THE

ENTOMOLOGIST'S MONTHLY MAGAZINE:

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"If all the eggs laid by insects came to maturity, the earth would be overwhelmed with them, and every green thing would be devoured."—*Packard.*

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1900.

At the mouth of the Axe, behind the last building, a foot track leads right up Haven Cliff, skirting some wet ground that is moistened by a dribbling spring which issues from the brow of the under-cliff where the foot-track passes. This wet grass slope is the site for *B. articularis*.

Seaton, Devon: *July*, 1900.

[*B. articularis*, like its allies, is a small black insect, very likely to be overlooked; details, so far as my knowledge then extended, are to be found in my "Monographic Revision and Synopsis." Its distribution is apparently wide, and it has been recorded from one Scandinavian locality. In 1891 Wallengren placed *Beræa* and *Bereodes* in a distinct Family, *Beræidæ*; to this I see no objection. Furthermore, he placed the three Scandinavian species of *Beræa* in named Sections, viz., *Beræa* for *B. pullata*, Curt.; *Ernodes* for *B. articularis*, Pict.; and *Dophnea* for *B. maurus*, Curt. I venture to think this subdivision will be adopted, or more probably that each will rank as a genus.—R. McLachlan].

NEUROPTERA COLLECTED IN THE UPPER PORTION OF STRATHGLASS IN 1899.

BY JAMES J. F. X. KING, F.E.S.

In 1880 I was fortunate enough to take a few specimens of *Somatochlora metallica* (see Ent. Mo. Mag., vol. xix, p. 8), and as the species had not been again found in this country, Mr. Briggs suggested that we might spend a holiday in Strathglass with the intention of looking for and capturing it. The arrangements of the trip were left to me and I selected the village of Tomich as head-quarters. There are practically no houses west of this, if we except Guisachan House, the residence of Lord Tweedmouth, and those of his servants. I arrived on June 15th and remained until August 25th. Mr. Briggs joined me on July 8th and stayed for a few weeks.

Our object being the capture of *S. metallica* much time had to be devoted to it, with the result that captures among the other *Neuroptera* were not as numerous as in 1880, as I then only devoted about eight days to the dragon-fly, whereas during this last visit I may say that nearly forty were given over to this one object. On the whole the weather was very good, although we had not the intense heat which prevailed during 1880. Unfortunately some of the worst weather was during Mr. Briggs' visit.

PSEUDO-NEUROPTERA.

Psocidæ.

Atropos divinatoria, Müll., common in buildings.

Clothilla pulsatoria, L., with the last.

Psocus fasciatus, F., at the Plodda Falls, July 15th.

Stenopsocus cruciatus, L., common, a large number having the wings much abbreviated.

Cæcilius obsoletus, Steph., common where firs were growing.——*C. fuscopterus*, Latr., common at the Dog-fall.——*C. perlatus*, Kolbe, and *Burmeisteri*, Brauer, fairly common on spruce and other firs ; middle of July.——*C. piceus*, Kolbe, a few specimens are probably referable to this species.

Elipsocus flaviceps, Ste., common. —— *E. unipunctatus*, two specimens, Beauly Road, July.——*E. cyanops*, Rost., not uncommon about middle of July.

Perlidæ.

Chloroperla grammatica, Poda, common.

Isopteryx tripunctata, Scop., and *torrentium* were both taken.

Tæniopteryx Risi, Mort., not uncommon.

Nemoura variegata, Oliv., and *cinerea*, Oliv., common.—— *N. inconspicua*, Pict., was in great abundance wherever there were trickling surface springs.

Leuctra sp.?

Ephemeridæ.

Leptophlebia Meyeri, Eaton, this species was very common upon the higher moorland. In my 1882 list I recorded *Lep. marginata*, L. This seems to have been an error, as all the specimens which I now have I find to be the above species.

Ephemerella ignita, Poda, fairly common.

Cloëon simile, Eaton, common at Glasslettre, Loch-en-Ang, &c. —— *C. rufulum*, Müller, in Glen Cannich.

Baëtis scambus, Eaton, one specimen in the Beauly Road.——*B. rhodani*, Piet., the Gull Loch, near Tomich, and in Glen Cannich.——*B. pumilus*, Burm., Plodda Falls and in Glen Cannich.

Rhithrogena semicolorata, Curt., common near Tomich, at the Gull Loch, Knockfin Loch and Glen Cannich.

Heptagenia sulphurea, Müller, in Glen Cannich.

Ecdyurus venosus, Fab., Knockfin, Plodda Waterfall.——*E. lateralis*, Curtis, Plodda Waterfall.

