

desired than his own, which, in addition to being entirely negative, are, at best, no argument as to the *fitness* of the flesh of tuberculous cattle *for food*, but merely show it to be less certainly dangerous when swallowed than when injected into the peritoneum.

M. Nocard admits (p. 95) the milk of tuberculous cows to be sometimes virulent, but, in his experience, never so when the udder is free from tuberculous lesion. But the negative results of his experiments on this point are overborne by those of Hirschberger, and some of those of Bang, both of which are quoted. In the author's illustration of the "fine children . . . put out to nurse in the country soon after their birth" (p. 71) who escaped from "the hereditary (?) tuberculosis to which their elder brothers had succumbed," what does this lesson prove—if not the infective character of the mother's milk when ingested?

Comparison with the original shows that in his translation of the book Dr. Scurfield has followed his author carefully and accurately, a by no means easy thing to do in the rendering of French scientific phraseology into the corresponding English. The only word which appears to have given him difficulty is "*médecins*," for which, as applied to the diseases of animals and man, there is no exact English equivalent.

The valuable service rendered to hygiene by Dr. Scurfield in his self-allotted task will be fully appreciated by a large class of readers. Even to those who are fair French scholars this good translation of such a technical work will be found a great convenience. To others it is much more, introducing to them, as it does, an able treatise on a disease which has, perhaps, more than all others, a vital and widespread interest for mankind.

X.

FOWL DIPHTHERIA AND PUBLIC HEALTH.

BY

J. LAWRENCE-HAMILTON, M.R.C.S.

AMONG the many magnificent up-to-date industrial monographs published by the Bureau of Animal Industry—one of the most useful branches of the U. S. Department of Agriculture—the exhaustive 1895 treatise on the Infectious Diseases of Poultry is specially worthy of attentive study by poultry breeders and hygienists.

This book is artistically illustrated with numerous original plain and coloured bacteriological and pathological plates, admirably arranged by Drs. Theobald Smith and Veranus Moore, who have had the great advantage of working under the expert direction of Dr. D. E. Salmon, the chief of the Bureau of Animal Industry.

It may be well to recall the summing up of the relationship of fowl diphtheria to public health, as

expressed by Drs. Theobald Smith and Veranus Moore in the following extract :—

"A comparison of the bacillus of diphtheria in man (Klebs-Löffler) with the one described by Löffler as the cause of diphtheria in fowls, shows that morphologically and in their pathogenesis for experimental animals, the two organisms are in no way alike. There is also a marked difference in the nature of the exudates in fowls and in man. The non-identity of these diseases has been clearly pointed out by Ménard (*Revue d'Hygiène*, tome XII. (1890), p. 410). Although these diseases are shown by several observations to be unlike in their etiology and the character of their lesions, the transmission of fowl diphtheria to the human species, and *vice versa*, is affirmed by several writers.

"Gerhardt (*Revue f. Thierheilkunde u. Viehzucht*, Bd. VI. (1883), p. 180) reports four cases of diphtheria among six workmen who had charge of several thousand fowls, many of which died of diphtheria, in Wesselhausen, Baden. There were no other cases of diphtheria in the neighbourhood, and the evidence was quite conclusive that the disease was contracted from the affected fowls. It is also stated that an island on the north-eastern coast of Greece had been free from diphtheria for at least one-third of a century, when a dozen turkeys, several of which were diseased, were introduced. Soon afterwards diphtheria appeared in a house near the garden where the turkeys were kept. The disease became epidemic on the island, causing the death of 36 people, or over 40 per cent. of those attacked.

"Debie (reviewed in *Centralblatt f. Bakteriologie*, Bd. XIII. (1893), p. 730) reports briefly the clinical history of six cases of diphtheria which occurred in the garrison of Sebdom, and states that while the sixth case (two were fatal) was still under treatment in the hospital, ten fowls kept in a house not far from the hospital were attacked with diphtheria, and exhibited symptoms strikingly like those present in the human beings. Five of the ten fowls died, and two heads were sent to Arloing, who confirmed the diagnosis of fowl diphtheria. The fowls were fed by a hospital attendant, and it was ascertained that an identical outbreak had occurred among the fowls at a neighbouring place, from which one of the six cases of human diphtheria had been brought. Debie is inclined to the view that human diphtheria is transmissible to fowls, and fowl diphtheria to man.

