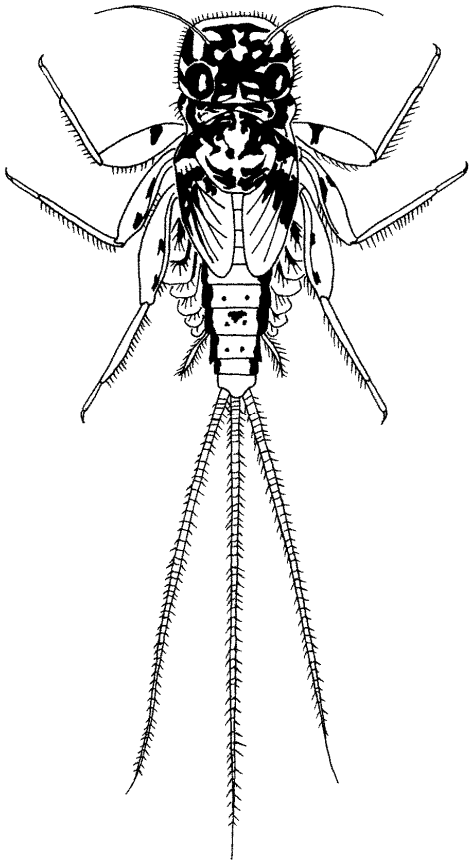
CHAPTER 4

EPHEMEROPTERA
(Mayflies)



Draft
June 17, 2009

4 ORDER EPHEMEROPTERA
Mayflies

Mayfly larvae are found in a variety of locations including lakes, wetlands, streams, and rivers, but they are most common and diverse in lotic habitats. They are common and abundant in stream riffles and pools, at lake margins and in some cases lake bottoms. All mayfly larvae are aquatic with terrestrial adults. In most mayfly species the adult only lives for 1-2 days. Consequently, the majority of a mayfly's life is spent in the water as a larva. The adult lifespan is so short there is no need for the insect to feed and therefore the adult does not possess functional mouthparts. Mayflies are often an indicator of good water quality because most mayflies are relatively intolerant of pollution. Mayflies are also an important food source for fish.

Ephemeroptera Morphology

Most mayflies have three caudal filaments (tails) (Figure 4.1) although in some taxa the terminal filament (middle tail) is greatly reduced and there appear to be only two caudal filaments (only one genus actually lacks the terminal filament). Mayflies have gills on the dorsal surface of the abdomen (Figure 4.1), but the number and shape of these gills vary widely between taxa. All mayflies possess only one tarsal claw at the end of each leg (Figure 4.1). Characters such as gill shape, gill position, and tarsal claw shape are used to separate different mayfly families.

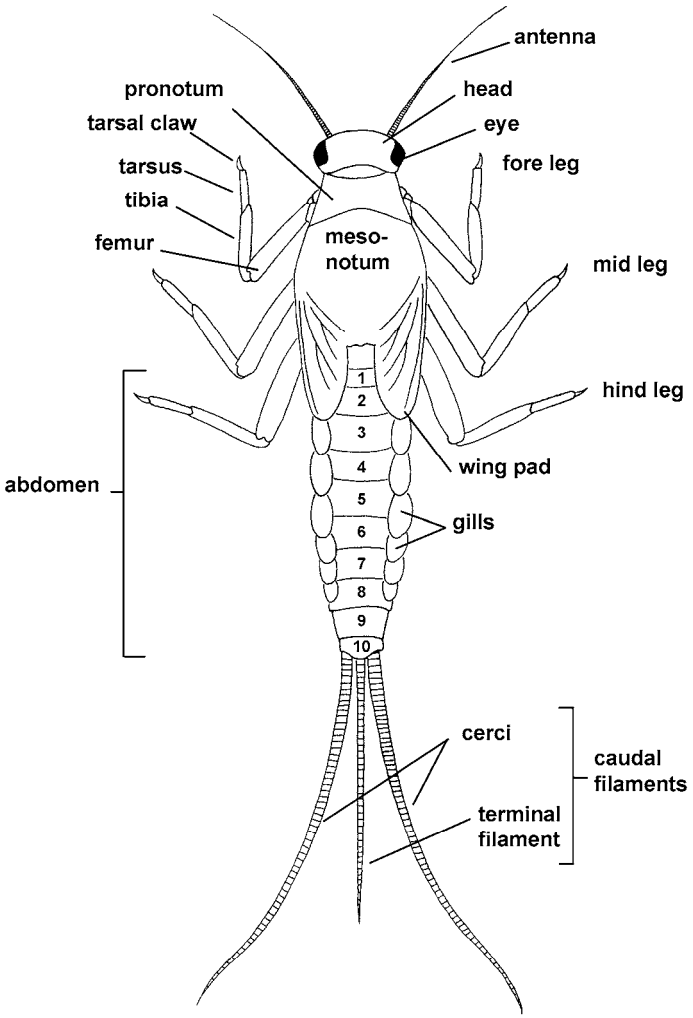


Figure 4.1: Dorsal view of ephemeropteran larva.

Key to Ephemeroptera Families (Larvae)

1. Head with mandibular tusks that project forward (Figure 4.2, Figure 4.4); gills on segments 2-7 forked with fringed margins (Figure 4.3).....2

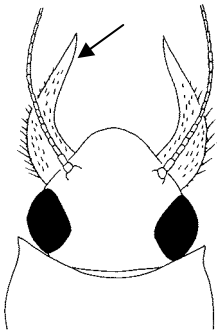


Figure 4.2: Head of *Anthopotamus* sp. (Potamanthidae) larva, Dorsal View.

