



On *Blaps* Fabricius, 1775 (Coleoptera: Tenebrionidae) from Western Kazakhstan with description of a new species from Tyuleniy Archipelago (Caspian Sea)

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Abstract

A new species of darkling beetles *Blaps caspica* sp. n. from Western Kazakhstan Kulaly Island (Tyuleniy Archipelago, Caspian Sea) is described. This new taxon belongs to the 6th group of the 2nd section according to Seidlitz's classification and is most similar to *Blaps kadyrbekovi* G. Medvedev, 2004, *B. lethifera* Marsham, 1802 and *B. parvicollis* Zoubkoff, 1829. *Blaps caspica* sp. n. differs from *B. kadyrbekovi* by the presence of a hair tuft between male abdominal ventrites 1 and 2, from *B. parvicollis* by having narrow acute short spurs on the mesotibiae, the structure of the gastral spicula, ovipositor and female genital tubes, from *B. lethifera* by the slender elliptic body, punctated (not granulated) epipleura and the structure of the female genital tubes. Images, an identification key and local distribution are given for ten Western Kazakhstan species of the genus *Blaps* Fabricius, 1775.

Key words: *Blaps*, identification key, distribution, new species, Caspian islands, Kazakhstan

Introduction

The largest genus in the tribe Blaptini, *Blaps* Fabricius, 1775 includes more than 250 Palaearctic species, 30 of which are listed for Kazakhstan (Löbl *et al.* 2008).

The most complete taxonomic revision of the genus *Blaps* in the current territory of Kazakhstan is the work of Seidlitz (1893) who combined data of previous researchers (Fischer von Waldheim 1844; Allard 1880, 1881, 1882) and described some species from the Northern Tien Shan. Significant contributions to the knowledge of *Blaps* of Kazakhstan were published by Skopin (1961, 1964, 1966, 1968, 1977) who also discovered new taxa from the same location and added new faunistic data on *Blaps* of Western (territory between the Aral Sea and the Caspian Sea) and Southern Kazakhstan. Many species distributed in Kazakhstan were included in taxonomic works of Medvedev and co-authors (Medvedev & Nepesova 1985; Medvedev 2004). Some faunistic data for Central and Western Kazakhstan are presented in papers by Arnoldi (1952), Arnoldi & Medvedev (1969), Ivanov (2012), and Kozminykh (2015).

The greatest diversity and number of endemic species of *Blaps* occur in Eastern Kazakhstan, especially in the Northern Tien Shan, while only 10 species are known from the wide plains and plateaus of Western Kazakhstan. Here the fauna of South West Kazakhstan (Ustuyrt and Mangyshlak plateaus) and the Aral region predominates, while the Western-Turanian and Widely-Turanian species are the most diverse (Skopin 1964). In North Western Kazakhstan only some widespread Turanian and Western Palaearctic species, and *Blaps kadyrbekovi* Medvedev, 2004, recently described from the North Aral and Eastern Caspian regions, are known.

In present paper, a new species of the genus *Blaps* is described from Kulaly Island (Tyuleniy Archipelago in

the north eastern part of the Caspian Sea). This taxon was previously listed as *species nova* in Abdurakhmanov & Nabozhenko (2014) and Abdurakhmanov *et al.* (2015). This single representative of the genus *Blaps* distributed on the Island was found under aggregations of moss in thickets of *Tamarix* L. on the highest point (6 m above the Caspian Sea level, –23 m bsl). Detailed studies of the eastern coast of the Caspian Sea, and a study of large materials from Mangyshlak and Ustyurt in Zoological Institute RAS, indicate the absence of this species on the mainland. Three other species, *Blaps parvicollis* Zubkov, 1829, *B. pruinosa* Eversmann, 1836 and *B. holconota* Fischer von Waldheim, 1844, were found on the coast of Mangyshlak gulf during our expedition in 2011 (Abdurakhmanov & Nabozhenko 2014). However, only *B. parvicollis* was collected in the sparse coastal thickets of *Tamarix* (similar to the Kulaly Island habitat) on Tub-Karagan Peninsula.

The insular endemism of a new species of *Blaps* could either be the result of being more widespread in the past, or island isolation. The age and origin of the Caspian Sea islands have been repeatedly discussed previously and summarized in the works of Abdurakhmanov with co-authors (Abdurakhmanov *et al.* 2012, 2015). The Caspian islands were connected with the mainland or completely flooded in the Pleistocene as a result of numerous transgressions and regressions of the sea (Svitoch *et al.* 2000). It is also assumed that the absolute height of the Tyuleniy Archipelago islands increased with the Caspian Sea level rise (Leont'ev 1957). Stable existence of insular lands was established in the Late Pleistocene-Holocene (Leont'ev 1957; Abdurakhmanov *et al.* 2015). This period is probably too short for the evolution of new species-level taxa in terrestrial invertebrates. Ecosystem preservation, absence of ungulates and anthropogenic pressure may serve as a possible explanation for the presence of some undescribed spiders and beetles (Abdurakhmanov *et al.* 2015) in Tyuleniy Archipelago. For example, the *Stipa–Ephedra* sandy steppe, almost extinct on the mainland, is preserved on the largest and most distant Kulaly Island (personal information of A.A. Teymurov). Also, wide thickets of *Tamarix*, aggregations of geophytic moss and lichens are present on the island (Fig. 1).



FIGURE 1. Thickets of *Tamarix*, habitat of *Blaps caspica* sp. n. on Kulaly Island (Caspian Sea).

Material and methods

The study is based on the examination of adult beetles from the following institutes, museums and private collections: ZIN—Zoological Institute, Russian Academy of Sciences, St. Petersburg; SFU—Southern Federal University, Department of Zoology, Rostov-on-Don; CN—collection of M. V. Nabozhenko, Rostov-on-Don. Scanning electron microscopy was made with the SEM EVO-40 XVP (LEO 143OVP).

The order of species is accepted considering the morphological similarity of listed taxa (Medvedev 2001, 2004) as well as monophyly of two groups of the genus *Blaps* (Skopin 1960, Condamine *et al.* 2011).

Review of species

Blaps caspica sp. n.

(Figs 2, 3A, B, 4A, B, 5A–C, D, E, 6)

Material. Holotype, ♂ (ZIN) and 87 paratypes (37♂♂ and 50♀♀) (ZIN, SFU, CN) with label: “Kazakhstan, the Caspian Sea, Kulaly Isl., 44°51'35"N, 50°4'24"E, 19–20.vi.2013, leg. G.M. Abdurakhmanov”.

