The average amount of serum used in the cases which recovered is as follows: In 29 cases the average intrathecally was 56 c.c.; in 27 cases the average intravenously was 146 c.c.; in 19 cases the average subcutaneously was 106 c.c. The smallest amount intrathecally to any case was 15 c.c.; the largest was 220 c.c. The smallest amount intravenously was 50 c.c.; the largest amount was 319 c.c. The smallest amount given subcutaneously was 35 c.c.; the largest amount was 185 c.c. The average total serum used in 31 cases which recovered was 277 c.c. The smallest amount was 50 c.c.; the largest amount was 645 c.c.

In the earlier cases treated in this way recovery was generally rapid, the temperature being normal in from four to eight days. Of the cases met with in November several of them ran a very irregular temperature, in some cases for four or five weeks. All these cases had previously suffered from influenza. Owing to the numerous cases occurring at this time, and also to there being a threatened shortage of serum, many of these cases had not received such large doses of serum in the early stage of the attack as they would have done. Whether this is the explanation, or whether the previous attack of influenza had reduced their resisting power, it is impossible to say. It was not considered advisable to use any more serum after the occurrence of a serum rash. These cases were accordingly treated by frequent L.P. and the administration of anti-meningococcal vaccines. In the early acute stages of the disease, when a virulent blood-infection is present, I have been averse to the use of vaccines, but in the later and more chronic stage I consider vaccine treatment not only safe but advisable. The vaccine was used in very small doses, about 45,000,000 at first, and repeated every day or every other day in gradually increasing doses, the interval being increased with the increase of dose. In several of the cases it would appear that the vaccine was very beneficial, and in no case could it be said that any harm whatever had resulted from the treatment.

In this chronic phase of the disease simple L.P. without the injection of serum was performed and repeated daily in many cases. Two men had L.P. done ten times, one man thirteen times, one man seventeen times. One of the women patients had it done thirteen times. There was never any septic infection of the tissues over the third and fourth lumbar spaces where the punctures were made, and none of the patients complained of more than a little local soreness.

Very little medicinal treatment of any kind was employed. For the headache morphia in doses of $\frac{1}{6}$ grain to $\frac{1}{3}$ grain was found extremely valuable in relieving the pain and quieting the restlessness of many of the patients. Pituitrin was found very valuable in combating the heart-failure following the intravenous injections. Many of the patients became very emaciated in the chronic form of the disease, and every effort was made to press as much food as possible on the patient. Incidentally it may be remarked that the ability to take food was a valuable indication of the favourable progress of the case. The patients were in rooms where an abundance of fresh air could be admitted, and this was regarded as a very valuable aid in treatment.

Results.

In the 36 military cases under treatment the deaths were 8, or 22·2 per cent. Two of these deaths were in the first three cases in which intravenous serum was not used in the early stages of the disease. In the remaining 33 cases 6 deaths occurred, or 18·2 per cent. It may be pointed out that one of these cases was admitted from influenzal pneumonia affecting both lungs, and it is doubtful if he would have recovered from the pneumonia apart altogether from the meningococcus infection. Another man was also suffering from pneumonia following influenza, and had a very large abdominal tumour, which was found post-mortem to be a huge pyonephrosis, containing over 6 pints of pus, which on culture gave a pure growth of staphylococcus aureus. He stated he had had a tumour in the side for some years, following a severe injury. Two of the other cases (13 and 15) died, the former one hour and the latter fourteen hours after admission to the ward. Of the remaining cases, one, as already mentioned, was an intense blood-infection, while another was an intense meningeal infection. Both these men were treated with large injections of serum, but the first died after fifteen days' illness, and the latter after sixteen days' illness. Of these 6 cases, therefore, 2 died before treatment had any chance to prove effective, and 2 had serious concurrent disease.

The death-rate, with the 4 civilian cases included, is 6 out of 37 cases—*i.e.*, 16·2 per cent. There were 5 cases in which the diagnosis was made on the clinical symptoms. If these cases are ignored and only those cases taken in which the meningococcus was found either in the blood or C.S. fluid, or in which pus was found in the C.S. fluid, the death-rate is 6 in 32, or 18·7 per cent.

Remarks.

During the influenza epidemic in November 14 men were admitted to the cerebro-spinal meningitis ward who had suffered from influenza, the date of the attack being noted. The average time from the commencement of the influenza to the commencement of the cerebro-spinal fever was eleven days—the extremes being six days and eighteen days. The cases had all been admitted to various hospital wards or temporary hospitals, and were doubtless contacts of cases of cerebro-spinal fever or of carriers of the meningococcus, and no particular significance can be attached to these figures. The usual routine of taking a throat-swab of men admitted to hospital and examining for meningococci could not be continued during the epidemic owing to the great number of cases admitted and to the depletion of the staff of the Bacteriological Laboratory. On this account no record of carriers could be obtained.

There was only one case which has any bearing on the incubation period of cerebro-spinal fever. This case had not suffered any previous illness and had been quartered in a tent, and as far as is known had not been exposed to infection till he entered the hospital ward as an