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EDITORIAL

The format of Bulletin No 38 is different to that of previous Bulletins. The spacing has been reduced to improve legibility and to reduce the number of pages required. Without these changes, the present volume would have been the largest ever published by the Society with the consequent increased costs of printing and postage. Over 100 pages have been saved.

The Bulletin contains eight articles reflecting some of the research interests of the members. Part 2 of the important work on the distribution of the Irish non-biting midges or chironomids is published. Part 1 appeared in Bulletin No. 37 while Part 3 will be included in Bulletin 39. The entire database will deal with some 533 species. When completed, a pdf will be made available of the work. Declan Murray, the senior author of the list, also reports on some interesting chironomid records from the Canary Islands.

Jervis Good also continues his work on the Tardy Collection in Trinity College, University of Dublin. As well as a reassessment of some of the records, the opportunity is taken to include a previously unpublished colour portrait of James Tardy along with biographical information. The caddisflies of Northern Ireland have been little studied compared with other areas of Ireland. This situation partly arose due to the civil strife there for many years when it was often considered unsafe to run light traps etc. Two papers, with distributional information, are included in this volume. The larger one is based on the RIVPACS Database and the authors are very grateful for permission to access that data. Full acknowledgements will be found in the paper.

Declan Quigley and Sean Moffat present an intriguing article on a deer observed swimming out to sea at Greystones, Co. Wicklow, and the possible causes. Martin Cawley provides some interesting records of uncommon Irish beetles and Myles Nolan records a new Irish spider. The referee of the beetle ms remarked that “It is particularly welcome that such contributions are being made on the Irish Coleoptera, which are a neglected group”. This neatly brings us to our referees who play an important role in the Bulletin. On behalf of the Society, I would like to thank them and our sponsors. The support of our sponsors is essential for the continuing survival of the Bulletin. Their financial help is greatly appreciated especially in these difficult times with so many pressures on their budgets.

J. P. O’Connor
Editor
4 October 2014
INSTRUCTIONS TO AUTHORS

1. Manuscripts should follow the format of articles in this Bulletin. The titles of journals should be given in full in the references.

2. Manuscripts may be sent as typed copy on A4 paper, using double-spacing and 2.5cm (one inch) margins with the text and any figures also on an accompanying compact disc to the Editor, Dr J. P. O’Connor, emeritus entomologist, National Museum of Ireland, Kildare Street, Dublin 2, Ireland. Alternatively, mss may be submitted electronically via our Treasurer Mr John Walsh at <ampersandwalsh@gmail.com> or the Editor at <joconnor@museum.ie>.

3. Word is preferred and Times New Roman 13pt should be used.

4. Figures and tables should be submitted in a size suitable for reduction to A5 without loss of detail. It is important that the text should remain legible after reduction. JPEGs are preferred for figures.

5. Records: please ensure that, when possible, the following information is incorporated in each record included in a manuscript:-
   (a) latin name of organism.
   (b) statement of reference work used as the source of nomenclature employed in the text. The describer’s name should be also given when a zoological species is first mentioned in the text.
   (c) locality details including at least a four figure Irish grid reference (e.g. N3946), county or vice-county and some ecological data about the collection site, plus date of capture.
   (d) Collector’s name and determiner’s name (where different from collector’s name), and
   (e) altitude data should be included where relevant.
RECORDS OF TRICHOPTERA (INSECTA) FROM NORTHERN IRELAND

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Abstract
A total of 313 macroinvertebrate taxa were recorded from the 70 running-water sites in the River InVertebrate Prediction And Classification System (RIVPACS III) dataset from Northern Ireland from 1990-1993. Additional samples were taken in 2000. Although the first paper on Northern Ireland Trichoptera was published over 150 years ago, the caddisfly fauna is poorly known compared with that of the rest of the island. As a result, the RIVPACS trichopteran data are presented here. Many of these records are of great interest as they are the first ones for Northern Ireland. Information is provided on 43 species.

Key words: Trichoptera, RIVPACS, Northern Ireland, distribution

Introduction
A total of 313 macroinvertebrate taxa were recorded from the 70 running-water sites in the River InVertebrate Prediction And Classification System (RIVPACS III) dataset from Northern Ireland (Wright et al., 2000). The research was funded by the Department of the Environment for Northern Ireland. RIVPACS is used for the biological assessment of ‘river quality’ in both national and local surveys in the United Kingdom and an introduction to it is given in Wright (2000). The dataset is held by the Centre for Ecology and Hydrology, a component part of the Natural Environment Research Council (NERC). Wright et al. (2000) provided a summary of the trichopteran species taken in the study but no locations were given. The first paper on Northern Ireland Trichoptera was published over 150 years ago (McLachlan, 1861) but despite this, the caddisfly fauna is poorly known compared with that of the rest of the island. As a result, permission has been granted to access the RIVPACS trichopteran data and details of the records are presented here. Many of these records are of great interest as they are the first ones for Northern Ireland viz. Agraylea multipunctata Curtis, Allotrichia pallicornis (Eaton) Neureclipsis bimaculata (Linnaeus), Polycentropus irroratus (Curtis), Cheumatopsyche lepida (Pictet), Hydropsyche angustipennis (Curtis), Hydropsyche pellucidula (Curtis), Silo nigricornis (Pictet), Lepidostoma basale (Kolenati), Drusus annulatus (Stephens), Ecclisopteryx
dalecarlica Kolenati, Odontocerum albicorne (Scopoli), Beraeodes minutus (Linnaeus), Athripsodes albifrons (Linnaeus), Athripsodes bilineatus (Linnaeus), Ceraclea dissimilis (Stephens) and Ceraclea nigronervosa (Retzius). Altogether, information is provided on 43 species. A further 11 taxa, only identified to genus, are not included.

Material and methods

The selected sites were of high biological quality and represented as wide a range of stream and river types and locations as possible. The samples were collected by the staff of the Industrial Research and Technology Unit (IRTU) using the standard RIVPACS protocols (Furse et al., 1981; Wright et al., 1984; Environment Agency, 1997). Those reported in Wright et al. (2000) were collected in 1990-1993. Further ones were taken in 2000. Each site was subjected to a three minute pond-net sample (plus one minute manual search) in spring (February-May), summer (June-August) and autumn (September-November). All available habitats were sampled in proportion to their occurrence in order to acquire the most comprehensive list of taxa for each site within the stated time. Subsequent sorting and identification of the fauna was undertaken by staff at the Institute of Freshwater Ecology (IFE) River Laboratory. The trichopteran larvae were determined using Wallace et al. (1990) and Edington and Hildrew (1995).

Presentation of the data

The presented data have been abstracted from an EXCEL file. The river names follow Wright et al. (2000). The number of specimens in each sample is given in bold in parentheses before the date of collection. Six figure grid references are given and these have been plotted on longitude and latitude distribution maps using D-MAP (Figs 1-43). A topographical map is also provided (Fig. 44). The distribution maps are adapted from an all-Ireland one (Fig. 45). Since the counties were not included in the file, JPOC has located the relevant ones. In some cases, rivers formed the boundary between counties and then only one county is given based on an examination of maps showing the catchments. The Irish counties are shown (Fig. 46).

The recorded species

RHYACOPHILIDAE

1. *Rhyacophila dorsalis* (Curtis, 1834)

Previously recorded from Counties Antrim, Down, Fermanagh and Tyrone (King and Halbert, 1910; Fahy, 1972; Carter and Wood, 1995), *Rhyacophila dorsalis* is widely distributed in Northern Ireland (Fig. 1).

RIVPACS records

**ANTRIM: Cashel Burn**, Downstream Bridge (D173069), (11) 15 May, (6) 26 July and (17)
25 October 2000; **Coopers Water**, Boomers Bridge (J216757), (17) 22 May, (112) 7 June and (8) 6 September 2000; **Crew Burn**, Carrols Bridge (J134707), (1) 7 June 2000; **Doagh R.**, Dunamoy (J260935), (16) 5 June and (3) 6 September 1991; **Doagh R. tributary**, Dixons Corner (J258937), (16) 16 May, (39) 13 June and (7) 18 September 2000; **Douglas Burn**, Lymnas Bridge (J227998), (7) 16 May, (6) 14 June and (1) 25 October 2000; **Dunnstown Burn**, Dunnstown (D048095), (19) 16 May, (9) 19 June and (2) 25 October 2000; **Glynn R.**, Glynn (J408999), (1) 6 June and (12) 14 November 1991; **Kellswater**, Rock Bridge (J160983), (2) 30 March, (1) 27 August and (1) 29 October 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (18) 16 May, (17) 19 June and (6) 25 October 2000; **R. Braid**, Harryville Bridge (D105030), (1) 30 March and (8) 2 August 1990; **R. Bush**, Ballyhoe (D077291), (4) 15 May and (8) 2 August 1990; **R. Clady**, Glenone Bridge (C963038), (6) 2 March, (28) 5 June and (3) 12 October 1990; **R. Clogh**, Glarryford Bridge (D062131), (2) 1 August 1991; **R. Crumlin**, Airport Bridge (J192767), (6) 8 October 1992; **R. Dervock**, Iderown Bridge (D021334), (2) 21 March, (32) 31 July and (2) 6 November 1990; **R. Glenarm**, Glenarm (D310149), (24) 30 May and (24) 15 August 1990; **R. Glenshesk**, B15 Road Bridge (D126406), (4) 14 August 1990; **R. Larne**, Owens Bridge (D378008), (17) 20 February, (18) 6 June and (2) 14 November 1991; **R. Main**, Dunmore Bridge (J087896), (16) 28 March, (28) 2 August and (1) 5 November 1990; **Ross Burn**, Rossburn (J159973), (13) 22 May, (16) 14 June and (2) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (10) 16 May, (36) 12 June and (22) 18 September 2000; **Six Mile Water**, below Ballyclare (J285903), (2) 6 March, (2) 1 June and (42) 26 September 1990.

**ARMAGH:** **Forkhill R.**, Forkhill Lower Bridge (J015157), (1) 25 March and (4) 23 October 1991; **Kilnasaggart (R.)**, Kilnasaggart Bridge (J060150), (2) 3 April, (1) 17 July and (8) 23 October 2000; **R. Callan**, Paper Mill Bridge (H857392), (8) 5 April, (56) 3 July and (8) 1 October 1990.

**DERRY (LONDONDERRY):** **Cam Burn**, Ballymacally Beg (C843212), (5) 16 May 2000; **Miltown Burn**, A29 Road Bridge (H848997), (1) 8 May 2000; **R. Aghadowey**, White Bridge (C879228), (4) 29 May and (40) 30 October 1990; **R. Agivey**, Glen Ullin (C792124), (6) 16 May, (36) 29 June and (1) 21 September 2000; **R. Ballinderry**, Ballinderry Bridge (H927798), (18) 25 May and (20) 13 August 1990; **R. Ballinderry**, Corkhill Bridge (H734793), (16) 14 March and (6) 18 November 1991; **R. Douglas**, Boheradaile (H774967), (15) 15 August 2000; **R. Faughan**, Ardmore (C474134), (2) 20 May and (1) 5 August 1990; **R. Inver**, Inver Bridge (C535010), (3) 26 April and (5) 28 September 2000; **R. Mayoghill**, Caheny Bridge (C889191),

**DOWN:** **Begny Hill Feeder**, Woodford Bridge (J289502), (1) 22 May and (2) 7 June 2000; **Cassy Water**, Cassy Water Bridge (J238149), (2) 20 May 1990, (4) 21 February and (11) 5 September 1991; **R. Annacloy**, Annacloy Bridge (J448484), (12) 16 March 1990; **R. Annalong**, Annalong Bridge (J374198), (5) 6 March and (2) 23 May 1990; **R. Kinnahalla**, upstream New Bridge (J239289), (2) 22 May and (12) 21 June 2000; **R. Shankys**, Tornamrock Park (J225255), (3) 3 April, (1) 21 June and (1) 4 September 2000; **R. Shimna**, Tollymore Forest (J353323), (2) 20 November 1991; **Spences R.**, Glassdrumman Bridge (J377228), (2) 1 November 2000; **Upper Bann**, Ballydown (J138450), (2) 12 June 1990 and (1) 24 September 1992; **Upper Bann**, Hilltown (J218291), (4) 12 March, (1) 8 June and (29) 25 September 1990.

**FERMANAGH:** **Cooneen Water**, Legatillida (H455396), (2) 30 April, (1) 7 August and (13) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (2) 24 May and (6) 15 August 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (1) 10 August 2000; **R. Arney**, Brockagh (H175375), (2) 18 September 1990; **R. Ballinamallard**, Magheracross (H281537), (1) 22 April, (6) 25 July and (1) 19 September 1990; **R. Bannagh**, Bannagh Bridge (H162654), (4) 20 July 1990; **R. Black**, Drumkeenagh (H018435), (3) 27 April and (3) 18 July 1990; **R. Boho**, Boho (H134445), (4) 21 April, (56) 16 July and (5) 23 October 1990; **R. Colebrooke**, Tullyreagh Cross (H378441), (1) 19 April, (4) 17 July and (2) 17 September 1990; **R. Garvary**, Larkhill (H009630), (1) 20 April, (4) 23 July and (4) 25 October 1990; **R. Glendurragh**, Ederny (H222652), (1) 26 April and (1) 24 July 1990; **R. Lack**, Croneen (H256665), (3) 22 March, (1) 12 August and (6) 1 November 2000; **R. Roogagh** (Glen R.), Garrison (G941518), (8) 27 April, (16) 18 July and (8) 20 September 1990; **R. Sillees**, Derrygonnelly (H118521), (16) 19 July and (8) 23 October 1990; **R. Sillees**, Drumkeen New Bridge (H230413), (2) 16 July 1990; **R. Termon**, Killynooghan (H111659), (3) 20 July 1990.

**TYRONE:** **Ballygawley R.** (Ballygawley Water), Lismore Bridge (H630538), (2) 26 February, (130) 11 June and (7) 22 October 1991; **Ballynahatty Water** (R. Owenreagh), Ballynahatty (H437673), (36) 20 June and (2) 2 September 1990; **Dreenan Burn**, Dreenan Bridge (H212843), (4) 28 March and (1) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (2) 19 April and (7) 19 July 2000; **Fairywater**, Mullanatoomog (H392766), (1) 23 May 1990; **Fury R.**, Belalastera Bridge (H552517), (4) 11 June and (12) 27 October 1991; **Glashagh Burn**, Cashel Wood (H615803), (9) 31 July 2000; **Gortin Water**, Gortin Bridge (H782792), (8) 27 March, (8) 3 July and (5) 26 September 2000; **Granagh Burn**,
Carrickmore (H604721), (9) 5 April, (4) 26 July and (10) 13 November 2000; **Lissan Water**, Drumgrass Bridge (H806816), (3) 14 March 1991 and (15) 10 June 1993; **Oughtmame Burn**, Oughtmame (H625937), (2) 17 April, (4) 7 August and (6) 5 October 2000; **R. Blackwater**, Caledon Bridge (H759446), (11) 26 September 1991; **R. Blackwater**, Derrymeen Bridge (H625530), (1) 26 February 1991; **R. Camowen**, Donnelly’s Bridge (H464730), (2) 8 April, (18) 21 June and (21) 3 September 1990; **R. Cleen**, Kiltermon Bridge (H475482), (1) 7 August 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (3) 24 May, (19) 27 July and (6) 13 November 2000; **R. Coolaghty**, Coolaghty (H257673), (2) 17 April, (4) 7 August and (3) 2 November 2000; **R. Derg**, Aghyaran Bridge (H191806), (26) 9 April, (18) 6 August and (1) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (17) 22 May, (32) 6 August and (4) 12 November 1990; **R. Glenelly**, Clougherny Bridge (H563913), (4) 21 May, (1) 6 August and (1) 13 November 1990; **R. Owenkillew**, Broughderg Bridge (H684853), (5) 12 April, (2) 31 July and (2) 2 October 2000; **R. Owenkillew**, Killymore Bridge (H438873), (11) 18 June and (18) 7 September 1990; **R. Owenkillew**, Monameel Bridge (H613847), (4) 7 April, (22) 30 June and (18) 7 October 1991; **R. Owenreagh**, B84 Road Bridge (H330658), (5) 24 May and (7) 21 July 2000; **R. Owenreagh**, Cashel Bridge (H582822), (1) 16 June and (18) 8 October 1991; **R. Strule**, Moyle Bridge (H411861), (1) 18 June and (5) 3 September 1990; **Quiggy Water**, Edergoole Bridge (H449678), (1) 8 April, (4) 20 June and (1) 2 September 1990; **Tulllynadall Burn**, Tulllynadall (H447906), (19) 10 August and (9) 5 October 2000.

**2. Rhyacophila munda** McLachlan, 1862

Previously recorded from the River Clogh in Co. Antrim (Carter and Wood, 1995), *Rhyacophila munda* is widely distributed in Northern Ireland (Fig. 2).

**RIVPACS records**

**ANTRIM:** Cashel Burn, Downstream Bridge (D173069), (11) 15 May and (1) 26 July 2000; **Coopers Water**, Boomers Bridge (J216757), (16) 22 May 2000; **Doagh R.**, Dunamoy (J260935), (1) 25 February and (16) 5 June 1991; **Douglas Burn**, Lynnas Bridge (J227998), (2) 16 May 2000; **Glenariff R.**, Callisnah Bridge (D224214), (4) 30 May 1990; **Glynn R.**, Glynn (J408999), (3) 6 June 1991; **Kells Water**, Rock Bridge (J160983), (1) 30 March 1990; **Legnagoole Burn**, Legnagoole Bridge (D132128), (3) 16 May and (4) 19 June 2000; **R. Bush**, Seneirl Bridge (C942360), (2) 21 March and (8) 31 July 1990; **Six Mile Water**, Ballyboley Bridge (J315950), (5) 16 May and (3) 12 June 2000.

**ARMAGH:** Forkhill R., Forkhill Lower Bridge (J015157), (4) 23 October 1991. **DERRY (LONDONDERRY):** Cam Burn, Ballynacally Beg (C843212), (5) 16 May 2000; **R. Agivey**, Glen Ullin (C792124), (5) 16 May 2000; **R. Inver**, Inver Bridge (C535010), (2) 26
April 2000.

DOWN: R. Annacloy, Annacloy Bridge (J448484), (8) 16 March and (1) 10 July 1990; R. Annalong, Annalong Bridge (J374198), (4) 23 May 1991; R. Kinnahalla, upstream New Bridge (J239289), (1) 22 May 2000; Upper Bann, Hilltown (J218291), (1) 12 March and (1) 8 June 1990.

FERMANAGH: R. Ballinamallard, Magheracross (H281537), (10) 22 April and (6) 25 July 1990; R. Black, Drumkeenagh (H018435), (3) 27 April 1990; R. Roogagh (Glen R.), Garrison (G941518), (1) 18 July 1990; R. Sillees, Derrygonnelly (H118521), (1) 21 April 1990.

TYRONE: Dunnyboe Burn, Dunnyboe Bridge (H459993), (1) 19 April and (1) 19 July 2000; Glashagh Burn, Cashel Wood (H615803), (1) 31 July 2000; Lissan Water, Drumgrass Bridge (H806816), (1) 10 June 1993; R. Owenkillew, Broughderg Bridge (H684853), (3) 31 July 2000; R. Strule, Moyle Bridge (H411861), (1) 9 April 1990; Tullynadall Burn, Tullynadall (H447906), (2) 10 August 2000.

HYDROPTILIDAE

3. Agraylea multipunctata Curtis, 1834 First record for Northern Ireland

Surprisingly, only one larva was taken (Fig. 3). The species is widely distributed elsewhere in Ireland (O’Connor, 1987).

RIVPACS record

FERMANAGH: R. Finn, Wattle Bridge (H425203), (1) 22 July 1990.

4. Allotrichia pallicornis (Eaton, 1873) First records for Northern Ireland

Allotrichia pallicornis is widely distributed but was not found in Counties Armagh and Down (Fig. 4). The species is known elsewhere in Ireland from Counties Dublin, Meath and Wicklow (O’Connor, 1987; Duke, 1994).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (3) 15 May 2000; Coopers Water, Boomers Bridge (J216757), (27) 22 May and (6) 7 June 2000; Doagh R., Dunamoy (J260935), (11) 5 June 1991; Doagh R. tributary, Dixons Corner (J258937), (3) 16 May and (3) 13 June 2000; Dunnstown Burn, Dunnstown (D048095), (16) 16 May and (1) 19 June 2000; Glynn R., Glynn (J408999), (1) 6 June 1991; Legnagooly Burn, Legnagooly Bridge (D132128), (8) 16 May and (4) 19 June 2000; R. Bush, Ballyhoe (D077291), (1) 15 May 1991; R. Clady (Clady Water), Dunadry (J194846), (52) 30 May 1991; R. Clady, Glenone Bridge (C963038), (1) 5 June 1990; R. Glenshesk, B15 Road Bridge (D126406), (24) 30 May 1990; R. Larne, Owens Bridge (D378008), (10) 6 June 1991; Ross Burn, Rossburn (J159973), (1) 14 June 2000; Six Mile Water, below Ballyclare (J285903), (36) 1 June 1990.
DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (14) 16 May 2000; R. Agivey, Glen Ullin (C792124), (2) 16 May 2000; R. Ballinderry, Ballinderry Bridge (H927798), (8) 25 May 1990; R. Owenbeg, Dungiven (C683098), (1) 16 June 1990.

FERMANAGH: Lisnabane Burn, Lisnabane Bridge (H379447), (1) 24 May 2000; R. Roogagh (Glen R.), Garrison (G941518), (32) 27 April 1990. TYRONE: Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (20) 11 June 1991; Foxhill Burn, Drumcreen (H279529), (1) 24 May 2000; R. Cloghfin, Ballykeel Bridge (H572671), (11) 24 May 2000; R. Cloghfin, Black Hill (H512706), (3) 24 June 1991; R. Owenreagh, Cashel Bridge (H582822), (1) 16 June 1991.

PHILOPOTAMIDAE

5. Philopotamus montanus (Donovan, 1813)

Previously recorded from Counties Antrim and Fermanagh (King and Halbert, 1910; Hazelton, 1974a, b), Philopotamus montanus is widely distributed as elsewhere on the island (Fig. 5). In Fermanagh, larvae have been discovered living in caves. RIVPACS records

ANTRIM: Douglas Burn, Lynnas Bridge (J227998), (1) 14 June and (2) 25 October 2000; Glenariff R., Callisnagh Bridge (D224214), (2) 30 May and (2) 15 August 1990; Glynn R., Glynn (J408999), (1) 14 November 1991; Legnagooly Burn, Legnagooly Bridge (D132128), (25) 25 October 2000; R. Glenarm, Glenarm (D310149), (1) 15 August and (1) 22 November 1990; Six Mile Water, Ballyboley Bridge (J315950), (1) 12 June and (3) 18 September 2000.

DERRY (LONDONDERRY): R. Douglas, Boheradaile (H774967), (1) 8 May 2000; R. Owenalena, B84 Road Bridge (C743060), (1) 5 July 2000.


FERMANAGH: R. Black, Drumkeenagh (H018435), (6) 27 April and (1) 20 September 1990.

TYRONE: Oughtmame Burn, Oughtmame (H625937), (1) 7 August and (1) 5 October 2000.

POLYCENTROPIDAE

6. Cyrnus trimaculatus (Curtis, 1834)

Previously recorded from Counties Armagh, Derry and Down (King and Halbert, 1910; Murphy and Carter, 1984), Cyrnus trimaculatus is widely distributed (Fig. 6). RIVPACS records

ANTRIM: Dunnstown Burn, Dunnstown (D048095), (1) 25 October 2000; R. Braid,
Harryville Bridge (D105030), (8) 29 October 1990; R. Clogh, Glarryford Bridge (D062131), (1) 5 November 1990; R. Crumlin, Airport Bridge (J192767), (2) 8 October 1992; R. Main (Killagan Water), Dundermot Bridge (D057130), (1) 18 October 1990.

DERRY (LONDONDERRY): R. Moyola, New Bridge (H956905), (2) 1 March 1990.

DOWN: R. Lagan, Bulls Brook (J252516), (4) 7 March and (3) 6 June 1990.

FERMANAGH: Lisnabane Burn, Lisnabane Bridge (H379447), (1) 9 November 2000.

TYRONE: R. Ballinderry, Doorless (H835764), (8) 9 May 1990; R. Blackwater, Moy (H852559), (5) 4 April 1990; R. Cleen, Kiltermon Bridge (H475482), (1) 2 November 2000.

7. Neureclipsis bimaculata (Linnaeus, 1758) First records for Northern Ireland

Neureclipsis bimaculata was only recorded in Co. Fermanagh (Fig. 7). The species is widespread on the island (O’Connor, 1987).

RIVPACS records

FERMANAGH: R. Finn, Wattle Bridge (H425203), (2) 22 July 1990; R. Sillees, Drumkeen New Bridge (H230413), (8) 16 September 1990.

8. Plectrocnemia conspersa (Curtis, 1834)

Previously recorded from Counties Armagh, Down and Tyrone (King and Halbert, 1910; Wilcock, Hildrew and Nichols, 2001), Plectrocnemia conspersa is widely distributed (Fig. 8).

RIVPACS records

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (3) 25 October 2000; Doagh R., Dunamoy (J260935), (1) 25 February 1991; Doagh R. tributary, Dixons Corner (J258937), (3) 16 May and (1) 13 June 2000; Glynn R., Glynn (J408999), (1) 20 February 1991; Six Mile Water, Ballyboley Bridge (J315950), (1) 12 June 2000.

ARMAGH: Kilnasaggart (R.), Kilnasaggart Bridge (J060150), (1) 3 April 2000.

DERRY (LONDONDERRY): R. Inver, Inver Bridge (C535010), (1) 8 August 2000; R. Owenalena, B84 Road Bridge (C743060), (1) 16 May 2000; R. Owenrigh, Carnanbane (C669067), (4) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (1) 22 May 2000; R. Shankys, Tornamrock Park (J225255), (2) 3 April and (3) 21 June 2000.

FERMANAGH: Cooneen Water, Legatillida (H455396), (3) 8 November 2000; R. Black, Drumkeenanagh (H018435), (5) 27 April, (5) 18 July and (1) 20 September 1990; R. Boho, Boho (H134445), (1) 21 April 1990; R. Lack, Croneen (H256665), (6) 1 November 2000.

TYRONE: Dreenan Burn, Dreenan Bridge (H212843), (1) 9 August 2000; Glashagh Burn, Cashel Wood (H615803), (1) 12 April 2000; Gortin Water, Gortin Bridge (H782792), (1) 27 March 2000; Lissan Water, Drumgrass Bridge (H806816), (4) 14 March 1991 and (1)

Previously recorded from Co. Fermanagh where larvae were found underground in caves (Hazelton, 1974a, b), the species was only found at one site (Fig. 9).

**RIVPACS record**

**ANTRIM:** Glenariff R., Callisnagh Bridge (D224214), (1) 30 May 1990.

10. *Polycentropus flavomaculatus* (Pictet, 1834)

Previously recorded from Counties Antrim, Armagh, Down and Fermanagh (King and Halbert, 1910; Fahy, 1972; Murphy and Carter, 1984), *Polycentropus flavomaculatus* is widely distributed (Fig. 10).

**RIVPACS records**

**ANTRIM:** Cashel Burn, Downstream Bridge (D173069), (13) 26 July and (4) 25 October 2000; Crew Burn, Carrols Bridge (J134707), (1) 22 May 2000; Doagh R., Dunamoy (J260935), (71) 6 September 1991; Doagh R. tributary, Dixons Corner (J258937), (1) 16 May, (3) 13 June and (1) 18 September 2000; Dunnstown Burn, Dunnstown (D048095), (21) 25 October 2000; Glenariff R., Callisnagh Bridge (D224214), (1) 30 May and (2) 15 August 1990; Glynn R., Glynn (J408999), (1) 14 November 1991; Kells Water, Rock Bridge (J160983), (1) 2 August and (4) 29 October 1990; Legnagooly Burn, Legnagooly Bridge (D132128), (5) 16 May, (4) 19 June and (4) 25 October 2000; R. Ballinderry, Corkhill Bridge (H734793), (15) 18 November 1991; R. Braid, Harryville Bridge (D105030), (9) 30 March and (106) 29 October 1990; R. Bush, Ballyhoo (D077291), (1) 30 July and (8) 24 October 1991; R. Bush, Seneirl Bridge (C942360), (1) 21 March, (26) 31 July and (27) 6 November 1990; R. Clady (Clady Water), Dunadry (J194846), (24) 22 February, (2) 30 May and (26) 21 October 1991; R. Clady, Glenone Bridge (C963038), (9) 2 March, (24) 5 June and (33) 12 October 1990; R. Clogh, Glarryford Bridge (D062131), (1) 28 March 1990; R. Crumlin, Airport Bridge (J192767), (2) 25 May and (6) 14 August 1990; R. Dervock, Iderown Bridge (D021334), (1) 21 March 1990; R. Glenarm, Glenarm (D310149), (1) 30 May and (12) 15 August 1990; R. Glenshesk, B15 Road Bridge (D126406), (1) 30 May and (3) 14 August 1990; R. Main, Dunmore Bridge (J087896), (50) 2 August and (56) 5 November 1990; Ross Burn, Rossburn (J159973), (6) 25 October 2000; Six Mile Water, Ballyboley Bridge (J315950), (1) 12 June 2000; Six Mile Water, below Ballyclare (J285903), (1) 1 June and (1) 26 September 1990.

