

Other Invertebrates

- Diptera (Flies)
- Crustacea
- Trichoptera (Caddisflies)
- Ephemeroptera (Mayflies)

Diptera



Chironomidae

Ceratopogonidae

Chaoboridae

Culicidae

Diptera Key Characteristics



- No obvious external jointed legs
- Prolegs may be present
- Head capsule
- May have tail or tail brushes

Chironomidae (Non-biting Midges)

Identifying Characteristics



Large brown head capsule

Prolegs present behind the head and on the tail



Tail brushes present

Chironomids white when preserved
(may be white or red when alive)

Length 2-30 mm long

Ceratopogonidae (Biting Midges)



Identifying Characteristics

Head capsule dark brown and very small relative to the rest of the body

No prolegs present

No appendages present on tail

Length about 1 cm



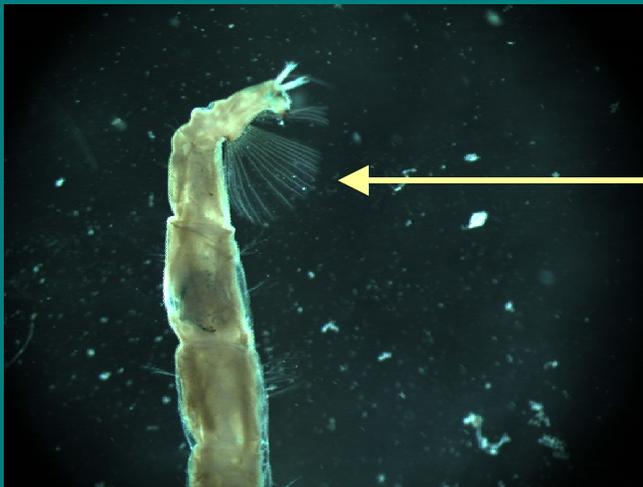
Chaoboridae (Phantom Midges)



Identifying Characteristics
Head generally similar in color to body

No prolegs present

Appears opaque white when preserved

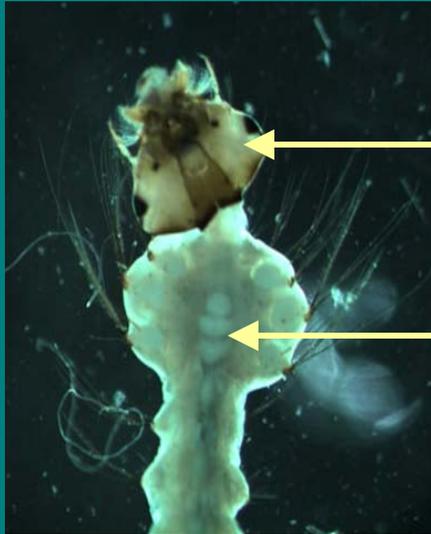


Tail with brushes

Length about 1-2 cm

Culicidae (Mosquitoes)

Identifying Characteristics



Head dark

Body enlarged immediately behind head



Tail has breathing tube

Pupae has enlarged head

Comparisons

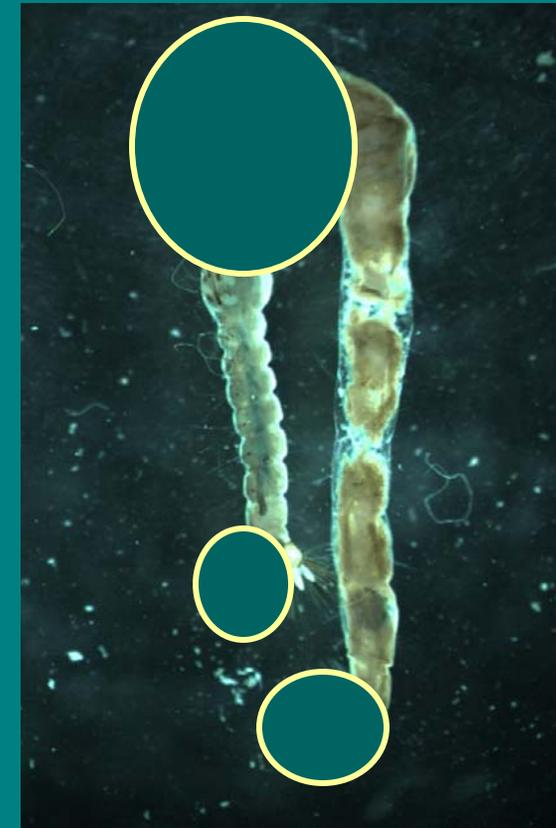
Ceratopogonidae / Chironomidae

Note differences in head size and presence or absence of prolegs



Culicidae / Chaoboridae

Note difference in head shape and the tail end



Crustacea

Identifying Characteristics

Segmented body

Five or more pairs of jointed legs

No wings or wing pads

Antennae



Amphipoda

Anostraca

Isopoda

Amphipoda (Scuds)