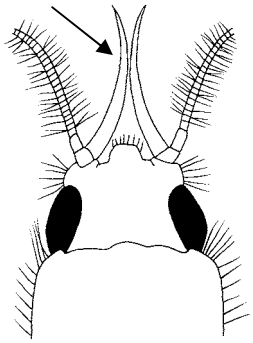


Figure 4.4: Head of Hexagenia limbata (Ephemeridae) larva, Dorsal View.

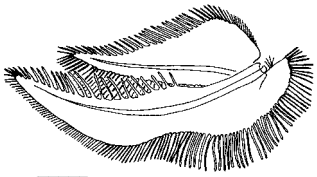


Figure 4.3: Gill of *Ephoron* sp. (Polymitarcyidae) larva.

1'. Head without mandibular tusks (Figure 4.5, Figure 4.6); gills variable 4

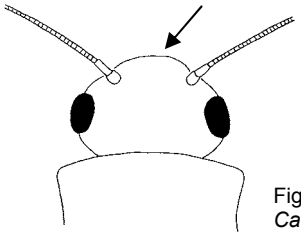


Figure 4.5: Head of *Caenis* sp. (Caenidae) larva, Dorsal View.

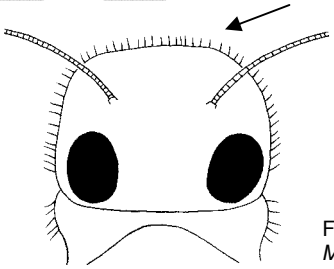


Figure 4.6: Head of *Maccaffertium exiguum* (Heptageniidae) larva, Dorsal View.

2(1) Abdominal gills held laterally (Figure 4.7); legs slender..... **Potamanthidae *p. 60***

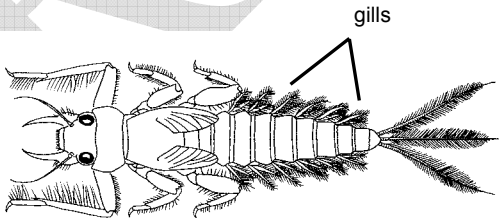


Figure 4.7: Anthop*otamus* sp. (Potamanthidae) larva, Dorsal View.

2'. Abdominal gills held dorsally over abdomen (Figure 4.8).....3

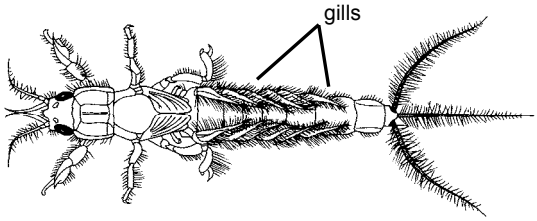


Figure 4.8: *Hexagenia limbata* (Ephemeridae) larva, Dorsal View.

3(2'). Mandibular tusks project outward or upward apically (at end) (Figure 4.9); apex of hind tibiae projected into a point ..... **Ephemeridae** ***p. 57***

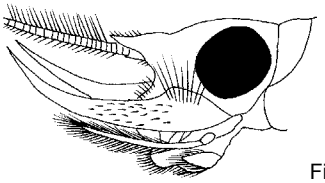


Figure 4.9: Head of *Ephemera* sp. (Ephemeridae) larva, Lateral View.

3'. Mandibular tusks projecting inward and downward (Figure 4.10); apex of hind tibiae rounded ..... **Polymitarcyidae** ***p. 59***

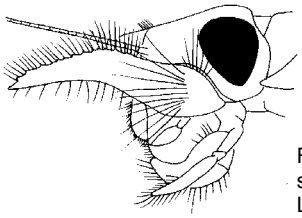


Figure 4.10: Head of *Ephoron* sp. (Polymitarcyidae) larva, Lateral View.

4(1'). Gills on abdominal segment 2 operculate (plate-like) and covering succeeding pairs of gills (Figure 4.11) ..... **Caenidae** ***p. 56***

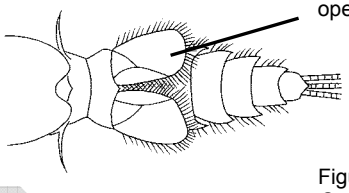


Figure 4.11: Abdomen of *Caenis* sp. (Caenidae) larva, Dorsal View.

4'. Gills on abdominal segment 2 similar to succeeding pairs of gills if present (Figure 4.13, Figure 4.12, Figure 4.14); if operculate gills present then not on abdominal segment 2 (Figure 4.14) 5

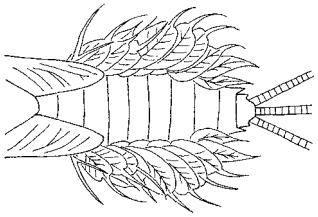


Figure 4.13: Abdomen of *Leptophlebia* sp. (Leptophlebiidae) larva, Dorsal View.

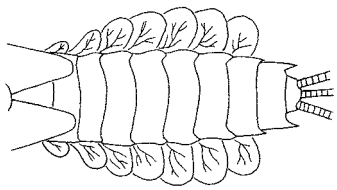


Figure 4.12: Abdomen of *Isonychia arida* (Isonychiidae) larva, Dorsal View.

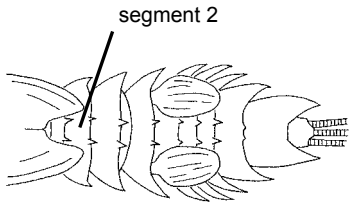


Figure 4.14: Abdomen of *Eurylophella doris* (Ephemerellidae) larva, Dorsal View.

