

***Micropsectra davigra* sp. n. from the Tatra Mountains – a contribution
to the systematics of the *Micropsectra attenuata* species group
(Diptera: Chironomidae)**

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ABSTRACT. *Micropsectra davigra* sp. n. from the Tatra Mts (Poland) is described. The adult male has characters showing close relation to *M. clastrieri* REISS, 1969 known from the mountains of the West-Palaearctic and *M. repentina* REISS, 1971 from the Himalaya. A systematic position of the new species and the *attenuata* species group diagnosis are discussed.

KEY WORDS: Diptera, Chironomidae, Tanytarsini, *Micropsectra*, taxonomy, new species, Poland.

INTRODUCTION

Micropsectra KIEFFER, 1909 is one of the bigger genera of chironomids from the tribe Tanytarsini, represented by ca. 90 valid species noted mainly in the Holarctic region. The best-known and systematized fauna of the European *Micropsectra* comprises 35 species, nearly half of which are noted in Poland (SÄWEDAL 1982, GIŁKA 2002, SÆTHER & SPIES 2004, STUR & EKREM 2006). *Micropsectra davigra* described below is the 14th Polish species of this genus, so far recorded in the Tatra Mountains.

The division of *Micropsectra* into three groups: *attenuata*, *notescens* and *atrofasciata* has been worked out mostly from the morphological studies of the male hypopygium and pupae of the European species (REISS 1969, SÄWEDAL 1976, STUR & EKREM 2006). The smallest group *attenuata* includes 5 species known in Europe: *M. attenuata* REISS, 1969, *M. auvergnensis* REISS, 1969, *M. bodanica* REISS, 1969, *M. clastrieri* REISS, 1969 and *M. seguyi* CASAS & LAVILLE, 1990. According to the *attenuata* group diagnosis (REISS 1969) adult males have a triangular or distally narrowed hypopygial superior volsella, strongly

reduced digitus and S-shaped stem of the median volsella bearing spatulate or exceptionally spoon-like lamellae. However, *M. davigra* does not fit strictly to any of the present *Micropsectra* group diagnoses but points out to the close relation with the West-Palaearctic *M. clastrieri* and the Nepalese *M. repentina* REISS, 1971.

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METHODS

Specimens were collected with an entomological net, preserved in 70% ethanol, dissected and mounted on microscope slides in a mixture of phenol and Canada balsam. Illustrations and measurements were taken from slide-mounted individuals. The wing was measured from the arculus to the tip; lengths of legs segments are rounded off to nearest 5 μm , length of palpomeres to 1 μm , antennal and leg ratios (AR, LR) to 0.01. The morphological terminology and abbreviations follow SÆTHER (1980). Designated types are deposited in the Department of Invertebrate Zoology, University of Gdańsk (DIZUG) and the Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw (MIZPAS), Poland.

SYSTEMATICS

Micropsectra davigra sp. n.

Diagnosis

Male. The new species can be separated from all other *Micropsectra* by the following combination of characters: anal point of hypopygium long, slender and acute (Fig. 1); superior volsella triangular or slightly narrowed in distal part, bearing 2 setae on apex, digitus absent or very short (Figs 1, 2); stem of the median volsella robust, club-like, bearing numerous small spoon-shaped lamellae (Fig. 3).

Description

Male. Wing length: 2.26–2.62 mm (2.38 mm).

Colour (in alcohol): tentorium, pedicellum, scutal stripes, postnotum and sternum brown to dark brown; flagellum, head capsule, scutellum, legs, wing veins and abdomen olive to brown; background of thorax, halter and wing membrane pale, greenish.

Head: antennal flagellum 13-segmented (distal flagellomeres weakly separated); AR = 0.75–0.85 (0.78); frontal tubercles represented only by swellings of integument (less than 5 μm long); clypeus with 13–18 setae; length of palpomeres II–V (μm): 48–64 (56), 155–179 (166), 139–155 (146), 222–266 (235), III palpomere always longer than IV. Thorax chaetotaxy: Ac 14–19 (reaching antepnotum), Dc 9–11, Pa 2–3, Scts 8 (in a single row).

Wing: squama bare, anal lobe reduced; wing densely covered with macrotrichia excepting veins Sc, R_{2+3} , M, R–M, short proximal section of Cu and base of wing; R_{4+5} ending well distal of M_{3+4} , FCu somewhat distal of R–M, An ending under FCu; false vein under distal half of M_{1+2} and false veins along Cu, M_{3+4} and Cu_1 well visible.

