Family Ephemeroptera
Key to UK families and genera

Adapted from
Elliott & Humpesch (1983) A Key to the Adults of the British Ephemeroptera, Freshwater Biological Association Scientific Publication no 47
Kimmins (1950), Handbooks for the Identification of British Insects volume 1 part 9.
Webb & McCafferty (2008) Heptageniidae of the Word: Part II. Key to the genera, published at https://biologicalsurvey.ca/ejournal/wm_07/introduction.htm

Checklist of British families and genera from Macadam (2001) A new checklist of the British Ephemeroptera. Bulletin of the Amateur Entomologists Society, volume 60, pp38-39.

Family AMELETIDAE
- Genus ***AMELETUS*** Bengtsson, 1865

Family ARTHROPLEIDAE
- Genus ***ARTHROPLEA*** Bengtsson, 1909

Family BAETIDAE
- Genus ***ALAINITES*** Waltz & McCafferty, 1984
- Genus ***BAETIS*** Leach, 1815
- Genus ***CENTROPTILUM*** Eaton, 1869
- Genus ***CLOEON*** Leach, 1815
- Genus ***LABIOBAETIS*** Novikova & Kluge, 1987
- Genus ***NIGROBAETIS*** Novikova & Kluge, 1987
- Genus ***PROCLOEON*** Bengtsson, 1915

Family CAENIDAE
- Genus ***BRACHYCERCUS*** Curtis, 1834
- Genus ***CAENIS*** Stephens, 1835

Family EPHEMERELLIDAE
- Genus ***EPHEMERELLA*** Walsh, 1862
- Genus ***SERRATELLA*** Edmunds, 1959

Family EPHEMERIDAE
- Genus ***EPHEMERA*** Linnaeus, 1758

Family HEPTAGENIIDAE
- Genus ***ECDYONURUS*** Eaton, 1868
- Genus ***ELECTROGENA*** Zurwerra & Tomka, 1985
- Genus ***HEPTAGENIA*** Walsh, 1862
- Genus ***KAGERONIA*** Matsumura, 1931
- Genus ***RHITHROGENA*** Eaton, 1881

Family LEPTOPHLEBIIDAE
- Genus ***HABROPHLEBIA*** Eaton, 1881
- Genus ***LEPTOPHLEBIA***
- Genus ***PARALEPTOPHLEBIA*** Lestage, 1917

Family POTAMANTHIDAE
- Genus ***POTAMANTHUS*** Pictet, 1845

Family SIPHLONURIDAE
- Genus ***SIPHLONURUS*** Eaton, 1868

1 Hind wings absent. 2

Hind wings present, but may be very small. 3

2 Front wings milky with fringed margins in both subadults and adults. Three long caudal filaments (tails). .... Family **CAENIDAE**

2 genera and 9 species. Subadults are newly-emerged adults which are able to fly but have one final moult before they can breed.

Image by B. Schoenmakers

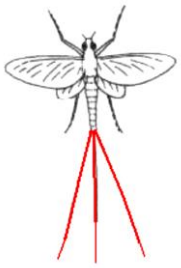
Front wings transparent and not fringed in adults. Two long caudal filaments. ..... Family **BAETIDAE**

Two genera including 3 species key out here. The rest of the species of this family have very small hind wings and key out in couplet 4.

3 Two long caudal filaments. 4

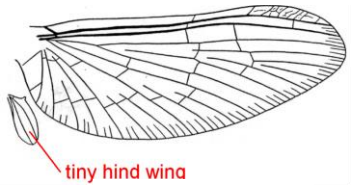
(C) Richard Bartz, CC BY-SA 2.5

Three long caudal filaments. 8

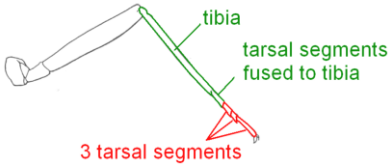


4 Hind wings very much reduced, with only two or three major veins. Hind tarsus with only 3 separate segments, two of the original five segments being fused to the tibia. .... Family **BAETIDAE**

Seven genera containing 14 species.