**ARMAGH:** Forkhill R., Forkhill Lower Bridge (J015157), (1) 25 March and (77) 23...
October 1991; R. Agivey, Glen Ullin (C792124), (34) 21 September 2000; R. Callan, Paper Mill Bridge (H857392), (8) 5 April and (8) 1 October 1990; R. Cusher, Knock Bridge (J039508), (1) 2 April, (1) 12 June and (1) 12 September 1990.

DERRY (LONDONDERRY): R. Aghadowey, White Bridge (C879228), (4) 29 May, (1) 13 August and (32) 30 October 1990; R. Ballinderry, Ballinderry Bridge (H927798), (2) 13 August and (3) 2 November 1990; R. Ballinderry, Corkhill Bridge (H734793), (1) 14 March 1991; R. Moyola, New Bridge (H956905), (2) 5 June and (4) 27 September 1990; R. Owenbeg, Dungiven (C683098), (2) 11 April, (17) 16 June and (72) 5 September 1990; R. Owenrigh, Carnanbane (C669067), (5) 5 September 1990; R. Roe, Corick Bridge (C751063), (5) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (1) 22 May 2000; Cassy Water, Cassy Water Bridge (J238149), (2) 5 September 1991; R. Annaclloy, Annacloy Bridge (J448484), (2) 16 March and (64) 2 October 1990; R. Annalong, Annalong Bridge (J374198), (2) 6 March and (4) 24 October 1991; R. Kinnahalla, upstream New Bridge (J239289), (1) 21 June 2000; R. Shankys, Tornamrock Park (J225255), (1) 3 April, (3) 21 June and (9) 4 September 2000; Upper Bann, Ballydown (J138450), (1) 20 March and (4) 12 June 1990, (15) 24 September 1992; Upper Bann, Hilltown (J218291), (1) 8 June and (3) 25 September 1990.

FERMANAGH: Cooneen Water, Legatillida (H455396), (8) 7 August and (5) 8 November 2000; Foxhill Burn, Drumcreen (H279529), (2) 15 August and (6) 10 November 2000; Lisnabane Burn, Lisnabane Bridge (H379447), (4) 24 May, (16) 10 August and (15) 9 November 2000; R. Arney, Brockagh (H175375), (4) 25 April and (19) 21 July 1990; R. Ballinamallard, Magheracross (H281537), (3) 19 September 1990; R. Bannagh, Bannagh Bridge (H162654), (16) 20 April, (12) 20 July and (5) 24 October 1990; R. Black, Drumkeenagh (H018435), (1) 27 April, (2) 18 July and (6) 20 September 1990; R. Colebrooke, Tullyreagh Cross (H378441), (1) 19 April and (4) 17 September 1990; R. Finn, Wattle Bridge (H425203), (11) 22 July and (3) 22 October 1990; R. Glendurragh, Ederny (H226652), (1) 24 July and (3) 21 September 1990; R. Lack, Croneen (H256665), (7) 12 August 2000; R. Roogagh (Glen R.), Garrison (G941518), (24) 27 April, (48) 18 July and (48) 20 September 1990; R. Sillees, Derrygonnelly (H118521), (20) 21 April, (16) 19 July and (4) 23 October 1990; R. Sillees, Drumkeen New Bridge (H230413), (16) 23 April and (32) 16 July and (32) 16 September 1990; R. Termon, Killynoogan (H111659), (8) 20 April, (8) 20 July and (3) 24 October 1990.

TYRONE: Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (1) 26 February and (6) 22 October 1991; Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (17) 8 April, (50) 20 June and (4) 2 September 1990; Dreenan Burn, Dreenan
Bridge (H212843), (4) 9 August and (1) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (4) 24 October 2000; **Fairywater**, Mullanatoomog (H392766), (1) 7 August and (1) 12 November 1990; **Fury R.**, Belaosopher Bridge (H552517), (2) 26 February, (4) 11 June and (60) 27 October 1991; **Glashagh Burn**, Cashel Wood (H615803), (1) 12 April, (30) 31 July and (3) 2 October 2000; **Gortin Water**, Gortin Bridge (H782792), (1) 27 March, (1) 3 July and (1) 26 September 2000; **Granagh Burn**, Carrickmore (H615803), (1) 12 April, (30) 31 July and (3) 2 October 2000; **Lissan Water**, Drumgrass Bridge (H806816), (4) 14 March 1991 and (2) 10 June 1993; **Oughtmame Burn**, Oughtmame (H625937), (1) 7 August 2000; **R. Ballinderry**, Doorless (H835764), (1) 30 July and (2) 2 October 1990; **R. Blackwater**, Caledon Bridge (H759446), (3) 26 September 1991; **R. Blackwater**, Derrymeen Bridge (H625530), (3) 22 October 1991; **R. Camowen**, Donnelly’s Bridge (H464730), (8) 8 April and (11) 3 September 1990; **R. Cleen**, Kiltermon Bridge (H475482), (12) 26 April, (26) 7 August and (20) 2 November 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (5) 27 July 2000; **R. Cloghfin**, Black Hill (H512706), (1) 14 April and (16) 12 September 1991; **R. Coolaghty**, Coolaghty (H257673), (3) 22 March, (12) 12 August and (6) 2 November 2000; **R. Derg**, Aghyaran Bridge (H191806), (1) 6 August and (99) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (17) 22 May and (1) 12 November 1990; **R. Glenelly**, Clougherny Bridge (H563913), (1) 21 May 1990; **R. Owenkillev**, Broughderg Bridge (H684853), (4) 12 April, (10) 31 July and (6) 2 October 2000; **R. Owenkillev**, Killymore Bridge (H438873), (1) 18 June and (2) 7 September 1990; **R. Owenkillev**, Monanameal Bridge (H613847), (1) 7 April and (179) 7 October 1991; **R. Owenreagh**, B84 Road Bridge (H330658), (2) 21 July and (1) 25 November 2000; **R. Owenreagh**, Cashel Bridge (H582822), (1) 16 June and (43) 8 October 1991; **R. Strule**, Moyle Bridge (H411861) (8) 9 April, (3) 18 June and (2) 3 September 1990; **Tullynadall Burn**, Tullynadall (H447906), (3) 10 August and (2) 5 October 2000.

11. **Polycentropus irroratus** (Curtis, 1835) **First records for Northern Ireland**

*Polycentropus irroratus* is a rare species compared with *P. flavomaculatus* and only reported from four sites (Fig. 11). However, the species is widespread on the island (O’Connor, 1987).

**RIVPACS records**

**ARMAGH:** Forkhill R., Forkhill Lower Bridge (J015157), (11) 23 October 1991.

**DERRY (LONDONDERRY):** R. Moyola, New Bridge (H956905), (1) 5 June 1990.

**FERMANAGH:** Foxhill Burn, Drumcree (H279529), (2) 10 November 2000; **R. Arney**, Brockagh (H175375), (1) 25 April 1990.
12. *Polycentropus kingi* McLachlan, 1881

Previously recorded from Co. Antrim (King and Halbert, 1910), *Polycentropus kingi* was only recorded from four sites (Fig. 12).

**RIVPACS records**

**ANTRIM:** *Douglas Burn*, Lynnas Bridge (J227998), (4) 16 May and (3) 14 June 2000; *R. Glenarm*, Glenarm (D310149), (1) 30 May 1990.

**DOWN:** *R. Annalong*, Annalong Bridge (J374198), (2) 23 May 1991; *R. Shimna*, Tollymore Forest (J353323), (1) 23 May 1991.

**PSYCHOMYIIDAE**

13. *Psychomyia pusilla* (Fabricius, 1781)

Previously recorded from Counties Antrim, Armagh and Derry (King and Halbert, 1910; Murphy and Carter, 1984), *Psychomyia pusilla* is widely distributed (Fig. 13).

**RIVPACS records**

**ANTRIM:** *Dunnstown Burn*, Dunnstown (D048095), (11) 16 May 2000; *Kellswater*, Rock Bridge (J160983), (8) 2 August 1990; *R. Clady*, Glenone Bridge (C963038), (4) 5 June 1990.

**ARMAGH:** *R. Callan*, Paper Mill Bridge (H857392), (2) 3 July 1990.

**DERRY (LONDONDERRY):** *R. Agivey*, Glen Ullin (C792124), (6) 16 May 2000; *R. Ballinderry*, Ballinderry Bridge (H927798), (18) 25 May and (3) 2 November 1990.

**FERMANAGH:** *Cooneen Water*, Legatilla (H455396), (2) 8 November 2000; *Foxhill Burn*, Drumcreen (H279529), (1) 24 May and (1) 10 November 2000; *Lisnabane Burn*, Lisnabane Bridge (H379447), (17) 24 May and (1) 9 November 2000; *R. Colebrooke*, Tullyreagh Cross (H378441), (1) 17 September 1990; *R. Roogagh* (Glen R.), Garrison (G941518), (1) 27 April 1990.

**TYRONE:** *Ballygawley R.* (Ballygawley Water), Lismore Bridge (H630538), (3) 11 June and (4) 22 October 1991; *Ballynahatty Water* (R. Owenreagh), Ballynahatty (H437673), (1) 8 April and (19) 20 June 1990; *Fury R.*, Belalastera Bridge (H552517), (2) 26 February and (4) 22 October 1991; *R. Ballinderry*, Doorless (H835764), (1) 2 October 1990; *R. Camowen*, Donnelly’s Bridge (H464730), (1) 21 June 1990; *R. Cloghfin*, Black Hill (H512706), (1) 24 June and (40) 12 September 1991; *R. Derg*, Aghyarann Bridge (H191806), (25) 9 April 1990; *R. Derg*, Crewe Bridge (H315845), (1) 22 May 1990; *R. Strule*, Moyle Bridge (H411861), (2) 18 June 1990; *R. Owenreagh*, B84 Road Bridge (H330658), (1) 24 May 2000.

14. *Tinodes waeneri* (Linnaeus, 1758)

Previously recorded from Counties Antrim, Armagh, Derry, Down and Fermanagh (McLachlan, 1885; King and Halbert, 1910; Murphy and Carter, 1984; O’Connor, Bond and
O’Connor, 2013, *Tinodes waeneri* is widely distributed (Fig. 14).

**RIVPACS records**

**ANTRIM:** *Crew Burn*, Carrols Bridge (J134707), (7) 22 May 2000; **R. Clogh**, Glarryford Bridge (D062131), (1) 5 November 1990; **R. Crumlin**, Airport Bridge (J192767), (2) 14 August 1990 and (3) 8 October 1992; **R. Main**, Dunmore Bridge (J087896), (8) 5 November 1990.

**DERRY (LONDONDERRY):** **R. Aghadowey**, White Bridge (C879228), (4) 29 May and (1) 13 August 1990; **R. Owenbeg**, Dungiven (C683098), (8) 11 April and (8) 5 September 1990.


**TYRONE:** **Black Water**, Carrickaness Bridge (H297743), (1) 10 April 2000; **Tullynadall Burn**, Tullynadall (H447906), (1) 5 October 2000.

**HYDROPSYCHIDAE**

15. *Cheumatopsyche lepida* (Pictet, 1834) **First record for Northern Ireland**

*Cheumatopsyche lepida* was only collected at one site (Fig. 15). However, the species is widespread on the island (O’Connor, 1987).

**RIVPACS record**

**TYRONE:** **R. Strule**, Moyle Bridge (H411861), (2) 18 June 1990.

16. *Hydropsyche angustipennis* (Curtis, 1834) **First records for Northern Ireland**

*Hydropsyche angustipennis* is widely distributed (Fig. 16).

**RIVPACS records**

**ANTRIM:** **R. Bush**, Seneirl Bridge (C942360), (129) 21 March, (10) 31 July and (18) 6 November 1990; **R. Main** (Killagan Water), Dundermot Bridge (D057130), (16) 28 March and (24) 18 October 1990.

**ARMAGH:** **R. Cusher**, Knock Bridge (J039508), (8) 2 April, (1) 12 June and (16) 12 September 1990.

**DOWN:** **Newry R.**, Carnmeen (J075303), (72) 13 March 1990.

**FERMANAGH:** **Lisblake Burn**, Brockagh (H169373), (1) 27 April and (5) 10 November 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (1) 9 November 2000; **R. Boho**, Boho
17. Hydropsyche instabilis (Curtis, 1834)

Previously recorded from the River Clogh in Co. Antrim (Carter and Wood, 1995), *Hydropsyche instabilis* is widely distributed (Fig. 17).

**RIVPACS records**

**ANTRIM:** Cashel Burn, Downstream Bridge (D173069), (1) 15 May and (4) 25 October 2000; Crew Burn, Carrols Bridge (J134707), (1) 22 May 2000; Doagh R. tributary, Dixons Corner (J258937), (6) 16 May, (8) 13 June and (11) 18 September 2000; Douglas Burn, Lynnas Bridge (J227998), (1) 25 October 2000; Glenariff R., Callisnagh Bridge (D224214), (30) 30 May and (6) 15 August 1990; Glynn R., Glynn (J408999), (2) 20 February, (16) 6 June and (32) 14 November 1991; Legnagooly Burn, Legnagooly Bridge (D132128), (36) 16 May, (26) 19 June and (42) 25 October 2000; R. Bush, Ballyhoe (D077291), (7) 15 May and (8) 24 October 1991; R. Clady (Clady Water), Dunadry (J194846), (4) 22 February 1991; Ross Burn, Rossburn (J159973), (8) 22 May, (8) 14 June and (18) 25 October 2000; Six Mile Water, Ballyboley Bridge (J315950), (60) 16 May and (16) 12 June 2000.

**DERRY (LONDONDERRY):** R. Agivey, Glen Ullin (C792124), (1) 16 May 2000; R. Douglas, Boheradaile (H774967), (21) 16 October 2000; R. Owenalena, B84 Road Bridge (C743060), (2) 16 May 2000; R. Owenrigh, Carnanbane (C669067), (1) 16 June 1990 and (1) 7 April 1991.

**FERMANAGH:** Cooneen Water, Legatillida (H455396), (8) 30 April and (12) 8 November 2000; Foxhill Burn, Drumcreeen (H279529), (15) 10 November 2000; R. Arney, Brockagh (H175375), (4) 25 April 1990; R. Black, Drumkeenagh (H018435), (23) 27 April, (3) 18 July and (10) 20 September 1990; R. Lack, Croneen (H256665), (2) 1 November 2000.

**TYRONE:** Black Water, Carrickaness Bridge (H297743), (4) 15 November 2000; Fury R., Belalastera Bridge (H552517), (4) 11 June and (12) 27 October 1991; Lissan Water, Drumgrass Bridge (H806816), (96) 14 March and (4) 18 November 1991, (5) 10 June 1993; R. Coolaghty, Coolaghty (H257673), (4) 22 March and (5) 2 November 2000; R. Owenreagh, B84 Road Bridge (H330658), (2) 25 November 2000.
18. *Hydropsyche pellucidula* (Curtis, 1834)  

*Hydropsyche pellucidula* is widely distributed (Fig. 18).

**RIVPACS records**

**ANTRIM:** Coopers Water, Boomers Bridge (J216757), (2) 6 September 2000; Doagh R., Dunamoy (J260935), (8) 25 February and (2) 6 September 1991; Doagh R. tributary, Dixons Corner (J258937), (2) 18 September 2000; Douglas Burn, Lynnas Bridge (J227998), (2) 16 May and (3) 25 October 2000; Dunstown Burn, Dunstown (D048095), (4) 25 October 2000; Glenariff R., Callisnagh Bridge (D224214), (4) 19 November 1990; Glynn R., Glynn (J408999), (1) 20 February and (16) 14 November 1991; Granagh Burn, Carrickmore (H604721), (1) 5 April 2000; Kells Water, Rock Bridge (J160983), (48) 30 March, (147) 2 August and (38) 29 October 1990; Legnagooly Burn, Legnagooly Bridge (D132128), (43) 25 October 2000; R. Blackwater, Caledon Bridge (H759446), (1) 27 March and (9) 11 June 1991; R. Bush, Seneirl Bridge (C942360), (1) 21 March and (48) 31 July 1990; R. Clady (Clady Water), Dunary (J194846), (17) 21 October 1991; R. Clady, Glenone Bridge (C963038), (52) 2 March, (12) 5 June and (15) 12 October 1990; R. Clogh, Glarryford Bridge (D062131), (32) 28 March and (8) 5 November 1990; R. Dervock, Iderown Bridge (D021334), (68) 21 March, (8) 31 July and (8) 6 November 1990; R. Glenarm, Glenarm (D310149), (8) 30 May, (44) 15 August and (4) 22 November 1990; R. Glenshesk, B15 Road Bridge (D126406), (4) 14 August and (2) 19 November 1990; R. Main, Dunmore Bridge (J087896), (16) 28 March, (10) 2 August and (8) 5 November 1990; Ross Burn, Rossburn (J159973), (1) 22 May 2000.

**ARMAGH:** Forkhill R., Forkhill Lower Bridge (J015157), (8) 25 March 1991; Kilnasaggart (R.), Kilnasaggart Bridge (J060150), (16) 3 April and (2) 23 October 2000; R. Callan, Paper Mill Bridge (H857392), (64) 5 April, (4) 3 July and (116) 1 October 1990.

**DERRY (LONDONDERRY):** R. Aghadowey, White Bridge (C879228), (4) 13 August and (144) 30 October 1990; R. Ballinderry, Ballinderry Bridge (H927798), (348) 13 August and (26) 2 November 1990; R. Douglas, Boheradaile (H774967), (1) 16 October 2000; R. Faughan, Ardmore (C474134), (12) 5 August and (2) 11 November 1990; R. Mayoghill, Caheny Bridge (C889191), (1) 16 May and (21) 21 September 2000; R. Owenalena, B84 Road Bridge (C743060), (6) 26 September 2000; R. Owenbeg, Dungiven (C683098), (16) 11 April and (8) 5 September 1990; R. Owenrigh, Carnbane (C669067), (4) 5 September 1990; R. Roe, Corick Bridge (C751063), (4) 11 April and (4) 5 September 1990.

**DOWN:** Cassy Water, Cassy Water Bridge (J238149), (7) 5 September 1991; Newry R., Carnmeen (J075303), (71) 13 March and (1) 13 September 1990; R. Annaclay, Annaclay Bridge (J448484), (8) 10 July and (44) 2 October 1990; Upper Bann, Hilltown (J218291), (12) 12 March and (17) 25 September 1990.
FERMANAGH: Cooneen Water, Legatillida (H455396), (4) 30 April, (11) 7 August and (17) 8 November 2000; Foxhill Burn, Drumcreen (H279529), (1) 24 May, (13) 15 August and (18) 10 November 2000; Lisblake Burn, Brockagh (H169373), (1) 27 April 2000; Lisnabane Burn, Lisnabane Bridge (H379447), (9) 10 August 2000; R. Arney, Brockagh (H175375), (75) 25 April, (129) 21 July and (388) 18 September 1990; R. Ballinamallard, Magheracross (H281537), (4) 24 May, (13) 15 August and (18) 10 November 2000; Lisnabane Burn, Lisnabane Bridge (H379447), (9) 22 April, (12) 25 July and (2) 19 September 1990; R. Bannagh, Bannagh Bridge (H162654), (4) 20 April and (8) 24 October 1990; R. Black, Drumkeenagh (H018435), (23) 27 April and (10) 20 September 1990; R. Colebrooke, Tullyreagh Cross (H378441), (1) 19 April and (3) 17 September 1990; R. Garvary, Larkhill (H009630), (8) 20 April and (8) 25 October 1990; R. Glendurragh, Ederny (H222652), (16) 26 April, (32) 24 July and (3) 21 September 1990; R. Lack, Croneen (H256665), (1) 12 August 2000; R. Roogagh (Glen R.), Garrison (G941518), (1) 18 July and (2) 20 September 1990; R. Sillees, Derrygonnelly (H118521), (16) 21 April, (1) 19 July and (16) 23 October 1990.

TYRONE: Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (32) 26 February, (38) 11 June and (97) 22 October 1991; Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (9) 8 April, (2) 20 June and (82) 2 September 1990; Black Water, Carrickaness Bridge (H297743), (4) 15 November 2000; Eskragh Water (Quiggery Water), Seskinore Mill Bridge (H472635), (1) 28 February 1991; Fairywater, Mullanatoomog (H392766), (50) 7 August and (8) 12 November 1990; Fury R., Belalastera Bridge (H552517), (6) 26 February and (4) 27 October 1991; Glashagh Burn, Cashel Wood (H615803), (1) 12 April 2000; Granagh Burn, Carrickmore (H604721), (4) 26 July and (3) 13 November 2000; Oughtmame Burn, Oughtmame (H625937), (1) 17 April 2000; R. Blackwater, Caledon Bridge (H759446), (1) 27 March, (9) 11 June and (146) 26 September 1991; R. Blackwater, Derrymeen Bridge (H625530), (53) 26 February and (29) 22 October 1991; R. Camowen, Donnelly’s Bridge (H464730), (1) 3 September 1990; R. Cleen, Kiltermo Bridge (H475482), (1) 2 November 2000; R. Cloghfin, Black Hill (H512706), (3) 14 April and (124) 12 September 1991; R. Derg, Aghyaran Bridge (H191806), (1) 6 September 1990; R. Derg, Crewe Bridge (H315845), (16) 6 August and (1) 12 November 1990; R. Glenelly, Clougherny Bridge (H563913), (123) 6 August and (2) 13 November 1990; R. Owenkillew, Killymore Bridge (H438873), (33) 7 September 1990; R. Owenkillew, Monanameal Bridge (H613847), (1) 7 April and (1) 7 October 1991; R. Owenreagh, Cashel Bridge (H582822), (8) 7 April and (205) 8 October 1991; R. Strule, Moyle Bridge (H411861), (3) 3 September 1990; Quiggery Water, Edergoole Bridge (H449678), (10) 8 April and (32) 2 September 1990; Tullynadall Burn, Tullynadall (H447906), (1) 5 October 2000.
19. **Hydropsyche siltalai** Döhler, 1963

Previously recorded from the River Clogh in Co. Antrim (Carter and Wood, 1995), *Hydropsyche siltalai* is widely distributed (Fig. 19).

**RIVPACS records**

**ANTRIM:** Cashel Burn, Downstream Bridge (D173069), (15) 15 May, (4) 26 July and (20) 25 October 2000; Coopers Water, Boomers Bridge (J216757), (2) 6 September 2000; Doagh R., Dunamoy (J260935), (8) 25 February, (2) 5 June and (96) 6 September 1991; Doagh R. tributary, Dixo’s Corner (J258937), (11) 16 May, (5) 13 June and (5) 18 September 2000; Douglas Burn, Lynnas Bridge (J227998), (39) 16 May, (9) 14 June and (31) 25 October 2000; Dunnstown Burn, Dunnstown (D048095), (1) 16 May and (65) 25 October 2000; Glenariff R., Callisnagh Bridge (D224214), (30) 30 May 1990; Glynn R., Glynn (J408999), (1) 20 February and (40) 14 November 1991; Kellswater, Rock Bridge (J160983), (280) 30 March, (7) 2 August and (38) 29 October 1990; Legnagooly Burn, Legnagooly Bridge (D132128), (7) 16 May, (16) 19 June and (43) 25 October 2000; R. Blackwater, Caledon Bridge (H759446), (4) 27 March and (24) 26 September 1991; R. Blackwater, Derrymeen Bridge (H625530), (5) 26 February, (1) 11 June and (52) 22 October 1991; R. Braid, Harryville Bridge (D105030), (1) 30 March and (1) 29 October 1990; R. Bush, Ballyhoe (D077291), (17) 15 May, (1) 30 July and (24) 24 October 1991; R. Bush, Seneirl Bridge (C942360), (41) 21 March and (8) 6 November 1990; R. Clady (Clady Water), Dunadry (J194846), (4) 22 February, (3) 30 May and (97) 21 October 1991; R. Clady, Glenone Bridge (C963038), (44) 2 March and (12) 5 June 1990; R. Clogh, Glarryford Bridge (D062131), (8) 28 March and (8) 5 November 1990; R. Crumlin, Airport Bridge (J192767), (1) 8 October 1992; R. Dervock, Iderown Bridge (D021334), (477) 21 March, (8) 31 July and (56) 6 November 1990; R. Glenarm, Glenarm (D310149), (64) 30 May, (4) 15 August and (18) 22 November 1990; R. Glenshesk, B15 Road Bridge (D126406), (1) 30 May, (12) 14 August and (2) 19 November 1990; R. Larne, Owens Bridge (D378008), (8) 6 June and (60) 14 November 1991; R. Main, Dunmore Bridge (J087896), (160) 28 March, (50) 2 August and (24) 5 November 1990; R. Main, Killagan Water, Dundermot Bridge (D057130), (1) 28 March 1990; Ross Burn, Rossburn (J159973), (19) 22 May, (19) 14 June and (21) 25 October 2000; Six Mile Water, Ballyboley Bridge (J315950), (22) 16 May, (56) 12 June and (136) 18 September 2000; Six Mile Water, below Ballyclare (J285903), (4) 6 March and (83) 26 September 1990.

**ARMAGH:** Forkhill R., Forkhill Lower Bridge (J015157), (176) 25 March and (80) 23 October 1991; Kilnasaggart (R.), Kilnasaggart Bridge (J060150), (13) 3 April and (21) 23 October 2000; R. Callan, Paper Mill Bridge (H857392), (8) 5 April, (4) 3 July and (116) 1 October 1990; R. Cusher, Knock Bridge (J039508), (16) 12 June 1990.
DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (4) 16 May 2000; Miltown Burn, A29 Road Bridge (H848997), (1) 8 May 2000; R. Aghadowey, White Bridge (C879228), (4) 29 May, (4) 13 August and (144) 30 October 1990; R. Agivey, Glen Ullin (C792124), (17) 16 May and (11) 29 June 2000; R. Ballinderry, Ballinderry Bridge (H927798), (145) 25 May, (72) 13 August and (2) 2 November 1990; R. Ballinderry, Corkhill Bridge (H734793), (8) 14 March and (20) 18 November 1991; R. Douglas, Boheradaille (H774967), (7) 8 May and (30) 16 October 2000; R. Faughan, Ardmore (C474134), (24) 20 May and (7) 11 November 1990; R. Inver, Inver Bridge (C535010), (5) 26 April 2000; R. Mayoghill, Caheny Bridge (C889191), (25) 16 May, (3) 29 June and (90) 21 September 2000; R. Owenalena, B84 Road Bridge (C743060), (19) 16 May, (5) 5 July and (4) 26 September 2000; R. Owenbeg, Dungiven (C683098), (104) 11 April, (34) 16 June and (48) 5 September 1990; R. Owenrigh, Carnbane (C669067), (5) 16 June and (9) 5 September 1990, (6) 7 April 1991; R. Roe, Corick Bridge (C751063), (4) 11 April and (5) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (14) 22 May and (9) 7 June 2000; Cassy Water, Cassy Water Bridge (J238149), (3) 20 May 1990, (1) 21 February and (59) 5 September 1991; Newry R., Carneen (J075303), (71) 13 March and (2) 14 June 1990; R. Annacloy, Annacloy Bridge (J448484), (2) 16 March, (8) 10 July and (44) 2 October 1990; R. Annalong, Annalong Bridge (J374198), (60) 6 March, (28) 23 May and (24) 24 October 1991; R. Kinnahalla, upstream New Bridge (J239289), (7) 22 May, (27) 21 June and (6) 4 September 2000; R. Mullagh, Mullagh Bridge (J332160), (16) 22 May and (132) 1 November 2000; R. Shankys, Tornamrock Park (J225255), (10) 3 April and (3) 21 June 2000; R. Shimna, Tollymore Forest (J353323), (2) 11 March and (18) 20 November 1991; Spences R., Glassdrumman Bridge (J377228), (4) 22 May, (9) 5 June and (17) 1 November 2000; Upper Bann, Ballydown (J138450), (20) 20 March and (64) 12 June 1990, (217) 24 September 1992; Upper Bann, Hilltown (J218291), (376) 12 March, (27) 8 June and (491) 25 September 1990.

