

FURTHER NOTES ON *CAENIS MOESTA* BENGTSS.
(EPHEMEROPTERA.)

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WHEN recording the occurrence of *Caenis moesta* Bengtss. in this country (Kimmings, 1943), it was remarked that the subimago had not been captured, and from the habits of the imago, it was suggested that the subimago probably emerged in the early hours of the morning. Incidental observation during the course of other research during 1942 having failed to locate the duns, it was decided to make further specific attempts during 1943 in the locality in which the spinners were originally observed—High Wray Bay, Windermere. The proposed plan envisaged a possible all-night watch on the lake, and through the kindness of Mr. A. Fildes, of Colthouse, his motor-launch moored in the bay was made available as a floating base and observatory.

The first attempt was made on the night of June 15-16, the weather being suitably calm and with the promise of moonlight to aid observation. Subimagines of *Caenis horaria* (L.) had been seen emerging about 8.30 p.m. G.M.T. near Fisherty How, Windermere, and at 9.30 p.m. in High Wray Bay there were many duns on the water and some were still hatching. Trout were rising freely, both here and at Fisherty How, taking the duns and also the hatching nymphs. The rise of trout continued in High Wray Bay until about 10 p.m. G.M.T., and between then and 1 a.m. no further hatch of *Caenis* was noticed. By this time the moon had become obscured by cloud and a breeze had arisen, making further observations impracticable, and the watch was therefore concluded. It will of course be understood that war-time conditions precluded the use of artificial light of sufficient strength to be of use for observation. Subsequent examination of the duns and nymph-skins collected revealed only *Caenis horaria*, thus confirming the observations made the previous year.

A second attempt was made on June 24, with a view to completing the night's watch. No *Caenis* duns were seen on the water on the way to the launch, but on arrival at 2.30 a.m. G.M.T., a few were collected from the launch coverings. At 2.50 a.m. a trout was seen rising near the shore, although it was not light enough to discern what was being taken. The water temperature was 54° F., the air being ten degrees cooler. At 3 a.m. two more duns appeared on the windows of the launch, and at 3.30 a further collection was made from the coverings. No duns had then been seen on the water, but about 4 a.m. several were seen and collected, with their nymph skins. At 4.45 the first spinner was seen on the wing, and as a breeze had sprung up, the watch was terminated.

All the duns taken on this occasion were *Caenis moesta*. The supposition of the previous year that this species hatched about dawn thus proves to be correct. The hatch was not a large one and was probably not the main one, although there is no evidence to show whether this had already occurred earlier in the month. The first spinners of *C. moesta* were noted on June 14. *C. moesta* would appear to differ in habits from the other two British species which I have seen hatching (*horaria* and *rivulorum*), and possibly also from its nearly related species, *C. macrura* Steph. The latter, according to Shoenemund (1930), flies in the gathering dusk. He also records that the latter migrates upstream in flight, but I have not observed anything of this nature in *C. rivulorum* on Scandale Beck.

To conclude these notes a description of the subimago of *Caenis moesta* is given.

Male.—Head dark chestnut, with light fulvous sutures. Eyes purplish-brown. Antennae greyish, basal segment fulvous, basal half of second segment darker grey. Pronotum dark brown, anteriorly fulvous, Meso- and metanota dark brown. Abdominal tergites 1 to 9 brownish, 1 to 6 heavily, and the remainder less heavily stippled with light fulvous; lateral margins with pale fulvous spots, which on 7 and 8 are margined with brownish. Tenth tergite piceous, with two pairs of fulvous spots; inner pair divergent, their bases contiguous, outer pair at the apical lateral angles. Sternites pale yellowish-white, much suffused with greyish-brown, on first segment forming a broad triangular mark, its apex forward and connected with a curved band on the metasternum; on the remaining sternites covering most of each sternite and enclosing pale lateral spots. Sternites 1 to 8 with pale apical margins and a pair of small pale dots on each near the centre, becoming less obvious towards the apex. Forceps-base creamy white, sides and base brownish, pyriform spot and apical crescent dark grey. Forceps dark greyish brown, penis white. Setae pale grey, slightly brownish at base and with the joinings fulvous. Legs whitish grey, marked with dark grey on the coxae, trochanters, dorsal and ventral margins of femora, and median and posterior tibiae. Anterior tibiae brownish. Wings translucent whitish, slightly shaded with brownish anteriorly. Venation translucent whitish except C, Sc, R1 and R2, which are brownish.

Female.—Resembling male, but larger, abdomen paler, tenth tergite concolorous with the rest, not piceous. Ventrally whitish, segments 2 to 10 with a greyish-brown spot in each basal angle. Setae whitish or pale grey, shaded with brownish towards the base. Anterior tibiae dark grey.

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