

Three new species and a new subspecies of *Meoneura*  
from the Alps (Diptera, Carnidae)

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Abstract – *Meoneura carpathica pseudoflavifacies* ssp. n., *M. falcata* sp. n., *M. helvetica* sp. n., *M. longifurca* sp. n. are described from the Alps (Switzerland and Austria). With 7 figures.

INTRODUCTION

In the course of the work for a manuscript of a part of Fauna Helvetica, numerous specimens of Carnidae were also identified. Some material from the Ötztaler Alps (Tirol, Austria) in the Diptera collection of the Department of Zoology, Hungarian Natural History Museum, Budapest was also studied now. Besides rare and interesting species, altogether three new species and a new subspecies of *Meoneura* were found.

The Alps seem to have several endemic species of carnids (*Meoneura*). Three species (*M. alpina* HENNIG, 1937, *M. atoma* L. PAPP, 1981, *M. flavifrons* L. PAPP, 1981) were formerly described from the Austrian mountains (PAPP 1984), which are found also in the present materials. The new species in this paper are possibly not the last newly described from there.

As for morphological terms, those in SABROSKY (1987) are used almost exclusively. The sclerites cranial to the true surstyli in the male genitalia are termed as "lamellae" since they must not be "process of hypoproct" (cf. HENNIG 1937, PAPP 1976, 1977, 1981). Male parameres are not studied in detail since shape and armature of surstylus and lamella give enough data to characterize species.

The type specimens are deposited in three collections: Entomologische Sammlung, Institut für Pflanzenwissenschaften, Eidgenössische Technische Hochschule, Zürich (ETHZ), Collection Bächli/Zoological Museum, Zürich (coll. Bächli/ZMZ) and the Diptera Collection, Department of Zoology, Hungarian Natural History Museum, Budapest (HNHM). The specimens are double mounted on minuten-pins if not otherwise stated. The male genitalia (usually with the whole abdomen) are preserved in Andersson's plastic microvial with glycerine under the rest of the specimen on the same insect pin.

Papp, 1997

*Meoneura carpathica pseudoflavifacies* ssp. n.  
(Figs 2–3)

**Holotype:** male (HNHM): Austria, Pillersee, 1777m, hálózás fenyőerdőben [netted in a larch forest], 1974. VII. 24., leg. Bajza & Papp (damaged, right wing lost, legs glued together).

**Paratype:** male (ETHZ): Helv. GR 1480 m, Zernezh/Gondas, 4. VIII. 96, Merz & Bächli. 2 females (HNHM, not designated as paratypes): Austria, Oberurgul, [environs of] Auf der Nase és Flach B. környéke, 1974. VII. 24., leg. Bajza & Papp.

Measurements in mm: body length 1.41 (holotype), 1.31, wing length 1.29, 1.31, wing width 0.517.

Body and legs black, mostly dull.

Face and most anterior upper edge of genae dirty yellow, anterior quarter of frons yellow. Frontal triangle extended to anterior 5/6 of frons, i.e. slightly longer than in *M. c. carpathica*, apex obtuse.

0+3 *dc* pairs, anterior pairs comparatively strong, ca. half length (5/11 to 6/11) of posterior pair of dorsocentrals. Fore femora with two long posteroventral setae.

Costal vein greyish yellow, other longitudinal veins greyish, like alar plane. Stronger fringe of black setulae on ca. 3/5 of the third costal section.

Other body features as in *M. carpathica* L. PAPP.

Epandrium with some long bristles only (Fig. 3), lamellae with 2 long bristles only. Surstylus much longer than lamella (Fig. 3, cf. Fig. 2).

*Meoneura c. pseudoflavifacies* ssp. n. is bigger than its nominate subspecies. Contrary to *M. carpathica*, anterior part of its frons is yellow, like *M. flavifacies*. However, the epandrium of *M. flavifacies* is with numerous extremely long bristles not only on its ventral surface and its surstylus is as long as lamella and without significant bristles, but its lamella bears numerous long bristles. In *M. carpathica* and *M. c. pseudoflavifacies* the surstylus is much longer than the lamella and the lamella is with 2 or 3 longer bristles only. The genitalia of the holotype of *M. carpathica* L. PAPP, 1977 were studied again (Fig. 2) but since they are fixed in Canada balsam, some parts cannot be figured at the required angle. So apex of the surstylus of *M. carpathica* is narrow and so surstylus seems more pointed than that of *M. c. pseudoflavifacies*; lamella bears a third longer bristle on the original figure (not seen now). The specimens from the Alps are described as a subspecies of *carpathica* but I cannot exclude that in the future, when more specimens will be available for comparison, its status will be changed to the species level.

