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A new species of darkling beetles of the genus *Blaps* Fabricius, 1775 (Coleoptera: Tenebrionidae) from Turkmenistan and Iran

© I.A. Chigray

Zoological Institute of the Russian Academy of Sciences, Universitetskaya Emb., 1, Saint Petersburg 199034 Russia. E-mail: chigray93@bk.ru

Abstract. A new species of darkling beetles, *Blaps ernesti* sp. n., is described from the Southeast Caspian region (Turkmenistan, Iran). Allard was the first to describe this species in 1882, but he misidentified it as “*Blaps variolaris* Gemminger, 1870”, the junior synonym of *Blaps rugosa* Gebler, 1825, which is distributed in Russian Eastern Siberia, China and Mongolia. Seidlitz in 1893 and subsequent authors interpreted the Irano-Turkmen species as *Blaps variolaris* with the authorship of Allard, which is contrary to Article 49 of the International Code of Zoological Nomenclature. The new species is morphologically similar to *Blaps mortisaga* Linnaeus, 1758 but differs in the very coarse and dense punctuation of its pronotum and elytra, in contrast to fine and sparse pronotal punctuation and smooth elytra in the latter species. The basal duct of the spermatheca, between the vagina and reservoirs of the spermatheca of *B. mortisaga*, is short relative to the long accessory gland, reservoirs of the spermatheca are thin and elongated, the 1st reservoir is widened at the apex and 1.5 times longer than the 2nd reservoir. The basal duct of the spermatheca in *Blaps ernesti* sp. n. is very long relative to the short accessory gland, reservoirs of spermatheca are fusiform in the apical half, the 1st reservoir is slightly longer than the 2nd one. The new species is externally similar to *Blaps dehaani* Baudi di Selve, 1875 by punctuation of pronotum and elytra, but differs in the larger body (18–28 mm vs 15–20 mm), very long male mucro and the hair tuft between abdominal ventrites 1 and 2.

Key words: Tenebrionidae, *Blaps*, Elburz, Kopet Dag, new species.

Новый вид жуков-чернотелок рода *Blaps* Fabricius, 1775 (Coleoptera: Tenebrionidae) из Туркменистана и Ирана

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Зоологический институт Российской академии наук, Университетская набережная, 1, Санкт-Петербург 199034 Россия. E-mail: chigray93@bk.ru

Резюме. Описан новый вид жуков-чернотелок *Blaps ernesti* sp. n. из Туркменистана и Ирана. Аллар первым описал этот вид в 1882 году, но определил его как “*Blaps variolaris* Gemminger, 1870”, являющийся в настоящее время младшим синонимом *Blaps rugosa* Gebler, 1825. Зайдлиц в 1893 году и последующие авторы интерпретировали ирано-туркменский вид как *Blaps variolaris* с авторством Аллара, что противоречит статье 49 Международного кодекса зоологической номенклатуры. Формой тела новый вид схож с *Blaps mortisaga* Linnaeus, 1758, однако отличается от него более грубой пунктировкой переднеспинки и надкрылий. Базальный проток сперматеки *B. mortisaga* короткий по отношению к длинной железе, резервуары сперматеки тонкие, вытянутые, первый резервуар с небольшим расширением на вершине и в 1.5 раза длиннее второго. Базальный проток сперматеки *Blaps ernesti* sp. n. очень длинный по отношению к короткой железе, резервуары сперматеки веретеновидной формы в апикальной половине, первый резервуар незначительно длиннее второго. По характеру пунктировки переднеспинки и надкрылий новый вид схож с обитающим на Эльбурсе *Blaps dehaani* Baudi di Selve, 1875, отличаясь от него более крупными размерами тела (*B. dehaani* – 15–20 мм, *B. ernesti* sp. n. – 22–28 мм), а также наличием у самцов очень длинного мукона и рыжего волосяного пятна между первым и вторым абдоминальными вентритами.

Ключевые слова: Tenebrionidae, *Blaps*, Эльбурс, Копетдаг, новый вид.

Introduction

The genus *Blaps* Fabricius, 1775 includes more than 270 species [Nabozhenko, Chigray, 2020] and it is the largest group in the tribe Blaptini Leach, 1815. The genus contains many taxa and names with nomenclatural problems. One of these names is “*Blaps variolaris*”, which is currently a junior synonym of *Blaps rugosa* Gebler, 1825 (Figs 1–3).

