BioOne COMPLETE

OBSERVATIONS ON A COCCIDIUM (Eimeria dorneyi) FROM THE NORTHERN FLYING SQUIRREL IN ONTARIO

Authors: SOON, BEE-LING, and DORNEY, ROBERT S.

Source: Bulletin of the Wildlife Disease Association, 5(1) : 37-38

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-5.1.37

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.

Downloaded From: https://complete.bioone.org/journals/Bulletin-of-the-Wildlife-Disease-Association on 28 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

OBSERVATIONS ON A COCCIDIUM (Eimeria dorneyi) FROM THE NORTHERN FLYING SQUIRREL IN ONTARIO

In 1962 Dorney (J. Protozool. 9: 258-261) partially described a coccidium from a Northern flying squirrel *(Glaucomys sabrinus)* captured in Wisconsin. Later, Levine and Ivens [The Coccidian Parasites (Protozoa, Sporozoa) of Rodents, University of Illinois Press, Urbana, 1965] after comparative studies of coccidia in the host family *Sciuridae,* elevated this *Eimeria* to specific status, naming it *E. dorneyi.* However, no drawings or photographs were ever made of this species. In this brief note we shall present further mensural data on this species as seen in Ontario flying squirrels *(G. sabrinus)* and shall compare its appearance to other described eimerians from North American flying squirrels.

Two Northern flying squirrels trapped in a private home 8 miles south of the campus of the University of Waterloo, Ontario, Canada, were used for studies. Intestinal contents of these squirrels were placed in 2% potassium dichromate solution and oocysts present in the digesta were allowed to sporulate in petri dishes at room temperature. Sporulated oocysts recovered by sugar flotation were measured with a calibrated ocular micrometer under oil immersion.

A composite scale drawing of *E. dorneyi* based both on photomicrographs and direct observation of many intact and crushed oocysts was made in comparison (Figure 1) with the other two described eimerians, *E. parasciurorum* (Bond and Bovee, J. Protozool. 4: 225-229, 1957) and

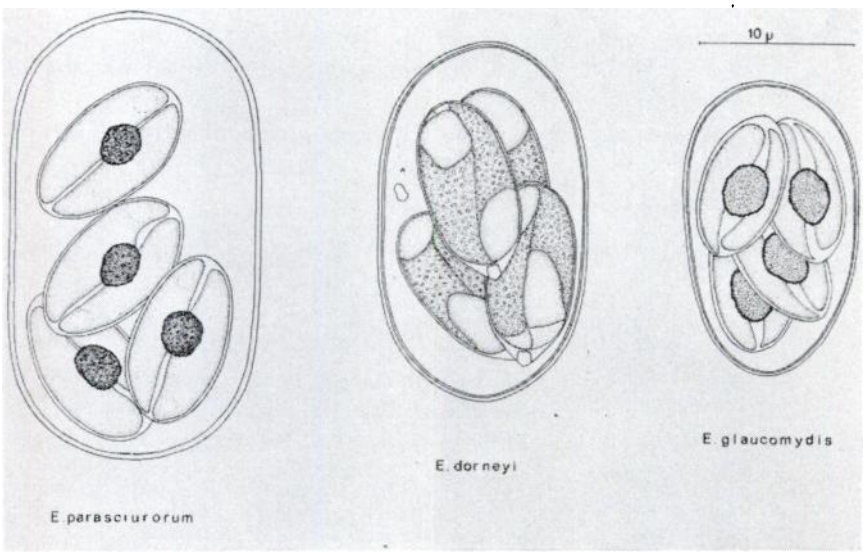


FIGURE 1. *Comparative drawings of the three presently known eimerians in the host genus* Glaucomys.

Downloaded From: https://complete.bioone.org/journals/Bulletin-of-the-Wildlife-Disease-Association on 28 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

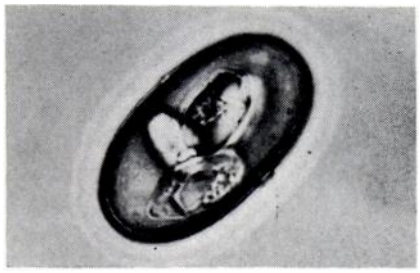


FIGURE 2. *A typical sporulated oocyst of* E. dorneyi.

E. glaucomydis (Roudabush, J. Parasitol. 23: 107-108, 1937), known from the Southern flying squirrel, *G. volans*. A photomicrograph of a typical oocyst of *E. dorneyi* is shown in Figure 2.

Mensural observations of sporulated oocysts of *E. dorneyi* from our Ontario material showed them to be ellipsoidal, rarely ovoid, with a smooth wall composed of two layers (Figure 2), outer wall light yellow and the inner pale green. Micropyle, polar cap and oocyst residuum were absent. One polar granule was present. Seventy-one sporulated oocysts measured 14.0 - 29.0 by 9.8 - 16.8 μ, mean of 23.0 by 13.0 μ. Mean length-width ratio was 1.8. Sporocysts (4) were ovoid, with Stieda body present which was not nipple-shaped. Sporocyst residuum was dispersed among the sporozoites. Five sporocysts measured 11.0 - 12.0 by 5.5 - 6.0 μ, with a mean of 11.6 by 5.7 μ. These measurements and observations on morphology are similar to those made earlier by Dorney in Wisconsin, with the exception that our material has a double wall while his had a single wall. The Stieda body, polar granule and appearance of sporocystic residuum of *E. dorneyi* easily differentiate this eimerian from the other two known from the genus *Glaucomys*.

These observations now extend the range of this eimerian to include Southern Ontario.

This research was supported by the National Research Council of Canada, grant no. A-4656.

BEE-LING SOON and ROBERT S. DORNEY

Department of Biology
University of Waterloo
Ontario, Canada

September 15, 1968

Downloaded From: https://complete.bioone.org/journals/Bulletin-of-the-Wildlife-Disease-Association on 28 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use