*Meoneura falcata* sp. n.  
(Fig. 4)

**Holotype male** (HNHM): Austria, Pillersee, 1777m, hálózás fenyőerdőben [netted in a larch forest], 1974. VII. 24., leg. BAJZA & PAPP. Its abdomen is detached and the whole fly has been put into a plastic microvial with glycerine.

**Paratypes:** 1 male (MHNG): Italie-Aoste s/Cervinia, 2500 m 12. VII. 65, A. Comellini (abdomen and genitalia in a plastic microvial with glycerine); 1 male (coll. Bächli/ZMZ): CH: Bürenchen VS, 7.-13.8.1993., G. Bächli leg. (genitalia not prepared).

One damaged female in the HNHM (left fore leg and wings lost) with data: Austria, Festkogel, 2300 m, dwarf shrub heath, G.-P. csapda [Gregor-Povolny trap], 1974. VII. 17., leg. BAJZA & PAPP, may belong to this species but it was not designated as paratype.

Measurements in mm: body length 1.58 (holotype), 1.75, wing length 1.60 (both), wing width 0.62, 0.65 (paratypes).

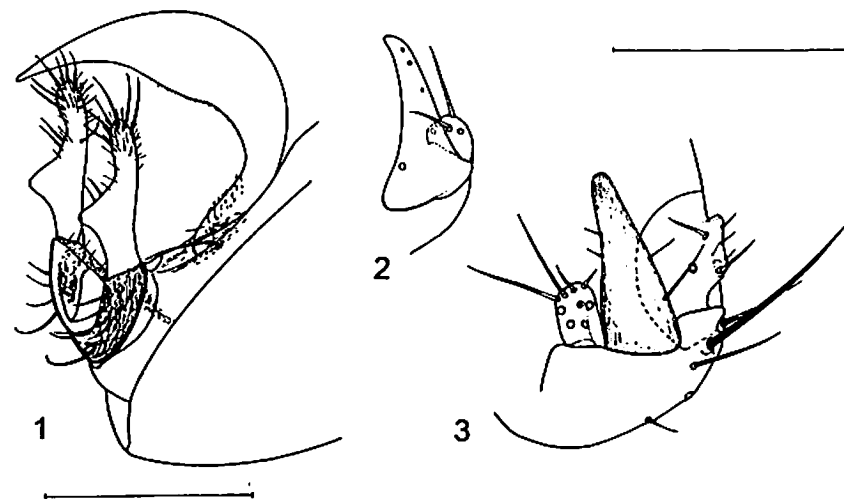
Body and legs all black.

Frons unicolorous black. Frontal triangle bright shining, rather long, 4/5 length of frons. Facial carina narrow, flagellomere globular. Three pairs of vibrissae, one upcurving genal bristle behind them and one strong genal bristle at the middle of gena. Palpi slender, ca. twice longer than flagellomere.

Mesonotal microchaetae comparatively long, 0+3 *dc* pairs, though 2 anterior pairs much shorter than posterior pair, as in *M. flavifacies*. Costal vein yellow, other veins dirty white, alar plane greyish. Stronger fringe on 2/5 of the third costal section. Crossvein *r-m* 0.60 mm, *dm-cu* 0.052 mm, intercrosvein section 0.095 mm. Knob of halteres dirty white, stalk grey. Fore coxa medially with a strong ventral seta. Fore femur posteroventrally with 3 longer setae.

Epandrium with several long setae but only ventrally. Surstylus (Fig. 4) large, medially curved, much longer than height of epandrium. Lamella rather short with several medium-long setae. Parameres rather large with blunt apex.

*Meoneura falcata* sp. n. is probably a member of the *M. flavifacies* species-group. Its characteristically long sickle-shaped surstylus makes it easily recognisable. Contrary to *flavifacies*, its epandrium bears long setae only on its ventral surface. The other species of the group differ by the armature and ratios of the genital parts.