Fischer von Waldheim [1844] described two taxa with the identical name *Blaps variolosa* Fischer von Waldheim, 1844 (pages 89 (№ 95) and 104 (№ 117)) and indicated in both descriptions the vicinity of Irkutsk city as the type locality. However, it is difficult to understand from Fischer’s descriptions whether it was one species or two.

Motschulsky [1860] interpreted “*Blaps*” as a group of several genera (*Agroblaps* Motschulsky, 1860, *Blapimorpha*

Motschulsky, 1860, *Blapisa* Motschulsky, 1860, etc.) which he divided into two groups by the presence or absence of hair tuft between male abdominal ventrites 1 and 2. *Blaps variolosa* (as one combined species) was placed by Motschulsky in the genus *Blapimorpha* Motschulsky, 1860, which belonged to the group without the hair tuft.

Gemminger [1870a, b] did not support Motschulsky’s taxa as separate genera and interpreted *Blaps* as genus sensu lato. Gemminger [1870a, b] established new names to eliminate the homonymy “*B. variolosa* Fischer von Waldheim” and *Blaps variolosa* Faldermann, 1835, which was described earlier from Mongolia: *Blaps variolaris* Gemminger, 1870 = *Blaps variolosa* Fischer von Waldheim, 1844 (p. 89, № 95), *Blaps variolota* Gemminger, 1870 = *Blaps variolosa* Fischer von Waldheim, 1844 (p. 104, № 117).



Figs 1–6. *Blaps*, habitus.

1–3 – *B. rugosa*, 4–6 – *B. reflexa*. 1–2, 4–5 – males, 3, 6 – females.

Рис. 1–6. *Blaps*, габитус.

1–3 – *B. rugosa*, 4–6 – *B. reflexa*. 1–2, 4–5 – самцы, 3, 6 – самки.



Figs 7–12. *Blaps ernesti* sp. n., habitus.
7–9 – male, 10–12 – female.
Рис. 7–12. *Blaps ernesti* sp. n., габитус.
7–9 – самец, 10–12 – самка.

Allard [1882] listed some of Motschulsky's genera as subgenera within *Blaps*. He incorrectly presented Gemminger's homonymy as *Blaps variolaris* Gemminger, 1870 = *Blaps variolosa* Fischer von Waldheim, 1844 (p. 104, № 117), *Blaps variolota* Gemminger, 1870 = *Blaps variolosa* Fischer von Waldheim, 1844 (p. 89, № 95). Allard also gave a description of *B. variolaris* from Iran (he wrote "Songarie" (Dzungaria) and "Perse" as distribution), but misidentified it as *Blaps variolaris* Gemminger, 1870. This Iranian species mentioned by Allard [1882] has the hair tuft between abdominal ventrites 1 and 2 and very long mucro (6 mm). These two last characters and the Allard's figure of male [1882: 94, fig. 97] indicate that Allard's "*Blaps variolaris*" is a separate species which differs well from the Siberian *Blaps*. However, it should be noted that Allard did not propose the Iranian species as new, instead he used Gemminger's name as valid.

Seidlitz [1893] considered that *B. variolosa* Fischer von Waldheim, 1844 (p. 104, № 117) is a junior synonym of *B. rugosa*, while *B. variolosa* Fischer von Waldheim, 1844 (p. 89, № 95) and Gemminger's *B. variolota* are junior synonyms of *Blaps reflexa* Gebler, 1832 (Figs 4–6). Later this opinion was confirmed by Schuster [1934]. In addition, Seidlitz [1893] indicated that the Iranian "*B. variolaris*" is a separate species and gave the authorship to Allard.



Figs 13–15. *Blaps ernesti* sp. n., aedeagus.

13 – dorsal view, 14 – ventral view, 15 – lateral view. Scale bar 1 mm.

Рис. 13–15. *Blaps ernesti* sp. n., эдеагус.

13 – вид сверху, 14 – вид снизу, 15 – вид сбоку. Масштабная линейка 1 мм.

