

Phylum Nematomorpha (Horsehair Worms)

326 known species; probably many more

a few fossils exist from the Cambrian and Cretaceous periods

superficially resemble nematode worms – hence their name

adults are aquatic; larvae are parasites

also called "hairsnakes" or "hairworms"

adults are freelifving and abundant in aquatic and moist environments

→ worldwide distribution

in all types of freshwater habitats with good oxygen levels

also in damp areas around watering troughs, swimming pools, puddles and cisterns

also in mats of algae or leaf litter along sides of ponds and streams; occasionally in damp soil

1 known marine species

in old days were common in horse troughs

once thought they were literally produced from horses hairs that fell into the water trough

in days past:

kids would pull hairs out of horses tail and place them in a jar of water put it in the window watch to see the "transformation"

adults mostly ~10 cm; range 5-120 cm (up to 3', a few 6') long

but very slender usually ~1 mm dia (but up to 3mm)

reddish or dark brown or black

really do resemble the hair of a horses tail

adults share many roundworm features; once considered to be nematodes:

adult resemblance
pseudocoelom
body covered with a **cuticle**
longitudinal muscles only in body wall
nerve ring around pharynx

but larvae are very different

→ resemble kinorhynchs (a related phylum)

Body Wall

covered by **cuticle** formed from layers of collagen fibers

secreted by epidermis, no cilia

longitudinal muscles only

mesenchyme forms bulk of the animal

Digestive System

adults are short lived and do not feed

have complete digestive tract but degenerate and nonfunctional

Nervous System

anterior ganglia surrounding pharynx

ventral nerve cord extends down trunk

some have eyespot on head

no circulatory, respiratory or excretory system

Reproduction & Development

adults usually short lived – up to about a month

long enough to mate and lay eggs, then die

dioecious → distinguished by caudal end:

male → bilobed
female → trilobed

internal fertilization

during copulation sperm are released through anus

adults often found in puddles after rain

sometimes hundreds together contorted into tangled mating knots of males and females

→ also called gordian worms

the name Gordian Worms relates to the fact that the worms often tie themselves into knots (Gordius of Phrygia, his ox cart, and an intractable problem once easily solved by Alexander the Great)

after mating female lays long strands of eggs on vegetation in water

eggs hatch into **larva** with spiny proboscis

larval stages are all parasitic in many kinds of insects, esp. crickets & grasshoppers, also parasites of centipedes, millipedes and crustaceans

larvae swim about in water and are usually ingested as host drinks

(in some species larva can actually bore into host)

within host, larvae live in the fluid filled body cavity of their host

absorb nutrients through their body wall from host's body fluids

parasitic larvae go through several molts in host

on maturity, parasite acts on host's brain and stimulates host to seek water and drown itself

adults emerge only when host is in water and quickly become sexually active