FERMANAGH: Cooneen Water, Legatillida (H455396), (4) 30 April and (7) 8 November 2000; Foxhill Burn, Drumcreeen (H279529), (60) 24 May and (100) 10 November 2000; Lisnabane Burn, Lisnabane Bridge (H379447), (1) 24 May and (1) 9 November 2000; R. Ballinamallard, Magheracross (H281537), (40) 22 April and (2) 19 September 1990; R. Bannagh, Bannagh Bridge (H162654), (20) 20 April and (34) 24 October 1990; R. Black, Drumkeenan Bridge (H018435), (8) 27 April 1990; R. Colebrooke, Tullyreagh Cross (H378441), (26) 17 September 1990; R. Garvary, Larkhill (H009630), (36) 20 April, (8) 23 July and (24) 25 October 1990; R. Glendurragh, Ederny (H222652), (12) 26 April 1990; R. Lack, Croneen (H256665), (1) 12 August and (2) 1 November 2000; R. Roogagh (Glen R.), Garrison (G941518), (24) 27 April, (8) 18 July and (25) 20 September 1990; R. Sillees, Derrygonnelly
(H118521), (16) 21 April, (2) 19 July and (48) 23 October 1990; R. Termon, Killynoogan (H111659), (4) 24 October 1990.

**TYRONE:** Ballygawley R. (Ballygawley Water), Lismore Bridge (H630538), (16) 26 February, (60) 11 June and (61) 22 October 1991; Black Water, Carrickaness Bridge (H297743), (2) 15 November 2000; Dreenan Burn, Dreenan Bridge (H212843), (1) 28 March and (3) 15 November 2000; Dunnyboe Burn, Dunnyboe Bridge (H459993), (9) 19 April and (5) 24 October 2000; Eskragh Water (Quiggs Water), Seskinore Mill Bridge (H472635), (3) 3 October 1991; Fairywater, Mullanatoomog (H392766), (67) 23 May and (16) 12 November 1990; Fury R., Belalastera Bridge (H552517), (8) 11 June 1991; Glashagh Burn, Cashel Wood (H615803), (1) 12 April, (1) 31 July and (1) 2 October 2000; Gortin Water, Gortin Bridge (H782792), (3) 27 March, (1) 3 July and (28) 26 September 2000; Granagh Burn, Carrickmore (H604721), (9) 5 April and (6) 13 November 2000; Lissan Water, Drumgrass Bridge (H806816), (16) 14 March and (8) 18 November 1991; Oughtmame Burn, Oughtmame (H625937), (6) 17 April and (20) 5 October 2000; R. Ballinderry, Doorless (H835764), (2) 2 October 1990; R. Blackwater, Caledon Bridge (H759446), (1) 27 March 1991; R. Blackwater, Derrymeen Bridge (H625530), (5) 26 February and (52) 22 October 1991; R. Camowen, Donnelly’s Bridge (H464730), (59) 8 April, (2) 21 June and (196) 3 September 1990; R. Cloghfin, Ballykeel Bridge (H572671), (3) 13 November 2000; R. Cloghfin, Black Hill (H512706), (80) 14 April, (34) 24 June and (124) 12 September 1991; R. Coolaghty, Coolaghty (H257673), (1) 22 March and (1) 2 November 2000; R. Derg, Aghyaran Bridge (H191806), (19) 9 April, (105) 6 August and (8) 6 September 1990; R. Derg, Crewe Bridge (H315845), (66) 22 May and (65) 12 November 1990; R. Glenelly, Clougherny Bridge (H563913), (92) 21 May and (25) 13 November 1990; R. Owenkillew, Killymore Bridge (H438873), (2) 10 April, (1) 18 June and (33) 7 September 1990; R. Owenkillew, Monenameal Bridge (H613847), (4) 7 April, (1) 30 June and (8) 7 October 1991; R. Ownereakh, B84 Road Bridge (H330658), (1) 25 November 2000; R. Ownereakh, Cashel Bridge (H582822), (22) 7 April 1991, (18) 16 June and (205) 8 October 1991; R. Strule, Moyle Bridge (H411861), (248) 9 April, (42) 18 June and (26) 3 September 1990; Quiggs Water, Edergoole Bridge (H449678), (18) 8 April and (16) 2 September 1990; Tullynadall Burn, Tullynadall (H447906), (7) 19 April and (63) 5 October 2000.

**GOERIDAE**

20. *Goera pilosa* (Fabricius, 1775)

Previously recorded from Co. Armagh (King and Halbert, 1910), *Goera pilosa* was only found at six sites in the south-west (Fig. 20).
RIVPACS records


TYRONE: **Ballynahatty Water** (R. Owenreagh), Ballynahatty (H437673), (1) 8 April and (2) 2 September 1990; **Quiggery Water**, Edergoole Bridge (H449678), (11) 2 September 1990.

21. *Silo nigricornis* (Pictet, 1834) First records for Northern Ireland

*Silo nigricornis* is widely distributed but no specimens were taken in the south-east (Fig. 21).

RIVPACS records

ANTRIM: **R. Dervock**, Iderown Bridge (D021334), (2) 21 March, (8) 31 July and (1) 6 November 1990; **Six Mile Water**, Ballyboley Bridge (J315950), (5) 16 May, (1) 12 June and (5) 18 September 2000.

ARMAGH: **R. Callan**, Paper Mill Bridge (H857392), (2) 5 April 1990.


FERMANAGH: **Lisblake Burn**, Brockagh (H169373), (1) 27 April, (14) 14 August and (2) 10 November 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (1) 10 August 2000; **R. Ballinamallard**, Magheracross (H281537), (1) 19 September 1990; **R. Boho**, Boho (H134445), (4) 23 October 1990.


22. *Silo pallipes* (Fabricius, 1781)

Previously recorded from Counties Antrim and Armagh (King and Halbert, 1910; Fahy, 1972), *Silo pallipes* is widely distributed (Fig. 22).

RIVPACS records

ANTRIM: **Coopers Water**, Boomers Bridge (J216757), (1) 22 May 2000; **Doagh R. tributary**, Dixons Corner (J258937), (3) 18 September 2000; **Douglas Burn**, Lynnas Bridge (J227998), (1) 14 June and (1) 25 October 2000; **R. Bush**, Ballyhoe (D077291), (2) 15 May 1991; **R. Clady** (Clady Water), Dunadry (J194846), (64) 22 February 1991; **R. Glenshesk**, B15 Road Bridge (D126406), (1) 19 November 1990; **Ross Burn**, Rossburn (J159973), (1) 14 June and (7) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (22) 16 May, (16) 12 June and (5) 18 September 2000.

DERRY (LONDONDERRY): **Miltown Burn**, A29 Road Bridge (H848997), (1) 8 May

**DOWN:** **R. Annalong**, Annalong Bridge (J374198), (1) 23 May 1991.

**FERMANAGH:** **Cooneen Water**, Legatillida (H455396), (1) 30 April and (8) 8 November 2000; **Foxhill Burn**, Drumcreen (H279529), (2) 24 May and (10) 10 November 2000; **Lisblake Burn**, Brockagh (H169373), (9) 27 April 2000; **Lisnabane Burn**, Lisnabane Bridge (H379447), (7) 24 May, (6) 10 August and (14) 9 November 2000; **R. Ballinamallard**, Magheracross (H281537), (9) 22 April and (17) 19 September 1990; **R. Black**, Drumkeenagh (H018435), (1) 27 April, (4) 18 July and (1) 20 September 1990; **R. Garvary**, Larkhill (H009630), (17) 20 April and (6) 25 October 1990; **R. Lack**, Croneen (H256665), (4) 22 March and (1) 1 November 2000.

**TYRONE:** **Black Water**, Carrickaness Bridge (H297743), (1) 10 April 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (1) 19 July and (7) 24 October 2000; **Fury R.**, Belalastera Bridge (H552517), (1) 26 February, (4) 11 June and (12) 27 October 1991; **Glashagh Burn**, Cashel Wood (H615803), (1) 12 April and (1) 2 October 2000; **Granagh Burn**, Carrickmore (H604721), (1) 5 April and (6) 13 November 2000; **Lissan Water**, Drumgrass Bridge (H806816), (2) 14 March and (56) 18 November 1991, (2) 10 June 1993; **Oughtmame Burn**, Oughtmame (H625937), (3) 17 April and (3) 5 October 2000; **R. Cleen**, Kiltemon Bridge (H475482), (27) 26 April and (3) 2 November 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (1) 27 July and (2) 13 November 2000; **R. Coolaghty**, Coolaghty (H257673), (3) 22 March and (4) 2 November 2000; **R. Owenkillew**, Broughderg Bridge (H684853), (2) 12 April 2000; **R. Owenreagh**, B84 Road Bridge (H330658), (1) 25 November 2000; **Tullynadall Burn**, Tullynadall (H447906), (2) 19 April 2000.

**LEPIDOSTOMATIDAE**

23. *Lepidostoma basale* (Kolenati, 1848)  
First record for Northern Ireland

*Lepidostoma basale* was only found at one site (Fig. 23). Elsewhere in Ireland, the species has been reported from Co. Kerry (O’Connor, 1987). There is also another published but unlocalised Irish record (Donohue *et al*., 2009).

**RIVPACS record**

**FERMANAGH:** **R. Roogagh** (Glen R.), Garrison (G941518), (59) 20 September 1990.

24. *Lepidostoma hirtum* (Fabricius, 1775)

Previously recorded from Co. Antrim (King and Halbert, 1910), *Lepidostoma hirtum* is widely distributed (Fig. 24).

**RIVPACS records**
ANTRIM: Cashel Burn, Downstream Bridge (D173069), (1) 15 May and (16) 25 October 2000; Douglas Burn, Lynnas Bridge (J227998), (6) 16 May 2000; Dunnstown Burn, Dunnstown (D048095), (1) 19 June and (9) 25 October 2000; Kells Water, Rock Bridge (J160983), (8) 30 March and (2) 29 October 1990; Legnagooly Burn, Legnagooly Bridge (D132128), (1) 25 October 2000; R. Blackwater, Caledon Bridge (H759446), (5) 27 March 1991; R. Braid, Harryville Bridge (D105030), (2) 29 October 1990; R. Bush, Ballyholie (D077291), (8) 24 October 1991; R. Bush, Seneirl Bridge (C942360), (25) 21 March and (9) 6 November 1990; R. Clady, Glenone Bridge (C963038), (4) 12 October 1990; R. Clogh, Glarryford Bridge (D062131), (3) 28 March and (3) 5 November 1990; R. Dervock, Iderown Bridge (D021334), (1) 21 March and (1) 6 November 1990; R. Main, Dunmore Bridge (J087896), (3) 28 March and (24) 5 November 1990.


DERRY (LONDONDERRY): Cam Burn, Ballynacally Beg (C843212), (22) 16 May and (1) 29 June 2000; R. Aghadowey, White Bridge (C879228), (3) 30 October 1990; R. Agivey, Glen Ullin (C792124), (2) 16 May and (1) 21 September 2000; R. Ballinderry, Ballinderry Bridge (H927798), (17) 25 May and (16) 2 November 1990; R. Ballinderry, Corkhill Bridge (H734793), (1) 18 November 1991.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (14) 22 May and (12) 7 June 2000; Cassy Water, Cassy Water Bridge (J238149), (2) May 1990 and (1) 21 February 1991; Newry R., Carnmeen (J075303), (31) 13 March, (3) 14 June and (9) 13 September 1990; R. Annacloy, Annacloy Bridge (J448484), (200) 16 March, (8) 10 July and (432) 2 October 1990; R. Annalong, Annalong Bridge (J374198), (1) 6 March, (2) 23 May and (8) 24 October 1991; R. Kinnahalla, upstream New Bridge (J239289), (5) 22 May, (8) 21 June and (1) 4 September 2000; R. Lagan, Bulls Brook (J252516), (1) 6 June 1990; R. Mullagh, Mullagh Bridge (J332160), (414) 22 May, (40) 17 July and (104) 1 November 2000; R. Shimna, Tollymore Forest (J353323), (2) 20 November 1991; Spences R., Glassdrumman Bridge (J377228), (8) 22 May 2000; Upper Bann, Hilltown (J218291), (32) 12 March, (9) 8 June and (51) 25 September 1990.

FERMANAGH: R. Black, Drumkeenanagh (H018435), (1) 27 April 1990; R. Garvary, Larkhill (H009630), (1) 25 October 1990; R. Roogagh (Glen R.), Garrison (G941518), (32) 27 April, (40) 18 July and (8) 20 September 1990; R. Sillees, Derrygonnelly (H118521), (102) 21 April and (1) 19 July 1990; R. Sillees, Drumkeenan New Bridge (H230413), (1) 16 September 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (1) 20 June
LIMNEPHILIDAE

25. *Anabolia nervosa* (Curtis, 1834)

Previous recorded from Counties Armagh and Fermanagh (King and Halbert, 1910; O’Connor, Bond and O’Connor, 2013), *Anabolia nervosa* is widely distributed (Fig. 25).

**RIVPACS records**

**ANTRIM:** *Kellswater*, Rock Bridge (J160983), (21) 30 March 1990; **R. Braid**, Harryville Bridge (D105030), (16) 30 March 1990; **R. Bush**, Seneirl Bridge (C942360), (26) 21 March, (1) 31 July and (8) 6 November 1990; **R. Clogh**, Glarryford Bridge (D062131), (13) 28 March 1990; **R. Crumlin**, Airport Bridge (J192767), (1) 25 May 1990; **R. Main**, Dunmore Bridge (J087896), (3) 28 March and (1) 2 August 1990; **R. Main** (Killagan Water), Dunermot Bridge (D057130), (107) 28 March and (56) 18 October 1990.

**ARMAGH:** **R. Cusher**, Knock Bridge (J039508), (16) 2 April, (24) 12 June and (3) 12 September 1990.

**DERRY (LONDONDERRY):** **R. Aghadowey**, White Bridge (C879228), (2) 29 May 1990.

**DOWN:** **R. Lagan**, Bulls Brook (J252516), (2) 7 March 1990; **Upper Bann**, Ballydown (J138450), (16) 20 March 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (123) 8 April, (35) 20 June and (2) 2 September 1990; Eskragh Water (Quiggery Water), Seskinore Mill Bridge (H472635), (4) 28 February 1991; Glasgagh Burn, Cashel Wood (H615803), (3) 12 April 2000; R. Ballinderry, Doorless (H835764), (26) 9 May 1990; R. Blackwater, Derrymeen Bridge (H625530), (1) 11 June 1991; R. Camowen, Donnelly’s Bridge (H464730), (167) 8 April and (17) 21 June 1990; R. Cloghfin, Black Hill (H512706), (1) 24 June 1991; R. Derg, Crew Bridge (H315845), (12) 22 May 1990; R. Owenkillew, Broughderg Bridge (H684853), (2) 12 April 2000; R. Owenreagh, Cashel Bridge (H582822), (4) 7 April and (8) 16 June 1991; R. Strule, Moyle Bridge (H411861), (2) 9 April and (1) 18 June 1990; Quiggery Water, Edergoole Bridge (H449678), (1) 8 April 1990.

26. Drusus annulatus (Stephens, 1837) First records for Northern Ireland

Drusus annulatus is widely distributed (Fig. 26).

RIVPACS records

ANTRIM: Coopers Water, Boomers Bridge (J216757), (1) 7 June 2000; Crew Burn, Carrols Bridge (J134707), (1) 22 May and (1) 7 June 2000; Doagh R., Dunamoy (J260935), (2) 25 February and (1) 6 September 1991; Glenariff R., Callisnagh Bridge (D224214), (2) 19 November 1990; Doagh R. tributary, Dixon’s Corner (J258937), (1) 16 May and (1) 13 June 2000; Legnagooly Burn, Legnagooly Bridge (D132128), (1) 16 May and (5) 25 October 2000; R. Clady (Clady Water), Dunadry (J194846), (21) 22 February 1991; R. Dervock, Ideron Bridge (D021334), (25) 21 March 1990; R. Larne, Owens Bridge (D378008), (1) 6 June and (126) 14 November 1991; Ross Burn, Rossburn (J159973), (1) 22 May, (5) 14 June and (4) 25 October 2000; Six Mile Water, Ballyboley Bridge (J315950), (42) 16 May and (5) 12 June 2000.

DERRY (LONDONDERRY): Cam Burn, Ballymacally Beg (C843212), (1) 29 June 2000; R. Ballinderry, Corkhill Bridge (H734793), (1) 18 November 1991; R. Douglas, Boheradaile (H774967), (1) 8 May and (12) 16 October 2000; R. Inver, Inver Bridge (C535010), (2) 26 April and (8) 28 September 2000; R. Owenalena, B84 Road Bridge (C743060), (4) 26 September 2000; R. Owenbigh, Carnanbane (C669067), (3) 5 September 1990.

DOWN: Begny Hill Feeder, Woodford Bridge (J289502), (2) 22 May and (2) 7 June 2000; R. Kinnahalla, upstream New Bridge (J239289), (2) 22 May 2000.

FERMANAGH: Lisblake Burn, Brockagh (H169373), (6) 27 April 2000; R. Boho, Boho (H134445), (69) 21 April, (34) 16 July and (15) 23 October 1990.

TYRONE: Black Water, Carrickaness Bridge (H297743), (1) 15 November 2000; Dreenan Burn, Dreenan Bridge (H212843), (5) 15 November 2000; Dunnyboe Burn, Dunnyboe Bridge
(H459993), (1) 19 April and (1) 24 October 2000; Granagh Burn, Carrickmore (H604721), (1) 26 July 2000; Lissan Water, Drumgrass Bridge (H806816), (8) 18 November 1991; R. Cleen, Kiltermon Bridge (H475482), (3) 26 April 2000; R. Owenreagh, B84 Road Bridge (H330658), (4) 25 November 2000; Tullynadall Burn, Tullynadall (H447906), (4) 5 October 2000.

27. *Ecclisopteryx dalecarlica* Kolenati, 1848  
First records for Northern Ireland

*Ecclisopteryx dalecarlica* is a local species (Fig. 27) as in the rest of Ireland (O’Connor, unpublished data).

RIVPACS records

DERRY (LONDONDERRY): R. Agivey, Glen Ullin (C792124), (3) 29 June and (45) 21 September 2000; R. Mayoghill, Caheny Bridge (C889191), (1) 21 September 2000.

TYRONE: Dunnyboe Burn, Dunnyboe Bridge (H459993), (22) 19 July and (14) 24 October 2000; Granagh Burn, Carrickmore (H604721), (1) 26 July and (4) 13 November 2000; R. Glenelly, Clougherny Bridge (H563913), (1) 21 May and (1) 13 November 1990; R. Owenkillew, Broughderg Bridge (H684853), (4) 2 October 2000; R. Owenkillew, Killymore Bridge (H438873), (3) 7 September 1990; R. Owenkillew, Monanameal Bridge (H613847), (1) 7 April 1991.

28. *Limnephilus flavicornis* (Fabricius, 1787)

Previously recorded from Counties Armagh and Fermanagh (King and Halbert, 1910; O’Connor, Bond and O’Connor, 2013), *Limnephilus flavicornis* was only collected at two sites (Fig. 28).

RIVPACS records

ARMAGH: R. Cusher, Knock Bridge (J039508), (16) 2 April 1990.

FERMANAGH: R. Finn, Wattle Bridge (H425203), (1) 23 April 1990.

29. *Limnephilus lunatus* Curtis, 1834

Previously recorded from Counties Antrim, Armagh, Derry and Fermanagh (King and Halbert, 1910; Murphy and Carter, 1984; O’Connor, Bond and O’Connor, 2013), *Limnephilus lunatus* is widely distributed (Fig. 29).

RIVPACS records

ANTRIM: Doagh R., Dunamoy (J260935), (1) 25 February 1991; Dunnstown Burn, Dunnstown (D048095), (2) 19 May 2000; R. Braid, Harryville Bridge (D105030), (9) 30 March 1990; R. Bush, Seneirl Bridge (C942360), (8) 21 March 1990; R. Main (Killagan Water), Dundermot Bridge (D057130), (2) 28 March 1990.

DERRY (LONDONDERRY): R. Aghadowey, White Bridge (C879228), (2) 29 May 1990;
R. Moyola, New Bridge (H956905), (2) 5 June 1990.

DOWN: Newry R., Carnmeen (J075303), (1) 14 June 1990.

FERMANAGH: R. Colebrooke, Tullyreeagh Cross (H378441), (1) 17 July 1990; R. Sillees, Drumkeen New Bridge (H230413), (64) 23 April and (8) 16 July 1990.

TYRONE: Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (18) 8 April 1990; Fairywater, Mullanatoomog (H392766), (1) 23 May 1990; R. Ballinderry, Doorless (H835764), (1) 9 May 1990; R. Camowen, Donnelly’s Bridge (H464730), (1) 8 April and (9) 21 June 1990.

30. *Limnephilus marmoratus* Curtis, 1834

Previously recorded from Counties Antrim, Armagh and Fermanagh (King and Halbert, 1910; O’Connor, Bond and O’Connor, 2013), *Limnephilus marmoratus* was only taken at three sites (Fig. 30).

**RIVPACS records**

ARMAGH: R. Cusher, Knock Bridge (J039508), (16) 2 April 1990.

DOWN: Newry R., Carnmeen (J075303), (1) 14 June 1990.

FERMANAGH: R. Finn, Wattle Bridge (H425203), (4) 22 October 1990.

31. *Limnephilus rhombicus* (Linnaeus, 1758)

Previously recorded from Co. Armagh (King and Halbert, 1910), *Limnephilus rhombicus* was only taken at two sites (Fig. 31).

**RIVPACS records**

DERRY (LONDONDERRY): R. Moyola, New Bridge (H956905), (4) 27 September 1990.

FERMANAGH: R. Finn, Wattle Bridge (H425203), (16) 22 October 1990.

32. *Sericostoma personatum* (Spence, 1826)

Previously recorded from Counties Antrim, Armagh, Derry and Fermanagh (King and Halbert, 1910; Fahy, 1972; Murphy and Carter, 1984), *Sericostoma personatum* is widely distributed (Fig. 32).

**RIVPACS records**

ANTRIM: Cashel Burn, Downstream Bridge (D173069), (8) 15 May, (1) 26 July and (14) 25 October 2000; Crew Burn, Carrols Bridge (J134707), (8) 22 May and (2) 7 June 2000; Doagh R., Dunamoy (J260935), (1) 25 February and (1) 5 June 1991; Douglas Burn, Lynnas Bridge (J227998), (1) 16 May 2000; Dunnstown Burn, Dunnstown (D048095), (1) 19 June and (2) 25 October 2000; Glenariff R., Callisnagh Bridge (D224214), (1) 30 May 1990; Glynn R.,
Glynn (J408999), (1) 14 November 1991; **Kellwater**, Rock Bridge (J160983), (8) 30 March 1990; **Legnagooly Burn**, Legnagooly Bridge (D132128), (5) 16 May, (1) 19 June and (2) 25 October 2000; **R. Braid**, Harryville Bridge (D105030), (3) 30 March 1990; **R. Bush**, Seneirl Bridge (C942360), (1) 21 March 1990; **R. Clady** (Clady Water), Dunadry (J194846), (1) 22 February and (2) 21 October 1991; **R. Clady**, Glenone Bridge (C963038), (1) 5 June and (1) 12 October 1990; **R. Dervock**, Iderown Bridge (D021334), (1) 21 March, (1) 31 July and (1) 6 November 1990; **Ross Burn**, Rossburn (J159973), (2) 22 May, (1) 14 June and (4) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (2) 22 May, (1) 14 June and (2) 18 September 2000.

**ARMAGH:** **Forkhill R.**, Forkhill Lower Bridge (J015157), (8) 25 March and (3) 23 October 1991; **Kilnasaggart (R.)**, Kilnasaggart Bridge (J060150), (1) 17 May and (1) 23 October 2000; **R. Callan**, Paper Mill Bridge (H857392), (8) 5 April 1990.

**DERRY (LONDONDERRY):** **Cam Burn**, Ballynacally Beg (C843212), (2) 16 May 2000; **Miltown Burn**, A29 Road Bridge (H848997), (2) 15 August 2000; **R. Aghadowey**, White Bridge (C879228), (3) 30 October 1990; **R. Agivey**, Glen Ullin (C792124), (2) 16 May, (2) 29 June and (13) 21 September 2000; **R. Ballinderry**, Corkhill Bridge (H734793), (1) 14 March, (1) 29 July and (7) 18 November 1991; **R. Douglas**, Boheradaile (H774967), (30) 15 August and (2) 16 October 2000; **R. Inver**, Inver Bridge (C535010), (1) 26 April 2000; **R. Mayoghill**, Caheny Bridge (C889191), (5) 16 May, (2) 29 June and (1) 21 September 2000; **R. Owenalena**, B84 Road Bridge (C743060), (2) 16 May and (8) 26 September 2000.

**DOWN:** **Begny Hill Feeder**, Woodford Bridge (J289502), (9) 22 May and (4) 7 June 2000; **Cassy Water**, Cassy Water Bridge (J238149), (4) 5 September 1991; **R. Annacloy**, Annacloy Bridge (J448484), (2) 16 March and (8) 2 October 1990; **R. Annalong**, Annalong Bridge (J374198), (1) 6 March 1991; **R. Kinnahalla**, upstream New Bridge (J239289), (1) 22 May and (4) 21 June 2000; **R. Lagan**, Bulls Brook (J252516), (1) 6 June 1990; **R. Mullagh**, Mullagh Bridge (J332160), (1) 22 May 2000; **R. Shankys**, Tornamrock Park (J225255), (2) 3 April, (3) 21 June and (1) 4 September 2000; **R. Shinnna**, Tollymore Forest (J353323), (2) 20 November 1991; **Upper Bann**, Hilltown (J218291), (9) 25 September 1990; **Spences R.**, Glassdrumman Bridge (J377228), (3) 22 May, (5) 3 June and (1) 1 November 2000.

**FERMANAGH:** **Lisblake Burn**, Brockagh (H169373), (23) 27 April 2000; **R. Ballinamallard**, Magheracross (H281537), (8) 19 September 1990; **R. Black**, Drumkeenagh (H018435), (2) 18 July and (2) 20 September 1990; **R. Garvary**, Larkhill (H009630), (1) 25 October 1990; **R. Roogagh** (Glen R.), Garrison (G941518), (8) 27 April, (16) 18 July and (24) 20 September 1990.

**TYRONE:** **Ballynahatty Water** (R. Owenreagh), Ballynahatty (H437673), (1) 2 September
1990; **Black Water**, Carrickaness Bridge (H297743), (2) 31 July and (3) 15 November 2000; **Dreenan Burn**, Dreenan Bridge (H212843), (3) 9 August and (1) 15 November 2000; **Dunnyboe Burn**, Dunnyboe Bridge (H459993), (1) 19 April and (1) 19 July 2000; **Fury R.**, Belalastera Bridge (H552517), (1) 26 February 1991; **Glashagh Burn**, Cashel Wood (H615803), (3) 12 April, (1) 31 July and (2) 2 October 2000; **Gortin Water**, Gortin Bridge (H782792), (4) 27 March, (3) 3 July and (3) 26 September 2000; **Granagh Burn**, Carrickmore (H604721), (1) 5 April 2000; **Lissan Water**, Drumgrass Bridge (H806816), (1) 14 March and (16) 18 November 1991, (7) 10 June 1993; **Oughtname Burn**, Oughtname (H625937), (1) 17 April 2000; **R. Camowen**, Donnelly’s Bridge (H464730), (1) 8 April 1990; **R. Cleen**, Kiltermon Bridge (H475482), (2) 26 April and (1) 2 November 2000; **R. Cloghfin**, Ballykeel Bridge (H572671), (1) 27 July and (3) 13 November 2000; **R. Derg**, Aghyaran Bridge (H191806), (2) 6 September 1990; **R. Derg**, Crewe Bridge (H315845), (1) 22 May and (1) 12 November 1990; **R. Owenreagh**, B84 Road Bridge (H330658), (1) 24 May and (4) 25 November 2000; **Tullynadall Burn**, Tullynadall (H447906), (5) 19 April, (2) 10 August and (2) 5 October 2000.

**ODONTOCERIDAE**

33. *Odontocerum albicorne* (Scopoli, 1763) **First records for Northern Ireland**

Surprisingly, no specimens were found in the south-east (Fig. 33) as *Odontocerum albicorne* is a widespread Irish species.

