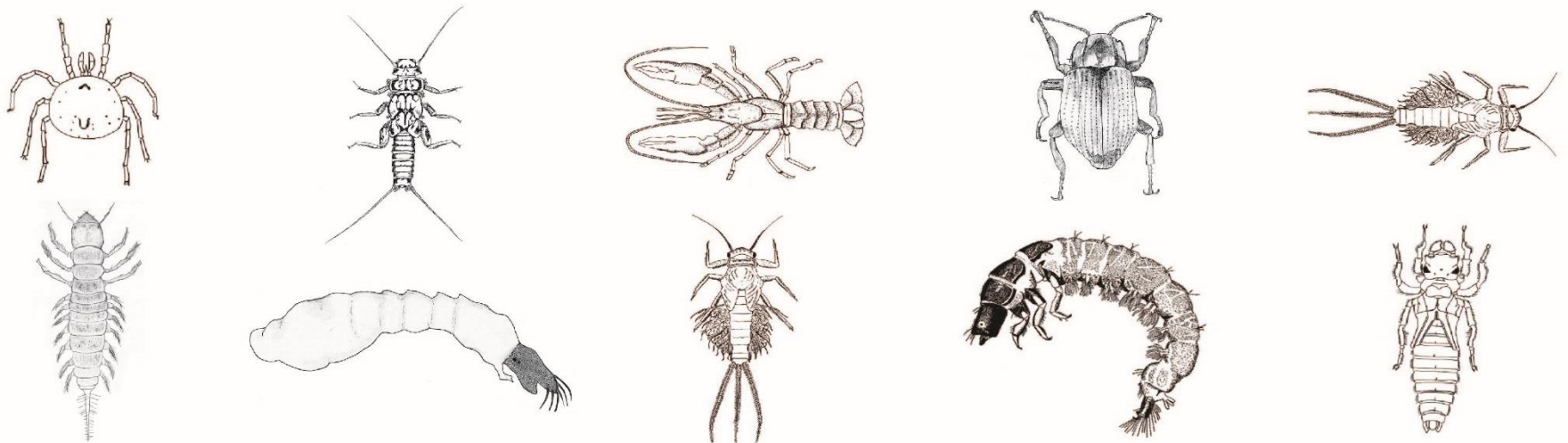


Identification Guide to Freshwater Macroinvertebrates

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Major Characteristics of Aquatic Larvae

GLOSSARY

Abdomen: posterior body segment(s) of insect

Dorsal: the top surface, the back

Filaments (tail): hair-like structures

Jointed leg: true legs, legs capable of bending

Lateral: at the side

Portable case: structure made of leaves, twigs, or sand that some caddisfly and midge larvae carry with them

Posterior: tail end of the body

Prolegs: short leg-like structures (not jointed)

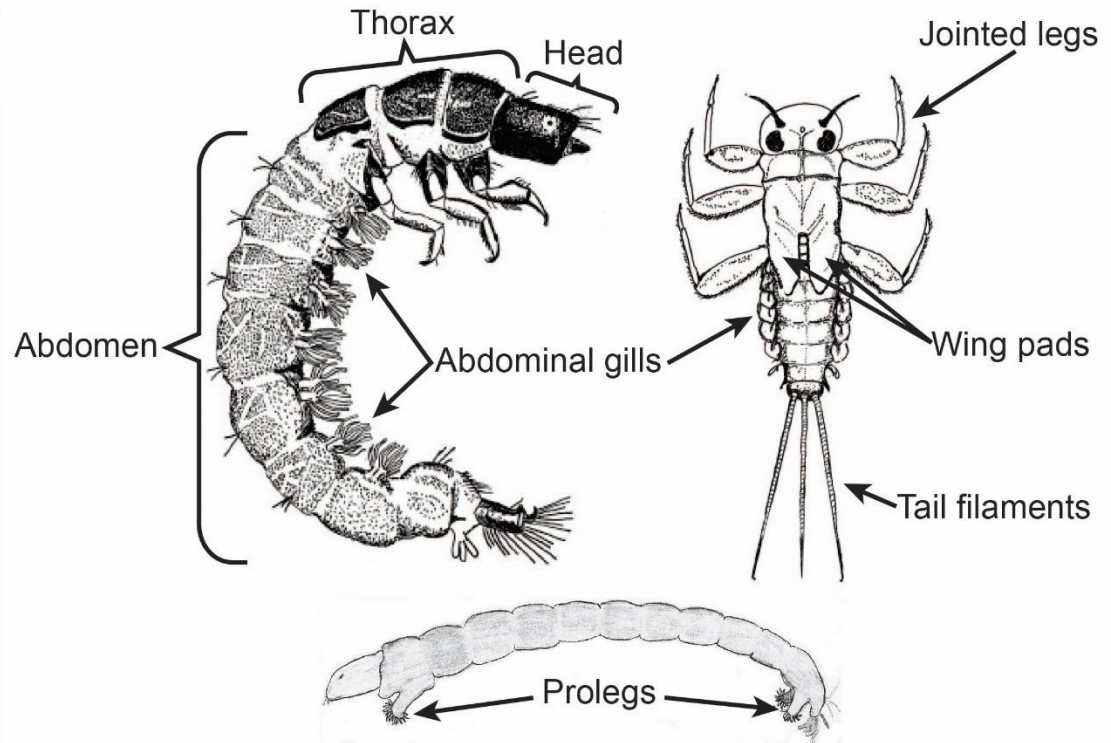
Protrusion: part of the body that sticks out