Allard's authorship was subsequently listed in works of other authors. Gebien [1910, 1937] listed "*Blaps variolaris* Allard, 1882" as a valid species, while relegated "*Blaps variolaris* Gemminger, 1870" to the synonymy of *B. reflexa*. It is interesting that Gebien did not propose a solution to eliminate the homonymy. Medvedev and Nepesova [1985] also used the name "*B. variolaris* All.". The name "*B. variolaris* All." is missing in the Catalogue of Palearctic Coleoptera [Löbl et al., 2008; Nabozhenko, Chigray, 2020], and "*B. variolaris* Gemm." (№ 117 according to Fischer von Waldheim [1844]) is listed as a junior synonym of *B. rugosa*. The name *B. variolosa* Fischer von Waldheim, 1844 (№ 95) is missing in both editions of the catalogue. This requires further discussion and will be finally clarified after studying the types of Fischer von Waldheim.

The name "*Blaps variolaris*" was given for the Irano-Turkmen species as a result of misidentification, and it cannot be used for this taxon according to the Article 49 of the International Code of Zoological Nomenclature [1999]. Thus, a new species *Blaps ernesti* sp. n. is described from the area of Elburz and Kopet Dag (Fig. 25).

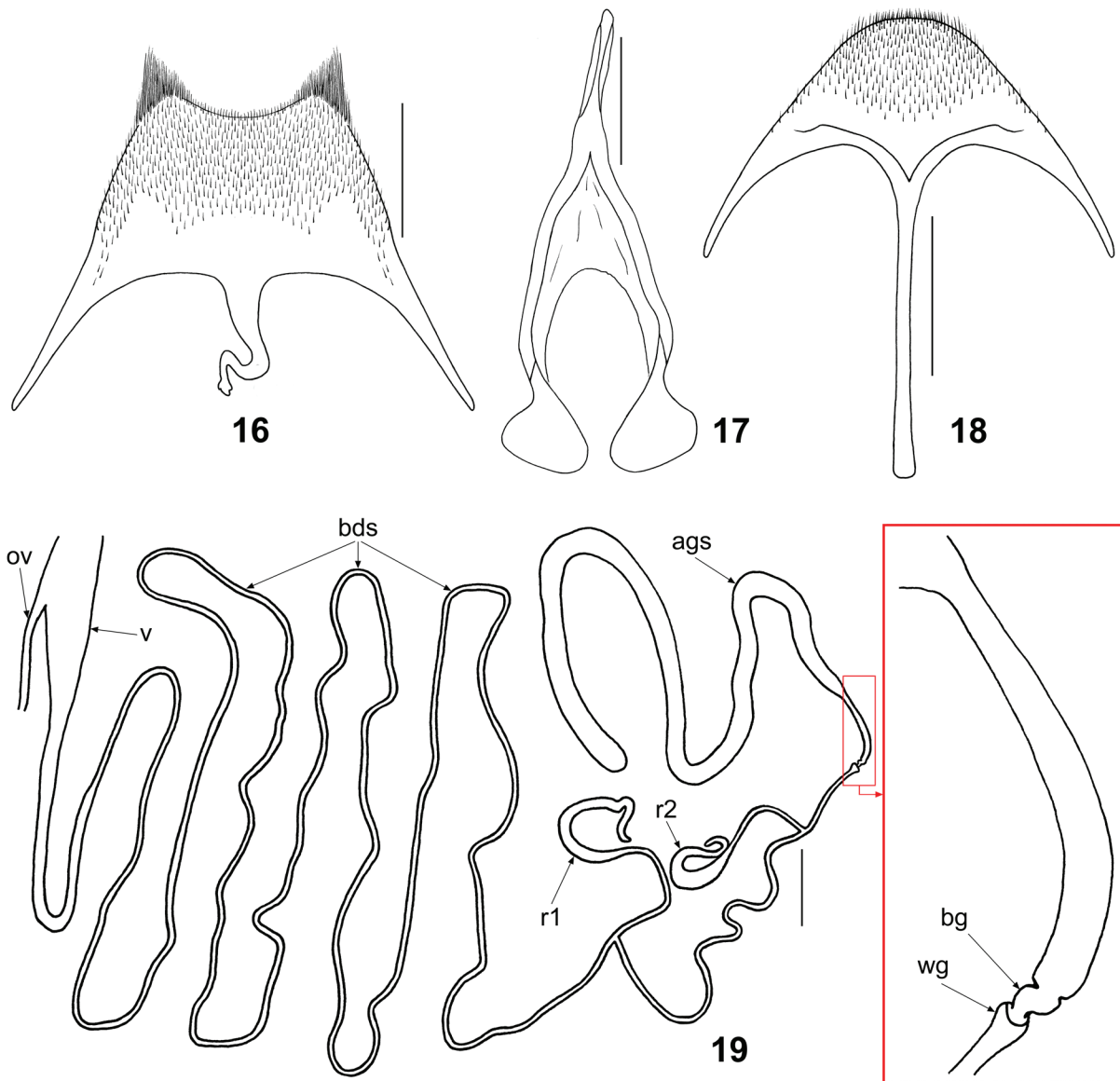
Material and methods

The study is based on the examination of adult beetles from the Zoological Institute of the Russian Academy of Sciences (ZIN, St Petersburg, Russia) and the Hungarian Natural History Museum (HNHM, Budapest, Hungary).

The system of Matthews and Bouchard [2008] was used for the abdomen: abdominal ventrites 1–5 (we use) or abdominal sternites III–VII.

Blaps ernesti sp. n. (Figs 7–24)

Material. Holotype, ♂ (ZIN): "Туркмения Н.скл. г. Сюнт. Г. Медведев 12.V.74" (Turkmenistan, north slope of Syunt Mt., G. Medvedev). Paratypes: Turkmenistan: 1 ♀, "Закаспийская обл. К.