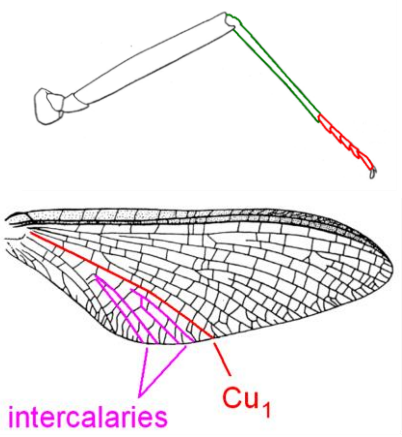


Kimmins (1950)



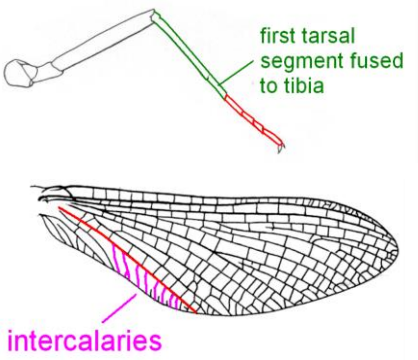
Hind wings not reduced and with many veins. Hind tarsus with 4-5 clearly separate segments. 5

5 Hind tarsus with five separate segments. Front wings with two pairs of cubital intercalary veins that run more or less parallel to vein Cu_1. 6



Mizzaro-Wimmer, Kimmins & Elliott (1983)

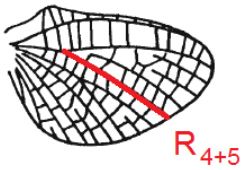
Hind tarsus with four separate segments (one of the original five segments is fused to the tibia). Front wings with the cubital intercalary veins running from vein Cu_1 to the hind margin of the wing forming a series of more or less parallel veins that are often wavy. 7



Mizzaro-Wimmer, Kimmins & Elliott (1983)

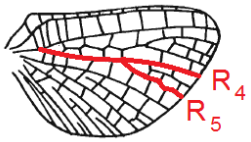
6 Hind wings with veins R_{4+5} unforked to the wing margin. ..... Family **ARTHROPLEIDAE**

Known from one specimen of *Arthroplea congener* captured in Middlesex in 1926. Extinct in Britain?



Hind wing with vein R_{4+5} forking to produce two separate veins R_4 and R_5. ..... Family **HEPTAGENIIDAE**

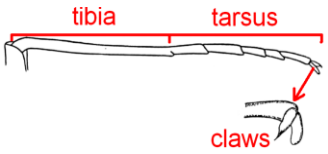
Five genera and eleven species.

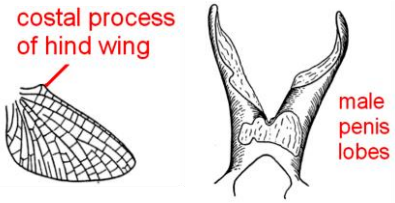


Kimmins (1950)

7 Hind tarsus slightly shorter than the tibia; claws dissimilar (one is sharp, the other blunt). Costal process of hind wing pointed. Wings dark brown in adults and reddish or yellowish brown in subadults. Penis lobes of male slender with a deep median excision. .... Family **AMELETIDAE**

One species, ***Ameletus inopinatus.*** Flight period May to August. Larvae found mainly in upland streams in Wales, northern England and Scotland and from several lochs in NW Scotland.

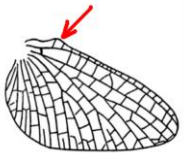




Mizzaro-Wimmer, Kimmins & Elliott (1983)

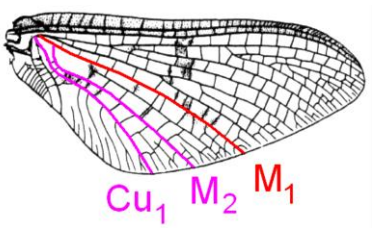
Hind tarsus slightly longer than the tibia with both claws sharp. Costal process of hind wing blunt or weak. Other characters not as above. .... Family **SIPHLONURIDAE**

One genus, *Siphlonurus* with three species, early May to the end of August. Found in well oxygenated rivers and lakes.