Cænis sp.? was seen at the Gull Loch, but not collected.

Odonata.

Leucorrhinia dubia, Van d. Lind., was seen south of Tomich, where Mr. Briggs caught one on July 10th.

Sympetrum striolatum, Charp., not uncommon.——*S. scoticum*, Don., very common towards the end of August on all the high moorlands.

Libellula quadrimaculata, L., this species was in great profusion at every little moorland pool.

Somatochlora metallica, Van d. Lind. This species was first sighted on June 16th, flying in a little corrie near Tomich ; it was very difficult to capture then as it flew so wildly and the nature of the ground did not allow of pursuit. On this day I went to the locality where I had taken it in 1880, but could find no trace of it, and for about fourteen days I constantly visited the locality, but without success. My idea is that when the species emerges it wanders away from its birth-place till

fully mature, when it returns. Its habit is to fly for long distances near the margin of the loch, keeping out about two or three feet and parallel to the edge, the speed is fairly swift and to catch the insect the net must be wielded rapidly. They continue their flight backwards and forwards as long as the sun is bright, but when the sun goes down they fly off and settle amongst the heather. If one's eyes are keen enough the insect may be captured at rest, although it is very easily startled. Mr. Briggs and I found the insects at various lochs, but always in more or less small numbers. After Mr. Briggs left I was very fortunate in getting one fine day's work at Loch-en-Ang, where I found the species in some numbers, but the day was what might be described as an ideal one, with little or no wind.——*S. arctica*, Zett., was taken near Tomich in June at a very low level, and in August a few were seen flying in a little shady nook near a hill-top in Glen Affrick.

Cordulegaster annulatus, Latr., as usual, very common everywhere.

Æschna juncea, L., common in August.——*Æ. cærulea*, Ström., a few of this species were seen and captured in Strathglass and in Glen Affrick.

Lestes sponsa, Hans., common at Glen Cannick, Loch-en-Ang, and Loch Glasslettre. This was taken by me in Glen Cannick in 1880, but I seem not to have recorded it.

Pyrrhosoma nymphula, Sulz., common.

Enallagma cyathigerum, Charp., common everywhere.

NEUROPTERA-PLANIPENNIA.

Sialis lutaria, L., common.——*S. fuliginosa*, Pict., not uncommon at Knockfin.

Sisyra fuscata, Fab., common with the last and also at the lochs south of Tomich.

Hemerobius marginatus, Steph., very common by beating birch trees everywhere.——*H. nervosus*, Fab., odd specimens were taken at Knockfin, at Plodda, in Glen Cannich, &c., but the species was by no means common.——*H. orotypus*, Wallengr., Dog-fall and towards Glasslettre.——*H. nitidulus*, F., out of Scotch firs at Loch-en-Ang.——*H. pini*, Steph., one specimen was taken above Guisachan House.

Chrysopa alba, L., *C. flava*, Scop., and *C. vittata*, Wesm, all sparingly at Plodda and Knockfin.

Coniopteryx tineiformis, Curt., not uncommon.

Panorpa germanica, L., common.

TRICHOPTERA.

Phryganea striata, L., was not uncommon at various lakes, where it was easily disturbed and flew wildly.——*P. varia*, F., was not uncommon at Knockfin. ——*P. obsoleta*, McLach., occurred all over the district in numbers.

Limnophilus rhombicus, L., at some of the higher lochs.——*L. marmoratus*, Curt. might be obtained at all the lochs, both in Strathglass and Glen Affrick.——*L. borealis*, Zett., this species was taken at Loch Bingley and also at the lochs around Cougie. It was just coming out towards the end of August; it is a very late species.——*L. lunatus*, Curt., not uncommon at the lochs.——*L. ignavus*, McLach., was taken near the Dog-fall in Glen Affrick.——*L. centralis*, Curt., as usual, very common; one specimen which I took had a long foot stalk to the third

apical cellule in both hind-wings.——*L. vittatus* with the last species.——*L. auricula*, Curt., common at Plodda, Loch-en-Ang, and other localities.——*L. griseus*, L., was well distributed over the district; specimens were taken at Loch Bingley, Glasslettre, Loch-en-Ang, at the lochs round Cougie, and also at the Dog-fall in Glen Affrick.——*L. luridus*, Curt., was fairly common in similar localities to those frequented by the last species.——*L. sparsus*, Curt., very common everywhere.

Asynarchus cœnosus, Curt., was obtained at Loch Bingley.

Stenophylax stellatus, Curt., and *S. latipennis*, Curt., at various lakes.——*S. permistus*, McLach., one species was taken at the Dog-fall.

