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Little Known Darkling Beetle *Blaps scabiosa* Baudi di Selve, 1874 (Coleoptera, Tenebrionidae: Blaptini): Taxonomy, Morphology, and Distribution

M. V. Nabozhenko[a, b*], I. A. Chigray[c], R. Poggi[d***], and L. Soldati[e****]**

[a]*Caspian Institute of Biological Resources of the Daghestan Federal Research Centre of the Russian Academy of Sciences, Makhachkala, Republic of Dagestan, 367000 Russia*
[b]*Dagestan State University, Makhachkala, Republic of Dagestan, 367000 Russia*
[*]*e-mail: nalassus@mail.ru*
[c]*Zoological Institute of the Russian Academy of Sciences, St. Petersburg, 199034 Russia*
[**]*e-mail: chigray93@bk.ru*
[d]*Museo Civico di Storia Naturale "Giacomo Doria," Genova, 16121 Italy*
[***]*e-mail: rpoggi@comune.genova.it*
[e]*INRA–UMR 1062 CBGP (INRA, IRD, CIRAD, Montpellier SupAgro), Montferrier-sur-Lez, 34988 France*
[****]*e-mail: superblaps@gmail.com*

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Abstract—The tenebrionid species *Blaps scabiosa* (tribe Blaptini) is redescribed and illustrated. This species was twice described under the same name by Baudi di Selve in 1874 from Tashkent (now Uzbekistan) and by Faust in 1875 from Tash (Iran, Semnan Province). In 1876 Faust synonymized his species with Baudi's species. Nabozhenko interpreted these taxa as two distinct species and gave a new name *B. neoscabiosa* Nabozhenko, 2008 to the Iranian *B. scabiosa* Faust, 1875 to eliminate homonymy. This species has never been found in Tien Shan and occurs only in Eastern Alborz Mountains. The type locality "Tashk." (Tashkent) should be corrected to "Tash" (Iran, Semnan). After examination of the type specimens we have established that the Baudi's and Faust's taxa are conspecific, and the following synonymy is proposed: *Blaps scabiosa* Baudi di Selve, 1874 = *B. scabiosa* Faust, 1875, **syn. resurr.** = *B. neoscabiosa* Nabozhenko, 2008, **syn. n.** The lectotype of *Blaps scabiosa* Faust, 1875 is designated.

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The darkling beetle *Blaps scabiosa* was first described by Flaminio Baudi di Selve (1874) from "Tashkend" (now Uzbekistan, the foothills of the Western Tien Shan). The original description is based on the material from the collection of the German entomologist Carl August Dohrn, who sent many beetles to the Museo Civico di Storia Naturale "Giacomo Doria." The museum archives contain information of the curator Raffaello Gestro about this species: "*Blaps scabiosa* Baudi, Ann. M. C. Genova, (1), VI, 1874, p. 111, Typus ! 1. (= one specimen) Taschkend—D. C. A. Dohrn 1872" **(**'D.' means 'Dedit' in Latin ("given as a gift")**)**. In addition, information from the covering letter of C. Dohrn was found: "Taschk. *Blaps* (*scabiosa* Dohrn c.)" ('c.' means collection, in collection) "Ricevuti 9 agosto 1872" (received August 9, 1872).

One year later, Johannes Faust (1875) described another species from "Tash" (Iran, Eastern Alborz Mts.) with the same name *Blaps scabiosa*. Type specimens were received from the Russian-German entomologist Hugo F. Christoph, who collected this species and reported that its name was "*Bl. scabiosa* Dohrn i. coll."

Later, Faust (1876) proposed the following synonymy: *Blaps scabiosa* Baudi di Selve, 1874 = *B. scabiosa* Faust, 1875, = *Blaps scabiosa* Dohrn, in litt.

Nabozhenko (2008) interpreted *B. scabiosa* Faust and *B. scabiosa* Bd. as different species; he eliminated

this homonymy and gave the replacement name *Blaps neoscabiosa* to the Iranian species *Blaps scabiosa* Faust, 1875. In addition, *Blaps scabiosa* Baudi di Selve, 1874 was included in the catalogue as a distinct species from Uzbekistan (Löbl et al., 2008).