О. Ангер" (Transcaspien region, K.O. Anger), "*Blaps variolaris* All. A. Shuster det"; 1 ♂ (ZIN), "Закасп. обл. Гаудан. Варенцов." (Transcaspien region, Gaudan [pass], Varentsov), "120"; 1 ♂ (ZIN), "Асхабад Варенцов" (Ashgabat city, Varentsov), "*Blaps variolaris* All. det. Shuster"; 1 ♂, 1 ♀ (HNHM), "TransCaspi Eylandt", "Coll. Reitter"; "*Blaps variolaris* All. det. dr. Kaszab"; "*Blaps variolaris* All. 1976. N. Skopin det."; 2 ♂ (ZIN), "Закасп. обл. уц. Айдере. 10.V.90 Эйланат." (Transcaspien region, Aydere Canyon, 10.05.18190, Eylandt); 1 ♂ (ZIN), "Туркм. Кара-Кала г. Сюнт. 7.V.957. Медведев Г.С." (Turkmenistan, Kara-Kala [Magtymguly], Syunt Mt., 7.05.1957, G.S. Medvedev), "горно-лесная зона, под камнями" (mountain-forest area, under stones), "Coll. N. Skopin"; 1 ♂ (ZIN), "Туркм. Кара-Кала г. Сюнт. 7.V.957. Медведева Г.Н." (Turkmenistan, Kara-Kala [Magtymguly], Syunt Mt., 7.05.1957, G.N. Medvedeva), "горно-лесная зона, под камнями" (mountain-forest area, under stones), "Coll. N. Skopin"; "*Blaps variolaris* All. det. N. Skopin, 1977"; 1 ♂, 1 ♀ (ZIN), "Туркм. Кара-Кала г. Сюнт. 19.V.957. Медведев Г.С." (Turkmenistan, Kara-Kala [Magtymguly], Syunt Mt., 19.05.1957, G.S. Medvedev), "горно-лесная зона, под камнями" (mountain-forest area, under stones), "Coll. N. Skopin"; 2 ♂ (ZIN), "Туркмения Н.скл. Сюнта и Хасардага Г.С. Медведев 30.IV.74" (Turkmenistan, north slopes of Syunt and Hasardag [mountains], 30.04.1974, G.S. Medvedev); 1 ♂, 1 ♀ (ZIN), "Туркмения г. Хасардаг Г. Медведев 01.V.74" (Turkmenistan, Hasardag Mt., 1.05.1974, G. Medvedev); 3 ♂, 3 ♀ (ZIN), "Туркмения Верш. г. Сюнт Г. Медведев 03.V.74" (Turkmenistan, peak of Syunt Mt., 3.05.1974, G. Medvedev); 2 ♂, 3 ♀ (ZIN), "Туркмения Н.скл. г. Сюнт Г. Медведев 04.V.74" (Turkmenistan, north slope of Syunt Mt., 4.05.1974, G. Medvedev); 1 ♂, 1 ♀ (ZIN), "З. Копет-Дар 23.iv.1975 В. Янушев" (Western Kopet Dag, V. Yanushev), "Coll. N. Skopin"; 1 ♀ (ZIN), "Туркмения Гез-Гядык 4.IV.77" (Turkmenistan, Gez-Gyadyk, 4.04.1977); 1 ♂ (ZIN), "Туркм. Копет-Дар ЮЗ Фирюзы 29.4.1989 Медведев" (Turkmenistan, Kopet Dag, southwest of Firyuza, Medvedev), "*Blaps variolaris* All. Kabakov det."; Iran: 1 ♀ (ZIN),



