

**Description of a new species in the *Micropsectra atrofasciata* group,  
with notes on rare Tanytarsini in Poland (Diptera: Chironomidae)**

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**ABSTRACT.** *Micropsectra tatrlica* sp. n. of the *atrofasciata* species group is described. *Micropsectra wagneri* (SIEBERT), *Neozavrelia cuneipennis* (EDWARDS), *Tanytarsus chinyensis* GOETGHEBUER and *T. striatulus* LINDBERG are reported in the Polish fauna for the first time; further four species of the tribe Tanytarsini, *Micropsectra radialis* GOETGHEBUER, *Tanytarsus niger* SØGAARD ANDERSEN, *T. nigricollis* GOETGHEBUER and *T. signatus* (VAN DER WULP), rare in Poland, are annotated.

**KEY WORDS:** Diptera, Chironomidae, Tanytarsini, new species, systematics, faunistics, Poland.

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INTRODUCTION

The tribe Tanytarsini comprises 187 species of 16 genera known in Europe (GIŁKA 2011b). So far 12 of these genera and 103 species have been reported from Poland, and it is expected that at least 20 further species, mostly boreal and montane ones, will be recorded (GIŁKA 2011a). They are mainly cold stenothermous inhabitants of springs and streams as well as limnophilous species that prefer living in nutrient-poor water bodies. Five species, here reported for the first time in the Polish fauna, are representatives of these ecological groups, including one unknown member of the *Micropsectra atrofasciata* species group, here described as new.

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## MATERIAL, METHODS AND SAMPLING SITES

The specimens were collected with a sweep net and Moericke traps at the sites listed below. Adults were dissected and slide-mounted in a mixture of phenol and Canada balsam. Measurements are based on those of slide-mounted individuals. Lengths of leg segments were rounded to the nearest 5  $\mu\text{m}$ ; lengths of palpomeres, antennal and leg ratios (AR, LR) were calculated to 0.01. The morphological terminology and abbreviations follow SÆTHER (1980). The illustrations were prepared using the technique described by GILKA (2008). Legators: Marta Gwizdalska-Kentzer (MGK), Ryszard Szadziewski (RSz), authors (NJ, WG). Sampling sites: [1] Delowo near Stężycza (gravel pits), 54°11'11"N 17°55'3"E; [2] Lake Kłodno near Chmielno, 54°18'36"N 18°6'10"E; [3] The Łęg nad Sweliną nature reserve near Sopot (spring area), 54°27'41"N 18°31'59"E; [4] Lake Nierybno (oligotrophic) in the Bory Tucholskie National Park, 53°49'18"N 17°33'36"E; [5] Lake Ostrowickie (oligotrophic) in Niesiołowice near Stężycza, 54°12'30"N 17°50'5"E; [6] Lake Raduńskie Dolne near Chmielno, 54°18'54"N 18°4'8"E; [7] Lake Trzechowskie near Kaliska, 53°52'38"N 18°13'45"E; [8] Lake Wdzydze in Wdzydze Tucholskie near Kościerzyna, 53°58'32"N 17°55'19"E; [9] Lake Wielkie Krzywce (oligotrophic) in the Bory Tucholskie National Park, 53°50'29"N 17°33'51"E; [10] Wodogrzmoty Mickiewicza waterfalls, Roztoka stream, Tatra Mts., 49°14'3"N 20°5'14"E. The material studied is deposited at the Department of Invertebrate Zoology, University of Gdańsk, Poland.

## RESULTS

*Micropsectra tatica* sp. n.

(Figs 1-2)

**Diagnosis**

AR 0.42. Hypopygial anal point subtriangular, broad at base, tapering to pointed tip. Superior volsella rounded, with posteromedian part expanded. Digitus reaching apex of superior volsella. Stem of median volsella long, distinctly curved in proximal part, bearing a few spoon-shaped lamellae arranged in single regular row. Inferior volsella curved in mid length, with swollen head-like distal half.

