

ACTERIOLOGICAL FINDINGS IN CASES OF INFLUENZA AT CAMP CRANE, ALLENTOWN, Pa.

Just previous to the outbreak of influenza, there occurred 2 cases in Officers in which the influenza bacillus of Pfeiffer was isolated in pure culture. Nasal swabs taken upon a large number (200) of officers at this time failed to show influenza-like organisms excepting in a few instances, in only one of which was the organism recovered in pure culture. With the outbreak of the epidemic a bacteriologic study was made of fifteen (15) uncomplicated influenza cases. The media used was laked human blood agar plates. On each patient a swab was taken from the nose, one from the throat, and one from the naso-pharynx with a test tube and in those cases in which sputum was available a smear was examined and it was cultured. Of all the swabs taken from the nose one showed the bacillus of Pfeiffer. Of those from the throat, five were found. Of those from the naso-pharynx two were found. The organism was seen in smears from the sputum in six cases and recovered in cultures in three cases.

Subsequent to this work the sputum was examined from 29 cases which developed pneumonia. In direct smears influenza-like organisms were seen in all but one case. These organisms were the predominating flora in 24 out of the 29 cases; they were practically in pure culture in 18 out of the 29 cases.

On one occasion the sputums from 14 cases of pneumonia were examined with a view to typing any pneumococci present to justify mouse inoculation. None of the mice inoculated were dead at the end of 24 hours; 3 of the 4 had sufficient growth and were killed. The strains isolated failed to react with sera of a fixed type and were accordingly classed as Group 4.

Of the cases that died smears taken from the sputum a short time previous to death showed in 4 cases practically a pure culture of "B" influenza, in one of which the organism was recovered in pure culture. In one instance, "Babeock", the bacillus of Pfeiffer appeared in the sputum in large numbers at first but was later replaced by large numbers of gram-positive cocci. In another case, "Frey", the reverse was true; a specimen taken shortly before death showing masses of "B" influenza. No autopsies were done.

In this series of cases examined, there was quite frequently encountered a large gram-positive, biscuit-shaped diplococcus showing marked variability in staining reaction. This organism alone was recovered from the nose, throat and sputum of one case of pneumonia, "Mc Grath".

Pneumococci and streptococci were third in importance and were of the ordinary mouth variety as far as could be determined on laked blood agar plates. During the latter part of the epidemic coincident with the arrival of fresh troops from the middle west there were a few cases of hemolytic streptococcus infection, 4 of which developed empyema, 1 case being fatal.

In regard to the laboratory technique, it is to be noted that great difficulty was encountered in growing the bacillus of Pfeiffer on laked human blood agar. The organism was frequently seen in large numbers in the smears from the sputum but would be entirely overgrown by other organisms on the plate. In this connection, it is of interest to note that the bacillus of influenza is notoriously difficult to cultivate even from material microscopically swarming with it. Uhlenhuth, using the best of technique in a group of 51 cases, found "suspicious" bacteria in direct films. In 66% of specimens of sputum, the cultural recovery being limited to 13%. In a second group of 47 cases, 84 sputums were examined and the organisms recovered on cultures in 46.8%. These facts may perhaps account

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for the low percentage of cases reported in some quarters in which the influenza was recovered. In many hospitals apparently faith was placed entirely on the culture without examination of direct smears; that it was probably the direct cause of death in some of the fulminating cases. In a great many instances it was found in association with an unknown gram-positive diplococcus, streptococci and pneumococci were in the background apparently as terminal invaders only.

CHART #1

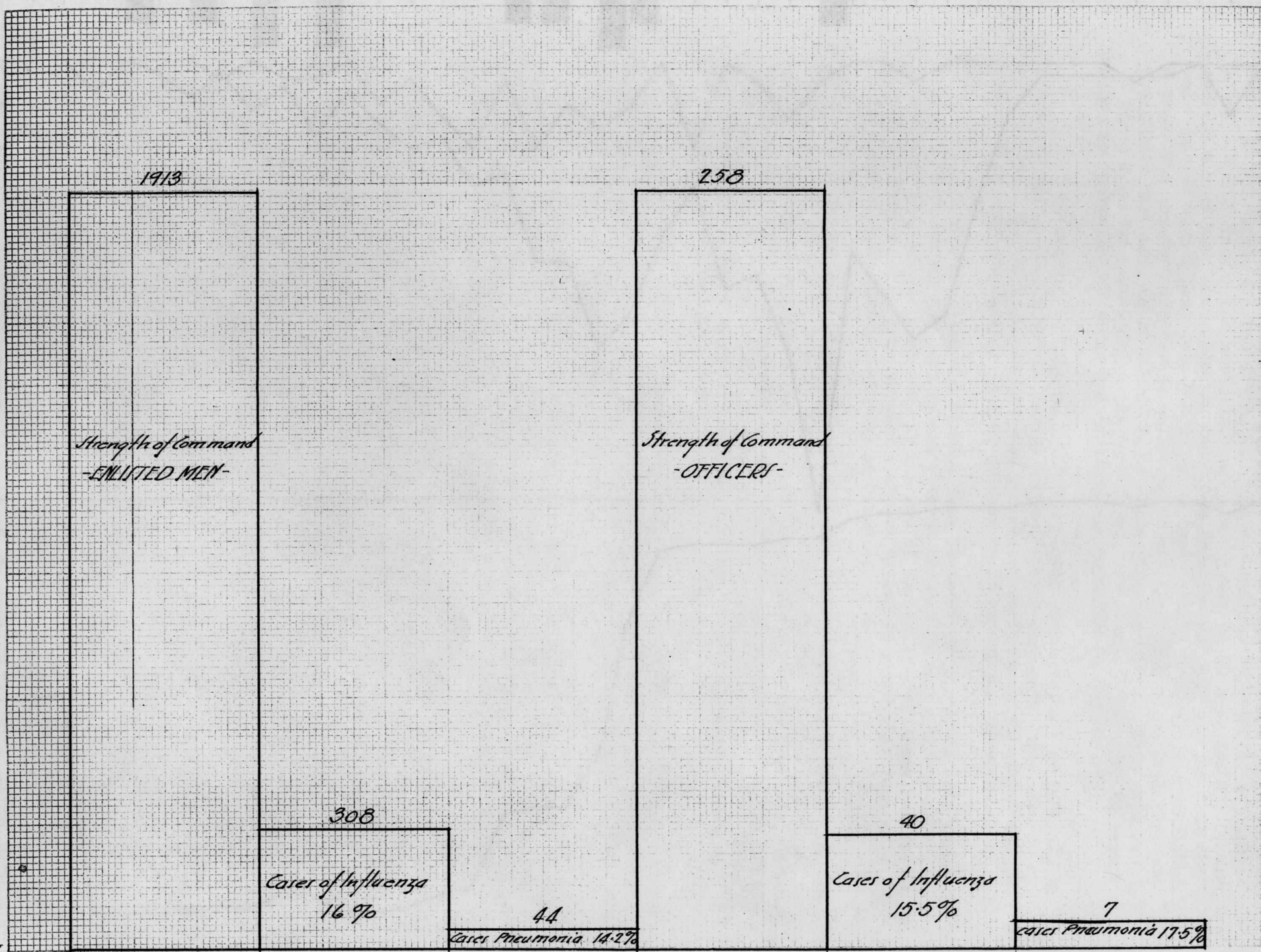




CHART #2

