

Key to Larvae of Mayflies (Ephemeroptera)

For species level identification see FBA Scientific Publication 49: "Larvae of the British Ephemeroptera: a key with ecological notes", J. M. Elliott, U. H. Humpesch & T. T. Macan.

1 Gills under covers (except small 1st gill) (fig. 1) — CAENIDAE

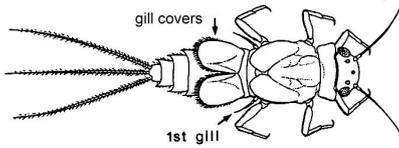


Fig. 1

CAENIDAE (2 genera). *Brachycercus harrisella* (fig. 2.) is separated from genus *Caenis* (5 spp.) by the presence of 3 tubercles on anterior-dorsal part of head and 5 backward-curved processes on the sides of the abdomen under the gill covers.

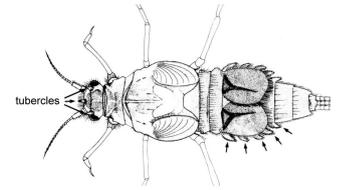


Fig. 2

— Gills Visible — 2

2 Gills feathery (fig. 3) — EPHEMERIDAE or POTAMANTHIDAE



Fig. 3

EPHEMERIDAE (one genus *Ephemera*, 3 spp.) Each gill 2-branched with fine filaments down the sides, held over back, and extend over first half of abdomen (fig. 4).



Fig. 4

POTAMANTHIDAE (1 sp.) *Potamanthus luteus* – Rare! Gills held out sideways, and extend over whole length of abdomen (fig. 5).

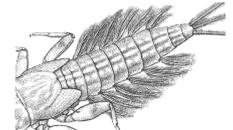


Fig. 5

— Gills not feathery — 3

3 Body flattened; eyes dorsal; plate-like gills, each usually with tuft (fig. 6) — HEPTAGENIIDAE

HEPTAGENIIDAE (5 genera) Body markedly flattened with broad head, thorax, and femora. Nymphs cling to surface of stones. Examine hind corners of plate (pronotum) behind head;

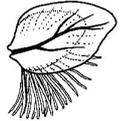


Fig. 6

— Back projections present fig. 7a **ECDYONURUS** (4 spp.)

— Back projections absent fig. 7b,

8a **RHITHROGENA** (2 spp.), 8b **HEPTAGENIA** (2 spp.), **ELECTROGENA** (2 spp.) and **KAGERONIA** 1 sp.)

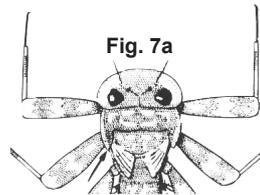


Fig. 7a

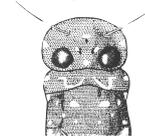


Fig. 7b

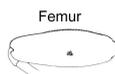
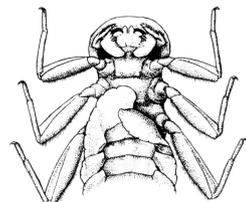


Fig. 8a: Note dark spot on top of each femur. First gill large and meets its fellow beneath the body.

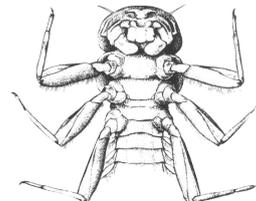


Fig. 8b: No dark spot on femora. First gill small and like others in shape.

NOTE: *Arthroplea congener* used to belong to the **HEPTAGENIIDAE** but is now in the family **ARTHROPLEIDAE**. *A. congener* also has a flattened body, dorsally placed eyes and plate-like gills (without tuft), though is easily distinguished by its long, brush-like maxillary palps that extend well beyond edges of the head (fig. 9). *A. congener* has not been seen in the UK since 1920.

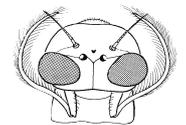


Fig. 9

— Body not flattened; eyes lateral; gills not as above — 4

4 Four pairs of plate-like gills (fig. 10) which are held over back — EPHEMERELLIDAE

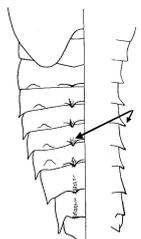


Fig. 11

EPHEMERELLIDAE (2 genera *Ephemerella*, 1 sp. & *Serratella* 1 sp.). *Serratella ignita* (was *Ephemerella ignita*) is common in small stony streams and rivers, and is easily recognised by the alternate light and dark bands on the tails, and the backwardly-directed projections on either side of the mid-dorsal line of the abdomen (fig. 11) The rarer *Ephemerella notata* has neither of these characters.