5(4'). Gills absent on abdominal segment 2 (may also be absent from segments 1 and 3) (Figure 4.15); gills on abdominal segments may be operculate (Figure 4.15) ..... **Ephemerellidae *p. 56***

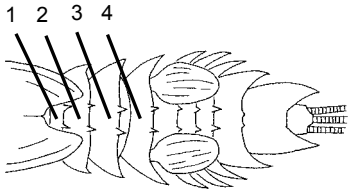


Figure 4.15: Abdomen of *Eurylophella doris* (Ephemerellidae) larva, Dorsal View.

5'. Gills present on abdominal segments 1-7 or 2-7 (Figure 4.17, Figure 4.16) 6

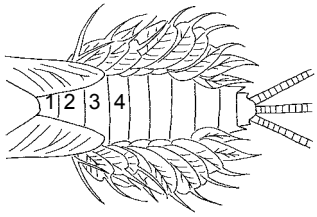


Figure 4.17: Abdomen of *Leptophlebia* sp. (Leptophlebiidae) larva, Dorsal View.

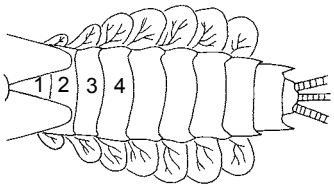


Figure 4.16: Abdomen of *Isonychia arida* (Isonychiidae) larva, Dorsal View.

6(5'). Head and body flattened (Figure 4.18, Figure 4.19)..... **Heptageniidae *p. 57***

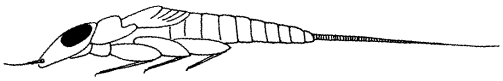


Figure 4.18: Heptageniidae larva, Lateral View.

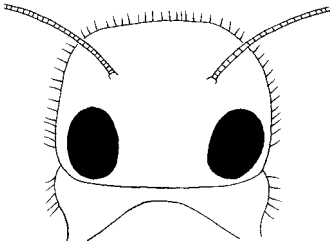


Figure 4.19: Head of *Maccaffertium exiguum* (Heptageniidae) larva, Dorsal View.

6'. Head and body not flattened (Figure 4.20)..... 7

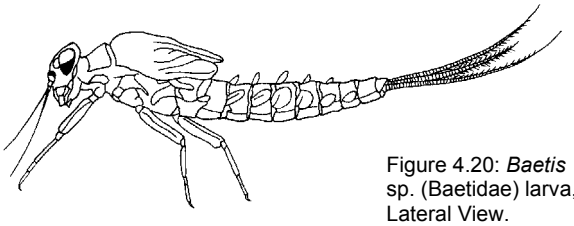


Figure 4.20: *Baetis* sp. (Baetidae) larva, Lateral View.

7(6'). Abdominal gills on segments 2-7 forked (Figure 4.21b), consisting of slender filaments (Figure 4.21a), or broad and ending in slender filaments (Figure 4.21c, d) ..... **Leptophlebiidae *p. 58***

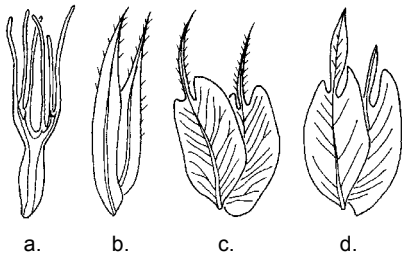


Figure 4.21: Gills of a) *Habrophlebia* sp., b) *Paraleptophlebia* sp., c) *Leptophlebia* sp., and d) *Choroterpes* sp. (Leptophlebiidae) larvae.

7'. Gills not as above, usually oval or heart-shaped (Figure 4.22) 8

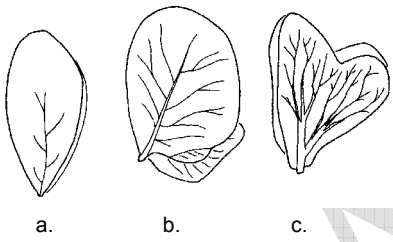


Figure 4.22: Gills of a) *Ameletus* sp. (Ameletidae), b) *Acanthametropodidae* sp. (Acanthametropodidae), and c) *Siphlonurus* sp. (Siphlonuridae) larva.

8(7'). Claws on fore legs different from claws on the mid and hind legs (Figure 4.23, Figure 4.22); claws on middle and hind legs long and slender, about as long as tibiae..... 9

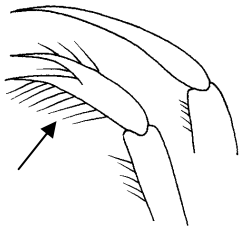


Figure 4.23: Tarsal claws of fore leg and hind leg of *Siphloplecton* sp. (Metretopodidae) larva.

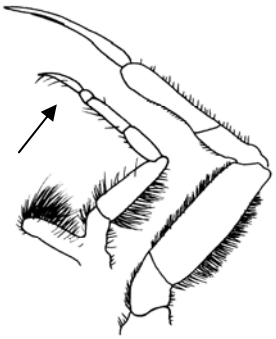


Figure 4.24: Tarsal claws of fore and hind leg of *Ametropus* sp. larvae.

8'. Claws on fore legs similar to claws on the mid and hind legs (Figure 4.25); claws on middle and hind legs usually shorter than tibiae..... 10

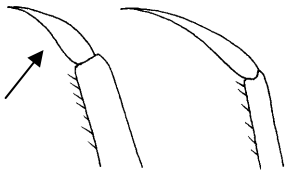


Figure 4.25: Tarsal claws of Baetidae larvae.

