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A REDEFINITION OF MICROPSELAPHA BECKER, 1894 (DIPTERA, SCATHOPHAGIDAE) WITH DESCRIPTION OF A NEW SPECIES FROM CENTRAL EUROPE

Miroslav Barták¹ and Štěpán Kubík²

ABSTRACT: A new species, Micropselapha bohemica sp. n. (Diptera, Scathophagidae) is described from the Czech Republic. Figures of both male and female terminalia are provided together with a habitus image. The genus is redefined and important morphological characters are discussed. A key to all three known world species is provided.

KEY WORDS: Micropselapha; Scathophagidae; Diptera; new species; key

INTRODUCTION

The genus Micropselapha was described by Becker (1894) on the basis of a single species, Cordylura filiformis Zetterstedt, 1846: 2025. The genus has been considered monotypic until quite recently when Ozerov (2010) described the second species, Micropselapha basovi Ozerov, 2010 and the third species of the genus is added herein. Several features of the recently described and newly discovered species necessitate an adjustment of the generic definition.

MATERIALS AND METHODS

In a detailed investigation of Diptera fauna of Podyjí National Park (Czech Republic), we collected a species of the genus Micropselapha Becker, 1894, belonging to neither of the two previously described species [M. filiformis (Zetterstedt, 1846) and M. basovi Ozerov, 2010]. Although the specimens of Micropselapha are mostly rather rare in collections, we gathered surprisingly numerous materials of this new species. All specimens are deposited in the collections of Czech University of Life Sciences in Prague.

The genitalia were dissected from flies, macerated in 10% KOH (24 hours, room temperature) and were stored together with specimens in plastic microvials with glycerine. The morphological terms used here follow Merz and Haenni (2000); genital structures were homologized based on Vockeroth (1987).

SYSTEMATICS

Micropselapha bohemica sp. n. (Figs. 1-6)

Material examined. Holotype: male, Czech Republic, Podyji NP, 1.5 km W of Horní Břečkov, wetland near pond, 48°53'28"N, 15°52'32"E, 400 m, 27.iii.-29.iv.2001, Malaise trap. Paratypes: Czech Republic: Podyji NP, Liščí skála, Quercetum, 48°49'48"N, 15°56'26"E, 410 m, 29.iv.-16.v.2001, Malaise trap, 1M

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Diagnosis. Black with yellow legs, frontal vitta entirely black to brownish black, lobes of 5th sternite rounded, shorter than core body of this segment, prealar seta shorter than postocellar or absent, and female 6th tergite desclerotized in middle.

Etymology. The species is named after the country of origin (Bohemia, part of the Czech Republic).

Description of male.

Head subquadrate in profile, frons-face angle slightly acute. Frontal vitta velvety black (anterior margin obscurely yellowish brown in immature specimens),
orbital plates, vertex, ocellar triangle and occiput polished black to brown, para- 
facialia, face and genae yellow, with silvery-white pruinosity. Clypeus brown, 
pruinose. Palpi short, brown, with several pale setae (the longest about 0.10 mm 
long), prepalp seta absent (subequally long as several other setae). Labrum and 
preamphidium brown, polished. Vibrissal angle with a single very long seta and sev-
eral very short brown setae. Antennae black, arista yellow in its slightly broad-
ened basal half, aristal rays shorter than basal diameter of arista. Second antenno-
mere 0.19 mm long, 3rd 0.55-0.65 mm long and 0.11-0.19 mm broad in middle, 
arista 0.55-0.82 mm long. Parafacial very narrow (0.04-0.06 mm broad in the 
narrowest part in middle). Large setae black: 4-5 inclinate frontoorbitals, 1 pro-
cline and 1 reclinate orbitals, ocellars procline and subequally long as 
orbitals, postocellars mostly as long as external verticals, 1 very long internal 
vertical, external verticals 1/3 as long. Occiput with dark setae dorsally and pale 
ventrally.