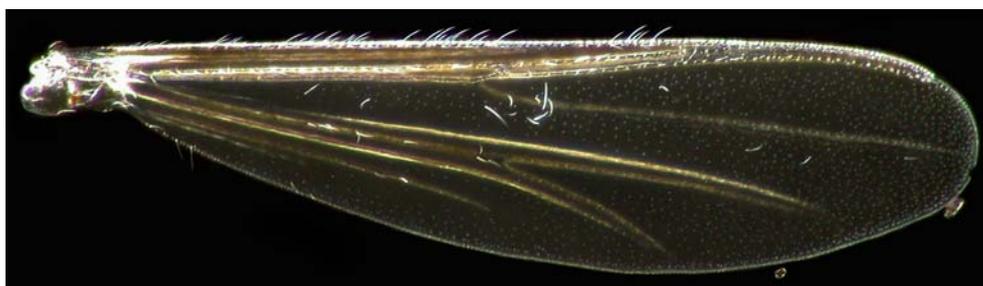
**Description**

Adult male. Colouration. Eyes black; antennal flagellum, scutal stripes, postnotum and sternum light brown with greenish undertone; antennal pedicel, tentorium, scutellum, background of thorax, legs and abdomen yellowish green; haltere and wing pale greenish.

Head. Antenna with 13 flagellomeres, plume well developed, AR 0.42. Frontal tubercles minute, c. 5  $\mu\text{m}$  long. Length of palpomeres 2-5 ( $\mu\text{m}$ ): 64, 159, 135, 234. Clypeus with 11 setae.

Thoracic chaetotaxy. Ac 15, reaching anteprepronotum; Dc 11-13; Pa 2-3; Sets 8 in row.

Wing (Fig. 1). Length (arculus-tip) 2.23 mm. Sc, R<sub>2+3</sub>, M, short proximal part of M<sub>1+2</sub>, RM and 1/3 proximal section of Cu bare, remaining veins with macrotrichia; membrane excepting basal part covered with macrotrichia. R<sub>2+3</sub> weak. FCu placed under RM-R connection. Veins ending as follows (in order from base to tip): An (under FCu), Sc, Cu<sub>1</sub>, R<sub>1</sub>, R<sub>2+3</sub>, M<sub>3+4</sub>, R<sub>4+5</sub>, M<sub>1+2</sub>. Anal lobe strongly reduced.



**Fig. 1.** *Micropsectra tatrlica* sp. n., wing of male.

Legs. Fore tibia with straight, c. 12 µm long spur. Combs of mid and hind tibia contiguous, composed of 32-34 teeth (mid leg) to 38-40 teeth (hind leg), length of teeth c. 15 µm, spurs absent. Basitarsus of mid leg bearing 3-4 hook-shaped sensilla chaetica. For lengths of leg segments and leg ratios, see Table.

**Table.** Lengths (µm) of leg segments and leg ratios of male *Micropsectra tatrlica* sp. n.

	Fe	ti	ta <sub>1</sub>	ta <sub>2</sub>	ta <sub>3</sub>	ta <sub>4</sub>	ta <sub>5</sub>	LR
p <sub>1</sub>	1080	730	1110	595	455	340	155	1.52
p <sub>2</sub>	1015	830	450	270	230	160	110	0.54
p <sub>3</sub>	1225	1060	685	450	355	230	130	0.65

Hypopygium (Fig. 2). Gonostylus c. 140 µm long, slightly swollen near mid-length, tapering to rounded tip. Anal tergite with bands of V-type, reaching elevated hump at base of anal point, bearing 4 median setae. Lateral teeth simple. Anal point subtriangular, broad at base, tapering to pointed tip, slightly narrowed subapically; crests long, separated by small knob distally. Superior volsella rounded, with posteromedian part slightly expanded, bearing 3 setae on anteromedian margin (proximal seta weaker) and 5 dorsal setae. Digitus well developed, reaching apex of superior volsella. Long *Micropsectra*-seta placed on a tall tubercle at base of superior volsella (Fig. 2A). Stem of median volsella

c. 55  $\mu\text{m}$  long, reaching slightly over half length of inferior volsella, distinctly curved in proximal part and directed posteriorly, bearing 7 spoon-shaped lamellae arranged in regular row (Fig. 2B). Inferior volsella curved in mid length and directed posteromedially, with abruptly swollen head-like distal half (Fig. 2B).



