

RECORDS OF MAYFLIES (EPHEMEROPTERA) IN NORTHUMBERLAND

by

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INTRODUCTION

Forty-seven species of Ephemeroptera are present in the British Isles and according to Macan (1961) sixteen have been recorded from Northumberland. Four further species were noted by Sutcliffe (1972) while an early record of a single species (not noted by Macan) was published in anon. (1916). The aim of this paper is to produce a comprehensive list for the county and to give, wherever possible, an indication of abundance and adult flight period.

Kimmins (1954) was used to identify imagos (adults) while nymphs were identified with the aid of Macan (1961). The nomenclature is that of Macan (1961). Wherever possible the locality is accompanied by an eight figure national grid reference, the exception being where material has been collected from an undefined section of stream or river, or from a vague area; in such instances the standard practice of the National Biological Records Centre has been adopted and only the 10 km grid square number is given. In order to equate the records with earlier distribution schemes, the Watson-Praeger vice-county number has been included.

Full dates are used for single records, but where collections have been continued over a considerable period only the first and last months and years are noted.

Unless otherwise stated the records refer to the adult stage and all species that appear only in the nymphal state have been reared in the laboratory to confirm identification. Records from the observers listed below have been included: where these are unpublished the observer's initials are given, while the appropriate reference appears after a published record.

D. G. Burleigh (DGB), J. Omer-Cooper (in Kimmins, 1935); J. M. Craster (in Craster, 1935); J. R. A. Gray (JRAG); M. Green (MG); A. D. Grensted and L. W. Grensted (in Kimmins, 1935 and 1938); R. H. Hardy (in Kimmins, 1932); A. H. Ingleby (in Kimmins, 1938); D. W. Sutcliffe (in Sutcliffe, 1972); E. J. Wise (EJW).

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EPHEMERIDAE

Ephemera danica Müll.

8.6.35	VC68	(NU/11)	Hulne Park, R. Aln (Craster, 1935)
12.6.66	VC67	(NY/98)	R. Wansbeck, Kirkwhelpington (sub imago) DGB
3.11.67	"	(NZ/06)	Whittle Dene (nymph) EJW
2.2.68	VC68	(NZ/17)	Catraw Burn, R. Blyth (nymph) EJW
17.6.68	VC67	(NZ005893)	Fairley, Birky Burn EJW

Ephemera vulgata L.

June 1916	VC67		Harnham (anon., 1916)
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LEPTOPHEBIIDAE

Leptophlebia marginata (L.)

11.6.62	VC67	(NZ043904)	Rothley Lakes (nymph) (Sutcliffe, 1972)
24.4.66	"	(NY997861)	Mary Castle pond, Knowesgate (nymph) DGB
30.4.66	"	"	Mary Castle pond, DGB
"	"	"	Mary Castle pond (sub imago) DGB
June 1968	VC68	(NU067027)	Home Farm Lake, Cragside (nymph) EJW
May 1968	VC67	(NY940863)	Linnheads (nymph) EJW
15.5.68	"	(NZ/06)	Whittle Dene MG
16.12.68	"	(NT/80, 90)	Barrow Burn (nymph) EJW

Leptophlebia vespertina (L.)

24-26.4.66	VC67	(NZ008843)	Dene House pond, Kirkwhelpington (nymph) DGB
4.5.66	"	(NY/98)	Spring near R. Wansbeck, Kirkwhelpington (nymph) DGB
Feb. 1968	VC68	(NZ067027)	Home Farm Lake, Cragside (nymph) EJW
May 1968	VC67	(NY940963)	Linnheads (nymph) EJW
Nov. 1968	"	(NZ045905)	Rothley Lake (nymph) EJW

Paraleptophlebia cincta (Retz.)

30.4.34-	VC67	(NZ/27)	Plessey Wood (Kimmins, 1935)
4.7.34	"	"	"
24.7.66	"	(NY/98)	R. Wansbeck, Kirkwhelpington DGB

Paraleptophlebia submarginata (Steph.)

9.4.34	VC67	(NZ/27)	Plessey Wood (Kimmins, 1935)
23.5.36	VC68	(NU187137)	Alnwick (Kimmins, 1930)
19.6.36	VC67	(NZ020618)	Riding Mill (Kimmins, 1930)
24.4.66	"	(NY/98)	Rayburn, Kirkwhelpington (nymph) DGB
12.6.66-	"	"	R. Wansbeck, Kirkwhelpington DGB
8.7.66	"	"	"
Oct. 1967-	VC67/68	(NT/80, 81, 90)	R. Coquet, Blindburn-Alwinton (nymph) EJW
Feb. 1969	"	"	"
Oct. 1967	VC68	(NU067027)	Home Farm Lake, Cragside (nymph) EJW
May 1968	VC67	(NY940863)	Linnheads (nymph) EJW

Nymphs are scarce on the upper Coquet. Emergence period is usually May-June (EJW).

