



The Fauna of Waterford Series, No. 11

**The
Mayflies
of
County
Waterford**



*An atlas of the Mayflies of
Waterford City and County about the start of the twenty-first century.*

Compiled by

Michael O'Meara



*The
Mayflies
of
County
Waterford*

*A catalogue and atlas of
the Mayflies of County
Waterford about the start
of the twentieth century*

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Cover. *Adult mayfly Ephemerella danica*

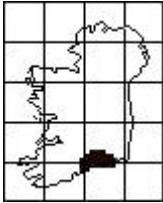
The Mayflies of County Waterford

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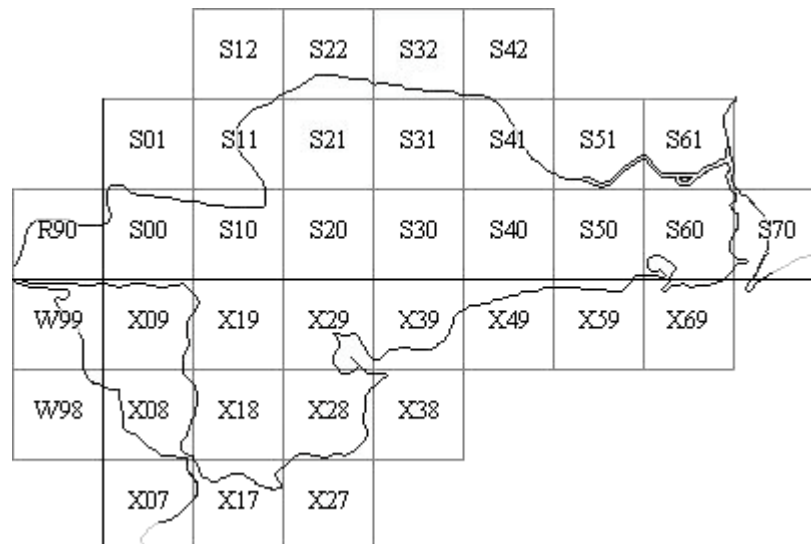
The Mayflies of County Waterford

Preface



The Mayflies of Waterford are not well known to science and are probably better known in most cases by anglers and fishermen who fish the many streams, lakes and rivers of the county. They are among the few insects with common names but these are not standardised as with the butterflies and moths and many variations occur for the same species. All those occurring in Waterford are commonly known as Duns or Spinners.

Objective information for Waterford is largely known from a study for Ireland carried out between 1995-1998 by the Zoology Department of University College Dublin (Kelly-Quinn *et al.* 2000) which sampled waterways in many parts of the county. This survey found 33 species in Ireland and of these, 19 are now known to occur in Waterford. Details shown here are from the data-base associated with this survey and not from the published maps together with records from several local anglers not included in that work. These are listed below together with their known distribution and some comments on their status. This list is not complete and there is no doubt that the true distribution and status of all species listed is greater than shown here. However, it represents what we know about the distribution and status of these important insects at this point in time. Species are mapped on a 10km square of the national grid basis. These are shown below.



Many Waterford waterways were not systematically examined during this survey particular in the east of the county. Consequently, there are no formal records from such places as Knockaderry, Ballinlough, Ballyshunock, Belle Lake, the lower reaches of the Suir and from their associated streams and tributaries.

Acknowledgements.

I am indebted to local anglers for their patience and tolerance of one as ignorant as I am in the mystery, lore and even magic of the mayfly. In particular, sincere thanks are due to both Michael Fitzgerald and the late Larry Foy for their introduction to so many species at or about the Churchtown area on the southern banks of the Suir above Carrick and to Martin Ryan for his comments on waterways closer to Waterford City including the St. John's River at Kilbarry. Mary Kelly-Quinn was most helpful and J. P. O'Conner of NMI (Natural History) and his staff were as always, full of suggestions and the organisers of copious mugs of tea! As an amateur naturalist, I make mistakes and these are entirely mine and in no way reflects on the expertise of those mentioned. I am in debt to them all.