Figs 1–3. *Meoneura* species, male genitalia. 1 = *M. longifurca* sp. n., holotype male, end of abdomen in sublateral view; 2 = *M. carpathica* L. PAPP, holotype male, left lamella and surstylus; 3 = *M. carpathica pseudoflavifacies* ssp. n., holotype male, right lamella and surstylus. – Scales: 0.2 mm for Fig. 1, 0.1 mm for Figs 2–3

*Meoneura helvetica* sp. n.

(Figs 5–7)

Holotype male (coll. Bächli/ZMZ): CH [Switzerland]: Flan/Clünas, GR, 5.VIII.1996, Merz & Bächli.

Paratypes: 3 males (2 coll. Bächli/ZMZ, 1 HNHM): same data; 1 male (ETZH): ibid., 2100 m; 2 males (coll. Bächli/ZMZ, HNHM): Oberwald VS, 13.-15.8.1975, G. Bächli coll.; 1 male (coll. Bächli/ZMZ): CH: Guttet VS, 27.-31.7. 1993, G. Bächli leg.; 2 males (coll. Bächli/ZMZ, HNHM): ibid., 27.7.-6.8.: 1 male (coll. Bächli/ZMZ): Lenzerheide GR, 11.-14.VIII.1988, G. Bächli leg.

Measurements in mm: body length 1.63 (holotype) 1.46–1.67 (paratypes), wing length ca. 1.55 (holotype, not precisely measurable), 1.25–1.66 (paratypes), wing width 0.66 (holotype), 0.57–0.67 (paratypes).

Body black, subshining, legs all black.

Frons all black with some silky shine, frontal triangle bright, long, extended nearly to lunule (88.5% length of frons). Palpi slightly longer than flagellomere. Facial carina very narrow.

Fore femur with 2 long posteroventral setae. Alar plane grey, costal vein and other longitudinal veins greyish yellow. Stronger fringe on 3/4 of the third costal section. Knob of halteres white, stalk brown.

E pandrium rather small with a number of medium-long bristles. Both surstylus and lamella with numerous long bristles (Fig. 5). There is no view from where both surstylus and lamella would be seen in their widest extension. So Fig. 6 shows lamella in its widest, and surstylus is depicted in Fig. 7 at its longest extension. Surstylus and lamella are partly fused.

*Meoneura helvetica* sp. n. is probably related to *M. asiatica* L. PAPP, 1976; at least other European species of the *M. flavifacies*-group do not seem to be closely related. The types of *M. asiatica* are newly studied and although the original figures are only caricatures of the genitalia, the shape of surstylus of *M. asiatica* – being pointed at apex – is really different from that of this new species (Figs 5–7, compare Fig. 4 of PAPP 1976). Furthermore, the length of setae on lamellae and on surstyli are less different in this new species than in *asiatica*, where surstylar setae are only half as long as those on its lamellae (Fig. 3 of PAPP 1976).

*Meoneura longifurca* sp. n.