**RIVPACS records**

**ANTRIM:** **Legnagooly Burn**, Legnagooly Bridge (D132128), (1) 16 May, (3) 19 June and (4) 25 October 2000; **Six Mile Water**, Ballyboley Bridge (J315950), (14) 16 May, (32) 12 June and (6) 18 September 2000.

**DERRY (LONDONDERRY):** **R. Agivey**, Glen Ullin (C792124), (2) 16 May, (1) 29 June and (1) 21 September 2000.

**FERMANAGH:** **R. Garvary**, Larkhill (H009630), (2) 25 October 1990.

**TYRONE:** **Lissan Water**, Drumgrass Bridge (H806816), (3) 18 November 1991.

**BERAEIDAE**

34. *Beraea maurus* (Curtis, 1834)

Previously recorded from Co. Antrim (King and Halbert, 1910), *Beraea maurus* was only found at four sites (Fig. 34).

**RIVPACS records**

**DERRY (LONDONDERRY):** **R. Douglas**, Boheradaile (H774967), (1) 15 August 2000.

**FERMANAGH:** **Foxhill Burn**, Drumcreen (H279529), (1) 15 August 2000.
TYRONE: Fury R., Belalastera Bridge (H552517), (2) 26 February 1991; Glenariff R., Callisnagh Bridge (D224214), (1) 19 November 1990.

35. Beraea pullata (Curtis, 1834)
Previously recorded from Co. Armagh (King and Halbert, 1910), only one specimen of Beraea pullata was found (Fig. 35).

RIVPACS records
FERMANAGH: R. Roogagh (Glen R.), Garrison (G941518), (1) 20 September 1990.

36. Beraeodes minutus (Linnaeus, 1761) First records for Northern Ireland
The discovery of the larvae of Beraeodes minutus at six sites in Northern Ireland is very interesting as it greatly increases the known distribution of this poorly known species (Fig. 36). Elsewhere in Ireland, B. minutus has only been reported from Counties Cavan, Kerry, Meath, Tipperary and Waterford. All the records are larval ones except for a single female recently discovered in a sample from Co. Waterford (O’Connor, 2014).

RIVPACS records
ANTRIM: R. Clogh, Glarryford Bridge (D062131), (1) 5 November 1990.
FERMANAGH: R. Colebrooke, Tullyreagh Cross (H378441), (6) 19 April and (9) 17 September 1990; R. Glendurragh, Ederny (H222652), (3) 21 September 1990.
TYRONE: Black Water, Carrickaness Bridge (H297743), (2) 15 November 2000; R. Camowen, Donnelly’s Bridge (H464730), (1) 8 April 1990; R. Owenreagh, B84 Road Bridge (H330658), (3) 25 November 2000.

LEPTOCERIDAE
37. Athripsodes albifrons (Linnaeus, 1758) First records for Northern Ireland
Surprisingly, Athripsodes albifrons was only taken at five sites and was not found in the north-east (Fig. 37).

RIVPACS records
DOWN: Newry R., Carnmeen (J075303), (17) 14 June 1990.
FERMANAGH: R. Arney, Brockagh (H175375), (8) 21 July 1990; R. Black, Drumkeenagh (H018435), (1) 27 April 1990.
TYRONE: R. Camowen, Donnelly’s Bridge (H464730), (6) 8 April and (9) 21 June 1990; R. Strule, Moyle Bridge (H411861), (35) 18 June 1990.

38. Athripsodes aterrimus (Stephens, 1836)
Previously recorded from Co. Armagh (King and Halbert, 1910), Athripsodes aterrimus is
widely distributed except in the north (Fig. 38).

**RIVPACS records**

**ANTRIM:** R. Main, Dunmore Bridge (J087896), (4) 28 March 1990; Six Mile Water, below Ballyclare (J285903), (1) 26 September 1990.

**DOWN:** Newry R., Carmmeen (J075303), (30) 13 March, (17) 14 June and (69) 13 September 1990; R. Lagan, Bulls Brook (J252516), (60) 7 March, (48) 6 June and (24) 8 October 1990; Upper Bann, Ballydown (J138450), (4) 24 September 1992.

**FERMANAGH:** R. Finn, Wattle Bridge (H425203), (16) 23 April and (14) 22 October 1990.

**TYRONE:** Fairywater, Mullanatoomog (H392766), (1) 23 May 1990; R. Camowen, Donnelly’s Bridge (H464730), (5) 8 April 1990.

39. *Athripsodes bilineatus* (Linnaeus, 1758) First records for Northern Ireland

The numerous larval records of *Athripsodes bilineatus* from the south-west and south-east is very surprising for previously the species has only been known from a small number of specimens in Ireland (Fig. 39). King and Halbert (1910) recorded the species from Lucan (Co. Dublin) and the River Shannon (Co. Westmeath). JPOC has confirmed the identity of 2♂♂ from the Westmeath site which are preserved in the National Museum of Ireland (O'Connor, unpublished data) but has not found any other Irish adults during his research despite examining the heads and genitalia of numerous specimens belonging to the *A. albifrons/bilineatus* group. Perhaps *A. bilineatus* is easier to collect in the larval stage or is locally abundant in Ireland. In Britain, it is widely distributed but not common (Barnard and Ross, 2012).

**RIVPACS records**

**DOWN:** Upper Bann, Ballydown (J138450), (8) 20 March 1990; Upper Bann, Hilltown (J218291), (8) 25 September 1990.

**FERMANAGH:** Foxhill Burn, Drumcreen (H279529), (1) 24 May and (2) 10 November 2000; Lisnabane Burn, Lisnabane Bridge (H379447), (2) 24 May and (1) 9 November 2000; R. Ballinamallard, Magheracross (H281537), (2) 22 April 1990; R. Bannagh, Bannagh Bridge (H162654), (7) 20 April 1990; R. Glendurragh, Ederny (H222652), (1) 21 September 1990; R. Termon, Killoyoogan (H111659), (4) 24 October 1990.

**TYRONE:** Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (91) 8 April 1990; Fury R., Belalastera Bridge (H552517), (16) 27 October 1991; R. Cleen, Kiltermon Bridge (H475482), (4) 26 April and (6) 2 November 2000.

40. *Athripsodes cinereus* (Curtis, 1834)

Previously recorded from Counties Antrim, Armagh and Derry (King and Halbert, 1910;
Murphy and Carter, 1984), *Atrhirodes cinereus* is widely distributed (Fig. 40).

**RIVPACS records**

**ANTRIM:** Kells Water, Rock Bridge (J160983), (8) 30 March 1990; **R. Braid,** Harryville Bridge (D105030), (35) 29 October 1990; **R. Bush,** Seneirl Bridge (C942360), (525) 21 March, (19) 31 July and (150) 6 November 1990; **R. Clogh,** Glarryford Bridge (D062131), (12) 28 March and (17) 5 November 1990, (2) 1 August 1991; **R. Main,** Dunmore Bridge (J087896), (4) 28 March 1990.

**ARMAGH:** Forkhill R., Forkhill Lower Bridge (J015157), (2) 24 July 1991; **R. Cusher,** Knock Bridge (J039508), (64) 2 April, (1) 12 June and (32) 12 September 1990.

**DERRY (LONDONDERRY):** **R. Aghadowey,** White Bridge (C879228), (2) 30 October 1990; **R. Ballinderry,** Ballinderry Bridge (H927798), (631) 25 May, (5) 13 August and (103) 2 November 1990.

**DOWN:** Newry R., Carnmeen (J075303), (30) 13 March and (69) 13 September 1990; **R. Lagan,** Bulls Brook (J252516), (4) 7 March and (16) 6 June 1990; **Upper Bann,** Ballydown (J138450), (28) 20 March and (4) 12 June 1990, (4) 24 September 1992.

**FERMANAGH:** **R. Arney,** Brockagh (H175375), (52) 25 April and (1) 21 July 1990; **R. Ballinamallard,** Magheracross (H281537), (1) 22 April and (1) 19 September 1990; **R. Sillees,** Derrygonnelly (H118521), (32) 21 April and (4) 23 October 1990; **R. Sillees,** Drumkeen New Bridge (H230413), (64) 16 July and (1) 16 September 1990.

**TYRONE:** Ballynahatty Water (R. Owenreagh), Ballynahatty (H437673), (91) 8 April, (52) 20 June and (117) 2 September 1990; **Eskragh Water** (Quiggy Water), Seskinore Mill Bridge (H472635), (1) 30 June 1991; **Fairywater,** Mullanatoomog (H392766), (48) 23 May and (32) 12 November 1990; **R. Ballinderry,** Doorless (H835764), (2) 9 May and (17) 2 October 1990; **R. Blackwater,** Caledon Bridge (H759446), (1) 26 September 1991; **R. Blackwater,** Derrymeeen Bridge (H625530), (3) 22 October 1991; **R. Camowen,** Donnelly’s Bridge (H464730), (5) 8 April, (8) 21 June and (1) 3 September 1990; **R. Clohghfin,** Black Hill (H512706), (36) 14 April, (1) 24 June and (20) 12 September 1991; **R. Derg,** Aghyaran Bridge (H191806), (8) 6 September 1990; **R. Derg,** Crewe Bridge (H315845), (4) 12 November 1990; **Quiggy Water,** Edergoole Bridge (H449678), (29) 8 April, (1) 20 June and (116) 2 September 1990.

### 41. *Ceraclea dissimilis* (Stephens, 1836) First records for Northern Ireland

*Ceraclea dissimilis* was only taken at four sites (Fig. 41).

**RIVPACS records**

**DOWN:** Newry R., Carnmeen (J075303), (17) 14 June 1990; **R. Annaclay,** Annaclay
42. **Ceraclea nigronervosa** (Retzius, 1783)  
*First records for Northern Ireland*

*Ceraclea nigronervosa* was only found at four sites in the south-west (Fig. 42).

**RIVPACS records**

**FERMANAGH:** R. Arney, Brockagh (H175375), (2) 18 September 1990; R. Sillees, Drumkeen New Bridge (H230413), (32) 16 July and (1) 16 September 1990.

**TYRONE:** Fairywater, Mullanatoomog (H392766), (31) 7 August 1990; R. Derg, Aghyaran Bridge (H191806), (1) 6 September 1990.

43. **Mystacides azurea** (Linnaeus, 1761)

Previously recorded from Co. Armagh (King and Halbert, 1910), the species was only found in the east (Fig. 43).

**RIVPACS records**

**ANTRIM:** R. Braid, Harryville Bridge (D105030), (1) 30 March and (37) 29 October 1990; R. Clogh, Glarryford Bridge (D062131), (17) 5 November 1990; R. Main, Dunmore Bridge (J087896), (1) 2 August and (1) 5 November 1990.

**DERRY (LONDONDERRY):** R. Moyola, New Bridge (H956905), (12) 5 June and (42) 27 September 1990.

**DOWN:** Newry R., Carnmeen (J075303), (69) 13 September 1990; R. Kinnahalla, upstream New Bridge (J239289), (1) 4 September 2000; **Upper Bann,** Ballydown (J138450), (1) 24 September 1992.

**TYRONE:** Eskragh Water (Quiggery Water), Seskinore Mill Bridge (H472635), (1) 3 October 1991; R. Ballinderry, Doorless (H835764), (3) 9 May and (59) 2 October 1990; R. Derg, Crewe Bridge (H315845), (1) 6 August 1990; R. Strule, Moyele Bridge (H411861), (44) 9 April, (1) 18 June and (1) 3 September 1990.

**Note**

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References


FIGURE 1. RIVPACS distribution of *Rhyacophila dorsalis* in Northern Ireland.

*Rhyacophila dorsalis* (Curtis, 1834)

FIGURE 2. RIVPACS distribution of *Rhyacophila munda* in Northern Ireland.

*Rhyacophila munda* McLachlan, 1862
FIGURE 3. RIVPACS distribution of *Agraylea multipunctata* in Northern Ireland.

![Map of Agraylea multipunctata](image1)

**Agraylea multipunctata** Curtis, 1834

FIGURE 4. RIVPCAS distribution of *Allotrichia pallicornis* in Northern Ireland.

![Map of Allotrichia pallicornis](image2)

**Allotrichia pallicornis** (Eaton, 1873)
FIGURE 5. RIVPACS distribution of *Philopotamus montanus* in Northern Ireland.

![Map of Philopotamus montanus](image1)

FIGURE 6. RIVPCAS distribution of *Cyrnus trimaculatus* in Northern Ireland.

![Map of Cyrnus trimaculatus](image2)
FIGURE 7. RIVPACS distribution of *Neureclipsis bimaculata* in Northern Ireland.

![Map of Neureclipsis bimaculata](image)

**Neureclipsis bimaculata** (Linnaeus, 1758)

FIGURE 8. RIVPACS distribution of *Plectrocnemia conspersa* in Northern Ireland.

![Map of Plectrocnemia conspersa](image)

**Plectrocnemia conspersa** (Curtis, 1834)
FIGURE 9. RIVPACS distribution of *Plectrocnemia geniculata* in Northern Ireland.

FIGURE 10. RIVPACS distribution of *Polycentropus flavomaculatus* in Northern Ireland.
FIGURE 11. RIVPACS distribution of *Polycentropus irroratus* in Northern Ireland.

**Polycentropus irroratus** (Curtis, 1835)

FIGURE 12. RIVPACS distribution of *Polycentropus kingi* in Northern Ireland.

**Polycentropus kingi** McLachlan, 1881
FIGURE 13. RIVPACS distribution of *Psychomyia pusilla* in Northern Ireland.

*Psychomyia pusilla* (Fabricius, 1781)

FIGURE 14. RIVPACS distribution of *Tinodes waeneri* in Northern Ireland.

*Tinodes waeneri* (Linnaeus, 1758)
FIGURE 15. RIVPACS distribution of *Cheumatopsyche lepida* in Northern Ireland.

![Cheumatopsyche lepida (Pictet, 1834)](image)

FIGURE 16. RIVPACS distribution of *Hydropsyche angustipennis* in Northern Ireland.

![Hydropsyche angustipennis (Curtis, 1834)](image)
FIGURE 17. RIVPACS distribution of *Hydropsyche instabilis* in Northern Ireland.

*Hydropsyche instabilis (Curtis, 1834)*

FIGURE 18. RIVPACS distribution of *Hydropsyche pellucidula* in Northern Ireland.

*Hydropsyche pellucidula (Curtis, 1834)*
FIGURE 19. RIVPACS distribution of *Hydropsyche siltalai* in Northern Ireland.

FIGURE 20. RIVPACS distribution of *Goera pilosa* in Northern Ireland.
FIGURE 21. RIVPACS distribution of *Silo nigricornis* in Northern Ireland.

![Silo nigricornis (Pictet, 1834)](image1)

FIGURE 22. RIVPACS distribution of *Silo pallipes* in Northern Ireland.

![Silo pallipes (Fabricius, 1781)](image2)
FIGURE 23. RIVPACS distribution of *Lepidosoma basale* in Northern Ireland.

![Lepidosoma basale distribution map](image1)

**Lepidosoma basale (Kolenati, 1848)**

FIGURE 24. RIVPACS distribution of *Lepidostoma hirtum* in Northern Ireland.

![Lepidostoma hirtum distribution map](image2)

**Lepidostoma hirtum (Fabricius, 1775)**
FIGURE 25. RIVPACS distribution of *Anabolia nervosa* in Northern Ireland.

![Anabolia nervosa (Curtis, 1834)](image1)

FIGURE 26. RIVPACS distribution of *Drusus annulatus* in Northern Ireland.

![Drusus annulatus (Stephens, 1837)](image2)
FIGURE 27. RIVPACS distribution of *Ecclisopteryx dalecarlica* in Northern Ireland.

FIGURE 28. RIVPACS distribution of *Limnephilus flavicornis* in Northern Ireland.
FIGURE 29. RIVPACS distribution of *Limnephilus lunatus* in Northern Ireland.

![Map of Limnephilus lunatus](image)

**Limnephilus lunatus** Curtis, 1834

FIGURE 30. RIVPACS distribution of *Limnephilus marmoratus* in Northern Ireland.

![Map of Limnephilus marmoratus](image)

**Limnephilus marmoratus** Curtis, 1834
FIGURE 31. RIVPACS distribution of *Limnephilus rhombicus* in Northern Ireland.

![Map of Limnephilus rhombicus](image1)

**Limnephilus rhombicus** (Linnaeus, 1758)

FIGURE 32. RIVPACS distribution of *Sericostoma personatum* in Northern Ireland.

![Map of Sericostoma personatum](image2)

**Sericostoma personatum** (Spence, 1826)
FIGURE 33. RIVPACS distribution of *Odontocerum albicorne* in Northern Ireland.

*Odontocerum albicorne* (Scopoli, 1763)

FIGURE 34. RIVPACS distribution of *Berea maurus* in Northern Ireland.

*Berea maurus* (Curtis, 1834)
FIGURE 35. RIVPACS distribution of *Beraea pullata* in Northern Ireland.

![Map of Beraea pullata distribution in Northern Ireland](image1)

**Beraea pullata (Curtis, 1834)**

FIGURE 36. RIVPACS distribution of *Beraeodes minutus* in Northern Ireland.

![Map of Beraeodes minutus distribution in Northern Ireland](image2)

**Beraeodes minutus (Linnaeus, 1761)**
FIGURE 37. RIVPACS distribution of *Athripsodes albifrons* in Northern Ireland.

**Athripsodes albifrons** (Linnaeus, 1758)

FIGURE 38. RIVPACS distribution of *Athripsodes aterrimus* in Northern Ireland.

**Athripsodes aterrimus** (Stephens, 1836)
FIGURE 39. RIVPACS distribution of *Athripsodes bilineatus* in Northern Ireland.

![Map of Athripsodes bilineatus](image1)

**Athripsodes bilineatus (Linnaeus, 1758)**

FIGURE 40. RIVPACS distribution of *Athripsodes cinereus* in Northern Ireland.

![Map of Athripsodes cinereus](image2)

**Athripsodes cinereus (Curtis, 1834)**
FIGURE 41. RIVPACS distribution of *Ceraclea dissimilis* in Northern Ireland.

![Map of **Ceraclea dissimilis**](image)

**Ceraclea dissimilis** (Stephens, 1836)

FIGURE 42. RIVPACS distribution of *Ceraclea nigronervosa* in Northern Ireland.

![Map of **Ceraclea nigronervosa**](image)

**Ceraclea nigronervosa** (Retzius, 1783)
FIGURE 43. RIVPACS distribution of *Mystacides azurea* in Northern Ireland.

![Map of Mystacides azurea distribution in Northern Ireland](image1)

FIGURE 44. Topographical map of Northern Ireland.

![Topographical map of Northern Ireland](image2)
FIGURE 45. Map of Ireland showing longitude and latitude.
FIGURE 46. The counties of Ireland.
DISTRIBUTION RECORDS OF IRISH CHIRONOMIDAE (DIPTERA): PART 2 – ORTHOCLADIINAE

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Abstract
This is the second of three papers dealing with records and distribution data of species-level taxa of Chironomidae currently known to occur in Ireland. Information is presented on 226 species-level taxa in the subfamily Orthocladiinae. The majority of the 9,420 records cited have not been published previously.

Key words: Chironomidae, Orthocladiinae, Ireland, records, distribution

Introduction
This is the second of three papers presenting records and distribution data of Chironomidae in Ireland. In Part 1 information was given on 4,360 records of 84 species-level taxa in the subfamilies Buchonomyiinae, Podonominae, Tanypodinae, Telmatogotoninae, Diamesinae and Prodiamesinae (Murray et al., 2013). Data is presented in this work, Part 2, on the distribution in Ireland of 226 species-level taxa in the subfamily Orthocladiinae. The majority of the 9,420 records cited have not been published previously. Background information and details of various publications, theses and reports consulted but not cited in Part 2 is given in Murray et al. (2013).

Record citation format
The taxonomic sequence of genera follows Ashe and O’Connor (2012) and the revised status of some genus-group taxa in Andersen et al. (2013) is adopted. Species are documented alphabetically within genus. Distribution records are cited by County (Fig. 1) and by Hydrometric Area (Fig. 2) since the early life-history stages of the Chironomidae are predominantly aquatic. County names and Hydrometric Area numbers (HA ##) are given in
bold capital font. For further explanation of hydrometric areas see Murray et al. (2013). Complementary information provides the water body type and name from which the record derives, district and/or collection site, Irish Grid Reference (in parentheses) given as letter and six figure number where possible, date(s) of record(s), collector and source of record (in parentheses). If the source is a publication, thesis or report it is cited by author and year. Where the source is a personal unpublished record by the collector/determinator then his/her initials are given in parentheses and the “collector” entry is omitted to avoid unnecessary duplication. Where the source is a multi-author citation the initials of the collector/determinator preceeded the citation.

**Abbreviations used in the text**

AHH - A. H. Haliday; AF - A. Fitzgerald; AJOS - A. J. O’Sullivan; BC - B. Connolly; BH - B. Healy; BK - B. Kennedy; BPH - B. P. Hayes; CAD - C. A. Duigan; CB - C. Bradley; CCO - C. C. Omoku; CD - C. Dowling; CFH - C. F. Humphries; CNP - Connemara National Park; COK - C. O’Keefe; CP - C. Plant; DAM - D. A. Murray; DEM - D. E. Morgan; d/s - downstream; DJD - D. J. Douglas; EF - E. Fahy; EMcE - E. McEntee; EPA - Environmental Protection Agency; FC - F. Curran; FWE - F. W. Edwards; GF - G. Free; GM - G. Morgan; GNP - Glenveagh National Park; GO - G. Oliver; GPF - G. P. Forde; GW - G. Walton; HA - Hydrometric Area; HD - H. Daoud; IFT - Inland Fisheries Trust; JB - J. Bracken; JC - J. Casey; JNH - J. N. Halbert; JL - J. Lynch; LMcL - L. Mc Larnon; JPOC - J. P. O’Connor; JRB - J-R. Baars; KB - K. Bond; KC - K. Clabby; L - Lough; LF - L. Finnegan; LJH - L. J. Heneghan; MB - M. Berrigan; MC - M. Carroll; MG - M. Grey; MH - M. Holmes; MJC - M. J. Costello; MKQ - M. Kelly-Quinn; MK - M. Kennedy; MOG - M. O’Grady; MS - M. Sommerfield; Mt - Mountain / Mount; NH - N. Hackett; NMI - National Museum of Ireland; NOM - N. O’Maoilideigh; pe - pupal exuviae; PG - P. Gargan; PHG - P. H. Grimshaw; PHL - P. H. Langton; PJA - P. J. Ashe; PMcC - P. McCreesh; POD - P. O’Dwyer; PS - P. Sweeney; R - River; RF - R. French; RH - R. Hernan; RL - R. Little; SC - S. Collins; SF - S. Fahy; SMcB - S. McBean; SR - S. Reilly; SW - S. Wistow; TOF - T. O’Flaherty; UCD - University College Dublin; u/s - upstream; UU - University of Ulster; WM - W. Murray; WEF - W. E. Frost; WMNP - Wicklow Mountains National Park; WT - W. Trodd.

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**SUBFAMILY ORTHOCLADIINAE**

*Acamptocladius reissi* Cranston and Sæther, 1982

**MAYO:** Clare Island - pond east of Maum road, Clare Island (L710863), 20 August 2002 (Murray and Murray, 2003). WICKLOW: **HA 10** - L. Ouler, Tonelagee (O091023), 8 August 2005, JRB (Murray, 2005).

*Acamptocladius submontanus* (Edwards, 1932)


Acricotopus lucens (Zetterstedt, 1850)

Brillia bifida (Kieffer, 1909)


2004, JRB (DAM).

**Brillia longifurca** Kieffer, 1921


**DERRY**: HA 2 - R. Roe, Deerpark Wood, Limavaddy (C682203), 9 June 2000 and Largy Bridge, Limavaddy (C681202), 14 July 2000 (Langton, 2002); HA 3 - R. Bann, Coleraine (C854304), 12 April, 26 April, 3 July and 22 September 1999, also 16 June 2001, 11 April and 25 April 2010 (PHL).


*Bryophaenocladius aestivus* (Brundin, 1947)

**GALWAY: HA 32** - pond at Administration Centre, CNP, Letterfrack (L715575), 16 September 1986, LJH (Murray, 2005; Murray, 2010).

*Bryophaenocladius femineus* (Edwards, 1929)


*Bryophaenocladius furcatus* (Kieffer, 1916)


*Bryophaenocladius ictericus* (Meigen, 1830)

*Bryophaenocladius muscicola* (Kieffer, 1906)
**DERRY: HA 3 -** R. Bann, Coleraine (C855304), 16 November 2012 (PHL).

*Bryophaenocladius nitidicollis* (Goetghebuer, 1913)

*Bryophaenocladius simus* (Edwards, 1929)
**DERRY: HA 3 -** pond, Ballylintagh Road, Coleraine (C854255), 16 May 2004 (Langton, 2005).

*Bryophaenocladius subvernalis* (Edwards, 1929)

_Bryophaenocladius vernalis_ (Goetghebuer, 1921)


_Bryophaenocladius xanthogyne_ (Edwards, 1929)

WEXFORD: HA 12 - Crossabeg steam, Crossabeg, Castletown (T023270), 6 May 2006, DAM/WM (Murray, 2010).

_Camptocladius stercorarius_ (De Geer, 1776)


/Cardiocladus capucinus_ (Zetterstedt, 1850)


**Cardiocladius fuscus** Kieffer, 1924


**Chaetocladius (Chaetocladius) dentiforceps** (Edwards, 1929)

Chaetocladius (Chaetocladius) dissipatus (Edwards, 1929)


Chaetocladius (Chaetocladius) insolitus Caspers, 1987


Chaetocladius (Chaetocladius) melaleucus (Meigen, 1818)

Chaetocladius (Chaetocladius) perennis (Meigen, 1830)

Chaetocladius (Chaetocladius) piger (Goetghebuer, 1913)

Chaetocladius (Chaetocladius) suecicus (Kieffer, 1916)
*Clunio marinus* Haliday, 1855


*Corynoneura arctica* Kieffer, 1923

Corynoneura carriana Edwards, 1924


Corynoneura celeripes Winnertz, 1852


Corynoneura celtica Edwards, 1924


*Corynoneura coronata* Edwards, 1924


*Corynoneura edwardsi* Brundin, 1949


Corynoneura gratias Schlee, 1968


Corynoneura lacustris Edwards, 1924


*Corynoneura lobata* Edwards, 1924


*Corynoneura scutellata* Winnertz, 1846


*Corynoneura Pe2a* (sensu Langton and Visser, 2003)


*Corynoneurella paludosa* Brundin, 1949


*Cricotopus (Cricotopus) albiforceps* (Kieffer, 1916)

**ANTRIM**: HA 4 - R. Brymore (Brymore Water), Brymore Bridge (D162275), 2 July 2000 (Langton, 2002). **CLARE**: HA 28 - R. Annageeragh, Moyglass Bridge, d/s L. Doo (R078725), and R. Doonbeg, Derryard (Q979644), 30 July 1982 (Hayes, 1991). **CORK**: HA 20 - R. Ilen,

**DERRY:** **HA 3** - pond, near R. Macquosin, Ballytinagh Road, Coleraine (C854255), 16 May 2004 (PHL). R. Bann, Coleraine (C854304), 3 May and 24 June 2000, also 11 April 2010 and 10 August 2012 (PHL).

**DONEGAL:** **HA 37** - R. Eany, d/s Eanybeg confluence (G842815), 10 August 1982 (Hayes, 1991). R. Eanymore, Letterbarra Bridge (G883825) and Drumagra Bridge (G863822), 10 August 1982 (Hayes, 1991).


**GALWAY:** **HA 31** - L. Nahasleam, Maam Cross (L972440), 20 June 2006, EPA (DAM).


**MAYO:** Clare Island - Creggan L., Lecarrow (L689857), 21 August 2002 (Murray and Murray, 2003; Murray, 2005).

**MEATH:** **HA 7** - R. Boyne: Scarriff Bridge (N733527) and Newtown, Trim (N815571), 9 July 1981; Stackallen Bridge (N918713), 12 July 1981 (all Hayes, 1991).


**Cricotopus (Cricotopus) algarum** (Kieffer, 1911) New to Ireland

**CLARE:** **HA 27** - L. Cullaun, Corrofin mid east shore (R317905), 5 April 2006, EPA (EPA).

**Cricotopus (Cricotopus) annulator** Goetghebuer, 1927

**ANTRIM:** **HA 3** - Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 (Langton, 2002). L. Neagh, Churchtown Point (J056852), 22 August 2001 and 31 May 2011 (PHL). R. Kells (Kells R.), Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002): **HA 4** - R. Bush: Conogher Bridge (C963305), 10 September 2000, Stranocum (D009307) and Ballyhoe Bridge (D077294) also a riparian pool at Ballyhoe Bridge (D077294), 2 July 2000 (all Langton, 2002). R. Brymore, Brymore Bridge (D162275) and R. Glendun, Drumfresky,
Cushendun (D193308), 2 July 2000 (Langton, 2002). R. Glenaan, Cushendall (D218288), 17 September 2011 (PHL); Altnahinch Reservoir, Ballymoney (D119234), 22 August 2001 (PHL).