Fig. 10

— Six or 7 pairs of gills visible and held out sideways — 5

5 Filamentous gills as shown (either fig. 12a, b or c); tails \geq length of body — LEPTOPHLEBIIDAE

LEPTOPHLEBIIDAE (3 genera) Tails as long as or longer than the body, with a few short bristles on both sides of each tail. Poor swimmers. Genera separated by shape of gills:

— Several filaments fig. 12a.
Habrophlebia fusca

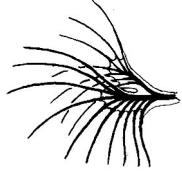


Fig. 12a

— Gill pairs 2-7 have two plates, each tapering to a single filament fig. 12b.
LEPTOPHLEBIA (2 spp.)



Fig. 12b

— Two strap-like filaments fig. 12c.
PARALEPTOPHLEBIA (3 spp.)



Fig. 12c

— **Plate-like gills tails < length of body — 6**

6 On posterior abdominal segments, hind corners form sharp points (fig.13a and b)—SIPHONURIDAE or AMELETIDAE

SIPHONURIDAE (one genus *Siphonurus*, 3 spp.) Tails of equal length with thick black band across centre. Tails in live specimens held apart. At least first two gills have two plates. Family **AMELETIDAE** (1 sp. *Ameletus inopinatus*). As with **SIPHONURIDAE** hind corners of abdominal segments have spines but much smaller. *Ameletus* may be wrongly identified as *Baetis* (family **BAETIDAE**). However, *Ameletus* and *Baetis* are easily separated by tail length; 3 tails of equal length in *Ameletus* and middle tail shorter than others in *Baetis*. In live *Ameletus* tails held close together. All gills are small and simple (one-plate). *Ameletus* is usually found in streams at high altitudes above 1,000ft, but is also found in lochs in Scotland.

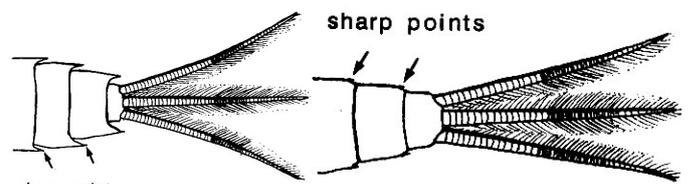


Fig. 13a, SIPHONURIDAE

Fig. 13b, AMELETIDAE

— **Hind corners blunt — BAETIDAE**

BAETIDAE (4 genera) Hind corners of last few abdominal segments not drawn out to form sharp projections (fig. 14).

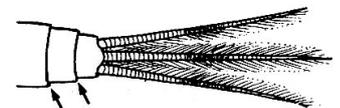


Fig. 14

Genus *Baetis* (9 spp.) Middle tail shorter than outer ones; tails never with dark rings but have a median dark band in some species (fig. 15). Gills single, rounded at the tip, and shaped like the head of a tennis racket. *B. niger* and *B. digitatus* have 6 pairs of single plate-like gills. Larvae found chiefly in streams and rivers.



Fig. 15

Other genera: 3 tails of equal length and tails marked with dark rings. If gills simple, they are pointed at tip.

Centroptilum luteolum: About 7 distinct dark rings on the tails but no dark band (fig. 16). Gills single and pointed at tip (beech-leaf shape) fig. 17. Lakes and slow-running stretches of streams and rivers.

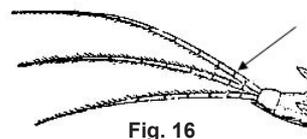


Fig. 16



Fig. 17

Procloeon (was *Centroptilum*) *pennulatum*: Dark band about half-way along tails and about 5 dark rings between band and body (fig. 18). First 6 gills double with one plate much larger than the other, and both plates round at tip. Slow-running water.

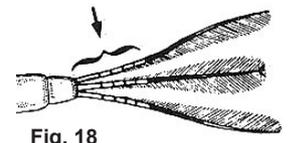


Fig. 18

Procloeon bifidum (synonym *pseudorufulum*): Narrow dark band on tails and about 9 dark rings between band and body (fig.19). Gills single, hairs on tails thick and usually extend to tip (in life, tails held close together). Slow-running water.

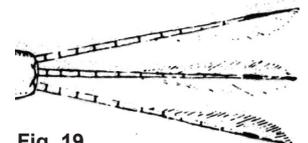


Fig. 19

Genus *Cloeon* (2 spp.): Broad dark band on tails and about 12 dark rings between band and body (fig. 20). First 6 gills double and rounded (*C. dipterum*) or pointed (*C. simile*) at tip. Hairs on tails not obvious and do not extend to tip (in life, tails held well apart and curve downwards at tip when seen from the side). Generally in ponds and lakes.

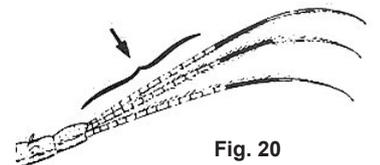


Fig. 20