

Mid-Michigan Macroinvertebrates Identification Guide & Descriptions

Mayfly

Nymphs have 3 tail filaments – occasionally 2 tail filaments – never paddle or fan-like
Feathery gills line the sides of the abdomen on nymph
Color of nymph can be green brown, gray but usually black



Caddisfly

Larvae are usually cylindrical and “C” shaped
Some larvae are free-living (collector -filterers)
Others are case makers (shredders-detritivores & shredders-herbivores)



Stonefly



Gilled Snails

- Have gills for breathing
- Soft body inside a hard, spiral shaped shell
- Plate-like door (called the operculum) protects the opening of the shell
- Shells usually open on the right side



Dobsonfly (Hellgrammite)

- Includes some of the largest larvae
- Larvae are carnivorous predators and may bite – mouth has large chewing pinchers
- Larvae have 3 pr. of well-developed legs on the thorax
- Larva has many fleshy, filamentous lateral appendages on each side of the abdomen
- Gill tufts on the underside of the tail of larvae
- Abdomen of larvae ends in a pair of short spiny prolegs each with 2 hooks



Alderfly

- Similar to a dobsonfly
- Usually smaller than a dobsonfly larva
- Larvae has a prominent, single tail



Water Penny (beetle larva)

- The water penny is the aquatic larva of a beetle
- The body is often stuck flat to surfaces as rocks and other flat substrates and looks like a tiny round leaf
- Larva is green, brown, black, or tan
- Segmented plate-like covering on larva
- Six tiny segmented legs beneath the round body



Damselfly

- Nymphs have slender bodies with 3 long tail-like gills
- Nymphs have no abdominal gills and tail supplemental gills are paddle-shaped
- Long legs are close to the head
- Large compound eyes and extendable jaws fold under the head – very good vision
- Nymphs are grey, grey or brown in color
- Nymphs found among stones and in leaf litter at bottom
- Nymphs are predators and feed on other macroinvertebrates in the water – may also be cannibals eating each other



Dragonfly

- Most nymphs have oval and flattened robust, elongated bodies or spider-like bodies –
- Nymphs are usually grey, brown or green
- Nymphs have large eyes, are predators with distinct mouthparts used to capture prey
- 6 legs and a pair of small wings may be seen developing on the back



Aquatic sowbug

- Have 7 pr. of legs, 2 pr. antennae – one much longer than the other
- Similar in appearance to terrestrial sowbugs or “roly-polys”



Scuds

- Sometimes called freshwater shrimp
- Are laterally compressed – side swimmers



Cranefly

- Larvae are worm-like with thick skinned segmented body – somewhat transparent with digestive tract visible- may be greenish or grayish
- Larvae are rounded at one end and disc like spiracles at the other end



Midge

- Larvae are cylindrical, thin, soft, and often curled with anterior and posterior prolegs and hardened head capsule
- Larvae burrow in the mud and use salivary secretions to bind substrate particles into tubes or tunnels in which they live
- Larvae feed on suspended matter in water and organic matter in the mud - gathering collector
- After the first molt, most midges take on a pink color then turn into a deep red “called blood-midges or blood worms, found in low oxygen conditions (**See blood midge**)

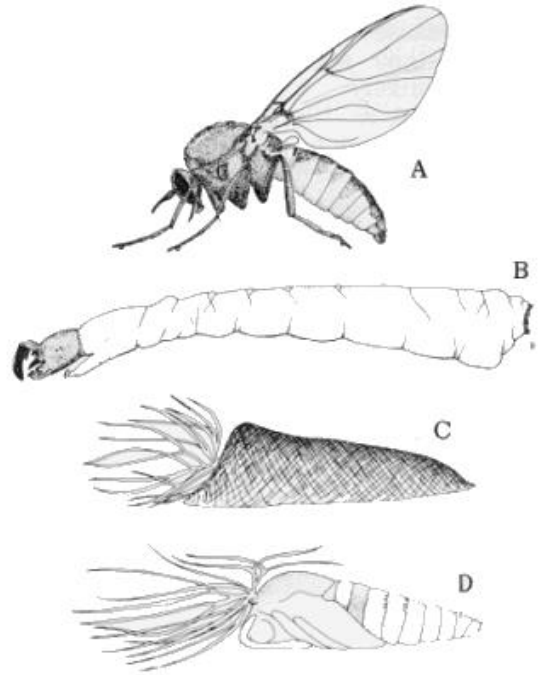


Blackfly

- Larvae have brush-like mouth part that collect tiny organisms or organic matter like a sieve out of water – collectors/filterers
- Larvae tend to stay attached to substrate by producing a silk thread to adhere- tiny hooks on the abdomen help to attach



larvae



Black fly. A, Adult. B, Larva. C, Cocoon. D, Pupa.

Leeches

- Segmented, flattened and a sucker on both ends of the body
- Tan to brown in color
- Can be carnivores, detritivores, but mostly external parasites



Air Breathing Snail

- Left opening with no plate-like covering (operculum) over opening
- Respire via lungs so they are not dependent on dissolved oxygen in the water
- Found grazing on a variety of substrates
- Grazers



Crane fly

- Diptera (true fly)
- Often black/grey in color



Blood midge



Giant Water Bug



Back Swimmer

- **Swims on its back** paddling with long fringed hind legs
- **Back is convex with wings white or lightly colored with cross striations** – can have green, brown or yellowish color (wings are lighter than the body area)
- Nymphs of water bugs molt several times before reaching adult
- Nymphs receive oxygen through their skin in pockets at the tip of the abdomen
- Adults breath air from the surface of the water
- Nymphs and adults are predators and attack prey as aquatic insects up to large as tadpoles and small fish
- Can inflict painful bite even to humans



nymph



adult

Water Boatman



For more information about the macroinvertebrates found in the Red Cedar Watershed, contact the Mid-Michigan Environmental Action Council at (517) 292-3078 or through our website www.midmeac.org.