Segment: a section of body

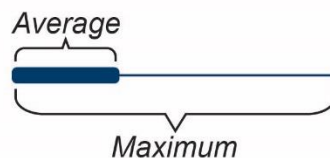
Thoracic: the middle region between the head and the abdomen

Ventral: underside

Wing pads: developing wings, often W in shape



Approximate Size Range



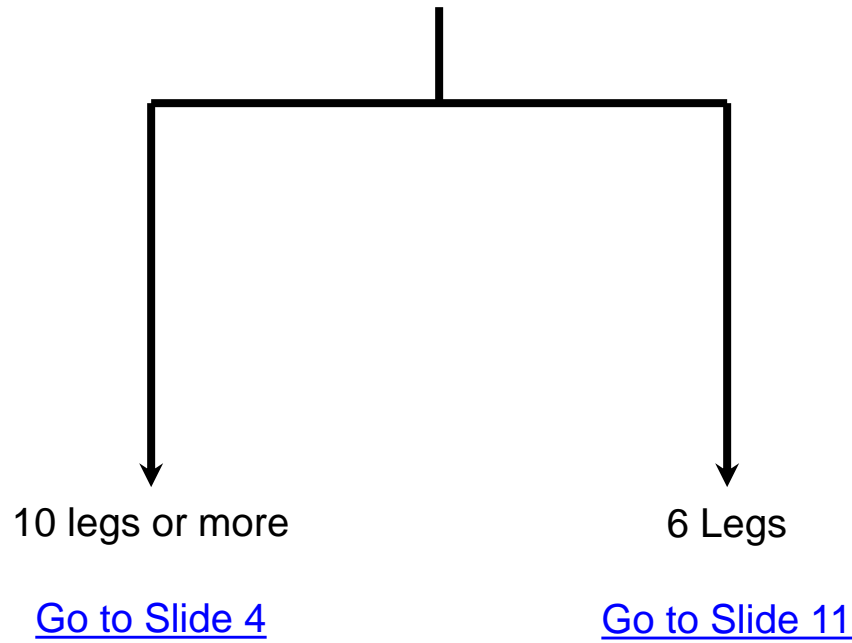
Pollution Tolerance

Sensitive (S)

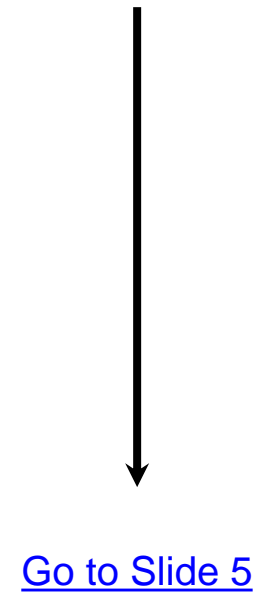
Somewhat Sensitive (SS)

Tolerant (T)

