A new micropterous species of the genus *Bracon* Fabricius, 1804 (Hymenoptera: Braconidae: Braconinae) from the South Urals

Новый короткокрылый вид рода *Bracon* Fabricius, 1804 (Hymenoptera: Braconidae: Braconinae) с Южного Урала

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A new micropterous species *Bracon semitus* **sp. nov.** belonging to the subgenus *Lucobracon* Fahringer is described from Orenburg Province of Russia. This is the second example of microptery discovered in both the genus *Bracon* and the subfamily Braconinae.

Описан новый микроптерный вид *Bracon semitus* **sp. nov.** из подрода *Lucobracon* Fahringer из Оренбургской области России. Это второй пример микроптерии, как в роде *Bracon*, так и во всем подсемействе Braconinae.

Key words: microptery, parasitoids, key, taxonomy, Russia, Orenburg Province, *Bracon*, *Lucobracon*, Hymenoptera, Braconidae, Braconinae, new species

Ключевые слова: микроптерия, паразитоиды, определительный ключ, таксономия, Россия, Оренбургская область, *Bracon*, *Lucobracon*, Hymenoptera, Braconidae, Braconinae, новый вид

INTRODUCTION

Most of braconid species are macropterous. However, about 110 species from 56 genera and 11 subfamilies demonstrate different levels of wing reduction – brachyptery, microptery, or aptery (Belokobylskij & Kula, 2012; Belokobylskij & Austin, 2013), and only a single species has been known in the subfamily Braconinae.

Among about 900 species of the genus *Bracon* Fabricius, 1804 known in the world fauna (Yu et al., 2012), only one recently described species, *B.* (*Habrobracon*) *barbieri* Belokobylskij, 2012 from Algeria (Belokobylskij & Kula, 2012), is micropterous in both sexes. In this paper, a second micropterous species, *B.* (*Lucobracon*) *semitus* **sp. nov.** from the South Urals of Russia, is described. According to Belokobylskij & Kula (2012), *B. semitus* **sp. nov.** is micropterous form because its fore wings are very short with only most basal veins distinct, and tegulae are strongly reduced.

Trend to wing reduction was observed in some species of the subgenus *Lucobracon* Fahringer, 1927 by Tobias (1959). This tendency includes shortening and narrowing of wings, more or less distinct shortening of the radial cell of fore wing (this cell does not reach apex of the wing), and shift of all venation to base of the wing (Tobias, 1959). According to Tobias (1959), these trends are most clearly represented in the braconid taxa from arid habitats.

MATERIAL AND METHODS

Morphological terminology and measurements follow Belokobylskij & Maeto (2009), terminology of sculpture follows Harris (1979). Following abbreviations are

used: POL – postocellar line, OOL – ocular-ocellar line, Od – maximum diameter of lateral ocellus. The holotype of the new species is deposited in the Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia (ZIN).