9(8). Claws on fore legs bifid (forked) (Figure 4.26); spinous pad absent from coxae of fore legs .....**Metretopodidae *p. 59***

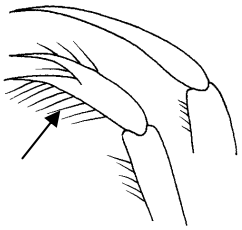


Figure 4.26: Tarsal claws of fore leg and hind leg of *Siphloplecton* sp. (Metretopodidae) larva.

9'. Claws on fore legs simple (Fig. 4.32); spinous pad present on coxae of fore legs (Figure 4.27) .....**Ametropodidae *p. 55***

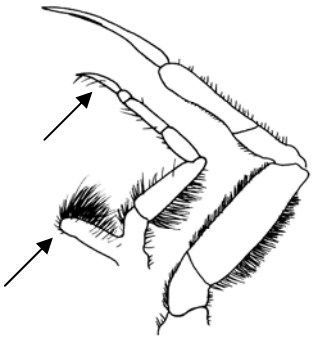


Figure 4.27: Tarsal claws of fore and hind leg of *Ametropus* sp. larvae.

10(9'). A double row of long setae (hairs) on inner margin of fore legs (Figure 4.28)..... 11

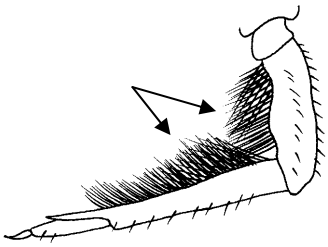


Figure 4.28: Leg of *Isonychia* sp. (Isonychiidae) larva.

10'. Scattered hairs present on fore legs but not as long or arrayed as above (Figure 4.29).... 12

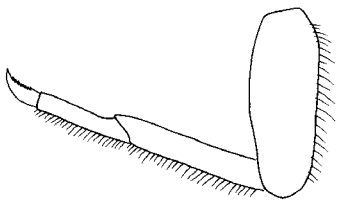


Figure 4.29: Leg of *Acentrella* sp. (Baetidae) larva.

11(10). Gills on segment 1 dorsolateral, similar in shape and position to other gills (Figure 4.30); gill fibrils shorter than gill plate.....**Isonychiidae *p. 58***

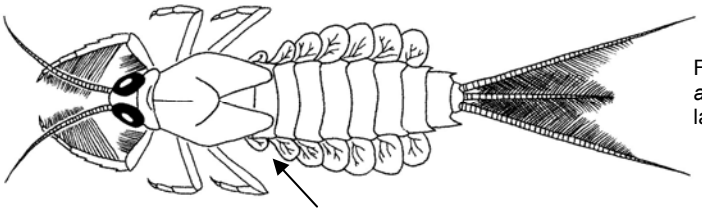


Figure 4.30: *Isonychia arida* (Isonychiidae) larva, Dorsal View.

11'. Gills on segment 1 ventral (Figure 4.31); gill fibrils longer than gill plate or consisting of fibrils only (Figure 4.31) .....**Oligoneuriidae *p. 59***

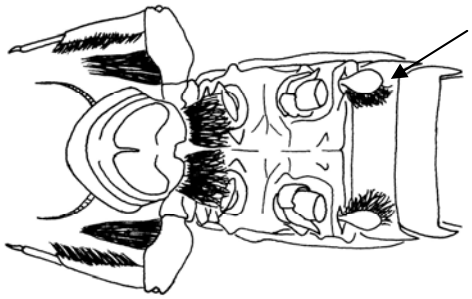


Figure 4.31: Head and thorax of *Lachlania sp.* (Oligoneuriidae) larva, Ventral View.

12(10'). Labrum usually with a median notch (Figure 4.32); antennae at least 2 times the width of head (Figure 4.33); if antennae shorter than 2 times the width of head then labrum with a deep notch (Figure 4.32) and maxillae without pectinate spines; terminal filament may be subequal to cerci or shorter than tergum 10 .....**Baetidae *p. 55***

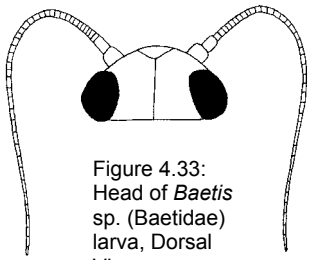


Figure 4.33: Head of *Baetis* sp. (Baetidae) larva, Dorsal View.

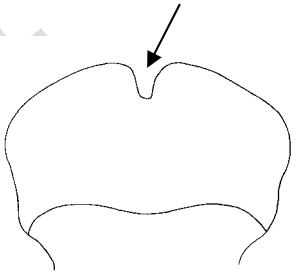


Figure 4.32: Labrum of *Baetis tricaudatus* (Baetidae) larva, Dorsal View.

12'. Labrum usually entire or with only a shallow notch (Figure 4.35); terminal filament may be subequal to cerci; antennae less than 2 times the width of head (Figure 4.34) or labrum with notch and maxillae with pectinate spines (Figure 4.36) 12

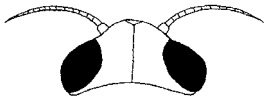


Figure 4.34: Leg of *Siphlonurus* sp. (Siphlonuridae) larva, Dorsal View.

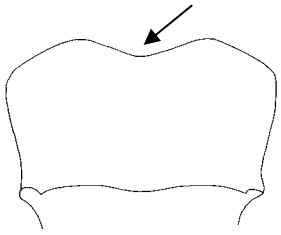


Figure 4.35: Labrum of *Siphlonurus marshalli* (Siphlonuridae) larva, Dorsal View.

