

## ENTERO-HEPATITIS OR BLACK-HEAD IN TURKEYS.

This disease, first described in 1895 by Dr. Theobald Smith (then Pathologist to the United States Bureau of Animal Industry), has since menaced the very existence of the turkey industry on this continent.

The cause of the disease is a very small microscopic parasite technically known as the "Ameba meleagridis." The parasite invades the liver, and the two blind portions of the intestine known as the caeca. It derives the name entero-hepatitis from the lesions noted in the liver and intestine. The term black-head was first applied as the head of affected birds has a very dark blue or black appearance. The dark appearance is caused by the lesions in the liver and consequently is more prominent about the head.

The losses from this disease have been enormous, and the increase in the price of this very desirable table bird can, we believe, be attributed solely to its ravages. Certain localities in Ontario which supplied eight carloads of turkeys ten years ago are now supplying barely two carloads, and the explanation is that the birds become affected with black-head and die before they become of a marketable age. Many individual losses have been reported to us of ninety per cent and over.

From the information which we have it is evident that there is not a province in Canada where entero-hepatitis or black-head does not make itself felt with more or less severity each season.

These reports of losses coming constantly to our notice confronted us with the necessity of offering some assistance which would have as its ultimate object the restoration of the turkey industry. Experimental work at the Biological Laboratory was first undertaken in 1905. The progress for some years was slow, as many features connected with turkey raising were very imperfectly understood. As we made progress it became necessary to broaden the scope of our investigations, and in 1910 we eliminated the possibility of conveying the infection from the adult bird to the poults by resorting to the artificial incubation of the eggs and the artificial brooding of the poults. This undertaking was in direct opposition to the advice of expert turkey breeders, who held that it was impossible to make such a radical departure from nature even if this was essential to control certain factors connected with our experiments. By this means, we secured healthy stock and carried them over without deaths or evidence of infection.

Having made some progress in this direction, we enlisted the co-operation of the Poultry Division of the Experimental Farms system, they first hatching our eggs in 1913. Success attended this effort, and in 1914 this was repeated upon a somewhat larger scale. In 1915 the turkey plots and housing facilities designed by the staff at the Biological Laboratory were placed at the disposal of the Poultry Division of the Experimental Farms system, as well as the entire number of eggs secured during that season. In doing this we desired that they undertake the full control of the field experiments for the purpose of effectively arriving at a practical basis upon which turkeys may be raised successfully. This experiment resulted in bringing to maturity 40 per cent of the poults hatched. Eight of these which were no longer required for experimental purposes were killed and dressed at seven months an average of sixteen pounds each. One individual dressed nineteen pounds two ounces. (These were raised in semi-confinement, or thirteen turkeys on a plot of less than one-quarter acre.)

Certain new findings have been made each year that the experiments with turkeys have been conducted at the Biological Laboratory, and we now feel that sufficient progress has been made to enable interested individuals to raise turkeys successfully