TAXONOMIC PART

Order **HYMENOPTERA**

Family **BRACONIDAE**

Subfamily **BRACONINAE**

Tribe **BRACONINI**

Genus ***Bracon*** Fabricius, 1804

Subgenus ***Lucobracon*** Fahringer, 1927

***Bracon* (*Lucobracon*) *semitus* sp. nov.**
(Figs 1–13)

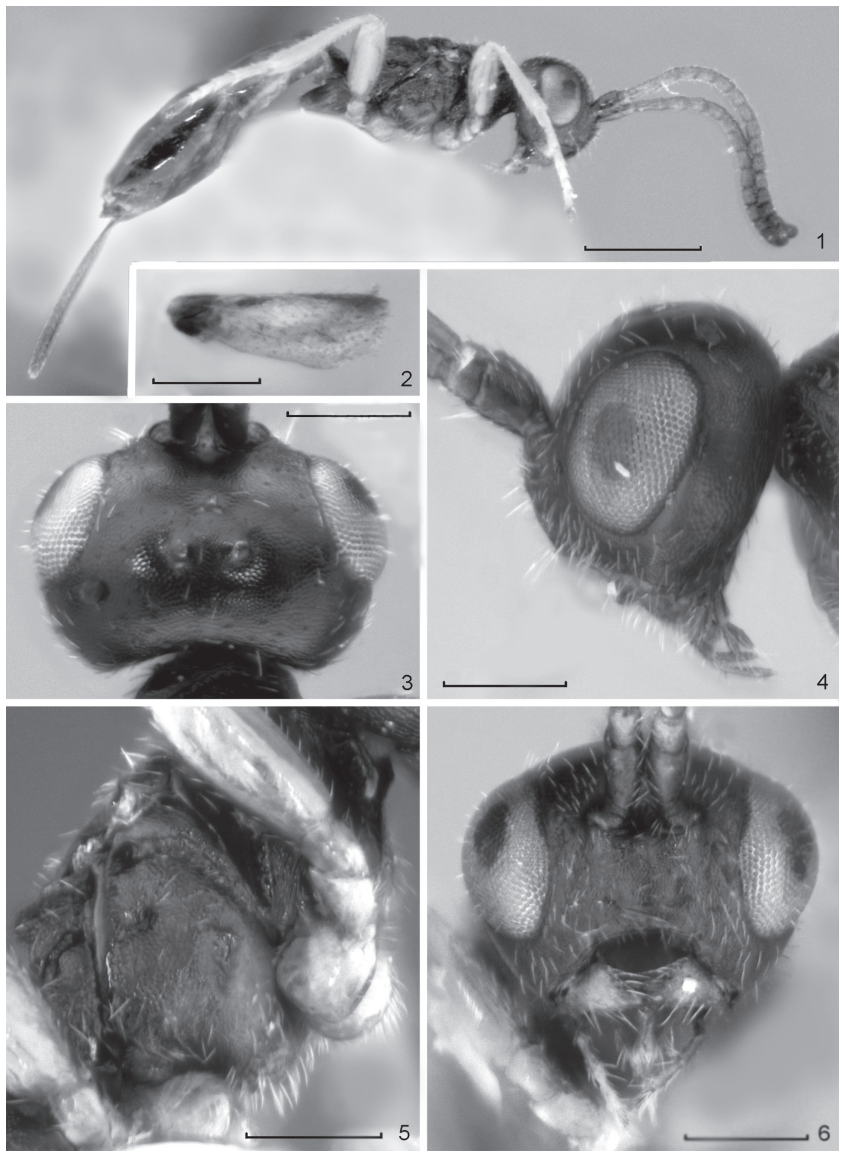
Holotype: Female; **Russia**, Orenburg Province, Kuvandyk District, vicinity of Kondurovka railway station, steppe, on the ground, 24 May 2012, coll. T.S. Kostromina (ZISP).

Description. Female. Micropterous. Body length 2.7 mm; fore wing length 0.3 mm.

Head slightly depressed, weakly transverse, its width 1.5 times median length (dorsal view) and 1.4 times maximum width of mesosoma before tegulae. Height of head 1.1 times maximum height of mesosoma. Head behind eyes, in dorsal view, distinctly and almost linearly narrowed. Transverse diameter of eye in dorsal view 1.3 times, and in lateral view 1.75 times longer than temple in its shortest place. Eyes weakly convex, with sparse and short setae. Occiput weakly concave. Ocelli small, arranged in triangle with base 1.25 times its sides. OOL 4.0 times Od; POL 2.5 times Od; OOL 1.6 times POL. Longitudinal diameter of eye (lateral view) 1.35 times as long as its transverse diameter. Face width twice its height with clypeus and twice width of hypoclypeal depression. Face with small elongate smooth tubercle dorsomedially. Clypeus short, not convex, weakly separated from face, its width 5.0 times maximum height. Width of hypoclypeal depression 1.45 times distance from edge of depression to eye. Malar space 0.6 times width of base of mandible, 0.25 times longitudinal diameter of eye. Malar suture absent. Hypostomal flange present, fine, weakly protruded. Tentorial pits small; distance between tentorial pits equal to shortest distance between pit and eye. Maxillary and labial palpi shortened, 5- and 3-segmented. Maxillary segments 2–4 subequal by length, weakly expanded towards apex, segment 5 slightly longer than segment 4. Maxillary segment 3 weakly thickened.

Antenna rather thick, shortened, 20-segmented, 0.65 times as long as body. First flagellar segment distinctly expanding towards apex, 2.75 times longer than its apical width and 1.5 times longer than second segment. Second flagellar segment weakly expanding towards apex, 1.7 times longer than its apical width. All following flagellar segments not expanding towards apex. Middle segments about 1.5 times longer than wide, almost as long as penultimate and apical segments. Apical segment roundly narrowed apically, 1.45 times longer than its maximum width. Flagellum covered with short and dense setae; scape and pedicel subglabrous, only with a few setae on ventral side.

