

XXVII. *Note on Boreus hyemalis and B. Westwoodii.*
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[Read 6th December, 1869.]

IN the "Entomologist's Monthly Magazine," Vol. iii. p. 132 (November, 1866), Dr. Hagen in his "Synopsis of the Genus *Boreus*" first made known to Entomologists the existence in Europe of two species of this singular, and still somewhat rare, genus of *Neuroptera*. His short descriptions are as follows:—

"*B. hyemalis*, Linné."

"Bronze-brown; beak, antennæ, legs, wings, appendices of the male, and borer of the female, clear brown, the antennæ dark brown at the apex; wings of the male long, acute, curved, and pectinated internally; first abdominal segment of the male with an erect transverse fold in the middle above, long, rather longer than broad; second segment with a similar fold, but smaller, almost in the form of a tubercle; lamina below the appendices, long, triangular elliptic at the apex.

"*Habitat*: Germany, Hanover, East Prussia.

"*B. Westwoodii*, Hagen."

"Bronzy-green; beak, antennæ, legs, wings, appendices of the male, and borer of the female, yellow; antennæ and legs dark brown at the apex; first abdominal segment of the male with a fold as in *B. hyemalis*; second segment with a quadrate fold, smaller; lamina broader, slightly grooved at the apex.

"*Habitat*: Germany, Finland, England.

"This is the species figured by Westwood in the frontispiece to his 'Introduction,' and probably also that described by Curtis and Stephens."

When working up the materials for my Monograph of the British *Neuroptera-Planipennia*, published in the Transactions of this Society, I felt compelled to ignore the existence of *B. Westwoodii* in Britain (Tr. Ent. Soc. 1868, p. 220), because I had never seen a male possessing the characters pointed out by Dr. Hagen, and the

few Continental examples of the genus to which I could refer, all seemed equally to pertain to *B. hyemalis*. Recently, however, my attention has again been called to the subject, and I resolved to obtain a sight of Professor Westwood's insect. That gentleman obligingly lent me two males, all that exist in the Hope Museum; these are certainly distinct from *hyemalis*, and agree well with the description of *Westwoodii*. But when lending me the insects, Prof. Westwood stated that both were from Germany, and that he never possessed a British male example. Under these circumstances, it is yet too soon to attribute the two species to Britain. All the native specimens I have seen are assuredly *hyemalis*, at any rate, so far as the males are concerned; and as for the females, it would certainly be unsafe to rely upon differences of colour alone, without having the other sex, as the colour varies immensely, according to the degree of maturity of the individual, and I may remark that I have males of *hyemalis* both bronzy-brown and bronzy-green; the clear yellow of the legs, &c., in *Westwoodii*, is characteristic, and some native female examples seem to possess this attribute, yet we must see males before deciding upon them.

I conclude these remarks with some notes upon the structural characters of the males of the two species.

In *B. hyemalis*, the first visible dorsal abdominal segment (I consider this in reality is the second segment), bears near its apical margin (but not on the margin), a transversely quadrate, thin, raised lobe, considerably longer than broad; on the succeeding segment is a faint indication of a similar lobe, but very indistinct. The valve ("lamina," Hagen) proceeding from the ventral apex of the abdomen is triangular, the sides slightly rounded, the lower surface convex, and the apex somewhat produced and elliptical. (See fig. 1.)

In *B. Westwoodii*, the first visible dorsal abdominal segment has the raised lobe as in *hyemalis*, but that on the succeeding segment is much larger than in that species, very distinct, and similar in form to the other, but less transversely quadrate. The ventral apical valve is shorter, the sides not rounded, the apex sharply truncate, and even slightly incised. (See fig. 2.)

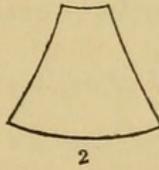
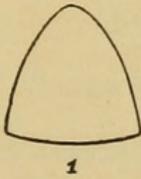
I have penned these notes with the hope that, by calling more attention to the peculiarities of the two

species, we may soon be able to claim both as natives of this country. Little can be added to the information as to distribution given by Dr. Hagen, save that I have received Swedish examples of *B. hyemalis* from Professor Stål, and it is also recorded as Swedish by Zetterstedt and Wallengren (though apparently not known as such to Linné when he wrote his "Fauna Suecica"). Omitting England from the localities for *Westwoodii*, that species would appear only to be known from Germany and Finland.

The descriptions and figures given by authors (before Hagen) all probably pertain to *hyemalis*; at any rate, none of them are sufficiently explicit to prove they had the other species under consideration.

Fig. 1.

Fig. 2.



B. hyemalis. *B. Westwoodii.*



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