

Supplement
to my recent paper on Liponeuridae
by C. R. Osten Sacken.

Immediately after the publication of my paper: „Contributions to the study of the Liponeuridae Loew“ (Berl. Ent. Z. Vol. XL, 1895, p. 148). I inserted in the Ent. Monthly Mag. London, May 1895, p. 118 the following short notice:

„I deem it my duty formally to retract my recommendation of a change of name for the Family Blepharoceridae, which, upon Loew's initiative, I introduced in my recent paper in the Berl. Ent. Zeit. 1895, p. 148. I have since received a letter from Prof. Mik (of Vienna) who called my attention to the fact that Loew was mistaken in his statement about the perfect structural identity of the antennae of *Liponeura* and *Blepharocera*. In examining the antennae of the latter genus under a compound microscope, Mik discovered in the female specimens a row of minute hairs on one side of the antennae, which does not exist in *Lip.*, and justify the name bestowed by Macquart upon the genus *Blepharocera*, which means „provided with ciliated antennae“. Macquart actually described and figured this character, which, owing to its minuteness, has been overlooked since. The name of the genus being thus vindicated, there is no reason to change the Family name, derived from the earliest published genus. (Thus Asilidae is derived from *Asilus*, without any particular etymological meaning being connected with the Family-name.) As a staunch friend of continuity in the matter of entomological nomenclature, I accept this solution as most welcome.

For the present I confine myself to this short statement, but I hope soon to publish a more elaborate discussion of the facts of the case, as well as some details about the structure of the two genera, communicated to me by Prof. Mik. In justice to myself, I must

remark that my article in the Berl. Zeitsch. had no other purpose than a critical review of the existing literature. With a stock-in-trade of two *Liponeuræ* only (as I stated on p. 150, line 11 from bottom), I could not attempt new discoveries. C. R. Osten Sacken, Heidelberg April 1, 1895."

With Prof. Mik's permission, I reproduce a portion of his letter, dated March 15, 1895. Although, as he says, its conclusions are not always final for want of fresh specimens, it will be found very suggestive of future research, and for this reason I prefer to give it verbatim.

[Translation.] "When Loew said about *Blepharocera* (Revision etc. 1877, p. 64, lines 15 and 16 from top) 'antennae without any longer hairs' he was in error (the same mistake is repeated on p. 83 for the whole Family). The antennae must be examined under the compound microscope. Even a power of 40 shows single longer hairs, besides the dense, short pubescence. Besides these, the front side of the antennae, especially towards the tip, shows hairs which almost resemble a beard; the antennae, under that power appear densely ciliated! Loew is likewise in error when (1877, p. 66, line 5 from top) he says: '*Bleph.* and *Lipon.* have an entirely similar structure of the antennae'. I examined females of both genera and must say that, as regards the antennae, *Bleph.* is totally different from *Liponeura*. *Blepharocera* has cylindrical joints, in *Liponeura* the joints are swollen in the middle, so that the antennae of the first may be called setaceous, while those of *Lipon.* at least under a weak magnifying power, are almost moniliform, especially in *Lip. brevisrostris*. In *Bleph.* ♀ the joints are much longer. The beard on the antennae of *Bleph.* ♀ I have described above. In *Lip.* ♀ the dense, short pubescence is quite uniform, not ciliated, or bearded on the front part of the joints; some stray longer hairs also appear on all the joints in *Bleph. arocera*, and, although very much scattered, they show some regularity of distribution on the single joints. *Lipon.* is moreover provided on joints 1 and 2 on the under-side, with some hairs, like cilia, which do not seem to exist in *Bleph.* — In *Bleph. fasciata* ♀ I have discovered under the base of each of the antennae, somewhat on the outer side, a tubercle beset at the tip with rather long bristle-like hairs, diverging like rays. This character, as far as I know, has never been noticed by any author. My three male specimens, unfortunately very badly preserved, do not show these tubercles, at least I cannot see them. The antennae of *Blepharocera* male, are shorter than in the female, and, as far as I can see, also moniliform; the joints are much

shorter. There is no trace of a row of cilia. The specimens are not well preserved, and fresh ones should be examined. In *Lip. ♀* I do not perceive the above-mentioned tubercles."

In the first sentence of his letter Prof. Mik is a little too severe against Loew, when he speaks of his "error". What Loew wanted to express is the striking bareness of the antennae of the *Blepharoceridae*, in comparison with other Families of *Nemocera*, which, in most cases, have distinct verticillate hairs on the articles of the flagellum, and in this respect his generalisation was correct. For this reason, in my paper (1895, p. 153, lines 13, 14 from top) I rendered the sense of Loew thus:

"Antennal flagellum with a microscopic pubescence, without verticils. (Loew, 1877, p. 64, *Bleph.* 'ohne alle längeren Haare'.)"

