

A SPECIES OF *CAENIS* (EPHEMEROPTERA) NEW TO
BRITAIN, WITH NOTES ON THE NYMPHS OF
SOME OTHER SPECIES.

BY D. E. KIMMINS.

DURING the summer of 1941 I collected a number of *Caenis* imagines from a swarm flying in the early morning sunshine at High Wray Bay, Windermere. These were duly recorded in my notebook at the time, though with some doubt, as a small form of *Caenis macrura* Stephens (*halterata* Etn. nec Fab.), a species which I had met with some years previously on the Thames at Teddington. The following winter, when preparing keys to the British species of Ephemeroptera I re-examined these specimens and found that my earlier doubts as to their correct identification were justified, and that they were really *Caenis moesta* Bengtsson, a species not previously recorded from the British Isles. Apart from its smaller size, *C. moesta* may be separated from *C. macrura* by the form of the antennae, the base of the terminal bristle in the former being considerably dilated. The penultimate segment is pale, not piceous as in *macrura*, and there are also differences in the form of the penis (not easily discerned in dry specimens) and the pigmented pattern of the forceps base.

In addition to these specimens from High Wray Bay, 28. vi. 1941, there are in the British Museum examples from Scotland (no other data); from the Hebrides, Barra, Loch Sinclair, 6. vii. 1935; and from Staffs, neighbourhood of Burton-on-Trent, viii. 1869. On the Continent it occurs in Sweden, Denmark, Germany and France.

The nymphs of *C. moesta* are not uncommon in the silt amongst plants of *Isoetes* on the bottom, but I have not yet succeeded either in hatching or capturing the subimago. *Caenis horaria* (L.) also occurs in High Wray Bay, and in this species the duns have been observed hatching about 9 p.m., G.M.T., at the end of June, and exuviae were collected from the surface of the water. No exuviae of *C. moesta* were found on this occasion, and it is possible that the hatch of *moesta* may not take place until the early hours of the morning, probably shortly before sunrise, as the main flight of the spinners occurs soon after sunrise.

The nymphs of *moesta* and *horaria* may be distinguished by the shape of the pronotum, as indicated by Schoenemund in the *Tierwelt Deutschlands*, but there is considerable variation in shape within the species. In *horaria* the anterior angles are sometimes much more acute than in my figure. In nymphs of this species from Esthwaite Water, collected in April amongst *Nitella*, there are two small piceous dots in the centre of the pronotum, one on each side

of the median line, but these cannot be made out in the exuviae from High Wray Bay. A further character may be found in the

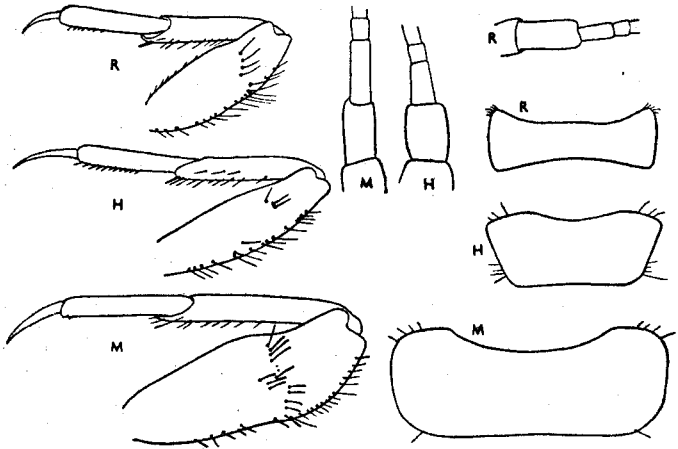


FIG. 1.—Anterior leg, basal segments of antenna and pronotum of nymph of *Caenis* spp. R, *rivulorum* Etn.; H, *horaria* (L.); M, *moesta* Bengtsson.

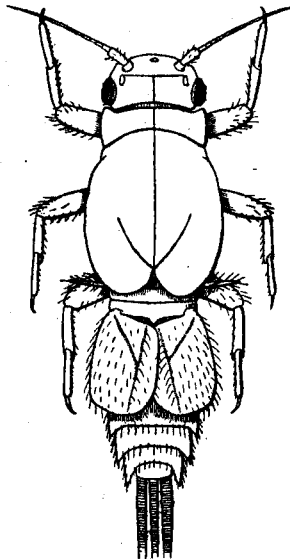


FIG. 2.—Nymph of *Caenis rivulorum* Etn.

shape of the anterior femur. In *horaria* this tapers evenly towards the apex, whereas in *moesta* the femur is somewhat dilated near the apex, its upper and lower margins being more sinuous. The

setae on the anterior surface are more numerous and slightly dilated at their apices in *moesta*. Ventral surface of tarsus almost bare in *moesta*, and in *horaria* furnished with a row of short setae. The basal segments on the antennae also differ slightly in proportion.

In addition to the foregoing two species, I have recently taken examples of a third, *C. rivulorum* Etn., a species not previously recorded from within the boundaries of the Lake District.* This, the smallest of the British Ephemeroptera, differs in its habitat from the two previous species. It breeds in pools of stony streams and becks, particularly where there is *Cladophora*. I found adults in spiders' webs along Rydal Beck on July 10, and on Scandale Beck on July 12 I witnessed the emergence of the minute white duns, which began at about 6.15 p.m. G.M.T., soon after the sun had dipped below the hill tops (water temperature 60°F.) Quite suddenly the duns appeared, like white specks on the water and in the air, and soon they were settling in numbers on one's clothing.

Several nymphs were also taken. According to Schoenemund (1930) the nymph is unknown, but Percival and Whitehead (1929) have recorded the habitat of the nymph in their Quantitative Study of the Fauna of Some Types of Stream-Beds, although they did not describe the nymph. In general appearance it is less covered with silt and detritus than the two previous species, rather shorter and more streamlined. The pronotum is much wider and shorter, sides almost parallel, with definite angles. The colour of the nymph is difficult to make out, as those I collected were fully mature and the colour of the enclosed adult showed through. The nymphal skin is more heavily pigmented dorsally than that of *horaria*, only the lateral flanges of the pronotum and the basal segments of the abdomen being pale.

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* Since the above notes were drawn up, I have heard from Dr. K. G. Blair that he and Mr. H. Britten took *C. rivulorum* in considerable numbers one evening in June, 1929, along the road between Staveley and Windermere. He adds, "All were females with quite a steady horizontal flight, but a day or two later we got plenty of males from spiders' webs on a bridge over the R. Kent at Staveley."

EARLY 1943 EMERGENCES.—I found my first *Hyloicus pinastris* L. on April 23, a remarkably early date, yet the specimen was not fresh, and had probably emerged a few days earlier when insect life responded generally to local conditions. *Ectropis punctulata* Hb. was out on the 11th.—M. J. MANSFIELD; 5, Chigwell Road, Bournemouth, May 1, 1943.

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