Michael O'Meara
November 2008

Introduction

Mayflies are small to medium sized insects with two or three long tail streamers and one or two pairs of delicate wings. The hind wings, when present, are always considerably smaller than the front pair. They have short antennae. Mayflies are aquatic and are always found close to water. The stoneflies, caddis flies and lacewing flies are the only other insects with which mayflies might be confused but the short antennae of the latter would distinguish them apart. Other useful distinctions are the large hind wings of the stoneflies and the few cross-veins of the caddis flies. In addition, a feature that may only be seen in life, the mayflies are unable to fold their wings over their bodies and these are always held vertically over the body when at rest, a position unknown to the other insects except when just emerged from nymphal or pupal skin.

The adult mayfly has a very slender body and delicate transparent wings. The hind wings are considerably smaller than the front ones and may be absent altogether. As would be expected, the mesothorax is the largest thoracic region, the pro and metathoracic segments being insignificant. None of our species can be called colourful, the dominant colours being brown and yellow. The wings of some species appear to have a metallic sheen when light hits them at certain angles, but the colours fade after death and identification by colour is not reliable.

Most of our mayflies are fairly small insects that measure less than 12mm across. Apart from some fieldworkers and scientists, these are probably better known by anglers and fishermen than anyone else. The reason for the angler's interest is that mayflies spend almost all of their lives in the water and are extremely important items in the diet of many fish. Mayflies in fact are the models for many of the angler's artificial flies and are therefore often called 'fishing flies'.

Despite their common name, mayflies are by no means confined to the month of May and one species or another can be found throughout the summer. All are weak flyers and except when carried by the wind but they are rarely found far from water. The front legs of male mayflies are relatively long and are used to hold the female during pairing. Otherwise, the legs are weak and slender and used only for holding on to vegetation. The 'tails' consist of a pair of long filamentous cerci, with or without central filament. Among the Irish mayflies, the number of tails is constant

for individual families, though one or more may be damaged or missing in a particular individual. The compound eyes are quite large and well developed but the antennae are small. Adult mayflies do not feed and their mouth parts are reduced and ineffective.

Eggs hatch into nymphs. Nymphs are basically herbivores, feeding on plant debris and algae although some are believed to take animal food as well. They breathe by means of plate-like gills that grow out from the sides of the abdomen. There are usually seven pairs of these gills and they contain tiny tracheae that are continuous with those in the rest of the body. Oxygen diffuses into them from the water.

Mayflies are unique among insects in moulting after attaining the winged state. Final instar nymphs stop eating and after a short while they climb up a plant stem, or more usually swim or float to the water surface. Here, within a few seconds, the nymphal skin splits and a winged insect emerges. In contrast to most freshly-emerged insects, this one can fly right away, although the direction of its flight is largely governed by air currents. This winged insect is not fully mature however; it is a sub-imago (the fisherman's Dun) and is rather dull in colour. This is due to a very fine covering of hairs which are thought to assist emergence from the nymphal skin by preventing wetting. These then seek a suitable place to rest and moult. This may take a few hours or a few minutes after which they turn into shinier mature insects. These are known as Spinners to the angling community.

The spinner's life is a very short one and is responsible for its formal scientific name-Ephemeroptera, from the Greek *ephemeros* = living for a day. Many species live for less than a day in the adult state. Others may live for a week. During this brief aerial existence the insects ensure the continuance of their species by mating and laying eggs. The males swarm in large numbers, 'dancing' up and down over and around water. Any female that comes near the swarm is seized by a male and mating takes place in the air. The eggs are usually laid within the hour although bad weather may delay it for several hours. The eggs are deposited on submerged plants. Having fulfilled their purpose, the spent insects drop to the water where they are devoured by fishes. Bats, insectivorous birds like swallows, warblers and flycatchers together with dragonflies also take their share of mayflies before they fall to the water. Mayfly classification depends primarily on the wing venation but there are problems here because the veins are often so feint as to be almost invisible. A good lens and suitable lighting will allow you to make out most of the veins.