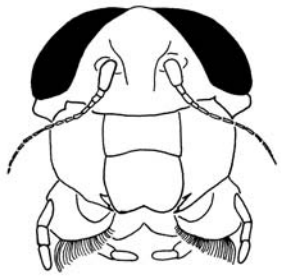


Figure 4.36: Head of *Ameletus sp.* (Ameletidae) larva.

13(12'). Tibiae and tarsi bowed (Figure 4.37); tarsal claws long and slender, with hind leg claws as long as tarsi (Figure 4.37); rare; large rivers; **Not known from Mongolia** .....**Acanthametropodidae *p. 54***

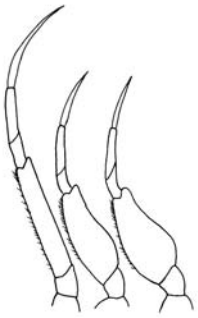


Figure 4.37: Legs of *Analetris eximia* (Acanthametropodidae) larva.

13'. Tibiae and tarsi not bowed (Figure 4.38); tarsal claws usually not long an slender..... 14

Figure 4.38: Fore and hind legs of *Ameletus sp.* (Ameletidae) larva.

14(13'). Maxillae with pectinate spines (Figure 4.40); gills consisting of a single oval-shaped plate with a sclerotized band (Figure 4.39).....**Ameletidae *p. 54***

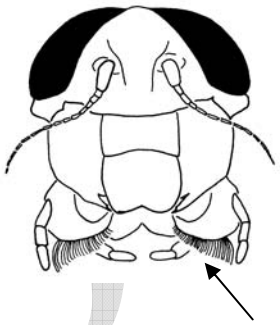


Figure 4.40: Head of *Ameletus sp.* (Ameletidae) larva.

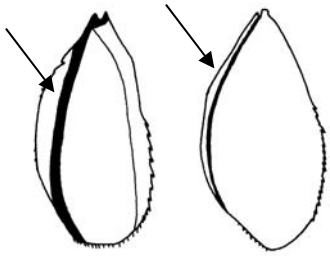


Figure 4.39: Gills of *Ameletus sp.* (Ameletidae) larva.

14'. Maxillae without pectinate spines; gills variable.....**Siphlonuridae *p. 61***

Ephemeroptera Family Descriptions

Acanthametropodidae

Common Name: Acanthametropodid Mayflies
Feeding Group: Predators
Tolerance Value: Unknown
Habitat: Larvae of acanthametropodids are found in rivers with swift flow and sand and rock substrates.
Size: Large (20 mm)
Characteristics: Antennae less than 2x the width of head; tibiae and tarsi bowed; tarsal claws long and slender, with hind leg claws as long as tarsi
Notes: **Not known from Mongolia.** Larvae of this family are adapted for dwelling in sand. This family is not commonly collected due to the habitat in which they occur.

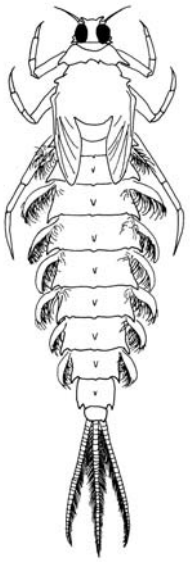


Figure 4.41: *Acanthametropus pecatonica* (Acanthametropodidae) larva, Dorsal View.

Ameletidae

Common Name: Ameletid Minnow Mayflies
Feeding Group: Scrapers, Collector/Gatherers
Tolerance Value: 0 (Low)
Habitat: Larvae of this family are found in small, swift streams on a variety of substrates.
Size: Small to Medium (6-14 mm)
Characteristics: Antennae less than 2x the width of head; maxillae with pectinate spines; gills consisting of a single oval-shaped plate with a sclerotized band; gills usually present on abdominal segments 1-7; long setae present on caudal filaments (present on both sides of terminal filament and only on the inner side of the cerci).
Notes: These mayflies superficially look like brush-legged (Isonychiidae) or small minnow (Baetidae) mayflies, but they can be separated by the presence of pectinate spines on the maxillae and the lack of rows of long hairs on the fore legs. Ameletid larvae are very good swimmers which allows them to navigate strong currents. Some species can inhabit temporary streams through a dormant egg stage when the stream is dry.

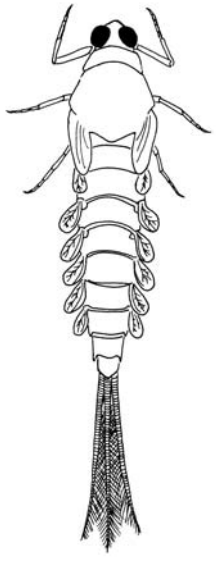


Figure 4.42: *Ameletus amador* (Ameletidae) larva, Dorsal View.

Ametropodidae

Common Name: Sand Minnow Mayflies
Feeding Group: Collector/Filterers, Collector/Gatherers
Tolerance Value: Unknown
Habitat: Ametropodid larvae live in large rivers with relatively strong current and firm sand.
Size: Medium (14-18mm)
Characteristics: Tarsal claws on fore legs simple; oval gills on abdominal segments 1-7; spinous pad present on coxae of fore legs.
Notes: When at rest the larvae are partially buried in sand. The long claws are possibly an adaptation for burrowing in sand. The feed on algae associated with the sand. This family is not commonly collected due to the habitat in which they occur.

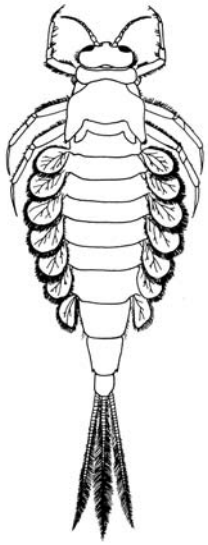


Figure 4.43: *Ametropus* sp. (Ametropodidae) larva, Dorsal View.

