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A New Hairy-Winged *Pseudorthocladius* (Diptera: Chironomidae) from Luxemburg

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Abstract

Pseudorthocladius cristagus sp. n. is described as male imago. It differs from all other members of the genus *Pseudorthocladius* v. d. Wulp except *P. pilosipennis* Brundin by having setae on the wing membrane. It can be separated from *P. pilosipennis* by having a gonostylus with a prominent crista dorsalis and an outer corner or heel. The species was collected with emergence traps from a helocrene spring in northern Luxemburg.

Keywords: *Pseudorthocladius cristagus*, new species, Orthocladiinae, Chironomidae.

Introduction

The immature stages of the genus *Pseudorthocladius* v. d. Wulp are found in a wide variety of damp habitats including seeps, mosses, hygropetric areas and floodplains along stream banks (Cranston et al., 1989). The genus contains about 25 species, seven of them known from Europe. Up to now, however, only a single species with hairy wings was known, *Pseudorthocladius pilosipennis* Brundin. Through the first author's participation in a faunistic survey of ground water springs in Luxemburg, an additional hairy-winged species was found. The new species is described here.

Methods and terminology

The general terminology follows Sæther (1980). In the figures of the male genitalia the dorsal view is shown to the left and apodemes to the right. The measurements are given as ranges. The holotype of the new species is deposited at the Zoologische Staatssammlung, Munich (ZSM), and the paratype at the Musée National d'Histoire Naturelle Luxembourg (MHNL).

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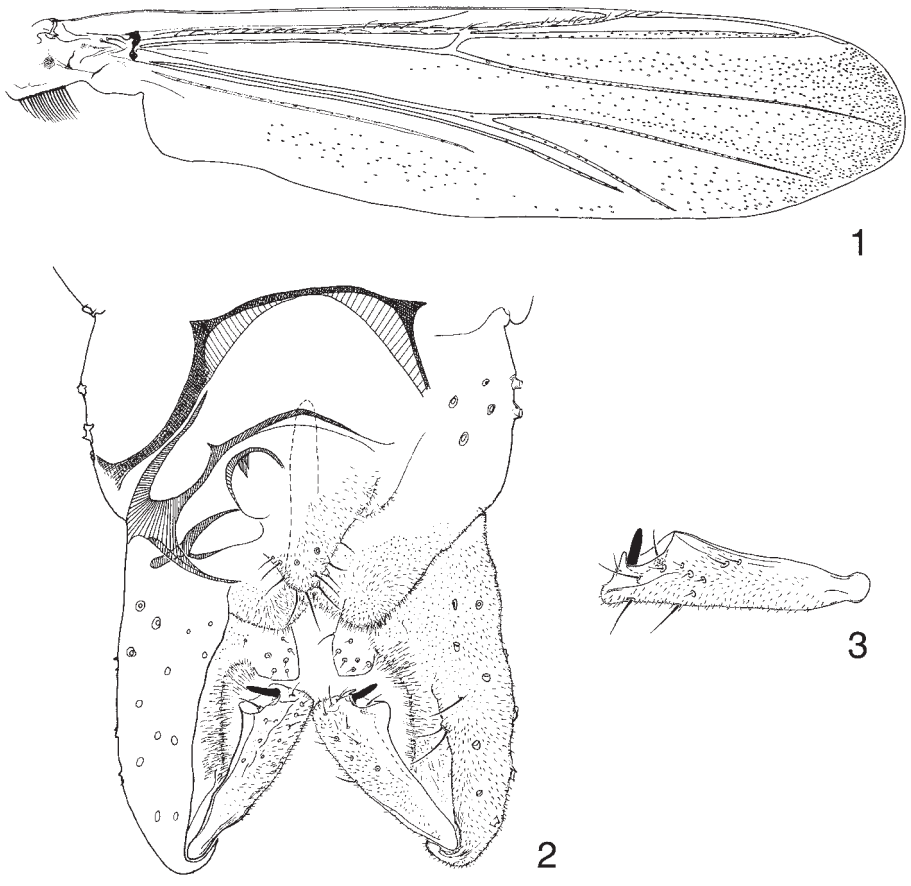
Pseudorthocladius cristagus sp. n. (Figs. 1–3)

Material examined

Holotype ♂, Luxemburg, Oesling, east Holzthum, Bleesquelle, 75.0/117.05, at 505 m elevation, helocrene, 4.V.1999, leg. I. Schrankel. Paratype: 1 ♂, as holotype, except 18.V.1999.

Diagnostic characters

The male imago is separable from the other species of the genus except *Pseudorthocladius pilosipennis* Brundin by having hairy wings. The strong crista dorsalis and outer heel of the gonostylus separate the species from *P. pilosipennis*.