The Mayflies of County Waterford

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<i>Baetis scambus</i> Eaton, 1870.	Male - Small Dark Spinner, Female - Small Red
<i>Baetis vernus</i> Curtis, 1834.	Medium Olive
<i>Baetis rhodani</i> (Pictet, 1844).	Large Dark Olive, Female - Large Red Spinner
<i>Baetis muticus</i> (Linnaeus, 1758)	Iron Blue, Female Spinner, Little Claret.
<i>Centroptilum luteolum</i> (Muller, 1776)	Pale Watery, Little Sky Blue.
<i>Procloeon bifidum</i> (Bengtsson, 1912)	Pale Evening.
HEPTAGENIIDAE	9
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<i>Rhithrogena germanica</i> Eaton, 1870.	March Brown, Great Red Spinner.
<i>Heptagenia sulphurea</i> (Muller, 1776).	Little Yellow May.
<i>Electrogena lateralis</i> (Curtis, 1834).	Dark Dun.
<i>Ecdyonurus venosus</i> (Fabricius, 1775).	Late March Brown.
<i>Ecdyonurus dispar</i> (Curtis, 1834).	August Spinner.
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<i>Ephemerella ignita</i> (Poda, 1761)	Blue-winged Olive. Female Spinner, Sherry Spinner.
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<i>Caenis rivulorum</i> Eaton, 1884.	Angler's Curse
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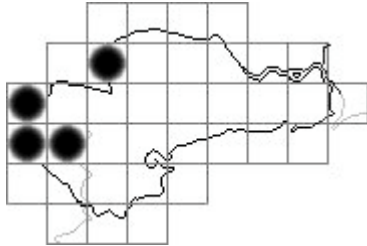


The Mayflies of Waterford

EPHEMEROPTERA BAETIDAE

Baetis scambus Eaton, 1870.

Male - Small Dark Spinner,
Female - Small Red
Distribution - R90. S10. W99. X09.



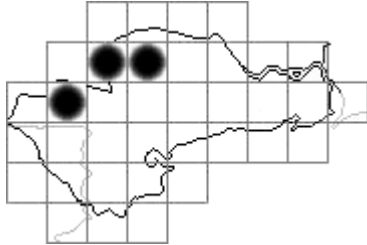
Status - common and abundant in Ireland. Under-recorded in Waterford.

First recorded by Smith (Kelly-Quinn *et al.* 2000) in the 1950's on the Araglin River and again near the same place by Giller *et al.* (1997) in 1991. Giller also recorded it on the northern slopes of the Knockmealdown Mountains in 1996 and on the Douglas, Bride and Blackwater and Finisk rivers

in 1997.

Baetis vernus Curtis, 1834.

Medium Olive S00, 11, 21,

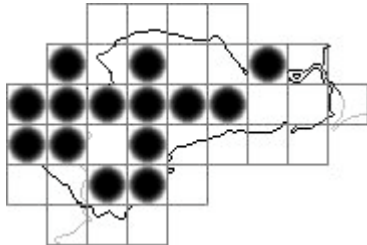


Status - patchy distribution in Ireland but abundant where it occurs in Waterford. Under-recorded.

This is only known from Prison Stream on the northern slopes of the Knockmealdowns, the River Suir and a tributary of the Owenashad River where it was recorded by Kelly-Quinn *et al.* (2000) in 1996.

Baetis rhodani (Pictet, 1844).

Large Dark Olive,
Female - Large Red Spinner
R90. S00, 01, 10, 20. W99. X09, 19, 28, 29.

