
Caddisfly Larvae (Trichoptera)

Caddisfly families do not have widely used common names.

- 1 a. Anal claw with many teeth, comb-like;
case spiraled and resembling a snail shell
..... **Helicopsychidae**

These larvae never abandon their snail-like case. They crawl over rocks, wood, and burrow in sand beds. They can tolerate warm water, develop in a year and emerge throughout the summer. [L/o/1/R]

- b. Anal claw not comb-like and hook-shaped
..... 2
-

- 2 a. Thoracic segments covered dorsally with a
hardened plate or pair of joined plates
..... 3

- b. Metanotum and often mesonotum (tops of
hind and middle thoracic segments) with
hairs and scattered small sclerites
(hardened plates), but otherwise
membranous
..... 4
-

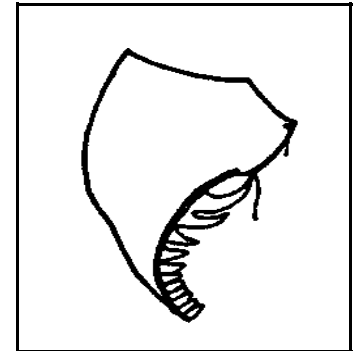
- 3 a. Branched gills along lower sides of
abdomen
..... **Hydropsychidae**

This common, diverse and important family is found in streams of all sizes, currents and temperatures. They are omnivorous, feeding on whatever is caught in their nets. They develop in 1 to 2 years. Some species are quite tolerant of poor conditions. [H/5/8/A]

- b. No branched gills on abdomen
..... *Micro-caddisflies, Hydroptilidae*

These very small larvae are free-living in their first four instars and build a purse or barrel-shaped case during their last, when their abdomen is relatively enlarged. They feed on algae and other plant material in a variety of habitats. [M/4/12/C]

Helicopsychidae claw on
anal proleg (1a)



Hydropsychidae (3a)



Hydroptilidae (3b)



- a. Antennae long (at least 6 times as long as wide) **and/or** sclerites on mesonotum (middle back) lightly pigmented except for a pair of dark curved lines; hind legs longer than others

4

These larvae are diverse in case construction, habitat and feeding behavior, though they are generally omnivorous. [M/5/7/C]

- b. Antennae not more than 3 times as long as wide; no sclerotized lines

..... 5

- a. Mesonotum sparsely sclerotized, sclerites covering less than half of notum

..... 6

5

- b. Mesonotum mostly covered with sclerites, usually pigmented

..... 12

- a. Abdominal segment 9 with a dorsal (top) sclerite

..... 7

6

- b. Abdominal segment 9 with dorsum entirely membranous

..... 9

- a. Prosternal (front chest) horn present, though it may be small; metanotal sa3 (3rd setal area, farthest to the sides and slightly forward on notum) with a small sclerite and a cluster of setae (hairs)

..... **Phryganeidae**

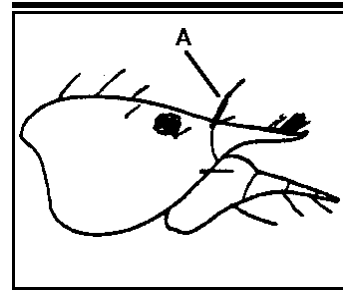
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These large caddisflies usually have a boldly striped head and distinctive cases of spiral or concentric rings of vegetation. Many are predators living among debris in a variety of waterbody types. [M/1/7/C]

- b. No prosternal horn; metanotal sa3 with a single setae and no sclerite

..... 8

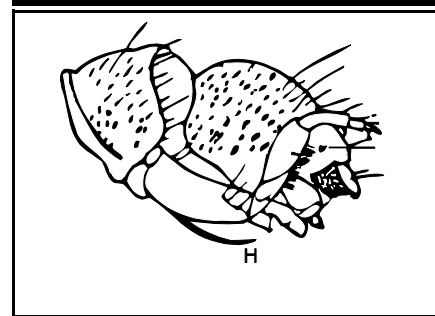
Leptoceridae, lateral view of head showing antennae (A) (4a)



Leptoceridae case (4a)



Phryganeidae with prosternal horn (H) (7a)



Phryganeidae (7a)



- a. Anal proleg joined with last abdominal segment along about half of its length; claw is small and has at least one hook on top

..... **Glossosomatidae**

Larvae build a turtle-like case and inhabit rocky surfaces in cold, clean streams. They feed on diatoms and algae scraped from the substrate. [L/2/4/C]

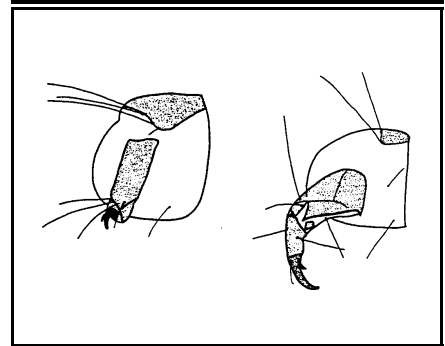
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- b. Anal proleg mostly free of last abdominal segment; claw not so small and without any hooks on the topside