Mesosoma 1.85 times longer than its maximum height, flat dorsally (lateral view). Mesoscutum short, 1.3 times wider than median length (dorsal view). Transverse lateral pronotal sulcus deep and crenulate. Notaulus distinct on anterior third of mesoscutum, crenulate, weak on posterior two-third of mesoscutum where it is indicated by short and erect setae. Traces of notauli meeting on posterior margin of mesoscutum. Prescutellar depression (mesoscutellar sulcus) rather deep, short, with eight carinae, 4.0 times wider than median length. Sternaulus short and deep, narrowly crenulate, situated on middle of mesopleuron. Mesopleural sulcus crenulate. Mesopleural pit developed. Propodeum, in lateral view, distinctly sloped posteriorly, with short and fine lateral tubercles.



Figs 1–6. *Bracon semitus* **sp. nov.**, female. **1**, habitus, lateral view; **2**, fore wing, ventral view; **3**, head, dorsal view; **4**, head, lateral view; **5**, mesopleuron, ventro-lateral view; **6**, head, frontal view. Scale bars: 0.15 mm (2), 0.25 mm (3–6), 0.5 mm (1).

Wings. Fore wing small and narrow, plume-form, reaching basal quarter of propodeum, rounded apically. Venation of fore wing strongly reduced, costal vein thickened and strongly sclerotised, thicker basally and apically. Only single medicubital cell closed by desclerotised veins. Hind wing very small, leaf-form, weakly narrowed at apex, its costal vein thickened and strongly sclerotised.

Legs. Femora and tibiae of all legs thickened, tibiae rather strongly expanded towards apices. Fore leg with femur 2.5 times longer than width, tibia 1.25 times longer than femur and 0.9 times as long as tarsus. Hind leg with femur 3.2 times longer than

Figs 7–13. *Bracon semitus* **sp. nov.**, female. **7**, mesosoma, dorsal view; **8**, hind leg; **9**, apex of middle tarsus; **10**, apex of antenna; **11**, metasoma, dorsal view; **12**, first metasomal tergite, dorsal view; **13**, base of antenna. Scale bars: 0.1 mm (9), 0.15 mm (10, 13), 0.25 mm (7, 12), 0.5 mm (8, 11).

width, tibia 1.4 times longer than femur and as long as tarsus. Inner spur of hind tibia 0.25 times as long as hind basitarsus. Fifth segment of hind tarsus (without pretarsus) twice longer than fourth segment, 0.7 times as long as second segment and 0.2 times as long as basitarsus. Claws small, curved, half as long as fifth tarsal segment and as long as fourth tarsal segment. Basal lobe of claw weakly protruding, not convex, with almost straight lower edge. Hind claw rather densely setose.

Metasoma 1.7 times longer than mesosoma. First tergite distinctly widened before spiracles and weakly widened behind spiracles. Median area of first tergite subrounded, weakly convex and weakly bordered, its maximum width 0.7 times apical width

of tergite. First tergite 0.8 times (measured from petiolar process) or 0.9 times (measured from base of tergite) longer than its apical width. Apical width of second tergite 2.3 times larger than its median length, 1.4 times larger than its basal width and 1.85 times larger than apical width of first tergite. Median length of second tergite 0.8 times larger than apical width of first tergite and equal to length of third tergite. Second suture straight and fine. Ovipositor sheath 1.4 times as long as hind femur, about as long as hind tarsus and 0.6 times as long as metasoma.

Sculpture and pubescence. Head granulate; occiput, vertex, frons and temple weakly granulate to almost smooth, with rare punctures; face shallowly but distinctly granulate. Pronotum, mesonotum and mesopleuron weakly granulate. Propodeum roughly granulate, medially narrowly and irregularly rugose. First tergite almost smooth basally, finely striate laterally, its median area finely striate basally and finely granulate apically. Second and third tergites and base of fourth tergite finely granulate, following tergites smooth. Middle and hind coxae dorsally strongly granulate. Head, mesosoma and first tergite mostly covered by short and erect setae; face and ventral part of mesopleuron with dense pubescence.

