Three new milichiid species (Diptera, Milichiidae) from Hungary

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Abstract – Desmometopa discipalpis sp. n., *Madiza eximia* sp. n. and *Paramyia hungarica* sp. n. are described from Hungary. A key for the World species of *Madiza* Fallén, 1810 is given. The genus *Paramyia* is reported from the West Palaearctic for the first time. The differentiating features of *Paramyia* Williston, 1897 are discussed. With 10 figures.

In 1992 a revision of the collection of the species of Milichiidae was made in the Department of Zoology of the Hungarian Natural History Museum identifying unnamed material and re-ordering the named ones. This new collection contains 66 named species (nearly one-third of the known species) of some 3,500 specimens. No surprise that quite numerous new species were also found. However, it seems remarkable that 3 new species were also found from Hungary, all of them are unique in their genera in some respects. These three species are described below with comments.

The type-specimens are deposited in the collection of the Department of Zoology of the Hungarian Natural History Museum, Budapest (below HNHM).

*Desmometopa discipalpis* sp. n.

(Figs 1-6)


*Measurements* in mm: body length 2.18 (holotype), 2.92 (paratype), wing length 2.10 (holotype), 2.63 (paratype), wing width 0.76 (holotype), 0.95 (paratype).

Body dull dark grey, mesonotum and abdomen with thick, lighter grey microtomentum.

Frons dark, velvety black, interfrontal plates rather thin, silvery grey, like fronto-orbital plates and ocellar triangle. Cheeks rather thin, epistomal margin and lateroventral corner of facial plate comparatively weakly warped forward. Postocellars long and thick like ocellars, 2 pairs of strong exinate ors. Palpi in deep foveae, subdiscoidal (Fig. 1), with short, erected and pointed setae marginally. Subocular black bare area narrow. Vibrissal angle cca. 80°. Labellae long, with long, erect bristles. Arista rather long, 0.55 mm (paratype).

Thoracic chaetotaxy as in other species of *Desmometopa*. Pleurae dull, except for a large shining black spot posteriorly to fore coxae, this spot is very similar to that of *D. m-nigrum* (see SABROSKY 1983: Fig. 23). Katepisternum with 3 medium-long bristles anteriorly to the strong katepisternal.

Fore coxa and fore femur very long and dull black, fore coxa 0.76 mm, fore femur 0.97 mm (paratype). Ventr marginal bristle of mid tibia very long, 0.12 mm (holotype) to 0.17 mm (paratype). Male hind tibia (Fig. 2) broad and flat, though not as much as in *leptometopoides* SABROSKY, 1983; subapical swelling with 3 short bristles.

Wings light greyish, veins brown. Section of costa between costal breaks with 10 erect, coarse, black setae (apart from the strong bristle at radial costal break). t1-t2 0.245 mm, t1 0.148 mm, terminal section of vein M 0.93 mm (holotype).

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Preabdomen normal, male genitalia as a whole similar to the ground-plan of the genus. Cercus (Figs 3-4) large, with a high, bare submedial ridge in its whole length; base of this ridge with a row of long bristles (Fig. 4). Surstylus inclined (Fig. 3), short digitiform and widely rounded in lateral view (Fig. 4), connected to epandrium by a narrow bridge and its apex rather anterad in its widest (sublateral) view (Fig. 5); surstylus with several moderately long bristles. Basiphallus strongly sclerotized, basal part of distiphallus rodlike, apex is able to swell in water (i.e. also when alive). Hypandrial complex (Fig. 6) form a double-bodied ship, subanal plate (an interependrial sclerite connecting hypandrium, cerci and bases of surtulli) distinct. Acicagul apodeme comparatively short, ejaculatory apodeme rather small (Figs 4, 6).

Desmometopa discipalpis sp. n. keys to D. atypica SABROSKY, 1983 (Panama to Peru) in SABROSKY's key; it has no closer relative among the West Palaearctic species. Actually it is very surprising to find such a unique species in Europe after SABROSKY's thorough revision. The characteristics of the male genitalia seem enough to define it versus any other species of Desmometopa.

Etymology: This species is named after its disciform palpus.

Madiza eximia sp. n.  
(Fig. 7)


Measurements in mm: body length 2.71, wing length 2.50, wing width 0.95.

Body shining black.

