

Hepatozoon sp. INFECTION IN MINK FROM SOUTHWESTERN ONTARIO

Authors: PRESIDENTE, PAUL J. A., and KARSTAD, LARS H.

Source: Journal of Wildlife Diseases, 11(4) : 479-481

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-11.4.479>

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.

***Hepatozoon* sp. INFECTION IN MINK FROM SOUTHWESTERN ONTARIO**

PAUL J. A. PRESIDENTE and LARS H. KARSTAD, Department of Pathology,
Ontario Veterinary College, University of Guelph, Guelph, Ontario N1G 2W2, Canada

Abstract: Schizonts of *Hepatozoon* sp. were found in the lungs of 10 of 18 (56%) mink (*Mustela vison*). Schizonts were located in microgranulomas within the pulmonary parenchyma, occasionally in peribronchiolar or perivascular sites.

CASE HISTORIES AND NECROPSY RESULTS

During the course of histologic studies of *Paragonimus kellicotti* infection,⁴ schizonts of a protozoan parasite were found in the lungs of 5 of 11 mink (*Mustela vison*). Examination of tissues from seven other mink collected at this time and in the same areas of southwestern Ontario revealed protozoa in five additional animals. Samples of lung, liver, kidney, spleen and heart were usually available from each mink. Schizonts were located in microgranulomas within the pulmonary parenchyma (Fig. 1), occasionally in peribronchiolar or perivascular sites. Focal aggregations of lymphocytes, macrophages, plasma cells, and eosinophils were associated with small groups of schizonts. Two types were differentiated: (1) subspherical schizonts, 22-29 μm X 19-24 μm , containing a single row of 18-24 macromerozoites around the perimeter; and (2) larger oblong or spherical schizonts, 29-38 μm X 19-24 μm , with 34-38 micromerozoites located throughout the organism (Fig. 2). These structures resembled the Y- and X-schizonts of *Hepatozoon* spp.^{1,2,8} Merozoites or gametocytes engulfed by

macrophages were frequently seen in microgranulomas in the pulmonary parenchyma (Fig. 3 and 4). These stages were also evident in similar foci of adipose tissue adjacent to lymph node and skeletal muscle in one mink and in perirenal fat in another. There was a schizont surrounded by mononuclear cells in a centrilobular site in hepatic parenchyma of a single animal. Merozoites were found within macrophages in a focus of lymphoid tissue in a portal area of the same liver.

Hepatozoon sp. has not previously been recorded in mink and the location of schizonts in the pulmonary parenchyma is unusual.² Schizonts of other *Hepatozoon* spp. have been identified in the myocardium, skeletal muscle, lungs, and liver of several species of wild mammals in southern Africa.¹

Although the number of mink examined was small (18), the high prevalence of infection (56%) and the fact that hepatozoonosis in raccoons has not been found in this area suggests that this organism may be a species different from *H. procyonis* described from raccoons.²

Acknowledgements

This research was supported by the Ontario Ministries of Natural Resources, and Agriculture and Food.

