

FIRST RECORD OF CHIRONOMIDAE LARVAE (INSECTA: DIPTERA) AS PARATENIC HOST OF GORDIOIDEA IMMATURES (NEMATOMORPHA: GORDIOIDA) IN AN ATLANTIC FOREST STREAM, BRAZIL

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Although immature and/or adult chironomids are known to be parasitized by a variety of taxa including mermithid nematodes, water mites, fungi, microsporidians and Hymenoptera parasitoids (Steffan 1967; Tokeshi 1995; Roque & Trivinho-Strixino 2006), they have not been reported as a paratenic host for Nematomorpha larvae, popularly known as horsehair worms or hairworms.

Here we report the occurrence of *Beardius* and *Endotribelos* larvae (Diptera: Chironomidae: Chironominae) as paratenic hosts of Gordioidea (Nematomorpha: Gordioida) for the first time. The larval specimens were collected with a Surber sampler in a small stream in the Brazilian Atlantic forest, Boracéia, State of São Paulo, Brazil (S 23°39'14" W 45°53'28"). The organisms were deposited in the collection of the Laboratório de Entomologia Aquática da Universidade Federal de São Carlos, SP, Brazil. Four larvae of Gordioidea were present in *Beardius* and 65 in *Endotribelos*; in both cases, the hairworms were concentrated in the median region of the larval body (figure 1), being sampled one specimen of each genus.

The four stages of nematomorph life history are: egg, preparasitic larva that hatches from the egg, parasitic larva (dominant stage) that develops within an invertebrate and free-living aquatic adult. The main hosts are representatives of the insect orders Coleoptera and Orthoptera. Other host groups include spiders (Araneae), myriopods (Diplopoda and Chilopoda), crustaceans, and leeches (Poinar 1991).

The paratenic host is a kind of intermediate host where, after hatching, the preparasitic larvae are ingested by a small-bodied invertebrate or vertebrate host. The parasite burrows into the

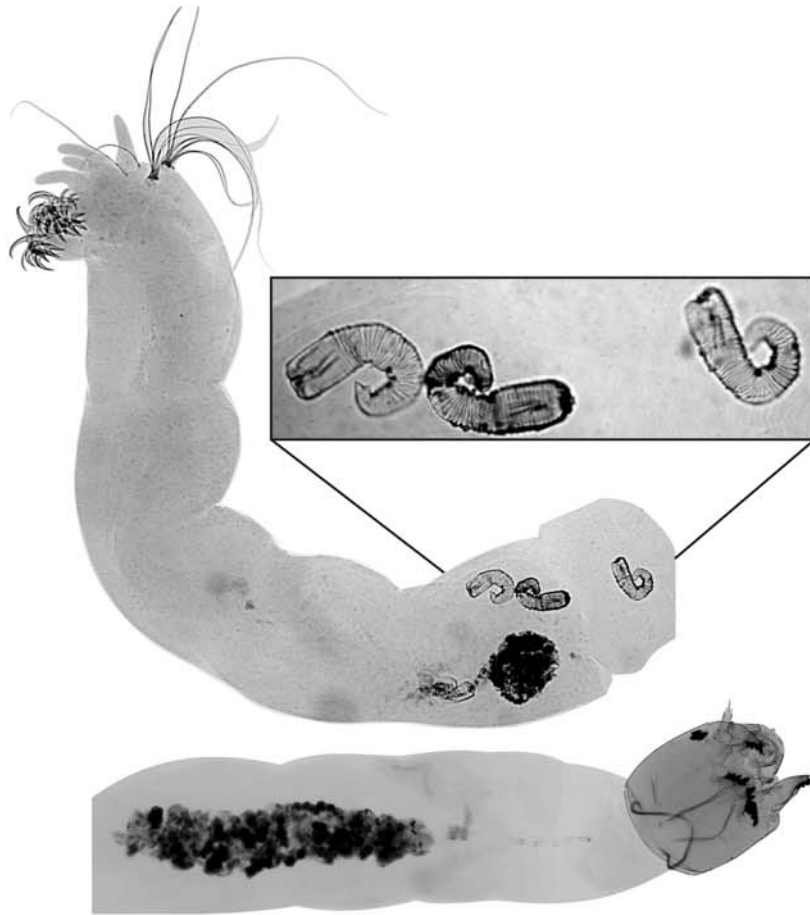
tissue of this paratenic host but then encysts and does not develop further. Only when the paratenic host is eaten by a predator or omnivore does the parasite continue its development. The diversity of paratenic hosts is great, extending from trematodes to vertebrates (Poinar 1991).

Acknowledgements

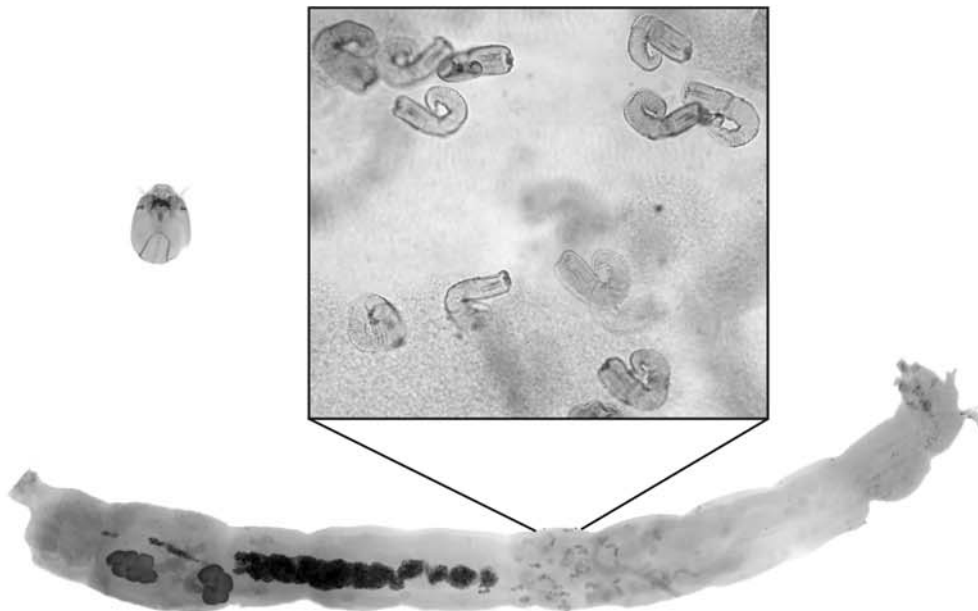
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A



B

Figure 1. Chironomidae larvae: A) *Beardius*, B) *Endotribelos* as paratenic hosts of immature Gordioidea.