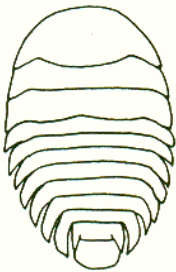


## **Creature Feature: Fall 2007**

By W. Scott Douglas

### **Beetles**

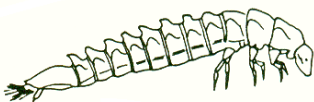
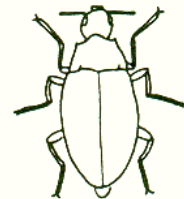
Most of us think about beetles as terrestrial creatures and don't expect to see them in the water. In fact many folks may not know that beetles have larval forms that look a lot like armored caterpillars. While most aquatic beetles live in ponds and lakes, some beetle larvae, and even adults, live out most or all of their lives in fast moving water.



The most recognizable stream loving Coleoptera is the water penny (at left). While most stream waders have seen these insects, they probably didn't recognize them as beetles. These members of the family Psephenidae don't look like beetles at all, but look and act like a cross between a limpet and a trilobite. Turn one over and you'll see the typical beetle larva shape hidden by the oversize tergite plates. Water pennies are strongly dorso-ventrally flattened so that they can hold on to rocks in swift water. They feed on algae and diatoms that they scrape from the rocks.

After a few months, the mature larva (about ½ inch in diameter) pupates and emerges as a small, shiny, black beetle, with none of its unusual larval characteristics. Water pennies like clean, cold, well aerated water.

The most common lotic beetle is the clinging riffle beetle (Elmidae). The adults look like the classic beetles, with hardened wing covers (elytra) that are black and shiny (right). It makes a living crawling around between rocks feeding on algae and detritus. The larva looks also looks like its terrestrial cousin, like a hardened caterpillar. Elmidae larvae never get larger than several millimeters in length, and when mature crawl up onto shore to pupate. When the adults emerge they fly off to a suitable spot, dive in and never fly again, even to mate. These tiny creatures can be very abundant in healthy, well aerated streams



like the Cooks Creek, but can tolerate a moderate amount of pollution. In the limestone sections of Cooks Creek, where there is a natural heavy coating of good algae and diatoms there are riffle beetles and water pennies in abundance.

There are a dozen or so genera in the Northeast, and it takes a good eye to be able to spot the differences between them. You can easily see water pennies just by picking up random

rocks at the heads of riffles. Adult water pennies will come to lights, or you can see them scampering across exposed rocks in riffle areas. Collecting riffle beetles will require a net, placed firmly on the stream bottom in fast moving water to catch what floats away when the substrate above is disturbed. You will tend to find more where there are leaf packs or submerged vegetation.