BioOne COMPLETE

Eimeria fitzgeraldi n. sp. FROM THE NORTHERN POCKET GOPHER, Thomomys talpoides 1

Author: TODD, K. S.

Source: Journal of Wildlife Diseases, 6(2) : 107-108

Published By: Wildlife Disease Association

URL: https://doi.org/10.7589/0090-3558-6.2.107

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/Journal-of-Wildlife-Diseases on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

Eimeria fitzgeraldi n. sp. FROM THE NORTHERN POCKET GOPHER, Thomomys talpoides[1]

From June through August, 1969, fecal samples from 65 northern pocket gophers, *Thomomys talpoides,* were collected in Park County, Wyoming, for parasitologic examination. A description of the population and trapping area was given by Tryon and Cunningham (1968, J. Mammal. 49: 699-705). Fecal pellets from the colon were placed in 2.5% potassium dichromate solution and mailed to Urbana. A single fecal pellet was examined from each sample with the aid of Sheather's sugar solution and a Zeiss Standard GFL microscope with 10X eyepieces and a 100X apochromatic objective. Three of the samples contained large numbers of sporulated or partially sporulated oocysts which are herein described as a new species. One hundred oocysts and sporocysts were measured.

Eimeria fitzgeraldi n. sp.

Description

The oocysts were ellipsoidal to ovoid and often slightly asymmetrical and flattened at one end (Fig. 1). The oocyst wall was about 1.5-2.0 μ thick and composed of two layers; the outer layer was brown, slightly rough and made up about ¾ of the total wall thickness. The inner layer was colorless. There was a slight thinning of the oocyst wall at the flat end, but a distinct micropyle was not present. A wrinkled membrane was present at the thin end of the oocyst. Oocysts were 24-33 μ x 18-24 μ (mean 28.3 $\pm$ 1.9 x 22.0 $\pm$ 1.3), and the length to width ratio was 1.06-1.72 (mean 1.29). A polar granule, which had an irregular shape, was present, but an oocyst residuum was absent.

The sporocysts were ovoid and had a distinct Stieda body. Sporocysts were 13-16 μ x 6-10 μ (mean 14.1 x 8.3 μ) and had a length to width ratio of 1.61-2.20 (mean 1.73). A granular sporocyst residuum was present, usually as a compact mass filling most of the sporocyst, but was sometimes elongate and situated between the sporozoites. A thin membrane surrounded the sporocyst residuum.

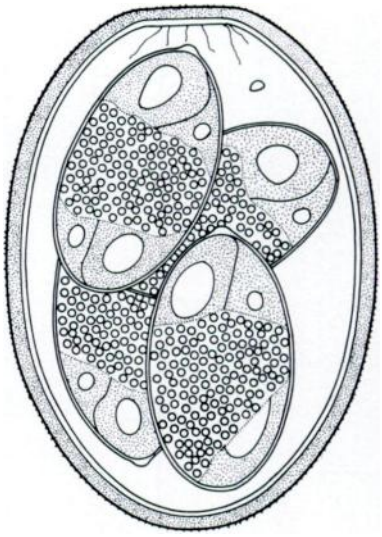


FIGURE 1. *Sporulated oocyst of* Eimeria fitzgeraldi, *n. sp.*

[1] Supported in part by the Environmental Sciences Branch, Division of Biology and Medicine, U.S. Atomic Energy Commission (NYO-2579-19), Training Grant AI-00033 from the National Institutes of Health, and General Research Support Grant FR-05460 from the National Institutes of Health.

Downloaded From: https://complete.bioone.org/journals/Journal-of-Wildlife-Diseases on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use

The sporozoites lay lengthwise in the sporocysts. A large posterior refractile body and a small anterior refractile body were present in each sporozoite.

Type Host: Northern pocket gopher, *Thomomys talpoides.*

Location: Beartooth Mountains, Park County, Wyoming.

Incidence: Oocysts were present in fecal samples from 2 of 10 juvenile males and 1 of 31 adult females. No oocysts were found in samples from 14 adult males or 10 juvenile females.

Remarks: Two other species of *Eimeria* have been described from the family Geomyidae. *Eimeria geomydis* Skidmore, 1929 was described from a single pocket gopher *Geomys bursarius* from Nebraska, and *E. thomomysis* Levine, Ivens and Kruidenier, 1957 was found in 2 of 5 *Thomomys bottae* from Arizona. The average sizes of these species were 13.3 x 12.5 μ and 14.2 x 13.9 μ, respectively, which is considerably smaller than *E. fitzgeraldi* n. sp. Also, *Eimeria thomomysis* does not have a polar granule, and only a few scattered granules of sporocyst residuum are present; *Eimeria geomydis* lacks a polar granule and Stieda body, and a micropyle is occasionally present.

The species is named for Dr. Paul R. Fitzgerald, College of Veterinary Medicine, University of Illinois, Urbana.

We wish to thank Gary L. Brown for technical assistance.

K. S. TODD, Jr.
College of Veterinary Medicine
University of Illinois
Urbana, Illinois

and

C. A. TRYON, Jr.
Pymatuning Laboratory of Ecology
University of Pittsburgh
Pittsburgh, Pennsylvania

Downloaded From: https://complete.bioone.org/journals/Journal-of-Wildlife-Diseases on 29 Mar 2024
Terms of Use: https://complete.bioone.org/terms-of-use