_Cricotopus (Cricotopus) bicinctus_ (Meigen, 1818)


*Cricotopus (Cricotopus) curtus* Hirvenoja, 1973

**Cricotopus (Cricotopus) cylindraceus** (Kieffer, 1908)

**CORK:** HA 18 - R. Blackwater, Keale Bridge, Millstreet (W294936), 2 September 1981 and Ballymacquirk Bridge, Banteer (W382989), 1 September 1981 (Hayes, 1991; Murray, 1996);


**KERRY:** HA 21 - R. Inny, Scarriff Bridge (V504696) and u/s Waterville (V525704), 24 August 1983 (Hayes, 1991; Murray, 1996).

**MAYO:** HA 33 - R. Owenmore, Bangor Erris (F863228), 18 August 1983 (Hayes, 1991).

**SLIGO:** HA 34 - R. Moy, Cloonacool (G493168), 30 August 1982 (Hayes, 1991).

**WICKLOW:** HA 10 - R. Avonmore, Castlehoward (T190833) and R. Avoca, Whitebridge, Tigroney (T198821), 4 August 1983 (Hayes, 1991; Murray, 1996).

**Cricotopus (Cricotopus) ephippium** (Zetterstedt, 1838)

**GALWAY:** HA 32 - L. Aughrusbeg, Cleggan (L557582), 5 June 2007, EPA (DAM).

**KERRY:** HA 22 - R. Flesk, d/s Whitebridge (V987900) and d/s New Bridge (V963885), July to September 1978 (Ashe, 1982).

**KILKENNY:** HA 15 - R. Clogh, Clogh (S565790), 10 March 1976, CD (DAM).

**MAYO:** HA 34 - L. Conn, south basin, Illannaglashy (G207070), 20 August 2008, EPA (DAM): **Clare Island** - L. Leinapollbauty, Lecarrow (L691856), 5 June 2002 (Murray and Murray, 2003).

**OFFALY:** HA 25 - bog lake, Turraun (N150230), 3 June 1999 (Murray, 2005).

**WICKLOW:** HA 10 - R. Glencullen, Knocksink (O218180), 18 May 1987 (Morgan, 1989).

**Cricotopus (Cricotopus) festivellus** (Kieffer, 1906)

**ANTRIM:** HA 3 - R. Kells (Kells R.), Shank Bridge, Kells (J126982), 20 June 2000 (Langton, 2002): **Rathlin Island** - pool (2) east of lighthouse (D164520), pool (3) east of lighthouse (D156516) and L. Craigmacagan (D154498), 24 July 2000 (all PHL); **Menyanthes** pool (D123515), 6 July 2004 (PHL).


**DERRY:** HA 3 - R. Bann, Coleraine (C854304), 22 September 1999, 18 and 25 April, 2 May 2010 (PHL):

**DONEGAL:** HA 38 - L. Altercan, The Rosses (B755158) and L. Mulladerg, The Rosses (B775199), 19 July 2000 (Langton, 2002).

**FERMANAGH:** HA 36 - Toppedmountain L., Tempo, Enniskillen (H310453), 16 August 2011 (PHL).

**GALWAY:** HA 25 - L. Derg, Woodford (M794964), 24 May 2003 (PHL): **HA 29** - Ballyturin L., Ballardiggan, Gort (M496005), 24 May 2003 (PHL):

**HA 30** - L. Corrib, no data (M1545), 1980, BC (DAM): **HA 31** - L. Ardderry, Maam Cross

*Cricotopus (Cricotopus) flavocinctus* (Kieffer, 1924)


*Cricotopus (Cricotopus) fuscus* (Kieffer, 1909)


Cricotopus (Cricotopus) pallidipes Edwards, 1929


**Cricotopus (Cricotopus) pilosellus Brundin, 1956**


**Cricotopus (Cricotopus) polaris Kieffer, 1926**


**TIPPERARY:** **HA 18** - L. Curra, Galtymore Mountain (R867242), 10 August 2005, JRB (DAM).

**WESTMEATH:** **HA 36** - L. Bane, Collinstown (N550712), 23 May, 26 June and 22 August 2006, EPA (EPA): **HA 7** - L. Lene (N510685), 26 April 2006, EPA (DAM).

*Cricotopus (Cricotopus) pulchripes* Verrall, 1912

**ANTRIM:** **HA 4** - R. Brymore (Brymore Water), Brymore Bridge (D162275) and R. Glendun (Glendun R.), Drumfresky, Cushendun (D193308), 2 July 2000 (Langton, 2002).


**DOWN:** **HA 3** - R. Careullion, Hilltown (J213275), R. Rocky (d/s Shanky confluence), Hilltown (J233277) and R. Kinnahalla, Hilltown (J239292), 26 September 1997 (PHL).

**DUBLIN:** **HA 9** - R. Dodder, Bohernabreena aqueduct (O101208), 21 May 1967 (DAM); R. Dodder, headwaters (Maureen’s Brook), Featherbed (O128175), 29 August 1981, PJA (PJA/NMI).

**FERMANAGH:** **HA 36** - R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002).

**GALWAY:** **HA 32** - Glenmore, Letterbrecknaun, Letterfrack, CNP (L750554), 21 September 1986, LJJ (Heneghan, 1987).


**MEATH:** **HA 7** - R. Boyne, New Bridge, Navan (N873679), 18 August 1988, DAM (Murray, 1988).

**TIPPERARY:** **HA 18** - L. Curra, Galtymore Mountain (R867242), 26 May 2005, JRB (DAM).

**TYRONE:** **HA 1** - R. Glenelly, Leaghs Bridge, Mullaghsallagh (H695940), 17 August 2011 (PHL).

*Cricotopus (Cricotopus) similis* Goetghebuer, 1921

**ANTRIM:** **HA 4** - R. Bush, Ballyhoe Bridge (D077294), 2 July 2000 (Langton, 2002).

**CORK:** **HA 20** - R. Bandon: Long Bridge, Dunmanway (W242631), 27 May to 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 25 September 1980; u/s Ballineen (W331537), 31 October 1980 (all Morgan, 1982).

**DERRY:** **HA 3** - R. Agivey, Garvagh (C838154), 30 May


Knockgarrigan, Glen of Imail (S936937) and Stratford Bridge (S895930), 28 July 1981 (Hayes, 1991).

*Cricotopus (Cricotopus) tibialis* (Meigen, 1804)


*Cricotopus (Cricotopus) tremulus* (Linnaeus, 1758)


**Cricotopus (Cricotopus) triannulatus** (Macquart, 1826)


*Cricotopus (Cricotopus) trifascia* Edwards, 1929


Cricotopus (Cricotopus) tristis Hirvenoja, 1973


*Cricotopus (Cricotopus)* Pe 16 sensu Langton and Visser, 2003


*Cricotopus (Isocladius) brevipalpis* Kieffer, 1909


*Cricotopus (Isocladius) intersectus* (Staeger, 1839)


**KERRY**: **HA 22** - R. Caragh, Bealalaw Bridge (V715832), 1975, CD (Dowling et al., 1981).


**MAYO**: **HA 34** - L. Mallard, Castlebar (M121902), 30 September 2004, DAM/WM (DAM).

**MONAGHAN**: **HA 36** - L. Inner, Dartery, Drum (H625173), 6 June 2007, EPA (DAM).

**SLIGO**: **HA 35** - L. Arrow, Ballinafad (G789123), 9 September 2008, EPA (DAM).

**TYRONE**: **HA 3** - L. Neagh, Washing Bay, Coalisland (H903662), 30 May 2002 (PHL).

**WESTMEATH**: **HA 26** - L. Derravaragh, Crookedwood (N468634), 30 August 2007, EPA (DAM).

* Cricotopus (Isocladius) laricomalis Edwards, 1932


**WESTMEATH**: **HA 26** - L. Owel, Mullingar (N421566), 1981 (Forde, 1985).

* Cricotopus (Isocladius) obnixus (Walker, 1856)

**CLARE**: **HA 27** - L. Cullaun, Corrofin, mid east shore (R317905), 7 June and 5 September

**Cricotopus (Isocladius) ornatus** (Meigen, 1818)


**Cricotopus (Isocladius) pilitarsis** (Zetterstedt, 1850)


**Cricotopus (Isocladius) reversus** Hirvenoja, 1973

Cricotopus (Isocladius) speciosus Goetghebuer, 1921

Cricotopus (Isocladius) sylvestris (Fabricius, 1794)
Cricotopus (Isocladius) tricinctus (Meigen, 1818)

Cricotopus (Isocladius) trifasciatus (Meigen, 1810)

*Cricotopus (Isocladius) Pe 2 sensu Langton, 1991 and Langton & Visser, 2003*

[Langton and Visser (2003) consider the possibility that this pupal morphotype may be associated with *C. (I.) relucens* Hirvenoja, 1973].


*Cricotopus (Isocladius) Pe 5 sensu Langton, 1991 and Langton & Visser, 2003*

**GALWAY: HA 32** – L. Kylemore, Letterfrack (L771582), 30 July 2007, EPA (DAM).


*Cricotopus (Nostococladius) lygropis* Edwards, 1929

**Cricotopus ?Isocladius** Pe (sensu Langton, 1991 - p. 208) and Langton & Visser 2003 p. 918

**DONEGAL**: HA 38 - L. Kindrum, Kindrum, Fanad (C186430), 9 September 2009, EPA (DAM).

**Diplocladius cultriger** Kieffer, 1908

**DERRY**: HA 3 - R. Bann, Coleraine (C854304), 17 January 2000 and 6 February 2001 (PHL).


**Epoicocladius ephemerae** (Kieffer, 1924)

**CAVAN**: HA 36 - L. Macnean, lower, Blacklion (H106378), 23 July 2007, EPA (DAM).


**Eukiefferiella ancyla** Svensson, 1986


_Eukiefferiella brevicalcar_ (Kieffer, 1911)

**CAVAN**: **HA 7** - R. Barora tributary, Relaghbeg (N679907), 21 April 1968 (Murray, 1972).


_Eukiefferiella claripennis_ (Lundbeck, 1898)


**Eukiefferiella clypeata** (Thienemann, 1919)


*Eukiefferiella coerulescens* (Kieffer, 1926)


**Eukiefferiella cyanea** Thienemann, 1936  
**MAYO:** Clare Island - R. Dorree, 100m above sea, Maum (L708865), 28 April 2000, DAM/WM (Murray and Murray, 2003).

**Eukiefferiella devonica** (Edwards, 1929)  

**MAYO:**


**Clare Island** - R. Dorree, 100m above sea, Maum, (L708865), 28 April 2000, DAM/WM (Murray and Murray, 2003).

**SLIGO:**

HA 34 - R. Moy, Metal Bridge, Tobercurry (G464138) and Annagh (G466123), 30 August 1982 (Hayes, 1991): **HA 35 - L. Gill, Sligo (G753335), 3 April 2008, EPA (DAM).**

**WEXFORD:**


**WICKLOW:**


**Eukiefferiella dittmari Lehmann, 1972**

**CLARE:**

HA 28 - R. Caher, Holywell, 2.5km from source (M173069), 27 October 1999, CB (DAM) and Murroogh, 5km from source (M153089), 27 October 1999, CB (PJA/NMI). L. Keagh, north shore, Milltown Malbay (R100813), 15 September 2009, EPA (DAM) and 19 September 2012, DAM/WM (DAM). **CORK:**

HA 20 - R. Bandon: Long Bridge, Dunmanway (W242631), 18 April to 22 December 1980 and 17 January 1981; Bealabouy Bridge, Dunmanway (W257514), 20 February to 22 December 1980; u/s Ballineen (W331537), 20 February to 28 November 1980; Ballineen Bridge (W434538), 20 March to 31 October 1980; Castle Bernard (u/s Bandon) (W472546), 20 March to 22 December 1980; 2.5km d/s Bandon...
Eukiefferiella gracei (Edwards, 1929)

**CLARE:** HA 28 - R. Caher, Holywell, 2.5km from source (M173069), 29 April 2000, CB (Kelly-Quinn et al., 2003).

**DUBLIN:** HA 10 - R. Glencullen tributary, Glendoo (O160212), 1970, KC (Clabby and Bracken, 1976); HA 9 - R. Dodder tributary (Slade Brook), Glenasmole (O103205), 26 May 1947 (CFH).

**GALWAY:** HA 26 - R. Shiven, d/s Ballinaglass (M788494), 29 July 2006, DAM (DAM).

Eukiefferiella ilkleyensis (Edwards, 1929)


ROSCOMMON: HA 26 - R. Suck: Castlecoote (M809627) and Ballyforan (M817464), 16 July 1981; Athleague (M825758) and Mount Talbot (M813531), 14 August 1981 (all Hayes, 1991).


WICKLOW: HA 10 - R. Avonbeg, Meetings Bridge (T188831), 11 July and 27 October 1997 (Curran, 2001). R. Avonmore, Lion Arch Bridge (T194833), 11 July 1997 (Curran, 2001). R. Avoca: Whitebridge, Tigroney (T198821), 11 July and 27 October 1997 (Curran, 2001); Avoca Village (T203802), 11 July 1997, FC (Curran and Murray, 2001) and 27 October 1997 (Curran, 2001); HA 12 - R. Slaney, Knickeen, Glen of Imail (S987948), Knockgarrigan, Glen of Imail (S936937), Stratford Bridge (S895930) and Kilmurray (S889856), 28 July 1981 (Hayes, 1991): HA 9 - R. Liffey,
Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937).

**Eukiefferiella minor/fittkaui** (pupal exuviae)

**GALWAY:** HA 31 - L. Ahalia, Maam Cross (L971402), 22 April 2009, EPA (DAM). **SLIGO:** HA 35 - L. Gill, Sligo (G782350), 11 June, 20 August and 8 September 2008, EPA (DAM).

**Eukiefferiella minor** (Edwards, 1929)


**Eukiefferiella tirolensis** Goetghebuer, 1938

Knickeen, Glen of Imail (S987948), 28 July 1981 (Hayes, 1991).

*Eurycnemus crassipes* (Meigen, 1810)


*Georthocladius (Georthocladius) luteicornis* (Goetghebuer, 1941)


**Gymnometriocnemus (Gymnometriocnemus) subnudus** (Edwards, 1929)


**Gymnometriocnemus (Raphidocladius) brumalis** (Edwards, 1929)


**Halocladius (Halocladius) fucicola** (Edwards, 1926)


**Halocladius (Halocladius) variabilis** (Staeger, 1839)

Halocladius (Halocladius) varians (Staeger, 1839)

ANTRIM: HA 4 - Murloagh Bay, Fair Head (D198420), 19 May 2002 (PHL).
DERRY: HA 3 - R. Bann, Coleraine (C854304), 8 and 26 August, 7 and 22 September 1999, 16 July and 8 October 2000 (PHL).

Halocladius (Psammocladius) braunsi (Goetghebuer, 1942)


Heleniella ornaticollis (Edwards, 1929)

ANTRIM: HA 5 - Raloo Water, Gleneo, Larne (J394967), 8 May 1999 (PHL).
HA 19 - Cruppoge stream, Kilcorney (W367851), 16 April 2004, JRB (DAM):
DERRY: HA 1 - inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 10 May 2001 (PHL):
HA 2 - R. Ballykelly, Ballykelly (C623211), 9 June 2000 (Langton, 2002):
HA 3 - R. Moyola, New Bridge, Magherafelt (H955905), 7 May 2001 (PHL).
DONEGAL: HA 37 - R. Eanymore, Letterbara Bridge (G883825) and Drumagrag Bridge (G863822), 10 August 1982 (Hayes, 1991):
HA 38 - R. Ray, Muckish Gap (B993268) and Crocnalaragh (B989272), 12 August 1982 (Hayes, 1991).
L. Barra, Commeen (B935119), 22 April 2009, EPA (DAM):
GALWAY: HA 30 - stream at N59 picnic site, Moycullen (M204326), 25 May 2003 (PHL):
HA 32 - R. Owenglin, Clifden (L677506) and R. Dawros, Tullywee Bridge, Letterfrack (L730586), 18

**Heterotanytarsus apicalis** (Kieffer, 1921)


**Heterotanytarsus sp. sensu Ashe, 1982**

**HA 22** - R. Clydagh, u/s Clydagh Bridge (W114826), March to November 1978 (Ashe, 1982). R. Flesk, d/s Clydagh/Loo confluence (W084814), d/s Whitebridge (V987900) and d/s New Bridge (V963885), March to November 1978 (Ashe, 1982). R. Loo, Aughnanus Bridge, Crohane (W045790), March to November 1978 (Ashe, 1982).

**Heterotrissocladius grimshawi** (Edwards, 1929)

**CLARE**: **HA 25** - L. Graney, Doorus, west shore (R556930), 10 April 2006, EPA (DAM): **HA 28** - L. Doo, Milltown Malbay (R123721), 1 April 2009, EPA (DAM). L. Keagh, Milltown

**Heterotrissocladius marcidus** (Walker, 1856)

**ANTRIM:** **HA 3** - Killylane Reservoir, Magherabane, Larne (J292985), 8 May 1999 (PHL): **HA 5** - Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CORK:** **HA 19** - L. Gouganebarra, Inchegeelagh (W009060), 26 September 1966 and 1 October 1968 (Murray, 1972): **HA 20** - R. Bandon: Long Bridge, Dunmanway (W242631), 25 September 1980; Bealabouy Bridge, Dunmanway (W257514), 18 April 1980; u/s Ballineen (W331537), 18 April 1980; Ballineen Bridge (W434538), 18 April and 25 September 1980; R. Bandon, Castle Bernard (u/s Bandon) (W472546), 18 April and 25 September 1980; 2.5km d/s Bandon (W516569), 18 April, 31 October and 28 November 1980 (all Morgan, 1982). **DERRY:** **HA 1** - Upper Creggan Reservoir, Creggan, Derry (C417173), 26 April and 10 May 2001 (PHL); pool, Creggan, Derry (C414171), 17 May 2002 (PHL); Lower Creggan Reservoir, Creggan, Derry (C422174), 26 April 2001; inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 26 April and 10 May 2001 (PHL): **HA 2** - Binevenagh pond, Coleraine (C691305), 18 May 2000 (Langton, 2002); fire dam 1 Binevenagh Forest, Coleraine (C699304) and fire dam 2 Binevenagh Forest, Coleraine (C704314), 18 May 2000 (Langton, 2002): **HA 3** - Howell’s Tarn, Ballywildrick, Coleraine (C766325), 7 April and 21 April 2002 (PHL). R. Bann,


**Hydrosmittia oxoniana** (Edwards, 1922)

**Krenosmittia camptophleps** (Edwards, 1929)


**DONEGAL:** HA 38 - R. Owenveagh, Glenbeagh Cottage, GNP, Glenveagh (B990178), 30 July 1985 and L. Veagh, Derrylahané, GNP, Glenveagh (C039231), 24 July 1985, LJH (Heneghan, 1986).

**FERMANAGH:** HA 36 - R. Sruh Croppa, Cuilcagh Mountain (H111329), 29 June 2000 (Langton, 2002).

**GALWAY:** HA 30 - R. Loughkip, Ballyquirk, Moycullen (M224313), 17 August 1981 (Hayes, 1991).


**LIMERICK:** HA 25 - R. Mulkear, Cappamore (R775514) and d/s Cappamore (R779504), 8 September 1981 (Hayes, 1991).


**TYRONE:** HA 3 - R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002).


**Limnophyes angeliacae** Sæther, 1990

**DERRY:** HA 3 - R. Bann, Coleraine (C855304), 7 April 2000 (Langton, 2004) and 10 August 2012 (PHL). MAYO: **Clare Island** - Creggan L., Lecarrow (L689857), 21 August 2002 (Murray and Murray, 2003; Murray, 2005), July to October 1998 and June to October 1999 (Fahy, 2002).

**Limnophyes asquamatus** Andersen, 1937

**Limnophyes difficilis** Brundin, 1947  

**Limnophyes edwardsi** Sæther, 1990  

**Limnophyes gurgicola** (Edwards, 1929)  

**Limnophyes habilis** (Walker, 1856)  

**Limnophyes minimus** (Meigen, 1818)  

**Limnophyes natalensis** (Kieffer, 1914)

Limnophyes ninae Sæther, 1975


*Limnophyes pentaplastus* (Kieffer, 1921)


*Limnophyes platystylus* Murray, 2006

**MEATH: HA 8** - stream-pond area, Meadesbrook, Kilmoon (O038594) [type locality], 5 May 2005, DAM/WM (Murray, 2005, 2007), 7 May 2005 (DAM) and 8 November 2005 (Murray, 2007) [Holotype NMI 2006: 60].
**Limnophyes pumilio** (Holmgren, 1869)


**Limnophyes spinigus** Sæther, 1990

**CLARE:** HA 27 - L. Bunny, Aughrim (R377965), 6 April 2006, EPA (EPA). L. Cullaun, Corrofin, mid east shore (R317905), 5 April and 7 June 2006, EPA (EPA). **FERMANAGH:** HA 36 - L. Erne Upper, slipway (H362242) and L. Erne, Lower, Boa Island (H108626), 27 April 2002 (Langton and Ruse, 2005).

**Mesosmittia flexuella** (Edwards, 1929)

**DONEGAL:** HA 38 - Administration Centre, GNP, Glenveagh (C041228), 14 July 1985, LJH (Heneghan, 1986; Heneghan and Murray, 1987; Murray, 2005). **GALWAY:** HA 30 - L. Corrib, no data (M1545), 1980, BC (DAM).

**Metriocnemus (Inermipupa) carmencitabertarum** Langton and Cobo, 1997

**DERRY:** HA 3 - Lodge Burn, Coleraine (C8530), 30 December 2013 (PHL). **DUBLIN:** HA 9 – rain-filled exposed small tank on roof of Science Centre, Belfield, UCD, (O182301), 7 August 2013 (Murray, 2013). **MEATH:** HA 7 - rainwater accumulation in milk churn, Riverstown, Kilmessan (N892595), 27 March 2012 (Murray, 2012) and 15 August 2013 (Murray, 2013). Rainwater accumulation in a kayak, Ardsallagh, Navan (N896635), 17 November 2012 (Murray, 2013). Rainwater accumulation in discarded motor tyres and plastic vessels at Mullaghboy Industrial Estate, Navan: a) The Zone Activity Centre (N853668), 18 June, 25 August, 8 September, 20 and 24 October 2012 (Murray, 2012) and 2 May 2013 (Murray, 2013); b) Huckleberry’s Den, (N857668) 2 May 2013. Rainwater in small basin, Ballinter (N890626),

**Metriocnemus (**Metriocnemus***) albolineatus (Meigen, 1818)**

**DERRY: HA 3** - R. Bann, Coleraine (C854304), 20 August 2002 and 9 November 2012 (PHL).


**Metriocnemus (**Metriocnemus***) alisonae Langton, 2013**

**DERRY: HA 3** - R. Bann, Coleraine (C854305), and at window, Kylebeg Avenue (C858304) 22 February 2013 (Langton, 2013).

**Metriocnemus (**Metriocnemus***) atriclava Kieffer, 1921**


**Metriocnemus (**Metriocnemus***) beringensis (Cranston and Oliver, 1988)**


**Metriocnemus (**Metriocnemus***) cavicola Kieffer, 1921**


**Metriocnemus (**Metriocnemus***) eurynotus (Holmgren, 1883)**

**ANTRIM: HA 3** - L. Neagh, Antrim Bay (J135866), 4 May 1999 (PHL): **HA 4** - inlet stream,

*Metriocnemus (Metriocnemus) fuscipes* (Meigen, 1818)


*Metriocnemus (Metriocnemus) inopinatus* Strenzke, 1950

**LEITRIM: HA 26** - L. Allen, Mountallen, Drumshanbo (G950145), 9 September 2008, EPA (Murray, 2010).

*Metriocnemus (Metriocnemus) picipes* (Meigen, 1818)

**Metriocnemus (Metriocnemus) terrestre** Pagast, Thienemann and Krüger, 1941

**DUBLIN:** HA 9 - bog pool, Featherbed (O120190), 1974, CD (Dowling and Murray, 1981).

**WATERFORD:** HA 16 - R. Nier, Knockanaffrin (S256132), 6 May 1999, CB (PJA/NMI).

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**Metriocnemus (Metriocnemus) tristellus** Edwards, 1929

**ANTRIM:** HA 3 - reservoir, Killylane, Magherabane, Larne (J292985), 8 May 1999 (PHL):


**DERRY:**


**ROSCOMMON:** HA 26 - R. Suck, Ballyforan (M817464), 16 October 1981, BPH (Hayes, 1991; Murray, 2005).


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**Metriocnemus (Metriocnemus) ursinus** (Holmgren, 1869)

**ANTRIM:** HA 5 - Three-Mile-Water, Mossley (J380892), 4 May 1999, SMcB (Langton, 2004).

**DERRY:** HA 3 - Downhill Forest, Coleraine (C760353), 24 March 2002, SMcB (Langton, 2004).

**MAYO:** HA 33 - bog pools, Glenamoy (F896345), April to June and August 1973, CD (Dowling, 1975; Dowling and Murray, 1981).


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**Nanocladius (Nanocladius) balticus** (Palmén, 1959)

**ANTRIM:** HA 4 - Dungonnell Dam, Newtown Crommelin (D193170), 20 June 2000 (Langton, 2002). Altnahinch Reservoir, Ballymoney (D120234), 22 August 2001 (PHL).

**CAVAN:** HA 36 - L. Gowna, north basin, Arnaogahan (N285920), 7 June 2006, EPA (DAM). L. Macnean, lower, Blacklion (H106378), 7 June and 18 September 2007, EPA (DAM).


**CORK:** HA 19 - L. Allua, Ballingeary (W180652), 20 August 2008, EPA (DAM).

**DERRY:** HA 1 - Upper Creggan Reservoir, Creggan, Derry (C417173), 10 May 2001 (PHL): HA 3 - L. Fea, Draperstown


Nanocladius (Nanocladius) dichromus (Kieffer, 1906)


*Nanocladius (Nanocladius) rectinervis* (Kieffer, 1911)


**Orthocladius (Eudactylocladius) fuscimanus** (Kieffer, 1908)


**Orthocladius** (*Eudactylocladius*) *olivaceus* (Kieffer, 1911)


**Orthocladius** (*Eudactylocladius*) *sp. mixtus*?

Orthocladius (Euorthocladius) ashei Soponis, 1990

[Records of O. (E.) ashei from Ireland prior to its description in 1990 were variously identified as O. flaveolus, O. rusticus or O. Euorthocladius sp.]


SLIGO: HA 35 - L. Gill (G753335), 3 April 2008, EPA (DAM).


**Orthocladius (Euorthocladius) rivicola** Kieffer, 1911  

**Orthocladius (Euorthocladius) rivulorum** Kieffer, 1909  
**CORK:** HA 20 - R. Bandon: Long Bridge, Dunnanway (W242631), 18 April and 27 May 1980; u/s Ballineen (W331537), 18 April 1980, Ballineen Bridge (W434538), 20 March and 18 April 1980; Castle Bernard (u/s Bandon) (W472546), 18 April 1980; 2.5km d/s Bandon
Orthocladius (Euorthocladius) thienemanni Kieffer, 1906


WICKLOW: HA 9 - R. Liffey, Ballysmuttan Bridge (O157148), 1929, WEF (Humphries and Frost, 1937).

Orthocladius (Mesorthocladius) frigidus (Zetterstedt, 1838)


ARMAGH:

*Orthocladius (Orthocladius) dentifer* Brundin, 1947


*Orthocladius (Orthocladius) glabripennis* (Goetzhebuer, 1921)


**Orthocladius** (**Orthocladius oblidens** (Walker, 1856))


**Orthocladius (Orthocladius) obumbbratus sensu Langton and Visser, 2003**

Palaeartic records of the Nearctic *O. (O.) obumbbratus* Johannsen are regarded as doubtful (Spies and Sæther, 2004; Ashe and O’Connor, 2012). The records presented here represent a distinct morphotype and are based on pupal exuviae identified from Langton and Visser (2003) and Langton (1992). Records pre-dating 1992 by Hayes had been determined as *Orthocladius* pe9 from the earlier work of Langton (1984).


