

Freshwater Mussels

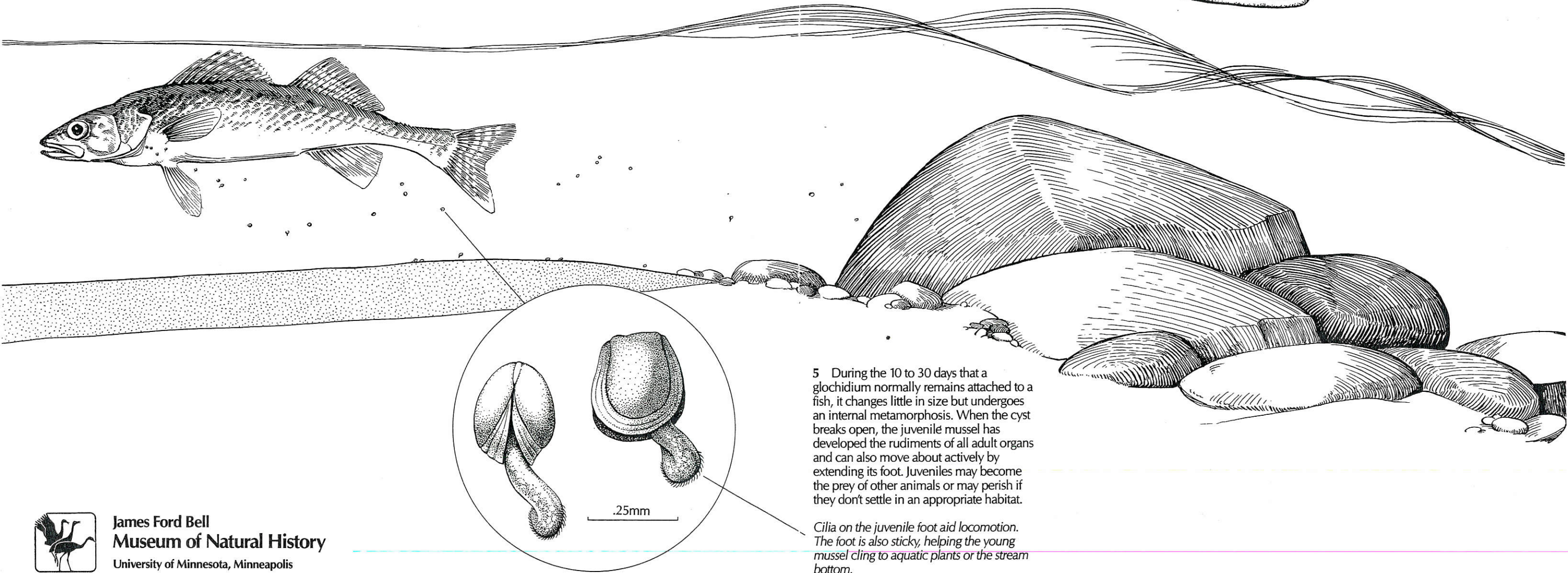
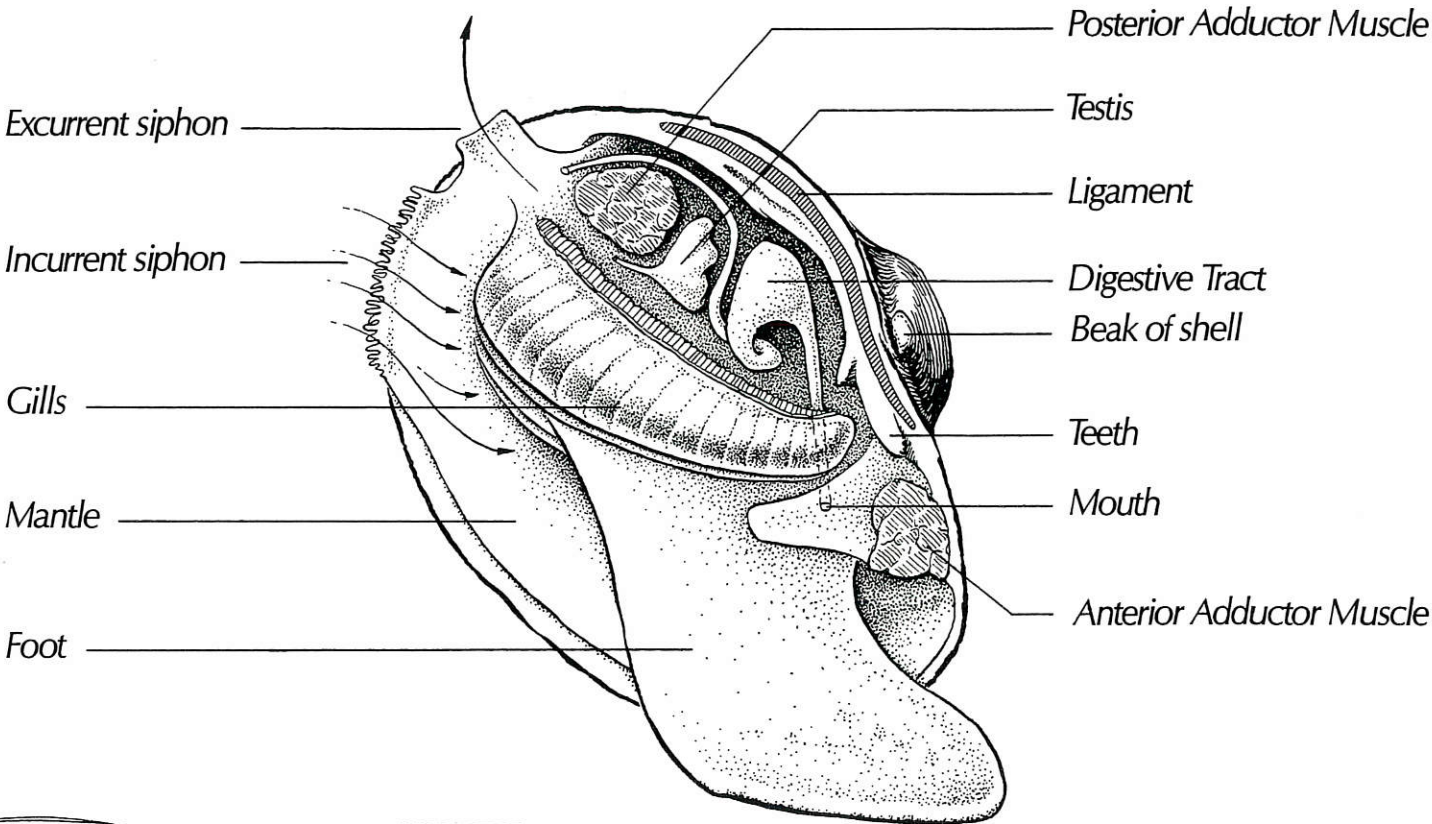
Lying partly buried in the bottom sediments of lakes and streams, mussels are easily overlooked and disregarded. We sometimes hear of how the Indians feasted on them and left great mounds of discarded shells. Or about how they were collected by the ton for the pearl button industry. But little is usually said about how these animals quietly make their living or about their rather elaborate life cycle.

