

Parasitic Ulcerative Ventriculitis in Mallards (Anas platyrhynchos)

Authors: Sterner, Mauritz C., and Stackhouse, Larry

Source: Journal of Wildlife Diseases, 23(4): 680-682

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-23.4.680

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at <u>www.bioone.org/terms-of-use</u>.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Parasitic Ulcerative Ventriculitis in Mallards (Anas platyrhynchos)

Mauritz C. Sterner and Larry Stackhouse, Veterinary Research Laboratory, Montana State University, Montana Department of Livestock, Bozeman, Montana 59717, USA

ABSTRACT: Natural infections of Streptocara crassicauda and Streptocara incognita were diagnosed in four mallards (Anas platyrhynchos) from Red Rock Lakes National Refuge, Beaverhead County, Montana. Lesions at the junctions of the gizzard and proventriculus were associated with the nematodes, and resulted in debilitation, emaciation and death.

Key words: Mallards, Anas platyrhynchos, Streptocara crassicauda, Streptocara incognita, Montana, ulcerative ventriculitis.

In August 1981, four mallards (Anas platyrhynchos) were found dead at the Red Rock Lakes National Wildlife Refuge, Beaverhead County, Montana, and brought to the Veterinary Diagnostic Laboratory in Bozeman, Montana, for examination. During necropsy cestodes of the genus Hymenolepis were found in the small intestine. Because of the poor condition of the specimens, identification was possible only to genus. Attached to the intestinal lining were acanthocephalans (Corynosoma constrictins and Polymorphus minutus) associated with a severe hemorrhagic enteritis. Spirurid nematodes (Streptocara crassicauda and S. incognita) were found embedded in the lesions of the gizzard and surrounding tissue. Streptocara incognita was the most abundant species.

The nematodes visible in the lesions were teased from the tissue using dissecting needles and preserved in 70% glycerinalcohol. Specimens of *S. crassicauda* and *S. incognita* have been deposited in the U.S. National Parasite Collection (Beltsville, Maryland 20705, USA) as USNM Helminth Collection Nos. 78753 and 79598.

Samples of the necrotic areas in the gizzard and small intestine were placed in 10% buffered formalin and processed for

microscopic examination. Microscopically, the gizzard contained multifocal areas of mucosal ulceration. These foci were usually filled with necrotic debris and contained numerous specimens of Streptocara spp. (Fig. 1). All nematodes were placed in the same vial before being identified, therefore it was impossible to attribute the lesions to any one species of Streptocara. The lesions were probably caused by S. incognita based on the large numbers of this species found and the fact that this nematode has been reported previously to cause such lesions (Gibson, 1968). In many locations there were parasites deep within the muscle wall. These were surrounded by varying amounts of necrotic debris and a cellular infiltrate consisting of mononuclear and multinucleated phagocytes, lymphocytes, and heterophiles (Fig. 2). In a few areas there were circumscribed foci of granulomatous inflammation surrounding amorphous debris (Fig. 3). In the ulcerated area associated with the Streptocara spp. the cornified layer of the gizzard was sloughed, leaving large areas unsuitable for the grinding of food. In the small intestine there was mucosal ulceration and hemorrhage associated with the acanthocephalans.

Streptocara crassicauda is a common parasite found in the gizzard or under the mucosal lining of waterfowl. This species has been found previously in numerous North American waterfowl including mallards (McDonald, 1965; Kinsella and Forrester, 1972). Streptocara incognita is found also in the gizzard and the proventriculus. This species is reported from mallards, ruddy ducks (Oxyura jamaicensis) and goldeneyes (Bucephala spp.) (Gibson, 1968).

In the United States, S. crassicauda has



FIGURE 1. Ulceration of the gizzard mucosa of a mallard associated with infections of *Streptocara crassicauda* and *Streptocara incognita*. H&E.



FIGURE 2. Deeply embedded parasites (*Streptocara* spp.) within gizzard muscle of a mallard surrounded by necrosis and an inflammatory cell infiltrate. H&E.



FIGURE 3. Circumscribed foci of granulomatous inflammation within gizzard musculature of a mallard. H&E.

been found in Alaska, Texas, Florida, Montana, and Wyoming (Kinsella and Forrester, 1972; McDonald, 1974; Wilkinson et al., 1977). *Streptocara incognita*, first described in 1968, has been found previously in Nevada (McDonald, 1974).

The authors thank Merrie Mendenhall of Montana State University for the photomicrographs, Gerald Schmidt of the University of Northern Colorado, Greeley, Colorado, for identifying the acanthocephalans and Malcolm McDonald of the National Wildlife Health Center, Madison, Wisconsin, and Benjamin Tuggle of the Grambling Cooperative Wildlife Project, Grambling State University, Grambling, Louisiana, for confirming identification of Streptocara crassicauda and Streptocara incognita. This contribution from the Veterinary Research Laboratory, Agricultural Experiment Station, Montana State University, Bozeman, Montana 59717, USA, is Journal Series #J-1706.

LITERATURE CITED

- GIBSON, G. G. 1968. Species composition of the genus *Streptocara* Railliet et al., 1912 and the occurrence of these avian nematodes (Acuariidae) on the Canadian Pacific coast. Canadian Journal of Zoology 46: 629–645.
- KINSELLA, J. M., AND D. J. FORRESTER. 1972. Helminths of the Florida duck Anas platyrhynchos fulvigula. Proceedings of the Helminthological Society of Washington 39: 173-176.

MCDONALD, M. E. 1965. Catalogue of helminths

of waterfowl (Anatidae). Wildlife Disease 46: 1–392.

- . 1974. Nematode parasites of waterfowl (Anseriformes) from western United States. Wildlife Disease 64: 1–19.
- WILKINSON, J. N., A. G. CANARIS, AND D. BRO-DERSON. 1977. Parasites of waterfowl from southwest Texas. 1. The northern cinnamon teal, *Anas cyanoptera septentrionalium*. Journal of Wildlife Diseases 13: 62–63.

Received for publication 14 June 1985.