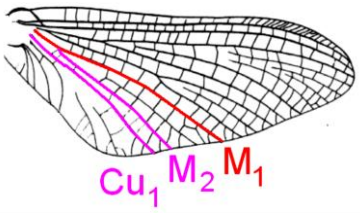
Mizzaro-Wimmer, Kimmins & Elliott (1983)

8 Front wings with veins M_2 and Cu_1 arched at their bases and strongly diverging from the base of M_1. Large species, front wing 12-24 mm long. 9



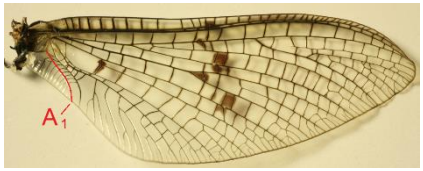
Kimmins (1950)

Front wings with veins M_2 and Cu_1 not arched at the base, with the basal part of M_1 and M_2 more or less parallel to slightly diverging from the basal part of Cu_1. Medium sized species, front wings less than 15 mm in length. 10



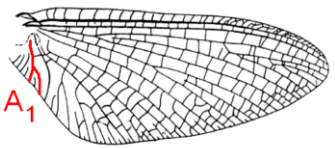
Mizzaro-Wimmer, Kimmins & Elliott (1983)

9 Wings more or less marked with brown. Vein A_1 in the front wing unbranched. Abdomen pale with brown markings. Eyes of males undivided. .... Family **EPHEMERIDAE**
One genus *Ephemera* with three British species.



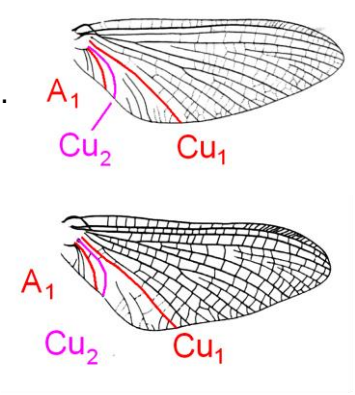
Hackston (2021)

Wings unspotted, yellow. Vein A_1 in front wing forked. Eyes of males divided. .... Family **POTAMANTHIDAE**
Only one British species, ***Potamanthus luteus***. Larvae in large rivers such as the Thames. Adults nocturnal, may be attracted by light. Rare or local. July.



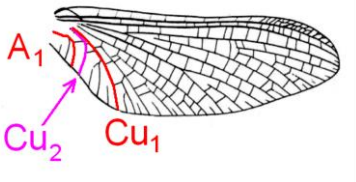
Mizzaro-Wimmer, Kimmins & Elliott (1983)

10 Front wings with the base of vein Cu_2 closer to vein A_1 than to vein Cu_1 or at most midway between Cu_1 and A_1. .... Family **LEPTOPHLEBIIDAE**
Three genera, six species.



Mizzaro-Wimmer, Kimmins & Elliott (1983)

Front wings with the base of vein Cu_2 closer to vein Cu_1 than to vein A_1. .... Family **EPHEMERELLIDAE**
Two genera, each with one species.



Mizzaro-Wimmer, Kimmins & Elliott (1983)

Family **CAENIDAE**

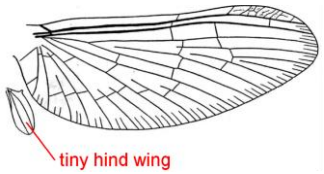
1 Viewed from below the bases of the front legs are very close together because the prosternum is very narrow. .... Genus ***Caenis***
The prosternum is the plate underneath the thorax between the bases of the front legs.

Prosternum very broad, so that the base of the front legs are widely separated. Wing span 10.5-13 mm. .... ***Brachycercus harrisella***
Probably nocturnal. Rare, June.