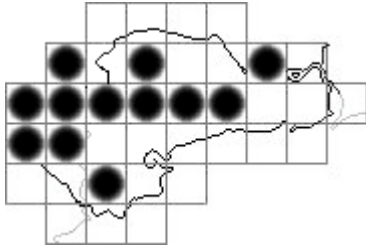


Status - common and abundant throughout Ireland and is the most recorded species in Waterford having been found in 28 sites in 14 10km squares of the national grid.

These sites are on the following rivers, Araglin, Blackwater, Bride, Colligan, Finisk, Glenshelane, Licky, Tar and Owenashad

Baetis muticus (Linnaeus, 1758)

Iron Blue, Female Spinner, Little Claret.
R90. S00, 01,10, 20, 21, 30, 40, 51. X09, 18.



Status - common and abundant throughout Ireland and the second most recorded species in Waterford. Under-recorded in the east of the county and on most of the Suir.

The sites where found are the same as those of the previous species.

Centropilum luteolum (Muller, 1776)

Pale Watery, Little Sky Blue.
S60.



Status – common and abundant in the midlands but scarce in the south and only once recorded in Waterford. Rare.

Found on the St. John’s River at the Kilbarry Bog, Waterford City in 1996 (Kelly-Quinn *et al.* 2000).

Procloeon bifidum (Bengtsson, 1912)

Pale Evening.
X09.



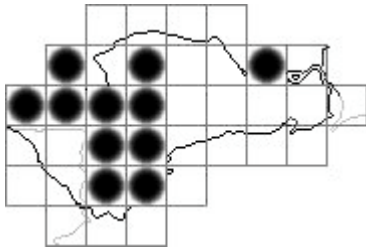
Status – scarce in Ireland with the majority of records being from pre 1970. Rare in Waterford.

Recorded on the Blackwater by Kelly-Quinn *et al.* (2000) in 1996.

HEPTAGENIIDAE

Rhithrogena semicolorata (Curtis, 1834).

Olive Upright, Yellow Upright.
R90. S00, 01, 10, 20, 21, 51. X18, 19, 28, 29.



Status – common and abundant in many parts of Ireland. Under recorded in east Waterford mainly.

This was found to be common on the Blackwater and some of its tributaries, on the Colligan and the river Suir near Mount Congreve but remains to be recorded in much of central and east Waterford.

Rhithrogena germanica Eaton, 1870.

March Brown, Great Red Spinner.
X19, 29.



Status - rare in Ireland and only known from two sites in Waterford.

Kelly-Quinn *et al.* (2000) gives an unpublished pre 1970 record of this species by M. Kennedy from the Finisk river and another from the Colligan river in 1996.

Heptagenia sulphurea (Muller, 1776).

Little Yellow May.
S51. W99. X08.

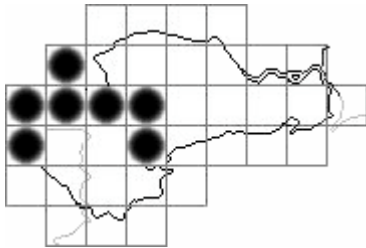


Status – Common throughout Ireland. Under-recorded in Waterford.

This was recorded by Kelly-Quinn *et al.* (2000) during the 1990's on the Blackwater and on the river Suir near Mount Congreve.

Electrogena lateralis (Curtis, 1834).

Dark Dun.
R90. S00. 01, 10, 20. W99. X29.

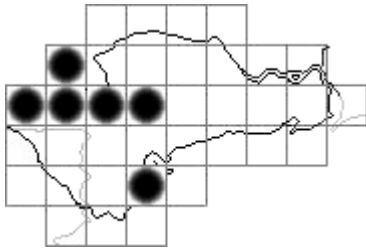


Status – scarce, with a patchy distribution in Ireland. Under-recorded in Waterford.

Kelly-Quinn *et al.* (2000) recorded this extensively in west Waterford in 1996-97 and the distribution shown here represents one of the most prominent clusters in Ireland. It remains to be found in the east of the county.