Description. Male. Body black, dull, slender, and elliptical. Anterior margin of frontoclypeus weakly bisinuate, straight in middle. Lateral angles of frontoclypeus right. Head widest at eye level. Head width 1.46 times width of interocular space. Genal outer margin straight, rounded only near eyes. Outer margins of head between frontoclypeus and genae with obtuse distinct emargination. Frontoclypeal ‘suture’ not distinct, weakly visible. Antennae reaching base of pronotum when directed backwards. Ratio of length/width of antennomeres 2–11 respectively 5(9) : 27(9) : 13(8) : 11(8) : 11(8) : 12(12) : 8(10) : 8(10) : 8(10) : 11(10). Mentum transverse, with rounded (not angled) lateral sides. Punctuation of head not coarse, moderately dense (distance between punctures subequal to puncture diameter).

Pronotum transverse (1.3 times as wide as long), widest a little before middle, 1.73 times as wide as head. Ratio of pronotal width near anterior angles, at the widest part, and at the base respectively 4.7 : 7.3 : 7.1. Anterior margin widely emarginated; lateral margins weakly rounded in anterior half and straight in basal half; base quite strongly emarginated. Anterior angles obtuse, widely rounded, posterior angles right, narrowly rounded at apex. Disc of pronotum weakly convex, with completely narrowly beaded external margins, only interrupted in middle of anterior margin. Punctuation of pronotum fine and sparse (distance between punctures 1–2 times puncture diameter). Prothoracic hypomera with smooth wrinkles and sparse small granules.

Elytra elongate (1.7 times as long as wide), widest at middle, weakly convex, 2.8 times as long and 1.2 times as wide as pronotum, 2.13 times as wide as head. Caudal extension of the elytra (mucro) distinct, 0.9–1.2 mm long; elytra 14 times as long as mucro. Elytral surface with rasp-shaped punctuation and microgranules. Epipleura with short fine wrinkles and sparse punctures. Abdominal ventrite 1 with acute or rarely rounded tubercle. Abdomen with hair tuft between 1th and 2nd abdominal ventrites. Abdominal ventrites 1 and 2 covered with recumbent reddish hairs; ventrites 1–3 wrinkled, with rasp-punctuation and sparse recumbent setation; ventrites 4 and 5 with simple fine punctuation.

Legs slender. Inner margin of profemora slightly emarginated apically. Ratio of length of femur, tibia and tarsus respectively: fore legs 6.7 : 6.2 : 4.1, middle legs 7.2 : 6.1 : 4.8, hind legs 9.3 : 8 : 5.3. All tarsomeres with bifurcate setal brush.

Length of aedeagus 4.1 mm, width 0.9 mm (n = 20), length of apical piece with parameres 1.2 mm. Apical piece weakly rounded in basal 2/3 and straight apically; apex obtuse. Rods of gastral spicula merged at apex.

Body length 20.3–25.5 mm, width 8.0–9.8 mm.

Female. Body more robust. Head width 1.5 times width of interocular space. Antennae shorter. Ratio of pronotal width near anterior angles, at widest part, and at base respectively 5 : 7.9 : 7.5. Elytra wider (1.6–1.65 times as long as wide), 2.8 times as long and 2–2.1 times as wide as pronotum, 2.4 times as wide as head. Mucro absent. Ventral surface of fourth pair of coxites wrinkled, covered with long setae. Dorsal side of fourth pair of coxites with small flattened processes near inner margins (fig. 6E); ventral side with strong acute processes (fig 6D). Anterior margin of proctiger widely emarginated, with long setae. Basal duct of spermatheca between vagina and reservoirs long; reservoirs elongate, oval, of equal size.

