

siderable attention, the work extending over a period of the last four years, and involving observations and inoculations of some three hundred fowls.

The publicity given to Stevenson's paper in the *Agricultural Press* led us first to examine the effect of human diphtheria antitoxin on birds suffering from diphtheria and having well-characterized pseudo-membranes. The antitoxin was injected subcutaneously, and after the operation the birds were observed every day for a week, and then at longer intervals. Many were kept under observation for several months.

A series of thirty birds was inoculated with fresh serum obtained from well-recognized sources (Parke, Davis & Co. and Mulford). The dose varied from 250 to 550 units, given either at one time or at intervals. Of the thirty birds so treated, but two showed signs of improvement following immediately after the injection; but, three days after they were again badly diseased. The remaining 28 either showed no improvement or even became worse after the treatment. In ten cases the disease persisted for three months, when the birds were killed and examined.

A series of eight birds was also treated with fresh horse serum, in doses from 2 to 5 c.c. Two heis treated with the larger dose died twenty-four hours after injection, a proof of the toxic nature of some horse sera, a fact which Cobbett has already pointed out. Two other birds showed some signs of improvement after treatment with smaller doses; and our poultry manager reported to me after trying the fresh horse serum on a number of diseased birds, that in some cases he had seen partial cures, but it was not specific, and did not seem of much use.

The results of these experiments, therefore, show that: (1) Diphtheria antitoxin inoculated into birds suffering from fowl diphtheria, and presenting pseudo-membranes produced no practical or permanent results; (2) were the germs of human and avian diphtheria the same, this antitoxin certainly must have influenced the fowl diphtheria, since it is the best remedy known for human diphtheria; (3) ordinary horse serum showed better results than antidiphtheritic serum; but it could not be regarded as a specific.

The third series of experiments was made on five healthy fowls, which were injected with human diphtheria bacilli, which were obtained from two different cases and isolated on Loeffler's serum.

Fowl 1.—Inoculated by scratching throat and rubbing in a twenty-four-hour-old culture of the Klebs-Loeffler bacillus. No membrane formed. Bird remained healthy.