

NEUROPTERA.

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THE present report contains a short account of the Neuroptera of the Clare Island district. It is concerned with such insects as the dragonflies, mayflies, caddisflies, and other insects comprising the Neuroptera of the older classifications.

Our knowledge of most of the entomology of the district prior to the present Survey was practically *nil*, if we except a few groups such as the moths and beetles. In the case of the Neuroptera, however, a considerable amount of collecting had already been done by Mr. J. J. F. X. King, who had selected the Westport and Newport districts for part of the field-work which it was necessary to carry out in the preparation of his catalogue of the Irish Neuroptera published in 1889.<sup>1</sup>

In order to secure a complete report on this interesting section of the fauna, it was hoped that Mr. King would be able to continue his work in the district; unfortunately neither he nor Mr. K. J. Morton could spare time for the undertaking. In these circumstances the attention given to the Neuroptera during the Survey was very limited, so that there are comparatively few additional species to record. They include, however, a few notable insects, such as the mayfly *Leptophlebia vespertina* and the caddisfly *Limnophilus fuscinervis*.

As a result of the collecting carried on both before and during the Survey we have now records of 124 species of Neuroptera from the neighbourhood of Clare Island, or almost exactly half the number recorded in the general Irish list published about two years ago.<sup>2</sup> The local list is made up as follows:—

Dragonflies, 14 species	Psocidae, 18 species
Mayflies, 11 „	Planipennia, &c., 13 „
Stoneflies, 5 „	Caddisflies, 63 „

There is no doubt that these do not represent the complete neuropterous fauna of the district; yet the group is numerically a small one, and it is hardly likely that many species remain to be discovered there.

In spite of an abundance of suitable habitats, the district is comparatively poor in aquatic species. The dragonflies, for instance, are few, but in this

<sup>1</sup> A Contribution towards a Catalogue of the Neuropterous Fauna of Ireland. Glasgow, 1889.

<sup>2</sup> J. J. F. X. KING and J. N. HALBERT: A list of the Neuroptera of Ireland. Proc. R.I. Acad., xxviii, Sect. B, No. 2. 1910.

respect the district shares a characteristic of the rest of Ireland, there being only twenty-three kinds recorded from this country.

Among the rarer dragonflies are *Sympetrum scoticum*, which occurs both on Clare Island and on the adjacent mainland. The local *Brachytron pratense* occurred on the wooded hillside at Belclare, and Mr. King had previously taken it near the convent at Westport. A much rarer species is the little *Ischnura pumilio*, which Mr. King found many years ago on the Carrowbeg River. One hot day in July I also met with a specimen flying over marshy ground by a small lough (Doo Lough) quite close to Louisburgh. According to Mr. Lucas it is a very local British insect, occurring in the south-eastern parts of England. Both of the handsome dragonflies *Calopteryx virgo* and *C. splendens* occur on the wooded banks of streams in the neighbourhood of Westport, the former species being an addition to the local list.

The most interesting insect discovered during the Survey is a caddisfly, *Limnophilus fuscinervis*, which it was my good fortune to capture while collecting on the wooded shores of Lough Lannough, close to Castlebar. This insect proved to be unrecorded from the British Isles.<sup>1</sup> The first specimen, a male, was taken on June 17th, 1909, and on a subsequent visit in July a few females were found in the same place, so that it is probably not uncommon there. It is remarkable that so conspicuous an insect should have been overlooked in these countries, and it is extremely likely that it awaits discovery on some lake-shore in northern Britain. Lough Lannough also yielded a Mayfly, *Leptophlebia vespertina*, which was not previously known to occur in this country.

This district is decidedly poor in stoneflies (*Perlidae*); none of the larger species, *Perla*, *Dictyopteryx*, &c., were found, although there are many streams affording a suitable habitat for these insects.

Apart from those species which are known to be common and widely distributed throughout Europe, there is a decided preponderance of northern over southern species. Amongst forms which may perhaps be included in the latter category are the dragonfly *Ischnura pumilio*, the mayfly *Gloëon simile*, and the caddisfly *Polycentropus Kingi*.