**Orthocladius (Orthocladius) pedestrís** Kieffer, 1909

**ANTRIM: HA 3** - L. Neagh, Antrim Bay (J135866), 4 May 1999 and 17 March 2000 (Langton, 2002) also 28 March 2001 (PHL); Churchtown Point (J056852), 22 May 2011 (PHL). R. Sixmilewater, Templepatrick (J227867), 4 May 1999 (PHL); **HA 5** - Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **DERRY: HA 1** - pool by Creggan Reservoir, Derry (C414171), 17 May 2002 (PHL); inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 18 May 2001 and 17 May 2002 (PHL); **HA 2** - R. Bessbrook, Limavady (C655212), R. Roe, Deerpark Wood, Limavaddy (C682203) and R. Curly, Artikelly Bridge, Limavady (C684247), 9 June 2000 (Langton, 2002); **HA 3** - Downhill beach stream, Coleraine (C754326), 9 June 2000 (Langton, 2002). Downhill Lake, Downhill Forest, Coleraine (C757354), 7 March 1999 (PHL). Balinrees Reservoir, Coleraine (C794300), 20 March 1999 (PHL) and 9 June 2000

Orthocladius (Orthocladius) rhacocobius Kieffer, 1911

Orthocladius (Orthocladius) rivinus Potthast, 1914

Orthocladius (Orthocladius) rubicundus (Meigen, 1818)


**Orthocladius (Orthocladius) wetterensis** Brundin, 1956


**Orthocladius (Pogonocladius) consobrinus** (Holmgren, 1869)

ANTRIM: **HA 5 -** L. Mourne, Carrickfergus (J415924), 4 and 8 May 1999 (PHL). **CAVAN:
Orthocladius (Symposiocladius) holsatus Goetghebuer, 1937


Orthocladius (Symposiocladius) lignicola Kieffer, 1914


*Orthocladius (Symposiocladius) ruffoi* Rossaro and Prato, 1991


*Paracladius conversus* (Walker, 1856)


Parakiefferiella bathophila (Kieffer, 1912)

Bane, Collinstown (N550712), 26 April, 23 May, 26 June and 22 August 2006, EPA (EPA).


**Parakiefferiella coronata** (Edwards, 1929)


**CORK**: HA 21 - L. Bofinna, Bantry (W041488), 8 April and 18 June 2008, EPA (DAM).


Parakiefferiella fennica Tuiskunen, 1986


Parakiefferiella scandica (Brundin, 1947)


Parakiefferiella smolandica (Brundin, 1947)


**SLIGO**: **HA 34** - L. Talt, Gleneask (G402151), 18 June 2008, EPA (Murray, 2010).

**WESTMEATH**: **HA 26** - L. Ree, Coosan (N050450), 15 August 2007, EPA (DAM).

**Paralimnophyes longiseta** (Thienemann, 1919)


**DUBLIN**: **HA 9** - Maureens Brook, R. Dodder headwater (O125187), 26 July 1949 (Reilly, 1951; Murray, 1972).

**GALWAY**: **HA 30** - L. Corrib (M150450), 1980, BC (DAM).

**Parametriocnemus stylatus** (Späreck, 1923)


**CORK**: **HA 18** - R. Blackwater, Shamrock Bridge, Millstreet (W221935) and Charles Bridge, Millstreet (W248943), 2 September 1981; Ballymacquirk Bridge, Banteer (W382989), Roskeen Bridge, Banteer (W444988) and Lombardstown (W463968), 1 September 1981 also Killavullen (W648998), 31 August 1981 (all Hayes, 1991): **HA 19** - L. Gouganbarra, Inchegeelagh (W009060), 4 April 1966 (Murray, 1972): **HA 20** - L. Coolkllure, Dunmanway (W177539), 7 April 2008, EPA (DAM). R. Bandon: Long Bridge, Dunmanway...

**Paraphaenocladius exagitan s.s. monticola** Strenzke, 1950


**Paraphaenocladius impensus** subsp. **impensus** (Walker, 1856)


Paraphaenocladius irritus subsp. irritus (Walker, 1856)

Paraphaenocladius penerasus (Edwards, 1929)

Paraphaenocladius pseudirritus subsp. pseudirritus Strenzke, 1950
Paratrichocladius rufiventris (Meigen, 1830)


Paratrichocladius skirwithensis (Edwards, 1929)

ANTRIM: HA 3 - R. Clogh, Clough Mills (D105109) and Glenravel Water, Gartnageeragh, Newtown Crommelin (D147154), 2 July 2000 also R. Main, Randalstown (J084904), 13 October 2000 (Langton, 2002): HA 4 - R. Bush, Stranocum (D009307) and Ballyhoye Bridge (D077294) (Langton, 2002). R. Brymore, Brymore Bridge (D162275), R. Glendun, Drumfresky, Cusheen (D193308) and R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). CORK: HA 19 - Crumpoge stream, south east of Kilcorney (W367851), 16 April 2004, JRB (DAM): HA 20 - R. Ilen, Drimoleague (W098454), 24 August
Paratrichocladius spiesi Ashe and O’Connor, 2012
synonym Paratrichocladius nigritus (Goetghebuer, 1938)


Paratrissocladius excerptus subsp. excerptus (Walker, 1856)

**Psectrocladius (Allopsectrocladius) obvius (Walker, 1856)**


Psectrocladius (Allopsectrocladius) platypus (Edwards, 1929)

October and 3 November 1998, 5 May, 2 and 10 June, 7 July and 14 September 1999 (Fahy, 2002). Bogpool, east face of Knockmore (L683857) and pond east of Signal Tower, 21 August 2002 (Murray and Murray, 2003). **OFFALY:** **HA 25** - bog pool, Clara (N244301), 20 March 1985, JR (PJA/NMI). **WICKLOW:** **HA 10** - L. Ouler, Tonelagee (O091023), 8 August 2005, JRB (DAM).

**Psectrocladius (Mesopsectrocladius) barbatipes** Kieffer, 1923


_Psectrocladius_ (Monopsectrocladius) calcaratus_ (Edwards, 1929)


**Psectrocladius (Psectrocladius) barbimanus** (Edwards, 1929)


**Psectrocladius (Psectrocladius) bisetus** Goetghebuer, 1942


**Psectrocladius (Psectrocladius) fennicus** Storå, 1939

HA 35 - L. Easky, Ox Mountain (G446230), 17 July 2008, EPA (DAM). TYRONE: HA 1 - L. Moor, Altishane, Strabane (H446984), 17 August 2011 (PHL).

_Psectrocladius (Psectrocladius) limbatellus_ (Holmgren, 1869)


**Psectrocladius (Psectrocladius) octomaculatus** Wülker, 1956


**Psectrocladius (Psectrocladius) oligosetus** Wülker, 1956


**Psectrocladius (Psectrocladius) oxyura** Langton, 1985


*Psectrocladius (Psectrocladius) psilopterus* (Kieffer, 1906)


Psectrocladius (Psectrocladius) schlienzi Wülker, 1956

Psectrocladius (Psectrocladius) sordidellus (Zetterstedt, 1838)
Psectrocladius (Psectrocladius) ventricosus Kieffer, 1925


**Psectrocladius Pe sordidellus/ventricosus** (sensu Langton and Visser, 2003)

**MAYO**: **HA 33** - L. Keel, Keel, Achill Island: south east shore (F650051), 17 June 2008; mid lake (F651059), 16 July 2008 and south west shore (F641055), 17 September 2008, EPA (DAM).

**Psectrocladius Pe sp. A** (sensu Langton and Visser, 2003)

[The characteristic pupal exuviae of this species has been recognised in Great Britain since 1980 (Langton, 1980, 1984) but the adult remains undescribed. Langton (2002) provided the first published record for Ireland (from Northern Ireland) from specimens he collected at Dungonnell in 2000. However, pupal exuviae were first collected in Ireland in 1982 from L. Dan, Co. Wicklow, HA 10 in lake shore samples collected by Libby Frey for Chydorid (Cladocera) inventory studies].

Pseudorthocladius (Pseudorthocladius) curtistylus (Goetghebuer, 1921)

Pseudorthocladius (Pseudorthocladius) filiformis (Kieffer, 1908)

Pseudorthocladius (Pseudorthocladius) macrovirgatus Sæther and Sublette, 1983

**Pseudorthocladius** (*Pseudorthocladius*) rectangilobus Caspers and Siebert, 1980


**Pseudosmittia albipennis** (Goetghebuer, 1921)


**Pseudosmittia angusta** (Edwards, 1929)

**TIPPERARY**: HA 18 - L. Curra, Galtymore Mountain (R867242), 10 August 2005, JRB (Murray, 2005; Murray and Baars, 2006).

**Pseudosmittia obtusa** Strenzke, 1960

**ANTRIM**: Rathlin Island - pool east of lighthouse (D163521), 7 July 2004 (Langton, 2005) [not yet recorded from the Irish mainland].
Pseudosmittia trilobata (Edwards, 1929)


Rheocricotopus (Psilocricotopus) atriipes (Kieffer, 1913)


[Langton (2004) provided the first published record for Ireland from Ceggan Reservoir. Earlier unpublished records were known from from HA 7 and HA 23 since 1981].

Rheocricotopus (Psilocricotopus) chalybeatus subsp. chalybeatus (Edwards, 1929)

Drumaboden (C165218), 12 August 1982 and Claragh (C197210), 13 August 1982. R. Crana, Buncrana (C347328) and Ballymagan (C379344), 15 August 1982 (all Hayes, 1991).


**Rheocricotopus (Psilocricotopus) glabricollis** (Meigen, 1830)

**CORK:** **HA 20 -** R. Bandon, u/s Ballineen (W331537), 18 April 1980 and 2.5km d/s Bandon (W516569), 28 November 1980 (Morgan, 1982). **KERRY:** **HA 22 -** R. Loo, Aughnanus Bridge, Crohane (W045790), July 1978 (Ashe, 1982; Murray and Ashe, 1983 - sub **R. gouini**).

**Rheocricotopus (Psilocricotopus) tirolus** Lehmann, 1969

**KERRY:** **HA 21 -** L. Brin, Derreeny (V780775), 18 June and 10 September 2008, EPA (Murray, 2010).

**Rheocricotopus (Rheocricotopus) effusus** (Walker, 1856)


**FERMANAGH:** **HA 36 -** L. Erne Lower, Black Bay (H072639), 27 April 2002 (PHL).

**LEITRIM:** **HA 35 -** L. Glencar, Glencar (G757435), 2 September 2008, EPA (DAM).


**ROSCOMMON:** **HA 26 -** L. Funshinagh, Brideswell (M933513), 23 April 2007, EPA (DAM).

**TIPPERARY:** **HA 16 -** R. Drish, Boolabeha Bridge (S190619), 22 May 1992 and R. Suir, Rossestown Bridge (S134624), 6 July 1992 (Murray and Lynch, 1992). **TYRONE:** **HA 3 -** R. Ballinderry, Ballinderry Bridge (H928798), 10 May 2000 (Langton, 2002).

**WICKLOW:** **HA 10 -** Glencullen R., Knocksink (O218180), 18 May 1987, DEM/DAM (Morgan, 1989).

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[Langton (2002) provided the first published record for Ireland from collections in HA 2 during the year 2000. Earlier unpublished records were known from HA 10 (1987), HA 16 (1992) and HA 20 (1980)].

**Rheocricotopus (Rheocricotopus) fuscipes** (Kieffer, 1909)


**Rheosmittia spinicornis** (Brundin, 1956)


**Smittia amoena** Caspers, 1988

DERRY: HA 3 - R. Bann, Coleraine (C854304), 17 August 2012 (Langton, 2012).
S. amoena has been cited in the Fauna Europaea database (Sæther and Spies, 2005, 2011) as “present” - in Ireland (IE) but absent in Northern Ireland (GB-NI). The source of information for that citation is unknown (M. Spies, pers comm.). The recent record in August 2012 by Langton from Northern Ireland is the only confirmed occurrence of the species from the island of Ireland.

*Smittia aterrima* (Meigen, 1818)


*Smittia contingens* (Walker, 1856)


*Smittia edwardsi* Goetghebuer, 1932

Smittia leucopogon (Meigen, 1804)  

Smittia nudipennis (Goetghebuer, 1913)  

Smittia pratorum (Goetghebuer, 1927)  

Smittia superata Goetghebuer, 1939  
DERRY: HA 3 - McFadyen’s Garden, Coleraine (C848316), 13 April 2003 (Langton, 2004).

Synorthocladius semivirens (Kieffer, 1909)  
(DAM); Cloghans (G205133), 28 March and 13 August 1965, AJOS (DAM); Errew 
(G167118), 31 March and 1 October 1965, AJOS (Murray, 1972); Brackwansha (G191098), 6 
April, 25 May and 24 September 1965, AJOS (DAM); Six Arch Bay (G227052), 30 March and 
20 August 1965, AJOS (DAM); west shore (G165144), 15 April 2008, EPA (DAM); 
Illannaglasy (G207070), 20 August 2008, EPA (DAM). L. Cullin, Drummon Wood 
(G235046), 18 June and 20 August 2008, EPA (DAM). L. Lannagh, Castlebar: west shore 
(M109883), 23 April and 21 August 2008, EPA (DAM); north east basin (M137899), 26 
September 2008, EPA (DAM). L. Mallard, Castlebar (M121902), 30 September 2004, 
DAM/WM (DAM). L. Levally, Massbrook (G146043), 25 June and 23 September 2008, EPA 
(DAM). L. Washpool, Ballycarra (M219842), 23 April and 19 June 2008, EPA (DAM): Clare 
Island - roadside at Bayview Hotel (L716856), 21 August 2002; Pollabrandy stream, 
Knocknaveen (L704858), 4 June 2002 and Loughnapucar stream (L657850), 21 August 2002 
(Murray, 1988); Stackallen Bridge (N917713), 19 July 1989 (DAM) and Oldbridge (0045761), 
19 July 1989 (DAM). R. Blackwater: Bloomsbury Bridge, Oristown (N793741) and 
Donaghpatrick (N819723), 19 August 1988 also Poolboy Bridge, Navan (N871681), 18 August 
1988 (Murray, 1988): HA 8 - R. Nanny tributary, Boolies, Duleek (0044654), 6 June 2006, 
DAM/WM (DAM). MONAGHAN: HA 6 - L. Naglack, Carrickmacross (H853026), 11 June 
2007, EPA (DAM): HA 36 - L. Annaghmakerrig, Newbliss (H585205), 22 May 2006, EPA 
(DAM). L. Avagnar, Latton, Cotehill (H688133), 4 April and 6 June 2007, EPA (DAM). L. 
Drumona, Rockcorry (H636176), 5 June 2007, EPA (DAM). L. Drumore, Drum (H614164), 18 
ROSCOMMON: HA 26 - R. Suck: Castlecoote (M809627), 16 July 1981; Athleague 
(M825758), 14 August 1981; Mount Talbot (M813531), 14 August 1981; Ballyforan 
Meelagh, Keadew (G901117), 11 June and 12 July 2008, EPA (DAM). L. Annaghmore, 
Strokestown, Elphin (M902838), 12 June and 2 September 2008, EPA (DAM). L. Cavetown, 
Boyle (M832974), 11 June, 17 July and 9 September 2008, EPA (DAM). L. Key, Boyle: pier at 
Forest Park Centre (G848040), 11 June 2008, EPA (DAM); Boyle (G838057), 6 August 2008, 
EPA (DAM); Hogs Island Pier (G825054), 9 September 2008, EPA (DAM). L. O’Flynn, 
Ballinlough (M585786), 9 April, 12 June and 16 July 2008, EPA (DAM). L. Urlar, north east 
shore (at Abbey) (M508900), 10 March 2005, DAM/WM (DAM). L. Ree, Yew Point, Barley 
Harbour (N018485), 13 June and 11 September 2007, EPA (DAM). SLIGO: - L. Gara, 
Cuppanagh, Cloonlough (G714013), 26 June and 30 September 2008, EPA (DAM): HA 34 - L.
Thalassosmittia thalassophila (Bequaert and Goetghebuer, 1914)


Thienemannia gracilis Kieffer, 1909


Thienemanniella acuticornis (Kieffer, 1912)


Thienemanniella clavicornis (Kieffer, 1911)

DUBLIN: HA 9 - R. Dodder, Bohernabreena aqueduct (O101208), 3 April 1967 and

*Thienemanniella flavescens* (Edwards, 1929)


*Thienemanniella majuscula* (Edwards, 1924)


*Thienemanniella obscura* Brundin, 1947

DERRY: HA 1 - Upper Creggan Reservoir, Creggan, Derry (C413171), 23 March 2001 (Langton, 2004).

*Thienemanniella vittata* (Edwards, 1924)


*Trissocladius brevipalpis* Kieffer, 1908

**DONEGAL**: HA 38 - stream (outflow from pond) near Administration Centre, GNP, Glenveagh (C041227), 14 May 1986 (Heneghan, 1986; Murray, 2005).

*Tvtenia bavarica* (Goetghhebuer, 1934)

**ANTRIM**: HA 4 - R. Glenariff (Inver/Glenariff), Cushendall (D215205), 2 July 2000 (Langton, 2002). Outflow stream, L. na Cranagh, Fair Head (D178425), 21 March 1999 (PHL); HA 5 - Raloo Water, Glenoe, Larne (J394967), 8 May 1999 (PHL). **CORK**: HA 20 - R. Bandon, 2.5km d/s Bandon (W516569), 17 January 1981 (Morgan, 1982). **DERRY**: HA 1 - inflow to Upper Creggan Reservoir, Creggan, Derry (C413171), 23 March 2001 (PHL); HA 2 - R. Bessbrook, Limavady (C655212) and burn at Largantea picnic area, Formoyle, Coleraine (C738287), 9 June 2000 (Langton, 2002); HA 3 - Howell’s Tarn stream, Ballywildrick, Coleraine (C766325), 7 July 2002 (PHL). Downhill Lake, Downhill Forest, Coleraine (C757354) 17 March 1999; Downhill Forest Stream (C759348), 17 March and 25 July 1999 (PHL). R. Bann, Coleraine (C854304), 29 March and 13 October 1999, 1 January to 19 February and 8 October 2000 (PHL). **DONEGAL**: HA 38 - inflow stream to north east shore of L. Veagh, Glenveagh, GNP, 50m from lake (C030218), 14 May 1986 (Heneghan, 1986).


*Tvetenia calvescens* (Edwards, 1929)


*Tvetenia discoloripes* (Goetghebuer and Thiemenmann, 1936)


_Tvetenia verralli_ (Edwards, 1929)


**Zalutschia humphriesiae** Dowling and Murray, 1980


References

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Haliday, A. H. (1855) Descriptions of insects figured, and references to plates illustrating the notes on Kerry insects. *Natural History Review (Proceedings)* **2**: 59-64.


Brosna in the vicinity of Cullion Fish Farm, Co Westmeath. Royal Canal Feeder Study. Department of Zoology, University College Dublin. Final Report (Volume 3) for the Central Fisheries Board and the Office of Public Works, Dublin.


FIGURE 1. The counties of Ireland.
FIGURE 2. The forty hydrometric areas of Ireland. Heavy lines illustrate demarcations of designated River Basin Districts (Water Resource Regions) consisting of hydrometric areas as follows: **North Western** - HA 01, 02, 36, 37, 38, 39, 40. **Neagh-Bann** - HA 03 and 06. **North Eastern** - HA 04 and 05. **Eastern** - HA 07, 08, 09, 10. **South Eastern** - HA 11, 12, 13, 14, 15, 16, 17. **South Western** - HA 18, 19, 20, 21, 22. **Shannon** - HA 23, 24, 25, 26, 27, 28. **Western** - HA 29, 30, 31, 32, 33, 34, 35. Dashed line indicates the international boundary.
FIRST RECORDS OF HALOPHILIC CHIRONOMIDAE (DIPTERA) FROM Lanzarote Including Clunio Marinus Haliday (Orthocladiinae) NEW TO THE CANARY ISLANDS

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Abstract
Four halophilic species of Chironomidae are recorded from Lanzarote, Canary Islands. Clunio marinus is a new record for the Canary Islands and Halocladius millenarius, Thalassosmittia atlantica and Thalassomya frauenfeldi are reported from Lanzarote for the first time.

Key words: Chironomidae, Canary Islands, Lanzarote, Telmatogotoninae, Orthocladiinae, Clunio marinus, distribution

Introduction
Early records of Chironomidae from the Macaronesian Canary Islands, located approximately 300km west of Morocco around a latitude of 29°N, were given by Becker (1908), Santos Abreu (1918) and Storå (1936) from the islands of La Palma, Tenerife and El Hiero. Cranston and Armitage (1988) reviewed and updated nomenclature from available type material from the collections of Becker and Santos Abreu. Armitage et al. (1995) provided additional records, based mostly on larval material, from Tenerife while Langton and Orendt (1996) provided records based on pupal exuviae from La Gomera. The Fauna Europaea database documents some 58 species of Chironomidae from the Canary Islands Archipelago (Sæther and Spies, 2011). An inventory of plant and animal species, coordinated by the Government of the Canary Islands in 2009 (Arechavaleta et al., 2010), provides records of 60 chironomid taxa compiled by Báez and Oromí (2010) from the islands of El Hiero (2 species), La Palma (23 species), La Gomera (12 species), Tenerife (33 species including 2 questionable records) and Gran Canaria (31 species). To date there are no records from the islands of Fuerteventura or Lanzarote. While visiting Lanzarote in March 2014, swarms of adult Chironomidae were observed and collected along the rocky shoreline at Costa Teguise, approximately 8km north-east of Arrecife. Collections from these swarms and of drowned adult specimens and pupal exuviae from the water surface of marine rock pools yielded a total of four species documented here as the first records of Chironomidae from Lanzarote.
Methods and collection sites

Collections were taken from coastal rock pools on 17 March 2014 along the Costa Teguise sea shore, Lanzarote, between Playa de los Charcos and Playa de las Cucharas. Adults were collected by net in flight or in surface skim samples from rock pools which also contained some pupal exuviae. All specimens obtained were preserved in 75% alcohol. Identification followed slide mounting using Euparal as mountant. Information on previous records from the Canary Islands is derived from Báez and Oromí (2010).

New records for the Canary Islands

Subfamily Telmatogotoninae

*Thalassomya frauenfeldi* Schiner, 1856

Previous records: La Palma. **New to Lanzarote.**

A fragmented adult (antennae and abdomen missing), collected from the water surface of a rock pool at Playa de las Cucharas, was readily identified from Cranston (1989) by the characteristic wing structure and numerous strong thoracic acrostichal setae. Described by Schiner (1856) from the Mediterranean coastline near Trieste, Italy, the first record from the Atlantic Ocean was by Wollaston (1858) who described it new to science as “Cheironomus” *pedestris* from the Macaronesian islands of Porto Santo and Deserta Grande in the Madeiran archipelago. Santos Abreu (1918) provided the first record from the Canarian archipelago, as *Scopelodromus canariensis*, from specimens collected on La Palma Island at Santa Cruz de la Palma. The species is also known from coastal areas of Madeira (Murray and Hughes, 2000) and the Azores (Murray *et al*., 2004).

Subfamily Orthocladiinae

*Clunio marinus* Haliday, 1855

Previous records: None. **New to the Canary Islands.**

A skim sample from a rock pool at las Chucarcas yielded an intact adult male which is the first record of *Clunio marinus* from Lanzarote and the Canary Islands. The species was first reported from Macaronesia by Murray and Hughes (2000) from the coast of Madeira.

*Halocladus (Halocladus) millenarius* (Santos Abreu, 1918)

Previous records: La Palma, La Gomera, Gran Canaria. **New to Lanzarote.**

Three adult females taken in a skim sample from a rock pool at las Chucarcas were identified from Hirvenoja (1973) as *H. stagnorum* Goetghebuer (1937) which was designated a synonym of *H. millenarius* by Cranston and Armitage (1988). Santos Abreu (1918) described this species from the Canary Islands as *Paratrichocladius millenarius* and also recognised five varieties - var. *furtivus*, var. *pallidicollis*, var. *flaviventris*, var. *exilis* and var. *litorosus* - all collected from the sea surface at sites on La Palma Island. These five varieties were synonymized with *H.*
millenarius by Ashe and O’Connor (2012). An additional three species described by Santos Abreu from La Palma - *P. formosus, P. pulchrigaster* and *P. sororians* were previously synonymized with *H. millenarius* by Cranston and Armitage (1988).

**Thalassosmittia atlantica** (Storà, 1936)

Previous records: El Hierro, Tenerife, Gran Canaria. **New to Lanzarote.**

Adult males and females were obtained swarming above and between rocks along the promontory shoreline at Playa de los Charcos. Storà (1936) described *Eukiefferiella atlantica* from specimens collected on Tenerife and El Hiero as well as a sub species *E. grancanariensis* collected on Gran Canaria which Ashe and O’Connor (2012) treat as a questionable synonym of *E. atlantica*. The species was transferred to *Thalassosmittia* by Armitage and Tuiskunen (1988). Other Macaronesian records are known from Madeira (Murray and Hughes, 2000) and the Azores (Storà, 1945; Murray et al., 2004).

**References**


Santos Abreu, E. (1918) Ensayo de una monografia de los Tendipedidos de las Islas Canarias. *Memorias de la Real Academia de Ciencias y Artes de Barcelona* 14: 159-326.


SIKA-LIKE DEER *CERVUS NIPPON* TEMMINCK, 1838 OBSERVED SWIMMING OUT TO SEA AT GREYSTONES, CO. WICKLOW: INCREASING DEER POPULATION PRESSURE?

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Abstract

During September 2011, an adult-size sika-like deer doe *Cervus nippon* Temminck, 1838 was observed swimming out to sea near Greystones, Co. Wicklow, off the east coast of Ireland (Irish Sea). It is hypothesised that this unusual behaviour may be inherently related to a phenomenal increase in deer distribution, abundance and density in Ireland over the last three decades.

Based on census data from 2009, the estimated mean density of all deer species in the Republic of Ireland was 0.04/ha total land area (county range: 0.003-0.65) and 0.4/ha forestry (county range: 0.02-3.68). Significantly, Co. Wicklow accounted for the highest densities of all deer species, 3.7/ha forestry and 0.65/ha total land area, including the highest densities of sika deer (3.1/ha forestry and 0.55/ha total land area) and hybrid deer (0.3/ha forestry and 0.05/ha total land area).

Previous observations on swimming deer are reviewed. It was concluded that deer are capable of swimming over relatively long distances. It is hypothesised that in some situations swimming may have facilitated the colonisation of new land masses by deer.

**Key words:** swimming deer, deer population pressure, deer densities, sika deer, Ireland

Introduction

Between 5.30 and 6.00pm on 4 September 2011, one of us (SM) observed an adult-sized sika-like doe *Cervus nippon* Temminck, 1838 barrelling down towards the south beach near Greystones (53.144°N, 6.072°W), Co. Wicklow, on the east coast of Ireland (Irish Sea). The deer was initially observed making its way along the edge of a coastal golf driving range before dropping down one side of a railway embankment, leaping over the railway tracks, scrambling up the opposite embankment and out across the strand at full speed towards the water’s edge where without any hesitation it splashed into the waves and began swimming directly out to sea, its head and a good part of its neck held stiffly up out of the water. Over the next 45 minutes, the deer was observed with binoculars, albeit with decreasing resolution, until it eventually
disappeared from view. Two hours later, there was still no sign of the deer returning to shore either at or near the location where it originally entered the sea. Although the deer may have made landfall at another location, its ultimate fate is unknown.

What prompted this sika-like deer to leave the seclusion and relative protection afforded by its usual forest habitat, stray into a densely human populated urban area, and swim out to sea? Perhaps it was inherently due to the effects of a rapidly expanding deer population and/or the aggressive territoriality of stags during the rutting season, which for sika deer can extend from late August to early December (Hayden and Harrington, 2000), and/or a deliberate attempt to migrate offshore in search of new territory? Perhaps after straying into an unfamiliar urban environment populated by humans and other potential predators (e.g. domestic dogs), the deer panicked and raced into the sea to escape rather than back towards its more familiar forest environment from whence it had undoubtedly come. How frequently do deer swim and how far can they swim?

**Methods**

Current data on Irish deer species distribution and abundance (Carden *et al*., 2010; Burkitt, 2012) were used to estimate deer densities by species (numbers/ha) on a county basis both in terms of forest cover (Anon, 2012a) and total land area. Previous observations on swimming deer were collated and reviewed by carrying out an extensive on-line web-based search.