Identifying Characteristics

Appendages obviously jointed

Seven pairs of appendages

Moves on side

Two genera may be found (only presence is recorded for metrics)



Anostraca (Fairy Shrimp)



Identifying Characteristics

Appendages delicate, leafy

Eleven pairs of appendages

Swims on back

Isopoda (Aquatic Sowbugs)



Identifying Characteristics

Seven pairs of legs

Legs project laterally

Trichoptera (Caddisflies)

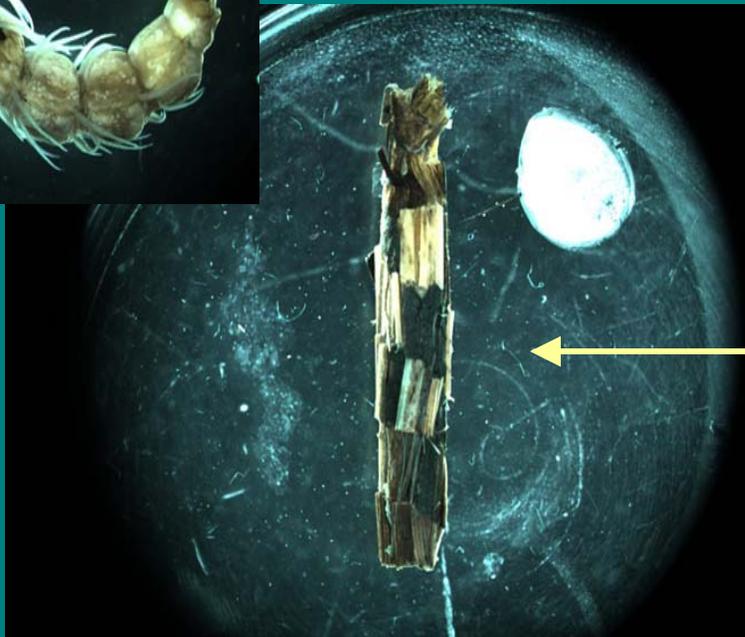
Identifying Characteristics



Thoracic legs jointed, well developed

Anal proleg with hook

Antennae reduced, inconspicuous



Construct and live in distinctive cases

Family Leptoceridae



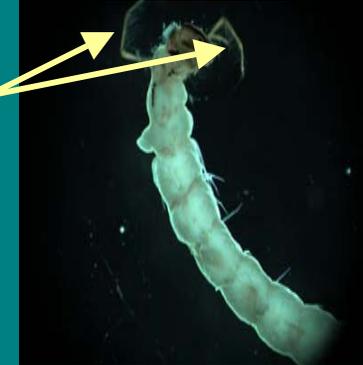
Leptocerus
(to 9mm long)

Smooth
case

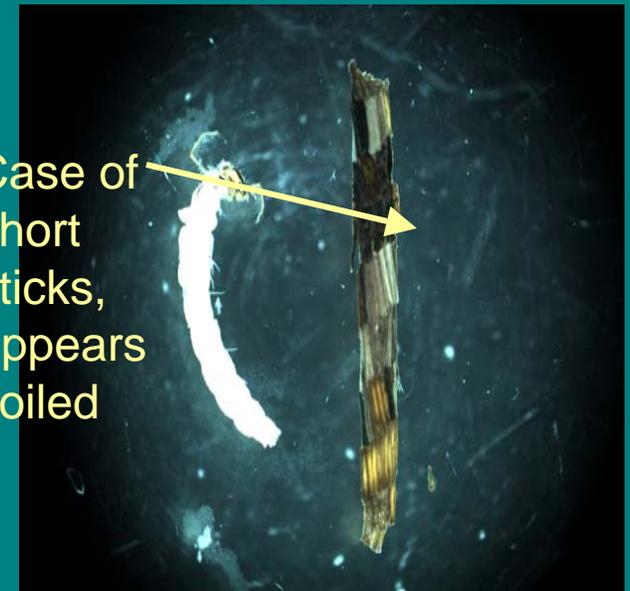


Oecetis (to 15 mm long)