After examination of the type specimens we have found that the Iranian and "Tien Shanian" taxa are actually conspecific. The confusion originated from the labels. This species was never found in Uzbekistan or other countries of Middle Asia during multiple expeditions of Russian, Soviet, and European entomologists. The largest collection of Middle Asian darkling beetles, kept in the Zoological Institute of the Russian Academy of Sciences (ZIN), contains no specimen of *Blaps scabiosa* from Tashkent or its surroundings (in spite of this locality being very well studied). On the other hand, a series of this species from Iran (Tash, Shahrud) is present in the ZIN collection. It is difficult to imagine such a disjunctive range when one species of *Blaps* inhabits such faunistically different and far spaced mountain systems. As a result, we postulate that Carl Dohrn confused the labels. The type locality of *B. scabiosa* should be Tash in Semnan Province of Iran.

Below, we give a supplemented description of *B. scabiosa* and list material from the European museums.

MATERIALS AND METHODS

Specimens from the following museums were examined (curators' names following in brackets):

Museo Civico di Storia Naturale 'Giacomo Doria' (MSNG, Genoa, Italy; Roberto Poggi);

Senckenberg Naturhistorische Sammlungen Dresden (SNSD, Dresden, Germany; Olaf Jaeger);

Zoological Institute of the Russian Academy of Sciences (ZIN, St. Petersburg, Russia; Ivan Chigray).

Blaps scabiosa Baudi di Selve, 1874
(Figs. 1–21)

Baudi di Selve, 1874 : 111; 1875 : 93 (note); Faust, 1876 : 331; Gebien, 1937 : 869; Löbl et al., 2008 : 226.

= *Blaps scabiosa* Faust, 1875. Faust, 1875 : 229 (Tash); 1876 : 331 (as a junior synonym of *B. scabiosa* Baudi di Selve, 1874); Allard, 1880a : 73 (Astrabad; as a junior synonym of *B. coriacea* Fischer von Waldheim, 1842); Seidlitz, 1893 : 293 (Astrabad, Tashkent); Gebien, 1937 : 869 (as a junior synonym of *B. scabiosa* Baudi, 1874), syn. resurr.

= *Blaps coriacea* Fischer von Waldheim, 1842 sensu Allard, 1880a : 73 ("Perse"). Allard, 1880b : 316; 1882 : 88, Fig. 92 (Shah Kuh, "Perse septentrionale;" Astrabad); Seidlitz, 1893 : 293 (as a junior synonym of *B. scabiosa* Faust, 1875); Gebien, 1937 : 869 (as a junior synonym of *B. scabiosa* Baudi, 1874).

= *Blaps neoscabiosa* Nabozhenko, 2008. Nabozhenko, 2008 : 35 (replacement name for *B. scabiosa* Faust, 1875, nec *B. scabiosa* Baudi di Selve, 1874); Löbl et al., 2008 : 224 (Iran); I. Chigray and Nabozhenko, 2016 : 267–268 (Iran, Gilan: Tash), syn. n.

Type material. Holotype of *Blaps scabiosa* Baudi di Selve, 1874, ♂ with labels: "Tashkend D. Dohrn," "Typus," "*scabiosa* Baudi" (MSNG).

