

THE FORKED TONGUE

THE MONTHLY NEWSLETTER OF THE GREATER CINCINNATI HERPETOLOGICAL SOCIETY

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February 2005

The Editor's Den

The February Forked Tongue features an article on cryptosporidiosis by Dr. Wendy Lim.

Calendar of Events

3/2/05 Monthly Meeting featuring Greg Lipps Jr. speaking on Ohio Herp conservation.

4/06/05 Monthly Meeting featuring Jim Harrison speaking on envenomation.

4/16/04 GCHS day at the Cincinnati Zoo See details below

4/22- 4/24 Herpetology Weekend at Natural Bridge Kentucky

5/4/05 Monthly Meeting featuring Brian Horn, Adventures of a Tropical Herpetologist.

7/6/05 Monthly Meeting featuring Phil Peak and Will Byrd speaking on Snakes of Kentucky.

8/3/05 Monthly Meeting featuring Joe Collins Speaking on "North American Herpetology, Problems and Perspectives"

Cryptosporidiosis

Dr. Wendy Lim DVM

Cryptosporidiosis is caused by a type of coccidia called *Cryptosporidium*. Coccidia is a single-cell protozoa, that is usually considered as parasite to the other hosts. Cryptosporidiosis has been reported in a total of 60 species of reptiles including 40 species of snakes (boids, colubrids, elapids, and viperids), 15 species of lizards (agamids, gekkonids, chamaeleonids, helodermatids, lacertids, teiids, and vacanids), five species of tortoises and turtles (testudinids chelonians).

In a recent study conducted in 2000, 13 out of 90 captive snakes were found to be shedding *Cryptosporidium* eggs in the feces.

The typical clinical signs of cryptosporidiosis include

weight loss, regurgitation within several days of feeding, loss of appetite, lethargy, mid-body swelling, change in consistency of the feces, and *etc.* The first signs observed are usually inappetance, weight loss and regurgitation. It may take weeks or months before other clinical signs become obvious, such as a mid-body swelling or muscle wasting due to starvation. Treatment for cryptosporidiosis is typically unsuccessful, either non-effective, or unsafe to the animals. For this reason, parasite control is extremely important. Isolation is the best way to prevent spread of disease. Infected reptiles are usually humanely euthanized. Nevertheless, some authors have tried different treatment such as halofuginone, spiramycin, paromomycin, bovine hyperimmune colostrums, and *etc.* with very little success.

Understanding the life cycle of any species of parasite is very important in the control of infestation. The basic principal of parasite control is terminating or disturbing the life cycle of the particular parasite. By knowing the potential risks, we can eliminate them and hence lower the risk of exposure. By applying the same principle, we have to know the possible risks that can put our animals in danger of contracting the disease. We have to pay particular attention to the environment of the animal, as well as the food and water source.

Transmission usually occurs by fecal-oral route (ingesting feces from infected animals) or direct contact with an infected animal. In fecal-oral transmission, the host (potentially infected reptile) ingests sporulated oocysts (eggs) in contaminated water or food, infected mice, snakes, lizards or other prey items. The incubation period (from ingestion of oocysts to manifestation of clinical signs) is approximately 10 days. Tortoises can be asymptomatic carriers. Some snakes and lizards are asymptomatic and can be considered as carriers. One of the authors stated that he had found some snakes shed *Cryptosporidium* eggs for years without showing clinical signs. The coccidian eggs have been found in the feces of some amphibians especially frogs, but the incidence of infection is very low. We may conclude that amphibians are capable of

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passing cryptosporidia in feces after ingesting an infected host.

