to 102° or 103°, but occasionally the initial symptoms preceded the fever by 14 hours. Conjunctival congestion and pain on pressing the eyeballs were a common finding. The fever lasted from 1 to 8 days, but in most cases from 3 to 4 days. In about 10% there was a short secondary rise of temperature, usually about the 6th or 7th day. The initial temperature was sometimes over 105°, and the prostration was great. Many of the patients appeared very ill, and in a few instances the photophobia was agonizing. Drowsiness was sometimes pronounced, and in one patient the cerebrospinal fluid contained 110 lymphocytes per c.mm. and 90 mg. of protein per 100 c.cm. The colloidal gold test was negative. The disease was often followed by debility and depression. There were no complications and no deaths. Members of the hospital staff were usually off duty for 7 to 12 days and sometimes longer. Several senior N.C.O.s who had never been in hospital before were affected. Some of the patients who had previously suffered from malaria remarked that sandfly fever "knocked them out" far more than malaria.

The classical clinical picture and the known heavy infestation of the camp with the phlebotomus left the diagnosis in little doubt. The *Aedes aegypti* had not been seen, and dengue could be excluded. Neither malarial parasites nor spirochaetes were seen among the many hundreds of blood slides examined.

Immunity

It is sometimes said that one attack of sandfly fever confers a sound and lasting immunity. This is not our experience. It is true that both hospitals were newcomers to the district. Hospital B had recently arrived from England, and although Hospital A had been in the Middle East for a considerable time, it had been in a district where the disease was unknown among the staff. In the present epidemic 15% of the N.C.O.s and men had two attacks, and some had three attacks, during the three-months period, at intervals ranging from two weeks to three months. The initial symptoms of the later attacks were often as severe as those of the first attack, but the illness tended to be shorter. Between the attacks the men were on duty and felt fit. The attacks ceased abruptly at the end of October. It seems clear that second attacks were not relapses but fresh infections. It is possible that men succumbed to a fresh infection before immunity had developed or that a second attack was caused by a different strain of infection. It appears, however, that one attack conferred little or no immunity in this area.

Control

Antimalarial precautions were strictly observed by the personnel of both units. At Hospital B from September onwards all tents were "flitted" in the evening and half an hour before reveille. Men were ordered to be properly clothed until the sun was well up. These measures had little effect on the incidence of the disease.

At Hospital A an attempt was made to stem the tide of the epidemic among patients in hospital for other diseases. It was obviously impossible to deal with the breeding-grounds of the phlebotomus. This would have entailed concreting or asphaltting the whole site. Acting on the assumption that the phlebotomus starts biting at about 9 p.m. and continues until the sun is well up, the following measures were adopted early in September and rigorously enforced:

Every patient suffering from or suspected to be suffering from phlebotomus fever was nursed under a sandfly net day and night until he was afebrile. All other patients had their nets lowered from one hour before sunset until the wards had been "flitted" the following morning. Every ward and annexe (including latrines) was "flitted" three times a day—just before wakening the patients, before the evening lowering of the nets, and at "lights out."

A glance at Chart 3 suggests that these measures had little or no effect on the incidence of the disease.

A suggestion was made that the infection might be controlled in the wards by burning pyrethrum powder throughout the night. The epidemic ceased, however, when this suggestion was made.

If there should be another epidemic in the future, it is proposed to carry out a controlled experiment, using the burning powder in two out of four tents in each group of tented wards.

SANDFLY FEVER AND THE RHEUMATIC SERIES

BY

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The similarity between sandfly fever and influenza is generally known, though I have not heard of this fever being associated with the rheumatic series. Towards the end of the Sicilian campaign I had two cases of sandfly fever, and one case which, for want of a better diagnosis, I have named "pyrexia of rheumatic origin"; all three cases bore a remarkable similarity—so much so that I consider them worthy of record.

Case Histories

Case 1.—Diagnosis, sandfly fever. This patient, a leading stoker aged 22, went ashore in Sicily on the evening of Aug. 5, 1943, for recreational leave. On the evening of the 9th he reported to the sick bay, stating that he felt as if he had influenza. His temperature was 102° and his pulse rate 96. He complained of general stiffness of his limbs, intense pain behind the eyes, slight epigastric discomfort, and pain in his abdomen which radiated to the loins. He vomited twice during the evening, before reporting. On examination he was flushed, his conjunctivae were injected, and his tongue was furred. He was suffering from numerous insect-bites on his legs and trunk. His temperature slowly resolved, as is shown on the chart, and his symptoms abated with the diminution of fever. He was given 10 minims of tinct. opii three times a day, and tinct. iodi mitis to the insect-bites; he was also given A.P.C. tablets for the headache.

