LIST OF **NEUROPTERA** OBSERVED AT RANNOCH IN JUNE, 1889.

BY J. J. F. X. KING, F.E.S., AND K. J. MORTON.

Rannoch has been visited by hosts of entomologists, but as few of them have paid attention to the **Neuroptera**, we have no hesitation in giving the following list of the results of a visit during the last summer, when we made that Order our special object of search.

While, as we have indicated, few recent visitors seem to have collected **Neuroptera**, the productions of the district in that Order are not altogether unknown, as Mr. McLachlan was there in 1865, and obtained many interesting species. Amongst other things certain rare **Odonata** of alpine and boreal distribution were found to have their home there, but even these insects, conspicuous as they are in point of size and beauty, seem not to have caught the popular eye, and it was beginning to be a question whether they still survived in the old locality. We are glad to have been able to settle that question in a satisfactory way, and we also made large collections in the Order generally.

The time of our stay was limited to a week exactly (15th to 22nd June—too early for many species); our head quarters were near Camachgouran, and our operations extended from the shores of the Loch to Cross Craig, Camcreagh, near Loch Lydoch, and Loch Ericht, the last named a magnificent sheet of water, but difficult to work on account of the dearth of shelter.

The weather was of the most brilliant kind possible, the heat was intense, and the biting flies countless in number and awful in virulence. The fine weather conditions made dragon-flies almost past catching, and we had sometimes to endure the tantalizing sight of unknown *Æschnæ* and an occasional *Somatochiora* about the tree tops hopelessly out of reach. Some good dragon-flies were taken about 7 o'clock in the morning in the Woods, flying about swampy places and along the roads.

The species taken are as follow:—

**TRICHOPTERA.**

**PHRYGANEIDÆ.**

*Phryganea striata*, L.—A pair, evidently just developed, at a weedy lake-like expansion of River Gaur.

**LIMNOPHILIDÆ.**


*Asynarchus canosus*, Curt.—One specimen on the Moor behind Camachgouran.
February,

Stenophylax infumatus, McL.—The day we arrived we were fortunate enough to fall upon what was probably the original locality whence Mr. McLachlan procured his typical specimens—a deep-cut moor stream overhung by heather and bog myrtle. There the insects were rather common, mostly ♀, but only to be found after diligent search in a manner which experience alone can teach, and which is hard work. *S. stellatus*, Curt.—Very common at Loch Rannoch; occurred also at Loch Ericht. *S. latipennis*, Curt.—A single ♀ at a moor stream at foot of Cross Craig.

Micropterna sequax, McL.—A ♀ bred from a case found in a dribbling stream running down Camoreagh. The stones lying around were dotted with nymph skins presumably of this species. *M. lateralis*, Steph.—Very common.

Ecclisopteryx guttulata, Pict.—Dall Burn and Loch Ericht.

Apatania Wallengreni, McL.—Abundant all along Loch Rannoch side, but we must surely have been too late for the ♂, to which sex hardly 10 per cent. of the specimens taken belonged.

SERICOSTOMATIDÆ.

Sericostoma personatum, Spence.—Taken singly at Loch Ericht and elsewhere.

Brachycentrus subnubilus, Curt.—Two specimens from River Gaur (this species would be over).

Lepidostoma hirtum, F.—Not uncommon.

Lasiocephala basalis, Kol.—A single ♀ at Loch Ericht.

LEPTOCRERIDÆ.

Leptocerus nigronervosus, Retz.—In profusion along a calm reach of River Gaur. The specimens taken here were paler in colour and larger than a few from the Loch side, which were small and dark.

Triacodexus bicolor, Curt.—Occurred near the locality mentioned for *P. striata*.

HYDROPSYCHIDÆ.

Hydropsycha palluicula, Curt.—Two ♀ on River Gaur; the species probably over. *H. guttata*, Pict.—Only one ♀ from near the head of Loch Rannoch. *H. instabilis*, Curt.—A ♀ taken near the Loch.

Philopotamus montanus, Donovan.—Dall Burn and elsewhere, sparingly.

Electrocnemus conspicua, Curt., *P. geniculata*, McLach.; *Polycentropus flavomaculatus*, Pict., *P. multiflagellatus*, Curt.—All taken at moor streams by beating the overhanging heather; and all common, save *P. geniculata*, of which only a few specimens were taken.

Cyrnus trimaculatus, Curt.—Only one specimen preserved, but doubtless common.

HYDROPTILIDÆ.

Hydroptila femoralis, Eaton.—Not uncommon at Loch Ericht and Loch Rannoch.

Oxyethira costalis, Curt.—Common everywhere.

NEUROPTERA–PLANIPENNIA.

SIALIDÆ.

Sialis lutaria, Lin., and *S. fuliginosa*, Pict.—Occurred on the Dall Burn.
HEMEROBIIDE.

Hemerobius inconspicuus, McL., H. nitidulus, Fab., H. orotypus, Wall., H. limbatus, Wesm.—All very common in the fir trees in the Black Wood. H. nervosus, Fab.—A few from fir trees near the base of Cross Craig.

PSEUDO-NEUROPTERA.

PSOCIDÆ.

Psocus fasciatus, Fab., and Elipsocus unipunctatus, Müll.—Not uncommon in Black Wood, by beating fir trees.

PERLIDÆ.

Isogenus nubecula, Newm.—Very short winged forms of this were taken by sweeping the lower branches of alders on the shores of the Loch.

Chloroperla grammatica, Poda.—Very common.

Isoperla tripunctata, Seop.—Very common.

Capnia nigra, Pict.—One specimen (an early species; quite a number of it were taken when I walked across the Moor of Rannoch on Easter Sunday: J. J. F. X. King).

Tanypodella trifasciata, Pict.—Was especially abundant on the higher parts of the Dall Burn.

Leuctra fusciniventris, Steph.—Common.

Nemoura variegata, Oliv.—Very abundant, as is usual with this. N. Meyeri, Pict.—Sparingly near Lochs Rannoch and Erich. N. lateralis, Pict.—Common at both Lochs. N. cinerea, Oliv.—A few specimens taken. N. humeralis, Pict.—Very common.

A large Perla was found near Kinloch, but the bottle containing it was unfortunately lost.

EPHEMERIDÆ.

Ephemera danica, Müll.—Common along the side of the Loch in the evening.

Leptophlebia marginata, Lin.—Sparingly along the Loch from Kinloch to its head. L. cineta, Retz.—Common.

Cloeon simile, Eaton.—Only one specimen of this usually common species.

Centroptilum luteolum, Müll.—Common.

Baetis rhodani, Pict.—Near Camachgouran and at Loch Erich. B. pumilus, Burm.—Not uncommon.

Siphlonurus lacustris, Eaton.—Three specimens from Loch Rannoch and Loch Erich.

Rhithrogena semicolorata, Curt.—Rather common near both Lochs.

Ecdyurus venosus, Fab., and E. lateralis, Curt.—Common near both Lochs.

ODONATA.

Leucorrhina dubia, V. de L.—Three specimens at a pool on the Moor towards Cross Craig.

Libellula quadriraculata, L.—Rather common on the Moors.

Somatochlora arctica, Zett.—One specimen on the Moor behind the Black Wood. The species was also observed flying about the trees in the higher part of the Wood itself.

Cordulegaster annulatus, Latr.—Common.

Æschna borealis, Zett.—Five specimens of this rare Æschna were caught, mostly about the Black Wood. Æ. juncea, Linn.—One female taken.

Enallagma cyathigerum, Charp.—A few specimens preserved; probably common.

Pyrrhosoma minium, Harris.—Very common.

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Bibliography of the Neuropterida

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