

Mussel Life Cycle

1 Sex for the mussel is an anonymous affair, as males shed clouds of sperm into the water, which enter the female through her incurrent siphon with water that the mussel filters for its food. Fertilization of the eggs takes place in the female's gills.

2 The fertilized eggs are retained within the gills of the female while they develop into specialized larvae known as glochidia. A small mussel may harbor several thousand embryos, whereas larger mussels can contain millions. In many species a section of gill is expanded to form a brood pouch called a marsupium.

Some mussels have a feature that improves the odds of infecting fish with their glochidia. Flaps of mantle extrude beyond the edge of their shells and look, flapping in the current, like tiny, tasty fishes. When larger fish strike at this lure, the mussel closes its shell and squirts a stream of glochidia into the fish's mouth.

3 The microscopic glochidia are the parasitic stage of the mussel life cycle. Though shaped like adults, with two valves, their internal structure is very different. When they contact the tissue of a fish, the two valves clamp shut and hang on.

glochidial cysts on fish gill

hookless glochidia attach to gill filaments

hooked glochidia attach to fins or scales

.25mm

4 Once attached to a gill filament, the glochidium becomes surrounded by host tissue, forming a small cyst. Glochidia do little or no harm to their hosts, since an infected fish usually only harbors a few of them.

Some mussels can successfully parasitize only one or a few species of fish. If a glochidium attaches to the wrong host or to a fish that has developed immunity, it soon drops off.

Many species release their glochidia in clumps shaped like small worms or newly hatched fish fry. Fish feed on these and in the process become infected.

male

female