Baetidae

Common Name: Small Minnow Mayflies
Feeding Group: Collector/Gatherers, Scrapers
Tolerance Value: 4 (Moderate)
Habitat: These mayfly larvae are found in a variety of habitats and are widespread. Some are found in streams of moderate current or in areas of slack water. Other species are primarily restricted to lakes and ponds.
Size: Small to Medium (3-12 mm)
Characteristics: Antennae in most genera 2-3x longer than the width of the head; gills present on abdominal segments 1 or 2 through 7; gill shape variable; 2-3 caudal filaments present.
Notes: These mayflies are often very small and sometimes very abundant when conditions permit. Most baetid mayflies are good swimmers, hence the name minnow mayfly. Some species can be very common in polluted streams.

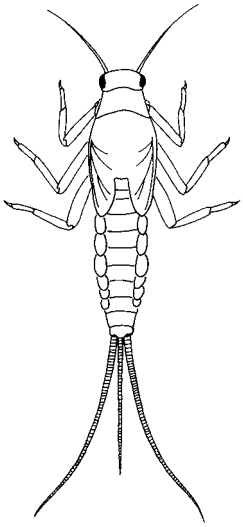


Figure 4.44: Generalized Baetidae larva, Dorsal View.

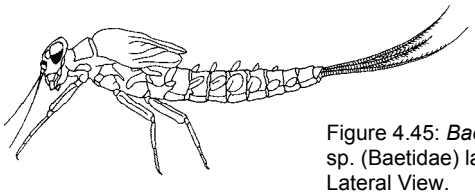


Figure 4.45: *Baetis* sp. (Baetidae) larva, Lateral View.

Caenidae

Common Name: Small Square-Gill Mayflies
Feeding Group: Collector/Gatherers, Scrapers
Tolerance Value: 7 (High)
Habitat: Caenid mayfly larvae occur in streams in areas of slow current, at the edges of lakes, and in wetlands.
Size: Small (2-8 mm)
Characteristics: Gills on abdominal segment 1 vestigial (small and finger-like); gills on abdominal segment 2 square operculate (plate-like) and covering succeeding gills; operculate gills touch or overlap at midline; fringed gills present on abdominal segments 3-6; setae on caudal filaments restricted to apex of each annulation.
Notes: The operculate gills do not take up dissolved oxygen, but instead are used to cover and protect the other gills, which absorb dissolved oxygen from the water. Since these mayflies occur in areas where the current is slow, sediment can rapidly settle on the gills and prevent dissolved oxygen uptake. In order to keep their gills free of sediment, caenid mayflies wave their operculate gills.

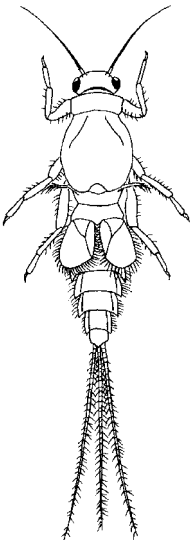


Figure 4.46: *Caenis* sp. (Caenidae) larva, Dorsal View.

Ephemerellidae

Common Name: Spiny Crawler Mayflies
Feeding Group: Collector/Gatherers
Tolerance Value: 1 (Low)
Habitat: Spiny crawler mayflies occur in a variety of habitats, but are most common in flowing waters of streams and rivers. They can also occur in lake edge habitats.
Size: Small to Medium (4-15 mm)
Characteristics: Gills absent from abdominal segment 2; gills present on abdominal segments 3-7 or 4-7.
Notes: When threatened, spiny crawler mayflies have an interesting habit of raising their three tails up, presumably to appear larger. If this posture does not frighten the intruder, the mayfly will curl its abdomen over its body so that their tails project in front of the head. The tails will then be used to jab the attacker.

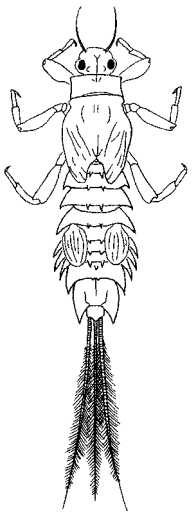


Figure 4.47: *Eurylophella doris* (Ephemerellidae) larva, Dorsal View.

Ephemeridae

Common Name: Common Burrowing Mayflies
Feeding Group: Collector/Gatherers
Tolerance Value: 4 (Moderate)
Habitat: Ephemerid mayflies are found in the soft silt or sand of streams and lakes.
Size: Medium to Large (10-32 mm)
Characteristics: Upturned mandibular tusks present; frontal process between antennae; fore legs modified (widened) for burrowing; gills present on segments 1-7; gills on segment 1 are small (vestigial) and simple; gills on segments 2-7 forked with fringed margins (feathered) and held over the abdomen.
Notes: Ephemerid mayflies make U-shaped burrows in soft sediments. Within this burrow these mayflies generate flow through the burrow by moving their gills. This current brings dissolved oxygen and food particles into the burrow. When the adults emerge on warm summer evenings they can cause problems as they can cover bridges, buildings, and vehicles near lakes and streams where they occur.

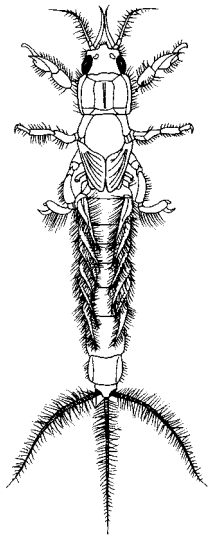


Figure 4.48: *Hexagenia limbata* (Ephemeridae) larva, Dorsal View.

