Preliminary notes on *Hemerobius limbatellus* of authors.

By

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Having recently had an opportunity to revise J. W. Zetterstedt's and H. D. J. Wallengren's collections of *Neuroptera* and *Mecoptera* I am able to state that Zetterstedt's two specimens of his *Hemerobius limbatellus* are belonging to *H. stigma* Steph., the same species as *H. strigosus* Zett.

Wallengren's *H. limbatellus* is highly collective, comprising *stigma* Steph., *simulans* Walk., *pini* Steph., and a fourth species, the one described by Esben-Petersen as *limbatellus*. Wallengren's *H. strigosus* is the same as Zetterstedt's, thus = *stigma* Steph. His *H. pini* is also of a collective value, being composed by *pini* Steph. and *stigma* Steph.

With Zetterstedt's and Wallengren's names arranged as synonyms of *stigma* this species may be cited:

Hemerobius stigma Steph.

Hem. stigma Stephens, Ill. Brit. Ent. VI, 112, 22, 1836.
» *strigosus* Zetterstedt, Ins. Lapp. 1049, 1840.
» *limbatellus* Zetterstedt, ibid 1050, 1840.
» » Wallengren (partim), K. V. A. Handl. 9, 8, 43, 1871.
» *strigosus* Wallengren, ibid. p. 44, 1871.
» *pini* Wallengren (partim), ibid. p. 44, 1871.
» *stigma* Mac Lachlan, Ent. Mo. Mag. 1899, p. 150.

As mentioned above Dr. P. Esben-Petersen has applied the name »*limbatellus* Zett.» to another species, which is closely allied to *H. pini* Steph. I have had the pleasure to examine specimens from his collection and consider his species to be of distinct specifical value. A new name must, however, be applied to it and

herewith I bring forward the name *fenestratus*. The species may be cited:

Hemerobius fenestratus nov. nom.

Hem. limbatellus Wallengren (*partim, nec* Zett.), K. V. A. Handl. 9, 8, 43, 1871.
» » Esben-Petersen (*nec* Zett.), Flor. & Faun, Silkeborg, p. 8, fig. 11 c & 13, 1915.
» » Esben-Petersen (*nec* Zett.), Danm. Fauna, 33, p. 30, fig. 9 c & 11 c, 1929.

Preliminary description: Allied to *pini* Steph. and very similar to that species. General colour yellowish braun. Forewings with a distinct, often glassy and very iridescent middle area (between radius, the inner row of cross-veins, and the darkmottled Cu_1). Male: Superior appendages broad, furcate, with the prongs widely divergent. The upper prong is of about the same shape and size as the lower prong. Both prongs end acute. (In *H. pini* the lower prong is longer than the upper prong and ends obtuse.) Inferior appendages placed at a very short distance from one another (in *pini* widely separated). Mediuncus indistinct (in *pini* large and distinct). — Female: Genitalia closely resembling those of *pini*. The following differences may, however, be noted. Lobes of 10th tergit relatively broad, distally with smoothly rounded hindmargin and with the lower end obtuse (in *pini* not so broad, with a more prominent hindmargin, and a less obtuse lower end). Lateral gonapophyses with the hindmargin almost parallel to the foremargin and with a prominent, rounded, obliquely upwards directed upper hindangle (in *pini* with the hindmargin smoothly rounded).

Specimens examined: Sweden, 1 ♂ (unlabelled, in Zetterstedt's general coll., Mus. Lund), 1 ♀ (unlabelled, coll. Ljungh, Mus. Lund), *Scania,* Nosaby, 1 ♂, leg. H. Rosén (Mus. Lund). *Västergötland,* 1 ♀, leg. Boheman (Nat. Hist. Mus. Stockholm). — Denmark, 2 ♀ (unlabelled, coll. Schlick, Mus. Lund), *Fylland,* Silkeborg Nordskov, 1 ♂ $^{27}/_{5}$ 1905, leg. Esben-Petersen (coll. Morton). Koldaker, 1 ♂ $^{13}/_{5}$ 1912 (coll. Esben-Petersen), Klakring, 1 ♀ $^{15}/_{5}$ 1925 (coll. Esben-Petersen), *Lolland,* Strandby, 1 ♂ $^{24}/_{5}$ 1912 (coll. Esben-Petersen), Naesgaard, 1 ♀ $^{25}/_{7}$ 1920, leg. Esben-Petersen (my coll.). — Curonia: Legen, 1 ♂ $^{15}/_{6}$ 1924, Sanken 1 ♀ $^{15}/_{6}$ 1929, leg. P. Lackschewitz (my coll.). — Germany, *Saxony,* Rachlau, 1 ♂, $^{1}/_{8}$ 1911 (coll. G. Feurich).

It may be noted that *Hemerobius limbatellus* of Mac Lachlan (Ent. Mo. Mag. 1899, p. 151) is not the same as *fenestratus*. By the kindness of Mr. Kenneth J. Morton I have got an opportunity

of examining a male specimen, originating from Mac Lachlan's collection, now in Mr. Morton's collection. It has proved to belong to another species of the *pini*-group, habitually very similar to *fenestratus*, but easily separated from it by the shape of the male genitalia. For this species I bring forward the name

Hemerobius contumax nov. nom.

Hem. limbatellus Mac Lachlan (*nec* Zett.), Ent. Mo. Mag. 1899, p. 15 (spec. from France, Pyrenées).

Preliminary description: In the male the superior appendages are very broad, broader than in *pini*. The prongs are similar to those of *pini*, but the lower prong appears to be somewhat shorter and more stout than in that species. In this respect *contumax* appears intermediate between *pini* and *fenestratus*. The inferior appendages are in *contumax* much longer than in *pini* and *fenestratus* and are directed stricly downwards, in lateral view forming a right angle with the main part of the 10th sternit. (In *pini* they are directed obliquely backwards-downwards, forming an obtuse angle with the 10th sternit). As in *pini* these appendages are widely separated from one another. — In the female the lateral gonapophyses appear broadest in the upper part with downwards convergent hind- and foremargins (in *pini* broadest in the middle part).

Specimens examined: Sweden, *Uppland*, Bondkyrko, Vårdsätra, 1 ♀ 12/6 1929, leg. E. Orstadius (Mus. Uppsala); Expermentalfältet, 1 ♂ June 1919, leg. G. Hedgren (Mus. Uppsala); Runmarö, 1 ♂, 9/7 1916, leg. F. Nordström (my coll.). — Curonia, Grobin, 1 ♂ 15/5 1899, leg. P. Lackschewitz (my coll.). — France, *Pyrenées*, 1 ♂ 24/6, leg. A. E. Eaton (coll. Morton from coll. Mc Lachlan); *Cantal*, Le Lioran, Alagnon, 1 ♂ 9—19/7 1924 (coll. Morton); *Hte Sav.*, Chamonix, 1 ♀ July 1925 (coll. Morton). — Switzerland, *Wallis*, Pierre, 1 ♂, led. M. Paul (my coll. from coll. Lackschewitz). — Italy, *Istria*, Selva di Tarnova 2 ♂ 27/6 1932, leg. Attilio Fiori (my coll.).

If also the other specimens, recorded by Mc Lachlan as »*limbatellus*», belong to *contumax* is, of course, uncertain.

Several other authors have dealt with »*limbatellus*» or species now considered as synonyms of it, such as *phaleratus* Schneid., *punctatus* Göszy, and others. From their descriptions only, I find it quite impossible to identify them.