There can be little doubt that most of the twenty-four species taken on Clare Island found their way to that area in former times while it was still joined to the mainland. With few exceptions the Neuroptera are winged, yet the comparatively weak and fitful flight of the majority of these insects would seem to preclude the possibility of their having flown across the three miles of ocean which, at its narrowest part, separates the island from the mainland.

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<sup>1</sup>The known Continental range of this caddisfly is northern Lapland, Finland, Sweden, Lithuania, Germany, Sarepta, Denmark; and a variety (var. *solutus* McLach) has been found in Persia.

The only neuropterous insects which are qualified for this task are the larger-bodied dragonflies of the genera *Sympetrum*, *Libellula*, and *Aeschna*—insects which would have little difficulty in crossing such a sea-barrier.

I am indebted to the Rev. W. F. Johnson and Mr. Claude Morley for notes of their captures, and to Mr. K. J. Morton and Rev. A. E. Eaton for kind help in the identification of some difficult species collected during the Survey.

In the list of species the locality names are indicated by the following letters:—

A = Achill Island.	L = Louisburgh.
B = Inishbofin.	M = Mulranny.
Bc = Belclare.	N = Newport.
Bm = Belmullet.	R = Mweelrea.
C = Clare Island.	W = Westport.
Cb = Castlebar.	

## LIST OF SPECIES.

- ODONATA (Dragonflies).
- Sympetrum striolatum* *Charp.*—C, A, B, L, M, N, W.  
*scoticum* *Don.*—C, W.  
*Libellula quadrimaculata* *L.*—C, A, L.  
*Brachytron pratense* *Müll.*—Bc, W.  
*Aeschna juncea* *L.*—C, M, R.  
*Calopteryx virgo* *L.*—Bc.  
*splendens* *Harr.*—W.  
*Lestes sponsa* *Hansen.*—L.  
*Pyrrhosoma nymphula* *Sulz.*—C, A, L, W.  
*Ischnura pumilio* *Charp.*—L, W.  
*elegans* *Van Lind.*—C, A, B, L, W.  
*Agrion pulchellum* *Van Lind.*—Bc, W.  
*puella* *L.*—Bc, W.  
*Enallagma cyathigerum* *Charp.*—C, A, B, L, W.
- EPHEMERIDAE (Mayflies).
- Ephemera vulgata* *L.*—Cb.  
*danica* *Müll.*—W.  
*Leptophlebia cincta* *Retz.*—W.  
*vespertina* *L.*—Cb.  
*Caenis halterata* *Fab.*—W.  
*Baëtis binoculatus* *L.*—C.  
*pumilus* *Burm.*—C.  
*Cloeon simile* *Eaton.*—A, N, W.
- Cloeon rufulum* *Müll.*—W.  
*Ecdyurus insignis* *Eaton.*—W.  
*lateralis* *Curt.*—C.
- PERLIDAE (Stoneflies).
- Chloroperla grammatica* *Pod.*—L, W.  
*Isopteryx torrentium* *Pict.*—C, A, L, W.  
*Nemoura cinerea* *Oliv.*—L, W.  
*variegata* *Oliv.*—A, Cb, M, W.  
*Leuctra Klapálecki* *Kempny.*—W.
- PSOCIDAE.
- Amphigerontia bifasciata* *Latr.*—W.  
*Psocus nebulosus* *Steph.*—W.  
*longicornis* *Fab.*—W.  
*Stenopsocus immaculatus* *Steph.*—W.  
*Graphopsocus cruciatus* *L.*—W.  
*Mesopsocus unipunctatus* *Müll.*—W.  
*Philotarsus flaviceps* *Steph.*—W.  
*Elipsocus Westwoodi* *McLach.*—W.  
*abietis* *Kolbe.*—W.  
*Peripsocus phaeopterus* *Steph.*—W.  
*Caecilius fuscopterus* *Latr.*—W.  
*flavidus* *Steph.*—W.  
*Burmeisteri* *Brauer.*—W.  
*perlatus* *Kolbe.*—W.  
*Atropos pulsatoria* *L.*—W.  
*Hyperetes guestfalicus* *Kolbe.*—W.