Habrophlebia fusca (Curt.)

30.6.34– 4.8.34	VC67	(NZ/27)	Plessey Wood (Kimmins, 1935)
12.8.36	"	(NZ020618)	Riding Mill (Kimmins, 1938)
1.9.36	"	(NY773664)	Chesterholm, near Twice Brewed (Kimmins, 1938)
14.6.63	"	(NZ065680)	Whittle Dene Reservoir (nymph) (Sutcliffe, 1972)
12.6.66	"	(NY/98)	R. Wansbeck, Kirkwhelpington (sub imago) DGB
24.7.66	"	"	R. Wansbeck, Kirkwhelpington DGB
Oct. 1967– Feb. 1969	VC67/68	(NT/80, 81, 90)	R. Coquet, Blindburn-Alwinton (nymph) EJW
"	VC67	(NT/80, 90)	Barrow Burn (nymph) EJW
May 1968	"	(NZ/06)	Whittle Dene Burn (nymph) EJW

In the Barrow Burn, hatching time is usually July and August (EJW).

EPHEMERELLIDAE

Ephemerella ignita (Poda)

4.7.34– 10.7.34	VC67	(NZ/27)	Plessey Wood (Kimmins, 1935)
12.8.36	"	(NZ020618)	Riding Mill (Kimmins, 1938)
2.9.36	"	(NY635665)	Gilsland (Kimmins, 1938)
22.7.66	"	(NY/98)	R. Wansbeck, Kirkwhelpington (nymph) DGB
24.7.66	"	"	R. Wansbeck, Kirkwhelpington DGB
"	"	"	R. Wansbeck, Kirkwhelpington (sub imago) DGB
Oct. 1966	"	(NZ/07, 17, 27, 28)	R. Blyth, Capheaton-Bedlington (nymph) EJW
Oct. 1967	VC67/68	(NT/80, 81, 90) (NU/00, 10, 20) (NZ/19)	R. Coquet, Blindburn-Guyzance (nymph) EJW
1.7.68	VC67	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
18.8.68	"	(NZ/28)	R. Blyth, Bedlington MG
"	"	"	R. Blyth, Bedlington (sub imago) MG

Nymphs are scarce in the Blyth, but more common in the Coquet, being especially abundant May–July. On both rivers emergence period is July and August. *E. ignita* overwinters in the egg stage; hatching takes place in May and is followed by a rapid period of growth (EJW).

Ephemerella notata Etn.

11.3.68– 10.6.68, 3.3.69	VC67/68	(NU/00, 10, 20) (NZ/19)	R. Coquet, Thropton-Guyzance (nymph) EJW
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Nymphs are relatively scarce in the Coquet, but are moderately common at Pauperhaugh. Emergence period is May and June (EJW).

CAENIDAE

Caenis horaria (L.)

12.6.63	VC67	(NY790698)	Broomlee Lough (nymph) (Sutcliffe, 1972)
14.6.63	"	(NY128633)	Bradley Hall pond (nymph) (Sutcliffe, 1972)

Nov. 1967-	VC67	(NZ230735)	Big Waters nature reserve, Seaton Burn
Feb. 1969			(nymph) EJW
11.3.68	VC67/68	(NU212027)	R. Coquet, Acklington EJW

Abundant at Seaton Burn. Emergence period is June and July (EJW).

Caenis rivulorum Etn.

12.6.66	VC67	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
Oct. 1966-	"	(NZ/07, 17, 27, 28)	R. Blyth, Capheaton-Bedlington (nymph)
Mar. 1968			EJW
Oct. 1967-	VC67/68	(NT/80, 81, 90)	R. Coquet, Blindburn-Guyzance (nymph)
Feb. 1969		(NU/00, 10, 20)	EJW
		(NZ/19)	

Locally common on the Blyth and Coquet. Imagos emerge in June and July (EJW).

BAETIDAE

Baetis bioculatus (L.)

10.7.34	VC67	(NZ/27)	Plessey Wood (Kimmins, 1935)
12.10.36	"	(NZ020618)	Riding Mill (Kimmins, 1938)

Baetis niger (L.)