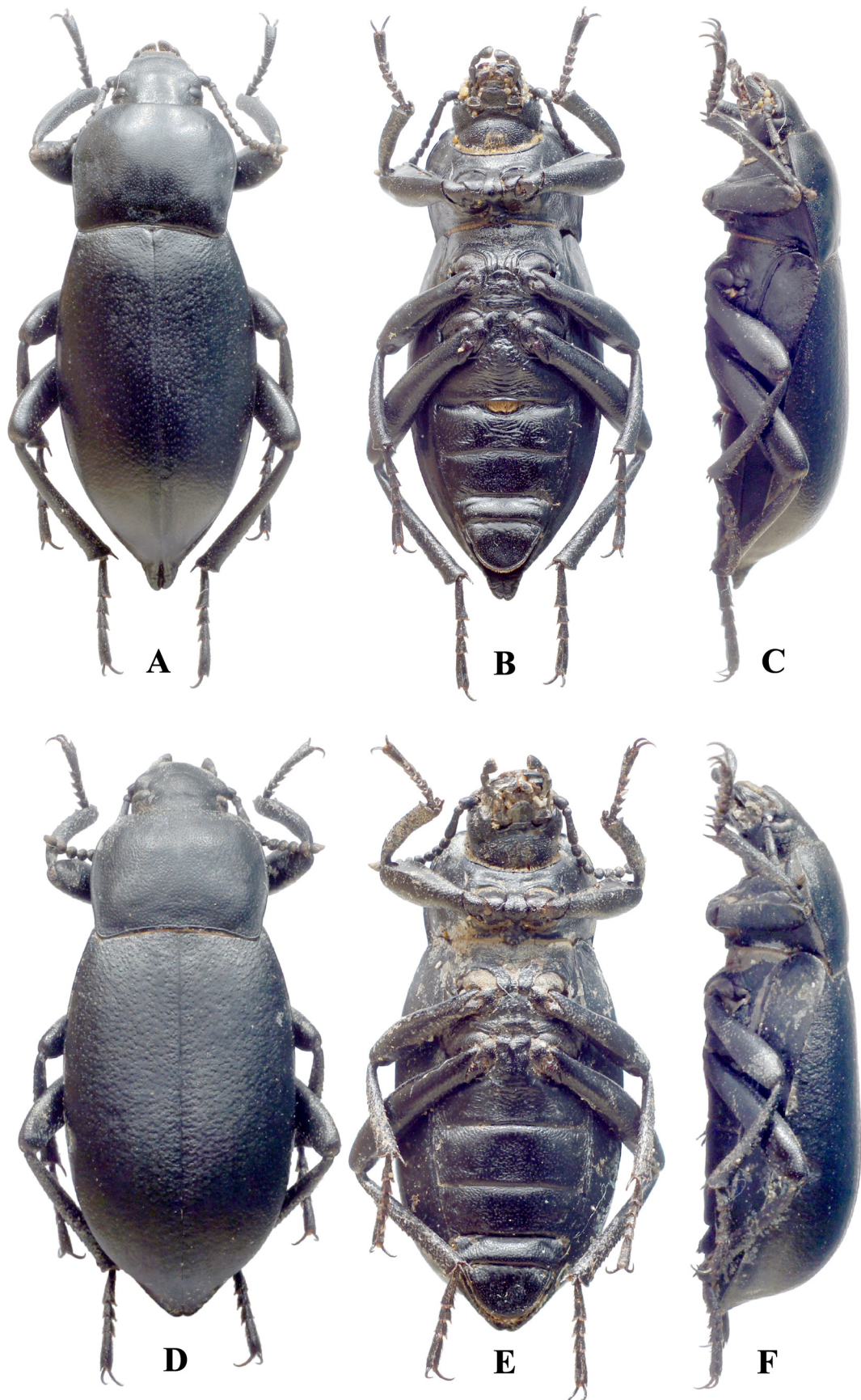


FIGURE 2. *Blaps caspica* sp. n., habitus. A–C. Male. D–F. Female. A, D. Dorsal view. B, E. Ventral view. C, F. Lateral view.

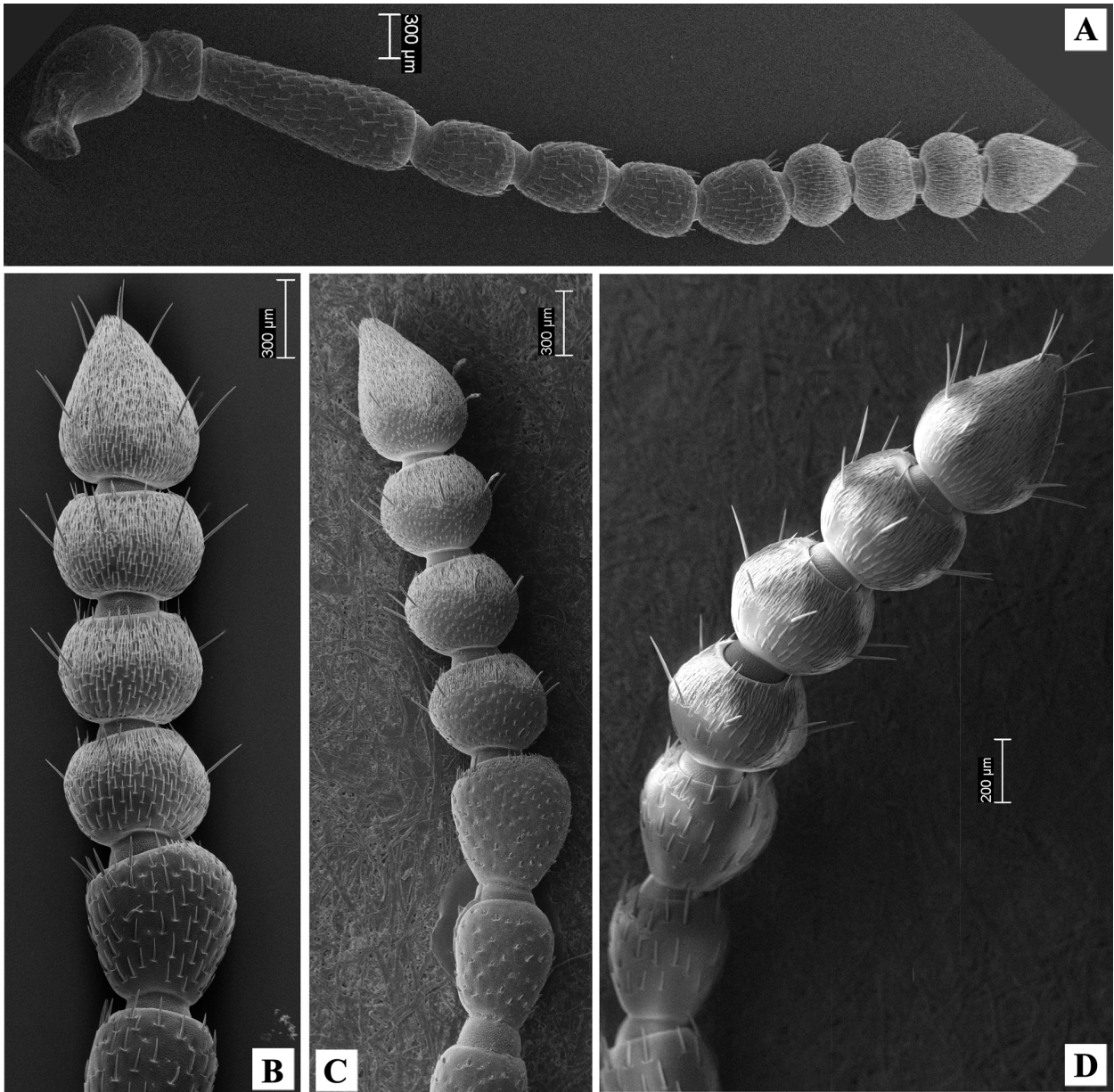


FIGURE 3. Antennae of *Blaps*. A. *B. caspica* sp. n., general view. B. *B. caspica* sp. n., apical antennomeres. C. *B. lethifera*, apical antennomeres. D. *B. parvicollis*, apical antennomeres.

Body length 19.6–23.5 mm, width 8.3–10.3 mm.

Etymology. The name derives from the name of the Caspian sea.

Differential diagnosis. The new species is similar to *Blaps kadyrbekovi*, *B. parvicollis* and *B. lethifera* and differs as follows:

- from *B. kadyrbekovi* by the presence of a hair tuft between abdominal ventrites 1 and 2, a larger and more slender body, wider elytral mucro in the male, and absence of a mucro in the female;
- from *B. parvicollis* by the structure of the spurs on the meso- and metatibiae (see fig. 4), the separate and elongate reservoirs of the spermatheca, the structure of the ovipositor (figs. 6 and 7), form of body, and absence of a mucro in the female;
- from *B. lethifera* by the slender elongate body, the distinctly emarginated pronotal base (straight or nearly straight in *B. lethifera*), elytral margins weakly rounded apically, punctated (without small granules) epipleura, and equal size of spermathecal reservoirs. *Blaps lethifera* has reservoirs of a different size (Chigray *et al.* 2015).

