

WAR STORY OF THE C.A.M.C.

reduced the death-rate. There were the alternatives either that the cultures of meningococci used to produce the serum had in the course of years lost their virulence and other properties, so that when inoculated into animals they set up no adequate reaction, and no adequate discharge of protective substances into the blood, so that the blood serum gained from the inoculated animals was no longer capable of destroying the meningococci when injected into the patient suffering from the disease; or, on the other hand, it might be that in the Army cases we dealt with another order or strain of meningococcus, which was not influenced by the serum produced by inoculating animals with the original New York or other meningococci of previous epidemics. Recent observations at the Rockefeller Institute had conclusively shown that there exist at least four strains of the organism (pneumococcus) associated with acute lobar pneumonia. Did the same condition of affairs obtain in association with cerebrospinal fever? It was this problem that Captain Ellis set himself to answer. The work required the exact study of as many cultures from different cases and laboratories in England and France as he could obtain, and a long series of delicate observations upon guinea-pigs and animals of the laboratory. To carry on such work just behind the Front within the radius of heavy gun activity, with bombs dropping from time to time from overhead and disturbing the laboratory, with laboratory supplies uncertain, and routine work a first consideration, all this increased the difficulty of the task. It is to the credit of Captain Ellis that notwithstanding all these hindrances, he was able, in December,