

Perspective

PARASITIC NEMATODE INFESTATIONS AND PARASITES OF GASTROPODS

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INTRODUCTION

Any worm belonging to the phylum Nematoda is a nematode, usually known as a roundworm. The majority of animals on Earth are nematodes. Nematodes are tapering at both ends, elongate, and bilaterally symmetrical. Some species have a pseudocoel, a hollow in the body wall between the digestive tract and the body that is filled with fluid. Nematodes secrete an exterior cuticle that is periodically shed, like as arthropods and members of six other groups. According to the taxonomic classification of Ecdysozoa, which is based on the idea that moulting has only ever occurred once, these animals have been collectively classified for the time being. They can be found everywhere, including mountains, deserts, and oceanic trenches. In freshwater, marine, and terrestrial settings, they frequently overwhelm other organisms in terms of both individual and species populations.

The cuticle, which is made of collagen, is quite thick and covers the epidermis, which is either a syncytium or a single layer of cells. The cuticle frequently has two or three separate layers and a complicated structure. There is a layer of longitudinal muscle cells below the epidermis [1]. Since nematodes lack circumferential muscles, the relatively hard cuticle collaborates with the muscles to form a hydroskeleton. In carnivorous animals, which may have several teeth, the cuticle that lines the oral cavity is frequently thickened by ridges and other features. The animal can stab its victim with the sharp stylet that is frequently present in the mouth. Some species have hollow stylets that can be used to suck liquids from living things. One type of nematode relies solely on fig wasps, the only source of fig fertilisation, for its survival [2]. They ride wasps from the ripe fig of the wasp's birth to the fig flower of its death in order to feast on them. After killing the wasp, they leave behind their progeny, who wait for the next generation of wasps to emerge as the fig develops.

A nematode's impact on plant health will vary depending on its species. The two types of nematodes, from an agricultural and horticultural standpoint, are the pest nematodes, which damage plants and carry viruses across crop plants, and the predatory nematodes, which destroy garden pests. The meiobenthos includes numerous and significant free-living marine nematodes [3]. They are sensitive to environmental changes brought on by pollution, aid in the recycling of nutrients in marine habitats, and play a significant part in the decomposition process. Nematode bodies are coated in a variety of sensory bristles and papillae, which collectively give nematodes a sensation of touch. Two

tiny pits, or amphids, are located behind the sensory bristles on the skull. These are likely chemoreception organs and have an abundance of nerve cells.

Predatory nematodes are deadly parasites that attack gastropods like snails and slugs. Numerous phytoparasitic nematode species harm roots histologically, forming visible galls as a result. These traits can be used to identify them in the field [4]. Some types of nematode species spread plant viruses by feeding on roots. Nematodes are cylindrical, nonsegmented organisms that are both free-living species and pathogens for both humans and animals. They are widespread across the world. Most human parasite infestations are caused by nematodes, which affect around one-fourth of the world's population. Vulnerable hosts frequently harbour a variety of harmful nematodes. All orders of reptiles have nematodes, which frequently live in their intestines and can be seen as larvae in the respiratory tract or respiratory exudate [5]. Even though infections are frequently asymptomatic, they can nevertheless lead to subsequent bacterial infections.

Ammonia, a nitrogenous waste product, is ejected through the body wall and is not linked to any particular organ. The mechanisms for excreting salt to sustain osmoregulation, however, are frequently more intricate [6]. Numerous marine worms have one or two unicellular renette glands that secrete salt through a hole near the throat on the animal's backside. These specialised cells have been replaced in the majority of other nematodes by an organ made up of two parallel ducts joined by a single transverse duct. This transverse duct leads into an excretory pore-facing common canal.

REFERENCES

1. Hartmann, S., and Lucius, R., 2003. Modulation of host immune responses by nematode cystatins. *Int. J. Parasitol.*, 33: 1291-1302.
2. Bongers, T., 1990. The maturity index: an ecological measure of environmental disturbance based on nematode species composition. *Oecologia.*, 83: 14-19.
3. Bongers, T., and Ferris, H., 1999. Nematode community structure as a bioindicator in environmental monitoring. *Trends. Ecol. Evol.*, 14: 224-228.
4. Gaugler, R., and Boush, G.M., 1978. Effects of ultraviolet radiation and sunlight on the entomogenous nematode, *Neoplectana carpocapsae*. *J. Invertebr. Pathol.*, 32: 291-296.

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5. Vanreusel, A., Fonseca, G., Danovaro, R., Da Silva, M.C., Esteves, A.M., Ferrero, T., and Galeron, J., 2010. The contribution of deep-sea macrohabitat heterogeneity to global nematode diversity. *Mar. Ecol.*, 31: 6-20.
6. Hsueh, Y.P., Mahanti, P., Schroeder, F.C., and Sternberg, P.W., 2013. Nematode-trapping fungi eavesdrop on nematode pheromones. *Curr. Biol.*, 23: 83-86.