Family **BAETIDAE**

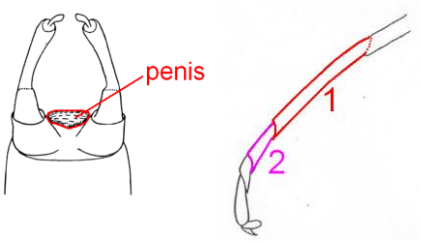
1 Hind wings absent. 2

Hind wings present, but reduced, with only 2-3 main veins. 3

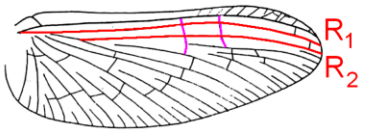


Mizzaro-Wimmer, Kimmins & Elliott (1983)

2 First segment of hind tarsus about three times the length of the second. Front wing with the two major cross veins between R_1 and R_2 in line with the cross veins below them. Penis of male adult appearing flattened when viewed from below. .... ***Procloeon bifidum***

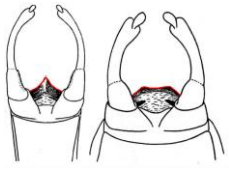


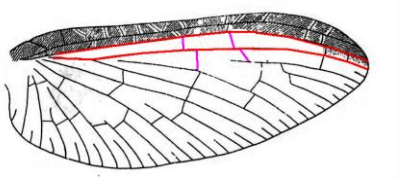
Flight period April to October. Larvae found mainly in slow flowing sections of streams and rivers.



Mizzaro-Wimmer, Kimmins & Elliott (1983)

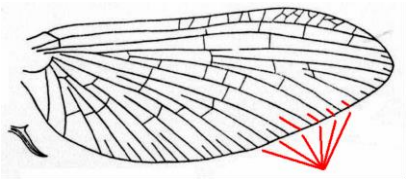
First segment of hind tarsus about twice the length of the second. Front wing with the two major cross veins between R_1 and R_2 not in line with the cross veins below them. Penis of male adult apparently either triangular or trapezoidal in when viewed from below. .... Genus ***Cloeon***





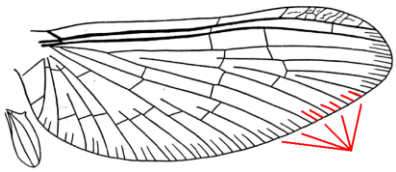
Mizzaro-Wimmer, Kimmins & Elliott (1983)

3 Intercalary veins along the outer margin of the front wing single. 4



Kimmins (1950)

Intercalary veins along outer margin of front wing paired. 5

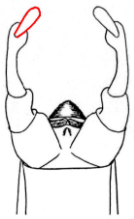


Mizzaro-Wimmer, Kimmins & Elliott (1983)

4 Apex of hind wing pointed. Abdominal segments 2-7 of male adult translucent whitish; terminal segments of forceps of male adult large. Small species with front wing 6-7 mm. .... ***Centroptilum luteolum***

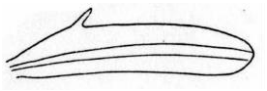
Kimmins (1950)

Flight period April to November. Larvae found mainly on stony shores of lakes and in slow-flowing sections of streams and rivers, especially amongst vegetation and on sandy beds.



Mizzaro-Wimmer, Kimmins & Elliott (1983)

Apex of hind wing rounded. Abdominal segments 2-7 of male adult translucent whitish and apical margins reddish orange; terminal segments of forceps of male adult small. Larger species with front wing 9 mm. .... ***Procloeon pennulatum***

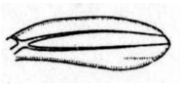


Kimmins (1950)

Flight period May to October. Larvae found mainly in slow flowing sections of streams and rivers, especially amongst vegetation and on sandy beds.