Oct. 1967-	VC67/68	(NT/80, 81, 90)	R. Coquet, Blindburn-Alwinton (nymph)
Feb. 1969		(NU/00, 10, 20)	EJW
	"	(NZ/19)	
"	VC67	(NY/99)	Grasslees Burn (nymph) EJW
"	"	(NT/80, 90)	Barrow Burn (nymph) EJW
7.5.69	"	(NZ005893)	Fairley, Birky Burn (nymph) EJW

Rare in the Coquet and the Grasslees Burn, but moderately common in the Barrow Burn. In all three localities emergence occurs in May (EJW).

Baetis pumilus (Burm.)

28.8.36	VC67	(NY989642)	Corbridge (Kimmins, 1938)
30.8.36	"	(NY920705)	Chollerford (Kimmins, 1938)
1.9.36	"	(NY/76)	Haltwhistle Burn (Kimmins, 1938)
2.9.36	"	(NY635665)	Gilsland (Kimmins, 1938)
12.6.66	"	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
Oct. 1967-	VC67/68	(NT/80, 81, 90)	R. Coquet, Blindburn-Guyzance (nymph)
Feb. 1969		(NU/00, 10, 20)	EJW
		(NZ/19)	
30.6.68	VC67	(NY/99, NZ/09)	Fallowlees Burn DGB

A common bivoltine species on the Coquet. Emergence period is April, May and September (EJW).

Baetis rhodani (Pict.)

23.5.36	VC68	(NU230165)	Littlehoughton (Kimmins, 1938)
13.3.66	VC67	(NZ/27)	R. Blyth, Plessey Woods (nymph) DGB
8.4.66-	"	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
15.5.66	"		
30.4.66-	"	"	R. Wansbeck, Kirkwhelpington (sub
15.5.66			imago) DGB
8.5.66	VC67/68	(NU070025)	R. Coquet, Rothbury DGB

8.5.66	VC67/68	(NU070025)	R. Coquet, Rothbury (sub imago) DGB
14.5.66	VC67	(NY860950)	R. Rede, Elishaw Bridge (nymph) DGB
Oct. 1966– Mar. 1967	„	(NZ/07, 17, 27, 28)	R. Blyth, Capheaton-Bedlington (nymph) EJW
29.4.67	VC67/68	(NU230043)	R. Coquet, Morwick (imago and sub imago) MG
Oct. 1967– Feb. 1969	„	(NT/80, 81, 90) (NU/00, 10, 20) (NZ/19)	R. Coquet, Blindburn-Guyzance (nymph) EJW
6.12.68	VC67	(NY/68)	Belling Burn, Plashetts Colliery (nymph) JRAG

Abundantly distributed on the Blyth and Coquet where it is bivoltine. Emergence period is March, April and September (EJW).

Baetis scambus Etn.

30.8.36	VC67	(NY941646)	Hexham (Kimmins, 1938)
1.9.36	„	(NY773664)	Chesterholm, near Twice Brewed (Kimmins, 1938)
no date	„	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
Oct. 1967	VC67/68	(NT/80, 81, 90) (NU/00, 10, 20) (NZ/19)	R. Coquet, Blindburn-Guyzance (nymph) EJW
May 1968– Oct. 1968	„	„	R. Coquet, Blindburn-Guyzance (nymph) EJW
June 1968	V/68	(NT938375)	R. Till, Ford (nymph) EJW

Apparently overwinters as eggs, so explaining the absence of nymphs during the winters of 1967 and 1968. Emergence period is July and September (EJW).

Centroptilum luteolum (Müll.)

1.9.36	VC67	(NY/76)	Haltwhistle Burn (Kimmins, 1938)
15-21.5.66	„	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
12.6.66	„	„	R. Wansbeck, Kirkwhelpington (sub imago) DGB
Nov. 1966– Mar. 1967	„	(NZ/07, 17, 27, 28)	R. Blyth, Capheaton-Bedlington (nymph) EJW
Oct. 1967– Feb. 1969	VC67/68	(NT/80, 81, 90) (NU/00, 10, 20) (NZ/19)	R. Coquet, Blindburn-Guyzance (nymph) EJW
15.5.68	VC67	(NZ/06)	Whittle Dene Reservoir MG
6.7.68	VC68	(NU090116)	Edlingham (sub imago) DGB

Locally common on the Blyth and Coquet, where it flies in April, May and September (EJW).

Centroptilum pennulatum Etn.

29.7.68	VC68	(NT818102)	R. Coquet, Fulhope (nymph) EJW
12.8.68	VC67	(NY/99)	Grasslees Burn (nymph) EJW

Apparently rare in the Coquet basin (EJW).

Cloeon dipterum (L.)