Figs 16–19. *Blaps ernesti* sp. n., details of structure.

16 – male inner sternite VIII; 17 – spiculum gastrale; 18 – spiculum ventrale; 19 – female genital ducts (v – vagina, ov – oviduct, bds – basal duct of spermatheca, r1, r2 – reservoirs, ags – accessory gland of spermatheca, wg – one way valve of accessory gland, bg – biflex of accessory gland). Scale bars 1 mm.

Рис. 16–19. *Blaps ernesti* sp. n., детали строения.

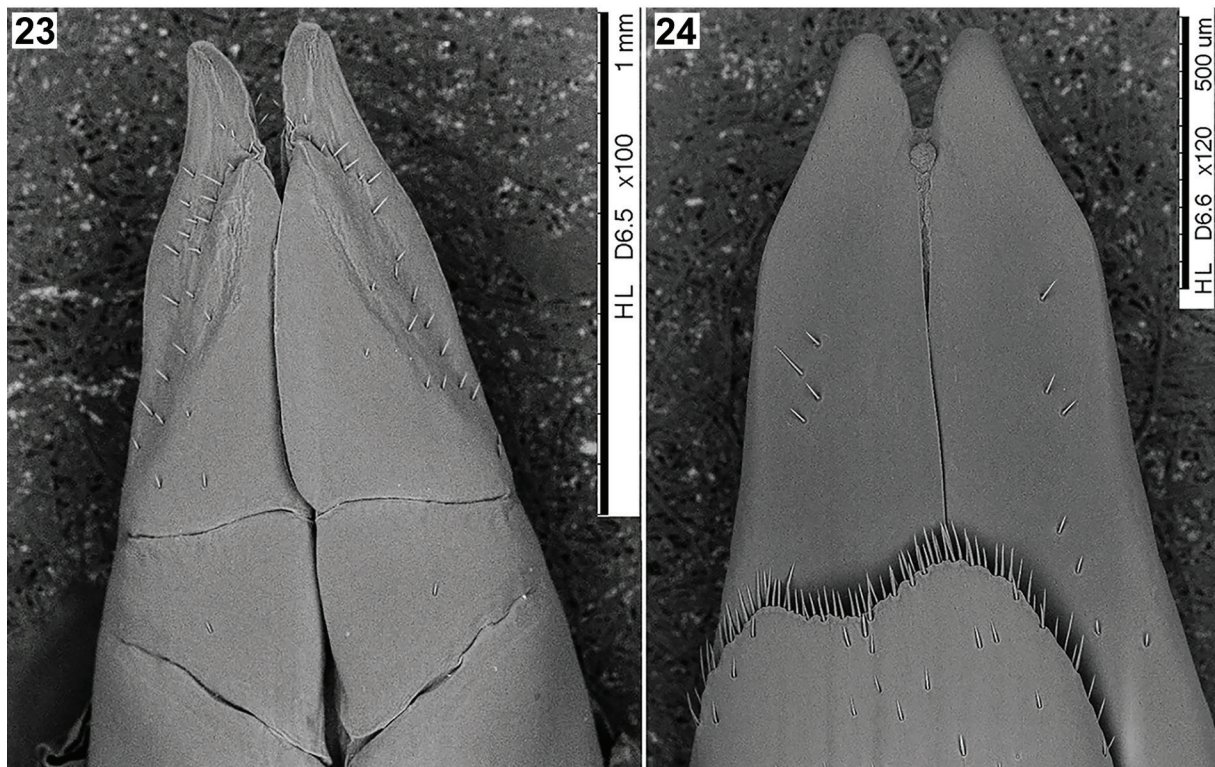
16 – внутренний стернит VIII самца; 17 – гастральная спикула; 18 – вентральная спикула; 19 – половые протоки самки (v – вагина, ov – яйцевод, bds – базальный проток сперматеки, r1, r2 – резервуары сперматеки, ags – железа сперматеки, wg – клапан железы сперматеки, bg – игиб железы сперматеки). Масштабные линейки 1 мм.

