

obviously impossible to attempt to deal with such carriers in ordinary civil life. In the precautions taken in camps these carriers were dealt with, although on a broad basis. No attempt was possible towards separating out the true meningococcal carrier from carriers of allied organisms. All suspicious throats were regarded as possible carriers and treated accordingly, and the result justified this simple method of dealing with the problem. In one case at least the influence of the carrier was demonstrated in the case of a man, "G.," in the 35th Reinforcements, who was found to be a carrier on mobilization, when he was isolated, and the throat apparently cleared up on treatment. A month afterwards he developed a bad cold, and four days later "M.," the man who slept next to him in the hut, developed cerebro-spinal meningitis, from which he died. Two other men in the same hut were found to be carriers. All were isolated and treated, but "G.'s" case was a very obstinate one and resisted all applications. He was finally discharged as a chronic carrier. It is interesting to note that "G." and "M." were tent-mates, yet "M." suffered no harm till "G." developed a severe cold. This case seems to bear out the conclusion shown in the Local Government Board report that the organism borne by the carrier may be a harmless saprophyte until some circumstance, such as the development of a catarrhal complaint in the carrier, may raise its virulence to a harmful extent.

Some attempt was made to ascertain from which districts the suspected throats came. The results were too few to be conclusive, but in general it appeared that "dirty throats" were more common among troops who had recently undergone a long railway journey, when doubtless the crowded conditions would lead to infection being spread. It was noticed that during the influenzal epidemic carriers were not more common than at other times. If this were confirmed by wider observation it would go to support the idea that the effect of influenza was indirect, not increasing the carriers, but making existing ones more dangerous and susceptible persons more easily infected. Everything which our experience in the past year has taught, and which recent reports from other places show, confirms the opinion developed last year that the first step towards combating meningococcal outbreaks is the avoidance of overcrowding, and of all conditions leading to catarrhal infections.

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REPORT OF PRINCIPAL MEDICAL OFFICER ON PREVAILING DISEASES AND SANITARY MEASURES IN TRENTHAM MILITARY CAMP.

I took over the duties of Principal Medical Officer from Lieut.-Colonel Andrew on the 12th November, 1917.

During the year 3,073 T.A.B. inoculations of soldiers were performed. 35,423 throat-swabbings were taken and slides examined microscopically. Of these, 944 were classed "suspect," and the men were sent into isolation camp for treatment by spraying twice daily. The average time required before the throat-swabbings became "clean" was three days. The great majority of these cases were "suspect" through organisms resembling meningococci being present in the naso-pharynx. Eighteen cases were definitely proved to be diphtheria-carriers. Spray treatment was not so effective in clearing away diphtheritic micro-organisms as in the former class. The duration of the isolation-period in cases of diphtheria-carriers varied from 14 to 183 days, the average being 51.56 days; the test of freedom from infection being two negative cultures shown at intervals of a week.

Seven cases of Vincent's angina were also isolated and subjected to spray treatment with little benefit, the topical application of organic arsenic compounds—viz., Atoxyl and Galyl—being more effective.

Spray treatment has been in daily use all the year for various conditions. Cases of "sore throat" of any kind have all been sprayed at once whatever the subsequent treatment might be. All measles and C.S.F. contacts were treated by spraying, and on several occasions a whole Reinforcement has been put through spray-rooms. Using our permanent spray-room with temporary rooms, and allowing ten minutes for time of spraying, a thousand men can be treated in five hours. The treatment is very effective in catarrhal conditions, and seems of great value in cases of diseases likely to be spread by naso-pharyngeal infection.

All Reinforcements as soon as recruits come into camp have post-nasal swabs taken and suspects treated by spraying. Swabs are also taken on sick-parade as considered necessary, and in all cases admitted to hospital. Immediately prior to embarkation each Reinforcement is swabbed, and suspects treated by spray and not allowed to embark if the microscopical examination still shows them suspect. It seems justifiable to credit to a large extent the reduction in the numbers of cases of infectious diseases in 1917 as compared with 1916 to the general use of the spray. Chloramine solution was sometimes used, but the routine solution was 2 per cent. sulphate of zinc in the solution-bottle of the spraying-apparatus.

New medical offices were finished and occupied at the end of February. A small laboratory was arranged by erecting a partition at one end of the Medical Record room, and work was commenced in May. The work done is outgrowing the accommodation, increase of which will have to be considered. Besides throat-swabs examined the following work was done: Pus-examinations, 227; bacterial cultures made and examined, 709; sputum-examinations, 69; bacteriological examinations of urine, 56; blood-examinations, 17.