"Cole (*Archives of Pediatrics*, XI. (1894), p. 381) reports an interesting case near Jacksonville, Ill. A flock of fowls became affected with a disease characterized by an exudate on the mucosa of the head. Some of the exudates emitted a foul odour (Cole's description of the disease shows that it was undoubtedly the same as the one I have studied). As the weather was cold, one of the chickens was taken into the house where a child

about two and a half years old fondled it. Four days later the child was taken sick, apparently with diphtheria, from which it died. There were no other cases in the neighbourhood, and the affected chicken was the only possible source of infection.

"The diphtheritic disease of fowls, reported by Loir and Ducloux (*loc. cit.*), in Tunis, in 1894, spread to the people of that place, resulting in an epidemic of serious proportions. Ménard refers to the fact that men employed to feed young squabs contracted diphtheria by blowing the masticated food into the mouth and crop of squabs (or young unfledged pigeons) suffering with that disease. Schrevels (*Bulletin de l'Acad. Royale de Méd. de Belgique*, VIII. (1894), p. 380) reports several cases of diphtheria in children, in which he traces the source of infection to certain poultry.

"Although the number of reported cases of the transmission of fowl diphtheria to the human species, and *vice versa*, is small in comparison with the extent of the disease in poultry, the evidence that such a transmission is possible is quite sufficient to discourage the careless handling of diseased fowls. It is a quite common practice, especially in the rural districts, to bring the sick chickens into the house for treatment, where the children of the household are allowed to fondle them at will. It is not improbable that when this disease is thoroughly investigated, the number of cases of direct infection from this source will be found to be much larger than it is at present supposed. Until such investigations are satisfactorily completed, the indiscriminate handling of diphtheritic chickens, especially by children, and the exposure of fowls to the infection of diphtheria in the human species, whereby they may become carriers of the virus, should be strenuously avoided."

ETIOLOGY OF DIPHTHERIA.

ST. PANCRAS.

DR. J. F. J. SYKES, in his annual report, brings up to the present date his interesting study of the metropolitan mortality from diphtheria, which was published in *PUBLIC HEALTH*, Vol. VI. pp. 331 - 334. He states:—"Contrary to our experience up to 1890, the last four years show that the mortality of diphtheria has taken to epidemic fluctuation like scarlet fever, and is no longer comparatively steady like enteric fever. Further, unlike previous years, the rise and fall of the mortality of scarlet fever and diphtheria have occurred simultaneously. Again, in reference to the proportion of the mortality from throat diseases caused by diphtheria, the experience of the past four years is not quite according to previous experience. Previous experience has shown that the fall in the number of deaths from throat diseases other than diphtheria corresponded with the rise in the number of deaths from diphtheria; but the last four years show that

there is no longer a correspondence between the two sets of figures, the deaths from diphtheria having increased in number out of all proportion to the diminution in the number attributed to other throat diseases, and this is specially observable in 1893, and in a lesser degree in 1892. An enormous increase in the mortality from *all* throat diseases has taken place in the last four years, and this mortality is wholly and solely due to diphtheria."

Dr. Sykes sums up his further conclusions as follows:—

1.—That there appears to be little doubt that a distinct change of type has taken place in a large proportion of disease affecting the throat, accounting in the first place for the diminution in the mortality from other diseases of the throat and its displacement by diphtheria.

2.—That it is very evident that the change of type is from a non-infectious to an infectious form of disease, accounting for the enormous increase of diphtheria mortality over and above the diminution of that of other throat diseases during the last few and quite recent years.

3.—That diphtheria has become an acute epidemic disease with far more sudden variations in extent and intensity of prevalence than formerly, and that we may expect epidemic and non-epidemic years with marked seasonal prevalence in the future.

WEST HAM.

Dr. Sanders remarks: "Apart from two localized outbreaks in connection with schools, diphtheria showed a phenomenal tendency to increase in the borough during 1894, to an extent greater in my opinion than the increase shown in the other large towns. Doubtless this increase is due to a variety of causes, the special characters and varying conditions of which are not at present recognized, but of this I feel sure, that although, owing to the virulence of the disease in many cases, and the consequent publicity given to the anti-toxic treatment of the disease, diphtheria has had much public attention given to it in recent times, yet there is not the same care and rigour devoted to the prompt and continued isolation of the slighter cases of diphtheria as in many other infectious diseases; a laxity due possibly to the frequent absence in this disease of objective symptoms which, as in the desquamation of scarlatina and the diarrhoea of enteric fever, force themselves on the notice of both medical attendant and friends. In this way children in a still infectious condition are allowed too early to associate with the unprotected, with the natural result of many unnecessary secondary cases."

BEDFORD.

Dr. Prior says: "Diphtheria and scarlatina are diseases which have, in some particulars, a strong similarity; both are infectious, though the one with