was quite marked in one case, and was not due apparently to any outside cause.

Reinfections were comparatively common. They were almost invariably milder; the temperature seldom rose above 100° F. (101.8° F. was the highest noted), and the rise lasted only one or at most two days. The symptoms and subsequent debility were also much less marked, and no complications were noted. No case of more than one reinfection was observed.

The treatment adopted presented no points of special interest. Tinct. opii mxx at the onset, repeated on the second and third nights and combined with magnesium sulphate 1 oz. daily, was found very efficacious. Aspirin relieved the headache and the pains. Easton's syrup was given during convalescence.

Conclusions.

The following would seem to be the chief clinical features in which the disease, as seen here, differed from the commonly circulated descriptions:

1. The occurrence of definite reinfections.
2. The frequency of post-critical rises of temperature.
3. The great variability in the amount of conjunctival injection.
4. The great preponderance of critical falls of temperature over those falling by lysis.

It is also an interesting fact that no cases were noted amongst the Cypriote muleteers camped in the affected area.

We should add that though it was impossible in a district like this definitely to exclude malarial infections amongst the cases studied, only those which from the clinical standpoint were undoubtedly phlébotomus fever were included in the series from which these conclusions have been drawn.

THE INVOLVEMENT OF THE EXTERNAL AND INTERNAL POPLITEAL NERVES IN LESIONS OF THE SCIATIC NERVE.

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DURING the South African war the external popliteal nerve was stated to be involved nine times as frequently as the internal popliteal nerve. In injuries of the sciatic nerve during the present war the proportion is stated to be three to one. Hoffman believed it to be due to the smaller blood supply of the external popliteal; but, on the other hand, this is the smaller nerve. The fact that the internal lies more in line with the femoral vessels and that the external is the more superficial cannot account for the disproportion, as the nerves lie side by side, and bullets pass in all directions.

The external popliteal, corresponding to the musculo-spiral nerve in the arm, supplies muscles which act against gravity. The slightest lesion of the nerve is followed by paresis of the extensor muscles, which is always evident by foot-drop and steppage gait. Great clinical experience is not necessary to make a diagnosis, and, owing to the continual overstretching of the muscles, no improvement follows until proper treatment has been applied.

The internal popliteal, corresponding to the ulnar and median nerves in the arm, supplies the plantar flexors of the ankle, the small muscles of the foot, and sensory fibres to the skin of the heel and sole. The action of these muscles is aided by gravity. In complete division but slight deformity is usually present, and apart from inelasticity in the gait, slight inconvenience is caused; this is shown by the useful movement obtained in complete division of the sciatic after correction of the drop-foot by a suitable boot. In incomplete division slight pes cavus may be present with paresis of the flexor muscles and anaesthesia, trophic changes being usually absent. Voluntary contraction of the flexors produces plantar flexion of the ankle and toes. The paresis is often difficult to observe, unless a careful examination is made, full plantar flexion of the ankle and toes being possible by the action of gravity alone, if the extensors be relaxed. It should be sought for with the patient lying prone and the knee flexed to a right angle, plantar flexion now taking place against the action of gravity. The skin of the sole and heel is not very sensitive, and to excite epicritic sensation in the normal sole slight pressure of the cotton-wool may be necessary. The internal saphenous and the popliteal position of the external saphenous encroach on

the sole of the foot and many of the ligaments are supplied by the external popliteal, and as in an incomplete lesion deep pressure sensation is often retained, the greatest care in applying the cotton-wool test is necessary.

In the case of an incomplete lesion of the internal popliteal associated with a complete or incomplete lesion of the external popliteal, the flexor muscles contract with the aid of gravity, and, as they have not to overcome the normal tone of the extensors, their action may appear to be as great as usual.

Careful examination by a competent observer is necessary for the diagnosis of some of these incomplete lesions. The foot from the time of the injury is placed by the action of gravity in the position of plantar flexion, this relaxes the affected muscles and helps their recovery, even if no treatment be applied.

In lesions of the sciatic nerve admitted to Alder Hey from other hospitals, the external popliteal was affected three times as often as the internal. The greater number of the latter were admitted for the painful neuritic condition, or for the combined lesion with foot-drop.

One hundred cases, admitted direct from France, in which the wound was in the upper two-thirds of the thigh, and there was a possibility of sciatic involvement, were carefully examined by me. The sciatic nerve was involved in 22.

- In 4 the external and internal portions were completely involved.
- In 3 the external was completely and the internal incompletely involved.
- In 2 the internal was completely and the external incompletely involved.
- In 9 the external and internal were both incompletely involved.
- In 3 the external was alone involved.
- In 1 the internal was alone involved.

The external popliteal was thus involved in 21 and the internal in 19 cases. In some of the latter diagnosis was only possible after a most careful examination, and in most cases the associated foot-drop alone caused inconvenience; except in the painful neuritic forms, there was a marked tendency for improvement to occur in the incomplete lesions. Incomplete lesions of the external popliteal did not show the same tendency to recover, and with the slightest paresis diagnosis was always evident owing to the inability to maintain dorsiflexion.

Conclusions.

It may therefore be stated that for diagnosis of incomplete lesions of the internal popliteal nerve a most careful examination is necessary, especially if a lesion of the external popliteal be present. In addition, the muscles are naturally placed in the position of relaxation, and recovery follows in many cases without a diagnosis or any special treatment. Incomplete lesions of the external popliteal are always associated with foot-drop, and, as the affected muscles are overstretched, no improvement follows until a diagnosis has been made and appropriate treatment instituted.

I cannot but think that the majority of lesions of the internal popliteal are never diagnosed, while lesions of the external popliteal are scarcely ever missed. During the examination of certain cases which could not pass the necessary tests at a command dépôt thirty-six nerve lesions were discovered by me, in spite of the fact that all cases should have been fit for general service four months after admission; thirty-five were previously undiagnosed lesions of the median and ulnar nerves, while only one was a lesion of the musculo-spiral, and this had been operated upon. Lesions of the median and ulnar nerves do not usually give rise to a deformity of a degree comparable to that present in musculo-spiral lesions. It therefore seems that even in the arm nerve lesions are more likely to be missed by inexperienced observers if marked deformity be absent; this must apply all the more to the leg, where special function of the toes is not required.

At a meeting of the Société de Biologie on March 23rd Professor Richet read a paper on the mechanism of death by haemorrhage. He stated that in a dog bled to 4 per cent. of its weight, respiration was profoundly affected by the position of the head. If it were lowered the animal breathed regularly; when it was raised respiration became asphyxial. He concludes that death by haemorrhage is due to cerebral anaemia.