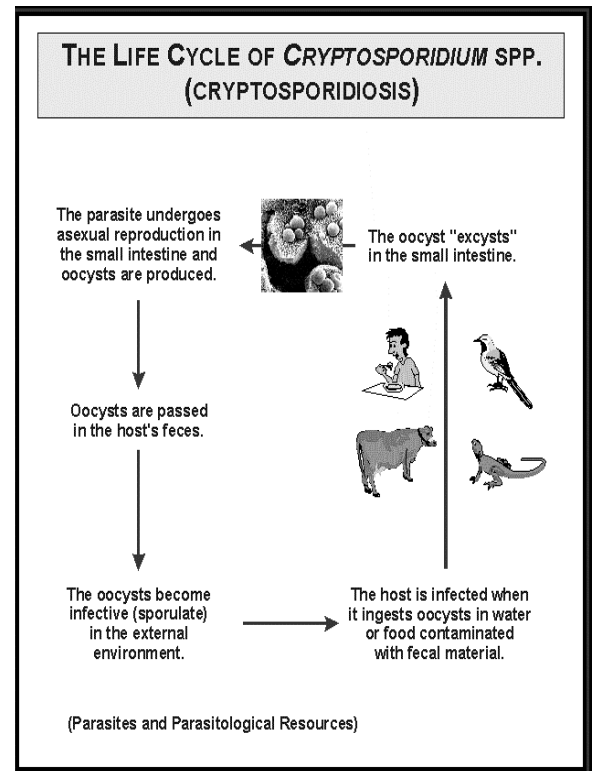
Cryptosporidium has a worldwide distribution. The oocysts can survive in the environment very well for several months to years, particularly when associated with fecal matter or in a moist atmosphere at low temperatures. It is resistant to most washing and disinfection protocols. Desiccation or exposure of *Cryptosporidium* oocysts to high temperatures (greater than 149.0°F) are the best methods to impair their infectivity, however, these methods may not be practical in certain situations. The most practical cleaning regimen suggested by some authors is to thoroughly clean any cage with standard disinfectants, discard all cage substrates, props, and water bowls, then move the cage and cleaning utensils to an outside area and disinfect with either 10% formalin, glutaraldehyde, or ammonia. Place the cages in plastic bags and allow for at least 48 hours of fumigation before using.

There is no zoonotic (cross species infection between human and reptiles) potential of reptilian cryptosporidiosis. Reptilian *Cryptosporidium* eggs are not cross-transmissible to mammals, birds, or amphibians, and nor does the opposite. Therefore, reptiles do not get infected by eating infected mammals. However, snakes can mechanically pass in their feces the eggs of some mammalian cryptosporidia (from their prey items or food), thus under certain circumstances, contamination with snake feces poses a potential zoonotic threat to the other mammals.

Useful samples for the diagnosis of Cryptosporidiosis are fecal material, regurgitated food, or stomach eluents. Cryptosporidiosis can sometimes be diagnosed by a special fecal staining. However, this method is unreliable. Other methods include antibody detection (serology or blood sample), biopsy of the stomach, polymerase chain reaction (a method used to detect the genetic material in the samples – feces, gastric lavage or swabs). We have successfully diagnosed a snake with cryptosporidiosis based on PCR technique last November. In my opinion, biopsy of the stomach wall will produce the most affirmative diagnosis. Screening is very important in bigger collection such as breeder animals and zoo animals. In an ideal practice, all specimens should be screened for *Cryptosporidium*. Due to cost-effectiveness, pooled samples are often used as opposed to sample collected

from each individual animal. If the results show up positive, then individual test is performed on each animal to isolate the infected.

Life cycle of *Cryptosporidium spp.* (<http://www.biosci.ohio-state.edu>)



Reference:

1. Cranfield, M. R., Graczyk, T., Wright, K., Frye, F. L., Raphael, B., Garner, M., Nathan, R., 1999. Cryptosporidiosis. Bulletin of the Association of Reptilian and Amphibian Veterinarians, 9(3):15-21.
2. Graczyk T. K., Cranfield M. R., 2000. *Cryptosporidium serpentis* oocysts and microsporidian spores in feces of captive snakes. Journal Parasitology 2000 Apr;86(2):413-4.

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Classified Advertising Policy

GCHS Members may run a free classified ad of 7 lines or less at no charge for an unlimited time; however, the ad will be canceled after one month unless the editor is informed to continue it. Please include scientific names for the animals with your ad as well as your phone number and area code. Ads of up to 7 lines for non-member are \$2 per issue; ad charges for items more than 7 lines long are as follows:

Business card size	\$3 per issue
1/4 page	\$6 per issue
1/2 page	\$10 per issue
Full page	\$20 per issue

The GCHS is not liable for the quality of the merchandise advertised. The Society also reserves the right to refuse any ad considered inappropriate.

Requirements for Submitting Articles to the Forked Tongue

Articles can be submitted via 3.5" floppy disk or hard copy to Editor, GCHS 11470 Gatch Hill Road, Aurora, IN 47001.

Articles may be e-mailed to Grady Calhoun at gradycalhoun@earthlink.net.