Ecdyonurus venosus (Fabricius, 1775).

Late March Brown.
R90. S00, 01, 10, 20. X28.

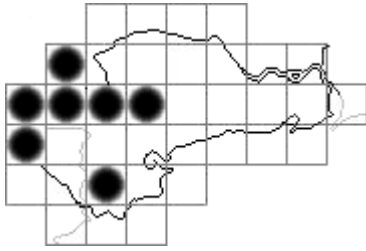


Status – common and widespread in Ireland but under-recorded in Waterford.

Remains to be found in many parts of Waterford.

Ecdyonurus dispar (Curtis, 1834).

August Spinner.
R90. S00, 01, 10, 20. W99. X18.



Status – common and abundant throughout Ireland but under-recorded in east Waterford particularly.

This and the previous species can occur in the same places at the same times. Consequently, they will have similar distributions as recorders will find both when visiting particular sites. It remains to be found in much of the county.

Ecdyonurus insignis (Eaton, 1870).

Green Spinner.
S51. W99. X29.



Status – patchy and local in most parts of Ireland and under-recorded in Northern Ireland. Probably more common in Waterford than the map shows.

Records are from the Blackwater, Colligan and the river Suir.

LEPTOPHLEBIIDAE***Leptophlebia marginata***, (Linnaeus, 1767).

Sepia Dun, Spinner.
S60.



Status – Rare in Ireland.

Kelly-Quinn *et al.* (2000) gives an unpublished record from an un-named tributary to the river Suir south of Waterford City recorded by one McCaul in 1994/95. This is likely to be from St. John's Pill at Kilbarry.

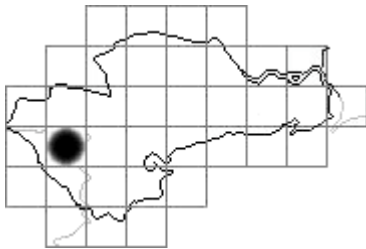
Leptophlebia vespertina (Linnaeus, 1758).

Claret Dun, Claret Spinner.
S21. W99.



Status – Patchy distribution in Ireland with the main centres of population in Galway, Mayo, Wicklow and Kerry. Rare in Waterford.

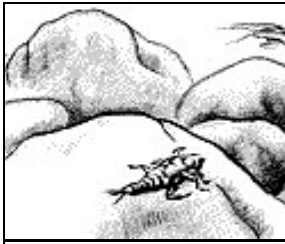
Recorded by Kelly-Quinn *et al.* (2000) on the Blackwater and near Kilbrien.

EPHEMERELLIDAE***Ephemerella ignita*** (Poda, 1761)Blue-winged Olive. Female Spinner, Sherry Spinner.
R90. S01, 10, 20, 51. W99. X09, 29.*Status – common and widespread in Ireland. Remains to be found in many parts of Waterford.*Records shown are by Kelly-Quinn *et al.* (2000).**CAENIDAE*****Caenis macrura*** Stephens, 1835.Angler's Curse
X09.*Status – Rare in Ireland.*Only recorded on the Blackwater by Kelly-Quinn *et al.* (2000).***Caenis luctuosa*** (Burmeister, 1839).Angler's Curse
W99. X09.*Status – common north of a line between Wicklow and Kerry but scarce south of this. Rare in Waterford.*

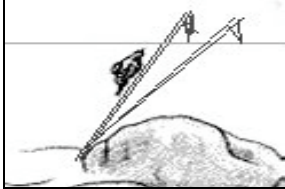
Recorded at two sites on the Blackwater.

Caenis rivulorum Eaton, 1884.Angler's Curse
R90. S00, 10, 51. X09, 18, 29.*Status – common and widespread in Ireland. Under-recorded in east Waterford particularly.*Kelly-Quinn *et al.* (2000) recorded this species about the Blackwater, Finisk, Colligan and the river Suir near Mount Congreve.

