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## CAPILLARIASIS IN PENNED WILD TURKEYS

G. A. HURST,<sup>1</sup> L. W. TURNER<sup>2</sup> and F. S. TUCKER<sup>3</sup>

**Abstract:** Capillariasis caused by *Capillaria annulata* was associated with dilated crops, emaciation and mortality of 23 juvenile wild turkeys (*Meleagris gallopavo silvestris*) in a captive flock. Gross lesions in the crops ranged from slightly-thickened lining folds to a thick necrotic diphtheritic membrane covering the entire inside surface. The parasites were in the squamous epithelium. Hygromycin controlled the outbreak.

### CASE REPORT

The Department of Wildlife and Fisheries, Mississippi State University maintains a flock of captive (penned) wild turkeys (*Meleagris gallopavo silvestris*). Part of the flock was kept in four adjoining dirt floor pens, each measuring 82 × 164 m; two containing 12 and 10 adults, the other two held 18 and 20 juveniles. About 1 km from this site, 10 adults were kept in a pen of similar size, also dirt floored, and 18 juveniles in a smaller, 8 × 8 m pen. The juvenile turkeys, age 6-10 weeks, had been used in food habits studies and were being raised as future breeding stock. The juveniles had been reared with "broody" domestic chickens until 5-9 weeks of age.

From 6 August to 7 September 1975, 23 of the 56 juvenile turkeys died. Depressed appetite, loss of weight and lethargy were clinical signs noticed by personnel feeding the birds. Deaths occurred in each group of juvenile turkeys.

The carcasses were emaciated and the crops were greatly dilated. Lesions in the crops ranged from slightly-thickened lining folds to a thick necrotic diphtheritic membrane covering the entire mucosal surface. Severe infection by *Capillaria annulata*<sup>1</sup> in the squamous epithelium of

the crop was observed in all dead birds (Figures 1 and 2). Inflammatory reactions in the areas around the parasites were accompanied by infiltration of heterophils, lymphocytes and plasma cells. The histologic structure of the crop, connective tissue and glands were distorted as a result of necrosis and cellular infiltration. The squamous epithelium was thickened and formed irregular spine-like projections on the surface.

Hygromycin-B,<sup>3</sup> mixed with the juvenile wild turkey's food, at an approximate rate of 48 g/100 lbs of feed, controlled the outbreak.

The most likely source of the parasite was domestic chickens. Earthworms are the essential vector for *C. annulata*,<sup>7</sup> and were available in the soil in the pens. Poults usually do not scratch for food items,<sup>2</sup> but on several occasions chicken hens were observed to scratch the litter and expose earthworms, which the poults readily ate. Juvenile and adult turkeys do a considerable amount of scratching for their food and could easily find and eat earthworms.

*C. annulata* was found in the crop of only one wild turkey in a study in Maryland;<sup>4</sup> the total number of turkeys examined was not indicated. The

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<sup>3</sup> Elanco Products Co., Division of Eli Lilly and Co., Indianapolis, Indiana.

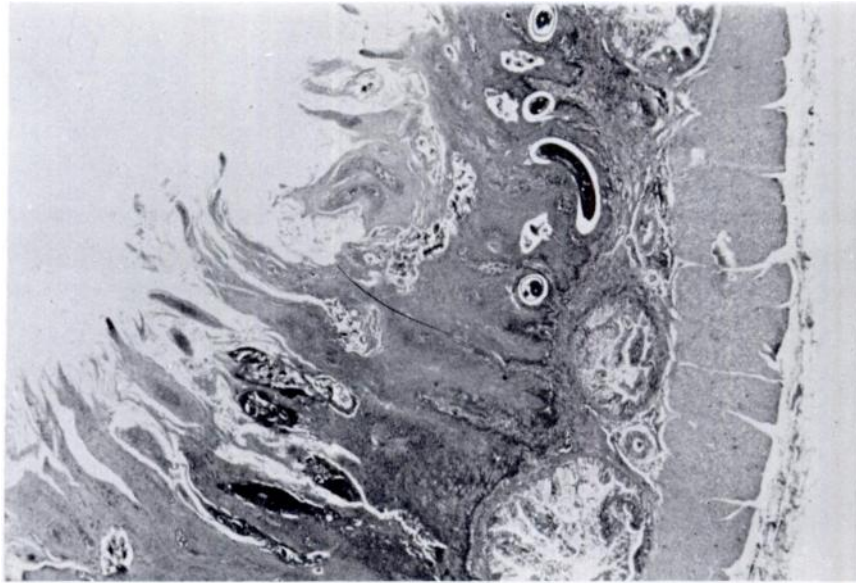


FIGURE 1. Part of wild turkey crop showing proliferation and necrosis of squamous epithelium and *Capillaria annulata*.  $\times 250$ .

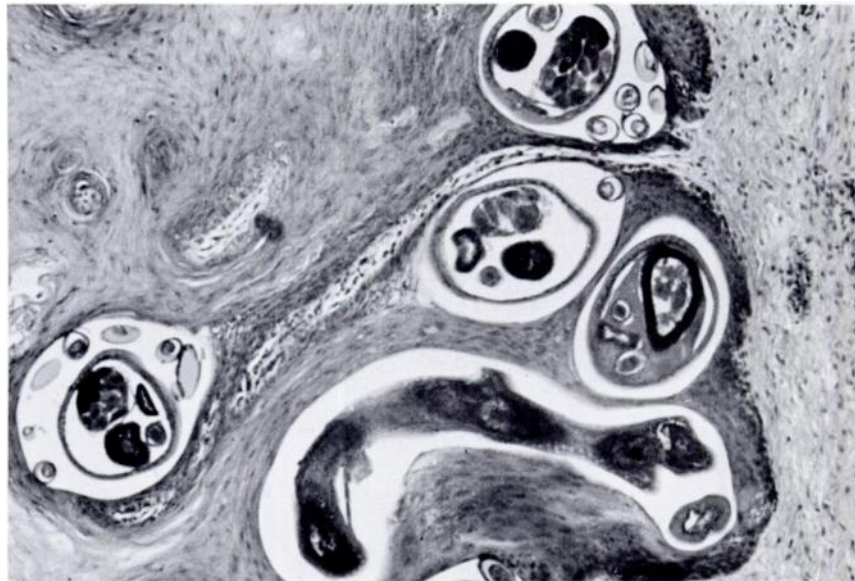


FIGURE 2. Squamous epithelium of wild turkey crop with *Capillaria annulata*.  $\times 400$ .

parasite was not found in a parasite survey of 134 adult and 82 juvenile wild turkeys in the delta region of Mississippi.<sup>3</sup> *Capillaria* spp. were reported in the crops of 4 of 50 wild turkeys examined in South Carolina.<sup>3</sup> Of 425 wild turkeys examined from five southeastern states, only one poult from Tunica County, Mississippi, was parasitized by *C. annulata*.<sup>4</sup> The few cases of *C. annulata* reported in

wild turkeys suggests that the parasite is quite limited in the wild.

This outbreak of capillariasis occurred in captive wild turkeys, but certainly indicates the pathogenicity of the parasite for this species. Domestic chickens and turkeys, and pen-raised wild turkeys, all potential carriers of the parasite, should never be allowed on or be released into wild turkey range.

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