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A NEW SPECIES OF THE GENUS *HYDROBAENUS* FRIES, 1830 (DIPTERA: CHIRONOMIDAE) FROM THE ARCTIC RUSSIA

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Summary. *Hydrobaenus birulyai* Krasheninnikov, **sp. n.** is described based on adult males from Yugorsky Peninsula. The new species is similar to *H. tumidistylus* Sæther, 1976 but differs from latter by long, wide at apex and rounded anal point without microtrichia, by present of 16 weak acrostichals begin at some distance from antepnotum, by massive inferior volsella, and by gonostylus with large median lobe located medially.

Key words: Chironomidae, Orthoclaadiinae, taxonomy, new species, Yugorsky Peninsula, Pay-Khoy Range, Arctic zone.

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Резюме. С Югорского полуострова по самцам описан *Hydrobaenus birulyai* Krasheninnikov, **sp. n.** Новый вид близок к *H. tumidistylus* Sæther, 1976, от которого отличается длинным, расширенным и закругленным на вершине анальным отростком, лишенным микротрихий, наличием 16 слабых акростихальных

щетинок, начинающих на некотором расстоянии от переднеспинки, массивным нижним придатком гоноксита и наличием большой медиальной лопасти на гоностиле.

INTRODUCTION

The genus *Hydrobaenus* Fries, 1830 includes 51 species (Ashe & O'Connor, 2012; Makarchenko & Makarchenko, 2014; Makarchenko *et al.*, 2015, 2017; Makarchenko & Makarchenko, 2018a, b; Moubayed-Breil & Baranov, 2018). Investigation along the coasts of the Pay-Khoy Range in summer 2013 reveals the presence of a new species of this genus.

The Pay-Khoy Range is a mountain range at the northern end of the Ural Mountains. The ridge is extended from northwest to southeast. It is located on the Yugorsky Peninsula. The ridge continues to Vaygach Island and separates the Barents Sea and the Kara Sea. Currently, the chironomid fauna of the Pay-Khoy Ridge includes 58 species in 36 genera of 5 subfamilies, of which four rare for Russia species, *Diamesa cinerella* Meigen, 1835, *Conchapelopia aagaardi* Murray, 1987, *Rheocricotopus* (*s. str.*) *gavriloae* Krasheninnikov, 2015 and *Tanytarsus miriforceps* (Kieffer, 1921), was recorded (Krasheninnikov, 2014; Krasheninnikov *et al.*, 2015).

MATERIAL AND METHODS

Specimen examined was slide-mounted in sandarac medium (Krasheninnikov, 2011). Morphological terminology and abbreviations follow that of Sæther (1980). All measurements were performed using an eyepiece micrometer associated with a microscope Micros MC50.

The holotype of new species is deposited in the collection of the Zoological Institute of Russian Academy of Sciences, St. Petersburg (ZIN); two paratypes are deposited in the collection of the Institute of Biological Problems of the North, Magadan (CCK).

DESCRIPTION OF NEW SPECIES

Hydrobaenus birulyai Krasheninnikov, sp. n.

