



## **Eimeria chelydrae n. sp. (PROTOZOA: EIMERIIDAE) FROM THE SNAPPING TURTLE, *Chelydra serpentina***

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***Eimeria chelydrae* n. sp. (PROTOZOA: EIMERIIDAE) FROM  
THE SNAPPING TURTLE, *Chelydra serpentina***

In May 1969, a snapping turtle, *Chelydra serpentina*, collected from a farm pond near Tifton, Georgia, was brought to the USDA Animal Parasite Laboratory. Examination of a fecal sample from the turtle revealed the presence of a single type of coccidian oocyst. A sample of the feces was placed in a 2.5% potassium dichromate solution and mailed to the USDA Regional Parasite Research Laboratory, Auburn, Alabama. When received in Auburn, the fecal sample contained many partially sporulated and a few completely sporulated oocysts of an undescribed species of *Eimeria*. After preliminary observations of the oocysts, the sample was placed in a thin layer in a petri dish, and the oocysts were allowed to continue sporulation for one week at room temperature (20-24 C). The sample was then stored in 2.5% potassium dichromate at 4 C for 3 weeks. The oocysts were concentrated with Sheather's sugar solution and were studied with a Leitz Ortholux microscope equipped with a 100 X planapochromatic oil immersion objective.

**Description.** Oocysts (Fig. 1) spherical or subspherical, rarely ellipsoidal. Oocyst wall smooth, colorless to light blue, composed of a single layer about 0.6-0.8  $\mu$  thick. Oocyst wall easily ruptured by pressure on the coverslip. Micropyle absent. Fifty sporulated oocysts measured 13-17 by 12-17  $\mu$  (mean 15.2 by 14.4  $\mu$ ); length-width ratios ranged from 1.0 to 1.2 with a mean of 1.02. Oocyst polar granule and oocyst residuum absent. Sporocysts ovoid with a small Stieda body at the narrow end. Fifty sporocysts measured 8-10 by 5-6  $\mu$  (mean 9.6 by 5.6  $\mu$ ). Sporocyst residuum composed of many granules of various sizes, in a mass surrounded by a thin membrane or scat-

tered throughout the sporocyst. One or two sporocysts normally lie at right angle and perpendicular to the long axis of the oocyst, so that they are viewed from the end. Sporozoites fusiform, lying lengthwise in the sporocysts, usually with a refractile body in each end.

**Remarks:** Fourteen species of *Eimeria* have been described from turtles. All but one was reviewed by Pellérdy (1965, *Coccidia and Coccidiosis*, Akadémiai Kiadó, Budapest, Hungary, p. 153-159). Since then a new species was described from *Pseudemys ornata* (Lainson, 1968, *Ann. Trop. Med. Parasit.* 62: 260-266). None of the previously described coccidian species were from *Chelydra serpentina*.

The only spherical or subspherical *Eimeria* oocysts that have been described from turtles are *Eimeria dericksoni* Rudabush, 1937 from *Amyda spinifera*; *E. irregularis* Kar, 1944 from *Lissemys punctata*; *E. joboti* Carini, 1942 from *Testudo tabulata*; *E. koormae* Das Gupta, 1938 from *Lissemys punctata*; *E. legeri* (Simond, 1901) from *Emyda granosa*; *E. pseudemydis* Lainson, 1968 from *Pseudemys ornata*; and *E. trionyxae* Chakravarty and Kar, 1943 from *Trionyx gangeticus*. *Eimeria chelydrae* differs from *E. irregularis*, *E. joboti* and *E. koormae* by having only a single-layered oocyst wall. It differs from *E. dericksoni*, *E. pseudemydis* and *E. trionyxae* by lacking an oocyst residuum. *Eimeria legeri* oocysts were insufficiently described to distinguish them from those of *E. chelydrae*.

In mammals and birds, *Eimeria* species are usually considered highly host-specific and occur in only a single host genus or, rarely, in two or more genera within the same tribe. The host specificity of reptilian *Eimeria* has rarely been studied.

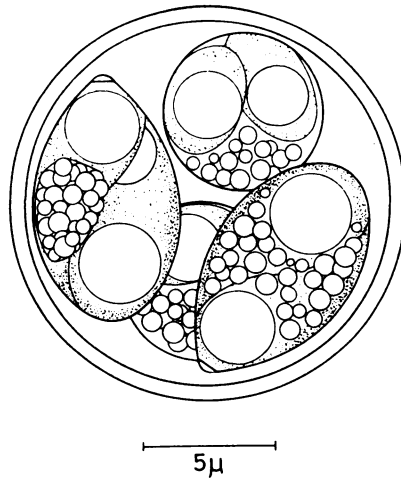


FIGURE 1. Sporulated oocyst of *Eimeria chelydrae*.

Vetterling and Widmer (1968, J. Parasit. 54: 569-576) were unsuccessful in attempting to infect two sidewinder rattlesnakes, *Crotalus cerastes*, *laterorepens*, and two garter snakes, *Thamnophis sauritis*, with sporulated oocysts of *Eimeria cascabeli* from the southern Pacific rattlesnake, *Crotalus viridis helleri* and the prairie rattlesnake, *Crotalus viridis viridis*.

Based on host specificity, *Eimeria legeri* and *E. chelydrae* are considered to be separate species. The host of *E. legeri* (*Emyda granosa*) belongs to the family Trionychidae, whereas the host of *E. chelydrae* (*Chelydra serpentina*) belongs to the family Chelydridae.

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