

FIRST RECORD OF THE ANT GENUS *STRONGYLOGNATHUS* MAYR (HYMENOPTERA: FORMICIDAE) FROM AFGHANISTAN, WITH DESCRIPTION OF A NEW SPECIES

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Abstract.— The socially-parasitic ant genus *Strongylognathus* is reported for Afghanistan for the first time, and a new species, *S. kabakovi*, is described based on the single queen. It belongs to the *huberi* species-group and is characterized by the small size. It differs from the latter species by the distinctly concave occipital margin, by the fines body sculpture, and by the less developed standing pilosity on the body.



Key words.— ants, Formicidae, taxonomy, *Strongylognathus*, new species, Afghanistan.

INTRODUCTION

The ant genus *Strongylognathus* comprises obligatory social parasites, so-called degenerate slavemakers, which live in nests of *Tetramorium* Mayr species. The parasite queen does not kill the host queen, but it pheromonally inhibits production of its sexual brood. The share of parasite workers in mixed colonies seldom exceeds 2%; under natural conditions, they only sporadically raid colonies of the host species to obtain more slaves. Morphologically *Strongylognathus* well differs from any known Palaearctic Myrmicinae genera by its highly specialized, long and narrow mandibles with not defined masticatory margin.

The taxonomy of *Strongylognathus* is comparatively well studied, while there are still several unresolved particular problems on this subject (Pisarski 1966, Baroni Urbani 1969, Radchenko 1985, 1991, Sanetra *et al.* 1999; see also Bolton 1995, Bolton *et al.* 2006). Bolton (1976) proposed to divide this genus into two species-groups: *testaceus*- and *huberi*-group. The species of the first group are characterized by the

strongly concave occipital margin and by prominent postero-lateral corners of the head. In contrary, the species of the *huberi*-group have straight or at most very shallowly concave occipital margin and rounded, not prominent postero-lateral corners of the head.

Strongylognathus includes 24 described species that are distributed only in the Palaearctic Region, from Iberian Peninsula to Tien-Shan Mts. in the west, and also in eastern China, Korea and Japan. Nevertheless, at least three more new undescribed species are known from Iran (Paknia *et al.* 2008), Pakistan (Andres Schulz, pers. comm.) and Armenia (unpublished personal data). Below we describe a new species, collected in Afghanistan; this is the first record of socially-parasitic ant genus for this country.

MATERIAL AND METHODS

We have compared the holotype queen of the describing species with the type specimens of related species, *S. minutus* Radchenko. The holotype of *S. kabakovi* is preserved at the Zoological Institute

of the Russian Academy of Sciences, St.-Petersburg (ZISP).

Measurements of specimens were made accurate to 0.01 mm:

- HL – maximum length of head in dorsal view, measured in a straight line from the most anterior point of clypeus to the posteriormost point of occipital margin,
- HW – maximum width of head in dorsal view behind (above) the eyes,
- SL – maximum straight-line length of scape from its articulation with condylar bulb to the proximal edge of scape,
- AL – diagonal length of the alitrunk seen in profile, from the anterodorsal point of alitrunk to the posterior margin of propodeal lobes,
- AH – height of alitrunk, measured from the upper level of mesonotum perpendicularly to the level of lower margin of mesopleuron,
- SCW – maximum width of scutum from above,
- SCL – length of scutum+scutellum from above,
- PL – maximum length of petiole from above, measured from the posterodorsal margin of petiole to its anterior edge at the articulation with propodeum; petiole should be positioned so that measured points lay on the same plane,
- PW – maximum width of petiole from above,
- PH – maximum height of petiole in profile, measured from the uppermost point of the petiolar node perpendicularly to the lowermost point of the ventral face of petiole (excluding subpetiolar lobe),
- PPL – maximum length of postpetiole from above,
- PPW – maximum width of postpetiole from above,
- PPH – maximum height of postpetiole in profile from its uppermost to lowermost points, measured perpendicularly to the linear component of the lateral postpetiolar suture.

DESCRIPTION OF NEW SPECIES

Strongylognathus kabakovi sp. nov. (Figs 1, 3, 5)

Etymology. The species is dedicated to the Russian entomologist, O. N. Kabakov (St.Petersburg), who collected the type specimen.

Material examined. Holotype queen, Afghanistan, Prov. Ghoz, Tulak, 2500 m, 29.x.1969, leg. O. Kabakov (ZISP).