Legs: fore tibia with straight spur (ca. 20 μm long); combs of mid and hind tibiae fused, teeth length: 15 μm (mid tibia), 20 μm (hind tibia), spurs absent; ta_1 of p_2 bearing 2–5 hook-shaped sensilla chaetica. For length of legs segments and legs ratios see table 1.

Table 1. Length of legs segments and legs ratios of examined adult males of *Micropsectra davigra* sp. n.

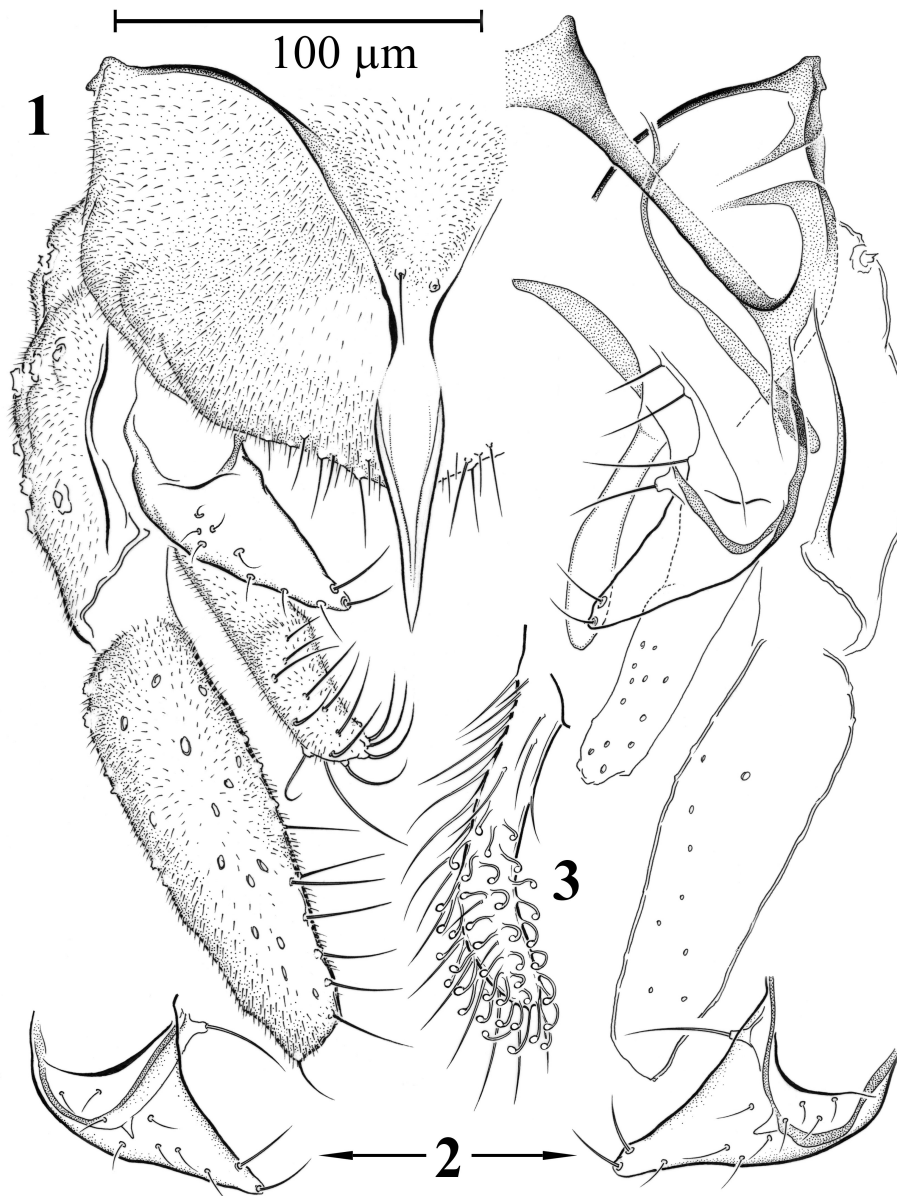
	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5	LR
P_1	970–1140 (1055)	690–815 (740)	1075–1215 (1135)	540–585 (560)	400–430 (415)	290–310 (305)	155–170 (160)	1.53–1.65 (1.57)
P_2	925–1080 (990)	800–925 (850)	475–490 (485)	275–290 (280)	215–230 (225)	155–170 (165)	125	0.57–0.60 (0.59)
P_3	1155–1340 (1225)	1060–1245 (1135)	690–770 (725)	430–510 (460)	340–385 (360)	215–260 (235)	140–155 (145)	0.62–0.65 (0.64)