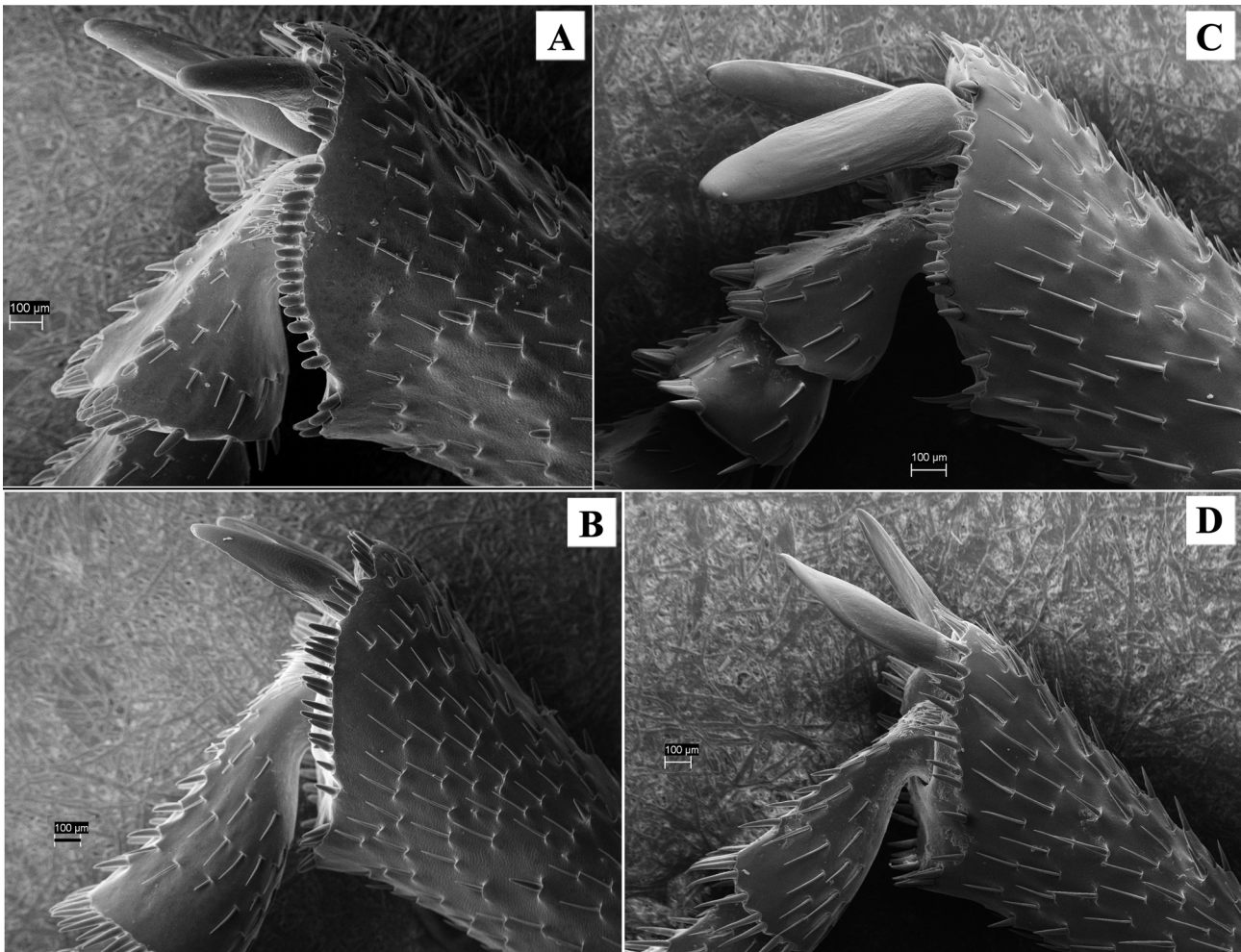


FIGURE 4. Spurs of *Blaps*. A, B. *B. caspica* sp. n. C, D. *B. parvicollis*. A, C. Mesotibia. B, D. Metatibia

***Blaps parvicollis* Zoubkoff, 1829**

(Figs. 3D, 4C, D, 5F, G, H, 7, 9A–C)

Distribution in Western Kazakhstan: Atyrau, Mangystau and West Kazakhstan Regions. Widespread on sandy areas.

Material. More than 200 specimens from the Caspian Depression (ZIN, SFU, CN).

***Blaps kadyrbekovi* Medvedev, 2004**

(Figs 9D–F)

Distribution. Kazakhstan: North Aral Sea coast (Butakov gulf), Atyrau Region (Kulsary).

Material. Holotype and paratypes (ZIN) from both localities were studied.

***Blaps inflexa* Zoubkoff, 1833**

(Fig. 10)

Distribution. Syr Darya valley from Namangan to North and East Aral coast, Amu Darya River delta. This species occurs in the tugay vegetation.

Material. 1♂, 1♀: Kyzylorda, Syr Darya valley (ZIN).