Thorax black, mostly polished, mesoscutum almost without any microtrichia; 
pruinose parts: meron except upper cranial corner, laterotergite, mediotergite, 
lower part of katepisternum. Long setae mostly black, small pale; 2 presutural 
dorsocentrals (first slightly shorter than second to 1/3 as long) and 3 postsutural 
(rarely one of them shorter), pale hair-like setae along acrostichal line in 4-5 
irregular rows before sutura scarcely separated and not distinguishable from 
other setae covering mesoscutum nearly completely, postpronotum medially and 
and anteriorly with several procline black spine-like setae and with 1-2 long recli-
nate setae and additional smaller pale setae, 0-1 presutural supraalar (posthumer-
al, presutural intaalar mostly absent), 2 notopleurals (front one longer than hind 
one), first postsutural supraalar (prealar) shorter than hind notopleural or absent, 
1 long supraalar, 2 long postalar (outer one shorter and thinner), one pair of dic-
cal scutellar, apical very short hair-like, propleura with several pale setae ante-
riorly, proepisternum with several rather long pale setae, proepimeron with dark 
seta, anepisternum with several pale setae in upper hind corner and 1-2 stronger 
setae along hind margin, katepisternum with short pale setae on upper hind part 
and longer pale setae ventrally and with 1 strong black seta in upper hind corner, 
anepimeron with 2-4 short pale setae. Fore coxa yellow, mid and hind coxae 
brownish proximally and yellow distally. Legs yellow including trochanters (mid 
and hind ones often darkened), tarsi darkened. Femora with pale setae ventrally, 
other setae mostly dark. Fore femur with a row of 6-8 brownish setae ventrally 
slightly longer than femur is deep and with irregularly arranged additional pale 
setae ventrally slightly shorter than femur is deep, dorsally short black setose, 
and with one black posterodorsal subapical seta. Fore tibia with single submedi-
an posteroventral seta, rarely with two setae, sometimes with anterodorsal seta in 
apical third. Mid femur with a row of several pale ventral setae shorter than 
femur is deep, dorsally with short dark setae and several anterodorsal setae in 
basal third and a single posterior subapical dark seta. Mid tibia with a single fine 
anteroventral in apical third and somewhat stronger but equally short preapical
ventral seta and with 2 fine small posterior setae. Hind femur with 1-2 pale ventral and anterodorsal setae in basal third and a single subapical anterodorsal. Hind tibia with one anterodorsal one posterodorsal in apical third, three prepical setae situated in dorsal, anteroventral and ventral (slightly posterodorsal) position. All tarsi short setose. Squama white with pale fringes, haltere yellow. Wing slightly infuscated along costal half, vein A complete, vein R1 bare dorsally.

**Abdomen** black to brownish black, the whole dorsum distinctly microtrichose, ventral parts polished including terminalia. Setation mostly pale, only one (rarely two) pair of black strong and very long hind marginal lateral setae present on each 2nd to 5th tergites. Altogether 6 pregenital tergites present (6th tergite completely fused with syntergosternite 7+8). The 5th sternite elongate with medium long rounded lobi (Fig. 1). Genitalia including cerci small, surstyli simple and relatively short, straight or very slightly bent, tipped (Fig. 3). Aedeagal complex very small (Fig. 2). Hypandrium forms complete ring, ejaculatory apodeme free, aedeagus very short, epiphallus horn-like, distiphallus small, both pregonite and postgonite with 1-2 setae (Fig. 2).

**Female.**
Similar to male with the exception of terminalia. The 6th tergite desclerotized in middle (Fig. 5), both 6th and 7th sternites entirely polished. Segment 7 smaller than segment 6 and sternite 8 not sclerotized (Fig. 4).

Length: body 5.3 - 5.9 mm, wing 4.2 - 5.3 mm.

**Redescription of the genus**
*Micropselapha* species are slender flies, thorax and abdomen brown to black and rather shiny, legs yellow. Head with parafacialia, face and genae yellow, occiput, vertex and orbital plates black to brown and polished, frontal vitta matte. Head subquadrate in profile, face slightly receding. One long and strong vibrissa, 3-6 inclinate and crossed interfrontals, 1 procline and 1 reclinate orbitals, ocellars, outer and inner verticals present, postocellars present, slightly divergent and procline or absent. Thorax brown to black, mostly polished. Chaetotaxy: acrostichals hair-like and indistinguishable from other setulae more or less densely covering mesoscutum; postpronotum with several strong spine-like setae in addition to 2-3 finer reclinate setae, 0-2 posthumerals (presutural infra- and supra-alaris), 0-1 prealar (in the latter case mostly shorter than hind notopleural), 1 supraalar, 2 postalaris, 2 discal scutellars (apical very short and hair like), propleur with several setulae anteriorly, both propisternum and proepimeron usually with one to several setulae (mostly one of them rather long), anepisternum with several setae along dorsal and hind margins, katepisternum with setae along hind and lower margins and with a single strong dorsal posterior seta; anepimeron with several setae. Legs yellow, at most mid and hind coxae, tip of femora and tarsi darkened. Tibiae with at most three submedian setae (rarely with four on mid tibia) and preapicals. Hind tibia with three preapical setae, situated in dorsal, anteroventral and ventral (to posterodorsal) position. Abdomen cylin-
drical, pale setose, tergites 2-5 mostly with a single (rarely more) strong (mostly black) setae on sides. Male terminalia similar to *Neochirosia*, with 6 visible pregenital tergites, 5th sternite with small to large rounded to triangular-shaped lobi, both aedeagal complex and cerci (the latter distinctly divided by a midline) small, surstyli simple and relatively short, straight to slightly bent, tipped. Female segment 7 smaller than 6th; 8th sternite not sclerotized.

