Hagfish
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Hagfish

Is a primitive jawless marine vertebrate distantly related to the_____, with a slimy eellike body, a slitlike mouth surrounded by barbels, and a rasping_____ used for feeding on dead or dying fish.

Phylum: _____
Class:_____

Background Information

The Myxini are unique among living vertebrate in that they have a_____ (____), but no vertebrae, and so they are not truly vertebrates. The skeleton is composed of_____, and lacks bone. Hagfish also lack_____, and for this reason were long classified together with the lampreys in a group called the _____ ("no jaws") or the Cyclostomata ("round mouth"). Jawlessness is the primitive state for fish however, and so any such group based on a lack of jaws is paraphyletic. View a cladogram of the groups of basal vertebrates for better understanding.

Description

Hagfish are almost _____, but have well developed senses of touch and smell. They have four pairs of_____ arranged around their mouth. The mouth lacks jaws, but a hagfish is equipped with two pairs of tooth-like_____on the top of a tongue-like projection. As this tongue is pulled back into the hagfish's mouth, the pairs of rasps pinch together. This bite is used to tear into the flesh of dead and dying fish which have sunk to the muddy ocean bottom, or in catching and eating marine invertebrates. By far, the largest part of their diet is _____, but because of their slow metabolism, hagfish may go for up to seven months without eating any food.

Respiration

Hagfish generally respire through taking in water through their _____, past the velar chamber and bringing the water through the internal gill pouches, which can vary in number from ____and ____ pairs, depending on species. The gill pouches open individually, but in Myxine the openings have coalesced, with canals running backwards from each opening under the skin, uniting to form a common aperture on the ventral side known as the branchial opening. The esophagus is also connected to the left _____, which is therefore larger than the right one, through a pharyngocutaneous duct (esophageocutaneous duct), which has no respiratory tissue.

Reproduction

Very little is known about hagfish reproduction. Embryos are difficult to obtain for study. In some species, sex ratio has been reported to be as high as_____ in favor of females. Some hagfish species are thought to be _____, having both an ovary and a testicle (there is only one gamete production organ in both females and males). In some cases, the ovary is thought to remain nonfunctional until the individual has reached a particular age or encounters a particular environmental stress. These two factors in combination suggest the survival rate of hagfish is quite high.