Chapter 5 Phylum Rotifera

Rotifera is a small group of **pseudocoelomate** animals that live in freshwater habitats ranging from temporary ponds to rivers. The body is divided into three regions: a head, a trunk and a foot. The head region bears the ciliated crown or **corona** (Fig. 1). Rotifers are filter feeders that consume plankton. The coronal cilia create currents of water that direct water and food toward the mouth. Foods are grasped and chewed by a muscular pharynx, called the **mastax**, which is a unique rotifer characteristic. Rotifers use toes, which secrete a sticky substance from pedal glands for attachment. Rotifers are dioecious, but some species reproduce only by **parthenogenesis**. Rotifers have two types of eggs, **amictic eggs** and **mictic eggs**. Amictic eggs are diploid eggs that develop directly into females. Mictic eggs are haploid eggs. If unfertilized mictic eggs develop quickly and parthenogenetically into males; if fertilized, they secrete a thick shell and become a dormant egg for several months before developing into a female the next year.

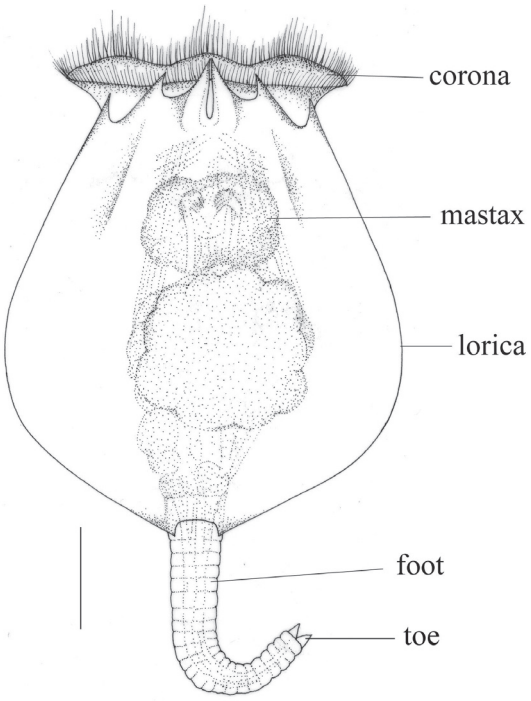

Fig. 1 Structure of *Brachionus rubens*. Scale = 50 μm.

Chapter 6 Phylum Nematoda

Nematodes, or roundworms, (Fig. 1) are translucent, slender, unsegmented, cylindrical **pseudocoelomate** worms. The body typically tapers at the posterior end. Nematodes are dioecious. Most nematodes are parasitic in plants and animals. Free-living nematodes feed on organic matter, algae and diatoms. Parasitic nematodes cause both public health and economic problems.

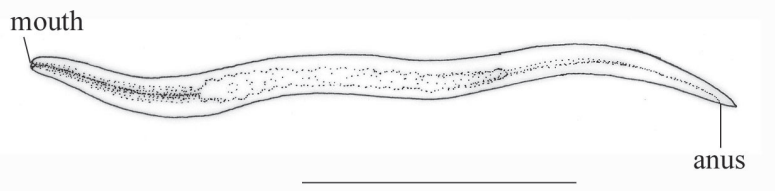

Fig. 1 Structure of freshwater nematode.
Scale = 0.5 mm.

Chapter 7 Phylum Nematomorpha

Horsehair worms (Fig. 1) are unsegmented, cylindrical, very long and slender worms with blunt anteriors. The body is covered by a thick layer of cuticle. Juveniles are parasitic in terrestrial insects and adults are free-living in water. Adults have a vestigial digestive tract and do not feed. They usually are found wriggling slowly among aquatic plants. Females lay eggs attached to aquatic plants.

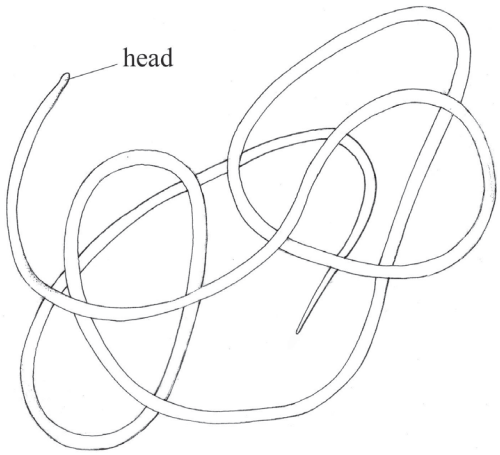

Fig. 1 Structure of horsehair worm.