**Fig. 2.** *Micropsectra tatrlica* sp. n., male: A – hypopygium, B – median and inferior volsellae.

**Type material**

Holotype, adult male. Poland, Tatra Mts., Roztoka Stream, Wodogrzmoty Mickiewicza waterfalls [10], 6 August 1981, netting, leg. RSz.

**Remarks**

In view of the set of interesting characters found in the adult male, we decided to present it on the basis of a single but fully developed and well preserved specimen. *Micropsectra tatica* is a member of the *atrofasciata* species group with a round superior volsella, and the unique features given in the diagnosis make for its easy identification. The new species shows one of the lowest AR in the *atrofasciata* group. Similarly low AR values (less than 0.5) were reported for *Micropsectra sofiae* STUR et EKREM (0.36-0.71, West Palaearctic) and *M. janetscheki* REISS (0.44-0.53, Nepal), whereas the AR is higher (usually over 0.8) in other species of the group (REISS 1971, STUR & EKREM 2006, ROSSARO et al. 2009). The broadly triangular and acute hypopygial anal point, the expanded posteromedian part of the superior volsella, the long digitus, the curved stem of the median volsella with a few spoon-shaped lamellae arranged in row, and the curved inferior volsella with head-like distal half form a unique combination of characters for *M. tatica*. Somewhat similar structures of the anal point and digitus are known from *M. bavarica* STUR et EKREM. However, the two species differ distinctly in their metrics (longer wing and lower AR in *M. tatica*, different length proportions of palpomeres and legs) and the shape of the hypopygial volsellae (cf. STUR & EKREM 2006).

The adult male of *Micropsectra tatica* was collected by a mountain stream and 3-10 m high cascades at an altitude of 1100 m. The larval habitat of *M. tatica* is not known in detail. The appearance of the species and sampling results (the site was visited several times) could well have been affected by variable flow velocities and water levels in the stream and/or the nearby springs and rivulets.

**New and rare species in Poland*****Micropsectra wagneri* (SIEBERT, 1979)****Material examined**

Łęg nad Sweliną [3], Moericke traps, 21 March – 26 May 2011, 3 males, 26 May – 6 June 2011, 2 males, MGK.

**Distribution and biology**

*Micropsectra wagneri* has so far been known only from *locus typicus* (SIEBERT 1979), and has recently been redescribed in detail based on type materials (GILKA & JAŹDŹEWSKA 2010). The present data on habitat preferences are consistent with those given by SIEBERT (l.c.), and indicate that *M. wagneri* is a cold stenothermous species. The specimens examined were sampled in a large spring area of the Stream Swelinia near Sopot, together with several boreo-alpine species of the family Ceratopogonidae (GWIZDALSKA-KENTZER 2011).

*Neozavrelia cuneipennis* (EDWARDS, 1929)**Material examined**

Łęg nad Sweliną [3], Moericke trap, 13-20 June 2011, 1 male, MGK.

**Distribution and biology**

*Neozavrelia cuneipennis*, recently redescribed (EKREM 2006), has so far been recorded from Austria, Great Britain, Finland, France, Germany, Norway and Romania (as *N. longappendiculata* ALBU). The present specimen was sampled together with *Micropsectra wagneri* (habitat as above). This is the first record of *N. cuneipennis* in Poland.

*Tanytarsus chinyensis* GOETGHEBUER, 1934**Material examined**

Lake Wielkie Krzywce [9], netting, 10 July 2010, 3 males, NJ.