Frons longer than broad, all shining, though less brightly than in glabra. Head bristles comparatively very long (Fig. 7, cf. e.g. PAPP 1978: Fig. 18/B). Postocular part of head broader than in congeners. Two pairs of ors as usual in this genus, anterior ors pro- and reclinate, posterior ors reclinate and slightly reclinate (Fig. 7); an additional ors between bases of posterior ors and vfr, which is not much shorter than anterior ors. Postocellar very long and parallel to each other. First peristomial as long as vibrissa (!); gena much narrower than breath of flagellomere, below eye (peristomially) with 3 long and straight bristles. Luneule short, triangular. Antennae short, flagellomere semiglobular, arista comparatively long, with medium-long cilia. Labellae and all the proboscis short (Fig. 7, cf. Figs 45-46 of HENNIG 1937). Palpi short and broad, with comparatively long, straight bristles.

Anterior dc about half as long as posterior dc. Prescutellars (acrostichals) very long. Proepisternum, anepisternum and anepimeron all bare. Katapisternum with 1 very strong bristle.

Legs black, but all tarsi, knees and basal part of tibiae ochreous. Fore coxae and femora normal.

Wings greish, veins ochreous. Basicosta with 1, costa anteriorly to first break with 3 long bristles. t₃-t₅ 0.285 mm, t₅ 0.138 mm, terminal section of vein M 1.12 mm. Halteres black.

Abdominal terga all shining. Female cerci very long and thin, with 5 pairs of medium-long and several short bristles.

Madiza eximia sp. n. is a unique species of this genus. Its differentiating features are summarized in the key below.

Etymology: from the Latin word "eximius" := exceptional, uncommon, extraordinary.

KEY TO THE WORLD SPECIES OF MADIZA FALLÀN, 1810

1 (2) Orbits with an additional ors between bases of posterior ors and vfr, which is not much shorter than anterior ors (Fig. 7). Proboscis shorter than height of head. Genae much narrower than flagellomere. Fore coxae and femora normal. Frons and all abdominal sclerites shining (Hungary)

eximia sp. n.

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2 (1) Orbits with a short or indistinct ors between bases of posterior ors and vri. Proboscis longer than height of head.

3 (4) Frons dull. Fore coxae and femora very long and much swollen (Fig. 18/D of Papp 1978). Genae not broad, narrower than flagellomere. Dorsal part (i.e. majority) of abdominal terga 1-4 with grey microtomentum. Anterior dc longer than half length of posterior one (Hungary, Yugoslavia)

*Pachymera* Becker, 1908

4 (3) All parts of frons or at least orbits shining. Fore coxae and femora normal (Fig. 18/E of Papp 1978). Gena broader than flagellomere. All parts of abdomen shining black.

5 (6) Longest axis of head between occiput and vibrissal angle (Fig. 18/B of Papp 1978). All parts of frons shining. Head bristles very short and comparatively thin. Anterior dc pair shorter than half length of posterior dc (widespread, Holarctic)

*Glabra* Fallen, 1820

6 (5) Longest axis of head between vertex and base of palpi, i.e. perpendicular to longitudinal axis of body (Fig. 45 of Hennig 1937). Interfrontal plate dull except for a pair of thin impression bordering ocellar triangle. Anterior dc longer than half length of posterior dc (Great Britain, Switzerland)

*Britannica* Hennig, 1937

The unique features of this new species facilitated a study of the known species of *Madiza*. Saborosky listed only *Glabra* from the Nearctic region (with *confusa* Curran, 1934 as a junior synonym). There are not any species known from the Neotropical, Afrotropical or Australasian and Oceanian regions (see e.g. Saborosky 1973, 1989) (and no species corresponding to the description by the key of Saborosky (1987) or to the description of the genus in Papp (1978) was found in the unnamed material of the HNHM).

Saborosky (1977) listed only *Madiza lacteipennis* Hendel, 1913 for the genus *Madiza* from the Oriental Region. Two female specimens of this species were found in the collection of the HNHM from Formosa (Taiwan), which is the type-locality of the species (its 3 female syntypes are actually from Anping and Tainan). Our specimens are from Anping and Takao, i.e one of them is a toptotypic specimen (the smaller half of the Sauter's collection was purchased by K. Kékesz for the HNHM). Our study revealed that *lacteipennis* Hendel is a species of *Leptometopa* Becker, 1903, and so it is proposed in a new combination of *Leptometopa lacteipennis* (Hendel, 1913). Since there are specimens of all the known species of *Madiza* in our collection (incl. that of *Leptometopa halteralis* (Coquillett), formerly placed in *Madiza*), the above key was put together for the World species.