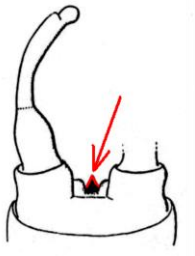
Mizzaro-Wimmer, Kimmins & Elliott (1983)

5 Hind wings without a tooth towards the base of the front margin. Small pointed tooth-like process present between the bases of the forceps of the male adult. .... ***Labiobaetis atrebatinus***



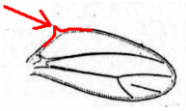
Kimmins (1950)

Flight period May to October. Larvae found mainly in calcareous streams and rivers



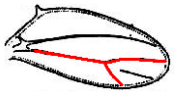
Mizzaro-Wimmer, Kimmins & Elliott (1983)

Costal process present near the base of the hind wing. No tooth-like process present between male forceps. 6



Kimmins (1950)

6 Hind wing with a forked Y-shaped vein at or behind the middle. 7

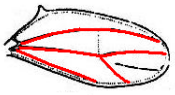


Kimmins (1950)

Hind wing with all the veins of the hind wing unbranched. ..... Genus ***Baetis***

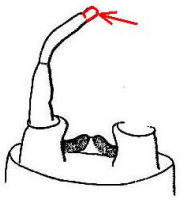
Kimmins (1950)

8 Hind wing with three longitudinal veins, the third very close to the hind margin. Male forceps with a very short fourth segment that is almost spherical. .... ***Alainites muticus***



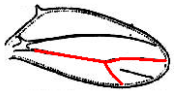
Kimmins (1950)

Flight period April-October. Larvae mainly found in small stony streams and rivers. *B. buceratus* occasionally has the middle vein branched and has a tiny fourth segment. In this species the forceps are strongly arched, curving downwards when viewed from the side.



Mizzaro-Wimmer, Kimmins & Elliott (1983)

Hind wing with only two longitudinal veins. Male forceps with the fourth segment elongate, approaching half the length of the third segment. .... Genus ***Nigrobaetis***

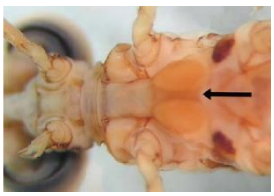


Kimmins (1950)

Two species, regarded by some authors as belonging to genus *Baetis*

Family **HEPTAGENIIDAE**

2 Thorax viewed from below between the middle legs with the central depression more or less parallel or slightly widening towards the front. 3



Webb & McCafferty (2008)

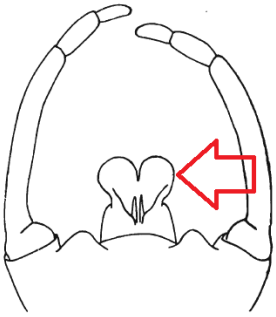
Thorax viewed from below between the middle legs with the central depression narrow at the front and much broader behind. 4

Webb & McCafferty (2008)

3 Tip of male abdomen viewed from below, between the forceps with the penis lobes boot-shaped and directed away from one another. .... Genus ***Ecdyonurus***

Kimmins (1950)

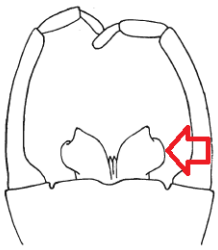
Penis lobes tear-drop shaped and more or less parallel to one another. .... Genus ***Electrogena***



Kimmins (1950)

4 Thorax viewed from above with the lateral furrows only slightly curved (shown in blue). Tip of the abdomen in males viewed from below with the penis-lobes joined, slightly dilated or egg-shaped. 5

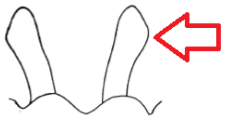
Webb & McCafferty (2008)



Kimmins (1950)

Thorax, viewed from above with the lateral furrows strongly curved towards the front. Males with the penis-lobes cylindrical, separated by a wide U-shaped notch. .... Genus ***Rhithrogena***

Webb & McCafferty (2008)



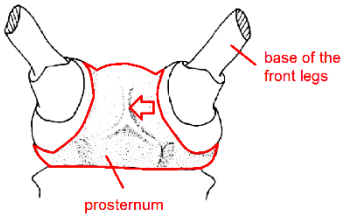
Kimmins (1950)

5 Tip of abdomen viewed from below with small spines laterally at the base of the penis lobes. Prosternum without a distinct longitudinal keel. .... ***Kageronia fuscogrisea***

A local species of large rivers and lakes. May. The prosternum is the plate between the bases of the front legs, on the thorax viewed from underneath.

