obtained in a low dilution, altogether different from the rapid and complete result obtained on the previous occasion.

Another point of interest is in connection with the count of the white cells of the blood; there was a marked relative leucocytosis, but apparently only a slight absolute leucocytosis. But it must be noted that, at the time when this count was made, the red blood cells were only half the normal number; if, then, the white cells had been present in normal ratio there would only have been 4,000 in the cubic millimetre, whereas there were 11,000, or nearly three times the normal. The normal ratio of white to red is about 1 in 700; in this case it was 1 in 300 or thereabouts.

Major Rogers, I.M.S., has pointed this out and recommends that a count of the red cells should be made in all cases of suspected liver abscess, otherwise a true absolute leucocytosis may be missed. Thus, if a case showed 10,000 white cells to the cubic millimetre, and no count of the red cells was made, it might be said that the white cells were only slightly over normal, whereas, if a red cell count was made and it was found that the red cells were only 2,500,000 per cubic millimetre, then there are really more than twice the proper number of white cells present.

In conclusion, I beg to express my indebtedness to Lieutenant-Colonel Franklin, R.A.M.C., for his kindness in allowing me to publish these notes; to Major L. Way, R.A.M.C., for assistance throughout the course of the case; to Major McDermott, R.A.M.C., for assistance at the operation, and to Assistant Surgeon Kidby for the able manner in which he has looked after the case throughout.

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

By Major W. H. Horrocks.

Royal Army Medical Corps.

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 con-
sumed 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 consump-
tion 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 of 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 agglu-
tination reaction. The milk of "Harropa" caused instantaneous clumping,
but that of "Paloma" gave no reaction. Ten centimetres of the
milk from “Harropa” were then centrifuged, and the deposit plated on litmus-nutrose agar; the \textit{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.

\textbf{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 cafes, 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 cafes; 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 \textit{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 Mediterranean fever wave, which used to occur during March, April, May, June and July.

\textbf{INCONTINENCE OF URINE IN THE SOLDIER.}

By \textsc{Major P. G. Ievors.}

\textit{Royal Army Medical Corps (R.).}

\textsc{Having had a few outbursts of this malady to deal with from time to time, I should like to give my experiences, and, in the first place, I have noticed that previous writers on the subject in the Journal of the Royal Army Medical Corps, when going into the etiology of this affection, do not appear to have been struck by the important part played by the season of the year. In this connection I have invariably found that, when the occurrence prevailed almost in epidemic form, the nights were long and the weather very cold. But coming to the investigation of the individual case, the latter can, as a rule, be divided into three classes:—}