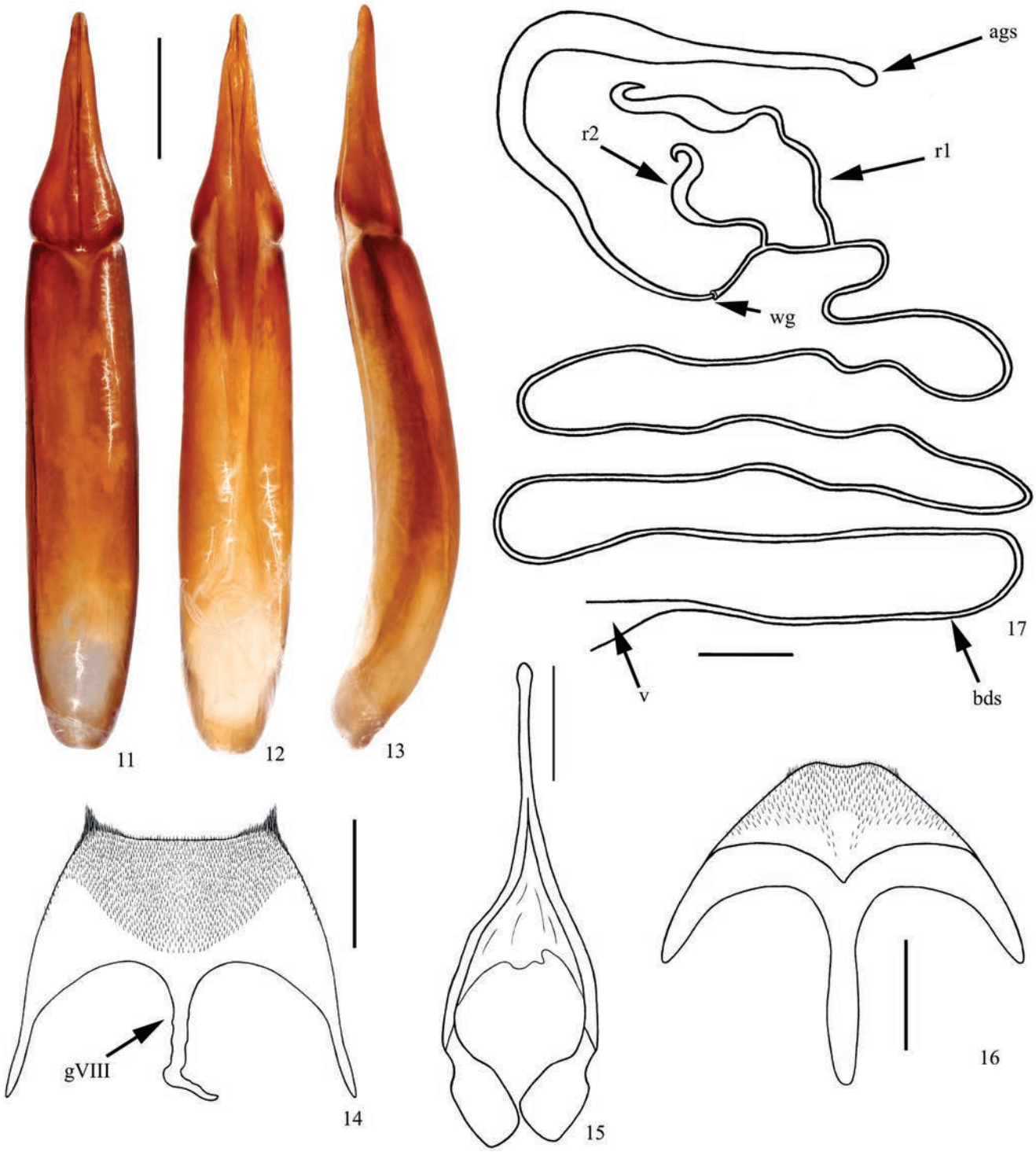
Lectotype of *Blaps scabiosa* Faust, 1875 designated here, ♀, with labels: "Tash, 40 v. na sev. ot Shakhruda Khristof 70" (Old Cyrillic label, English translation: Tash, 40 versts (ca. 42 km) N of Shahrud) Chistoph [18]70, "C. Christoph," "T." "*Blaps scabiosa* Fst. Schuster det.," "Lectotypus *Blaps scabiosa* Nabozhenko & I. Chigray des. 2019" (ZIN).

Paralectotype of *Blaps scabiosa* Faust, 1875, ♂ with labels: "von *Scabiosa* Tash! (terra typica)," "13874," "*Blaps scabrosa* Bdi.," golden square, "Tash Christoph," "Staatl. Museum für Tierkunde. Dresden" (SNSD).