Figures 1–3. *Pseudorthocladius cristagus* sp. n., male imago: (1) Wing; (2) Hypopygium; (3) Gonostylus.

Etymology

From Latin, *crista*, crest and the dismembered *magnus*, large, leaving — *gus*, referring to the large crista dorsalis.

Description

Male imago (n = 1–2)
Total length 3.35–3.41 mm. Wing length 1.89–2.02 mm. Total length/wing length 1.69–1.78. Wing length/length of profemur 2.44–2.58. Coloration brownish black.

Head
AR 1.38–1.43. Ultimate flagellomere 571–586 µm long. Temporal setae 13–18, including five inner verticals, 3–6 outer verticals and 5–7 postorbitals. Clypeus with 8–10 setae. Tentorium 150–158 µm long, 38 µm wide. Stipes 150–158 µm long, 68–75 µm wide. Palpomere lengths (in µm): 36–41, 49, 90–124, 114–124, 169. Third palpomere with five apical sensilla clavata, 12 µm long; no sensilla clavata on palpomere 4.

Thorax
Antepronotum with 4–6 setae. Dorsocentrals 23–29 in 2–3 rows, acrostichals 20, prealars 6–10. Scutellum with 12–14 setae in transverse row.

Wing (Fig. 1)
VR 1.08–1.14. Anal lobe projecting. Costal extension 68 µm long. Brachiolum with one seta; subcosta; RM, M and Cu bare; costal extension with nine non-marginal setae, R with 23–30 setae, R_1 with 21, R_{4+5} with 50, M_{1+2} with 63, M_{3+4} with 40, Cu_1 with 22, postcubitus with eight, and An with 19 setae. Cell m basal of RM bare, r_{4+5} with about 260 setae, m_{1+2} with about 300, m_{3+4} with about 100, and cells cu and an combined with about 60 setae. Squama with 11–16 setae.

Legs
Spur of front tibia 56–68 µm long, spurs of middle tibia 38–39 and 26–28 µm long, of hind tibia broken and 26 µm long. Width at apex of front tibia 41–47 µm, of middle tibia 41 µm, of hind tibia 49 µm. Pseudospurs and sensilla chaetica absent. Length and proportions of legs as in Table 1.

Hypopygium (Fig. 2)
Tergite IX with 12–15 setae on anal point, laterosternite IX with 10–12 setae. Anal point 30–34 µm long. Phallapodeme 73–79 µm long, partly divided into two characteristic parts; transverse sternapodeme 71–83 µm long. Virga absent. Gonocoxite 225–229 µm long. Gonostylus (Fig. 3) 90–92 µm long, with more or less prominent outer corner or heel, crista dorsalis conspicuous, triangular, megaseta 15 µm long. HR 2.49–2.50, HV 3.71–3.73.

Table 1. *P. cristagus* sp. n. Lengths (in µm) of leg segments and leg proportions.

	fe	ti	ta_1	ta_2	ta_3	ta_4	ta_5
p_1	779–784	809–832	624–662	331–359	227–246	137–151	80–85
p_2	728–784	728–775	397–406	189–208	142	132–137	71–76
p_3	841	926	605	293	189	123–170	85

	LR	BV	SV	BR
p_1	0.75–0.76	2.77–2.86	2.50–2.58	2.9–4.3
p_2	0.52–0.55	3.78–3.81	3.67–3.84	3.2–4.2
p_3	0.65	3.49	2.92	6.2

Remarks

The species is close to *P. pilosipennis* Brundin (Brundin 1956: 139, fig. 102; Sæther & Sublette 1983: 50, fig. 26), but in addition to having a different gonostylus with outer heel and prominent crista dorsalis, *P. cristagus* has higher leg ratios, a more projecting anal lobe of the wing, R_{4+5} ending slightly proximal to M_{3+4}, (in *P. pilosipennis* R_{4+5} ends clearly distal to M_{3+4}), and the phallapodeme is partly divided into two parts. Pulvilli are present, but setiform and not finely dissected/pectinate as given in the generic diagnoses by Sæther and Sublette (1983) and Cranston et al. (1989).

Distribution

The species has so far only been collected in an intermittent helocrene with a relatively large moist area in northern Luxemburg. In years with little rain it dries up already in early summer, and is shown to have an exceptional species composition of copepods and Acari compared to other investigated springs in Luxemburg (Gerecke et al., subm.). Gerecke et al. (subm.) give further details of the helocrene locus typicus for *P. cristagus*, listed as LUX qu20.

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