

Phylum Platyhelminthes: Flatworms



Flatworms are the simplest organisms that have tissues organized into organs and organ systems. They have a rudimentary nervous system where information is stored and processed in a simple brain. This "brain" is just a collection of nerve cells in the anterior portion of the worm. There are also several nerve cords that run from the "brain" throughout the length of the worm.

Characteristics

- Flatworms are similar to cnidarian in that they only have one opening for digestion.
- They have well developed muscle systems.
- Have a mesoderm (middle tissue layer).
- No body cavity.

Turbellarians

The most commonly seen flatworm is the turbellarians. These are mostly free-living carnivores. Some live inside or on the surface of oysters and crabs. Click the link to see the movement of turbellarians on YouTube at <http://www.youtube.com/watch?v=tfcMCH8nloA>.



Flukes

The largest group of flatworms are the flukes, or trematodes. All flukes are parasitic. Adult flukes live in a vertebrate organisms but the larva inhabit snails, clams or fish. The larva is eaten when another vertebrate eats one of these and the adult fluke lives in this vertebrate and reproduces.

Flukes are common in fish, seabirds and whales. One fluke in particular, a **schistosome**, infects snails. If you enter contaminated water, you may be infected and get what is called "swimmer's itch". A marine variety of this occurs often in Australia and is called "pelican itch". The fluke spends part of its life cycle in snails (marine or freshwater). Larvae of the fluke then leave the snail and float freely in the water until they encounter a bird. Then they infect the bird where they will complete the next cycle of their reproduction. In the case of swimmer's itch, because the fluke normally hosts in birds, they are not too troublesome for humans. They can enter the skin of a human, but the promptly die and typically cause an itchy rash for a few days.

Other schistosomes DO use humans as one of their life stages and can cause great illness for infected people.

An estimated 200 million people and many more domestic animals throughout the tropical and sub-tropical world suffer from the parasitic disease schistosomiasis (also known as bilharzia), while more than 400 million others are at risk of infection. Please click the link to watch the video below, Schistosomiasis Pt 1 of 3 at http://www.youtube.com/watch?v=Ww3DfF_0qmQ&feature=relmfu. It is about 9 minutes long.

Tapeworms

Tapeworms, or cestodes, are also parasitic flatworms. They typically have a long body of segmented parts. They attach in the intestines of most species of vertebrates. Tapeworms lack a gut or a mouth. Rather, they just absorb nutrients across the body wall. The host's intestines have done all of the digestion for them! Tapeworms can get very large. The largest one on record was found in a whale and measured 130 ft long! Tapeworms attach using an interesting collecting of hooks and suckers (as seen in the photos below). Their eggs are made and stored in the proglottids (or segments). As the worm grows, new proglottids are added behind the neck. An organism will defecate and a segment of eggs will go out with the feces. Then, if another organism touches the feces and ingests some of the eggs (like not washing your hands after going to the bathroom and then touching your mouth at lunch time), the eggs will travel into the intestines and attach.

Please click the link below to watch a video-lecture about tapeworms (Cestodes) from YouTube at <http://www.youtube.com/watch?v=N3-MGi1CZrQ>.

Photo Attribution

Description: Flatworm

Source: Shutterstock.com