**Distribution and biology**

*Tanytarsus chinyensis* is a widely distributed Palaearctic species that prefers to inhabit nutrient-poor lakes. The specimens examined were collected at the oligotrophic Lake Wielkie Krzywce in the Bory Tucholskie National Park. This is the first record of *T. chinyensis* in Poland. The diagnostic characters for the adult male are given in GILKA & PAASIVIRTA (2009) and GILKA (2011a).

*Tanytarsus striatulus* LINDBERG, 1976**Material examined**

Lake Nierybno [4], 10 July 2010, 1 male, NJ. Lake Wielkie Krzywce [9], netting, 10 July 2010, 1 male, NJ.

**Distribution and biology**

*Tanytarsus striatulus* is a widespread Palaearctic species, common in Fennoscandia (PAASIVIRTA 2012). Immatures of *T. striatulus* are limnophilous and prefer oligotrophic/mesotrophic conditions. The specimens examined were taken by oligotrophic lakes in the Bory Tucholskie National Park. This is the first record of the species in Poland. Adult males of *T. striatulus* are easily identified using the characters given by LINDBERG (1976) and GILKA (2011a).

*Micropsectra radialis* GOETGHEBUER, 1939**Material examined**

Lake Wdzydze [8], netting, 13 April 2009, 12 males, NJ.

**Distribution and biology**

*Micropsectra radialis* is a Palaearctic cold stenothermous species that prefers to inhabit lakes and tarns in Central Europe. This is the first record of *M. radialis* in Poland outside

the Tatra Mts. (GIŁKA 2002). As far as its geographical distribution is concerned, the species is regarded as a boreal relic in the Southern Baltic Lakelands province, probably dating from the Baltic Glaciation.

***Tanytarsus niger* SØGAARD ANDERSEN, 1937**

**Material examined**

Lake Kłodno [2], netting, 19 April 2009, 28 males, NJ. Lake Raduńskie Dolne [6], 19 April 2009, 16 males; 26 April 2009, 6 males; 01-03 May 2009, 122 males; NJ.

**Distribution and biology**

This limnophilous species had hitherto been known from a single site in Poland (GIŁKA 2002, Jezioro Żarnowieckie, Southern Baltic Coasts). The present specimens were collected at two adjacent mesotrophic lakes in the Kashubian Lakeland. Flight period data confirm that *Tanytarsus niger* is a spring univoltine species, which emerges in Central Europe in April-May; occasionally, it also turns up as an adult in autumn (JANECEK 1995).

***Tanytarsus nigricollis* GOETGHEBUER, 1939**

**Material examined**

Delowo [1], netting, 28 August 2009, 4 males, WG. Lake Raduńskie Dolne [6], netting, 18 July 2009, 1 male, NJ. Lake Trzechowskie [7], netting, 25 April 2009, 5 males; 26 September 2009, 3 males; 01 May 2011, 1 male; NJ.

**Distribution and biology**

*Tanytarsus nigricollis* is a West Palaearctic species known from Belgium, France, Germany, Italy and from a single site in Poland (GIŁKA & DOMINIAK 2007; Śnice, Kashubian Lakeland); it has now been confirmed from further three sites in the East Pomeranian Lake District. The species prefers to inhabit lakes, ponds and gravel/clay pits. New data on seasonal distribution indicate that *T. nigricollis* is polyvoltine in Poland.

***Tanytarsus signatus* (VAN DER WULP, 1859)**

**Material examined**

Lake Ostrowickie [5], netting, 22 May 2010, 3 males, WG. Lake Wielkie Krzywce [9], netting, 05 June 2010, 1 male; 14 August 2010, 1 male; NJ.

**Distribution and biology**

*Tanytarsus signatus* is a widely distributed species in the Holarctic region, but rare in Poland. This is the first report based on adults from northern Poland (the Kashubian Lakeland and the Tuchola Forest), and the second record since LOEW (1871, Tatra Mts.). Immatures of the species prefer to inhabit nutrient-poor lakes, ponds and small standing freshwater bodies.

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