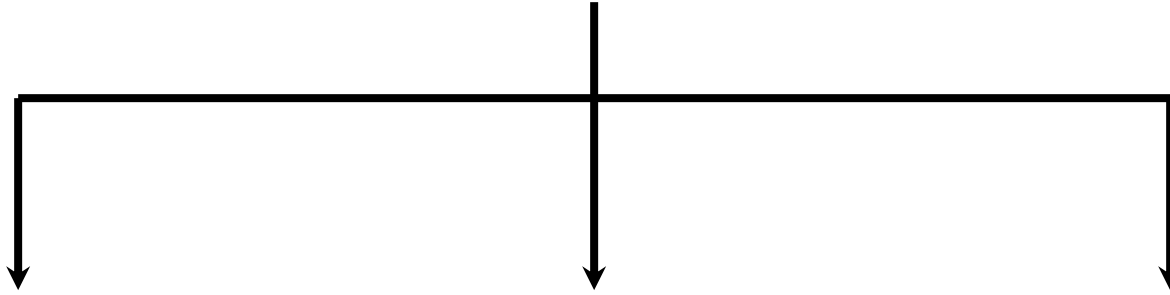
Jointed Legs



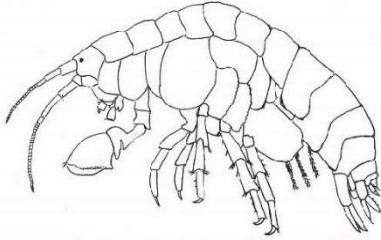
No Jointed Legs



10 Legs or More

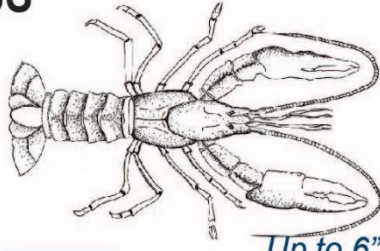


SS



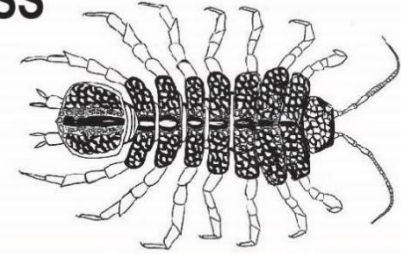
SCUDS
Amphipoda

SS



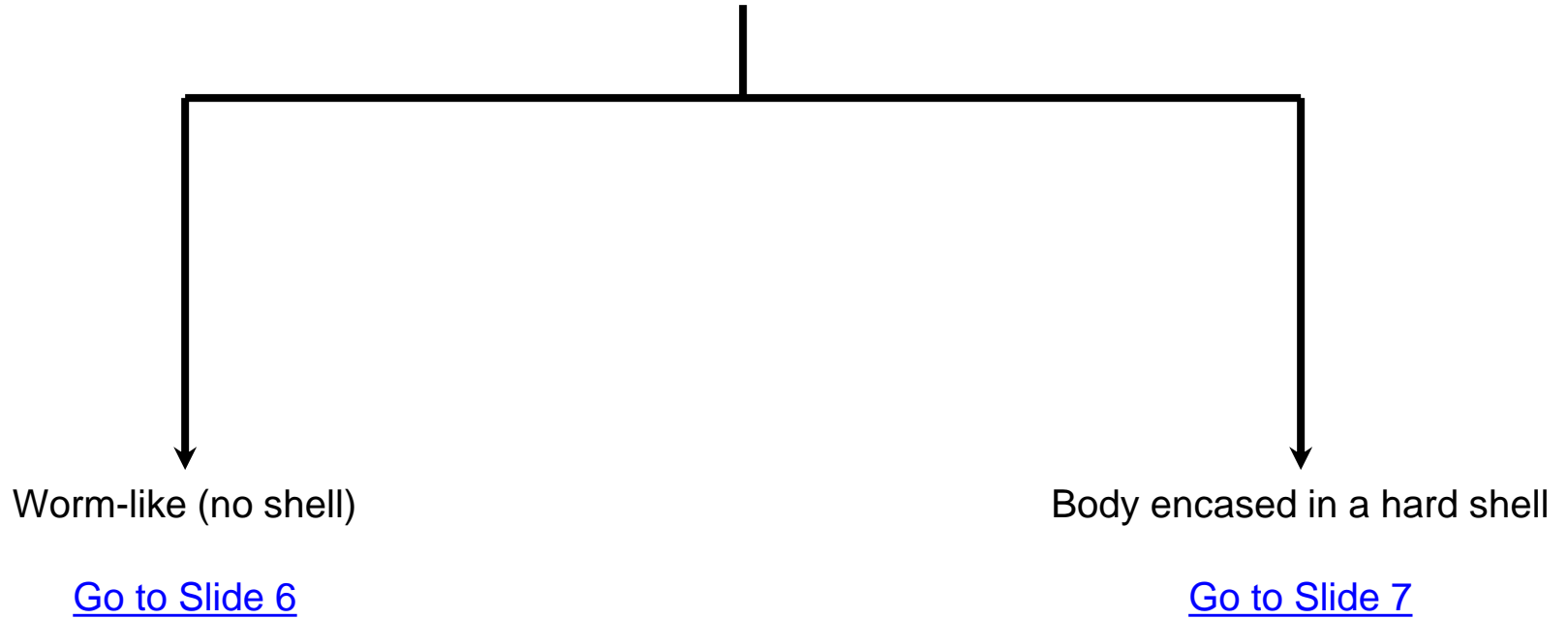
CRAYFISH
Decapoda
Crustaceans

SS



SOWBUGS
Isopoda

No Jointed Legs



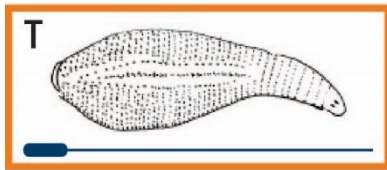
Worm-like (No Shell)