Heptageniidae

Common Name: Flathead Mayflies
Feeding Group: Scrapers
Tolerance Value: 4 (Moderate)
Habitat: Flathead mayflies are most common in slow to fast flowing streams where they occur on the surface of rocks, logs, vegetation, and leaves.
Size: Small to large (5-20 mm)
Characteristics: Body, head, and legs (femora) flattened; mouthparts not visible from dorsal view; gills present on abdominal segments 1-7; only short setae present on caudal filaments.
Notes: Flathead mayflies are well adapted for swift flowing waters. Their bodies, head, and legs are flattened which reduces drag by forcing water over the organism. Most of these mayflies feed on algae and microorganisms growing on rocks. One genus of heptageniid mayfly has only two tails, but can be separated from stoneflies by the presence of a single tarsal claw at the end of each leg.

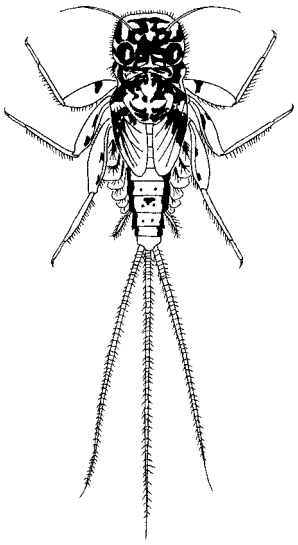


Figure 4.49: *Maccaffertium exiguum* (Heptageniidae) larva, Dorsal View.

Isonychiidae

Common Name: Brush-Legged Mayflies
Feeding Group: Collector/Filterers
Tolerance Value: 2 (Low)
Habitat: Species of this family usually occur in streams with swift to moderate current. They are commonly associated with tangles of vegetation consisting of sticks, leaves and roots.
Size: Medium (8-17 mm)
Characteristics: Forelegs with a double row of long setae; gill plates oval and present on abdominal segments 1-7; gills on segment 1 similar to other gills; gill fibrils shorter than plates; long hairs along the margins of caudal filaments.
Notes: Isonychiids feed on algae, diatoms, and detritus which they filter from the water using the brush-like hairs on their fore legs. They do this by clinging to the substrate with their middle legs and hind legs and holding their fore legs in the current to collect small particles in the water. Isonychiids then consume the material collected in their hairs. These mayflies are good swimmers, but they spend most of the time clinging to the substrate. The rows of hairs on the tails help these mayfly larvae swim by functioning as a paddle.

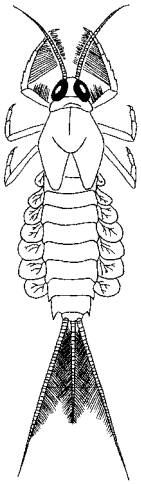


Figure 4.50: *Isonychia arida* (Isonychiidae) larva, Dorsal View.

Leptophlebiidae

Common Name: Prong-Gilled Mayflies
Feeding Group: Collector/Gatherers
Tolerance Value: 2 (Low)
Habitat: The larvae of prong-gilled mayflies occur in a variety of habitats including lakes, ponds, and swift and slow flowing streams. They are found on rocks and gravel, leaf packs, and submerged roots.
Size: Small to medium (4-15 mm)
Characteristics: Gills on first abdominal segment usually slender and finger-like; gills on abdominal segments 2-7 forked with variable shape (consisting of slender filaments, or broad and ending in slender filaments); setae on caudal filaments present at apex of each segment.
Notes: A common distinguishing characteristic of leptophlebiid mayflies is the presence of forked gills. Unfortunately, these gills are commonly broken off making identification difficult.

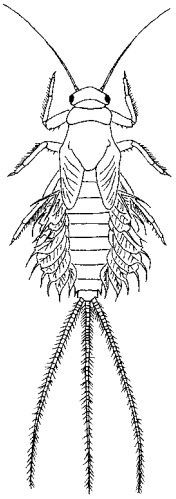


Figure 4.51: *Leptophlebia* sp. (Leptophlebiidae) larva, Dorsal View.

Metretopodidae

Common Name: Cleft-Footed Minnow Mayflies
Feeding Group: Predators, Collector/Gatherers
Tolerance Value: 2 (Low)
Habitat: Metretopodid mayflies are generally collected from vegetated margins of slow flowing streams and rivers.
Size: Medium (9-16 mm)
Characteristics: Tarsal claws on fore legs bifid (forked); spinous pad absent from coxae of fore legs; oval gills on abdominal segments 1-7; terminal filament (middle tail) with long hairs on both sides; cerci (outer tails) with long hairs only on inner margin.
Notes: One genus of this family has been collected in deep dredges of large lakes. Cleft-footed mayflies are apparently very good swimmers and tend to be difficult to collect. This family is not commonly collected possibly because they are active, strong swimmers.

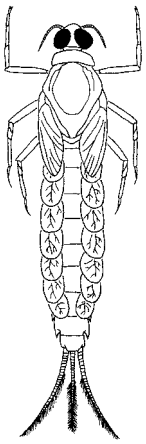


Figure 4.52: *Siphloplecton* sp. (Metretopodidae) larva, Dorsal View.

Oligoneuriidae

Common Name: Brush-Legged Mayflies
Feeding Group: Collector/Filterers
Tolerance Value: Unknown
Habitat: Oligoneurids encountered in large streams with considerable flow and shifting sand substrate and in riffles of streams of varying size.
Size: Medium (8-12 mm)
Characteristics: Forelegs with a double row of long setae; gills on segment 1 ventral; gill fibrils longer than gill plate or consisting of fibrils only; gill plates oval and present on abdominal segments 1-7.
Notes: Adults of this family are different from other mayfly families in that they are swift fliers with modified wings.