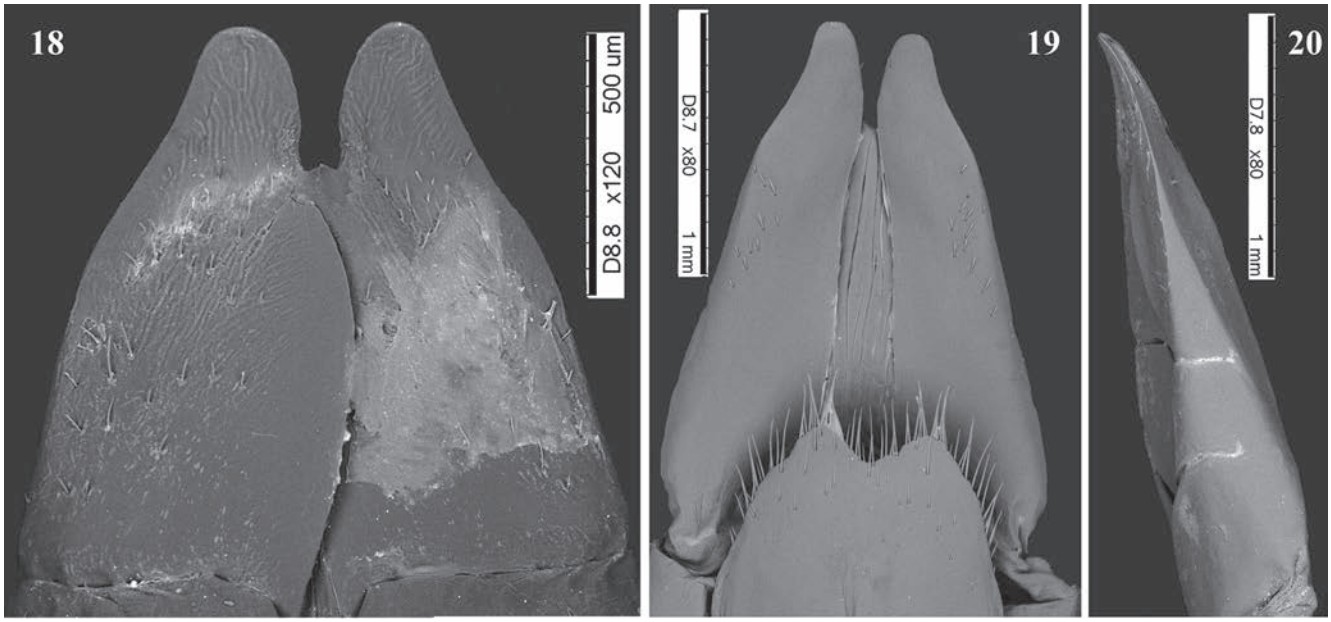
Material. (ZIN): 1 ♂, "Persia Schahrud," "Christoph," "*Blaps scabrosa* Dohrn," "k. Solskogo" (Cyrillic label: Solsky's coll.), "*scabiosa* Fst. A. Schuster;" (ZIN): 1 ♀, "*Blaps scabiosa* Dohrn i. l.," "Coll. Chrstoph.," "*B. scabiosa* Faust A. Bogachev det.," "280," "380," (ZIN): 1 ♀, "*Blaps scabiosa* Dohrn/Baud Schahrud Christoph," "k. Solskogo," "*B. scabiosa* Fst. A. Schuster det.;" (ZIN): 1 ♂, "Persia Schahrud," "k. Solskogo," "*B. scabiosa* Fst. A. Schuster det.," "ZIN" (Cyrillic label); (ZIN): 1 ♀: "Schrd" (Shahrud), "coll. Skopin."

Redescription. Male (Figs. 1–6, 11–15). Body slender, black, weakly shiny.

Figs. 1–10. *Blaps scabiosa* Baudi, habitus and labels: (1) holotype, male, dorsal view (MSNG); (2) the same, latero-dorsal view; (3) paralectotype of *B. scabiosa* Faust, male, dorsal view (SNSD); (4) the same, lateral view; (5) male, ventral view (ZIN); (6) the same, lateral view; (7) female, dorsal view (ZIN); (8) labels of the holotype of *B. scabiosa* Baudi in MSNG; (9) labels of the paralectotype of *B. scabiosa* Faust in SNSD; (10) labels of the lectotype of *B. scabiosa* Faust in ZIN.



Figs. 11–17. *Blaps scabiosa* Baudi, genitalia: (11) aedeagus, dorsal view; (12) aedeagus, ventral view; (13) aedeagus, lateral view; (14) male sternite VIII (gVIII—gland of this sternite); (15) spiculum gastrale; (16) female sternite VIII and spiculum ventrale; (17) female genital tubes [(ags) accessory gland of spermatheca), (bds) basal duct of spermatheca, (r1, r2) reservoirs, (v) vagina, (w) one way valve of accessory gland]. Scale bars 1 mm.



