

A new species of the genus *Hylaeus* Fabricius, 1793 (Hymenoptera: Colletidae) from Siberia

Новый вид рода *Hylaeus* Fabricius, 1793 (Hymenoptera: Colletidae) из Сибири

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Ключевые слова: пчелы, Ariformes, Anthophila, Россия, Палеарктика.

Abstract. *Hylaeus (Hylaeus) leleji* Proshchalykin et Dathe, **sp.n.** is described and illustrated from Siberia (Altai Territory), increasing the number of species reported from the region to 33.

Резюме. Дано описание и иллюстрации нового вида *Hylaeus (Hylaeus) leleji* Proshchalykin et Dathe, **sp.n.** из Сибири (Алтайский край). Число видов *Hylaeus*, обнаруженных в Сибири, увеличивается до 33.

Introduction

The genus *Hylaeus* Fabricius, 1793 is a worldwide lineage of bees constituting a rather small percentage of the total bee fauna [Michener, 2007]. It is easily identified by the combination of the following characters: minute to small size; slender («hylaeiform»); often nearly hairless; black or rarely partly red, usually with limited yellow or white integumental markings on the head and mesosoma; the glossa of both sexes is short and subtruncate to weakly bilobed, and lacks seriate hairs but has fine hairs on the posterior surface; malar space usually short; the mesepisternum normally lacks a strong ridge or spine in front of the mesocoxa; the distal end of the metatibia, on the outer surface, lacked spines; scopa of female entirely absent [Ikudome, 1989; Michener, 2007]. Characteristic for the males of most species is a pale (white or yellow) face mask; a «complete mask» means that the paraocular areas, the clypeus and the supraclypeal area are entirely pale. The genus comprises presently 52 subgenera and about 600 species [Michener, 2007; Dathe, 2015]. More than 200 species are known from the Palaearctic region with its centre of diversity in the Mediterranean Basin.

Thirty two *Hylaeus* species have been recorded from Siberia so far [Proshchalykin, Dathe, 2012, 2016]. The record of *Hylaeus breviceps* Morawitz, 1876 and

H. gibbus Saunders, 1850 from Western Siberia [Eremina et al., 2006; Konusova et al., 2007] is doubtful and requires checking. Up until now only three *Hylaeus* species were described from Siberia by Strand [1909], Cockerell [1937], and Proshchalykin and Dathe [2016], but the discovery of a number of additional species can be expected. Based on a comprehensive study of specimens in the collection of the Zoological Institute of the Russian Academy of Sciences (St Petersburg, Russia) [ZISP] we here describe a new species of *Hylaeus* from Siberia (Altai Territory), that we dedicate the meritorious Russian entomologist Professor A.S. Lelej on the occasion of his 70th birthday.

Material and methods

The morphological terms generally follow Michener [2000, 2007] and Dathe [2015]. For the terminology, the following abbreviations are used in the text: T1, T2, T3, etc — the first, second, third, etc. metasomal terga; S1, S2, S3, etc — the first, second, third, etc. metasomal sterna; CL — clypeal length (the median length of the clypeus from the basal to the apical margins); CW — clypeal width (the distance between the clypeal margins at the level of the tentorial pits); HL — head length (the maximum midline distance between the occipital margin and the apical margin of the clypeus in frontal view); HW — head width (the maximum breadth of the head in frontal view, across the eyes); LFW — lower facial width (the minimum distance between the eyes at their lower ends); UFW — upper facial width (the maximum distance between the eyes at their point of greatest width; the relationship UFW : LFW is used to express the degree of convergence of the inner eye margins); SL — scapus length (maximum length of the

scapus without the basal condylus); SW — scapus width (width of the scapus at its broadest point).

An Olympus SZX12 microscope was available for examination of specimens. The photos were taken with a system comprising a Leica Z6APO microscope, a DFC 450 camera and the Leica Application Suite (LAS) Version 4.3.0. Composite images with an extended depth of field were created using the software CombineZP by Alan Hadley.

Taxonomy

Hylaeus (Hylaeus) leleji
Proshchalykin et Dathe, **sp.n.**
Figs 1–8.

Type material. Holotype, ♂, Russia, Altai Territory: 30 km S Kur'ya, Savvushka. 31.VII–1.VIII.2007, S. Belokobylskij leg. (ZISP).

Description. Male. TL 5.67 mm, WL 4.28 mm. Head (Fig. 1). Proportions HL : HW = 1.05, UFW : LFW = 1.32, outline elongate trapezoid. Scapus black, slender conoid, SL : SW = 2.30, slightly bent, little wider than flagellum; flagellum of medium length, black, yellow below, apical segments dark. Mask complete, white, side patches expanded beyond upper margin of scapi bases, rounded at top. Foveae faciales distinct, reaching up to the vertex. Clypeus CL : CW = 1.75, smooth and shiny, with scattered punctation on a very weak longitudinal wrinkled surface, anterior margin black. Lower part of supraclypeal area relatively wide, upper part very narrow, with gentle transition to the frons; sculpture and punctation as in clypeus. A narrow triangular impression with smooth surface on each side between scapus base and tip of supraclypeal area. Frons and vertex with dense, strong punctation; intervals shiny; vertex with relatively dense but inconspicuous pale pilosity. Genae normal, with elongated punctation; occiput rounded; malae long, longer than width at the end. Labrum and mandibles black.