It is difficult to consider the taxonomic position of the genus because no recent attempt to classify the genera of Scathophagidae has been made. Hackman (1956) placed the genus *Micropselapha* in his group of genera 1 (together with *Chylizosoma*, *Parallelomma*, *Phrosia*, *Cordylura*, *Scoliaphleps*, *Leptopa*, and *Maga phthalma*) based on having 1 sternopleural seta (= katepisternum), filiform palpi, simple male “ventral genital lamellae” and well developed propleural seta (= seta on both proepimeron and proepisternum, in fact sometimes only one of them present). The genus *Micropselapha* cannot be assigned to the subfamily system created by Collin (1958) because setose propleura indicates his subfamily Scathophaginae but having 6 pregenital male tergites places the genus with his Delininae. Šifner (2003) listed *Micropselapha* under his tribe Delinini based on short filiform palpi and presence of propleural (= proepisternal) and prostigmal (= proepimeral) setae.

All three known *Micropselapha* species share several interesting characters but their taxonomic value is unclear, e.g. spinose and mostly procline setae on postpronotum (similar to *Gimmomera*, *Nanna*, and *Spathephilus* – none of them listed by Hackman (1956) as genera allied to *Micropselapha*), two preapical ventral setae on hind tibia (similar to *Cordilura*), desclerotized 8th female abdominal sternite (according to Jong 2000, “sternite 8 usually medially divided, posteriorly produced into an acute extension or carrying a number of spines in most species with phytophagous larvae” – thus, a character of doubtful taxonomic value), setose anepimeron (similarly as in *Cordilura hyalipennis* (Ringdahl, 1936) or *Megaphthalmoides*), and setose propleura (character stressed by Collin (1958), but also by Vockeroth (1987) in his key); however, this character may be variable even inside a single genus: in *Nanna articulata* (Becker, 1894) this sclerite is usually without any setae but in most other *Nanna* it is setose.

**Key to world species of *Micropselapha* Becker, 1894**

1 Small hair-like setae in presutural area less numerous, those on dorsocentral line almost uniserial just in front of sutura and clearly separated from several similar setulae on area towards postpronotum. Apical section of CuA1 longer than dm-cu. Wing shorter than 3.3 mm. Male: lobi of 5th sternite subequally long as core body of this segment. Female 6th tergite (5th visible) completely sclerotized. ................................................................. *M. filiformis* Zetterstedt

- Small hair-like setae in presutural area numerous, those on dorsocentral line more than biserial just in front of sutura and scarcely separated from similar
setulae on area towards postpronotum. Apical section of CuA1 shorter than dm-cu. Wing longer than 4.1 mm. Male: lobi of 5th sternite much shorter than core body of this segment. Female 6th tergite (5th visible) desclerotized in middle (unknown for M. basovi) .................................................................2

2 (1) Frontal vitta clear yellow just above antennae. Parafacial about 0.08 mm broad in the narrowest place. Altogether 2 postsutural dorsocentrals. Prealar seta longer than postocellar. Male body of 5th sternite more than 1.6 times as long as lobi. Female unknown .................................M. basovi Ozerov

- Frontal vitta velvety black, sometimes only frontmost margin obscurely yellowish brown. Parafacial less than 0.06 mm broad in the narrowest place. Altogether 3 subequally long postsutural dorsocentrals (rarely 2 long and 1 slightly shorter). Prealar seta shorter than postocellar or absent. Male body of 5th sternite about 1.4 times as long as lobi. Female 6th tergite broadly desclerotized in middle. .........................................................M. bohemica sp. nov.

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LITERATURE CITED


Figure 1. *Micropselapha bohemica* sp. nov. (Paratype): male 5th sternite, ventral view. Scale = 0.5 mm.

Figure 2. *Micropselapha bohemica* sp. nov. (Paratype): aedeagal complex; hyp = hypandrium, phalap = phalapodeme, ejap = ejaculatory apodeme, pregn = pregonites, postgn = postageonites, distph = distiphallus, basiph = basiphallus, epiph = epiphallus, bacscl = bacil-iform sclerite. Scale = 0.1 mm.
Figure 3. *Micropselapha bohemica* sp. nov. (Paratype): surstyli and cerci (macerated). Scale = 0.1 mm.

Figure 4. *Micropselapha bohemica* sp. nov. (Paratype): female abdomen, lateral view (macerated). Scale = 0.5 mm.
Figure 5. *Micropselapha bohemica* sp. nov. (Paratype): female abdomen.

Figure 6. *Micropselapha bohemica* sp. nov. (Paratype): overall habitus.