

AVIAN TUBERCULOSIS.

The disease known under the names of Avian Tuberculosis or Consumption in fowls and other birds is of widespread importance.

It is only within comparatively recent times, slightly over a decade, that Tuberculosis has been observed among fowls in Canada. The affection had probably existed for many years but its true nature and significance was not recognized until diseases of poultry commenced to attract the attention of workers in comparative pathology.

The losses from Tuberculosis in poultry have been large, but there is at present no means of arriving, even approximately, at an accurate estimate of this loss. The poultry industry is a valuable source of revenue when plants are properly organized and managed, and all farms can, with advantage, carry more fowls than are usually found. To ensure profits, however, due attention must be given to keeping the flock entirely free from disease.

Once Tuberculosis makes its appearance in a flock, the aggregate losses are large, although a great number of birds do not die at one time. The general unthriftiness of the fowls, however, renders them unsuitable for table use and the non-production of eggs makes the industry very unprofitable as well as discouraging to the poultry owner.

As Avian or Fowl Tuberculosis, viewed from a causative standpoint, is almost identical with the disease as found in human beings and cattle, it is imperative that further research work be conducted in order to establish, if possible, its exact relation as a source of infection for other animals and man. This is more pertinent since Mohler and Washburn, of the United States Bureau of Animal Industry, have reported the transmission of Avian Tuberculosis to mammals by the direct feeding of diseased organs, and also the infection of guinea-pigs by artificial inoculation with the whites of eggs from affected fowls. That there is considerable variation in the morphology of the causative organisms found in the different forms of Tuberculosis cannot be disputed. Extensive investigations have shown that even these apparently specific characteristics can be altered by artificial cultivation upon various laboratory media, and also by growth in the tissues of different animals.

The fact that Avian Tuberculosis is transmissible to mammals, and the mammalian type communicable to human beings, serves to substantiate the theory that changes may occur in the human host whereby the avian and bovine types of organisms may undergo transformation into the human type.

During investigations conducted at this laboratory attention has been chiefly directed towards the microscopic detection of tubercle bacilli in eggs, the infection of experimental animals with these eggs, and the perfecting of a method of diagnosis whereby latent and incipient cases may be identified.

The possibility of Tuberculosis being present in chicks at birth has been given considerable attention, but our experiments in this connection have thus far given only negative results. Eggs from tuberculous fowls have been artificially incubated and the chicks immediately transferred to new quarters where special precautions were taken to prevent infection from outside sources. The most careful autopsies, however, failed to reveal lesions of Tuberculosis, while cultures from splenic tissues gave negative results.

The demonstration of acid-fast* organisms in eggs was also undertaken and in nearly 20 per cent of the latter, bacilli microscopically indistinguishable from those

*Tubercle bacilli from any source possess the peculiarity of retaining the dye material used for their study in the presence of acid, hence the term acid-fast.