

theria than those who keep aloof from poultry yards? These and other questions suggest themselves to any one who critically examines the problem.

Let us, however, examine the work of various writers, and investigators on the subject, which we may conveniently group under two heads: (1) Those who have investigated the disease as it occurs in fowls and pigeons, by the usual methods employed in working out infectious diseases; (2) those who have made observations without experimental research, and who have not employed bacteriological methods to support or controvert their views either for or against the identity of the disease as it appears in birds and man.

EXPERIMENTAL RESEARCH.

Rivolta,¹ Silvestrini,² Friedberger,³ and Davaine⁴ made a number of microscopical observations on the disease prior to the introduction of the bacteriological methods of Koch and Pasteur, and hence I shall not dwell upon their results, but pass on to the work of Loeffler,⁵ in 1884, on the diphtheria of pigeons and chickens.

From diphtheritic pseudo-membranes in the mouths of pigeons, which died from an infectious form of diphtheria that prevails in Germany, Loeffler isolated a bacillus which, when inoculated in pure culture into pigeons produced exactly the same symptoms as those which are met with in birds that acquire the disease naturally. This organism was quite different from the true diphtheria germ, and was not pathogenic for guinea-pigs, rats or dogs. Loeffler's discovery was subsequently confirmed by Cornil and Megnin.⁶ Chicoli,⁷ and subsequently Krajeweski,⁸ found cocci in the false membranes of fowls, and Perontito⁹ saw coccidia in those of pigeons, chickens, and turkeys. In 1899, Pfeiffer,¹⁰ from fowls and pigeons attacked by diphtheria and contagious epithelioma observed corpuscles having ameboid movements, which he considered were gregarines, and in other cases discovered flagellata which were difficult to distinguish from leucocytes. The following year Babes and Puscariu¹¹ found trichomonas showing the same characters as those described by Pfeiffer; but in diseased pigeons these protozoa were associated with the bacillus discovered by Loeffler, and which alone was able to produce the disease. Thus the trichomonas must be looked on as being normally present in the pharynx of pigeons. In 1894, Loir and Ducloux¹² studied in Tunis an epizootic of diphtheria which affected fowls, ducks, sparrows, pigeons, and turkeys. From all these cases they isolated a motile bacillus with