Segmented Worms

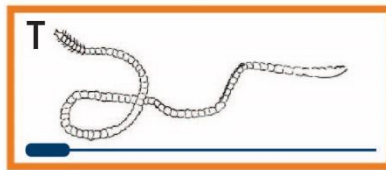
Head and/or fleshy protrusion

Non-segmented worms/flat-worm

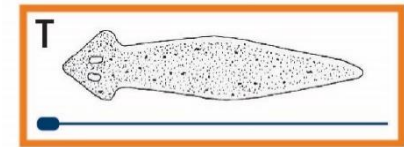
[Go to Slide 8](#)



LEECHES
Hirudinea



AQUATIC WORMS
Oligochaeta



PLANARIANS/FLATWORMS
Turbellaria

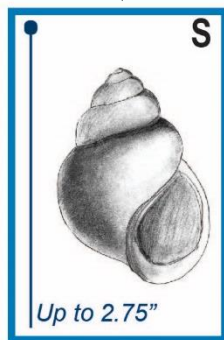
Body Encased in a Hard Shell

Single Shell
(snail or limpet-like)

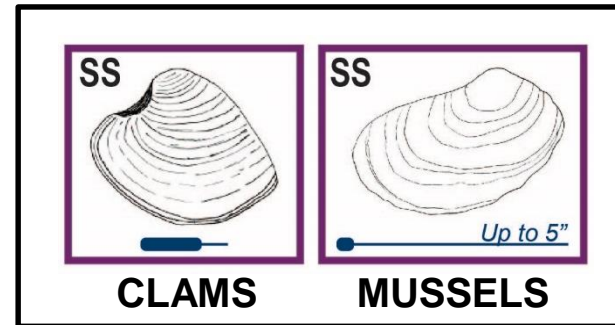
Double Shell
(Bivalve) – connected
with a single hinge



**LEFT-HANDED/
LUNGED SNAILS**
Gastropoda



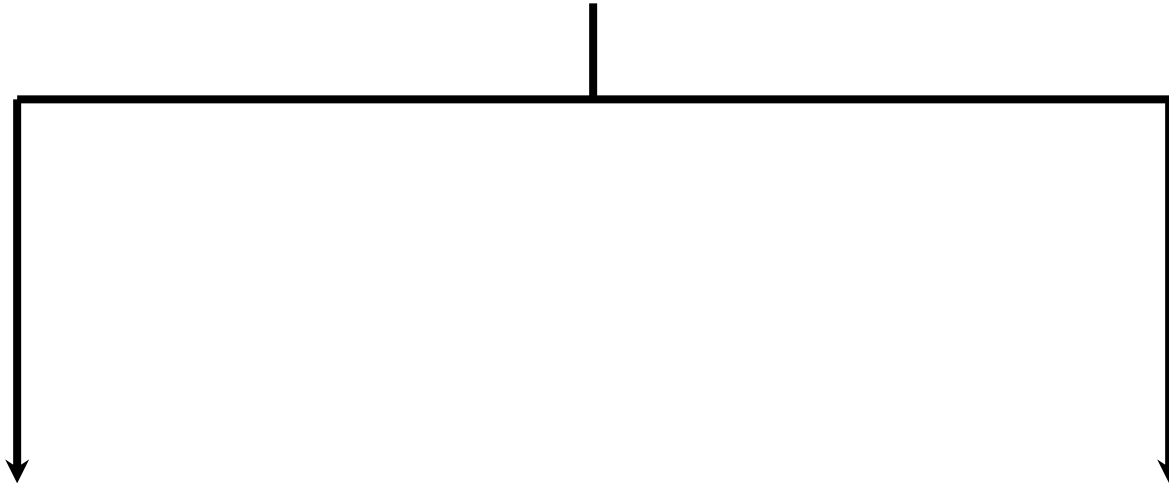
**RIGHT-HANDED/
GILLED SNAILS**
Gastropoda