“Pers.” (Persia); 1♂ (ZIN), “Nd Persien, Schakuh”, “Coll. N. Skopin”; 1♂, 1♀ (ZIN), “Демавенд 29-V-94 Глазунов” (Iran, Damavand Mt., 29.05.[18]94, Glazunov); 6♂ (ZIN), “Демавенд 31-V-94 Глазунов” (Iran, Damavand Mt., 31.05.[18]94, Glazunov); 1♂ (ZIN), “Iran, Western Khorasan, near Nishapur, Bojan vill. 19.05.2016, leg. D. Kasatkin”.

Description. Male. Body slender, black, mat. Anterior margin of epistoma weakly bisinuate, weakly rounded in the middle. Lateral margins of epistoma weakly rounded, almost straight. Lateral margins of genae straight in anterior half, rounded at base. Lateral margins of head with distinct emargination between epistoma and genae. Head widest at level of eyes and temples. Head 1.39 times as wide as interocular distance. Antennae reaching base of pronotum when directed backwards. Ratio of length/width of antennomeres 2–11 as 6(8) : 37(10) : 15(10) : 15(10) : 15(10) : 17(12) : 11(10) : 11(10) : 11(10) : 14(9). Mentum transversely

oval, its base straight. Punctuation of head moderately coarse and dense (puncture diameters 1–2 times as wide as distance between punctures), sometimes punctuation of epistoma and frons sparser (puncture diameters 2–3 times as wide as distance between punctures). Occiput and temples with rasp-like punctures and covered with dense subrecumbent light hairs. Underside of epicranium wrinkled, covered with small granules and light hairs.

Pronotum transverse (1.24 times as wide as long), widest at middle, 1.97 times as wide as head. Ratio of pronotal width near anterior angles to widest part and that at base 4.6 : 7.7 : 7.3. Disc of pronotum weakly convex, flattened along lateral sides and base. Anterior margin of pronotum moderately widely emarginate. Lateral margins of pronotum weakly emarginate in basal third, their middle and apical third evenly widely rounded, base of pronotum widely weakly emarginate, straight in middle. Pronotum



Figs 20–24. *Blaps ernesti* sp. n., ovipositor.

20 – ventral view; 21 – dorsal view; 22 – lateral view; 23 – apical lobes, ventral view; 24 – apical lobes, dorsal view.

Рис. 20–24. *Blaps ernesti* sp. n., яйцеклад.

20 – вид снизу; 21 – вид сверху; 22 – вид сбоку; 23 – вершинные доли коксита, вид снизу; 24 – вершинные доли коксита, вид сверху.

completely beaded, except for middle of anterior margin, basal border indistinct, lateral border narrowed from base to anterior margin. Anterior angles obtuse, widely rounded, posterior angles acute, narrowly rounded at apex. Pronotal punctation coarse and dense (distance between punctures subequal to one puncture diameter or less). Prothoracic hypomera with small transverse wrinkles and covered with small sparse granules, lateral sides of prohypomera completely widely flattened. Prosternum with fine wrinkles, rasp-like punctures and small granules along prothoracic hypomera.

