

## Opinion

## CILIATED ORGANS FUNCTION IN DETRITIVORE ACORN WORMS

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## INTRODUCTION

Acorn worms are a hemichordate class of invertebrates that includes one order of the same name. Hemichordata is a phylum of triploblastic, enterocoelomate, and bilaterally symmetrical marine deuterostome organisms that is commonly regarded as the echinoderms' sister group, acorn worms are solitary worm-like creatures. They are generally burrow dwellers and deposit feeders, however some species are pharyngeal filter feeders, and the Torquaratoridae family are free-living detritivores. Many are well known for producing and accumulating halogenated phenols and pyrroles. Acorn worms have a worm-like body with an anterior proboscis, an intermediate collar, and a posterior trunk. The proboscis is a ciliated and muscular organ that aids in movement as well as the collecting and transport of food particles, the mouth is located between the proboscis and the collar.

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The lateral cilia that line the gill slits form a water circulation that enters from the mouth, moves through the buccal cavity, gill slits, pharynx, and branchial sacs, and leaves through the gill pores [3]. The excretory organ is the glomerulus or proboscis gland, which is positioned in front of the central sinus and projects into the proboscis coelom. Particles of brown or yellow colour are discharged. The nervous system is primitive, as seen in coelenterates and echinoderms. Because the sexes are dioecious, males and females live in separate tubes. External fertilisation occurs when gametes are shed into seawater and mix there. Tornaria larvae are planktonic ciliated larvae that

develop in an indirect manner [4]. A dorsal, hollow nerve cord, a notochord, pharyngeal gill slits or pouches, and a coelom, the fluid-filled primary body cavity, distinguish the phylum Chordata. Acorn worms feature pharyngeal gill slits, a nerve cord, and a coelom, which makes them similar to chordates. A little structure in the anterior trunk was formerly assumed to be a notochord, but it has since been revealed to be an extension of the gut. The female lays a huge number of eggs trapped in a gelatinous mass of mucus, which are then externally fertilised by the male before being broken up and dispersed by water currents.

The skin is coated with cilia and mucus-secreting glands. Some species create a bromide molecule that has a therapeutic odour and may protect them from bacteria and predators. Acorn worms move slowly, relying on ciliary activity and proboscis peristalsis [5]. Debris feeders, acorn worms chew sand or mud and extract organic detritus. Others feed on organic material suspended in water that they may drag into their mouth with the cilia on their gill bars. Acorn worms have an open circulatory system in which blood flows through sinuses in the tissues. A dorsal blood artery in the mesentery above the gut transports blood to a sinus in the proboscis containing a muscular sac that functions as a heart. Unlike most other species' hearts, this organ is a closed fluid-filled vesicle with no direct connection to the blood system. Nonetheless, it pulsates on a regular basis, assisting in the passage of blood through the surrounding sinuses, sucking oxygenated water into their mouths, acorn worms breathe. The water subsequently comes out of the animal's trunk-mounted gills. As a result, the acorn worm breathes similarly to fish.

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