INCIDENCE AND MORTALITY.

Cerebro-spinal Fever.—In all 59 cases of this disease have been dealt with during the year 1916 among the troops. Of these, 4 cases were treated in hospitals outside the camps—one in Auckland, one in Masterton, one at Otaki, and one in Timaru—these patients being men on leave from Trentham or Featherston. Certain cases given in the returns as "measles" and "influenza" are included, as subsequent results revealed meningococcal infection. In 5 cases soldiers on leave were notified from outside the camp as probably suffering from cerebro-spinal meningitis. The diagnosis lacked confirmation, and they are not included in the 59 given above.

Of the 59 cases 36 died, giving a case mortality of 61 per cent. Thirty-five of the cases came from Trentham Camp, of whom 21 died, yielding a case mortality of 60 per cent.; 24 cases came from Featherston Camp, of whom 15 died, a case mortality of 62·5 per cent. The mortality in the two camps, therefore, is much the same. No cases were reported from Awapuni or Narrow Neck Camps.

The mortality shows a marked seasonal variation. Thus from January to the end of July 14 cases occurred, with 12 deaths—a mortality of 80 per cent.; from the 1st August to the 31st December 44 cases, with 24 deaths, occurred—a mortality of 54·5 per cent. It is shown in the following table:—

Seasonal Mortality.

Month.	Trentham.		Featherston.		Totals.		Percentage of Deaths.
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
January	1	1	..	..	1	1	
February	..	..	..	..	..	..	
March	..	..	2	2	2	2	75
April	..	..	..	..	..	..	
May	..	..	3	2	3	2	
June	..	..	2	1	2	1	
July	5	5	1	1	6	6	100
August	14	8	1	1	15	9	60
September	5	0	8	4	13	4	30
October	7	5	3	2	10	7	70
November	2	1	2	0	4	1	57
December	1	1	2	2	3	3	

The difference in the mortality between July and September is very marked, especially at Trentham. It rises again very noticeably in October, and though the figures for November and December are too small to yield a reliable percentage it is evident that the mortality was again tending to decrease. The drop in mortality in September has been attributed to the use of autogenous vaccines; but, as the same methods of preparing vaccine were followed in October, when the mortality rose, this explanation does not seem sufficient. In most epidemics of infectious disease there is a tendency for the virulence to decrease towards the end of the outbreak, and as nearly all the cases in September occurred in the first two weeks one can regard them as the final cases of a first outbreak, and the October cases as being the beginning of a second epidemic with renewed virulence.

Pneumonia.—A total of 50 cases of pneumonia following measles occurred in men from the two main camps during 1916. Of these 35 were fatal, yielding a case mortality of 70 per cent. Thirty-one cases were reported from Trentham, with 19 deaths—a case mortality of 61·3 per cent. Of these 31 cases 1 was reported from Dunedin Hospital. Of the 19 cases which occurred at Featherston 16 died—a case mortality of 84 per cent. The high mortality at Featherston probably is due to the presence of a special type of infection throughout the year, whereas at Trentham this type did not appear till July, as will be noticed when we consider the seasonal variation.

The seasonal variation in mortality wholly differs from that of cerebro-spinal meningitis. Thus at Trentham up to the middle of July, out of 10 cases only 2 deaths had occurred. From the 16th July to the 31st December out of 21 cases only 3 recovered, which closely corresponds with the figures for the whole year at Featherston. The appearance of the fatal type of pneumonia at Trentham corresponds with the appearance of cerebro-spinal meningitis at that camp, the first case of which occurred on the 20th July. It was subsequent to that date that the pneumonia cases following measles became so virulent. At Featherston, on the other hand, cerebro-spinal meningitis had been present since March, and the pneumonias (which first appeared in that month) were all of a virulent type. Of pneumonias not connected with measles, 12 cases occurred at Trentham, with 5 deaths. Some of these may have been cases of the specific infection accompanying the cerebro-spinal meningitis outbreak. Certainly one which occurred in November and followed influenza had all the features of the virulent post-measles type, and proved fatal. Two others which occurred in the latter half of July after the cerebro-spinal meningitis outbreak began also were fatal. It is probable these 3 deaths were cases of specific infection. Of the remaining 9 pneumonias not following measles the majority occurred before the cerebro-spinal meningitis outbreak, and it is possible that they were—like the earlier post-measles cases—simple pneumococcal infections. Assuming that this is the case, we find the mortality at Trentham from