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NOTES OF CASES OF MEDITERRANEAN FEVER OCCURRING IN GIBRALTAR DURING 1906.

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During the year 1906, three cases of Mediterranean fever were reported amongst the civil population. The first case was notified on May 19th, the second on November 27th, and the third on December 17th. There were no cases amongst the troops. The particulars of the civil cases are as follows :—

Case 1.—J. A. T., aged 30, a native of Gibraltar, employed as a shop assistant, was in good health until May 7th, when he began to suffer from continued fever. His blood was examined, and the serum, diluted 1 in 160, caused complete agglutination of the *Micrococcus melitensis* in half an hour. The man stated that, being somewhat debilitated, he had been in the habit of drinking daily a glass of goat's milk, which was boiled by his wife. The other members of his family used condensed milk. At the time when the fever developed there were

no mosquitoes or biting flies to be found, and the sanitary condition of the house was above suspicion. Also, no cases of Mediterranean fever had been reported since November 5th, 1905. The goat's milk consumed by the patient was brought from Spain, several gallons being consigned to a contractor, who again retailed it. The goats supplying the milk could not be examined, so a sample was taken from the next consignment received after the notification of the case, and tested for agglutination. The deposit from 50 cc. after centrifugalisation was also plated on nutrose agar. The milk gave no reaction, and the *M. melitensis* could not be recovered. The man attributed his illness to the consumption of fresh cheese made from goats' milk. On April 23rd he visited the neighbouring Spanish town of Linea and ate heartily of this particular variety of cheese; a few hours later he felt ill, but speedily recovered and was in his usual state of health until April 7th, when fever set in. Fresh cheese is made by coagulating goats' milk with rennet; the curd is then placed in a mould to drain, and may be eaten eight hours later, but usually twenty-four to forty-eight hours elapse before it is consumed. Knowing from previous examinations that some o the goats in Linea are infected, it appeared possible that the *M. melitensis* might have been retained in the curd and caused the infection. Unfortunately, fresh cheese could not be obtained in May, as the dairymen stated that it was only made in the months of February, March and April, when milk was so plentiful that all of it could not be sold for drinking purposes. The cheese received had been made three weeks, and though dilute emulsions were made and plated on nutrose-agar, the *M. melitensis* could not be recovered.

CASE 2.—F. A., aged 22, a native of Gibraltar, having been in delicate health for some time, went to reside on a farm close to the Spanish town of San Roque, during the months of July, August and September. While at the farm he drank milk supplied by a small herd of goats. On October 8th he returned to Gibraltar, apparently in good health, but twelve days later developed continued fever, and on November 26th his blood serum, diluted 1 in 160, completely agglutinated a recent culture of the *M. melitensis*. The farm was then visited, and the herd found to consist of twenty-eight goats, one being of pure Maltese descent. A sample of blood was taken from each of the goats, and the serum tested in the usual manner. The sera obtained from four of the goats caused agglutination of the *M. melitensis;* one, a spanish goat ("Harropa"), reacted in a dilution of 1 in 40, and the remaining three, two Spanish and one Maltese, reacted in a dilution of 1 in 10. Unfortunately, all the goats were found to be pregnant, and milk could only be obtained from the Spanish goat "Harropa" and from the Maltese goat "Paloma." The milks were diluted 1 in 5, and tested with *M. melitensis* for an agglutination reaction. The milk of "Harropa" caused instantaneous clumping, but that of "Paloma" gave no reaction. Ten centimetres of the

milk from "Harropa" were then centrifugalised, and the deposit plated on litmus-nutrose agar; the *M. melitensis* was readily isolated from the plates. The chain of evidence in this case appears complete; there can be little doubt that the man acquired Mediterranean fever by drinking infected goats' milk.

CASE 3.—J. A., the captain of a British sailing ship, arrived in Gibraltar on December 7, 1906, and was seized with fever the same day. He stated that he had recently discharged a cargo of timber in Malta, and remained there thirteen days. He slept on board his ship, but frequented *cafés*, where he used to drink two or three glasses of goats' milk daily. He had visited Malta on four previous occasions, but always drank whiskey or beer in the *cafés;* this year, being an abstainer, he only drank milk. Seventeen days after leaving Malta, while at Marseilles, he suffered from fever, which subsided after about a fortnight; he then sailed for Gibraltar and had a relapse immediately on his arrival. He was admitted into the Colonial Hospital, and a specimen of his blood being obtained, the serum, diluted 1 in 40, was found to completely agglutinate the *M. melitensis*, the clumps being visible with the naked eye.

In Gibraltar the supply of goats' milk is most plentiful during the months of February, March, April, May and June. It begins to rapidly decrease in July, and is comparatively scarce and much dearer during the winter months. Owing to the favourable temperature and rich pasturage in the spring, the goat-herds arrange that the female country goats shall be impregnated, so as to be in milk at this time of the year. In order to obtain the winter supply of milk, stall-fed goats of better breed coming from Malaga are covered, so as to give milk from September to December, but the quantity available is comparatively small. The increased supply of milk during the early summer months may help to explain the rise in the Mediterannean fever wave, which used to occur during March, April, May, June and July.