Case of
sand
grains



Swimming
legs



Case of
short
sticks,
appears
coiled

Trienodes (to
33mm long)

Identifying Family Characteristics

- Small to medium (to 33mm long)
- One pair of swimming legs
- Relatively long antennae
- Few or no external gills

Family Limnephilidae

Identifying Characteristics: Limnephilus

Medium sized (to 29mm long)

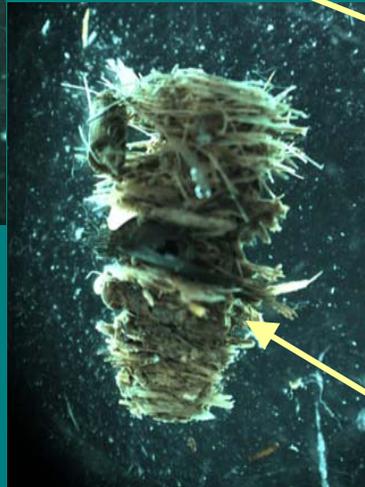


Hump rounded

Dark plates behind head

Many external gills

Short antennae



Case of irregular layers of vegetation, sticks, bark, or rocks.

Family Phryganeidae

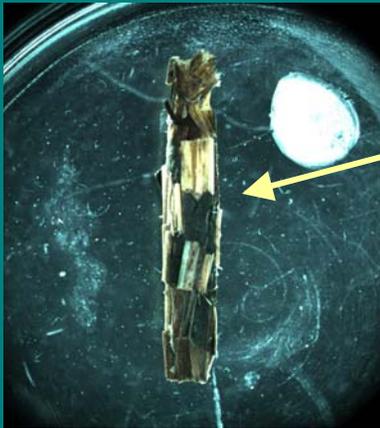
Identifying Characteristics: Banksiola

Large (to 45mm long)

Very short antennae

Many external gills

Case of short pieces of vegetation, of uniform shape and size, in a spiral pattern.



Ephemeroptera (Mayflies)

Identifying Characteristics



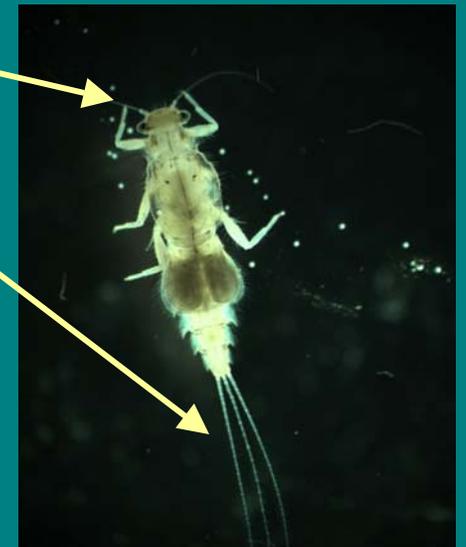
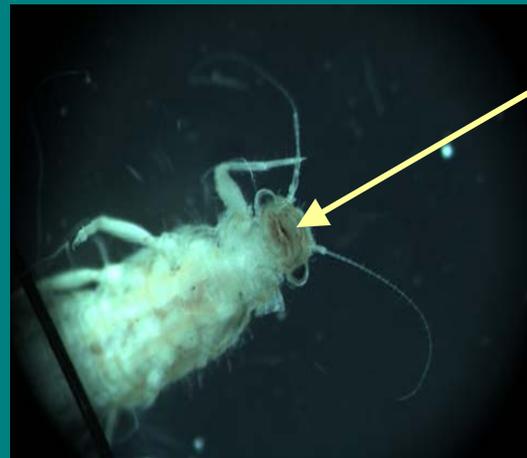
Smaller than damselflies

Gills on abdomen

Head typically narrower than body

Mouth not hinged

Tails (2 or 3) are rounded



Ephemeroptera/Odonota Compared



Gills on abdomen



Damselflies larger



Gills at end of abdomen



Mayflies

Head narrower than body
Mouth not hinged



Head wider than body
Mouth hinged



Damselflies

Distinguishing Mayflies



Caenis

Smallest (2.5-4mm)

Rectangular plates over gills



Callibaetis

Small (4-9mm)

Heavily veined gills

Antennae relatively long



Syphlonurus

Larger (9-16mm)

Irregular gills

Antennae very short

U of M Online Guide to Aquatic Macroinvertebrates

- [http://www.entomology.umn.edu/midge/VS
MIVP.htm](http://www.entomology.umn.edu/midge/VS_MIVP.htm)