Synopsis of the described genera and species of the Blepharoceridae

by

C. R. Osten Sacken.

As the principal papers on the Blepharoceridae [1]) have been published in italian and german, I thought it might be useful to publish in english a survey of our present knowledge, as well as of the existing literature concerning this interesting family.

Half a century has elapsed since the first species of this family was described: *Asthenia fasciata* Westwood, in Guérin's Magazin de Zoologie 1842, Insects, Pl. 94. — Since then the number has gradually risen to thirteen described, and two as yet imperfectly known species. Six of the thirteen belong to Europe, one to Asia, five to North-America, one to South-America. The two imperfectly described species are the two Paltostomae from S. America and Mexico.

In both of his papers, Loew established subdivisions of the family and constructed corresponding analytical tables. The primary subdivision in the italian paper is based on the length of the proboscis; that in the german paper is established on the presence or absence of spurs on the hind tibiae. In my Bemerkungen etc. I adopted a still different basis of subdivision, the presence or absence of the incomplete vein on the posterior margin, which affords, I think, a more natural arrangement. For the present paper I constructed a table based upon the same principle of subdivision, but I enlarged it so as to include the species, as well as the genera, and to bring up the subject to date, with regard to recent discoveries.

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1) These papers are:

H. Loew, La famiglia dei Blefaroceridi (Bollet. Soc. Entom. Ital. Vol. I, p. 85—101, w. a plate. 1869).

— — Revision der Blepharoceridae (Zeitsch. f. Entom., neue Folge, Heft VI, Breslau 1877), w. a plate.

Osten Sacken: Bemerkungen über Blepharoceriden, ein Nachtrag zu Loew's Revision etc. dieser Familie (Deutsche Entom. Zeitsch. 1878, p. 405).

In using this table it must be borne in mind that of the eight genera described, only two are known in both sexes (*Blepharocera* and *Liponeura*); four are known in the male sex only (*Bibiocephala*, *Agathon*, *Hammatorrhina* and *Hapalothrix*); and that there is some doubt, as will be shown below, about the sexes of *Apistomyia* and *Paltostoma*.

The thirteen species hitherto described are:

Bibiocephala grandis O. Sack., Hayden's Geol. Rep. for. 1873, p. 574 w. fig. (a not quite correct translation of this description will be found in Loew's Revision etc., p. 95). — Rocky Mountains, Colorado.

Agathon elegantulus v. Röder, Wien. Ent. Z. 1890, p. 230. — Nevada; U. States (not Sierra Nevada).

Blepharocera fasciata Westw., Guérin's Mag. de Zool. 1842, w. plate (*Asthenia*); Loew, Revision etc., p. 62. — Central Europe.

— *capitata* Loew, Centur. IV, 43, 1863. — Northern and Middle United States.

— *ancilla* O. Sack., Catal. N. Am. Dipt. 1878, Additions. — California.

Liponeura cinerascens Loew, Stett. Ent. Z. 1844, p. 118, w. fig. — Central Europe.

— *brevirostris* Loew, Schl. Zeitsch. f. Ent. 1877, p. 67. — Silesia, Bohemia.

— *bilobata* Loew, Boll. Soc. Ent. Ital. 1869; Schl. Zeit. f. Ent. 1877, p. 66. — Greece, S. Italy.

— *yosemite* O. Sacken, Western Diptera, p. 195 (*Blepharocera*); Deutsche Entom. Z. 1878, p. 408. — California.

Apistomyia elegans Bigot, Ann. Soc. E. Fr. 1862, w. fig. — Corsica; Cyprus (coll. Bellardi).

Paltostoma superbiens Schin., Verh. Z. B. Ges. 1866, Novara, p. 27. — Colombia, S. A.

Hammatorrhina bella Loew, Bull. Soc. Ent. Ital. 1869; Schles. Zeitschr. f. Entom. 1877, p. 75. — Ceylon.

Hapalothrix lugubris Loew, Deutsche Ent. Z. 1876, p. 213; Schles. Z. f. Ent. 1877, p. 81. — Monte Rosa, Italian side.

About the above-mentioned doubtful Paltostomae from S. America and Mexico the following literature man be consulted.

A species from Mexico is mentioned in my Cat. N. Am. Dipt. 1878, p. 17, which may be different from Schiner's species; some details about it will be found in my paper on Blepharoceridae (l. c. p. 411).

The metamorphoses of a *Paltostoma torrentium* are described by Fritz Müller in an admirable paper in the Archivios do Mus. Nacion. in Rio Janeiro, Vol. IV, 1879; the imago's are but imperfectly described from specimens extracted from pupae. A male is figured in Tab. 7, f. 7. with subcontiguous eyes (the letterpress p. 81 says „contiguous"). The female is said to occur in two forms, a sanguisugous one with a broad front (the head is figured l. c. fig. 14) and a mellisugous one with a still broader front and small eyes (the head, l. c. fig. 13).