And in the following line as a corrective, I added: "In *Lip. yos.* I perceive some longer hairs on the proximal third of the segments." — When in 1892 I separated the *Nemocera anomala* from the *N. vera*, I pointed out that the absence of such verticillate 'sensitive' hairs, was one of the distinctive characters of this division (Berl. Ent. Z. 1892, p. 446, line 13 from top). As the *Blepharoceridae* belong to the *N. anomala*, Loew evidently had a presentiment of this differential character belonging to them. A similar presentiment seems to have been in the mind of Dufour when he wrote: "Ces Bibions, ces Scatopses qui, par leur tournure de monche et par leurs antennes perfoliées, semblent protester de leur annexion aux Tipulaires" (Ann. Soc. Ent. Fr. 1864, p. 615).

The same misunderstanding of my meaning about the contrast between the verticillate antennae prevailing among the *Nemocera vera*, and the absence of verticils in the *Nem. anomala*, occurs in the paper of Dr. B. Wandolleck "Ueber die Fühlerformen der Dipteren", (in the Zool. Jahrb. VIII, 1895) which I received just as I was going to send the present article to the press. The author discovered under a microscope some minute hairs on the antennae of *Bibio* and *Liponeura*, recognised them as true verticillate hairs ("echte Wirtelhaare") and, on the strength of this character, set aside, with a charming "sans gêne", my division *Nemocera anomala*, as if it was based solely on the antennae. ("Der Hauptunterschied dieser beiden Gruppen liegt nach O. S. in den Fühlern.") The presence of such rudimentary hairs, even if they were proved to be homologous with what are called verticillate hairs in the *Nemocera vera*, is not a sufficient reason to give up a subdivision based upon characters borrowed from different parts of the organism of the *N. anomala*. I have a great respect for Dr. Wandolleck

as a trained Zoologist (which I have never pretended to be), and I would feel happy to receive from him an outline of a better grouping of the *Nemocera*. But he has not done anything of the kind yet, and, in the mean time, I remain firmly convinced that the elimination by me of the aberrant forms from the Suborder *Nemocera* of Latreille marks a progress which should not be given up before something better is offered.

In the remaining part of his letter Prof. Mik vindicates the right of the earlier Family-name Blepharoceridae. As I have given the substance of his argument in my Notice in the E. M. M. (comp. above) it is unnecessary to reproduce it here. It is worthy of remark that when Mik discovered the peculiar characters of the antennae and of the head of the female *Blepharocera* he had not seen Macquart's description and figures in the Annales 1843 („ich habe auch bis heute noch nicht die Original-Beschreibung von *Bleph.* in Ann. 1843 gelesen, und weiss nicht, ob nicht Macquart etwa die Etymologie des Namens angiebt, was er sonst doch zu thun pflegt“). And yet, what he saw and described is in perfect agreement with Macquart's data. Macquart gives the figure of the antenna of the ♀ (fig. 3 „très grossie“) which shows a row of microscopic cilia on one side only, just as Mik saw them. Even the protuberance with erect hairs at the top, 'diverging like rays', under each of the antennae, which Mik describes, is distinctly represented by Macquart in the magnified figure of the head (fig. 5). Finally Macquart (p. 61) states explicitly that the name of the genus is derived from those cilia of the antenna.

Now how did it happen that neither Loew, nor I, have paid any attention to the details of Macquart's figures? For my own part, the explanation is easy. In 1862 when I discovered *Blepharocera capitata* in America, I examined its head and eyes with a strong lens and obtained results which I published much later, in the Deutsche Ent. Zeitschr. 1878, p. 405. At that time I had no access to the Annales 1843, which were not to be had in the libraries of Washington. Lately, when I took up the subject again, I had the Annales at hand, but no specimens of *Blepharocera* to compare, and thus the details of Macquart's figures escaped my attention; in fact I never expected Macquart to be as accurate in his figures as he appears to have been on this occasion. As to Loew, he must have made his extracts from the Annales in some library in Berlin, away from his specimens, and everybody knows that consulting books in a library is not as easy a matter as studying them at home. At any rate, neither Loew, nor I, have been

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induced, by Macquart's figures, to examine the antennae of *Bleph.* ♀ under a strong magnifying power. And it is undoubtedly a merit, or a piece of luck, on the part of Mik, to have used a strong power without that inducement!

I am glad to have availed myself of this opportunity for publishing the interesting details communicated to me by Prof. Mik about *Bleph.* and *Lipon.* They prove, once more, how many minute characters in this remarkable family have hitherto been overlooked by its monographers, not so much for want of zeal, but principally for want of material in fresh specimens and of opportunities to study them in life.

C o r r i g e n d u m.

In my paper: Correction to my paper: Three *Trochobolae* etc., Berl. Ent. Zeit. 1895, p. 170, line 19 from top, a slip of the pen has occurred: for *australensis* read *australis* Skuse.

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