Baylisascaris procyonis (a.k.a. raccoon roundworm)

- Zoonotic nematode
- Natural host is the raccoon
- Direct life cycle (i.e. lacking an obligatory intermediate host)
- Birds and other mammals are susceptible to both infestation and consequent aberrant migration[1]
- Eggs possess a sticky surface coating that allows them to adhere to contact surfaces
    - Very resistant to degradation
- Eggs are susceptible to incineration (i.e. propane flame gun) and soaking with xylene and acetone mixtures or boiling water and bleach (may only remove the outer sticky coating of the egg but lessens the infectivity)[1]

Raccoons

- Transmission occurs via ingestion of eggs during either feeding or grooming or ingestion of infected prey (birds or mammals)
- No apparent clinical signs are typically observed unless an unusually heavy infestation occurs in a juvenile[1]
- Eggs are shed in the feces → the larva continue to develop within the egg after excretion → larva become infective within 2 – 4 weeks
- Approximately 20,000 eggs excreted per gram of feces[1]

Humans

- Humans are dead end hosts (i.e. *B. procyonis* eggs are not shed in feces)
- Fewer than 25 human cases have been diagnosed as of 2003 [2]
- Majority of cases have been reported in children
- Transmission occurs via inadvertent oral ingestion of *B. procyonis* eggs
- Clinical signs of infection develop 2 to 4 weeks following the ingestion of eggs
- Clinical signs include nausea, lethargy, hepatomegaly, varying degrees of central nervous system dysfunction (loss of muscle control, paralysis, blindness, death, coma)
- Pathogenesis: *B. procyonis* larvae are released from the eggs in the intestinal tract → larvae migrate extensively in the tissues (visceral larval migrans) → an intense eosinophilic inflammatory reaction ensues
    - Parasite has a tendency to invade the eye (ocular larva migrans), the spinal cord, and the brain (neural larval migrans)
- Poor prognosis for the majority of human infestations
- Infection may result in permanent neurologic damage, blindness, or death
- There is no known effective treatment for human infection [1]

[1] Murray W.J. Human Infections Caused by the Raccoon Roundworm, *Baylisascaris procyonis*. 2002. Clinical Microbiology Newsletter. 24(1): 1-7.

[2] Center for Disease Control, Division of Parasitic Diseases, Parasitic Disease Information Fact Sheet. http://www.cdc.gov/ncidod/dpd/parasites/baylisascaris/factsht_baylisascaris.htm