Black and white photographs can be included with articles. Photo submissions should include your name, phone number, and description of photo on the back. Photos can be returned. All time dependent submissions must be in the editors possession no later than the meeting previous to the desired publication.

Classifieds

For Sale: Captive Bred albino boa constrictors, (Peter Kahl strain). These are 2004 babies, all feeding and looking great! \$1000.00 each. Partial stripes available for \$1600.00. Call Scott Kass at 513-779-8124.

For Sale: 1.0.0 Carpet x Diamond Python (*Morelia spilotes*), 6 years old, tame, 8 ft +, eats pre-killed large rats. Has been in my collection for 4+ years. \$125 or trade. Call Mike McMullen (513) 753-1899.

Rats and Mice for sale. Reasonable price. Call Jesse or Tom (513) 876-0579.

Savannah monitor (*Varanus exanthematicus*). Feeds very well, approx 32". Healthy, tame, feeds on canned dogfood, mice, boiled chicken, eggs, etc. Free to good, experienced home but must come back to me if you get rid of it.

Nile monitor (*Varanus niloticus*) about 28". Feeds very well, approx 27". Healthy, NOT tame, feeds on canned dogfood, mice, boiled chicken, eggs, etc. Free to good, experienced home but must come back to me if you get rid of it. For Sale: 1.1 Captive bred grey-banded kingsnake. Eating live pinkies. \$50.00 each. Call Grady Calhoun at 513-564-6041

For Sale: 3.3 South Carolina Corn Snakes (*elaphe guttata guttata*). These were bred by me, and are approx. 1.5 years old. All are nice looking, but a few have exceptional orange and red coloring, and all are feeding very aggressively on f/t mice. I am asking between \$40-\$50 each. Very healthy snakes. Feel free to call me at 228-0293 or e-mail at kdobrien76@aol.com with any questions. Ask for Kevin.

Discount: A 10% discount is offered to all card-carrying members of the GCHS at *All Creatures Animal Hospital*. Dr. Dan Meakin, All Creatures, 1894 Ohio Pike, Amelia, OH 45102, 513-797-7387.

Discount: A 10% discount is offered to all card carrying members of the GCHS at Dr. Dahlhausen's Veterinary Clinic, 5989 Meijer Dr., Suite 2, Milford, Ohio 513-576-0131

(Number to left of decimal indicates males; number to right of decimal indicates females; number to right of second decimal indicates number of unknown sex. For example, 3.2.1=3 males, 2 females, and 1 unsexed specimen)

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Currently Held Positions

President	Grady Calhoun	(812) 926-1206	Vice President	Dean Alessandrini	(513) 347-0099
		(513) 564-6041	Editor	Grady Calhoun	(812) 926-1206
Treasurer	Peggy Fille	(513) 528-4452			(513) 564-6041
Sergeant-at-Arms	Bruce Fille	(513) 528-4452	Education Committee Co-Chairman		
Advisor	Ray Whitson	(859) 342-8842		Peggy Fille	(513) 528-4452
Secretary	Vacant			Chris Bauer	(513) 424-5818

About the GCHS

The Greater Cincinnati Herpetological Society holds monthly meetings which typically consist of a short business section, a refreshment intermission, and a program related to herpetology. Both members and nonmembers are invited to attend. Membership is open to anyone with an interest in reptiles and amphibians. New members may sign up by mail or at the monthly meetings. Members receive monthly issues of *The Forked Tongue* and free classified advertising. Annual dues should be directed to the secretary at the society's mailing address, according to the rates below:

Student	\$10.00	Corresponding	
	\$10.00		
Individual	\$12.00	Sustaining	\$25.00
Family	\$18.00	Institutional	\$30.00
Contributing	\$50.00		

Why Be a Member?

Receive monthly issues of *The Forked Tongue*

- Meet individuals knowledgeable about herpetoculture
- Have access to captive-bred herps and feeder animals
- Participate in society-sponsored field trips, and outings.
- Receive a 10 percent discount on herp-related items and services when you show a valid membership card at the following establishments:

Delhi Pet Center	(513) 451-4015
Kentucky Reptile Zoo	(606) 663-9160
Harrison Pet Center	(513) 367-1115
All Creatures Animal Hospital	(513) 797-7387
Dr. Dahlhausen's Veterinary Clinic	(513) 576-0131.

P.O. Box 14783
Cincinnati, OH 45250

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