The above-mentioned male with contiguous eyes has the venation of *Paltostoma*, but cannot well belong to that genus, because the male of the latter has a broad front. Schiner's brazilian specimens agree in this respect with the mexican specimen which I have examined in Turin (comp. my paper l. c. p. 411). That the two females with a broad front belong to the male with the contiguous eyes remains to be proved, because the Blepharoceridae hitherto described in both sexes, show the same formation of the head in both. Nothing can be decided about the systematic position of *Paltostoma torrentium* until well-preserved specimens shall be forthcoming. More about this matter will be found in my article in the Ent. Monthly Mag. London, Vol. XVII, p. 130; addition p. 206.

Analytical Table.

(The figures of the wings quoted here will be found in Loew's Revision etc. 1877.)

I. The incomplete vein near the posterior margin is present.

A. Second longitudinal vein with two branches (fig. 6).

a. Origin of the anterior branch of the second vein coincident with the origin of the third vein (fig. 6).
Anterior tibiae curved in the ♂.
Bibiocephala O. S. *B. grandis* O. S. ♂ — Rocky Mts.

aa. Origin etc. not coincident etc. but distad of the origin of the third vein.
Anterior tibiae straight in the male.
Agathon v. Röder. *A. elegantulus* v. Röder ♂ — Nevada, U. S.

AA. Second longitudinal vein simple, without branches.

a. Eyes contiguous, bisected by an unfacetted crossband, or by a simple groove.
Blepharocera Macq.

b. Eyes bisected by an unfacetted crossband; submarginal cell sessile; no crossvein between the fourth and fifth longitudinal veins (fig. 3).

B. fasciata Westw. ♂ ♀. — Europe.
B. capitata Lw. ♂ ♀. — U. States.

bb. Eyes bisected by a simple groove; submarginal cell with a long pedicel; a crossvein between the fourth and fifth veins.

B. ancilla O. S. ♂. — California.

aa. Eyes separated by a broad front, and not bisected by a crossband or groove.

Liponeura Loew.

b. A crossvein between the 4^{th} and 5^{th} veins.
Submarginal cell sessile (fig. 5).
L. bilobata Lw. ♂. — Europe.
Submarginal cell with a long petiole.
L. yosemite O. S. ♂. — California.

bb. No crossvein between the 4^{th} and 5^{th} veins.
Larger species *L. cinerascens* Lw. ♂ ♀. — Europe.
Smaller and darker species *L. brevirostris* Lw. ♂ ♀.— Europe.

II. No incomplete vein near the posterior margin.

A. Proboscis very much prolonged; hind tibiae provided with spurs; ungues simple.

a. There is a longitudinal vein between the first and the fourth longitudinal veins[1]). Eyes separated by a broad front (♂).

b. Eyes bisected by an unfacetted crossband; wing fig. 1.
Apistomyia Bigot. — *A. elegans* Bigot ♂. — Corsica; Cyprus[2]).

bb. Eyes entire, not bisected (♂); wing fig. 7.
Paltostoma Schiner. — *P. superbiens* Schin. ♂. — S. Amer.

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1) It must be borne in mind that the fourth longitudinal vein of the *Blepharoceridae* is the vein immediately preceding the large posterior fork (the incomplete vein not being counted).

2) Loew, Revision etc. p. 71 says that Bigot calls a male the specimen which he describes and figures, whereas in the figure it appears to be a female. I would not accept this surmise without further proof.

aa. No longitudinal vein between the first and fourth longitudinal veins; wing fig. 2; eyes contiguous (♂).
Hammatorrhina Lw. — *H. bella* Lw. ♂. — Ceylon.

AA. Proboscis short; hind tibiae without spurs; ungues pulvilliform; wing fig. 8; eyes contiguous [or subcontiguous?] (♂).
Hapalothrix Lw. — *H. lugubris* Lw. ♂ —
Europe.

On the Chaetotaxy of Cacoxenus indagator Lw.

by *C. R. Osten Sacken.*

Cacoxenus indagator is a little fly, between 3 and 4 mm. long., which was first observed in Silesia by Dr. Scholz in sand-pits, frequented by sand-burrowing bees; a little later Dr. Giraud (Verh. Z. Bot. Ges. 1861, p. 489) bred it from the nests of *Osmia emarginata*, found on old walls. The larva of the fly consumes the provisions gathered by the bee, and thus reduces the progeny of its host to starvation. Loew recognized a new genus in this fly, gave it a well-chosen name (*Cacoxenus* = bad guest) and described it in a short paper (Wien. Ent. Mon. 1858, p. 213—222), a very model of accuracy and completeness. The only point, in which the description is incomplete, is the enumeration of the macrochaetae, especially of those of the thorax. I shall attempt to fill this deficiency by applying to this fly my chaetotactic system, as described in the Trans. of the Entom. Soc. of London 1884, p. 497—517.

My specimens of *C. indagator* I find on the windows of my rooms in Heidelberg, three or four of them regularly every spring, during the first half of May; they may be the guests of some mason-bee nesting along the walls of the house.[1] I have now about a

[1] Mr. Raddatz found *C. indagator* in the same situation; compare his Dipt. Mecklenburgs, in the Archiv des Vereins für Naturwiss. in Mecklenburg, 1873.