Mollusca

Worm-like with Distinct Head or Fleshy Protrusion

DIPTERA *True Flies*



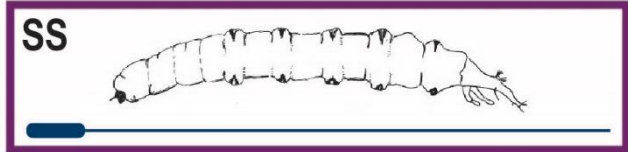
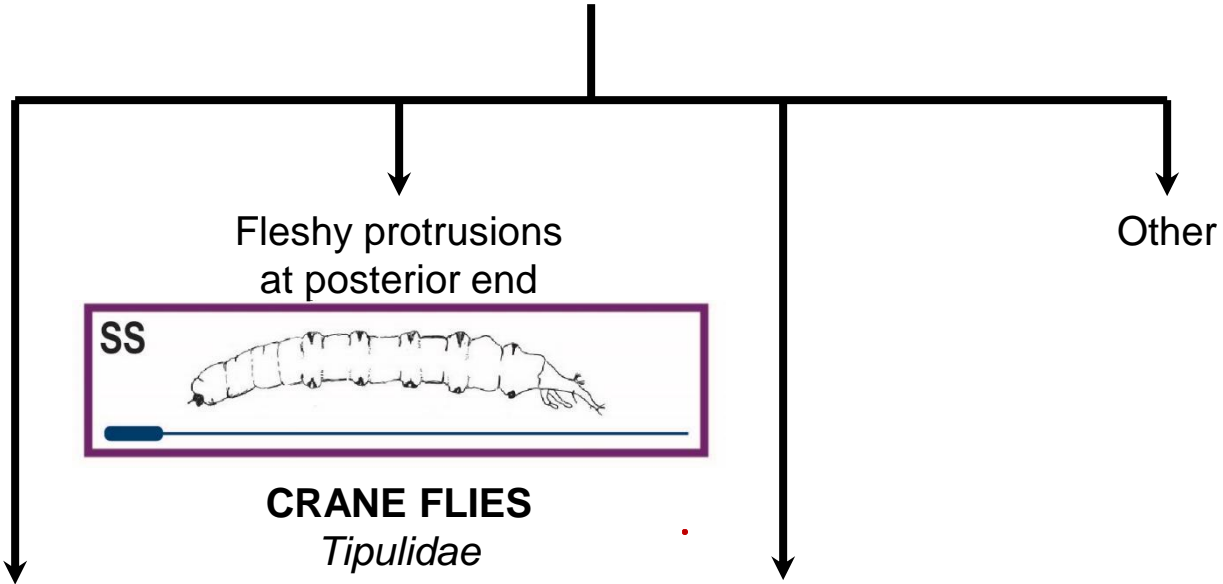
Small head often hidden from view

[Go to Slide 9](#)

Distinct head

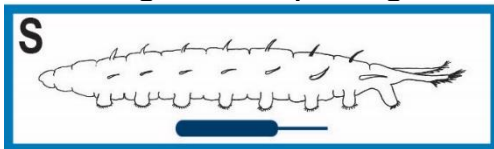
[Go to Slide 10](#)