Figs. 18–20. *Blaps scabiosa* Baudi, apex of ovipositor: (18) ventral view, (19) dorsal view, (20) lateral view.

Anterior margin of epistome weakly emarginate. Lateral margins of epistome slightly rounded. Genae convex, with widely and evenly rounded margins. Lateral margin of head with distinct emargination between epistome and genae. Head widest at temples level; at eye level, 1.37 times as wide as interocular space of frons. Punctation of head not coarse, dense (puncture diameter equal to, or shorter than interpuncture distance); frons and epistome in middle with sparser punctation (interpuncture distance 2–3 times puncture diameter). Vertex, temples and ventral side of head covered with rasp-like punctation and dense pubescence of short recumbent light hairs. Mentum transverse, oval, with lateral margins angularly bent inward; base weakly convex. Antennae moderately long, with apical antennomeres reaching base of pronotum. Ratio of length(width) of antennomeres 2–11 as following: 6(8), 36(9), 15(9), 15(8), 15(8), 17(9), 11(8), 11(8), 11(8), 13(8).

Pronotum subcordate, weakly transverse (1.12 times as wide as long), widest slightly before middle, 1.6 times as wide as head. Ratio of pronotal width near anterior margin, at widest level, and at base 4.8 : 7 : 6 respectively. Anterior margin of pronotum widely emarginate; lateral margins rounded from widest part to anterior margin and straight backwards to the base, which is straight. Anterior angles acute, posterior ones obtuse, almost right; all angles with narrowly rounded apex. Disc moderately or weakly convex, flattened along base and sides; completely beaded except the middle of anterior margin and base; punctation not coarse, dense on sides (puncture diameter subequal to interpuncture distance), sparser and finer in middle of disc (puncture diameter 2–3 times shorter than interpuncture distance). Prothoracic hypomera with smooth wrinkles and sparse granules; lateral margins of prohypomera completely flattened. Sternite of prothorax covered with fine rasp-like punctures and small granules.

Elytra elongate (1.95 times as long as wide), 1.96 times as wide as head, 1.22 times as wide and 2.7 times as long as pronotum. Disc weakly convex, sometimes almost flat, apical declivity sloped. Elytral mucrone well developed, near 1.5 mm in length, 11.2 times shorter than elytra. Elytra covered with coarse, dense rasp-like punctures and granules. Each granule carrying short reddish subrecumbent seta. Epipleura with rasp-like fine punctation and sparsely pubescent. Mesoventrite densely covered with small granules and moderately long recumbent light hairs. Intercoxal process of mesoventrite bare, not granulate. Mesepisterna, mesepimera and metepisterna with sparse, smooth rasp-like punctation. Metaventrite pubescent, with sparse moderately long recumbent light

