

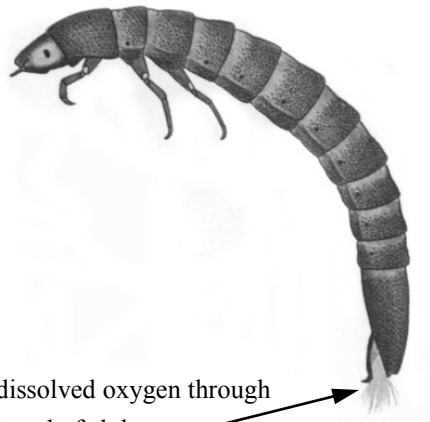
# Riffle Beetle

Order: Coleoptera Family: Elmidae

Number of species in North America: 80

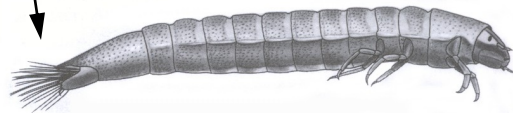


Size: 1-8mm (adult)



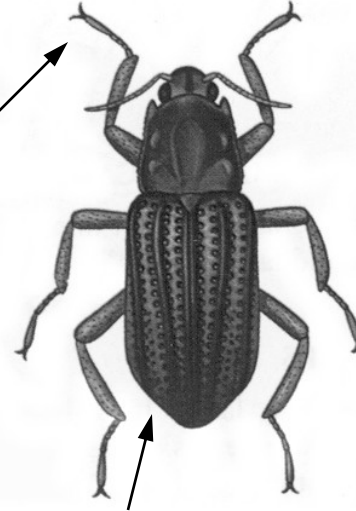
Breathe dissolved oxygen through gills at end of abdomen

RIFFLE BEETLE LARVAE



Gills protrude and wave to collect water

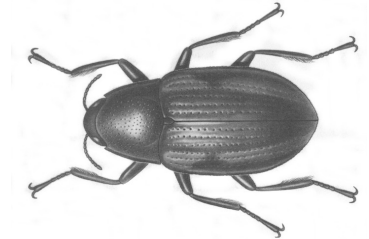
2 prominent claws



Pocket with door protects abdomen from sediment abrasion

ADULT RIFFLE BEETLES

So efficient with breathing, adults do not need to resurface after diving... Breathe via a **plastron** ( a thin film of air held by tiny unwaterable hairs)



Credits: McCafferty, W. Patrick. Aquatic Entomology, 1981.

**Diet:** Scrapers, collector-gatherers. Periphyton, detritus.  
**Food for:** Game fish, predaceous water insects.  
**Habitat:** Swift portions of stream, on stones or pebbles.  
**Movement:** Clingers, climbers– slow movers.  
**Breathing:** Through pocket door (larva) and plastron (adults).  
**Water Quality Indicator:** Group I– generally sensitive to pollution; a large number indicates GOOD water quality.

## Life Cycle Corner

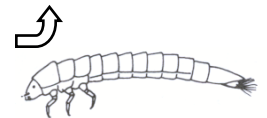
Complete metamorphosis

Fly immediately after emergence, then lose ability after entering water. Hind wings fall off.

Pupae crawl into terrestrial chambers in moist soil, under rocks, or inside of rotting wood

Eggs are laid either singly or in small groups on submerged rocks, organic debris, or vegetation.

Six larval instars; can take up to three years.



Larval riffle beetle