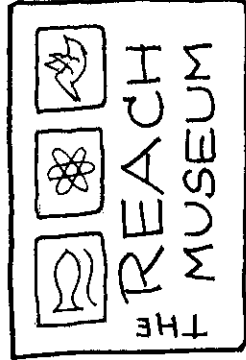


HOW TO DRAW AQUATIC invertebrates

river micro-habitat: bottom



caddisfly larva

mouthparts

① **HEAD**
squarish

② **THORAX**
with 3 segments

③ **LEGS**
3 pairs, short, medium, long

④ **long ABDOMEN**
with 8 segments
hairy

side view, curled

Some are free-living, but many caddisflies make a protective case out of sand, rocks, leaves, or twigs.

my outfit rocks!

"water" you wearing?

"Leaf" me alone!

adult

damselfly nymph

dragonfly nymph

① **HEAD**
abig eyes for spotting prey, short antennae

② **THORAX**
developing wings

③ **ABDOMEN**
segmented

short appendages

smaller than dragonfly, narrower abdomen, 3 feathery tails

eggs

nymph

adult

LIFE CYCLE

incomplete metamorphosis

pouch snail

① opening on the left

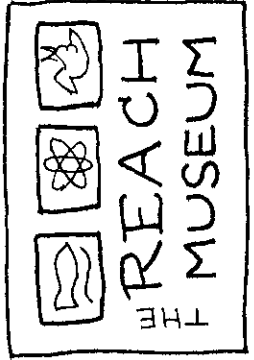
④ hiding out and about

3 pairs of **LEGS** attach at thorax

body can be wide or narrow

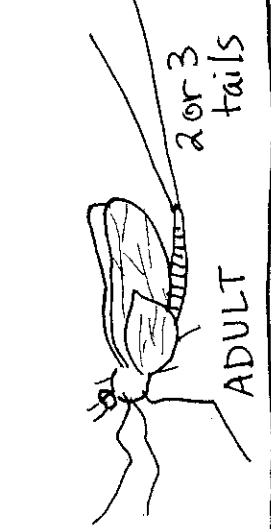
HOW to DRAW AQUATIC invertebrates

river micro-habitat: bottom



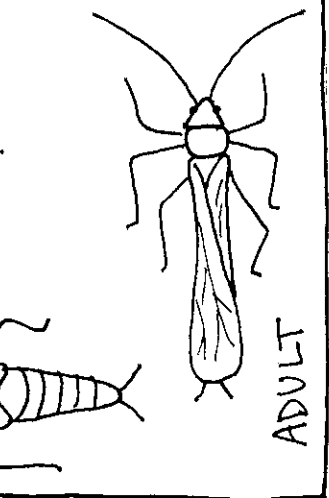
mayfly larva

- ① HEAD medium antennae
- ② THORAX with developing WINGS
- ③ ABDOMEN segmented gills 3 tails
- ④ 3 pairs of LEGS, attach at THORAX walks or swims with a fish-like wiggle



stonefly nymph

- a.k.a. salmonfly
- ① HEAD long antennae
 - ② THORAX in 3 sections, from round to half-donut-shaped
 - ③ ABDOMEN segmented with 2 tails
 - ④ 3 pairs of LEGS - attach a pair to each THORAX section



SCUD

- Very small!
a.k.a. sideswimmers
- ①
 - ② EYE 2 pairs antennae
 - ③ many legs
- CRAWLS OR SWIMS