..... **Rhyacophilidae**

These free-living predatory larvae inhabit cool streams. [L/1/1/C]

Glossosomatidae (left) and Rhyacophilidae (right), position of anal proleg (8a/8b)



Rhyacophilidae (8b)



- a. Protochantins (projections near shoulder of front legs) broad and hatchet shaped

..... **Psychomyiidae**

These larvae graze on detritus, fungi, and periphyton in the vicinity of their silk retreats. [L/2/2/C]

9

- b. Protochantins pointed or poorly developed

..... 10

Psychomyiidae protochantin (9a)



- a. Protochantins poorly developed; labrum (upper lip) membranous and narrower where it joins the head (T-shaped), often retracted; head without markings

..... **Philopotamidae**

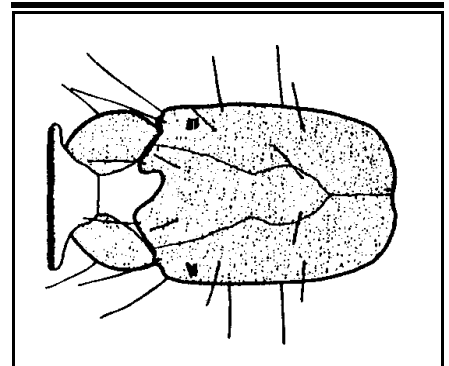
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Living in silk retreats on the bottom of rocks, these larvae capture algae and detritus in their nets. [L/3/3/C]

- b. Protochantins pointed; labrum widest at base and sclerotized; head usually patterned

..... 11

Philopotamidae head (10a)



- a. Tarsi (feet) wider than tibiae (forearms), flat and hairy; mandibles short and triangular with thick brush
 **Dipseudopsidae**

These larvae build tubes in the sand and silt along margins of lakes and streams. They eat detritus caught in the net within the tube.
 [M/1/1/C]

11

- b. Tarsi not as above, with a large claw; mandibles elongate
 **Polycentropodidae**

Most species are predators and have tubular retreats. The retreats also aid in respiration, as the larvae undulate their bodies to move water through the tube and past their gills.
 [M/3/5/C]

Dipseudopsidae leg (11a)



Polycentropodidae, free floating and in retreat (silken tube) (11b)

Without retreat



With retreat



- a. First abdominal segment with no lateral or dorsal humps; prothorax divided by distinct furrow
 **Brachycentridae**

Often attaching their cases to moss or vegetation in cold spring-fed streams, these caddisflies graze on periphyton or gather food from the current with their long legs.
 [L/2/3/C]

12

- b. First abdominal segment with lateral humps and often a dorsal hump
 13

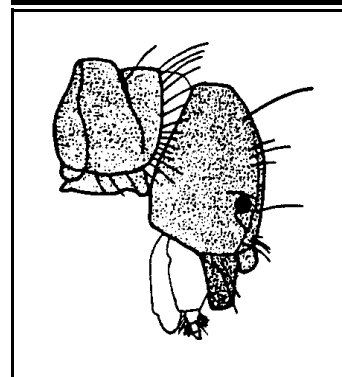
- a. Claws of hind legs very small compared to those of other legs **or** modified into slender filaments about the same length as tarsus
 **Molannidae**

13

These larvae live in sand and silty sediments in slow currents, feeding on algae, vascular plants and invertebrates. [M/1/1/R]

- b. Claws of hind legs similar in size to other claws
 14

Brachycentridae, with furrowed thorax (12a)



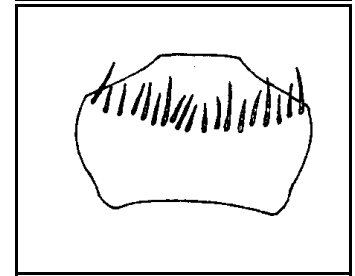
- a. Labrum with a row of 16-18 long setae across central part
..... **Calamoceratidae**

14

Cases are made of leaf pieces or hollowed twigs. These larvae are found in pools of cool streams. They can take two years to develop and grow quite large. [L/1/1/R]

- b. Labrum with 6 or less setae across central part
..... 15

Calamoceratidae labrum with row of 16-18 long setae (14a)



- a. Anal proleg with a lateral sclerite extending posteriorly and bearing a long seta (hair) at the end; inside base of anal claw with a membranous surface and brush of setae
..... **Beraeidae**

15

Larvae of this family are rare, live in muck margins of spring seeps, and build curved tapered cases of sand. [L/X/1/R]

- b. Anal proleg not as above; setae may be present on dorsum of proleg but not as a brush on inside base of claw
..... 16

- a. Antennae (small) close to front of head capsule; prosternal horn lacking
..... 17

16

- b. Antennae closer to eye or midway between eye and front of head capsule; prosternal horn present, though it may be small 18

- a. Anal prolegs with about 30 long setae each; protochantins large and hook-shaped

..... **Sericostomatidae**

These larvae live in horn-shaped cases in the sandy substrates of lakes, streams and spring seeps. They feed primarily on detritus.