Small Head Often Hidden From View



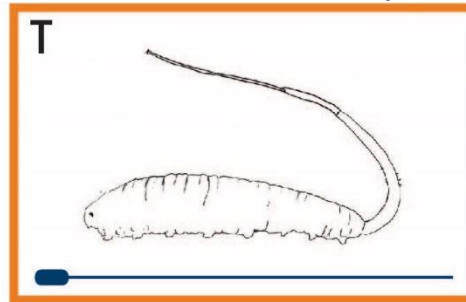
CRANE FLIES
Tipulidae

Fleshy projections;
posterior with 2
pointed protrusions
longer than prolegs



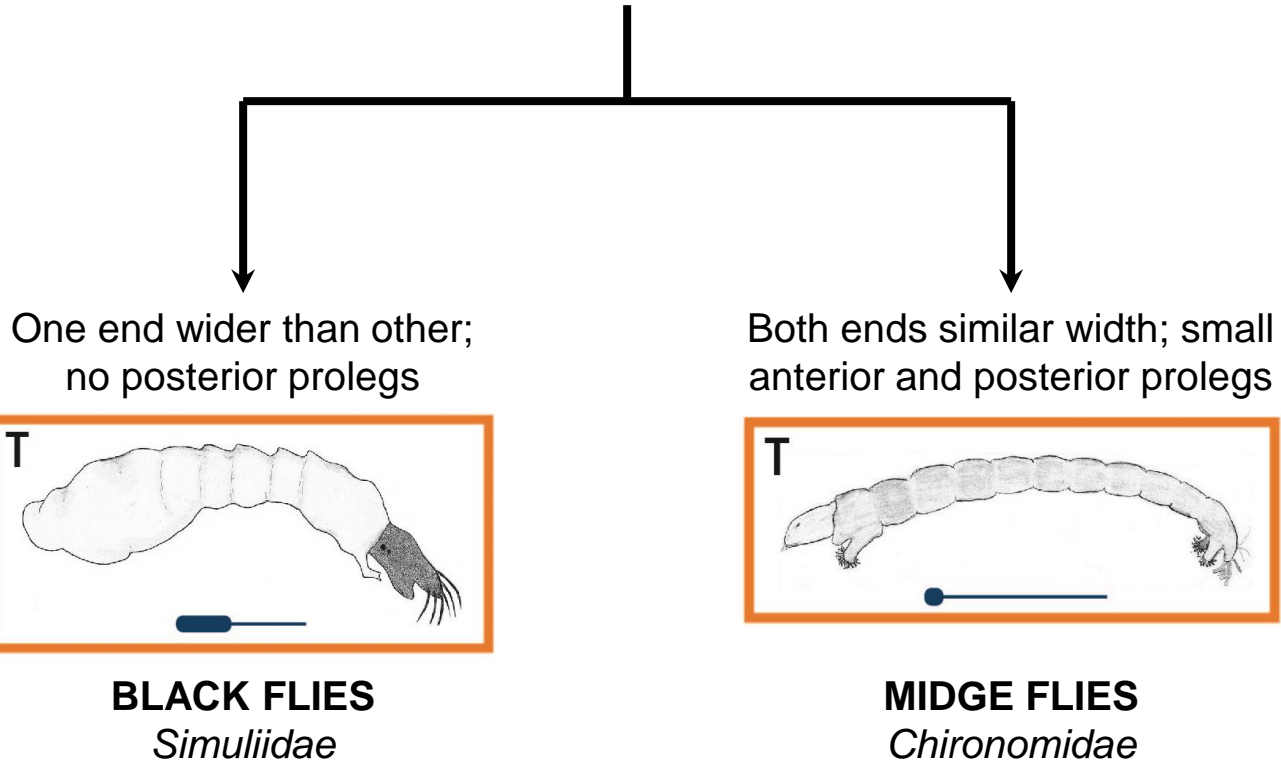
AQUATIC SNIPE FLIES
Athericidae

Long tail; prolegs
may be present on
underside of body

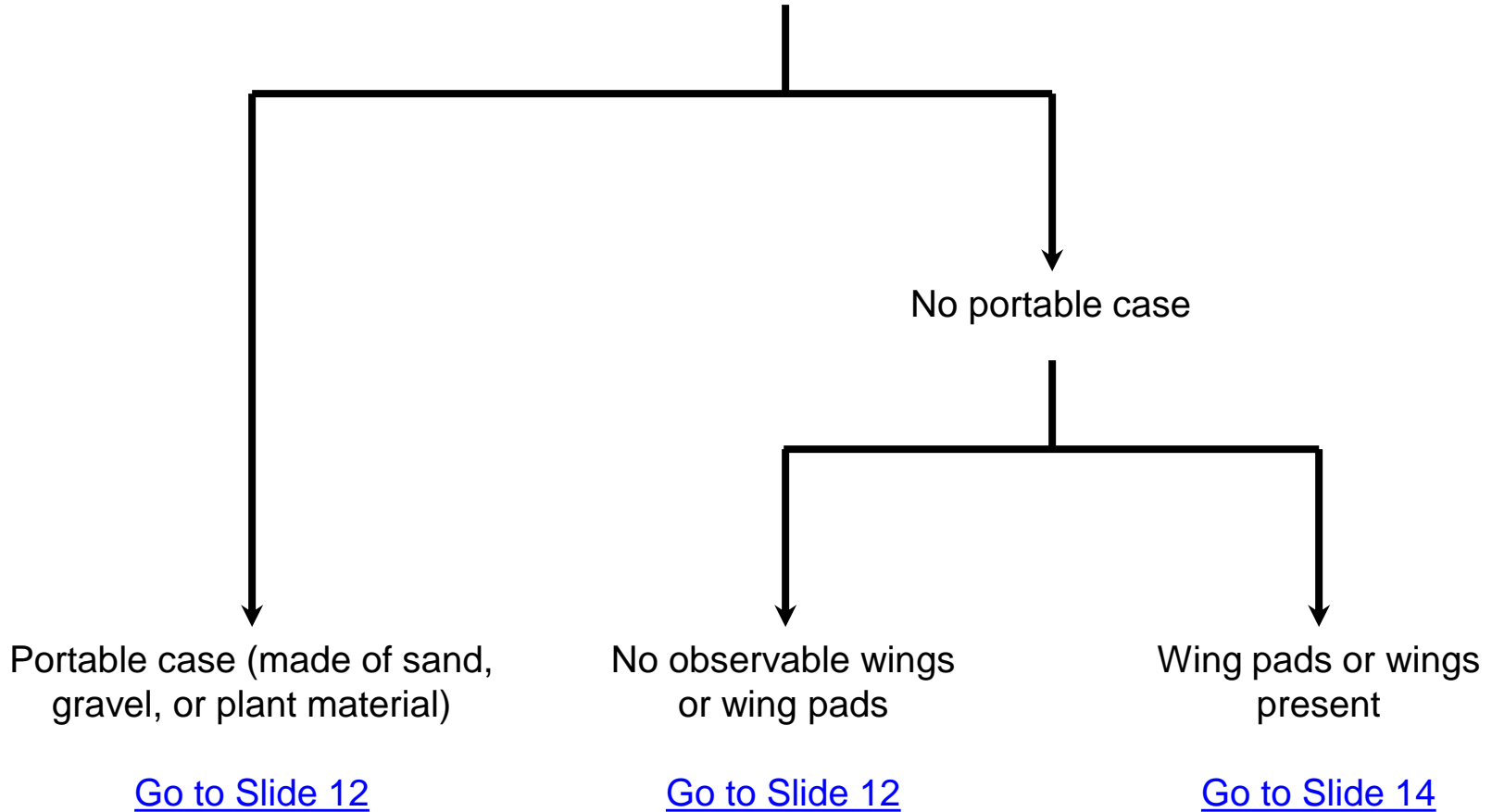


RAT-TAILED MAGGOTS
Syrphidae

Distinct Head



6 Jointed Legs



