

Fowl 2.—Same procedure, but bacillus from another source. No membrane formed. Bird remained healthy.

Fowl 3.—Inoculated subcutaneously with the half of a serum culture of the K.-L. bacillus. No results.

Fowl 4.—Same procedure, but bacillus from another source. No ill effects.

Fowl 5.—Inoculated in sub-mucosa with about half a c.c. of a K.-L. culture. No membrane formed. Bird remained healthy.

Two guinea-pigs inoculated with the same culture died within thirty-six hours with typical symptoms of diphtheria.

The results of these experiments, therefore, show that the Klebs-Loeffler bacillus is not pathogenic for hens. We may also mention, in this connection, that we have repeatedly tried to infect rabbits and guinea-pigs by injecting false membranes taken from diseased hens, but never with any success. We have also kept rabbits and guinea-pigs confined in cages with diseased hens; but these animals have never taken the disease. Stevenson stated that in his experiments, when rabbits were fed from the same vessel as a rousy bird, they became infected with the disease and died as the result. But experiments conducted here have entirely failed to corroborate this statement. Not only did rabbits live for weeks in coops with rousy birds without becoming affected, but a doe brought up a litter in a coop in which were kept the worst procurable cases of fowl diphtheria; and these rabbits, though drinking from a vessel used by diseased birds, which was uncleaned for weeks, and eating hay and roots which were in constant contact with the birds, never showed any symptoms of ill-health. If the disease in the fowls had been caused by the Klebs-Loeffler bacillus, it would certainly have been pathogenic for both the rabbits and guinea-pigs, as we know these animals are used for standardizing the diphtheria antitoxin. We have made cultures from over two hundred fowls, which died from diphtheria or were killed in certain stages of the disease; but we have not met with the Klebs-Loeffler bacillus in any of them, and consequently we cannot believe in the identity of the human and avian diseases.

We also find that the structure of the diphtheritic membrane of men and fowls is different. In the former, it consists of necrosed epithelial cells and inflammation of the connective tissue beneath, with an abundant fibrinous exudation. If the membrane is formed in the trachea instead of the pharynx, the epithelial cells are shed and the membrane consists almost entirely of fibrin with leucocytes, the former arranged in laminæ, but varying in density. The diphtheria bacilli are most frequently found lying