Colour. Head, mesosoma, anterior and posterior tergites of metasoma mainly black, pronotum dark brown, mesopleuron ventrally with reddish brown spot. Scape and pedicel ventrally and apically dark brown; pedicel basally and dorsally, first to third segments of flagellum yellowish brown, following segments dark. Legs yellowish brown; middle and hind coxae mostly brown, black dorsally; fifth segments of all tarsi black. Second, third and base of fourth tergites reddish, following tergites black.

Male. Unknown.

Etymology. From the Latin *semita* (narrow path, country road) that refers to the soil near road where the new species was collected on.

Comparison. *Bracon semitus* **sp. nov.** belongs to the subgenus *Lucobracon* by having thickened legs, short antennae, short wings and extensively granulate body (Tobias, 1957, 1958, 1959; Papp, 1966).

The new species resembles *B. punctithorax* Tobias, 1959 by having similar structure of antennae, maxillary palpi, and sculpture of face and mesosoma, but differs by the following characters:

Sternaulus absent. Mesosoma longer, about twice longer than height (lateral view), distinctly depressed dorsoventrally. Face less transverse, its width 1.5 times height with clypeus combined. Flagellar segments shorter, first segment twice longer than its apical width and 1.2 times longer than second segment. Second tergite rugulose, suture between second and third tergites distinctly crenulate and medially strongly sinuate. Notaulus with fine granulate sculpture. Body length 2.1 mm. – Kazakhstan . . . . . ***B. punctithorax*** Tobias, 1959

– Sternaulus present. Mesosoma shorter, 1.85 times longer than its height (lateral view), more or less cylindrical, weakly depressed dorsoventrally. Face more transverse, width twice its height with clypeus combined. Flagellar segments longer, first flagellar segment 2.75 times longer than its apical width and 1.5 times longer than second segment. Second and third tergites shallowly sculptured, suture between them straight and weak. Notaulus distinct and crenulate in anterior part of mesonotum, weak with disappearing granulate sculpture on posterior part. 2.7 m . . . . . ***B. semitus*** **sp. nov.**

Bracon semitus **sp. nov.** also resembles *B. semifusus* Papp, 1965 by having abruptly sloped posteriorly propodeum with more or less developed lateral tubercles, and by sculpture of metasomal tergites, but differs by the following characters:

Head, in dorsal view, more transverse, weakly narrowed behind eyes, its maximum width 1.7 times median length. Occiput distinctly concave. Antenae 26-segmented. Flagellar segments shorter; first segment 1.8 times longer than its apical width, as long as second segment; median segments about 1.4 times longer than their width. Head, mesosoma, metasoma, antennae and almost all

legs black. Face strongly granulate; propodeum and mesopleuron rugose-granulate. Sternalus wide and shallow. Body length 2.8–3.5 mm. – Hungary, Moldova, Turkey, Algeria ..... ***B. semifusus*** Papp, 1965

– Head, in dorsal view, less transverse, distinctly narrowed behind eyes, its maximum width 1.5 times median length. Occiput very weakly concave. Antennae 20-segmented. Flagellar segments longer; first segment 2.75 times longer than its apical width, 1.5 times longer than second segment; median segments 1.5 times longer than their width. Mesosoma black with brownish spots, second, third and base of fourth tergites reddish brown. Face finely granulate; propodeum roughly granulate, mesopleuron weakly granulate to almost smooth. Sternaulus narrow and deep. Body length 2.7 mm ..... ***B. semitus* sp. nov.**

The new species also resembles *B. sculptithorax* Tobias, 2000 by having similar structure of head, antenna and mesosoma, but differs by the following characters:

Hind femur slender, 4.5 times longer than its maximum width. Maxillary palpi longer than height of head. First tergite with distinctly convex median area; following tergites distinctly rugose. Mesopleuron striate, with long sternaulus. Propodeum almost straight, without lateral tubercles. – Russia: Primorskiy Terr. ..... ***B. sculptithorax*** Tobias, 2000

– Hind femur wider, 3.2 times longer than its maximum width. Maxillary palpi shorter than height of head. First tergite with weakly convex median area; following tergites almost smooth or finely sculptured. Mesopleuron grannulate, with short sternaulus. Propodeum sloped posteriorly, with more or less developed lateral tubercles .... ***B. semitus* sp. nov.**

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