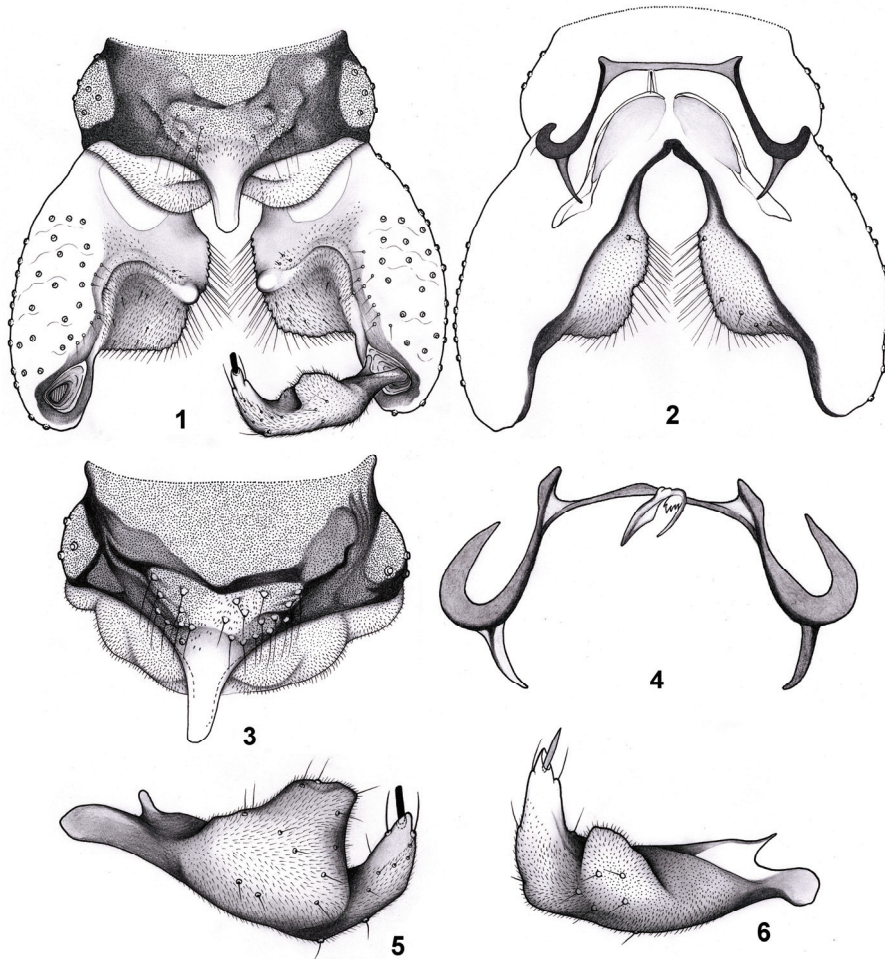
<http://zoobank.org/NomenclaturalActs/A54D9E70-D61D-4D85-A2AF-FDD1D6338DD6>

Figs 1–6

TYPE MATERIAL. Holotype – ♂, **Russia**: Nenets Autonomous Okrug, Yugorsky Peninsula, Pay-Khoy Range, nameless stream, a tributary of the Peschanaya River near its estuary, 69,745056° N, 61,812861° E, h=9 m, 16.VII 2013, leg. A.B. Krasheninnikov (CCK). Paratypes: 1♂, Yugorsky Peninsula, Pay-Khoy Range Amderma River, 69,726694° N, 61,715056° E, h=6 m, 14.VII 2013, leg. A.B. Krasheninnikov (CCK); 1♂, Pay-Khoy Range nameless stream on the coast of the Kara Sea, 69,765056° N, 61,753222° E, h=5 m, 26.VII 2013, leg. A.B. Krasheninnikov (CCK).

DIAGNOSIS. The new species is similar to *Hydrobaenus tumidistylus* Sæther, 1976 but differs from latter in having anal point long, wide at apex, rounded, without microtrichia; acrostichals 16, they situated at some distance from antepronotum; inferior volsella massive, complex shape; gonostylus with large median lobe, located medially.

DESCRIPTION. Adult male (n = 3). Total length 2.7–3.1 mm; length of abdomen 1.9–2.1 mm; wing length 1.7–1.8 mm. Ratio total length/wing length 1.60–1.69. Head, thorax, abdomen and legs light brown.



Figs 1–6. Male adult of *Hydrobaenus birulyai* sp. n. 1 – hypopygium, holotype, dorsal view; 2 – hypopygium, holotype, ventral view; 3 – anal point, paratype, dorsal view; 4 – transverse sternapodeme and virga, paratype; 5, – gonostylus, holotype; 6 – gonostylus, paratype.

Head. Eye bare, with dorsomedial extension lacking ommatidia. Temporal setae including 2–3 inner and 4 outer verticals and 1–2 postorbitals. Antenna with partly reduced plume, AR 0.50–0.58. Clypeus with 6–12 setae. Lengths of palpomeres (in μm): 20–24; 39–43; 78–86; 59–74; 86–94.

