

## CAPILLARIASIS OF CHICKENS

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It is the purpose of this paper to report the occurrence of Capillariasis in three widely separate Illinois farm flocks. In a previous note this parasite was reported in two flocks<sup>1</sup>. The pathological changes encountered in the ingluvium and esophagus in affected fowls from two flocks resemble the gross lesions of *Capillaria annulata* infestations. In one fowl from a third infested flock the gross lesions at autopsy suggested the possibility of another species of *Capillaria* being present.

Cram<sup>2, 3</sup> reported finding of *Capillaria annulata* in affected grouse in Michigan, in chickens from Georgia, Mississippi, and Louisiana, and from turkeys in Maryland. Jungherr<sup>4</sup> reported the same parasite in turkeys in Montana. Hung<sup>5</sup> described the histopathology of *Capillaria annulata* infestation as observed by the writers, which resembles lesions in fowls described as cases 1 and 2 coming to our attention. It is possible that the gross pathology in intestinal Capillariasis may ultimately aid the autopsiist in distinguishing different species of this parasite.

*Cases 1 and 2.* In specimens from two of the farm flocks mentioned, a nematode parasite was found in several of the affected birds from both groups. The condition appeared in the fall and had, up to the time of diagnosis, assumed an insidious course, so far as could be learned not more than one or two birds becoming affected each week. The symptoms observed in both flocks that harbored Capillarids consisted of lack of vigor, emaciation, ruffled feathers, droopiness, lameness, progressive torticollis, finally extreme helplessness and death. Affected fowls die in ten days to five weeks after displaying symptoms. The late hatches were observed to be the most often affected. Birds weighing from 2½ to 3 pounds were first attacked. The gross pathology in affected fowls from two flocks was confined to the lower portion of the

<sup>1</sup> Graham, R., Thorp, F., and Hectorne, R.—*Capillaria* Infestation in Chickens. Jour. Amer. Vet. Med. Ass'n., Vol. LXXIV, n. s., Vol. 27, pp. 1060-1063, June, 1929.

<sup>2</sup> Cram, E. B.—A Parasitic Disease of the Esophagus of Turkeys. North American Veterinarian, Vol. 7, No. 10, pages 46-48, October, 1926.

<sup>3</sup> *Ibid*—Nematodes of Pathological Significance Found in Some Economically Important Birds in North America. U. S. D. A. Tech. Bull. No. 49, pages 1 and 2, 1928.

<sup>4</sup> Jungherr, E.—Two interesting poultry diseases. Jour. Amer. Vet. Med. Ass'n. Vol. LXXI, n. s., Vol. 24, No. 5, pages 636-640, August, 1927.

<sup>5</sup> Hung, S. Lü—Pathologic lesions caused by *Capillaria annulata*. The North American Veterinarian. Vol. 7, No. 10, pages 49 and 50, October, 1926.

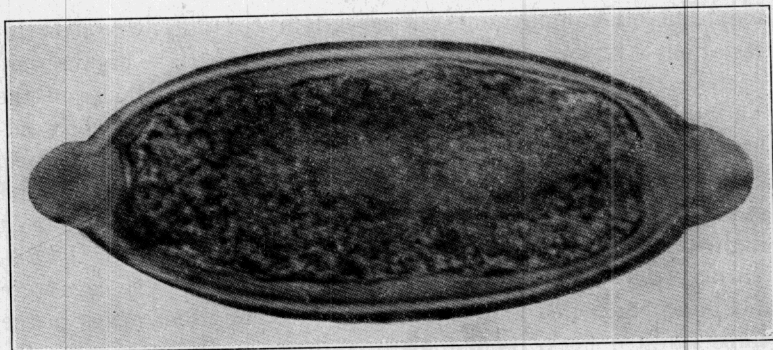


FIG. 1. *Egg of Capillaria sp.* (Many times enlarged.)

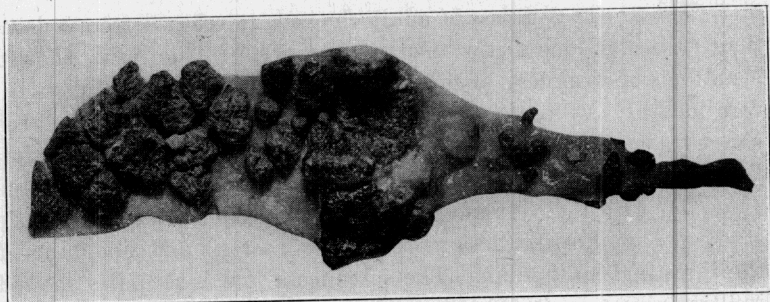


FIG. 2. Follicular diphtheritic enteritis.