Hypopygium: gonostylus 130–150 μm long, transversely cut distally; anal tergite bearing 2 median setae; anal tergite bands V-type, separated; lateral teeth absent or very small, single; anal point long, slender and acute, with crests tapering to tip ending subapically and 4–6 lateral setae on each side (Fig. 1); superior volsella triangular or slightly narrowed in distal part, bearing 7–9 setae in dorsolateral position and 2 setae on apex (anteroapical position), digitus usually absent or very short, long *Micropsectra*-seta on a tall tubercle present (Figs 1, 2); inferior volsella slightly curved and directed medially, with setae placed on its distal half (Fig. 1); stem of the median volsella robust (60–75 μm), club-like, slightly curved and directed laterally, bearing numerous (ca. 40) small spoon-shaped lamellae (Fig. 3).

Adult female, pupa and larva: unknown.

Etymology

We dedicate the species to the first legator, Dawid GRACZYK (Gdynia, Poland).



Figs 1–3. *Micropsectra davigra* sp. n. 1 – hypopygium, general view; 2 – superior volsella, variability; 3 – median volsella.

Type material

Holotype: adult male labelled: *Micropsectra davigra*; Poland, Tatra Mts., Białka Stream Valley nr. Łysa Polana, 31 August 2005, leg. Ł. Abramczuk (DIZUG). Paratypes: 1 male as the holotype (MIZPAS); 2 males: Poland, Tatra Mts., Kuźnice on Bystra Stream, 9 September 2000, leg. D. Graczyk, 10 September 2005, leg. W. Giłka (DIZUG).

Biology

Adult males of *M. davigra* were sampled on the mountain streams and adjacent brook-let-springs, at the height of 1000 m a.s.l. The co-appearing species were *Micropsectra atrofasciata* (KIEFFER 1911), *M. notescens* (WALKER 1856) and *M. sofiae* STUR et EKERM, 2006, dominating on the sampling sites and known as the species associated with cold-water habitats at high elevations or springs (STUR & EKREM, in press). *M. davigra* was noted at the end of August and in September only, despite regular, i.e. each month collecting conducted on the same and nearby sites between May and September 2004 and 2005.

DISCUSSION

A relatively low AR, triangular superior volsella tapering to apex armed with 2 setae, strongly reduced digitus and slender inferior volsella are the characters found in males of *M. davigra*, typical in the *attenuata* species group. The new species is close to *M. clastrieri* in having similar shape of the anal point, the same shape of the superior volsella and the strongly reduced digitus (REISS 1969). Both these species differ in colour and size of the body, AR values and the shape of the median volsella. The robust, club-like stem of the median volsella bearing numerous but small spoons is known from *M. repentina* (REISS 1971). *M. davigra* and *M. repentina* have also the same average wing length, length ratios of palpomeres, a similar shape of the anal point, the elongated superior volsella and the reduced digitus and are apparently sister species.

A comparison of the diagnostic characters in the sequence *M. clastrieri* (1) *M. davigra* (2) *M. repentina* (3) is interpreted as follows. Wing length: 1.3 mm (1); 2.26–2.62, M = 2.38 (2); 2.1–2.9, M = 2.38 (3). Palpomeres: IV longer than III (1), III longer than IV (2, 3). Number of median setae: 3 (1), 2 (2), 1–2 (3). Lateral teeth: well developed (1, 3), absent or very small (2). Anal point: long, crests separated, ending subapically (1); long, crests tapering, ending subapically (2); strongly elongated, crests tapering, ending half way to the apex (3). Superior volsella: triangular or slightly narrowed in distal part, two setae on apex (1, 2); strongly elongated and distinctly narrowed in distal part three setae on apex (3). Digitus: very short (1, 3), very short or absent (2). Inferior volsella: distinctly curved and directed medially (1, 3), slightly curved and directed medially (2). Stem of the median volsella: S-shaped with distal part directed medially, armed with large spatulate lamellae (1); club-shaped with distal part directed laterally, armed with small spoon-shaped lamellae (2, 3).

We conclude that *M. davigra* and *M. repentina* belong to the *attenuata* group and the S-shaped stem of the median volsella with its spatulate lamellae should be treated as an auxiliary character in the group diagnosis. As it was remarked (REISS 1969, CASAS & LAVILLE 1990), the straight (not S-shaped) stem of the median volsella is known from *M. auvergnensis* and spoon-like (not spatulate) lamellae were described also in *M. seguyi*, both originally included in the *attenuata* group.

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