Thorax. Lateral anteprenotals 6–9; dorsocentrals 6–8; acrostichals 16 (begin at some distance from anteprenotum, weak, curved at right angles), prealars 3–4. Scutellum with 6–8 setae.

Wing. R with 8–11, R_1 with 0–1, R_{4+5} with 0–2 setae; other veins bare. Anal lobe slightly truncated. Costa extending to apex of R_{4+5} on 16–24 μm . Squama with 11–12 setae.

Legs. Fore tibia with 35–39 μm long spur; mid tibia with 16–24 μm and 16–20 μm long spurs; hind tibia with 47–55 μm and 16–19 μm long spurs. Hind tibial comb consists of 11–13 setae. Pseudospurs absent, pulvilli reduced, empodium present. Length (in μm) and proportions of legs as in Tables 1, 2.

Table 1. Length (in μm) of adult male legs of *Hydrobaenus birulyai* sp. n. (n = 3)

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅
P ₁	624–702	686–827	468–530	296–343	218–234	156–172	110–125
P ₂	624–733	640–749	296–343	187–218	140–172	110	94–110
P ₃	640–764	764–889	452–499	234–250	172–187	110	94–110

Abbreviations. P₁- P₃ – anterior, mid and hind legs; fe – femur; ti – tibia; ta₁- ta₅ – 1st-5th tarsal segments.

Hypopygium (Figs 1–6). Tergite IX with 14–25 setae, laterosternite IX with 4–8 setae. Anal point 51–63 μm long, wide at apex, rounded, without microtrichia. Virga 24–27 μm long consisting of 2–3 spines. Transverse sternapodeme 86–90 μm long, from straight to convex, phallapodeme 102–114 μm long. Gonocoxite 204–251 μm long. Superior volsella absent. Inferior volsella massive, complex shape. Gonostylus 98–106 μm long, with large median lobe; megaseta 16 μm long, well-developed. HR 2.08–2.37.

Female, pupa and larva. Unknown.

DISTRIBUTION. The new species is known from its type-locality at the Pay-Khoy Range, Yugorsky Peninsula, Russia.

Table 2. Proportions of adult male legs of *Hydrobaenus birulyai* sp. n. (n = 3)

	LR	BV	SV	BR
P ₁	0,62–0,68	2,24–2,49	2,80–2,97	1,4–1,8
P ₂	0,46–0,47	2,92–3,08	4,26–4,32	1,0–2,0
P ₃	0,55–0,59	3,05–3,29	3,10–3,45	1,2–1,7

Abbreviations. P₁- P₃ – anterior, mid and hind legs; LR – length ta₁ / length ti₁; SV – length fe+ti / length ta₁; BV – length fe+ti+ta₁ / length ta₂+ta₃+ta₄+ta₅; BR – length of setae on ta₁ / minimal wide of ta₁.

ECOLOGY. All adult collections are confined to the neighborhood of lotic waters and carried out in the second half of July (Fig. 7). Together with the new species in the studied water bodies *Trichotanytus christmasus* Makarchenko, 1983 (Podonominae), *Diamesa cinerella* Meigen, 1835 (Diamesinae), *Constempellina brevicosta* (Edwards, 1937) (Chironominae), and 22 species of Orthoclaadiinae were collected, among which the most interesting are *Hydrobaenus laticaudus* Sæther, 1976, *H. pilipodex* Sæther, 1976, *Krenosmittia halvorseni* (Cranston et Sæther, 1986), *Parasmittia carinata* Strenzke, 1950, and *Rheocricotopus (Rheocricotopus) gavriiloae* Krasheninnikov, 2015.

ETYMOLOGY. The species is named in honor of the Russian biologist Alexey A. Byalynitsky-Birulya (1864–1937), who participated in the Russian polar expedition in 1900–1902 led by Eduard von Toll to study the New Siberian Islands and search for the legendary Sannikov Land.



Fig. 7. Gathering place of *Hydrobaenus birulyai* sp. n., left – Pay-Khoy Range, nameless stream, a tributary of the Peschanaya River near its estuary; right – Pay-Khoy Range, Amerma River.

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