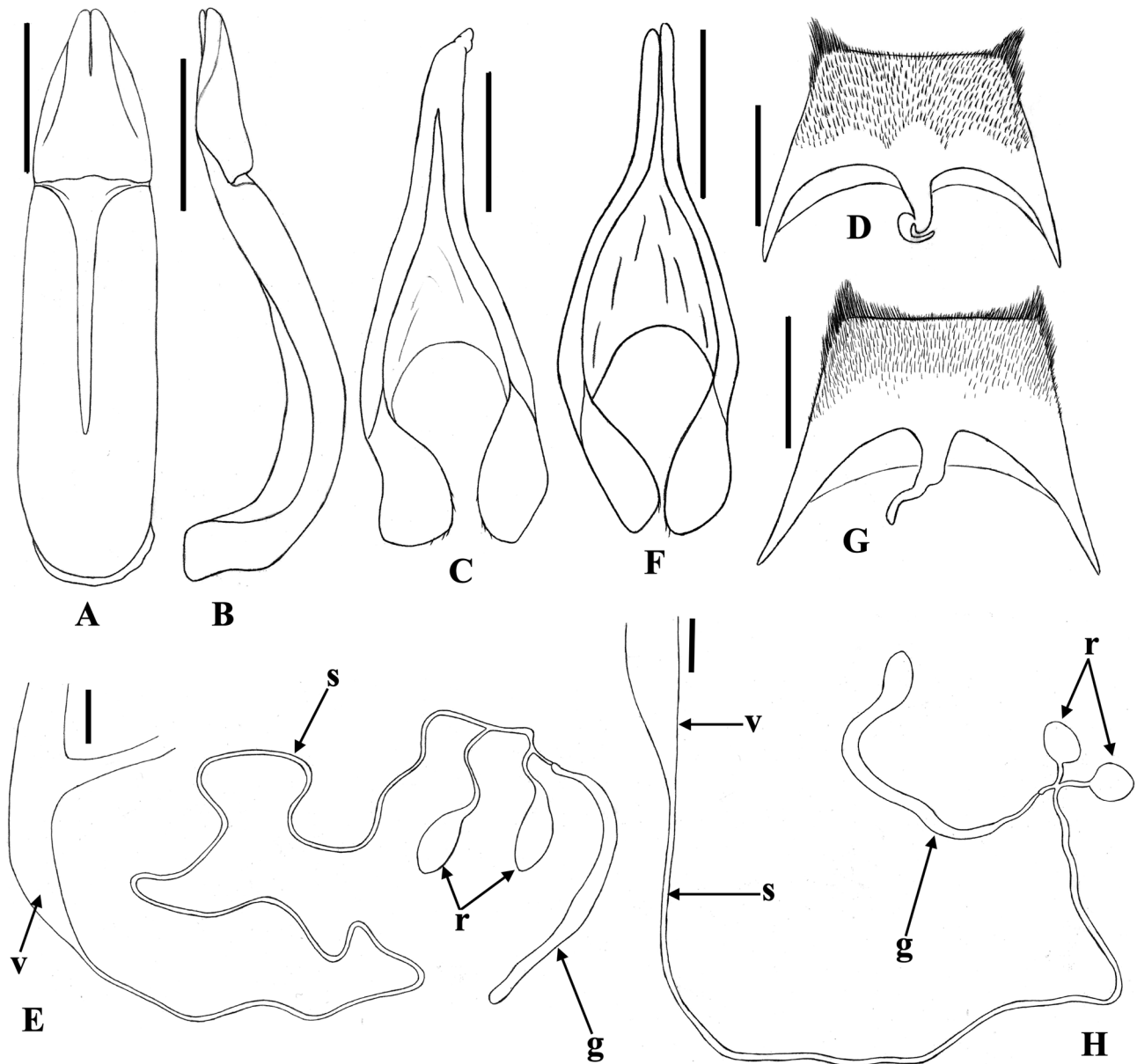


FIGURE 5. Male genitalia and female genital tubes of *Blaps*. A. Aedeagus, dorsal view. B. Aedeagus, lateral view. C, F. Gastral spicula. D, G. Male inner sternite VIII. E, H. Female genital tubes. A–C, D, E. *B. caspica* sp. n. F, G, H. *B. parvicollis*; v—vagina, s—spermatheca, r—reservoirs, g—accessory gland of spermatheca. Scale bars—1 mm.

***Blaps lethifera* Marsham, 1802**
(Figs 3C, 8, 11A–C)

Distribution in Western Kazakhstan: North of Actobe Region, West Kazakhstan (Uralsk, Dzhanlybek) and Atyrau (Inder Lake) Regions.

Material. 1 ♀: Kazakhstan, Atyrau Region, Inder Lake env., 1–2.05.2011, leg. A.E. Abramov (CN); more than 60 specimens from West Kazakhstan Region (ZIN).

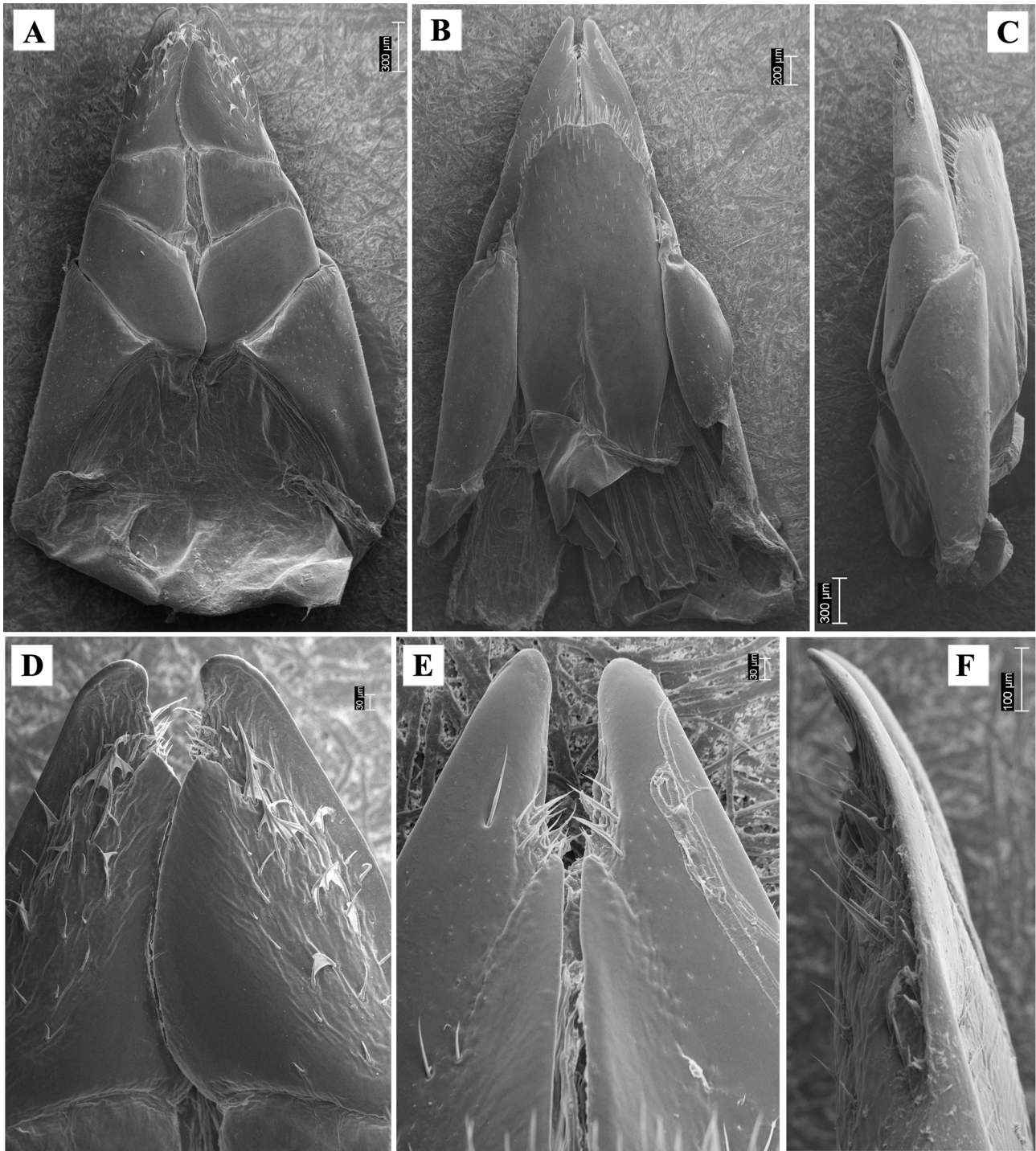


FIGURE 6. Ovipositor of *Blaps caspica* sp. n. A. General ventral view. B. General dorsal view. C. General lateral view. D. Fourth pair of coxites, ventral view. E. The same, dorsal view. F. The same, lateral view.