**Paramylia hungarica** sp. n.

(Figs 8-10)


*Measurements* in mm: body length 1.26, wing length 1.26, wing width 0.578.

Body black shining (abdomen dark grey dusted).

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Head (Fig. 9) higher than long. Ocellar triangle extended to a shining interfrontal triangle reaching nearly to lunule. Lunule very short, facial keel low and not sharp, mouth edge slightly protruding in profile (Fig. 9). Gena half as broad as flagellomere. Both ors pairs exinate, both orv pairs inclinate; a short (0.052 mm) additional ors between posterior ors and vi; vii extremely long, poc pair long, strong and inclinate. Flagellomere comparatively larger than in Xenophyllomyza deserticola (Fig. 8, cf. Fig. 1 of OZEROV 1992): length/width 0.147mm/0.112mm, with long cilia. Arista short, 0.259 mm, its cilia as long as on flagellomere. Whole length of proboscia 0.86 mm. Apex of palpi with 5 straight bristles.

Thoracic chaetotaxy: 1 h, 2 np, 1 prst, 1 sa, 2 pa, 2 dc, 1 prsc, 2 sc. Anterior dorsocentral caudal to supraalar and less than half as long as posterior one. Apical scutellars widely divergent. Proepisternum with a minute bristle, anepisternum and anepimeron bare. Katepisternum with 1 very strong bristle.

Legs brown, short but robust, tarsi light brown. Thromerites slightly dorso-ventrally flattened. Mid tibia with a strong ventroapical, otherwise legs without characteristic bristles.

Membrane of wings with some light brownish hue, costal and radial veins greyish ochreous, other veins indistinct yellowish. No hind crossvein (dm-cu) nor even a vestige of a vein there (Fig. 10). Veins R2+3 and R4+5 nearly parallel and close to each other. t crossvein proximal to R1 break of costa (Fig. 10). Anal vein distinct on a section of c. 0.2 mm as a faint line. Halteres black.

Abdominal terga with dark grey microwebular. Male genitalia not studied.

Paramyia hungarica sp. n. is the first known species of the genus Paramyia WILLISTON, 1897 from the Palaeartic. Xenophyllomyza OZEROV, 1992 (type-species: X. deserticola) described most recently from Turkmenistan seems related (or even congeneric), but this question must be cleared in a subsequent revision of the species of Paramyia. In the collection of the HNHM there are specimens of 2 undescribed species from the Neotropical region and another species (inconspicua MALLOCH or a new species) from Viet Nam (inconspicua hitherto known from Java only). SABROSKY (1989) listed "Unidentified spp." from Australia. That revision seems even more interesting since it has been found that Paramyia and Aldrichiomyza HENDEL are related. Their shared synapomorphies are: costa extending to R4+5, proboscis very long, no vibrissae, veins R2+3 and R4+5 parallel and close to each other, veins R4+5 and M divergent. Aldrichiomyza and Xenophyllomyza share also the features that anterior ors are proclinate and both possess 2 pairs of katepisternals. The differentiating characters of Paramyia are its normal pubescent arista, and the loss of dm-cu crossvein (and 1 or 2 dc pairs). The only synapomorphies for the species of Aldrichiomyza are: their thick arista with dense thick short setae, more dorsocentral pairs (incl. a presutural pair) and the retention of dm-cu crossvein. It seems indispensable to study the details of male genitalia in order to clear up relations among those three genera.

References


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Figs 1-6. Desmometopa discopalpis sp. n., male: 1 = palpus in lateral view, 2 = hind tibia laterally, 3 = genitalia in caudal view, 4 = genitalia in lateral view, 5 = surstylus in its widest extension (sublateral view), 6 = hypandrial complex. — Scales: 0.1 mm for Figs 3-4, 6 and Fig. 5, respectively.

Abbreviations: ea = ejaculatory apodeme, h = hypandrium, sa = subanal plate

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Figs 7-10. 7 = Madiza eximia sp. n., holotype female: head laterally. 8-10 = Paranyia hungarica sp. n., holotype male: 8 = antenna in interior (lateral) view, 9 = head laterally, 10 = habitus.

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