[L/1/1/R]

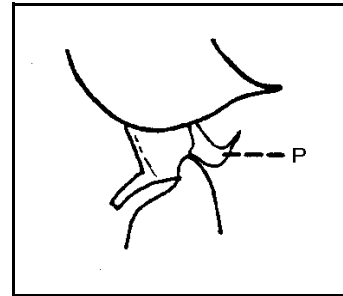
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- b. Anal prolegs with about 5 long setae each; protochantins small and not hook-shaped

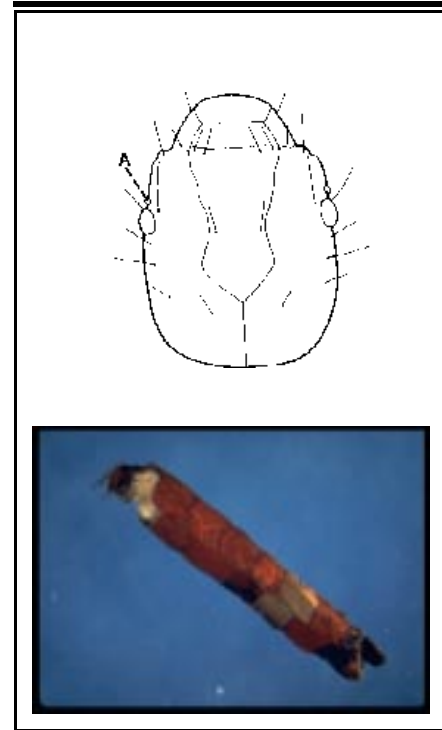
..... **Odontoceridae**

Cases of these larvae are horn-shaped and tough. They are found in cold streams and spring seeps, and are omnivorous. [L/1/2/C]

Sericostomatidae
protochantin (P) (17a)



Lepidostomatidae, head showing antenna (A) and animal in case (18a)



- a. Antennae very close to eyes; dorsal hump on 1st abdominal segment lacking

..... **Lepidostomatidae**

Most members of this family live in cold streams, though some are found in lakes. Larvae are detritivores and are found among detritus over various stream bottom types.

[L/1/2/C]

18

- b. Antennae midway between eye and front of head capsule; dorsal hump usually present on 1st abdominal segment

..... 19

- a. Mesonotum extended forward on both sides, either long and pointed or rounded and spiny

..... **Goeridae**

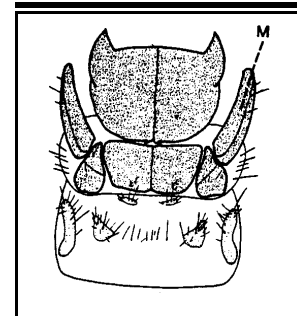
Larvae inhabit either cobbles or muck in tube- or horn-shaped cases. They feed on periphyton, vascular plants, and detritus. [X/X/2/R]

19

- b. Mesonotum without extensions as above

..... 20

Goeridae thorax with mesonotum (M) extended on both sides (19a)



- a. Anterior edge of mesonotum somewhat notched at centerline; metanotal sa1 (front and center pair of setal areas on the hind thoracic segment) unsclerotized and with only one or two setae

..... **Uenoidae**

20

These larvae occur in streams and springs, where they feed on detritus, diatoms and algae. Their case is either long or short and horn-shaped. [L/1/1/C]

- b. Anterior edge of mesonotum straight or continuously curved; metanotal sa1 with a sclerotized plate **and/or** more than 2 setae

..... 21

- a. Mesonotum with setal areas on 2 or 3 pairs of sclerites **or** basal seta of each tarsal claw extending far short of tip of claw and mandibles each with two or more teeth

..... **Limnephilidae**

This is a large and diverse family, difficult to characterize as to habitat or case construction. They feed primarily on large particulate organic matter. [L/6/24/C]

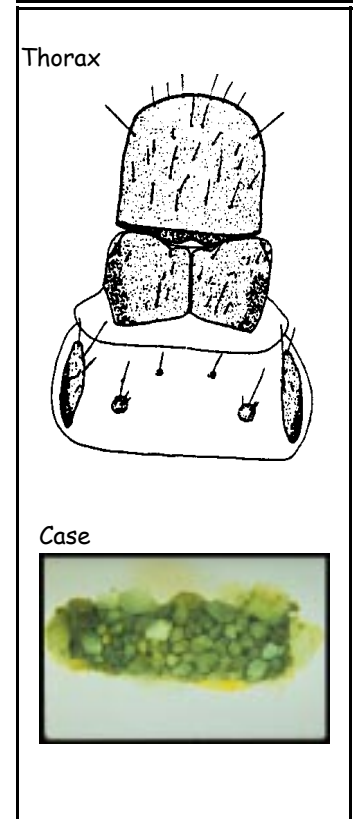
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- b. Mesonotum with 1 pair of sclerites joining or close along center line; basal seta of each tarsal claw extending to, or close to, tip of claw; mandibles with scraper blades, not teeth

..... **Apataniidae**

These larvae are found in cold mountain streams, spring seeps and cold clean lakes. Their case is tapered and strongly curved. They feed on periphyton and detritus.

Uenoidae thorax and case (20a)



Limnephilidae with and without case (21a)



Apataniidae basal seta of tarsal claw (21b)