***Blaps seriata* Fischer von Waldheim, 1822**

(Figs 11D–F)

Distribution in Western Kazakhstan: Mangystau Region (North Western Ustyurt: Beyneu, Manaty pass; Mangyshlak plateau: Tauchik, Karaman-Ata, Uzen', Kamysty depression, Tushchikuduk).

Material. 1♂, 1♀: Kazakhstan, Mangystau Region, Beyneu, 16.04.2011, leg. A.E. Abramov (CN).

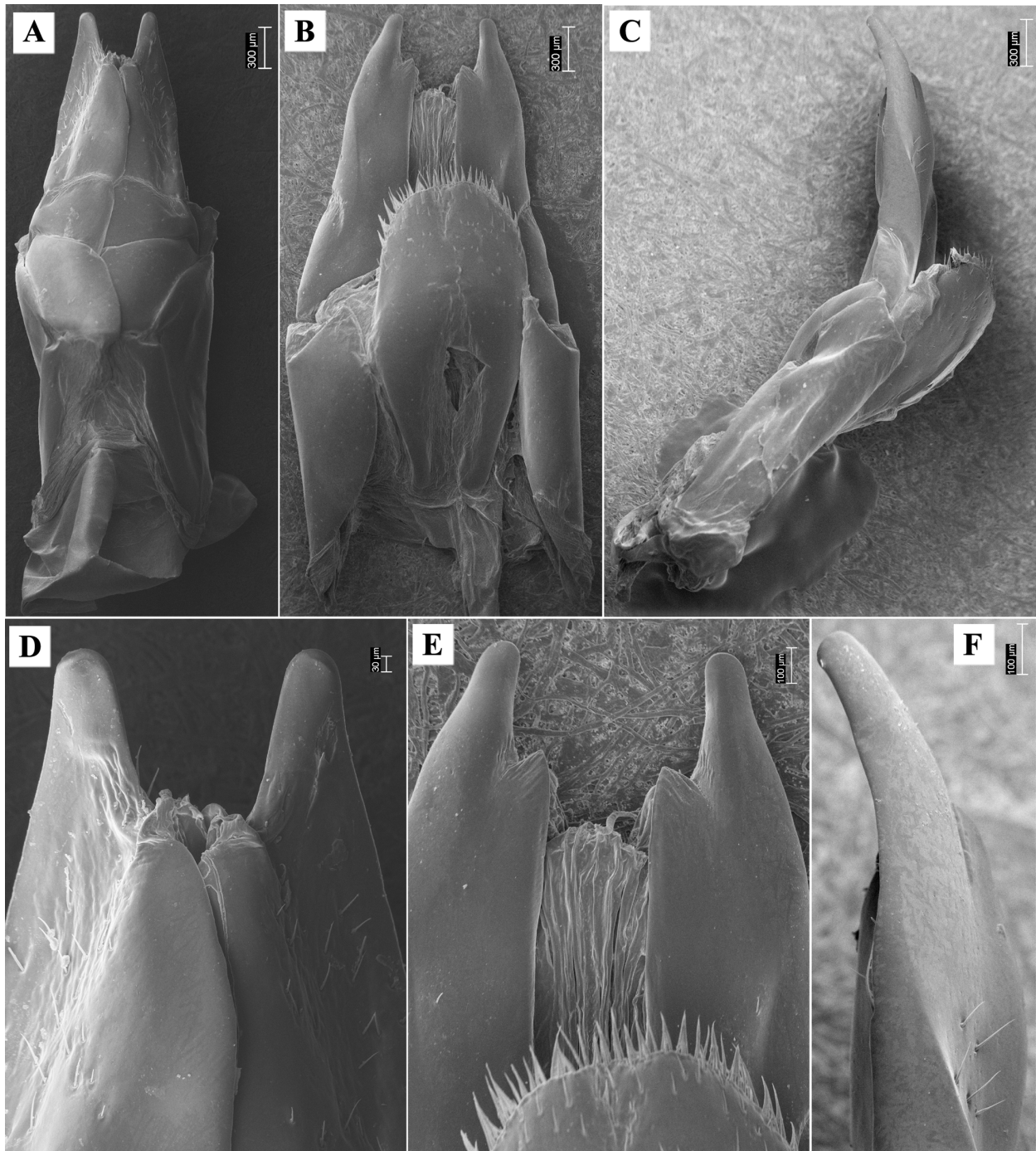


FIGURE 7. Ovipositor of *Blaps parvicollis* sp. n. A. General ventral view. B. General dorsal view. C. General lateral view. D. Fourth pair of coxites, ventral view. E. The same, dorsal view. F. The same, lateral view.

***Blaps holconota* Fischer von Waldheim, 1844**

(Figs 12A–C)

Notes. Skopin (1964) distinguished two ecologically divided subspecies: *Blaps holconota holconota* on dense soil (sandy loam, argillaceous, clay loams) and psammophilic *Blaps holconota scutellata* Fischer von Waldheim, 1844. It is known that the species inhabits burrows of Rodentia (Skopin 1964; Ivanov 2012). Medvedev & Nepesova (1985) used the name *B. scutellata* for both these taxa. *Blaps holconota* and *B. scutellata* are listed as different species in the catalogue (Löbl *et al.* 2008). We use the name *Blaps holconota* because it was described on page 71,

while *B. scutellata* on page 72. The status of these taxa can be established after study of the type specimens and comparison of large series of specimens from Afghanistan to the Caspian Sea.

Distribution in Western Kazakhstan. South of Aktobe and Mangystau Regions from the Aral to the Caspian (Mangyshlak, Ustyurt) seas.

Comparative material. 2♂, 3♀: Kazakhstan, Mangustau Region, 15 km S Fort Shevchenko, 17–18.vi.2013, leg. G.M. Abdurakhmanov (CN).