FIG. 1.—Temperature Chart of Case 1.

Case 2.—Diagnosis, sandfly fever. A leading stoker aged 24 went ashore in Sicily on the evening of Aug. 5, 1943. On the morning of the 11th he reported to the sick bay, complaining of intense supra-orbital headache and stiffness at the back of the neck and on the shoulders. He said that he had been feeling "off colour" for 24 hours previously. He complained of general lassitude and tiredness, but otherwise felt all right. His temperature was 101° and pulse 80. Towards the evening he sweated profusely, his face became swollen, and he suffered from severe conjunctivitis. He found difficulty in resting quiet in bed because of generalized aches and pains. There were a few isolated insect-bites on his trunk and legs, and he suffered from nausea and could not take his food. On the 13th the conjunctivitis cleared, but the headache persisted until the 18th. The generalized aches and pains in his limbs settled on the evening of the 15th, and from then on he appeared to be much better. He began taking his food normally, and finally was allowed up on the evening of Aug. 19, after eight days' sickness. He was treated with tinct. opii 10 minims b.d., aspirin and phenacetin aa gr. 5 S.O.S., luminal gr. 2, to help his insomnia.

FIG. 2.—Temperature Chart of Case 2.

Case 3.—A leading seaman aged 20 reported to the sick bay on the evening of Aug. 11, 1943, stating that he was suffering from an influenzal attack; he had not been ashore for some time. He said that he had been feeling ill all day, but thought that he would

"try and stick it out." He said he suffered from aches and pains in his back and legs, especially in the muscles of the calf and in both knee-joints. He also had a severe frontal headache. He said that he had had rheumatic fever eleven years previously, and since then had suffered almost every year from similar attacks. In civilian life he went to bed and was attended by his doctor; the last attack was two years previously. On examination his temperature was 104.8° and his pulse 120. The only physical sign detected was a soft presystolic mitral murmur, which was not heard four days after the onset of the pyrexia. He was confined to his hammock and given mist. sod. sal. gr. 20 and luminal gr. 2. The following day he was given mist. sod. sal. gr. 20 and aspirin gr. 10 t.d.s. On Aug. 14 all medicines were discontinued, and he returned to duty quite well.

FIG. 3.—Temperature Chart of Case 3.

Owing to the exigencies of the Service at the time it was only possible to obtain blood films from each of the patients on Aug. 12, 1943, and examine them microscopically in a large ship, in order to exclude malaria or leishmaniasis; blood counts were not done. No parasites were found in a careful examination of the slides. Paratyphoid, dengue fever, and influenza were all considered, and were rejected as improbable. Cases 1 and 2 were diagnosed as phlebotomus fever, and Case 3 as pyrexia of rheumatic origin. These patients suffered from intense supra-orbital headaches and generalized "rheumatic" pains, which varied in intensity. In all three cases there was absence of severe gastro-intestinal symptoms such as may be expected in the later stages of sandfly fever. The pyrexial period varied between 3 and 8 days. Bradycardia was not noticed in either of the cases of sandfly fever.

Conclusion

Case 3 resembled no particular syndrome with which I am familiar, but appeared to be related to the rheumatic series of diseases.

The cases resembled one another closely, and, by coincidence, occurred at the same time.

Cases 1 and 2 were diagnosed as phlebotomus fever because of the short duration of pyrexia, the presence of insect-bites, and the symptomatology. The fever, as is known, is caused by a virus introduced by the bite of *Phlebotomus papatasi*, which is present in large numbers in Sicily from May to October.

Almost constant "action station" routine caused the patients discomfort owing to the stuffy atmosphere in the ship, but it was possible to treat such cases of high pyrexia on board a destroyer provided that the patient was nursed efficiently.