Mesosoma (Figs 2–4) elongate, rounded, depressed; pilosity pale, short and dense, but inconspicuous. Coloration black, pronotum laterally with two small white spots, callus and tegula with white flecks. Pronotum narrow, only laterally somewhat expanded, rounded, dorsolateral angles blunt. Mesonotum and scutellum (Fig. 3) smooth and shiny, punctation strong, close; metanotum densely and coarsely punctate, matt; mesopleuron with similar sculpture as mesonotum, but with slightly larger and denser between them small pits; anterior margin rounded. Mesosternum (Fig. 4) semi-cylindrically impressed, with distinct edges to mesopleuron, the impression covered with dense hair. Legs black, anterior surface of fore tibia, base of other tibiae and proximal parts of basitarsi yellow, other tarsi brown; wings lightly brownish, venation brown. Propodeum (Fig. 2) totally rounded, its surface finely grid wrinkled; medial area with short rugose net wrinkles, separated from the other parts only by coarser meshes; propodeal furrow narrow, shiny.

Metasoma (Fig. 5) cylindrical, apically spindle-shaped, coloration black. T2 basally separated from T1 by a strong groove, T3 and T4 laterally bulged with flattened marginal depression; surface of T1 smooth and shiny, punctation moderate, sparse; surface with short hairs; T2 and following terga similarly punctate; lateral parts of terga without fringes.

S3 basally with wide transverse bulge with front face little impressed, very finely shagreen, shiny.

Terminalia (Figs 6–8). The male terminalia of species of the *Hylaeus nigratus* species-group vary little in structure; here also, no species characteristic divergence is detectable.

Female. Unknown.

Distribution. Russia (Altai Territory).

Etymology. The new species is named in honor of the outstanding hymenopterist Prof. Arkadiy S. Lelej.

Diagnosis. The new species resembles the well-known Palaearctic *H. hungaricus* (Alfken, 1905), a nomen novum for *Hylaeus affinis* Morawitz, 1876. We compared it to the type of *H. affinis*, it differs by other proportions in the mask parts: the upper part of supraclypeal area is approximately 1.2 times wider than the adjacent distance to the orbits (0.9 times in *H. affinis* type); the scapus is more slender; the clypeus surface shows weak longitudinal wrinkling; the lower smooth part of the scapus area is significantly smaller; the tarsi are dark (instead of white in *H. affinis* type) and the terga of metasoma bear no side fringes.

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References

- Cockerell T.D.A. 1937. Siberian bees of the genera *Halictus*, *Sphecodes* and *Hylaeus* // American Museum Novitates. No.949. P.1–6.
- Dathe H.H. 2015. Studies on the systematics and taxonomy of the genus *Hylaeus* F. (9). Supplement to the taxonomy and distribution of Afrotropical *Hylaeus* F. species (Hymenoptera: Anthophila, Colletidae) // Contributions to Entomology. Vol.65. No.1. P.9–26.
- Eremeeva N.N., Sidorov D.A., Yakovleva S.N. 2006. [Colletid bees (Hymenoptera, Apoidea) of the Kuznetsk-Salair Mountain Province] // Trudy Kemerovskogo Otdeleniya Russkogo Entomologicheskogo Obshchestva. No.4. P.24–28. [In Russian]
- Ikudome S. 1989. A revision of the family Colletidae of Japan (Hymenoptera: Apoidea) // Bulletin of the Institute of Minami-kyūshū Regional Science. No.5. P.43–314.
- Konusova O.L., Sidorov D.A., Eremeeva N.I. 2007. [A contribution to the fauna and ecology of colletid bees (Hymenoptera, Colletidae) in the southeast of Western Siberia] // Vestnik Tomskego Gosudarstvennogo Universiteta. No.301. P.212–217. [In Russian]
- Michener C.D. 2000. The bees of the World. Baltimore, London: Johns Hopkins University Press. 913 p.
- Michener C.D. 2007. The bees of the World. Second edition. Baltimore: Johns Hopkins University Press. 953 p.



Figs 1–8. *Hylaeus (Hylaeus) leleji* sp.n., holotype, male: 1 — head, frontal view; 2 — propodeum; 3 — mesonotum and scutellum, dorsal view; 4 — mesepisternum, ventral view; 5 — metasoma; 6 — S7, dorsal view; 7 — S8, dorsal view; 8 — genital capsule, dorsal view. Scale bars: 0.5 mm.

Рис. 1–8. *Hylaeus (Hylaeus) leleji* sp.n., голотип, самец: 1 — голова спереди; 2 — пропodeум; 3 — мезонотум и скутеллюм сверху; 4 — мезэпистернум снизу; 5 — метасома; 6 — S7 сверху; 7 — S8 сверху; 8 — генитальная капсула, сверху. Масштабная линейка: 0,5 мм.

Proshchalykin M.Yu., Dathe H.H. 2012. The bees of the genus *Hylaeus* Fabricius 1793 of the Asian part of Russia, with a key to species (Hymenoptera: Apoidea: Colletidae) // Zootaxa. No.3401. P.1–36.

Proshchalykin M.Yu., Dathe H.H. 2016. Additional records of the genus *Hylaeus* Fabricius 1793 (Hymenoptera: Apoidea:

Colletidae) from Siberia, with description of a new species // Zootaxa. No.4105(4). P.301–320.

Strand E. 1909. Die paläarktischen *Prosopis*-Arten des Kgl. Zoologischen Museums zu Berlin // Entomologische Rundschau. H.26. S.72–78.

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