

HAVE YOU GOT PLANARIA ?

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Planaria are free-living (non-parasitic) flatworms which most of us find in our tanks at one time or another. To the beginning aquarist, the sight of a tank with planaria in it can be quite alarming, but there is no need to be frightened of these critters. While they may be a little repulsive to look at, planaria will do your fish and aquarium no harm. In addition, planaria can be hard to get rid of, as few fish will eat them. Fish of the gourami family will consume them at times, but the best way to destroy planaria is to take down the tank and sterilize it.

Planaria belong to the class Turbellaria (free-living flatworms). The common freshwater planarians of North America—Dugesia, Tigrina, etc.—are all small animals which inhabit cool, clear and permanent waters including streams, ponds, marshes and springs. They cling to the under surfaces of submerged plants, rocks and logs to avoid the light.

STRUCTURE - Dugesia is a thin, slender and soft worm about 5 to 25 millimeters long. It has a blunt, triangular anterior end or "head", and a tapered body patterned with dark pigment. The head region bears two black eyespots mid-dorsally. The mouth is on the ventral surface near the middle of the body. Through it a tubular pharynx (proboscis) with muscular walls can be extended to capture food. The food passes into the intestine, which has three main branches—one anterior and two posterior. Minute excretory openings are present laterally on the dorsal surface but are difficult to see. Sexually mature worms also have a small genital pore on the ventral surface behind the mouth.

A planarian has an elastic basement membrane, rather than a skeleton, to hold the shape of the animal. There is also no respiratory system as such; oxygen-carbon dioxide exchange occurs through the epidermis.

The nervous system of planarians is more highly organized than the diffuse nervenet of coelenterates (jellyfish, sea anemones, etc.). In the head region beneath the eyes are two cerebral ganglia joined to form a brain. From this "brain", several short nerves extend forward to the anterior end and to the eyes, and two longitudinal nerve cords—one along either side with many transverse connectives and peripheral nerves—pass back to the posterior end of the worm.

The eyespots of planarians are sensitive to light which hits them from certain directions, but they form no images.

REPRODUCTION - All planarians can reproduce sexually, and some can reproduce asexually as well. Asexual reproduction occurs by transverse fission. The worm constricts - usually behind the pharynx - and forms two pieces.

The parts missing from each piece are regenerated, thereby forming two new worms.

Planarians which can reproduce asexually possess great powers of regeneration when injured either naturally or experimentally. Any part of the body can be replaced, and entire small worms will result from artificial cutting of a larger individual into pieces.

A sexually mature planarian has both male and female reproductive systems, and hence is monœcious (hermaphroditic). In sexual reproduction two planarians bring their posterior ventral surfaces together for copulation, with the penis of each being inserted into the genital atrium of the other. Sperm from the seminal vesicle of the male system passes to the female seminal receptacle of the other. The worms separate after mating, and sperm migrate up the oviducts of each to fertilize the eggs. Later, each zygote (fertilized egg) is combined with many yolk cells and enclosed in a capsule (egg shell) which is secreted by the genital atrium. The egg is then passed to the outside, and development from egg to adult occurs without an intervening larval stage.