According to Wenscher (*Dtsch. med. Wschr.*, 1942, 68, 984) neurological signs aid in the early diagnosis of typhus. The first indication is sudden high rise in temperature, accompanied by a typical and unusually stubborn headache which responds only slightly to analgesics. An additional sign is hardness of hearing, which occurs in almost all cases. If these signs are accompanied by speech disorders and the characteristic twitching of the perioral muscles the diagnosis of typhus exanthematicus is assured even without a distinct exanthema. Therapy consists in relieving the pressure. Apathy or restlessness responds quickly to lumbar puncture; circulation and respiration improve and the distressing headache disappears. Along with the essential support of the cardiovascular system, the main therapeutic concern is the prompt reduction of increasing pressure in the c.s.f. For this reason strophanthin should always be given in strongly concentrated glucose solutions, which exert a dehydrating action. After damage to the vasomotor and respiratory centres, the next most important danger is the occurrence of bulbar paralysis.

Medical Memoranda

An Unusual Form of Ectopia Testis

Sir John Thomson-Walker (1936) quotes Eccles (1903) as considering it extremely doubtful if the testis is ever spontaneously passed into the upper part of the thigh through the femoral ring. The following is the record of such a case.

Cpl. A., aged 43, was admitted to hospital with the diagnosis of right inguinal hernia. Seven years previously, while engaged in heavy work, he felt a sharp pain in the right groin followed by the appearance of a lump; the swelling had remained there since. Examination showed a swelling the size of a hen's egg in the right groin, over the junction of the middle and inner thirds of the inguinal ligament. The swelling was not reducible, felt cystic, and was attached to the deep tissues. The right testicle was present in the scrotum, the left half of which was empty.

Operation showed the swelling to be an ectopic testis which had descended through the femoral ring and canal, and had all the coverings of a femoral hernia. A hydrocele was present; this was aspirated, and the testis then made to retrace its path, the femoral ring being exposed from above as in Lotheissen's operation. Dissection revealed a hernia of the congenital type, the neck of which was very narrow. The fluid in the sac had been restricted to the distal extremity by the constriction to the sac as it passed through the femoral ring, forming a hydrocele of the hernial sac. The spermatic cord consisted only of a fine bunch of vessels, the testicle itself being extremely atrophied.

Two interesting features are that the testis had passed through the femoral ring to gain the upper part of the thigh, and that both normal and ectopic testes were on the same side, the surmise being justifiable that one testis found its way through the femoral ring because the normal passage through the inguinal canal was already occupied.

My thanks are due to Prof. R. C. Alexander, Surgical Director for the area, for permission to publish this case.

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Recovery after 700-foot Fall

The following case would seem unusual enough to merit being placed on record.

CASE REPORT

A well-built paratroop pupil aged 25, weighing 11 st., was parachute-jumping from an aircraft travelling at 80 m.p.h., at a height of 700 feet, into a 10 m.p.h. wind. Unfortunately, although the parachute came out of its pack, the canopy did not develop properly, with the result that the pupil landed some 10 seconds later on a ploughed field, dropping at a speed which must have been in the region of 50 m.p.h. When examined a few seconds later he was found to be still alive and just conscious. He was lying on his left side in a crouched position, with his knees drawn up towards his chin. The pulse rate was 70 a minute and weak; breathing was shallow and difficult owing to much mucus being brought up, and there was a small amount of thin yellowish fluid exuding from his right ear. Physical examination showed no obvious signs of fracture or paralysis. The pupils were equal and of normal size.

A "tubonic" ampoule (morphine hydrochloride gr. 1/3, atropine sulphate gr. 1/120) was given, following which he was put on to a stretcher. A few minutes later he became very restless, and as he was now trying to move his arms and legs he had to be strapped securely to the stretcher during transit to hospital. Next day he looked very ill, but was cheerful and mentally clear, showing no signs of disorientation or amnesia. He could move his arms and legs without difficulty and his excretory functions were normal. Two days later the improvement was so marked that he was considered fit for x-raying, when it was discovered that he had a compression fracture of the 12th thoracic vertebra. After immobilization in a plaster cast progress was satisfactory and uninterrupted.

COMMENTARY

Partial failure of a parachute is extremely rare and is almost as unique as this man's survival of the accident, which was undoubtedly an extraordinary escape, especially in view of the fact that all previous occurrences of this nature had resulted in instantaneous death either from multiple injuries or from fractured cervical vertebrae.

Reliable eye-witnesses of this descent were of the opinion that the degree of inflation of this soldier's parachute was so slight and his fall so rapid that he could not possibly escape death. It is thought that he landed on one foot and fell sideways, thus preventing the full force of his landing being transmitted through the legs and spine to the base of the skull,