Elytra weakly convex, flattened along suture, elongate (1.84 times as long as wide), widest at middle, 3 times as long and 1.3 times as wide as pronotum, 2.58 times as wide as head. Caudal extension of elytra (mucro) distinct, 4.9 mm long; elytra 3.8 times as long as mucro. Elytra covered with very coarse, dense (often merged) rasp-like foveae and very fine subrecumbent light hairs. Lateral inflected margins of elytra flattened in basal quarter and next to mucro, completely visible from above. Epipleura with fine wrinkles and sparse fine rasp-like punctures. Mesoventrite along prothoracic hypomera covered with very small granules with short light hairs, intercoxal process of mesoventrite between mesocoxae with granules. Mesepisterna along prosternum with dense small granules and covered with fine light hairs, granules near mesepimera transformed into sparse rasp-like punctures. Mesepimera with sparse smooth rasp-like punctures. Metaventrite with sparse small granules, wrinkled in middle, intercoxal process with rasp-like punctures; surface completely covered with fine light hairs. Hair tuft between abdominal ventrites 1 and 2 present. Abdominal ventrites 1–3 with large transverse wrinkles, ventrites 4–5 without wrinkles. Abdominal ventrite 1 covered with sparse small granules and rasp-like punctures, ventrites 2–3 with only rasp-like punctures, ventrites 4–5 with simple and rasp-like punctures, ventrite 5 beaded except for base and middle of anterior margin. Middle of abdominal ventrite 1 with transversely wrinkled tubercle, rounded and blunt at apex. Intercoxal process of abdominal ventrite 1 between metacoxae with large transverse wrinkles.

Legs slender. Ratio of lengths of femora, tibiae and tarsi of fore, middle and hind legs 6.7 : 5.9 : 3.7; 7.3 : 6.2 : 4.4; 9.6 : 8.7 : 5.2. Protarsomere 1 with entire hair brush on plantar side.

Anterior margin of male sternite VIII emarginate; accessory gland of sternite VIII moderately long. Rods of spiculum gastrale merged at apex, forming long common stem, lobes of spiculum gastrale oval. Aedeagus length 3.9–4.1 mm, width 0.75–0.8 mm. Aedeagus moderately C-curved. Parameres length 1.4 mm, width 0.75–0.8 mm. Lateral sides of parameres weakly rounded, weakly emarginate near apex.

Body length 25–28 mm, width 10–10.2 mm.

Female. Body shape and punctation similar to those in male. Head 1.44 times as wide as interocular distance. Antennae reaching base of pronotum when directed backwards. Ratio of pronotal width near anterior angles, at widest part and at base 4 : 7.1 : 6.7. Elytra elongate (1.61 times as long as wide), 3 times as long and 1.32 times as wide as pronotum, 2.7 times as wide as head. Mucro very short (0.6 mm).

Ovipositor moderately long. Lateral sides of apical lobes weakly emarginate in basal half, almost straight, tapering from middle to apex, emarginate in apical half. Apex of lobes narrowly rounded. Ventral side of lobes with longitudinal smooth wrinkles and covered with sparse setae; dorsal side of lobes smooth, with some short setae in middle. Anterior margin of proctiger with deep narrow emarginated in middle, sometimes emargination absent. Basal duct of spermatheca very long relative to gland and wide near vagina. Reservoirs of spermatheca fusiform in apical half, 1st reservoir slightly longer than 2nd. Gland of spermatheca short, base of gland narrow and bisinuate near valve of accessory gland. Stem of spiculum ventrale moderately long and thin.

Body length 18–20 mm, width 9.3–9.5 mm.



Figs 25. Distribution of *Blaps ernesti* sp. n.
Рис. 25. Распространение *Blaps ernesti* sp. n.

Differential diagnosis. The new species is similar to *Blaps mortisaga* Linnaeus, 1758 by the body form but differs in very coarse and dense punctation of pronotum and elytra, in contrast to fine and sparse pronotal punctation and smooth elytra in the latter species. Basal duct of spermatheca between vagina and reservoirs of *B. mortisaga* is short relative to the long accessory gland, reservoirs of spermatheca are thin and elongated, the 1st reservoir is widened at apex and 1.5 times longer than second reservoir; basal duct of spermatheca in *B. ernesti* sp. n. is very long relative to short accessory gland, reservoirs of spermatheca are fusiform in apical half, the 1st reservoir is slightly longer than the 2nd one. Of the species occurring in the same region, the new species is externally similar to *Blaps dehaani* Baudi di Selve, 1875 by punctation of pronotum and elytra, but differs in larger body (18–28 mm vs 15–20 mm), very long male mucro and the presence of hair tuft between abdominal ventrites 1 and 2.

Etymology. The species is named in honour of the famous French entomologist Ernest Allard (1820–1900).

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