

Salmonellosis in a Wild Turkey

Author: Howerth, E. W.

Source: Journal of Wildlife Diseases, 21(4) : 433-434

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-21.4.433>

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 www.bioone.org/terms-of-use.

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.

been identified in cervids in other locations in Wyoming. Nothing is known about the importance of this disease in the mule deer population.

The relationship of these viruses to poxviruses present in domestic animal populations in Wyoming is unknown. Contagious ecthyma is common in sheep flocks in Wyoming and many sheepmen vaccinate sheep with a live virus vaccine. Bovine papular stomatitis and pseudocowpox, bovine diseases caused by parapox viruses, have been identified in a few animals in the state within the last two years. Other poxviral diseases of domestic or wild animals may have gone unrecognized. Characterization of the deer viruses and

transmission studies are presently underway to investigate some of the questions raised by the presence of poxviral-induced disease in free-ranging mule deer.

This study is a contribution of Wyoming Game and Fish Department Federal Aid to Wildlife Restoration, Project FW-3R. We thank William Hepworth, Sandy Anderson, Bob Trebelcock and Dave Belitsky, Wyoming Game and Fish Department for assistance; Margie Reis, Elaine Dow, and Inez Johnson, Wyoming State Veterinary Laboratory for technical help and the National Veterinary Services Laboratory, Ames, Iowa for isolation of the poxvirus from the first case and providing us with the Vero M cell lines.

Journal of Wildlife Diseases, 21(4), 1985, pp. 433-434
© Wildlife Disease Association 1985

Salmonellosis in a Wild Turkey

E. W. Howerth, Southeastern Cooperative Wildlife Disease Study, Department of Parasitology, College of Veterinary Medicine, University of Georgia, Athens, Georgia 30602, USA

In May 1982, an emaciated adult female free-ranging wild turkey (*Meleagris gallopavo*), weighing 2.27 kg, was killed in Dallas County, Alabama, because it was exhibiting unusual behavior. The carcass was frozen and subsequently submitted for necropsy.

At necropsy, there were miliary pinpoint yellow-white foci scattered throughout the liver. The ceca were distended severely by large cores of caseous debris, and the cecal mucosa was ulcerated extensively and covered by a thick yellow diphtheritic membrane. Samples of cecum, liver, spleen, kidney, lung, and heart

were fixed in 10% buffered formalin, embedded in paraffin, sectioned at 7 μ m, and stained with hematoxylin and eosin. Gram's and acid-fast stains also were applied to sections of liver and cecum.

Histologically the liver contained multiple granulomas, 100 μ m to 500 μ m diameter, characterized by a central core of macrophages surrounded by a single layer of multinucleated giant cells (Fig. 1). Myriads of gram-negative, non-acid-fast bacterial rods were observed within many of the granulomas. Sinusoids immediately surrounding the granulomas contained hyaline fibrin thrombi (Fig. 1). Similar thrombi also were present in sinusoids throughout the liver unassociated with granulomas. The cecal mucosa was dif-

Received for publication 4 February 1985.

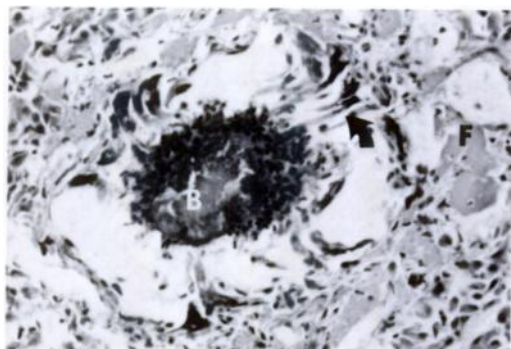


FIGURE 1. Hepatic granuloma with central core of macrophages surrounded by single layer of multinucleated giant cells (arrow) in a wild turkey. Note myriads of bacteria within granuloma (B) and fibrin in adjacent sinusoids (F). H&E, $\times 300$.

fusely ulcerated, with damage extending to the tunica muscularis in some areas. Multinucleated giant cells and macrophages lined the base of the ulcerated area separating the cecal wall from the layers of necrotic inflammatory cells and fibrin which formed a cast in the cecal lumen. Masses of bacteria similar to those in the liver were present throughout the cecal cast and both free and within macrophages along the base of the ulcer.

Salmonella Group B was isolated in pure culture from liver in thioglycollate broth. The isolate was serotyped as *S. typhimurium* by the National Veterinary Services Laboratories, Ames, Iowa.

Salmonella typhimurium is the most common *Salmonella* reported in wild avian species (Steele and Galton, 1971, *In Infectious and Parasitic Diseases of Wild Birds*, Davis et al. (eds.), Iowa State Univ. Press, Ames, Iowa, pp. 51–58). In domestic fowl, it is the serotype most frequently involved in systemic cases (Williams, 1984, *In Diseases of Poultry*, Hofstad et al. (eds.), Iowa State Univ. Press, Ames, Iowa, pp. 65–129). Although there is serologic and cultural evidence that salmonella organisms, including *S. typhimurium*, infect free-ranging wild turkeys (Hensley and Cain, 1979, *Avian Dis.* 23: 62; White et al., 1981, *J. Wildl. Dis.* 17: 327–330), we believe this to be the first reported case of clinical disease.

The author thanks Nina Rodenroth for photographic assistance. This study was supported by an appropriation from the Congress of the United States to the Southeastern Cooperative Wildlife Disease Study, Department of Parasitology, College of Veterinary Medicine, University of Georgia. Funds were administered and research coordinated under the Federal Aid in Wildlife Restoration Act (50 Stat. 917) and through Contract Number 14-16-0004-83-004, Fish and Wildlife Service, U.S. Department of the Interior.