Halesus radiatus, Curt., along with the last, and also at the Dog-fall.

Sericostoma personatum, Spence, very common at Knockfin, &c.

Silo pallipes, Fab., by beating near the river.

Crunœcia irrorata, Curt., not uncommon at Plodda, Loch-en-Ang, and the Dog-fall.

Lepidostoma hirtum, Fab., common everywhere.

Beræa maurus, Curt., this species might have been taken in hundreds in its own localities, several of which I visited along the roadsides where there was a constant flow of moisture caused by small springs. In one such locality, in a wood above Tomich, in June, I have had from ten to twenty in my net with a single sweep; till then I had never seen the species so plentiful, although we look upon it as common.

Molanna palpata, McLach., common at all the lochs.

Odontocerum albicorne, Scop., as the last.

Leptocerus fulvus, Ramb., Loch-en-Ang, &c.——*L. aterrimus*, Steph., fairly common in suitable localities.——*L. bilineatus*, L., at various lakes.

Mystacides azurea, L., and *longicornis*, L., fairly common.

Triœnodes bicolor, Curt., common at all the lochs south of Tomich.

Œcetis ochracea, Curt., common with the last species, and also at Loch Glasslettre.

Hydropsyche instabilis, Curt., at all the higher lochs.

Philopotamus montanus, Don., at all the lochs commonly, and in great profusion in Glen Cannich and at the Dog-fall. A pale form was observed, but not the var. *scoticus*.

Diplectrona felix, McLach., occurred with *B. maurus* in June in the wood above Tomich.

Wormaldia occipitalis, Pict., and *subnigra*, McLach., not uncommon along the river, also at Knockfin and the Dog-fall.

Plectrocnemia conspersa, Curt., was taken on the hills south of Tomich.

Polycentropus flavomaculatus, Curt., common everywhere.——*P. Kingi*, McLach., at Knockfin and in Glen Cannich.

Holocentropus dubius, Ramb., in Glen Cannich.

Cyrnus trimaculatus, Curt., common at Knockfin.——*C. flavidus*, McLach., not uncommon at Loch-en-Ang.

Tinodes wæneri, F., common everywhere.

Psychomyia pusilla, Fab., common, Knockfin, Plodda, and in Glen Cannich.

Rhyacophila dorsalis, Curt., common, as usual.

Glossosoma Boltoni, Curt., common everywhere I looked for it.——*G. vernale*, Pict., occurred at Plodda.

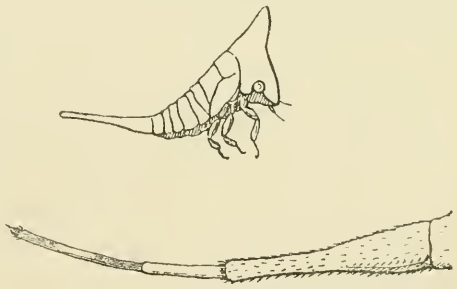
Agapetus fuscipes, Curt., and *comatus*, Pict., fairly common all over the district.

1, Athole Gardens Terrace,
Kelvinside, Glasgow:
May, 1900.

NOTE ON THE ATTRACTIVE PROPERTIES OF CERTAIN LARVAL *HEMIPTERA*.

BY E. ERNEST GREEN, F.E.S., Government Entomologist.

Dr. Sharp, in his magnificent work on insects, refers (part ii, p. 577) to the statement by Belt that certain species of *Membracidæ* were attended by ants for the sake of a sweet excretion; but considers it doubtful if the insects in question really belonged to that group of *Homoptera*. It may, therefore, be of interest to record some personal observations on Membracid larvæ in Ceylon. I have frequently watched the larvæ of various species of *Centrotus* being assiduously attended by ants. The larvæ are gregarious, usually frequenting the succulent shoots of plants, and have an extensile organ at the extremity of the body, from which the coveted fluid is emitted. This organ (see figure) is distinctly 3-segmented. In the species from which the accompanying drawings were made, the small terminal segment was of a crimson colour; the penultimate segment black, with a broad white median band; and the basal segment (of the extensile part) white. When the insect is undisturbed, this organ is withdrawn into the long conical segment which apparently terminates the body, but is extruded immediately upon application by the attendant ants.



Though this inter-relation between ants and larval *Homoptera* is found very generally throughout that suborder, it is not of such frequent occurrence amongst the *Heteroptera*. I have, however, recently observed the fact in a species of the Scutellerid genus, *Coptosoma*, a colony of which was being tended by a species of *Cremastogaster*. I did not observe any extensile organ in this case.

Royal Botanic Gardens,
Peradeniya, Ceylon:
June 6*th*, 1900.