1985

Raccoon Ascarids Pose Public Health Threat

J. H. Greve
Iowa State University

Follow this and additional works at: https://lib.dr.iastate.edu/iowastate_veterinarian

Part of the Parasitic Diseases Commons, Veterinary Pathology and Pathobiology Commons, and the Veterinary Preventive Medicine, Epidemiology, and Public Health Commons

Recommended Citation

Greve, J. H. (1985) "Raccoon Ascarids Pose Public Health Threat," Iowa State University Veterinarian: Vol. 47 : Iss. 1 , Article 2. Available at: https://lib.dr.iastate.edu/iowastate_veterinarian/vol47/iss1/2

This Article is brought to you for free and open access by the Journals at Iowa State University Digital Repository. It has been accepted for inclusion in Iowa State University Veterinarian by an authorized editor of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
That cute, mischievous raccoon turns out to harbor an ascarid that has dangerous public health potential. The ascarid, *Baylisascaris procyonis*, is common in raccoons in Iowa, especially among younger raccoons, judging from results of a small survey run in 1983. Of 24 scats collected in July (probably representing adults only), three were positive for *B. procyonis*, while 16 of 22 scats collected in November (mixture of adults and young-of-the-year) were positive. Figure 1 shows an infective *B. procyonis* egg.

Officials of the City of Ames, Iowa, estimate that over 700 raccoons live permanently within the city limits, which attests to the prevalence of these animals. Because raccoons are frequently found in residential, farm, and recreational areas, human contact with raccoon feces that contain infective eggs of *B. procyonis* is a possibility.

Realization of the zoonotic potential of *B. procyonis* is a story that has unfolded over the past 15 years or so. The important segment of this ascarid's cycle in this regard involves the migratory behavior of the juvenile. In the raccoon, the migration is much like that of *Ascaris suum* in swine (to the liver, lungs, coughed up, swallowed). In other animals (e.g. rodents, birds, monkeys, mustelids, canines, man), juvenile *B. procyonis* sets out on the same migratory path, but the juvenile continues to migrate in tissues instead of passing into the bronchioles and moving up the tracheal escalator. This extended migration is unusually aggressive in the case of *B. procyonis*. Within a few weeks, the juvenile often reaches the brain or spinal cord. It is not known if this is purely by chance or if there is a special predilection for nervous tissue. The aggressiveness of the intracranial migration has been likened to a BB shot ricocheting around in a barrel. A single *B. procyonis* juvenile will disable and kill a small mammal, such as a rodent, in a few days after reaching the brain.

Since 1973, at least nine cases of cerebrospinal infection due to migrating *B. procyonis* have been diagnosed at Iowa State University, according to records in the Veterinary Diagnostic Laboratory, the Department of Veterinary Pathology, and the Laboratory Animal Resources Unit. Affected animals seen at Iowa State University include a silver fox, a cockatiel, a flock of bobwhite quail, a colony of prairie dogs, woodchucks, and wild and domestic rabbits. Severe CNS signs, including vertigo, ataxia, twitches, and depression, preceded death in all cases. In many in-

---

*Dr. Greve is a professor in the Department of Veterinary Pathology at Iowa State University.*

**Figure 1.** Embryonated, infective egg of *Baylisascaris procyonis*. (Courtesy of Dr. Joan Hopper, Laboratory Animal Resources Unit)
stances, the history included known contact with raccoon feces, and in the others the contact was presumed. The diagnosis was made by finding the migratory juvenile ascarids in histologic sections of the brains (Figure 2).

In 1984 the American Veterinary Medical Association distributed a communique warning of the danger of human infection and recommending that pets and children not be allowed access to areas where raccoons may have defecated. Raccoons usually defecate for several days in a row in a common latrine site, so the scats are concentrated rather than being widely scattered. Favored latrine sites are on small prominences, stumps, and downed logs along streams, but bales of hay and straw are also frequently used. Such areas should be avoided, and contaminated hay or straw should be discarded. Persons should wash their hands immediately after contact with raccoon feces or with materials possibly contaminated by raccoon feces. People, especially small children who habitually put dirty hands or objects into their mouths, may become infected by ingesting the infective eggs.

Suffice it to say that raccoons are not good prospects for pets, if for no other reason than they serve as a reservoir for *B. procyonis*, which has been incriminated in at least two cases of fatal encephalitis in humans.

Figure 2. Coiled juvenile *Bayulisascaris procyonis* in brain of a domesticated rabbit that had been fed oats in which raccoons had defecated. Reaction around the juvenile is minimal, suggesting rapid movement by the paraiste. (Courtesy of Dr. Joan Hopper, Laboratory Animal Resources Unit)