10.7.34	VC67	(NZ/27)	Plessey Woods (Kimmins, 1935)
20.5.62	"	(NZ270748)	Annitsford ponds (nymph) (Sutcliffe, 1972)
May 1963	"	(NZ127657)	Close House pond (nymph) (Sutcliffe, 1972)
22.5.63	VC68	(NU087020)	Blackburn Lake (nymph) (Sutcliffe, 1972)
26.7.63	VC67	(NY/828704)	Shield-on-the-Wall (nymph) (Sutcliffe, 1972)
13.5.66	"	(NZ030845)	Wallington (nymph) DGB
June 1966	"	(NY/97)	Hallington Reservoir (nymph) EJW
Oct. 1967-	"	(NZ230735)	Big Waters nature reserve (nymph) EJW
Feb. 1969			

Common at Seaton Burn where it flies in June and July (EJW).

Cloeon simile Etn.

16.6.68	VC67	(NZ080818)	Bolam Lake DGB
23.8.68	"	(NZ/26)	Town Moor, Newcastle upon Tyne (sub imago) DGB

Procloeon pseudorufulum Kimmins

24.6.68	VC67	(NT/80, 90)	Barrow Burn (nymph) EJW
12.8.68	"	(NY/99)	Grasslees Burn (nymph) EJW
26.8.68	VC67/68	(NY920060)	R. Coquet, Alwinton (nymph) EJW
Oct. 1967-	VC67	(NZ230735)	Big Waters nature reserve (nymph) EJW
Feb. 1969			

Apparently rare at Seaton Burn; usually flies in June and July (EJW).

SIPHONURIDAE

Siphonurus lacustris Etn.

18.2.62	VC67	(NT740030)	Catcleugh Reservoir (nymph) (Sutcliffe, 1972)
6.5.68	VC67/68	(NT991007)	R. Coquet, Hepple (nymph) EJW
5.6.68	VC68	(NT830109)	R. Coquet, Blindburn (nymph) EJW
30.6.68	VC67	(NY/99, NZ/09)	Fallowlees Burn (sub imago) DGB

Rather local on the Coquet; it hatches in July (EJW).

Ameletus inopinatus Etn.

18.2.62	VC68	(NT903095)	Kidlandlee Dean (nymph) (Sutcliffe, 1972)
6.12.68	VC67	(NY/68)	Belling Burn, Plashetts Colliery (nymph) JRAG

HEPTAGENIIDAE

Rithrogena semicolorata (Curt.)

16.6.34	VC67	(NZ145875)	Pigdon (Kimmins, 1935)
25.5.36	"	(NZ020618)	Riding Mill (Kimmins, 1938)
12.6.36	"	(NY941646)	Hexham (Kimmins, 1938)
17.4.66	"	(NY/98)	R. Wansbeck, Kirkwhelpington (nymph) DGB
24.4.66	"	"	Stream running into R. Wansbeck, Kirkwhelpington (nymph) DGB
4.5.66	"	(NY860950)	R. Rede, Elishaw Bridge DGB

5.5.66	VC67	(NY/98)	R. Wansbeck, Kirkwhelpington (sub imago) DGB
21.5.66	"	"	R. Wansbeck, Kirkwhelpington DGB
10.1.66– Mar. 1967	"	(NZ/07, 17, 27, 28)	R. Blyth, Capheaton-Bedlington (nymph) EJW
Oct. 1967		(NZ119645)	R. Tyne, Wylam (nymph) EJW
Oct. 1967– Feb. 1969	VC67/68	(NT/80, 81, 90) (NU/00, 10, 20) (NZ/19)	R. Coquet, Blindburn-Guyzance (nymph) EJW

Abundant on the Coquet; it usually hatches in May (EJW).

NOTE—Nymphs of *Rithrogena semicolorata* (Curt.) cannot at present be distinguished from those of *R. haarupi* Esb.-Pet. Imagos have been reared from nymphs collected from both the Coquet and the Wansbeck and, without exception, have proved to be *R. semicolorata*.

Heptagenia lateralis (Curt.)

Oct. 1967– Feb. 1969	VC67/68	(NT/80, 81, 90)	R. Coquet, Blindburn-Alwinton (nymph) EJW
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Locally common on the Coquet; flies in May and June (EJW).

Heptagenia sulphurea (Müll.)

9.6.34	VC67	(NZ/27)	Plessey Woods (Kimmins, 1935)
16.6.34	"	(NZ145875)	Pigdon (Kimmins, 1935)
28.8.36	"	(NY989642)	Corbridge (Kimmins, 1935)
30.8.36	"	(NY920705)	Chollerford (Kimmins, 1935)
Oct. 1967– Feb. 1969	VC67/68	(NU/10, 20) (NZ/19)	R. Coquet, Pauperhaugh-Guyzance (nymph) EJW

Fairly rare on the Coquet where it is confined to the lower reaches (EJW).