Description. Queen (Figs 1, 3, 5). Head longer than broad, somewhat widened posteriorly, with very weakly convex sides, narrowly rounded occipital corners; occipital margin shallowly, but distinctly concave medially, postero-lateral corners of head rounded, not

prominent; anterior clypeal margin straight. Scape short, does not reach the level of lateral ocelli.

Alitrunk long and low, mesonotal dorsum flattened, dorsal surface of propodeum distinctly shorter than posterior one, propodeum with short, while sharp triangular denticles. Anterior surface of petiole concave, posterior one steep, slightly convex, meets with anterior surface at an acute angle to form transversal dorsal crest, peduncle quite short; ventral surface of petiole anteriorly with small rounded lamina. Postpetiole distinctly higher than length.

Body generally with fine sculpture, surface appears shiny. Lower part of frons with fine longitudinal striation, genae and temples with somewhat coarser longitudinal striation; surface of head dorsum in addition finely superficially micropunctated (except for central strip of frons, frontal triangle and clypeus smooth). Surface of gaster with fine superficial polygonal microsculpture.

Central part of scutum with fine longitudinal striation and micropunctures, the rest of scutum and scutellum smooth. Sides of alitrunk, whole propodeum and waist finely punctated.

Not hairy species. On head, two long erect curved setae present on occipital corners, and a few similar ones – on clypeus; ventral surface of head hairless. Alitrunk and gaster with a few scattered long setae (they more abundant on the posterior gastral segments), petiolar node with four very long curved setae, postpetiole with four similar setae and two much shorter erect hairs. Head, alitrunk and waist without decumbent pubescence; gaster with short and very sparse decumbent pubescence, distance between hairs 3-4 times longer than their length. Scape and legs with short, not abundant decumbent hairs.

Body colour brownish-red, appendages somewhat lighter.

Males, workers and ecology are unknown.

Measurements (in mm) and indices: HL 0.80, HW 0.70, SL 0.50, AL 1.19, AH 0.55, SCL 0.88, SCW 0.47, PL 0.32, PH 0.33, PW 0.25, PPL 0.24, PPH 0.36, PPW 0.39; HL/HW 1.14, SL/HL 0.63, SL/HW 0.72, AL/AH 2.18, SCL/SCW 1.34, PL/HW 0.46, PL/PH 0.98, PW/HW 0.36, PPL/HW 0.34, PPL/PPH 0.65, PPW/HW 0.56, PPW/PW 1.56.

Comparative diagnosis. *S. kabakovi* belongs to the *huberi* species-group of the genus *Strongylognathus*. Among all previously described species of this group, only *S. minutus* Radchenko, known from Turkmenistan, Uzbekistan and southern Kazakhstan, has very small queens (AL < 1.20 *versus* > 1.60 in other species).

S. kabakovi well differs from all species of this group by its small queen size, except for *S. minutus*. On the other hand, it well distinguishes from the latter by the combination of features, which is emphasized below (compare also Figs. 1, 3, 5 and 2, 4, 6).



Figures 1–6. Photos of details of structure of *Strongylognathus kabakovi*, holotype queen (1, 3, 5) and *S. minutus*, holotype queen (3, 4, 6); 1, 2 – body, lateral view; 3, 4 – head, dorsal view; 5, 6 – alitrunk, dorsal view.

<i>S. kabakovi</i> sp. nov.	<i>S. minutus</i> Radchenko
<ul style="list-style-type: none"> • Occipital margin of the head distinctly thought not strongly concave; 	<ul style="list-style-type: none"> • Occipital margin of the head almost straight;
Much less hairy species:	Much more hairy species:
<ul style="list-style-type: none"> • dorsal surface on the head with only two long setae on the occipital corners, and with similar ones on the clypeus; ventral surface of the head completely hairless; • inner margin of mandibles without hairs; • alitrunk and gaster with a few scattered long hairs. 	<ul style="list-style-type: none"> • both dorsal and ventral surfaces of the head with numerous erect hairs of various length; • mandibles with erect to suberect hairs on the distal third of their inner margin; • alitrunk and gaster with abundant long erect hairs.
Sculpture finer:	Sculpture coarser:
<ul style="list-style-type: none"> • only lower part of frons with fine longitudinal striation; • medial part of scutum finely striatopunctated, scutellum smooth and shiny. 	<ul style="list-style-type: none"> • frons entirely with not coarse longitudinal rugulosity; • medial part of scutum not coarsely longitudinally rugose, scutellum with longitudinally-concentric rugulosity, only its central part smooth and shiny.

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