*Lepinotus inquilinus* Heyd.—W.

*Troctes divinatorius* Müll.—W.

PLANIPENNIA.

*Sialis lutaria* L.—W.

*Sisyra fuscata* Fab.—A, Bc, W.

*Hemerobius micans* Oliv.—W.

*humuli* L.—W.

*lutescens* Fab.—W.

*marginatus* Steph.—W.

*nervosus* Fab.—W.

*Micromus variegatus* Fab.—W.

*paganus* L.—A.

CHRYSOPIDAE.

*Chrysopa flava* Scop.—W.

*alba* L.—W.

*flavifrons* Brauer.—W.

CONIOPTERYGIDAE.

*Coniopteryx lactea* Wesm.—W.

TRICHOPTERA (Caddisflies).

*Phryganea striata* L.—W.

*varia* Hagen.—L, M, W.

*Colpotaulius incisus* Curt.—C, Cb, N, W.

*Glyphotaelius pellucidus* Retz.—W.

*Limnophilus rhombicus* L.—W.

*flavicornis* Fab.—W.

*marmoratus* Curt.—C, A, N, W.

*lunatus* Curt.—C, N, W.

*fuscinervis* Zett.—Cb.

*ignaceus* (Hagen) McLach.—W.

*centralis* Curt.—W.

*vittatus* Fab.—M, W.

*auricula* Curt.—W.

*griseus* L.—A, M, W.

*hirsutus* Pict.—W.

*luridus* Curt.—A, L.

*sparsus* Curt.—C, A, L, M.

*Micropterna lateralis* Steph.—A.

*Sericostoma personatum* Spence.—A, Cb, L, W.

*Goëra pilosa* Fab.—W.

*Silo nigricornis* Pict.—W.

*Lepidostoma hirtum* Fab.—W.

*Beraea pullata* Curt.—L, W.

*maurus* Curt.—C, W.

*Odontocerum albicorne* Scop.—L, W.

*Leptocerus fulvus* Ramb.—A, W.

*senilis* Burm.—N, W.

*albo-guttatus* Hagen.—W.

*aterrimus* Steph.—N, W.

*cinereus* Curt.—N, W.

*albifrons* L.—N, W.

*dissimilis* Steph.—W.

*Mystacides azurea* L.—N, W.

*longicornis* L.—N, W.

*Triaenodes bicolor* Curt.—N, W.

*Oecetis ochracea* Curt.—W.

*furva* Ramb.—W.

*lacustris* Pict.—W.

*testacea* Curt.—W.

*Hydropsyche instabilis* Curt.—W.

*angustipennis* Curt.—W.

*Philopotamus montanus* Donovan.—C, A, B, M, P, W.

*Wormaldia occipitalis* Pict.—C, L, W.  
*subnigra* McLach.—W.

*Chimarra marginata* L.—L, N, W.

*Neureclipsis bimaculata* L.—W.

*Plectrocnemia conspersa* Curt.—C, W.

*Polycentropus flavomaculatus* Pict.—C, A, L, N, W.

*multiguttatus* Curt.—W.

*Kingi* McLach.—W.

*Holocentropus dubius* Ramb.—W.

*stagnalis* Albarda.—W.

*picicornis* Steph.—C, W.

*Cyrnustrimaculatus* Curt.—A, L, N, W.

*flavidus* McLach.—W.

*Ecnomus tenellus* Ramb.—W.

*Tinodes Waeneri* L.—N, W.

*aureola* Zett.—C, W.

*Lype phaenopa* Steph.—W.

*Rhyacophila dorsalis* Curt.—W.

*Agapetus fuscipes* Curt.—C, L, W.

*Hydroptila sparsa* Curt.—W.

*Oxyethira costalis* Curt.—W.