**Results**

**Irish deer distribution and abundance**

According to the most recent national survey, the total number of deer of all species in the Republic of Ireland (ROI), red deer *Cervus elaphus* L., fallow deer *Dama dama* (L.), sika deer, red*sika deer hybrids and muntjac deer *Muntiacus reevesi* (Ogilby, 1839), was estimated to have increased almost six-fold between 1978 and 2008 (Burkitt, 2012). Indeed, over the latter 30-year period, the compound annual rate of expansion was 7% for red deer, 5% for sika deer and 3% for fallow deer. The total range increase was 565% for red deer, 353% for sika deer and 174% for fallow deer (Carden *et al*., 2010). Population estimates for 2009, based on cull returns, suggested that the total population of all deer species in the ROI was 303,490 animals and that this was likely to increase by *circa* 30% to 393,000 animals by 2016 (Burkitt, 2012). Sika deer and fallow deer accounted for 47.4% (143,790) and 41% (124,390) of the estimated national deer population (Fig. 1). Significantly, Co. Wicklow accounted for 43.5% (132,040) of the total estimated national deer population, including 77.6% (111,530), 82.5% (10,540) and 66.7% (60) of the total sika deer (143,790), hybrid deer (12,770) and muntjac deer (90) populations respectively (Table 1).
Irish deer densities

In 2012, it was estimated that 10.5% of the total land area of the ROI (731,660 ha) was covered by forest (Anon, 2012a). Significantly, Co. Wicklow accounted for the highest percentage (18%) of forest cover by county. An analysis of the data on the estimated number of deer (Burkitt, 2012), forest cover (Anon, 2012a) and the total land area by county indicated that the average densities of deer of all species in the ROI during 2009 was 0.4/ha of forestry (county range: 0.02-3.68) and 0.04/ha of total land area (county range: 0.003-0.65) (Figs 2 and 3). Significantly, Co. Wicklow accounted for the highest densities of all deer species, 3.7/ha forestry and 0.65/ha total land area, including the highest densities of sika deer (3.1/ha forestry and 0.55/ha total land area) and hybrid deer (0.3/ha forestry and 0.05/ha total land area). The latest census of the ROI’s human population (Anon, 2011a) indicated that the average national density of humans was 0.7/ha total land area and that Co. Wicklow ranked seventh at 0.7/ha.

Previous observations on swimming deer

Although there are no known previous published reports about deer swimming in Irish waters, over the last decade several video clips have been posted on <www.youtube.com> of deer swimming during daylight hours in both marine (9) and freshwater (17) environments, particularly in North America. A summary of these web-based reports are presented in Table 2. The vast majority of observations involved white-tailed deer *Odocoileus virginianus* Zimmermann, 1780 (69.2%), black-tailed or mule deer *O. hemionus* (Rafinesque, 1817) (11.5%), and sitka black-tailed deer *O. hemionus sitkensis* Merriam, 1898 (11.5%). There was one record of the chital deer *Axis axis* (Erxleben, 1777) from Maui, Hawaii and a possible red deer from Norway. The vast majority of observations were made in freshwater habitats (65.4%). Mature stags accounted for 42.3% of the observations. Almost 27% of the records involved 2 or more animals, including stags, does and fawns. The monthly frequency distribution of observations was as follows: January, 3; April, 2; July, 2; August, 5; September, 1; October, 8; and November, 5. Over 80% of the observations occurred during the second half of the year (July to November) which would generally coincide with the rutting season. Although all of the observations were made during daylight hours, it is possible that deer may also swim across water bodies during the hours of darkness. In summary, it clear that deer are capable swimmers and probably cross water bodies, particularly freshwater lakes, more frequently that the paucity of observations would suggest, either in search of food, especially in disjoint habitats, or due to other population pressures (e.g. aggressive behaviour during the rutting season, increasing densities and/or predator avoidance).
How far can deer swim?

Reimchen et al. (2008) noted that white-tailed deer are known to swim up to 25km between islands in the Great Lakes (North America). Serjeantson (1990) and Mulville (2010) noted that red deer can swim up to 7km in the marine environment. Voorhees (2007) noted that deer often swim across the ocean between Papua New Guinea and Saibai Island (Australia), a distance of circa 4-5km.

Discussion

Irish deer populations are increasing in distribution and abundance throughout the country, primarily due to increasing afforestation, legal protection and a lack of natural predators (Carden et al., 2010; Burkitt, 2012). Significantly, during 2009, it was estimated that Co. Wicklow accounted for 43.5% of the total estimated national deer population, including 77.6%, 82.5% and 66.7% of the total sika deer, hybrid deer and muntjac deer populations respectively. According to Hayden and Harrington (2000), sika deer readily colonise suitable habitats but once established, their home ranges may be relatively small. Although females may spend their entire lifespan within an area as small as 50ha, males tend to travel over greater distances, and during the course of a year they may wander over an area as large as 1,000ha. However, as deer population densities continue to expand, it is likely that increasing numbers of both male and female deer may be forced to forage well beyond their original home ranges and this may result in both increasing levels of hybridization (Senn et al., 2010), introgression (Goodman et al., 1999), negative impacts on ecosystems, and encroachments into nearby urban areas (Putman et al., 2011a, b), particularly densely populated areas close to natural deer habitats. Indeed, it is interesting to note that the estimated minimum density (numbers/ha total land area) of both deer (0.65/ha) and humans (0.7/ha) in Co. Wicklow are broadly similar.

Although it is acknowledged that deer are not exclusively confined to forestry habitats, many species spend a considerable amount of time either in or near forestry. Hayden and Harrington (2000) remarked that sika deer can attain local densities of 0.15-0.5 animals/ha in coniferous plantations with access to good grazing areas. Putman et al. (2011a, b) noted that although negative impacts may occur in commercial forestry above a threshold of 0.04 deer/ha, the actual threshold level is likely to be both species specific and habitat dependent. For example, they noted that unfenced native woodlands seem to regenerate naturally if there were fewer than 0.04-0.05/ha large deer (e.g. sika, red and fallow deer) or fewer than 0.25/ha smaller deer (e.g. roe deer *Capreolus capreolus*), while open habitats may suffer only light or moderate impacts from red deer at landscape densities of 0.07-0.08/ha. Putman et al. (2011a, b) concluded that although deer density alone is unlikely to be a good predictor of impact, long-term management should be based on the assessment of both actual impacts and the apparent density of deer at the
landscape level. Nevertheless, the estimated density of all deer species in Co. Wicklow (3.7/ha forestry) far exceeds the threshold for commercial forestry (0.04/ha) suggested by Putman et al. (2011a), a density that is likely to have several negative effects on the environment. Indeed, the estimated minimum density (numbers/ha total land area) for all deer species in the ROI during 2009 was 0.04/ha, and apart from Co. Wicklow (0.65), it was also significantly high in Cos Dublin (0.09), Tipperary (0.08), Laois (0.06) and Waterford (0.06).

Although many species of deer are known to be good swimmers and probably take to the water more frequently than observed, there is surprisingly very little published information on the maximum distance that they can swim. Serjeantson (1990) and Mulville (2010) noted that red deer can swim up to 7km, a distance enough for the species to have naturally colonised the Inner Hebrides (Scotland) with ease, but for islands separated by wide or dangerous straits, such as the Outer Hebrides, they concluded that the species must have been introduced by humans. Welsh (2003) also noted that sika deer had naturally colonised several islands within the Inner Hebrides, such as Skye, Scalpay and Raasay, by swimming across open sea channels. Reimchen et al. (2008) noted that although white-tailed deer are known to swim up to 25km between islands in the Great Lakes (North America), strong currents and extensive wave action may limit opportunities for deer to colonise offshore islands in the marine environment. Voorhees (2007) noted that deer often swim across the ocean between Papua New Guinea and Saibai Island (Australia), a distance of circa 4-5km.

Although red deer are known to occasionally frequent islands in the Lakes of Killarney (Nugent pers. comm.), there is no evidence to date that deer naturally colonised any Irish nearshore or offshore marine islands. It is possible that a lack of suitable habitats on these islands and/or previously low onshore deer population densities may have precluded any inherent pressure for natural colonisation. However, considering the current extremely high and increasing density of deer populations on mainland Ireland, it is possible that some deer, particularly in or near coastal locations, may be forced to emigrate to nearby islands. Perhaps the Greystones’ deer represents the vanguard of a potentially lemming-like plunge into the unknown? Under optimum climatic conditions, the mountain peaks of Snowdonia (NW Wales), maximum height 1,085m (Mount Snowdon), are visible from elevations as low as 120m along the Co. Wicklow coast (DQ pers. observation.). However, in the unlikely event that a Co. Wicklow deer somehow managed to successfully reach the nearest landmass (Bardsey Island, Lleyn Peninsula, Caernarvonshire, NW Wales), a minimum distance of 96km from Greystones, this remarkable achievement would have major implications for the on-going debate as to whether or not Ireland was naturally colonised by swimming mammals (e.g. red deer) following the end of the last Ice Age circa 18,000 years BP (Harrington, 1979; Devoy, 1986; Yalden, 1986; Sleman, 1997; McCormick, 1999; Searle, 2008; Carden et al., 2012).
Nevertheless, considering that sea levels were estimated to be *circa* 120m lower than present during the Last Glacial Maximum (*circa* 26,000 years BP) (Edwards and Brooks, 2008), the minimum distance between Ireland and the UK would have been significantly shorter, albeit only temporarily, during the immediate post glacial period and this may have facilitated a window of opportunity for the natural colonisation of Ireland by some swimming mammal species such as deer.

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**References**

Anderson, A. (2013) Veterinarian and his son rescue a 10 point buck.  
<http://www.youtube.com/watch?v=0Lm8Plr3CTc>

<http://www.youtube.com/watch?v=Q2A1_oM3RZw>

<http://www.youtube.com/watch?v=I5_Xde3AyGw>

Anon. (2007c) Deer swimming across a Canadian lake it's a fawn.  
<http://www.youtube.com/watch?v=Ct640Fjme10>

<http://www.youtube.com/watch?v=ITUTGke7UAM>

Anon. (2008a) Swimming deer.  
<http://www.youtube.com/watch?v=VvaUK9us0hc>

<http://www.youtube.com/watch?v=rO0KBmarJTM>

Anon. (2010) It’s a deer in the ocean.  
<http://www.youtube.com/watch?v=m8jEL2tGBmU>


Anon. (2011b) Swimming deer.
<http://www.youtube.com/watch?v=OVQ3gm45yjY>

Anon. (2011c) Big bucks swimming in Lake Lanier.

<http://www.youtube.com/watch?v=NpQd0vco8E>


<http://www.youtube.com/watch?v=AZqa1kddOpk>


Anon. (2012b) Deer swimming in the ocean.

<http://www.youtube.com/watch?v=9mtwj1aqUCE>

Anon. (2012c) Sika deer swimming across lake Kissimmee.

<http://www.youtube.com/watch?v=nTTS-GwztNo>


<http://www.youtube.com/watch?v=zkrLn1WxF5Q>

Anon. (2013) A deer day at the beach.

<http://www.youtube.com/watch?v=bDS1zwIHNwM>

Anon. (2014) Deer rescued from drowning while swimming across a lake.

<http://www.youtube.com/watch?v=tnNyaUaUj9s>


<http://www.youtube.com/watch?v=N_3o02k0XLs>

Introgression through rare hybridization: a genetic study of a hybrid zone between red and  


<http://www.youtube.com/watch?v=FNKuSVDeUPU>

(ed.) The Holocene History of the European Vertebrate Fauna: Modern Aspects of  
Research. Verlag Marie Leidorf GmbH, Rahden.

<http://www.youtube.com/watch?v=p0TyHUsG9BY>


Peterson, G. (2013) Small deer tries to swim across Clear Lake in U.P. of Michigan, gets to shore  
tired, OK.  
<http://www.youtube.com/watch?v=opHWivbKww8>

Putman, R., Watson, P. and Langbein, J. (2011a) Assessing deer densities and impacts at the  
appropriate level for management: a review of methodologies for use beyond the site  

Putman, R., Langbein, J., Green, P. and Watson, P. (2011b) Identifying threshold densities for  
wild deer in the UK above which negative impacts may occur. Mammal Review 41: 175-  
196.

offshore islands of Haida Gwaii using microsatellite markets. Pp 117-120. In Gaston, A. J.,  
Golumbia, T. E., Martin, J. L. and Sharpe, S. T. (eds) Lessons from the Islands:  
introduced species and what they tell us about how ecosystems work. Proceedings from  
the Research Group on Introduced Species 2002 Symposium, Queen Charlotte City,  
Queen Charlotte Islands, British Columbia, Canadian Wildlife Service, Environment  
Canada, Ottawa.


<http://www.youtube.com/watch?v=Pm_mxiwTTAM>

<http://www.youtube.com/watch?v=aIonYWz_0dU>

<http://www.youtube.com/watch?v=gOX1T4zua4w>

<http://www.youtube.com/watch?v=YHsv0CgN96g>

<www.behav.org/student_essay/deer/Sika_hybr.htm>

<http://www.youtube.com/watch?v=j3n7n6G2zlk>

FIGURE 1. Estimated number and % of deer species in the ROI during 2009 (Burkitt, 2012).

FIGURE 2. Irish deer densities by species (numbers/ha forestry/county) 2009.
FIGURE 3. Irish deer densities (total numbers/ha total land area/county) 2009.

TABLE 1. Estimated numbers and densities of deer by species in Co Wicklow.

<table>
<thead>
<tr>
<th>Species</th>
<th>Number</th>
<th>%</th>
<th>% National</th>
<th>Densities (number/ha)</th>
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<td></td>
<td></td>
<td></td>
<td>Forestry</td>
</tr>
<tr>
<td>Sika</td>
<td>111530</td>
<td>84.5</td>
<td>77.6</td>
<td>3.110</td>
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<td>7.5</td>
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<td>Red</td>
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<td>2.7</td>
<td>0.017</td>
</tr>
<tr>
<td>Muntjac</td>
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<td>0.05</td>
<td>66.7</td>
<td>0.002</td>
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<td>43.5</td>
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</table>

TABLE 2. Summary of on-line video clip observations of swimming deer.

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Habitat</th>
<th>Location</th>
<th>State</th>
<th>Country</th>
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<td>USA</td>
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<td>British Columbia</td>
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<td>marine</td>
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<td>White-tailed Deer</td>
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REASSESSMENT OF EARLY NINETEENTH CENTURY TARDY RECORDS IN THE
DUBLIN UNIVERSITY ZOOLOGICAL MUSEUM: PART 2 (COLEOPTERA,
LEPIDOPTERA, NEUROPTERA AND BIOGRAPHICAL NOTE)

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Abstract
Irish records of the following species, based on material in the early nineteenth century Tardy Collection, are reviewed: *Paederus littoralis* Gravenhorst and *Bledius annae* Sharp (Staphylinidae), *Carabus violaceus* Linnaeus (Carabidae), *Aricia agestis* Denis & Schiffermüller (Lycaenidae), *Aporia crataegi* (Linnaeus) (Pieridae) and *Chrysopa abbreviata* Curtis (Chrysopidae) are rejected. However, the Tardy record of *Calosoma inquisitor* Linnaeus (Carabidae) from Powerscourt, Co. Wicklow is accepted. A previously unpublished portrait of James Tardy and biographical information are also included.

Key words: James Tardy, Irish Coleoptera, Irish Lepidoptera, Irish Neuroptera, Dublin Huguenot families

Introduction
In a previous paper on the Tardy Coleoptera collection (Good, 2013), several references were made to an unpublished manuscript (MS) by the senior author (JAG) in the Dublin University Zoological Museum which assessed Tardy records of *Paederus littoralis* Gravenhorst (Staphylinidae), *Calosoma inquisitor* Linnaeus and *Carabus violaceus* Linnaeus (Carabidae). While it was originally intended to publish that MS separately, it has been suggested that it would be better to publish this as a part of the original paper in the same journal. Also, in the meantime, a Tardy specimen, marked Irish, of the brown argus butterfly (*Aricia agestis* (Denis & Schiffermüller)), and a similarly marked lacewing specimen, under the label of *Chrysopa perla* (Linnaeus) (now *C. abbreviata* Curtis), have been discovered in the Dublin University Zoological Museum (DUZM), and the validity of these require reassessment. In addition, a portrait of James Tardy, in the possession of MB and not previously known in Ireland, is reproduced here, and some further biographical details are also included.
Methods
Details of interpretation of the collection and its associated manuscripts, other than those mentioned below, are given in Good (2013).

Results

**COLEOPTERA**

*Paederus littoralis* Gravenhorst (Staphylinidae) - Rejected (English specimen)
Following a recommendation to delete the single published Irish record of *Paederus littoralis* Gravenhorst (Good and O’Connor, 2009), a further putative Irish specimen was found in the DUZM Tardy collection. Good and Linnie (1990) concluded that potential Irish Tardy records are represented by specimens marked with green wax on their pinheads which are also recorded as “certainly Irish” in the MS list of Irish insects by A. H. Haliday (now held in the NMI). The Tardy collection, acquired by Thomas Coulter for the DUZM in 1842 (Nelson, 1983), was updated by Haliday in or after 1847 (Ball, 1847; Nash and O’Connor, 2011), and Haliday had available to him James Tardy’s manuscripts, now lost (Good and Linnie, 1990). The single Tardy specimen of *Paederus littoralis* (Gravenhorst) (= *litoralis* auct. (misspelling)) was redetermined using Lohse (1964) and with English reference material. This specimen has green wax on its pinhead, which was used to indicate Irish provenance (O’Connor and Nash, 1982). The entry in Haliday’s MS list reads: “Paederus litoralis”, with the line through *litoralis* in red ink, followed by a cross within a circle (meaning “certainly Irish”) in ink but with a cross-out (‘X’) through it in pencil, and then “ta!” meaning ‘Tardy!’ and finally “fornent sp” in pencil which is overwritten with “fornent” in ink. The term ‘fornent sp.’ is taken to mean ‘close-by species’, indicating that Haliday considered the record not to be *litoralis*. That Haliday crossed out both ‘litoralis’ and the ‘certainly Irish’ icon also indicates that he doubted the record, and it has not been cited in any subsequent publication. It is most probable that the record refers to *P. riparius* (Linnaeus). This is deduced from the subsequent addition of *riparius* to his MS list, with Tardy (‘ta’) cited as the first record, despite there being no other *Paederus* specimen or vacant pin-hole in the DUZM Tardy collection. It is also *riparius*, and not *litoralis*, which is marked as Irish in a copy of Curtis’ (1829) catalogue, apparently made out for the DUZM by Haliday (see Appendix 1 in Good, 2013). Yet, critically, it is a specimen of *litoralis*, not *riparius*, which remains in the collection, marked Irish. It would appear that an unlabelled English specimen was initially marked green on the misinterpretation that it was Irish (virtually all the non-Irish marked specimens in the collection are marked red, indicating English provenance). Haliday may have subsequently, on the basis of manuscript information, rejected the record as Irish, but he did not apparently correct the specimen marking.
**Carabus violaceus** Linnaeus (Carabidae) - Rejected (English specimens)

Except for two Tardy specimens, all available specimens supporting Irish records of *Carabus violaceus* Linnaeus have either proven to be *C. problematicus* Herbst or are doubtfully Irish (Speight *et al.*, 1982; Anderson *et al.*, 2000). *C. violaceus* is represented in the DUZM Tardy collection by a single specimen with green wax on its pin-head, and by another specimen derived from the DUZM Tardy collection marked “Ireland” in the NMI. The DUZM specimen was kindly confirmed as *C. violaceus* by Dr Martin C. D. Speight. The entry in Haliday’s MS list reads: “violaceus”, followed by a cross within a circle (meaning “certainly Irish”) and “ta”, “Cork, WC.” “Dublin, Mr Tardy”. (‘WC’ refers to William Clear). Critically, however, *C. violaceus*, although cited as from “Dublin” in Haliday’s MS list, is omitted from the Dublin list of Hogan (1854), which was based on information supplied, *inter alia*, by Haliday. Perhaps Haliday did not subsequently amend his MS list by crossing out this species? If an English specimen of *P. littoralis* was marked green in error for a similar species (*P. riparius*), then it is quite possible that an unlabelled English *C. violaceus* specimen could also be marked green in error for a similar species (*C. problematicus*). It would also be unusual for this species, if it did occur in Ireland, not to be more widespread (see discussion in Anderson *et al.* (2000)). The Tardy record for *C. violaceus* is rejected, therefore, even though it cited as Irish by Haliday.

**Calosoma inquisitor** Linnaeus (Carabidae) - Accepted (native)

However, the record of *Calosoma inquisitor* (Linnaeus), currently retained on the Irish list (Anderson *et al.*, 2000), is acceptable because, unlike *Paederus littoralis* or *Carabus violaceus*, it would not have been easily confused with another species. In addition to there being a specimen marked Irish in the DUZM Tardy collection and another Tardy specimen in the NMI, Curtis (1830) reported of this unmistakable species that “Mr. Tardy has seen them flying amongst oak trees at Powerscourt in Ireland”, and Tardy appears to have been a sufficiently well-respected entomologist (see below) not to have misidentified such a species. Alfred Furlong is also recorded as having collected this species in Powerscourt (Haliday MS list) (and a specimen labelled “Deerpark, Powerscourt, Co. Wicklow” is held in the NMI), meeting Allen’s criterion of “an unmistakable species credibly reported by two or more authors independently” (Allen, 1968).

**Bledius annae** Sharp (Staphylinidae) - Rejected (possible English specimen)

Two Tardy *Bledius* specimens in the NMI, labelled “*Hesperophilus talpa ? vix*” in Haliday’s hand, were provisionally determined by Good (2013) as *Bledius annae* Sharp. However, Lott (2008) considered that Irish records of *B. annae* probably refer to *B. pallipes* (Gravenhorst). While all the Irish material of *B. annae* has not yet been checked, and the Tardy specimens were only provisionally determined as this species, it is nonetheless a possible outcome that these Tardy specimens may represent the only Irish records of *B. annae*. It is necessary, therefore, to
examine their validity; could English material of *B. annae* have been inadvertently selected as representing *B. talpa* following the manner in which English *Paederus littoralis* were confused as Irish (see above)? The answer is yes. *B. annae* was only separated from *B. pallipes* by Sharp in 1911, and *B. annae* and *B. pallipes* are very similar to *B. subterraneus* (see Fowler (1888) for example), the name which was subsequently added to Haliday’s MS list just below “*talpa*?”. In the 1830’s, *talpa* was one of only seven species of *Bledius* listed in Curtis (1829) *Catalogue of British insects*, so confusion of these species in Tardy’s time is quite likely. The record, if it is indeed based on *B. annae* specimens, must therefore be rejected, as the possibility of English specimens being inadvertently marked Irish cannot be ruled out.

**LEPIDOPTERA**

*Aricia agestis* Denis & Schiffermüller (Lycaenidae) - Rejected (English specimen)

A specimen of the brown argus (*Aricia agestis* Denis & Schiffermüller), marked Irish, was found in the nineteenth century British and Irish Lepidoptera collection in the Dublin University Zoological Museum (DUZM). This collection is a combination of remnants of a number of collections including that of James Tardy. The brown argus specimen, while not labelled, has green wax on its pinhead, which was the method of marking specimens considered to be Irish by A. H. Haliday (O’Connor and Nash, 1982). In Haliday’s MS list of Irish insects, now held in the National Museum of Ireland (NMI), *Aricia agestis* is annotated with a “certainly Irish” icon and “ta” meaning Tardy. Based on the marking of the Tardy Coleoptera, the specimen can be interpreted as representing the Tardy record cited by Haliday.

In Birchall’s first review of Irish Lepidoptera, *A. agestis* is cited as being recorded from “Dundrum, near Dublin” (Birchall, 1866). Subsequently, he removed the species from the Irish list, stating, without further detail, that “no trustworthy confirmation has been obtained of the occurrence in Ireland of [this and other] species”, and that “the foodplant, *Helianthemum vulgare*, is not, I believe, found in Ireland” (Birchall, 1873). However, *A. agestis* also feeds on *Erodium* spp. and *Geranium sanguineum*, which occur on the mid-east coast of Ireland (Preston *et al.*, 2002). Thus, we have a putative Irish specimen, available foodplants, and an unpublished verification by A. H. Haliday.

However, the record cannot be accepted for the following reasons. The first is that green-marked Tardy specimens could be of English origin, where the species so marked could have been confused with a related Irish species (see discussion of *Paederus littoralis* and *Carabus violaceus* above). *A. agestis* is superficially similar to a small female *Polyommatus icarus* (Rottemburg) (common blue) with brown uppersides; indeed such a specimen taken near Athy (Co. Kildare) by K. M. Dunlop occurs in the NMI. If a written record of *A. agestis* was erroneously based on such a female *P. icarus*, and an English specimen subsequently
inadvertently marked as representing this record, then this is no different to what apparently happened with the *Paederus littoralis* specimen, except that Haliday’s MS list was not corrected subsequently. Secondly, the annotated Curtis (1829) catalogue, which was apparently annotated by Haliday after his initial MS list was produced (the latter in 1838 (see Ashe, 1986)), does not mark *Aricia agestis* as Irish. Thus the Irish record of *Aricia agestis*, despite it being represented by a specimen marked Irish and verified in Haliday’s MS list, must be rejected as unreliable.

*Aporia crataegi* (Linnaeus) (Pieridae) - Rejected (unverified specimen)

Haliday’s MS list also annotates the black-veined white (*Aporia (=*Pieris*) crataegi* (Linnaeus) (Pieridae)) with a “certainly Irish” icon, followed by “ta, eg”, meaning Tardy and Egan (the latter who was a contemporary entomologist (Nash, 1983)). No specimens marked Irish were found in the DUZM or NMI collections, and neither does Haliday’s annotated copy of Curtis (1829) list *Pieris crataegi* as Irish. No Egan specimen has apparently been located, but Birchall (1866) stated that “Mr Greene inserts this species in his list on the authority of Mr. Hely”.

The record must be rejected as no specimen is available (note that the longhorn beetle *Aromia moschata* (Linnaeus), a similarly distinctive species which would be recognisable to an experienced entomologist like Tardy, was accepted by Good (2013). However, in the latter case, the specimen was removed and a pinhole remained with a green disc (indicating Irish provenance); also Haliday appears to have paid more attention to updating his MS list for Coleoptera, in which he had a greater interest (Nash and O’Connor, 2011), than updating for Lepidoptera).

**NEUROPTERA**

*Chrysopa abbreviata* Curtis (= *perla* (Linnaeus)) (Chrysopidae) - Rejected (misidentification)

This species is included on the Irish list (O’Connor and Nelson, 2012), with the following annotation: “certainly Irish according to Haliday MS (King and Halbert, 1910), but since then there have been no records and its Irish status requires confirmation”. The entry in Haliday’s MS list is cited by King and Halbert (1910) as “*Chrysopa perla* (Ste?) = *reticulata* ?, *cancellata*, certainly Irish, *Hely* !”. A specimen was found in the DUZM Tardy collection standing under the label ‘*Chrysopa perla*’; this was redetermined as *Chrysotropia (= Chrysopidia) ciliata* (Wesmael) using the key and description in Plant (1997) and in comparison with an English reference specimen of *C. abbreviata*. It is possible that this was a Tardy specimen determined by Hely, and hence the authority was attributed to Hely by Haliday. Given this possibility and the misidentification, *C. abbreviata* should probably be deleted from the Irish list.
Biographical note: James Tardy

The following note supplements the information given in Good and Linnie (1990).

James Tardy (1782-1835) was the youngest son of a successful Dublin Huguenot sugar refiner, who was originally a French naval officer captured by the British in 1759 (Lee, 1936). Both are buried in the Huguenot cemetery in Merrion Row, Dublin (and the year of birth of James was determined from the inscription therein). That he was able to fully pursue natural history may also have been assisted by his apparent wealth as a result of his marriage to Ann Johnston, a granddaughter of a cousin of Queen Anne (Agnew, 1874). No illustration of James Tardy has been available to-date in Ireland. Now, a portrait of James Tardy, which is in the possession of the junior author (MB), is reproduced here (see Plate 1).

James Tardy was an “esteemed entomologist” of his time (Anon., 1838). Davis (1832) described him as “the most active of the few entomologists in Dublin” (Nash, 1983), and a contemporary, Dr Charles Farran, lamented him as “an enthusiastic naturalist, to whom we are all indebted as giving the first impulse to natural history in Dublin” (Farran, 1854). He was a respected friend of N. A. Vigors, first Secretary of the Zoological Society, on whose recommendation John Curtis named *Rhopalomesites tardyi* (Curtis) (Curculionidae) after him (Nash, 1983). He was actively collecting in the 1810s; Brown (1818) records of the bivalve species *Chama cor* Linnaeus (now *Glossus humanus* Linnaeus)) that “one valve of this very rare shell was found in Dublin Bay by James Tardy”.