clam

both clam & mussel burrow in mud

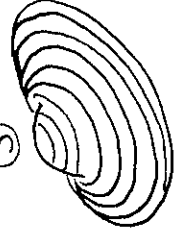
- ① almost closed circle
- ② small ARC



mussel

2 shells enclose body

- ① almost closed oval
- ② small ARC
- ③ growth rings

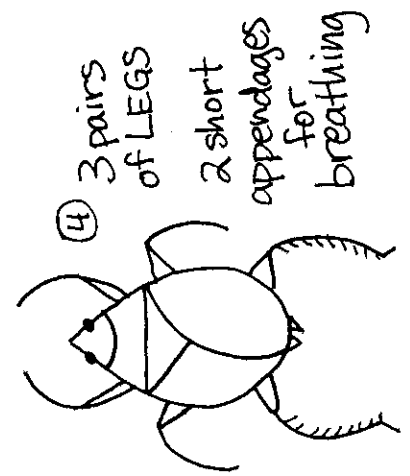


AQUATIC invertebrates

HOW to DRAW

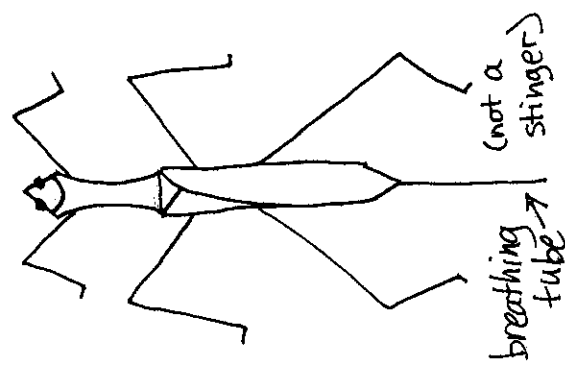
giant water bug

- ① Pointed oval
- ② divide with u and line
- ③ large EYES, v and curve for folded WINGS



- ④ 3 pairs of LEGS
- 2 short appendages for breathing

water scorpion

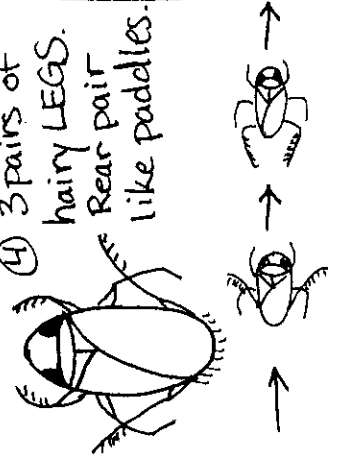


Same structure as giant water bug, but thin and elongated.

Hang at surface when not clinging to plants

water boatman

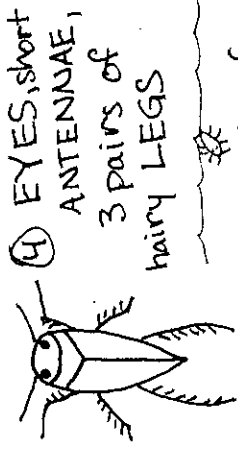
- ① long oval, shallow U
- ② another shallow U, large EYES
- ③ v, line & curve for folded WINGS
- ④ 3 pairs of hairy LEGS. Rear pair like paddles.



Surfaces with head up, unlike backswimmer.
Swims down to forage.

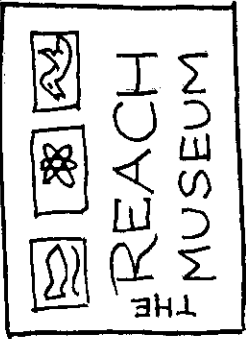
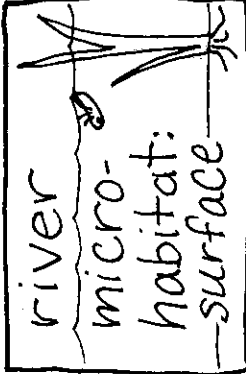
predaceous diving beetle

- ① pointed oval
- ② divide into 3 sections with a shallow U and V
- ③ add line to divide WING covers



Hangs at surface abdomen-up
LARVA climbs on plants

HOW to DRAW AQUATIC invertebrates



backswimmer

- ① tall, narrow V
- ② add shallow U
- ③ upside down U on top

x for folded wings - each line of X goes from upper corner to about 2/3 down.

④ Sideways C for the HEAD, large EYES.

⑤ 3 pairs of LEGS, rear pair long and hairy for paddling



Swims upside-down
Comes to surface abdomen up, unlike water boatman.

whirligig beetle

- ① pointed oval
- ② add 2 shallow U's
- ③ vertical line divides WING covers.

④ 2 EYES
2 short ANTENNAE

⑤ Front pair of LEGS grab prey.
Middle and rear LEGS paddle.

EYES are part above, part below water

LARVA climbs on plants under water

HEAD → THORAX with 6 LEGS
ABDOMEN with 10 segments

Water strider

- ① narrow, pointed oval
- ② divide into 3 parts using V and U
- ③ connect V and U for folded WINGS

④ 2 EYES and 2 ANTENNAE

⑤ 3 pairs of long LEGS

skates on top of water

mosquito

LARVA uses breathing tube at surface

PUPA uses "horns" at surface, wiggles when disturbed.

ADULT females feed on blood

wiggles down to find food