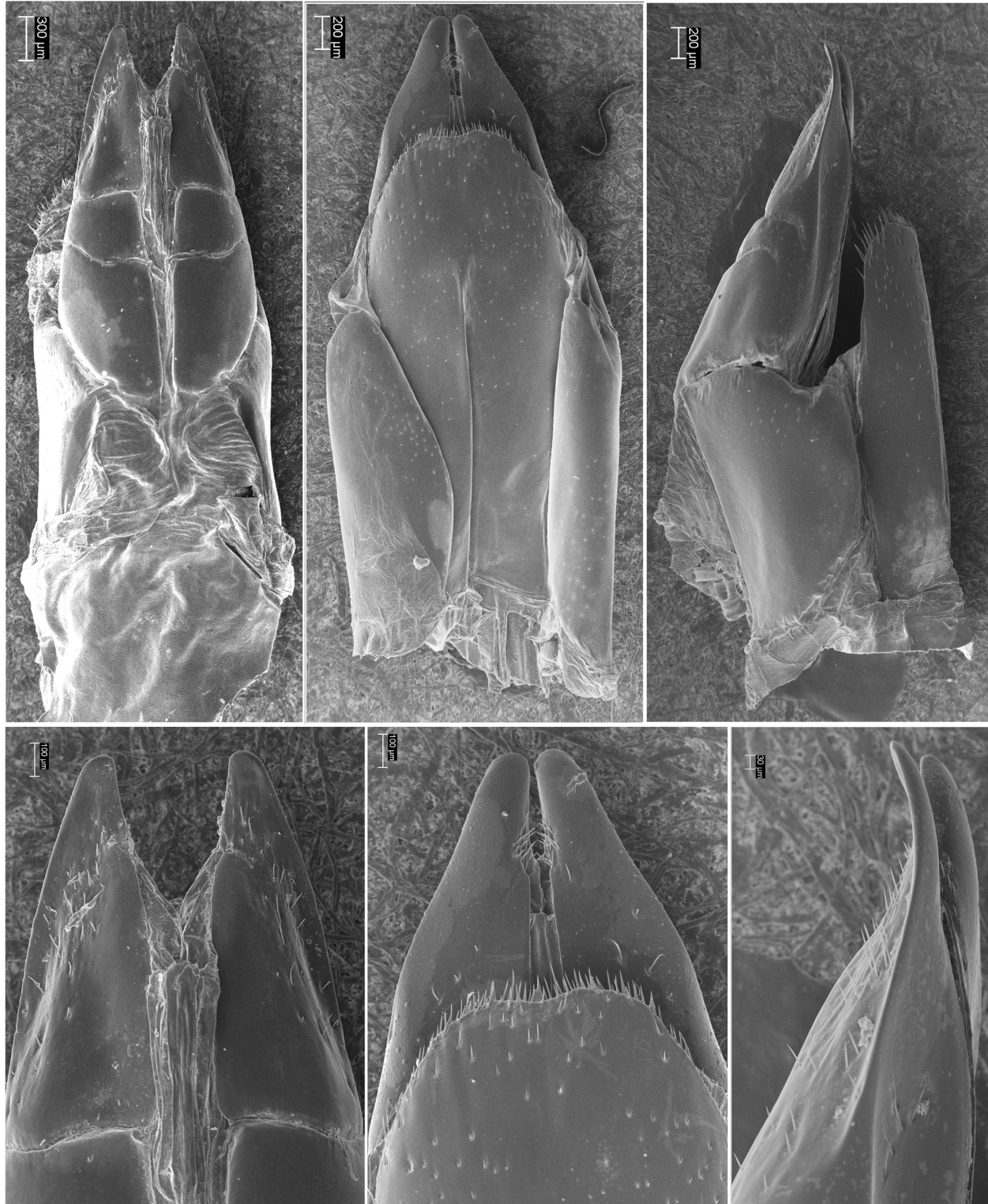


FIGURE 8. Ovipositor of *Blaps lethifera* sp. n. A. General ventral view. B. General dorsal view. C. General lateral view. D. Fourth pair of coxites, ventral view. E. The same, dorsal view. F. The same, lateral view.

