Phoronida

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Phylum of enterocoelic coelomates; exclusively marine, secretory, and free-living in a chitinous cylindrical tube. Phoronids are characterized by the lophophore, tentaculated extension of the mesosome, and its cavity, the mesocoelom, which embraces the mouth but not the anus. The main functions of the lophophore are feeding, respiratory, and protective. The body is divided into a prosome (epistome, preoral lobe), a mesosome, and a long cylindrical metasome, each containing its own coelom. The nervous system is basipetal. The U-shaped digestive tract brings the anus close to the mouth. The paired excretory organs are also gonducts: metanephridia in adults, proctonephridia in larvae. There is a closed circulatory system with red corpuscles.

Phoronids are hermaphroditic or dioecious, some brooding on nidamental lophophoral glands; spermatophore production is effected by lophophoral organs. Egg cleavage is radial and total, with three types of development: (1) Eggs are rich in yolk, about 125 μm in diameter, and are retained in the parental tube; the whole development requires about 13 days, with 4 of pelagic life. (2) Eggs are moderately rich in yolk, about 100 μm in diameter, and are brooded into nidamental glands in the lophophore during 6–8 days; the whole development requires about 20 days, with 12 of pelagic existence. (3) Eggs are yolk-poor, about 60 μm in diameter, and are directly shed into the seawater; the pelagic development requires about 20 days. The larva is called Actinotrocha (or actinotroch). Asexual propagation occurs in all species.

Phoronids are suspension feeders and also feed directly on dissolved organic compounds. Recent species are found in all marine waters. They occur at depths ranging from the intertidal zone to about 400 m. Species are buried into or encrust hard substrates, in association with the tube wall of cerianthid anemones, or are embedded vertically into soft sediments.

Phoronida, now considered to constitute a class of the phylum Lophophorata, consist of 2 genera and 10 species.

Phoronis iijimai

Actinistrocha branchiata
(Phoronis muelleri larva)