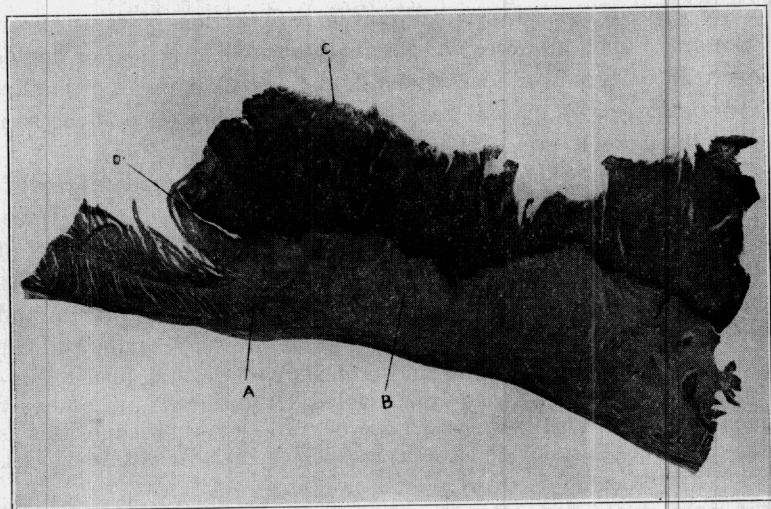


FIG. 3. Histopathology of follicular enteritic lesion: (a) the line of demarcation between circular muscle and the regenerative fibrosis; (b) regenerative fibrosis; (c) necrosis of intestinal epithelium; (d) junction of regenerating fibrosis and diphtheritic membrane.

esophagus and ingluvium as described in *Capillaria annulata* infestations. A very putrid odor was noted when these organs were opened. An ingluvitis was detected. The lymph follicles of the wall of the ingluvium were increased in size and a slightly adherent diffuse fibrinous pseudomembrane extended over the surface. Small circumscribed patches of the mucosa were necrotic and easily displaced on pressure. Scrapings from the inflamed ingluvium revealed a few mature Capillarids embedded in the diseased mucous membrane together with many eggs. The eggs were doubled, operculated and easily recognized. *Capillaria* eggs in the three infested flocks were indistinguishable upon microscopic examination. (Fig. 1).

*Case 3.* In a group of adult chickens purchased from a local poultry dealer, one sickly fowl was noticed. This bird showed symptoms of weakness, anemia, and emaciation for several days before death. At autopsy the intestine just anterior to the ceca showed a marked dilatation. The gross pathology revealed a follicular diphtheritic enteritis of the wall of the dilated intestine (Fig. 2), with the contents giving off a foul odor. Histopathologic study of the intestinal lesions revealed a necrosis and sloughing of the intestinal epithelium. The submucosa and muscularis showed infiltrating areas of fibrin filaments and a chronic fibrosis (Fig. 3). The disintegration and fibrous infiltration of the circular muscle fibres explain the intestinal dilatation. Scrapings of the necrotic membrane upon microscopic examination revealed masses of double operculated eggs as in cases 1 and 2, and a small number of mature Capillarids. The mature parasites, though minute, could be seen with the unaided eye.

*Summary.* The symptoms and lesions in fowls from three different Illinois flocks, insofar as could be determined, were traceable to the presence of the nematode *Capillaria*. The possibility of two separate species of this parasite in cases 1, 2, and 3 is recognized.<sup>6</sup> These parasites impair the functions of the ingluvium and intestine. The gross lesions in one specimen were confined to the intestine, while the ingluvia and esophagus of several fowls examined from two other flocks were involved. Capillarids are probably more prevalent than supposed. To our present knowledge, this is the first time Capillarids have been reported in Illinois farm flocks.

<sup>6</sup> Doctor H. B. Ward, Professor of Zoology, University of Illinois, identified the genus as *Capillaria* in case 3. Since the above report was prepared Doctor Maurice C. Hall, Chief of the Zoology Division, Washington, D. C., advised that Miss Cram regarded the species referred to in case 3 as *Capillaria meleagris-gallapavo*.