Portable Case

No Observable Wings or Wing Pads

Observable hooks
at end of body

No observable hooks at end of body

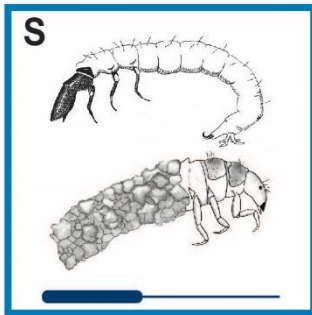
[Go to Slide 13](#)

Without lateral filaments

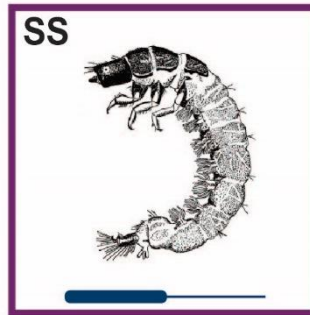
With lateral filaments

No branched gills

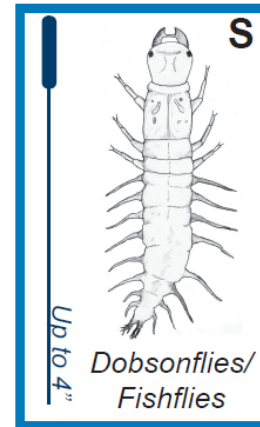
Branched gills on underside
of abdomen; dorsal plates on
all three thoracic segments