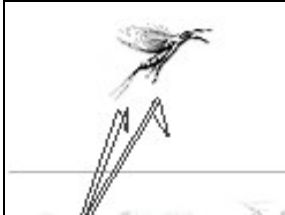
Mayfly Life Cycle



Nymph hatches from egg.



Nymph emerges from water



Changes to Dun and flies to nearby vegetation to mature as Spinner



Spinners swarm to attract females



Mates on the wing



Female deposits eggs



Falls to surface of water and dies.

List of Irish and Waterford Mayflies

Those recorded in Waterford are shown in **Bold**

Siphonuridae

<i>Siphonurus armatus</i> Eaton, 1870	Summer Mayfly
<i>Siphonurus lacustris</i> Eaton, 1870	Summer Mayfly
<i>Siphonurus alternatus</i> (Say, 1842)	Summer Mayfly
<i>Ameletus inopinatus</i> Eaton, 1887	No common name

BAETIDAE

<i>Baetis fuscatus</i> (Linnaeus, 1761)	Pale Watery, Golden Spinner
<i>Baetis scambus</i> Eaton, 1870	Male - Small Dark Spinner, Female - Small Red.
<i>Baetis vernus</i> Curtis, 1834	Medium Olive.
<i>Baetis rhodani</i> (Pictet, 1844)	Large Dark Olive, Female - Large Red Spinner.
<i>Baetis atrebatinus</i> Eaton, 1870	Dark Olive
<i>Baetis muticus</i> (Linnaeus, 1758)	Iron Blue, Female Spinner, Little Claret.
<i>Centroptilum luteolum</i> (Muller, 1776)	Pale Watery, Little Sky Blue.
<i>Cloeon dipterum</i> (Linnaeus, 1761)	Pond Olive, Lake Olive.
<i>Procloeon bifidum</i> (Bengtsson, 1912)	Pale Evening.

HEPTAGENIIDAE

<i>Rhithrogena semicolorata</i> (Curtis, 1834)	Olive Upright, Yellow Upright.
<i>Rhithrogena germanica</i> Eaton, 1870	March Brown, Great Red Spinner.
<i>Heptagenia sulphurea</i> (Muller, 1776)	Little Yellow May.
<i>Heptagenia fuscogrisea</i> (Retzius, 1783)	Brown May
<i>Electrogena lateralis</i> (Curtis, 1834)	Dark Dun.
<i>Ecdyonurus venosus</i> (Fabricius, 1775)	Late March Brown.
<i>Ecdyonurus torrentis</i> Kimmins. 1942	No common name
<i>Ecdyonurus dispar</i> (Curtis, 1834)	August Spinner.
<i>Ecdyonurus insignis</i> (Eaton, 1870)	Green Spinner.

LEPTOPHLEBIIDAE

<i>Leptophlebia marginata</i> , (Linnaeus, 1767)	Sepia Dun, Spinner.
<i>Leptophlebia vespertina</i> (Linnaeus, 1758)	Claret Dun, Claret Spinner.
<i>Paraleptophlebia cincta</i> (Retzius, 1783)	Purple Dun, Purple Spinner

EPHEMERIDAE

<i>Ephemerella danica</i> Muller, 1764	Green Drake Spinner, Spent Gnat, Male -Black Drake, Female-Grey Drake
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EPHEMERELLIDAE

<i>Ephemerella ignita</i> (Poda, 1761)	Blue-winged Olive. Female Spinner, Sherry Spinner.
<i>Ephemerella notata</i> Eaton, 1887	Yellow Evening

CAENIDAE

Caenis macrura Stephens, 1835

Caenis luctuosa (Burmeister, 1839)

Caenis horaria Linnaeus, 1858

Caenis rivulorum Eaton, 1884

Angler's Curse

Angler's Curse

Angler's Curse

Angler's Curse



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