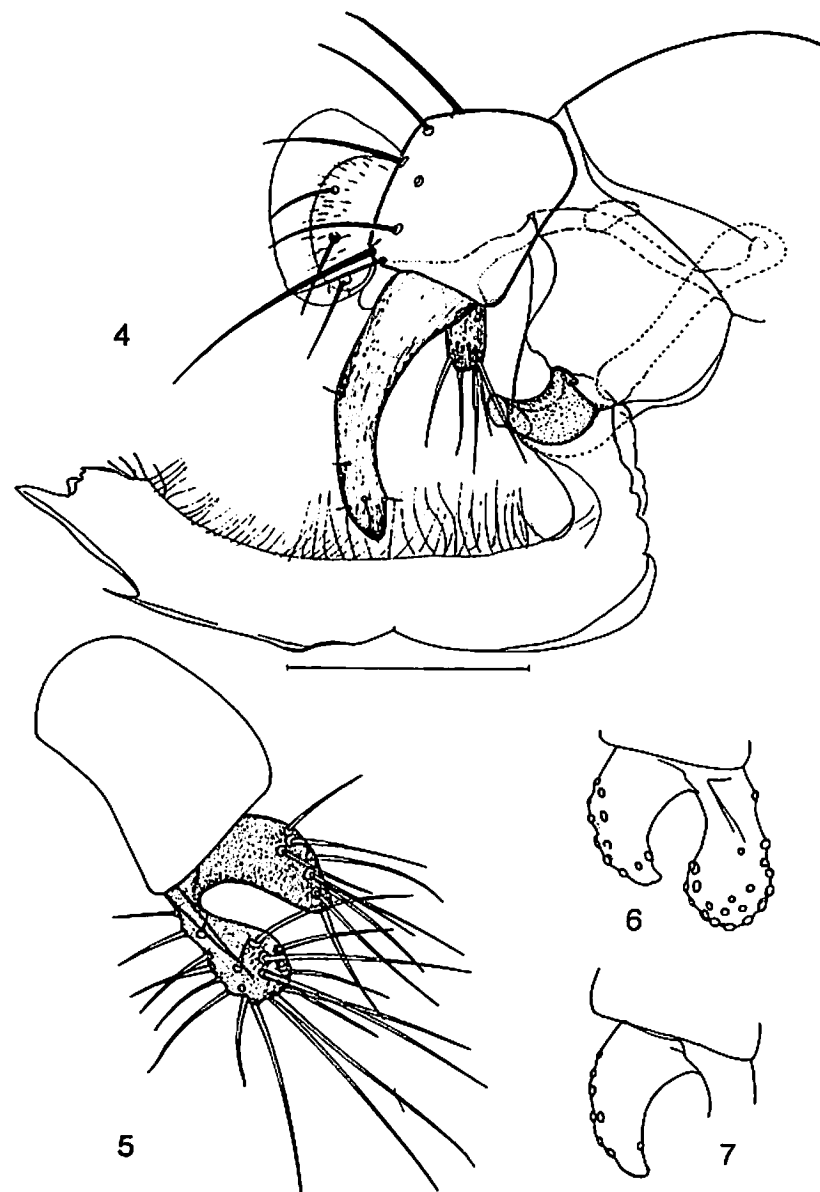
(Fig. 1)

Holotype male (coll. Bächli/ZMZ): Switzerland: Zuoz-Nüd GR, 7.VIII.1996, Merz & Bächli leg. Paratype male (HNHM): CH: Guttet VS, 2.-3.8.1993, G. Bächli leg.

Measurements in mm: body length 1.67 (holotype), 1.80, wing length 1.70, 1.80, wing width 0.64, 0.71.

Body and legs dull black.

Frons dull, frontal triangle extended to 9/16 of frons, not strongly shining. Face dark greyish but anterior margin of frons yellow on its anterior 1/8. Palpi very short, not longer than flagellomere.



Figs 4–7. *Meoneura* new species, male genitalia. 4 = *M. falcata* sp. n., holotype male, terminalia laterally; 5–7: *M. helvetica* sp. n., paratype male: 5 = left lamella and surstylus in a “typical” lateral view, 6 = right lamella and surstylus, lamella at widest, 7 = right surstylus in its longest view. – Scale: 0.1 mm for all

Mesonotum with thick grey microtomentum. Anterior dorsocentrals very short, actually I can recognize only 1 pair, which is shorter than half of the posterior *dc*. Fore femur with 3 long posteroventral bristle pairs.

Costal vein yellow, other longitudinal veins greyish yellow, alar plane greyish. Stronger fringe of costal vein present on nearly the whole length of third costal section. Knob of halteres white, stalk brown.

Abdominal sterna long and narrow, similar to those of the related species. Phallus large, almost bulbous with many setulae on ventral surface. Only an *in situ* figure of lower magnification (and of lower quality) was made on the holotype, since I do not want to dissect it (I found the paratype after depicting the holotype in another material). However, the details of its genitalia are very characteristic (Fig. 1): epandrium extremely small with only 1 longer bristle pair dorsally; 1 pair of long though not extremely long setae on gonopods; no lamellae; surstylus long, very characteristic in shape (Fig. 1), with medium-long setae apically. Surstylus much longer than height of epandrium.

*Meoneura longifurca* sp. n. is related to *M. forcipata* SABROSKY, 1959 (Nearctic and also in Mongolia, see PAPP 1976): its epandrium is similarly very small, there is no trace of lamellae in the genitalia, etc. I do not think *M. perlamellata* HENNIG, 1937 (Palestine, now Israel; cf. Textfig. 70 of HENNIG 1937) would be closely related. The latter species has two pairs of very long setae on gonopods (? or on hypandrium), the new species has only one pair of much shorter bristles there. The epandrium of *perlamellata* is comparatively large and its knob of halteres is blackish. Otherwise also the surstylus of *perlamellata* is much longer than in *longifurca*.

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