OTHER CADDISFLIES



NET-SPINNING CADDISFLIES



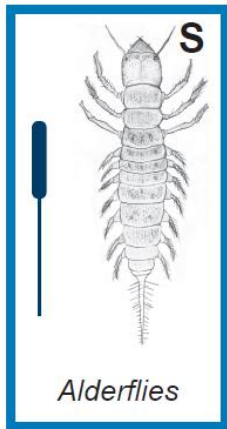
DOBSONFLIES/FISHFLIES

Megaloptera

Trichoptera

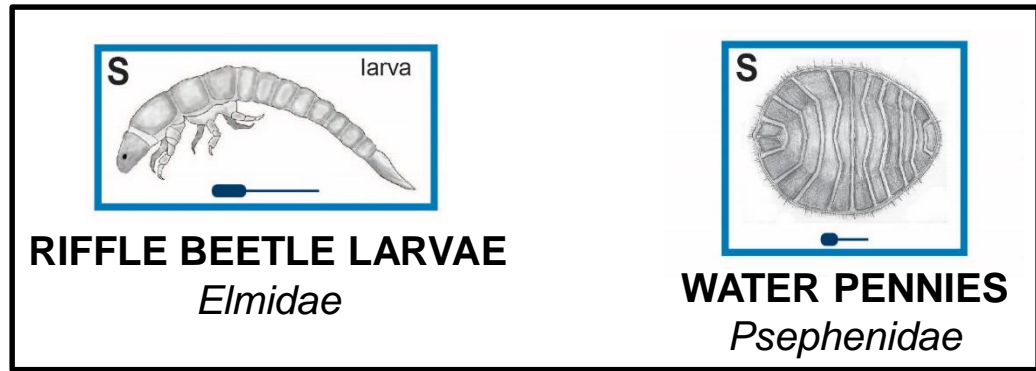
No Observable Hooks at End of Body

With lateral filaments;
body ends in a
single, long filament



ALDERFLIES
Megaloptera

Without lateral
filaments

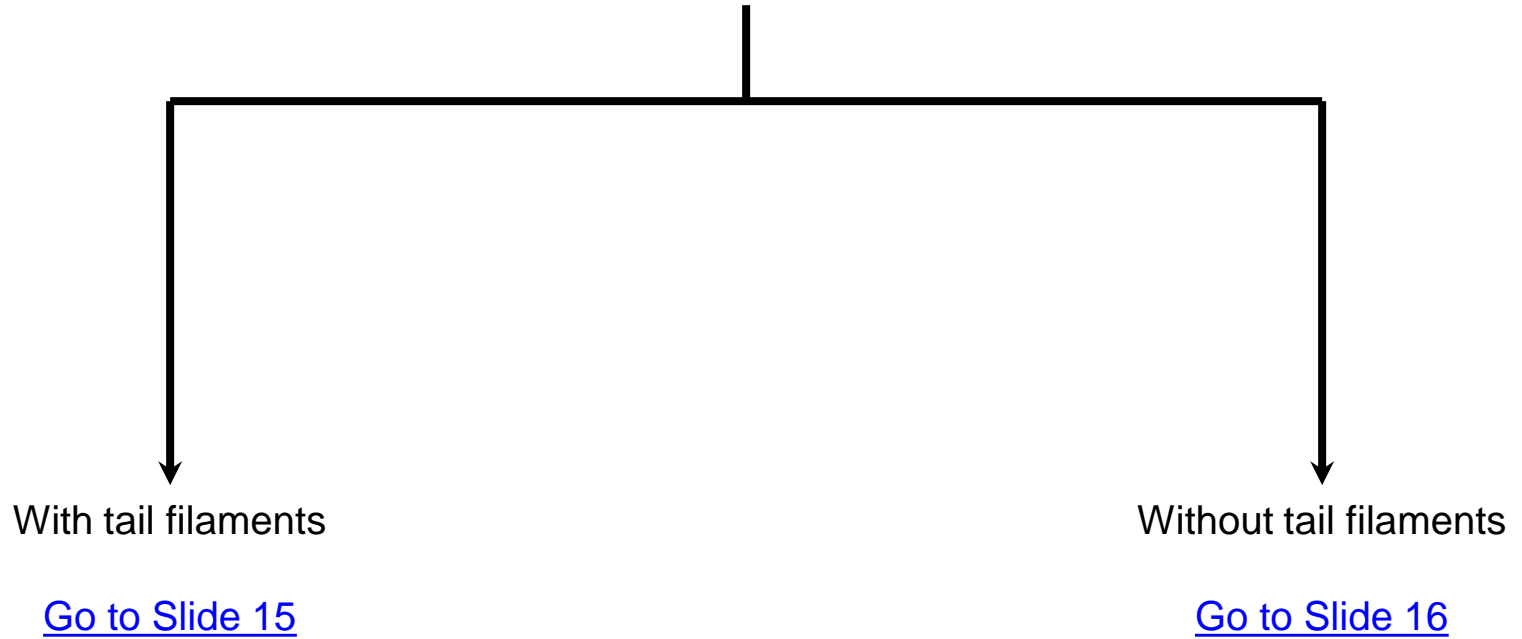


RIFFLE BEETLE LARVAE
Elmidae

WATER PENNIES
Psephenidae

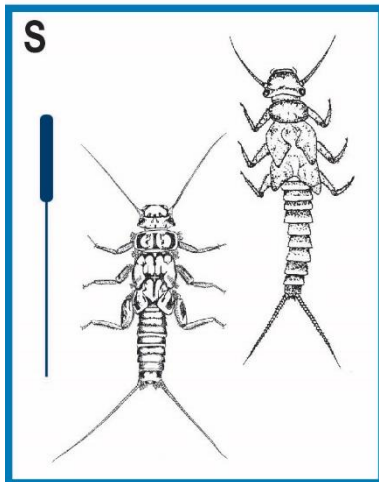
Coleoptera

Wing Pads or Wings Present



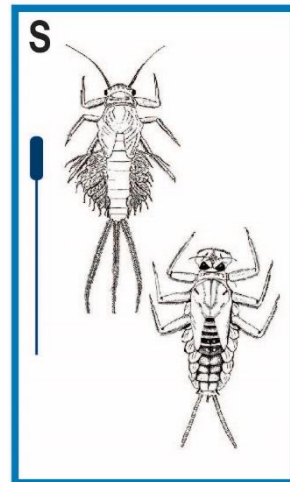
With Tail Filaments

Two tail filaments,
without
abdominal gills



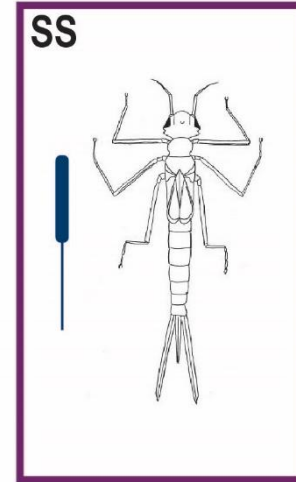
STONEFLIES
Plecoptera

Two or three tail
filaments, with
abdominal gills



MAYFLIES
Ephemeroptera

Three flat tail filaments,
without abdominal gills;
large hinged mouth



DAMSELFLIES
Odonata

Without Tail Filaments