Ecdyonurus dispar (Curt.)

23.8.36	VC67	(NZ020618)	Riding Mill (Kimmins, 1938)
29.8.36	"	(NY920705)	Chollerford (Kimmins, 1938)
23.7.66	"	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
22.9.68	VC67/68	(NZ101997)	R. Coquet, Pauperhaugh (imago and sub imago) MG

Ecdyonurus insignis (Etn.)

30.6.34– 3.7.34	VC67	(NZ/27)	Plessey Woods (Kimmins, 1935)
24.7.66	"	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
6.7.68	VC68	(NU049252)	R. Till, Newton Bridge, Chillingham (nymph) DGB

Ecdyonurus torrentis Kimmins

24.4.66	VC67	(NY/98)	Stream running into R. Wansbeck, Kirkwhelpington (nymph) DGB
8.5.66	VC67/68	(NU065017)	R. Coquet, Rothbury (nymph*) DGB

*Caught as nymphs, emerged in captivity. Recorded dates of emergence: 14.5.66; 19.5.66.

2.5.66-	VC67	(NY/98)	R. Wansbeck, Kirkwhelpington DGB
12.6.66			
14.5.66	„	(NY860950)	R. Rede, Elishaw Bridge DGB
5-12.6.66	„	(NY/98)	R. Rede, Elishaw Bridge (nymph) DGB
			R. Wansbeck, Kirkwhelpington (sub imago) DGB
Nov. 1966-	„	(NZ/07, 17, 27, 18)	R. Blyth, Capheaton-Kirkley Hall (nymph)
Mar. 1967			EJW
Oct. 1967-	VC67/68	(NT/80, 81, 90)	R. Coquet, Blindburn-Guyzance (nymph)
Feb. 1969		(NU/00, 10, 20)	EJW
		(NZ/19)	

Ecdyonurus venosus (Fabr.)

18.5.31	VC68	(NU/01, 11, 21)	R. Aln (Kimmins, 1932)
19.5.36	VC67	(NZ020618)	Riding Mill (Kimmins, 1938)
Oct. 1967-	VC67/68	(NT/80, 81, 90)	R. Coquet, Blindburn-Guyzance EJW
Feb. 1969		(NU/00, 10, 20)	
		(NZ/19)	

SUMMARY

Thirty species of Ephemeroptera have now been recorded from Northumberland, the following being new county records: *Leptophlebia vespertina*, *Ephemerella notata*, *Caenis rivulorum*, *Baetis niger*, *Centropetium pennatulatum*, *Cloeon simile*, *Procloeon pseudorufulum*, *Heptagenia lateralis* and *Ecdyonurus torrentis*. Seven of the forty-seven species on the British list are rare, with a very restricted national distribution, and when considering the remaining species it would be reasonable to state that Northumberland is well represented in terms of species numbers. Comparison with other areas of the country is difficult because the available records tend to reflect the distribution of collectors of the Ephemeroptera. However, it is possible, using Macan (1961), to compare Northumberland and the Lake District. Twenty-seven species of Ephemeroptera have been recorded from the Lake District while five species found in Northumberland (namely *Ephemera vulgata*, *Ephemerella notata*, *Ecdyonurus insignis*, *Paraleptophlebia cincta* and *Baetis bioculatus*) appear to be absent from the Lake District. Conversely, *Baetis tenax* and *Caenis moesta* are present in the Lake District, but have not been recorded from Northumberland.

Bearing in mind the fact that the species list for Northumberland may still be incomplete, some tentative reasons for the differences in distribution can be postulated. Macan (1961) considers that *Ephemera vulgata* is typical of rivers with a muddy substrate and this is probably a rare habitat in the Lake District, where most of the rivers are torrential, with a stony substrate. The absence of *Ephemerella notata* is more difficult to explain. Its habitat in the Coquet indicates that it needs a stable substrate, which may be the beds of Fontinalis amongst which it is found, and it is difficult to conceive that a similar habitat is not available in the Lake District. In general, because of the hard igneous rocks, Lake District waters are soft whereas parts of southern and western Northumberland have extensive areas of Carboniferous Limestone which make the waters more calcareous. This factor could explain the absence of *Baetis bioculatus* and *Ecdyonurus insignis*. It is not possible to comment further on the difference in distribution of the other species. *Ameletus*

inopinatus has been recorded from both areas, but in Northumberland it has been found at 650 ft (198 m) above sea level whereas Macan (1961) contends that in the Lake District it is confined to becks above 1000 ft (304 m).

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