

Parasitic Worms of Insects

Horsehair worms

Horsehair worms or hairworms (Figure 1) are a group of nematode-like long worms (Phylum Nematomorpha; Class Gordioidea). Their name is based on an old superstition that the worms arise from horsehairs that happen to fall into the water. The body of a horsehair worm is threadlike (less than $\frac{1}{100}$ inch in diameter) and can be up to 14 inches long. They vary in color from almost white to light tan to dark brown.

The adults, which do not feed, are free-living and can be found in water (running or standing) and damp soil.

Eggs are deposited in water or damp soil. After hatching, the juvenile worm enters the body of an arthropod — such as a beetle, cockroach, cricket, grasshopper, centipede, millipede or cabbage worm — or possibly one of many other insects. The larva either penetrates the host's body wall or is ingested. After a period ranging from several weeks to months, during which numerous molts occur, the worm leaves the host. Emergence from the host only occurs when the host is near water. The presence of the mature worm inside seems to “drive” the host to water.

Adult horsehair worms may attract attention by forming a loose, intertwined “ball” squirming and twisting about on the soil, vegetable plants (such as cabbage heads), water troughs, toilet bowls or any place the host happened to be when the worm left its body.

Horsehair worms do not cause any injury to people or plants but are actually beneficial because they kill the insect in which they develop.



Figure 1. Horsehair worm exiting cricket. (Soni Cochran, Nebraska Extension in Lancaster County, <http://lancaster.unl.edu>.)

Mermithid nematodes

Other common worm parasites of insects belong to the roundworm Family Mermithidae (Phylum Nematoda). These nematodes are free-living in the adult stage and parasitic in an animal host for at least part of their juvenile stage. Mermithid nematodes are long and slender, similar to horsehair worms, and usually range in length from 4 to 8 inches. They range in color from gray to black.

The adult mermithid is found in the soil (occasionally under stones) or mud and does not feed. Its life span varies from a few days to months, depending upon the stored food supply.

Eggs are deposited in the soil. After hatching, the larvae enter a host's body, either through ingestion or by penetrating the host's body wall. After a period of time, the immature worm will leave its host to complete its development in the soil.

Mermithid nematodes parasitize almost all groups of insects and are considered beneficial organisms.

Original authors: Bruce A. Barrett and Darryl Sanders

Reviewed by
Bruce A. Barrett, Entomology State Specialist, Division of Plant Sciences