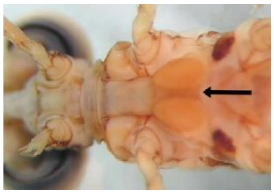
Kimmins (1950)

Penis lobes without small spines at the side near the base. Prosternum with a longitudinal keel. .... Genus ***Heptagenia***



Mizzaro-Wimmer, Kimmins & Elliott (1983)

6 Thorax viewed from below between the middle legs with the central depression more or less parallel or slightly widening towards the front. .... Genera ***Ecdyonurus*** and ***Electrogena***



Webb & McCafferty (2008)

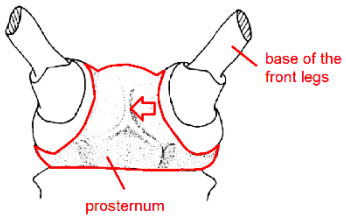
Thorax viewed from below between the middle legs with the central depression narrow at the front and much broader behind. 7

Webb & McCafferty (2008)

7 Prosternum without a distinct longitudinal keel. .... Genera ***Rhithrogena*** and ***Kageronia***

Prosternum with a longitudinal keel. .... Genus ***Heptagenia***

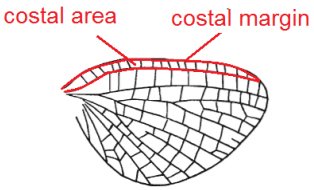
The prosternum is the plate between the bases of the front legs, on the thorax viewed from underneath.



Mizzaro-Wimmer, Kimmins & Elliott (1983)

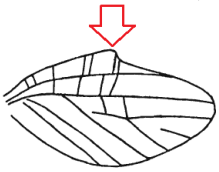
Family **LEPTOPHLEBIIDAE**

1 Costal margin of hind wing smoothly rounded; costal area narrow. 2

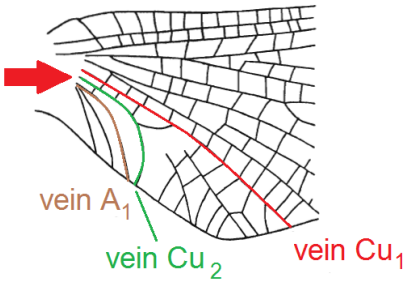


Kimmins (1950)

Costal margin of hind wing with a strong projection at about half way so that the costal area is broad. .... ***Habrophlebia fusca***
Wing length 13-15 mm. Slow streams with much vegetation. Generally common in England. May to September.

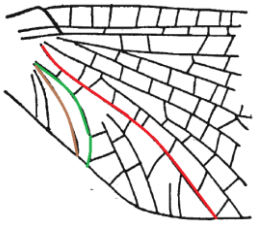

Kimmins (1950)

2 Vein Cu_2 in the front wing about half way between veins Cu_1 and A_1 at the base. .... Genus ***Leptophlebia***



Kimmins (1950)

Vein Cu_2 in the front wing near to vein A_1 than to vein Cu_1 at the base. .... Genus ***Paraleptophlebia***



Kimmins (1950)

Family ***EPHEMERELLIDAE***

2 Viewing the abdomen from below, abdominal sternites 1-7 or 1-8 with black markings. General colour yellowish to yellowish brown. Wing length 8.5-11.5 mm. .... ***Ephemerella notata***

Kimmins (1950)

A species of moderately fast rivers, generally of an alkaline character. Locally common. May to June.

Abdominal sternites without such markings, general colour reddish brown. Wing length 7.5-11.5 mm. .... ***Serratella ignita***

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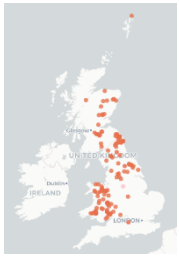
Fast streams and rivers, up to at least 1500 ft. Generally common. April to September.

3 Wings pale greyish with yellowish venation, body yellowish. .... ***Ephemerella notata***
A species of moderately fast rivers, generally alkaline. Locally common. May to June.



Wings dark greyish- or bluish-black, body olive-brown in male, apple-green in female. .... ***Serratella ignita***
Fast streams and rivers, up to at least 500 metres. Generally common. April to September.