While a few of the unique or almost unique Tardy Irish Coleoptera records, like *Calosoma inquisitor*, can be accepted, a number of the other such records with Irish marked specimens in his collection and annotated as ‘certainly Irish’ in Haliday’s MS list are open to doubt. However, this is not a completely ‘deplorable loss of skilled observation’, as de Vismes Kane (1901) said of his much less-organised Lepidoptera, as the collection, taken as a whole, indicates relatively minor losses to the Irish coleopterous fauna during the nineteenth century (see Good, 2013). A discussion of other rejected and accepted Tardy records is given in Good (2013).

Acknowledgements

I am most grateful to Dr Martyn Linnie (DUZM) and Dr Jim O’Connor (NMI) for access to the manuscripts and collections held in the DUZM and NMI, respectively, and for their kindness with their time during my sometimes impromptu visits; to Dr Roy Anderson, Dr Martin Speight and Dr Fidelma Butler for discussion of Tardy records; and to Dr Martin Speight for checking a *Carabus violaceus* specimen.
References


Ball, V. (1847) The Dublin University Museum. Dublin University, Dublin.


Davis, A. H. (1832) Entomological notes on a journey through several English counties, and in Wales and Ireland, during July and August 1831. Magazine of Natural History 5: 245-248.


Good, J. A. and O’Connor, J. P. (2009) Paederus littoralis Gravenhorst, Quedius longicornis Kraatz (Staphylinidae) and Lytta vesicatoria (Linnaeus) (Meloidae) to be deleted from the
PLATE 1. A portrait of James Tardy (1782-1835).
FURTHER RECORDS OF CADDISFLIES (TRICHOPTERA) FROM CO. FERMANAGH INCLUDING SEVEN SPECIES NEW TO NORTHERN IRELAND

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Abstract
During a recent collecting trip to the lakelands of Co. Fermanagh, the authors recorded 33 species of Trichoptera including seven species new to Northern Ireland.
Key words: Trichoptera, Northern Ireland, Fermanagh, new records, distribution

Introduction
O’Connor, Bond and O’Connor (2013) reviewed the caddisfly fauna of County Fermanagh, an important wetland area in Ireland, and listed 16 species from the county. O’Connor and Bond (2014) added Oxyethira flavicornis (Pictet). O’Connor and Davy-Bowker (2014) reported another 29 species based on larvae collected in running water. Recently, the authors revisited the county to obtain adults with an emphasis on collecting at standing water. Altogether, 33 species were captured and seven of these are new to Northern Ireland. A total of 19 species are new to Fermanagh bringing the total to 65 species and representing over 43% of the Irish fauna. Undoubtedly, many more species await discovery in the region.

The adults were taken by sweeping water-side vegetation with a hand-net, searching spider webs or by Heath portable light-traps. Lower Lough Erne was much more accessible than the Upper Lough Erne and it was possible to collect from paths beside the lake. All the material was identified by the senior author using Mosely (1939), Malicky (1983) and Barnard and Ross (2012). Irish grid references are given for each site. Voucher specimens of the species new to Northern Ireland will be deposited in the National Museum of Ireland.

The records
GLOSSOSOMATIDAE
Agapetus ochripes Curtis, 1834
Arney River: Old Drumane Bridge (H2336), swept, 3♂♂ 26 August 2014.
New to Co. Fermanagh, Agapetus ochripes was recorded from Co. Antrim by King and Halbert (1910).

HYDROPTILIDAE
Agraylea multipunctata Curtis, 1834
A single larva was recorded from the River Finn in Co. Fermanagh by O’Connor and Davy-Bowker (2014).
Hydroptila angulata Mosely, 1922
Lower Lough Erne: Castle Archdale Country Park (H1758), swept, 10♂ 2♀ 26 August 2014. New to Co. Fermanagh, Hydroptila angulata was recorded from Co. Armagh by O’Connor and Bond (2014).

Hydroptila forcipata (Eaton, 1873) New to Northern Ireland
Arney River: Old Drumane Bridge (H2336), swept, ♀ 26 August 2014.
Hydroptila forcipata is a widespread Irish species (Fig. 1).

Hydroptila pulchricornis Pictet, 1834 New to Northern Ireland
Hydroptila pulchricornis is a local species in Ireland (Fig. 2).

Hydroptila sparsa Curtis, 1834
New to Co. Fermanagh, Hydroptila sparsa was recorded from Co. Tyrone by O’Connor and Bond (2009).

Ithytrichia lamellaris Eaton, 1873 New to Northern Ireland
Arney River: Old Drumane Bridge (H2336), swept, ♂ 26 August 2014.
Ithytrichia lamellaris is widely distributed in Ireland (Fig. 3).

Oxyethira flavicornis (Pictet, 1834)
Oxyethira flavicornis was recorded from Derryvore Townland near Crom, Co. Fermanagh, by O’Connor and Bond (2014).

POLYCENTROPODIDAE

Cyrnus flavidus McLachlan, 1864
New to Fermanagh, Cyrnus flavidus was recorded from Co. Armagh by King and Halbert (1910).

Cyrnus trimaculatus (Curtis, 1834)
Cyrnus trimaculatus has been recorded from all six counties in Northern Ireland (O’Connor and Davy-Bowker, 2014).

Holocentropus picicornis (Stephens, 1836)
New to Co. Fermanagh, Holocentropus picicornis was recorded from Co. Armagh by King and Halbert (1910).
**Polycentropus flavomaculatus** (Pictet, 1834)
Woodford River: near Aghalane (H3419), swept, ♂ 27 August 2014.

*Polycentropus flavomaculatus* has been recorded from all six counties in Northern Ireland (O’Connor and Davy-Bowker, 2014).

**PSYCHOMYIIDAE**

**Psychomyia pusilla** (Fabricius, 1781)

*Psychomyia pusilla* has been recorded from Cos Antrim, Armagh, Derry, Fermanagh and Tyrone (O’Connor and Davy-Bowker, 2014).

**Tinodes waeneri** (Linnaeus, 1758)

*Tinodes waeneri* has been recorded from all six counties in Northern Ireland (O’Connor and Davy-Bowker, 2014).

**HYDROPSYCHIDAE**

**Cheumatopsyche lepida** (Pictet, 1834)
Arney River: Old Drumane Bridge (H2336), swept, ♂ 26 August 2014.

New to Co. Fermanagh, *Cheumatopsyche lepida* was previously only known in Northern Ireland from two larvae taken in the River Strule, Co. Tyrone (O’Connor and Davy-Bowker, 2014).

**PHRYGANEIDAE**

**Agrypnia obsoleta** (Hagen, 1864) New to Northern Ireland
Mill Lough, near Bellanaleck (H2438), light-trap ♂♀♂♀ 26 August 2014.

King and Halbert (1910) give a W. F. Johnson record of *Agrypnia obsoleta* from Kellystewart Lough in Co. Armagh. This is however an error. The site’s name is misspelt and assigned to the wrong county. Johnson (1892, 1893) actually collected at Killystewart Lough in Co. Donegal. He describes the waterbody as being on the top of a hill near Ardara. The known Irish distribution is shown (Fig. 4).

**Agrypnia pagetana** Curtis, 1835 New to Northern Ireland
Mill Lough: near Bellanaleck (H2438), swept 2♂♂♀♀ and light-trap 3♂♂♀♀ 26 August 2014.

*Agrypnia pagetana* is mainly a northern species in Ireland (Fig. 5).

**GOERIDAE**

**Goera pilosa** (Fabricius, 1775)
Lower Lough Erne: Castle Archdale Country Park (H1758), swept, ♂♂ 26 August 2014.

*Goera pilosa* has been recorded from Cos Armagh, Fermanagh and Tyrone (O’Connor and Davy-Bowker, 2014).
LIMNEPHILIDAE

Limnephilus auricula Curtis, 1834
Upper Lough Erne: Knockninny near Derrylin (H2731), swept, ♀ 27 August 2014.
New to Co. Fermanagh, Limnephilus auricula was recorded from Co. Armagh by King and Halbert (1910).

Limnephilus flavicornis (Fabricius, 1787)
Limnephilus flavicornis has been recorded from Cos Armagh and Fermanagh (O’Connor and Davy-Bowker, 2014).

Limnephilus lunatus Curtis, 1834
River Erne: Cloonatrig, Bellanaleck (H2637), light-trap placed on pontoon, 2♂♂ 26 August 2014.
Limnephilus lunatus has been recorded from all six counties in Northern Ireland (O’Connor and Davy-Bowker, 2014).

Limnephilus marmoratus Curtis, 1834
Limnephilus marmoratus has been recorded from Cos Antrim, Armagh, Down and Fermanagh (O’Connor and Davy-Bowker, 2014).

Limnephilus vittatus (Fabricius, 1798)
Arney River: Old Drumane Bridge (H2336), swept, ♀ 26 August 2014. Upper Lough Erne: Knockninny near Derrylin (H2731), swept, 3♂♀ 27 August 2014.
New to Co. Fermanagh, Limnephilus vittatus was recorded from Co. Armagh by King and Halbert (1910).

SERICOSTOMATIDAE

Sericostoma personatum (Spence, 1826)
Lower Lough Erne: Castle Archdale Country Park (H1758), swept, ♀ 26 August 2014.
Sericostoma personatum has been recorded from all six counties in Northern Ireland (O’Connor and Davy-Bowker, 2014).

LEPTOCERIDAE

Athripsodes aterrimus (Stephens, 1836)
Athripsodes aterrimus has been recorded from Cos Down, Fermanagh and Tyrone (O’Connor and Davy-Bowker, 2014).

Athripsodes cinereus (Curtis, 1834)
Lower Lough Erne: Castle Archdale Country Park (H1758), swept, 2♂♂5♀♀ 26 August 2014.
Athripsodes cinereus has been recorded from all six counties in Northern Ireland (O’Connor and Davy-Bowker, 2014).
Ceraclea fulva (Rambur, 1842)
Upper Lough Erne: Knockninny near Derrylin (H2731), swept, ♂♀ 27 August 2014.

*Ceraclea fulva* has been recorded from the Crom Estate also on Upper Lough Erne (O’Connor, Bond and O’Connor, 2013).

*Mystacides azurea* (Linnaeus, 1761)
Lower Lough Erne: Castle Archdale Country Park (H1758), swept, ♂♀ 26 August 2014.
Upper Lough Erne: Bellanaleck (H2339), swept, ♀ 27 August 2014.

New to Co. Fermanagh, *Mystacides azurea* has been recorded from the other five counties of Northern Ireland (O’Connor and Davy-Bowker, 2014).

*Mystacides longicornis* (Linnaeus, 1758)

New to Fermanagh, *Mystacides longicornis* was recorded from Cos Antrim and Armagh by King and Halbert (1910).

Oecetis furva (Rambur, 1834)  
New to Northern Ireland

The known Irish distribution of *Oecetis furva* is shown (Fig. 6).

Oecetis lacustris (Pictet, 1834)  
New to Northern Ireland
River Erne: Cloonatrig, Bellanaleck (H2637), light-trap placed on pontoon, ♂ 26 August 2014.

The known Irish distribution of *Oecetis lacustris* is shown (Fig. 7).

Oecetis ochracea (Curtis, 1825)
River Erne: Cloonatrig, Bellanaleck (H2637), light-trap placed on pontoon, 2♂♂♀ 26 August 2014.

New to Co. Fermanagh, *Oecetis ochracea* was recorded from Co. Armagh by King and Halbert (1910).

Triaenodes bicolor (Curtis, 1834)

New to Co. Fermanagh, *Triaenodes bicolor* was recorded from Co. Armagh by King and Halbert (1910).

Acknowledgement
The maps were prepared using DMAP and the senior author is indebted to Alan Morton for providing a special programme for producing them.

References


**Figure 1:** *Hydroptila forcipata*.

**Figure 2:** *Hydroptila pulchricornis*.

**Figure 3:** *Ithytrichia lamellaris*.

**Figure 4:** *Agrypnia obsoleta*. 
FIGURES 5-7. The Irish distributions of *Agrypnia pagetana* Curtis, *Oecetis furva* (Rambur) and *Oecetis lacustris* (Pictet).

**Figure 5:** *Agrypnia pagetana*.

**Figure 6:** *Oecetis furva*.

**Figure 7:** *Oecetis lacustris*. 
RECORDS FOR UNCOMMON IRISH BEETLES (COLEOPTERA), INCLUDING PHACOPHALLUS PARUMPUNCTATUS (GYLLENHAL) (STAPHYLINIDAE)

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Abstract
Records of fourteen uncommon species of Irish beetles (Coleoptera) are presented. The following families are represented: Oedemeridae, Carabidae, Leioidae, Staphylinidae, Heteroceridae, Tenebrionidae and Chrysomelidae. The record of Phacophallus parumpunctatus (Gyllenhal, 1827) is the first Irish one since 1854.

Key words: Coleoptera, Ireland, records, distribution, Phacophallus parumpunctatus

Introduction
The author’s natural history activities over recent years have mainly involved studying spiders and myriapods. However in 2013, my research was concentrated on beetles. A number of interesting discoveries were made and these are detailed below, along with a few additional records gathered over recent years.

OEDEMERIDAE
Oedemera lurida (Marsham, 1802)
DUBLIN: Sean Moore Park (O190331), 26 July 2011, specimens were scattered on vegetation on a coastal headland.

CARABIDAE
Amara eurynota (Panzer, 1796)
CORK: Cobh (W7966), 2 August 1995, waste ground.

The only other Co. Cork record would appear to be that reported by Moore (1981). The species seems to be a very scarce beetle over much of Ireland (Anderson, McFerran and Cameron, 2000).

Harpalus rubripes (Duftschatz, 1812)
CARLOW: Carlow (S723764), 25 April 2010, a single male, waste ground.

A scarce southern species in Ireland (Anderson, McFerran and Cameron, 2000).
LEIOIDAE

Choleva fagniezi Jeannel, 1922
SLIGO: Bartragh (G262290). ♂ 5 July 2013, trapped in a hollow in coastal sand dunes.

Choleva fagniezi was added to the Irish list by McCormack, Nolan and Regan (2006), from upland sites in Co Mayo and Donegal. Clearly the species is widespread in the north-west of Ireland and not confined to the uplands.

Leptinus testaceus Muller, 1817
CORK: Poulgorm Bridge (W210353), 27 February 2008, a few individuals sieved from leaf litter, collected at the edge of disturbed mixed woodland. No particular sign of mammal activity at this site, however the leaf litter bore a heavy covering of bird droppings. One individual stayed alive unattended in a plastic lunchbox containing leaf litter for 4 months. Knocknabehy (W604781), 12 October 2012, sieved from leaf litter collected in mixed woodland.

STAPHYLINIDAE

Astenus lyonessius (Joy, 1908)
SLIGO: Cooanmore Point (G393383), ♀ 23 May 2013, under a stone with ants, exposed coastal headland.

Scopaeus sulcicollis (Stephens, 1833)
Scopaeus sulcicollis (Stephens) was added to the Irish list by Bullock (1935), and the only other Irish record I am aware of is that contained in Good and Wistow (1997). To these I can add a third Irish record. SLIGO: Kilmacowen (G670302), 1 July 2013, a single female sieved from tidal debris, mostly Phragmites fragments, at the edge of coastal grassland.

With records now coming from counties Kerry and Louth, as well as Sligo, this inconspicuous little beetle would appear to be widespread in Ireland, at least near the coast.

Bisnius puella (Nordmann, 1837)
SLIGO: Union Wood (G681278), ♂ 11 October 2013, in fresh badger (Meles meles) dung in oak (Quercus) woodland, Also present were Bisnius cephalotes (Gravenhorst), B. fimetarius (Gravenhorst), Philonthus addendus Sharp and P. tenuicornis Mulsant and Rey.

Gabrius osseticus (Kolenati, 1846)
SLIGO: Carrowdough (G601348), 3 April 2013, sand dune foreshore; Bartragh (G262290), 5 April 2013, sandy bank in dunes. DONEGAL: Tullan Strand (G833618), 12 April 2013, sand dune foreshore.

Phacophallus parumpunctatus (Gyllenhal, 1827)
On 10 September 2013 I revisited a compost heap at Ferryhouse, Clonmel, Co. Tipperary (S237229), primarily to search for beetles. Few beetles were uncovered in the field, so some of the composting material was sieved and examined later at home. This revealed the presence of a
single specimen of *Phacophallus parumpunctatus* (Gyllenhal). This very distinctive immigrant rove beetle was reported from Co. Dublin by Hogan (1854), and remarkably appears not to have been reported from Ireland since. Other immigrant rove beetles present were *Lithocharis nigriceps* Kraatz, *Philonthus discoideus* (Gyllenhal) and *P. rectangulus* Sharp, as well as *Bisnius fimetarius* (Gravenhorst). *L. nigriceps* was added to the Irish list by Nash, Anderson and O'Connor (1997). The composting vegetation is present in a shrubby waste area between St Joseph’s Church and the River Suir, and presumably originates from grass cuttings etc., being disposed of from the church grounds. I first visited the site in October 2000 and in the intervening years the nature of the composting material has changed from predominately leaves to mostly grass cuttings. Interesting invertebrates are invariably present, e.g. Cawley (2009). I have a record for *L. nigriceps* from grass cuttings at Ballysadare, Co. Sligo, G672294, 11 October 2013, so this beetle would now appear to be very widespread in Ireland.

*Tasgius morsitans* (Rossi, 1790)

SLIGO: Trawalus Strand (G692558), 13 April 2012, a singleton under a stone at the base of a sandy bank.

**HETEROCERIDAE**

*Heterocerus fenestratus* (Thunberg, 1784)

SLIGO: On 18 July 2013 I collected specimens of *Heterocerus* at Colgagh Lake (G744362), the males of which proved on dissection to be *fenestratus* (Thunberg). On a very hot day the beetles were numerous and active on recently exposed semi-vegetated lakeshore mud. *H. fenestratus* was added to the Irish list by Owen (1997) when he collected a specimen at Lough Gash, Co. Clare. This is the only Irish record alluded to by Foster (2010). Other beetles active on the mud were *Dyschirius leudersi* Wagner (Carabidae), *Philonotus furcifer* Renkonen, *Philonotus quisquiliarius* (Gyllenhal) and the typical (black elytra) form of *Bledius gallicus* (Gravenhorst) (Staphylinidae). *Pelophila borealis* (Paykull), *Blethisa multipunctata* (Linnaeus) and *Chlaenius nigricornis* (Fabricius) (Carabidae) were also present. The dark form of *B. gallicus* has been reported from Ireland by Lott (2008). A number of uncommon carabids have been reported from this site by Cawley (2013), and the scarce dytiscid *Hygrotus novemlineatus* (Stephens) is present in the lake.

**TENEBRIONIDAE**

*Lagria hirta* (Linnaeus, 1758)

MAYO: Charlestown (G476020), 14 July 2012, a single specimen of *L. hirta* swept from nettles *Urtica dioica*, on waste ground adjacent to a disused railway line. Although a widespread beetle in the south and east of Ireland, especially near the coast, *L. hirta* would appear to be virtually
absent from the north-west of the country. Indeed the only published record I am aware of is that of Johnson and Halbert (1902) who list a Co. Derry occurrence, supplied by C. W. Buckle. This relatively large and distinctive species would appear to be a genuine rarity in these parts.

**CHRYSMELIDAE**

*Oomorphus concolor* (Sturm, 1807)

Information contained in Cox (2007) would suggest that *Oomorphus concolor* (Sturm) has a marked southern and eastern distribution in Ireland. I was therefore surprised to find, among some unidentified material, specimens which I had collected at Knockbrack, Co. Leitrim (G771577), 8 February 2006. Here two specimens were sieved from moss, collected in remnant coastal heath. This record, coupled with an old Co. Galway record contained in Johnson and Halbert (1902), hints at a wider coastal distribution in Ireland for this inconspicuous little beetle.

**Acknowledgement**

Thanks to Dr Roy Anderson, who confirmed a number of identifications, read over a draft of this note and for his advice.

**References**


FIRST IRISH RECORDS OF *CRUSTULINA GUTTATA* (WIDER) WITH NOTES ON IRISH OCCURRENCES OF *CRUSTULINA STICTA* (O.P.-CAMBRIDGE) (ARANEAE: THERIDIIDAE)

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**Abstract**

Specimens of *Crustulina guttata* (Wider, 1834) were collected from cliff vegetation near Bray town in Co. Wicklow, the first records of the species from Ireland. Where it occurs, the spider is generally rather local but not uncommon. It is widespread across Europe and tends to occur in drier habitats. Its rarer congener *Crustulina sticta* (O.P.-Cambridge, 1861) was collected with *C. guttata* and is known only from Ireland’s east coast. It usually occurs in rather humid and damp habitats. The two species are profiled and their Irish status discussed.

**Key words:** Araneae, Theridiidae, *Crustulina guttata*, *Crustulina sticta*, Ireland, first records, cliff, Dublin, Wicklow

**Records and identification**

*Crustulina guttata* (Wider, 1834)                                                               New Irish Record

**WICKLOW:** All records were from the coastal cliff walk between the southern end of Bray town and Greystones, Co. Wicklow. Specimens were shaken from vegetation growing on the lower cliff-face into a net, the catch was examined immediately and selected specimens retained: 1♀ 28 May 2014 (O284171); 1♀, 1♂ subadult, 1♂ subadult, 2 June 2014 (O284165) from a prostrate mat of *Thymus polytrichus* on rocks; 1♂2♀♀, 2♀♀ subadults (O286161) from a prostrate mat of *Thymus polytrichus* on rocks.

Identified using Roberts (1993); the spider has a very distinctive appearance, with clear pale abdominal markings on a dark background, strongly annulated legs and the carapace carrying numerous warty granulations. *C. guttata* is not noted in Helsdingen (1996), Cawley (2009) or any subsequent publication on Irish spiders and the present records are considered the first for Ireland.

*Crustulina sticta* (O.P.-Cambridge, 1861)

**DUBLIN:** 24 May 2004, Howth Head, 1♀ (O269370), 1♀, 1 immature (O271369), south-facing cliffs, shaken from *Calluna* plants; 12 June 2004, Howth Head, 1♀ (O269370) from base of tall *Calluna* plant; 30 August 2004, Howth Head, 1♀, 1 immature (O271368), a fire had burnt
vegetation extensively in this area and the female was taken here, the immature from an unburnt Calluna shrub. WICKLOW: (new county record) Bray cliff-walk (O284165), 1♀ 2 June 2014 from a prostrate mat of Thymus polytrichus on rocks.

Identified using Roberts (1993). This spider is less distinctive, with a pale band on the anterior and margins of the abdomen and extending down the midline, on a brownish background. The legs are unmarked but the carapace carries the characteristic warty granulations.

Species profiles
Crustulina guttata

Distribution: Palaearctic (Platnick, 2014), occurring from Europe to North-western China and Japan (Song et al., 1999) but not known from southern China or south-east Asia (Murphy and Murphy, 2000). Found in most European countries occurring from Fennoscandia to the Mediterranean, into Russia and the Northern Caucasus (Helsdingen, 2013a, 2013b; Otto, 2014). Absent from most Mediterranean islands. Locally common but generally scarce in Britain (Harvey et al., 2002), it is most abundant in south-eastern England with scattered records from central England and a few from Wales or further north. In France, more frequent in the north-west however the species probably occurs throughout (Le Peru, 2006). Preferred environment: most records are from mesothermic to xeric habitats. It occurs in a wide range of habitats, even in Britain where it is not frequent (SHRS, 2014). There it prefers sandy soils (Harvey et al., 2002) and most records are from moor, heath, coastal dune and shingle habitats. Most other records are split between woodland and open grassland habitats. The summary of Hänggi et al. (1995) has the species occurring in central Europe most frequently in xerothermic wood steppe, vineyards, rubble-piles and coastal dunes. Less frequent in Molinia meadows, semi-dry grasslands, deciduous, coniferous and peatland woodlands. Regular in Pinus woodland in a number of countries, inter alia Britain, Sweden and the Czech Republic (Buchar and Ruziska, 2002; Harvey et al., 2002; Almquist, 2005). Occurs in other habitats including scree margins (Buchar and Ruziska, 2002), and heather and juniper stands (Le Peru, 2006). Semi-natural habitats: a small number of records from parklands and gardens in Belgium (Keer et al., 2010) and post-industrial landscapes in Britain (SHRS, 2014). Micro-habitat: spins a small web in vegetation close to ground level; also amongst leaf-litter, mosses, under stones and bark (Harvey et al., 2002; Le Peru, 2006; Braud, 2007) and found amongst moss in winter (Braud, 2007). The majority of specimens are taken in the litter and herb layer (Hänggi et al., 1995; SHRS, 2014). Builds a small frame-web with strands reaching to the substrate, the lower ends of these are gluey to trap passing ants (Almquist, 2005). Season: adults occur throughout the year (Harvey et al., 2002; Le Peru, 2006; Braud, 2007). In Britain, numbers of both sexes peak
in June (SHRS, 2014) and are lowest from December to January. Braud (2007) suggests fewer specimens are seen in late summer and early spring.

Crustulina sticta

**Distribution:** Holarctic (Platnick, 2014); North-America, Europe, Russia, China, Japan, but not South-East Asia (Murphy and Murphy, 2000). Widespread through Europe, rather rarely found and not known from many countries including Norway, many of the major Mediterranean islands, Switzerland, and a wide swathe of land from the Dalmatian coast east to the Black sea (Helsdingen, 2013a; Nentwig et al., 2014; SHRS, 2014). **Preferred environment:** the only previous Irish record was from an area of wet dune meadow/slack on Ireland’s east coast (Snazell, 1983) very close to the more recent records. Generally found in humid and damp habitats, often coastal, and many non-coastal records are from wetlands. Favoured central European habitats are bogs and swampland (Nentwig et al., 2014). In Britain, over one quarter of records are from heath/moor and above another quarter from coastal habitats: dunes, shingle and saltmarsh. It has been recorded from a variety of wetland and grassland habitats in smaller numbers (SHRS, 2014). In France, records are mostly both coastal and wetland including Phragmites (Le Peru, 2006) and Braud (2007) notes it from humid moorland. Coastal dunes and Sphagnum bogs in Sweden (Almquist, 2005), Sphagnum bog in the Netherlands (Gajdoš and Toft, 2000) and marshy Carex habitat in Poland (Kupryjanowicz, 1997). **Semi-natural habitats:** Le Peru (2006) notes it from cereal fields. **Micro-habitat:** builds a small scaffold web from vegetation to substrate. Primarily recorded from ground-layer and low-vegetation (<20cm) (SHRS, 2014), under stones, amongst Ammophila (Almquist, 1973), Juncus litter (Le Peru, 2006), mosses (Braud, 2007), Cladonia lichens (Almquist, 1973) and herbs (Le Peru, 2006). **Season:** British data has males recorded only from May to July with a maximum in May. Females are probably found all year round, being most abundant from May to September, and reaching a minimum in October/November and from February to April (SHRS, 2014). February to May in north-western France (Braud, 2007) but also recorded there from September to November (Le Peru, 2006). **Conservation status:** it is considered scarce rather than threatened in Britain and the damp nature of its preferred habitats should be maintained to encourage the spider (SHRS, 2014).

**Comments**

The combination of a coastal situation and fast draining, rocky, semi-vertical location seems to serve both species by offering an environment that is sufficiently dry for the one and sufficiently humid for the other. The species have been noted to occur together previously: the
type locality of *C. sticta* was from “under heathy ledges” on Bloxworth Heath and *C. guttata* had been collected there the same year “at the roots of heath” (Cambridge, 1861).

The amount of sampling carried out when I collected the spiders was very small and would suggest that *C. guttata* at least could be very abundant along the Bray cliffs. The undisturbed nature of the cliff vegetation in Bray and Howth is probably significant since neither spider occurs frequently in managed habitat. Considering those habitats in which the two species most regularly occur elsewhere and thus in which they might be expected to occur in Ireland, it can be noted that surveys of midlands raised bogs, calcareous grasslands (including eskers and other glacial deposits), and of east and west coast dune systems have produced neither *C. guttata* nor *C. sticta*. Obvious likely locations where either or both species might be expected to occur are areas of cliff and coastal rocky vegetation on Ireland’s east and south coasts.

Present evidence suggests that the two species are confined to Ireland’s east coast and this might in turn suggest that they are relatively recent advents. The absence of records from other likely habitat in Ireland might support this line of thought. There is not much in the way of evidence to suggest that either species has spread significantly within Europe in recent times. There is little to suggest also they are species susceptible to transportation by human agency. I am not aware if either species disperses by ballooning and this possibility cannot be excluded. There are no particularly strong grounds, to my mind, for suggesting that *C. guttata* is a recent advent to Ireland and more likely, the species has been missed up to now.

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**References**


**NOTICE**

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