

The source of the infection in the first case was a visitor, and the second was possibly from an outside source; but the epidemic was clearly fostered by bacillus carriers, human and animal. Besides the 92 patients with clinical diphtheria, 95 apparently healthy individuals whose throats showed the presence of the bacillus, were also isolated, and for a longer average period (30.2 days) than that of the diphtheria cases (20.8 days). There were no fatal cases; all yielded readily to antitoxin. In an almost exclusively adult population, the disease showed a predilection for subjects under 30 years of age. Prophylactic cultures were taken in 4,081 cases, and 2.08 per cent. showed diphtheria bacilli. Inoculation for testing the virulence of the organism was done in only six cases, near the end of the epidemic. Three months after its subsidence, 506 more cultures were made from the throats of patients and employees, and 1.1 per cent. showed the Klebs-Loeffler bacillus, but in all cases the inoculations proved harmless to guinea pigs. This fact, together with the other fact that only 3 of the 5 tested during the epidemic were virulent, seems to indicate that probably about half the apparent diphtheria carriers would be found by inoculation tests to have only non-virulent bacilli in their throats. It would seem likely therefore that about half of the 95 individuals isolated as the result of culture tests, might have been spared the inconvenience had the laboratory force been sufficient to test the virulence in every case. Under the circumstances, however, the plan adopted was the only safe one. An interesting point noted was that rats frequenting the sewer from the isolation hospital, and the cats that preyed on them, seemed to carry the infection, cultures from their fur revealing the germs. The author's con-

clusions are summarized as follows:

1. The chief source of infection in this epidemic were latent cases (bacilli carriers), rats and cats.
2. One negative throat culture is insufficient for diagnosis.
3. Two and even three successive negative throat and nose cultures do not constitute sufficiently strict quarantine regulations to prevent the spread of diphtheria.
4. In institutions in which large numbers are congregated, at least four successive negative cultures, including at least two nose cultures are imperative.
5. All healthy individuals carrying bacilli in their throats should be isolated during a time of epidemic in institutions, unless wholesale immunization can be undertaken.
6. The isolation of bacilli carriers in private practice is neither reasonable nor expedient.
7. Bacilli carriers harbored the bacilli longer than did the clinical cases of diphtheria.
8. All hypertrophied tonsils should be treated, as a prophylactic measure.
9. The Neisser stain has distinct advantages over the Loeffler
10. Stained smears are of great value for immediate diagnosis.
11. The early diagnosis made possible by careful culturing, permitted of early treatment with antitoxin, undoubtedly diminished the severity of the individual case, and the severity and duration of the epidemic.
12. Of healthy individuals during the epidemic, 2.08 per cent. were found to be bacillus carriers.
13. When no epidemic existed, non-virulent Klebs-Loeffler bacilli were found in 1.1 per cent. of healthy individuals.
14. No virulent Klebs-Loeffler bacilli were found in 506 throat cultures three months after the epidemic.
15. Two weeks is the limit of immunization for 1,000 units of antitoxin.