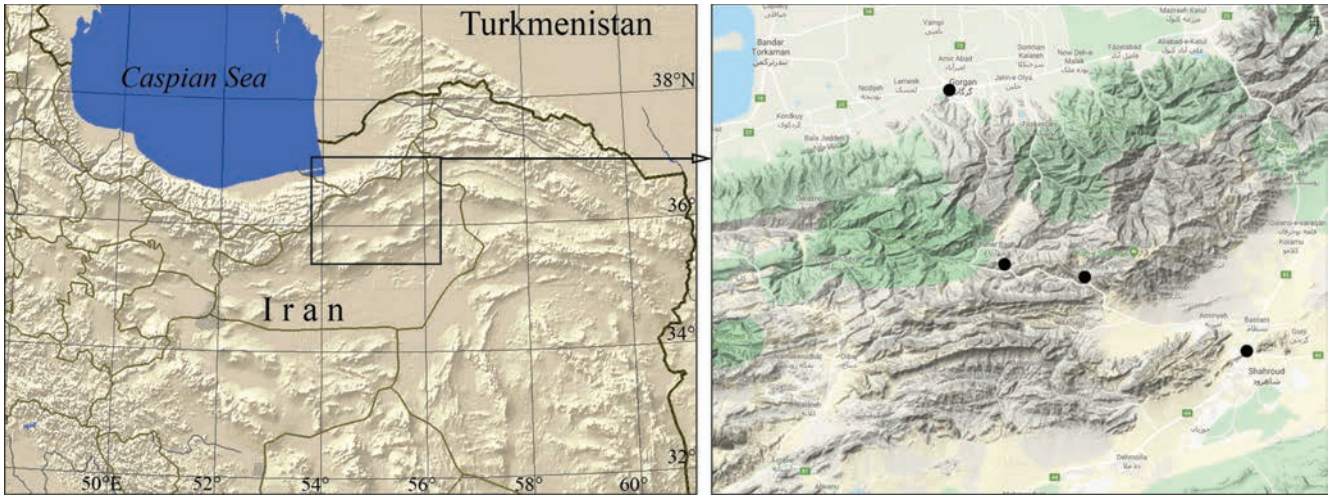


Fig. 21. Distribution of *Blaps scabiosa* Baudi.

hairs. Intercoxal process of metaventrite with deep emargination in middle.

Abdomen without hair tuft between ventrites 1 and 2. Ventrites 1–3 wrinkled; ventrite 1 with coarse transverse wrinkles in middle; ventrites 4 and 5 with simple punctation; ventrite 5 with short sparse setae and longer hairs near apex. All ventrites covered with recumbent setae. Intercoxal process of ventrite 1 square, with coarse wrinkles. Anterior margin of sternite VIII slightly emarginate, almost straight (Fig. 14); surface densely covered with small setae, gland of this sternite long and narrow. Spiculum gastrale thin, merged into long common stem; laminae of spiculum gastrale sub-square. Length of aedeagus 6.1 mm, width 1.8 mm; length of parameres 1.8 mm, width 1.4 mm in widest part. Parameres with lengthly bisinuate lateral margins, acute, narrow, completely divided by suture.

Legs slender. Ratio of femur, tibia and tarsus of legs as following: fore legs 6.6 : 6.4 : 4.9; middle legs 7.4 : 6.4 : 5.2; hind legs 9 : 8.2 : 6.1. Protarsomeres 1 and 2 with entire hair brushes on ventral side.

Body length 23.50–24.33 mm, width 8.4–8.6 mm.

Female (Figs. 7, 16–20). Body slightly wider and more robust. Head at eye level 1.32 times as wide as interocular space on frons. Antennae shorter, reaching only basal third of pronotum. Pronotum more transverse (1.22 times as wide as long). Ratio of pronotal width near anterior margin, at widest level and at base 4.4 : 7.2 : 6 respectively. Elytra more robust, 1.77 times as long as wide, 2.14 times as wide as head, 1.2 times as wide and 2.64 times as long as pronotum. Mucrone similar to that in the male.

Spiculum ventrale strongly sclerotized near base of inner sternite VIII. Ovipositor moderately long, without additional sclerotized processes on inner side of apical blades (4th lobe of coxite). Lateral margins of apical blades straight in basal two thirds and widely emarginate in apical third. Ventral side of apical blades finely wrinkled and covered with sparse setae in middle; dorsal side smooth, covered with several short setae in middle near lateral margins and one pair of setae on inner margin of blades. Anterior margin of proctiger with deep triangular emargination in middle, pubescent with long hairs.

Genital tubes. Basal tube of spermatheca long; accessory gland shorter than basal tube. Reservoirs of spermatheca long, visibly spaced from each other and from accessory gland, thin in basal half and thickened in apical half, first reservoir larger that second. Accessory gland thin at base, evenly widened to middle and narrowed to apex.

Body length 22–25 mm, width 8.4–9.4 mm.

Distribution (Fig. 21). Iran: Semnan Province (Shahrud, Tash), Golestan Province (Shah Kuh-e Bala, Gorgan) (Allard, 1880a, 1882; Seidlitz, 1893). Chigray

and Nabozhenko (2016) erroneously listed this species from Tash Village in Gilan Province of Iran.

Notes. The species has unclear position within the genus *Blaps*. It is similar to the *mortisaga*-species group in having the acute parameres and in the structure of genital tubes. Four species of this species-group also have narrow acute reservoirs of different sizes (Chigray and Nabozhenko, 2016). On the other hand, *B. scabiosa* clearly differs from the taxa of the *mortisaga*-species group in the following characters: full brushes of setae on the ventral side of protarsi, full suture on the parameres, basal duct of spermatheca much longer, and accessory gland with narrow base.

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ADDITIONAL INFORMATION

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