Like most other bivalve mollusks, freshwater mussels are sedentary filter feeders. Water is drawn in through an opening called a siphon, and passes over the gills. Food—tiny plankton and organic detritus—sticks to the mucus lining of the gills and is slowly swept to the mouth by cilia. Filtered water and wastes pass out the excurrent siphon.

The shell is secreted by the mantle, a sheet of tissue that surrounds the mussel's body and lines the shell. During the winter, growth slows or stops, and rings

form on the outside of the shell that can be counted like tree rings to estimate the age of the shell. Mussels can be extremely long lived. Thick shelled species typically live 20 to 40 years and some may reach 100.

A great diversity of mussels lives in the rivers of the Mississippi drainage. Forty-eight species are found in the Upper Mississippi alone, but only a dozen are known from all the rivers of Europe. This species richness indicates that mussels probably evolved from their salt-water ancestors in North America. The challenge facing these sedentary animals was how to colonize new habitats upstream. Marine mussels and clams have free-swimming larvae which are spread by ocean tides and currents to new locations. But in a river, such larvae would always be swept back out to sea. The solution found by freshwater mussels was larvae that attach themselves to fish, thus hitching a free ride upstream.



5 During the 10 to 30 days that a glochidium normally remains attached to a fish, it changes little in size but undergoes an internal metamorphosis. When the cyst breaks open, the juvenile mussel has developed the rudiments of all adult organs and can also move about actively by extending its foot. Juveniles may become the prey of other animals or may perish if they don't settle in an appropriate habitat.

Cilia on the juvenile foot aid locomotion. The foot is also sticky, helping the young mussel cling to aquatic plants or the stream bottom.