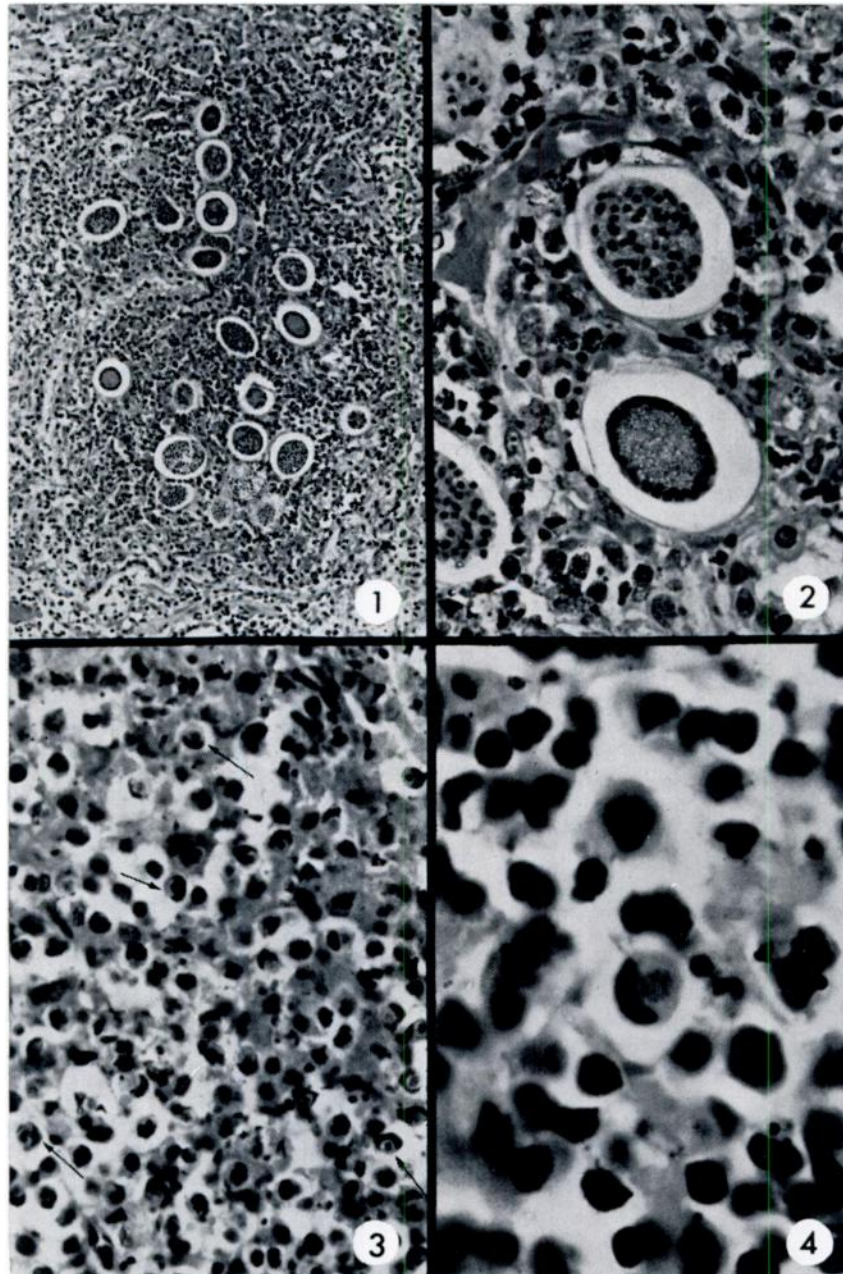


FIGURE 1. A focus of *Hepatozoon* sp. schizonts in the pulmonary parenchyma of a mink. Infiltrations of macrophages, lymphocytes and eosinophils form a microgranuloma around the schizonts. H&E X 380.

FIGURE 2. Morphology of the X (upper) and Y (lower) schizonts of *Hepatozoon* sp. in the microgranuloma of Fig. 1. H&E X 1550.

FIGURE 3. *Hepatozoon* merozoites engulfed by macrophages (arrows) in a microgranuloma in the pulmonary parenchyma of mink. H&E X 1550.

FIGURE 4. High power magnification of a single merozoite in a macrophage (from Fig. 3). H&E X 3380.

LITERATURE CITED

1. BASSON, P. A., R. M. McCULLY, S. P. KRUGER, J. W. VAN NIEKERK, E. YOUNG, V. DE VOS, M. E. KEEP and H. EBEDES. 1971. Disease conditions of game in southern Africa: Recent miscellaneous findings. *Vet. Med. Rev.* 71: 313-340.
2. CLARK, K. A., R. M. ROBINSON, L. L. WEISHUHN, T. J. GALVIN and K. HORVATH. 1973. *Hepatozoon procyonis* infections in Texas. *J. Wildl. Dis.* 9: 182-193.
3. OHBAYASHI, M. 1971. *Hepatozoon* sp. in northern voles, *Microtus oeconomus*, on St. Lawrence Island, Alaska. *J. Wildl. Dis.* 7: 49-51.
4. PRESIDENTE, P. J. A. and R. O. RAMSDEN. 1975. *Paragonimus kellicotti* infection in wild carnivores in southwestern Ontario: II. Histopathologic features. *J. Wildl. Dis.* 11: (in press).

Received for publication 7 March 1975