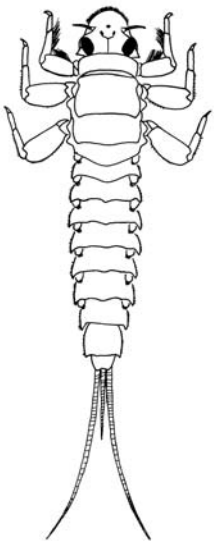


Figure 4.53: *Chromarcys sp.* (Oligoneuriidae) larva, Dorsal View.

Polymitarcyidae

Common Name: Pale Burrowing Mayflies
Feeding Group: Collector/Gatherers, Filterers
Tolerance Value: 2 (Low)
Habitat: These mayflies burrow in rivers under rocks or in clay banks.
Size: Medium to large (9-30 mm)
Characteristics: Down turned mandible tusks present; fore legs modified (widened) for burrowing; gills present on segments 1-7; gills on segment 1 are single or double; gills on segments 2-7 forked with fringed margins (feathered) and held over the abdomen.
Notes: Pale burrowing mayflies are uncommon or are not commonly collected, possibly due to the habitat in which the larvae occur.

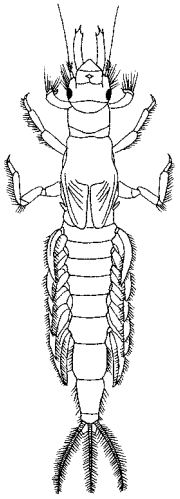


Figure 4.54: *Tortopus incertus* (Polymitarcyidae) larva, Dorsal View.

Potamanthidae

Common Name: Hacklegill Mayflies
Feeding Group: Collector/Filterers
Tolerance Value: 4 (Moderate)
Habitat: Potamanthids generally occur in moderate to fast flowing streams and rivers.
Size: Medium (8-15 mm)
Characteristics: Mandibular tusks present; fore legs slender (not modified for burrowing); gills held laterally; feathery gills present on segments 1-7; gills on segment 1 are small (vestigial) and simple; gills on segments 2-7 forked with fringed margins and held laterally; caudal filaments fringed with hairs.
Notes: The young larvae of potamanthids are burrowers in soft silt, but as the larvae mature they move to erosional habitats with cobble and gravel where they can be found on rocks. The potamanthid mayflies are closely related to other burrowing mayflies (Ephemeridae and Polymitarcyidae), but their fore legs are not adapted for burrowing.

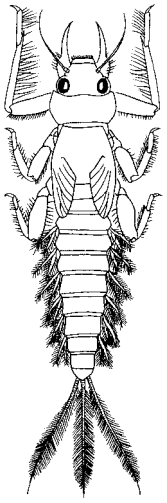


Figure 4.55: *Anthopotamus* sp. (Potamanthidae) larva, Dorsal View.

Siphlonuridae

Common Name: Primitive Minnow Mayflies
Feeding Group: Collector/Gatherers
Tolerance Value: 7 (High)
Habitat: Primitive minnow mayflies can be found in vegetation along large rivers, in the riffles of small streams, in seeps, in swamps, and in ponds.
Size: Small to large (6-20 mm)
Characteristics: Antennae less than 2x the width of head; maxillae without pectinate spines; gills usually present on abdominal segments 1-7; gills usually oval; long setae present on caudal filaments (present on both sides of terminal filament and only on the inner side of the cerci).
Notes: These mayflies superficially look like brush-legged (Isonychiidae) or small minnow (Baetidae) mayflies, but they can easily be separated by the lack of rows of long hairs on the fore legs and short antennae (<2x width of head). Like the small minnow mayflies, these larvae are also good swimmers. The rows of hairs on the tails help these mayfly larvae swim by functioning as a paddle.

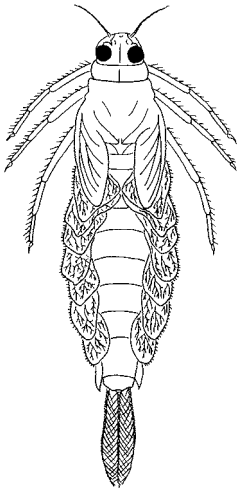


Figure 4.56: *Siphlonurus occidentalis* (Siphlonuridae) larva, Dorsal View.

Families and Genera of Ephemeroptera Known from Mongolia

Baetidae
- *Acentrella*
- *Baetiella*
- *Baetis*
- *Baetopus*
- *Centroptilum*
- *Cloeon*

Caenidae
- *Brachycercus*
- *Caenis*

Oligoneuriidae
- *Oligoneuriella*

Polymitarcyidae
- *Ephoron*

Potamanthidae
- *Potamanthus*

Ephemeridae
- *Ephemera*

Ameletidae
- *Ameletus*

Siphlonuridae
- *Siphlonurus*

Isonychiidae
- *Isonychia*

Heptageniidae
- *Cinygmulla*
- *Ecdyonurus*
- *Epeorus*
- *Heptagenia*
- *Iron*
- *Nixe**
- *Rhithrogena*

Ametropodidae
- *Ametropus*

Metretopodidae
- *Metretopus*

Ephemerellidae
- *Drunella*
- *Ephemerella*
- *Serratella*
- *Torleya*
- *Uracanthella*

Leptophlebiidae
- *Leptophlebia*
- *Paraleptophlebia*

* Occurrence in Mongolia needs to be confirmed.