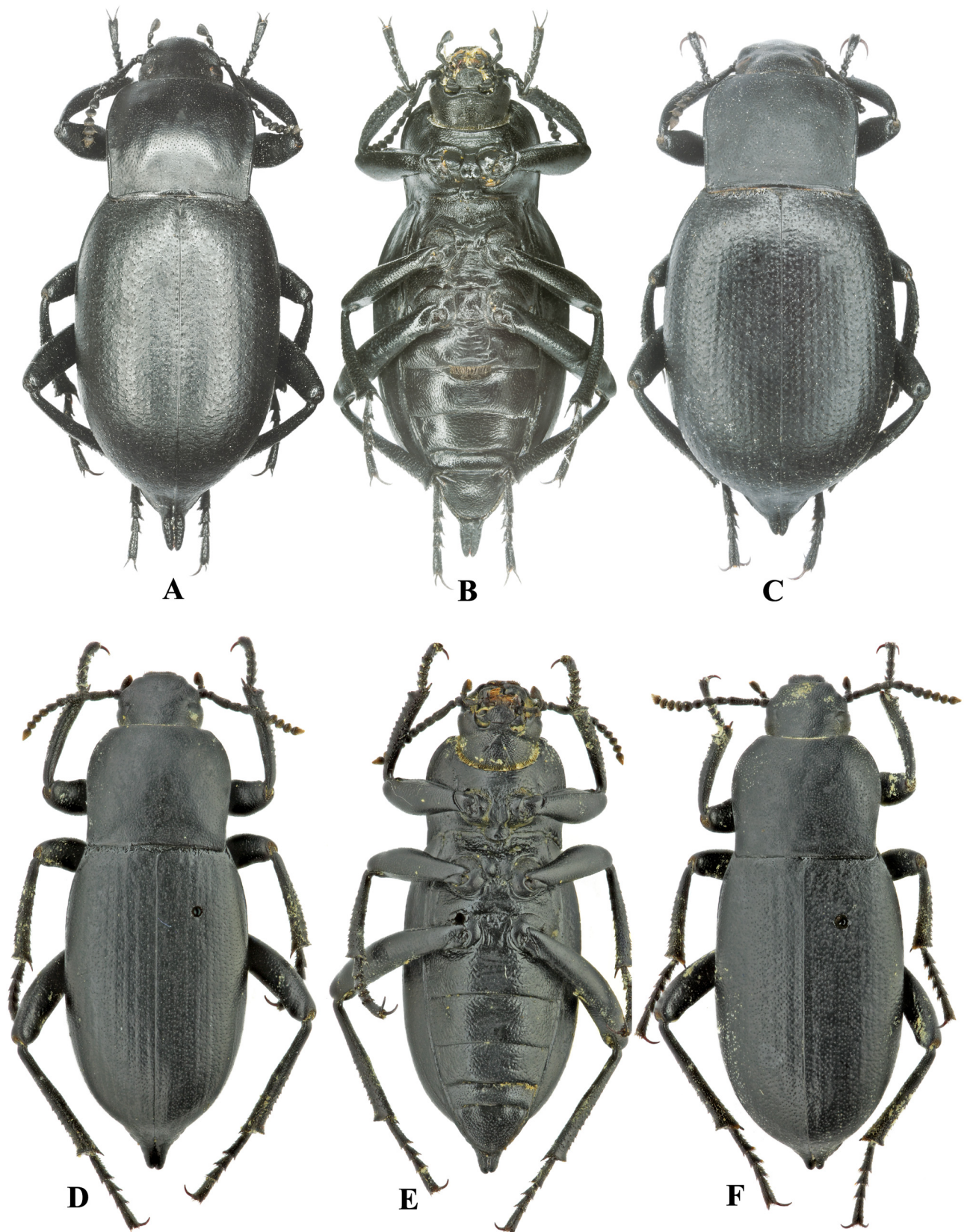


FIGURE 9. Habitus of *Blaps* spp. A–C. *B. parvicollis*, D–F. *B. kadyrbekovi*. A, C, D, F. Dorsal view. B, E. Ventral view. A, B, D, E. Males. C, F. Females.

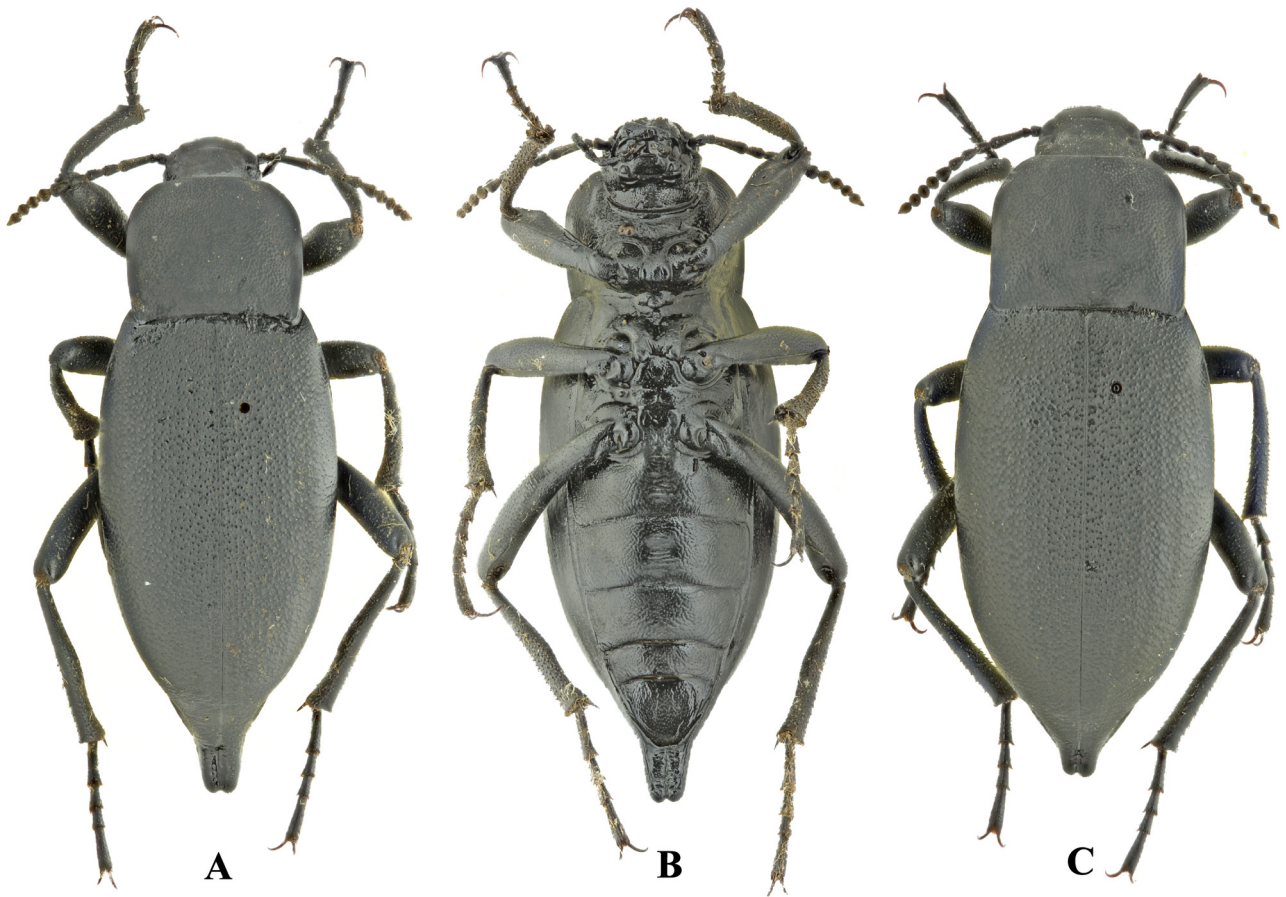


FIGURE 10. *Blaps inflexa*, habitus. A, C. Dorsal view, B. Ventral view. A, B. Male. C. Female.

Subgenus *Dineria* Motschulsky, 1860

***Blaps halophila* Fischer von Waldheim, 1822**

(Figs 12D–F)

Distribution in Western Kazakhstan. North of the West Kazakhstan Region, steppes of Ural River valley.

Comparative material. 2♂ and 1♀ with label “Uralsk” (West Kazakhstan Region) (CN).

Species-group “*Lithoblaps*” sensu Seidlitz (1896), Skopin (1960) etc., which is supported by the phylogenetic analyses (Condamine *et al.* 2011)

***Blaps pruinosa* Eversmann in Falderman, 1836**

(Figs 13A–C)

Distribution in Western Kazakhstan. Atyrau, Mangystau and Aktobe Regions. Species common on hummocky sands.

Material. More than 50 specimens from the Caspian Depression (ZIN, CN).

***Blaps titanus* Ménériés, 1848**

(Figs 13D–F)

Distribution in Western Kazakhstan. Mangystau Region: Mangyshlak (Skopin, 1964). Ustyurt (Ivanov, 2012).

Material. 1♂, 2♀: Kazakhstan, Mangustau Region, 15 km S Fort Shevchenko, 17–18.vi.2013, leg. G.M. Abdurakhmanov (CN).

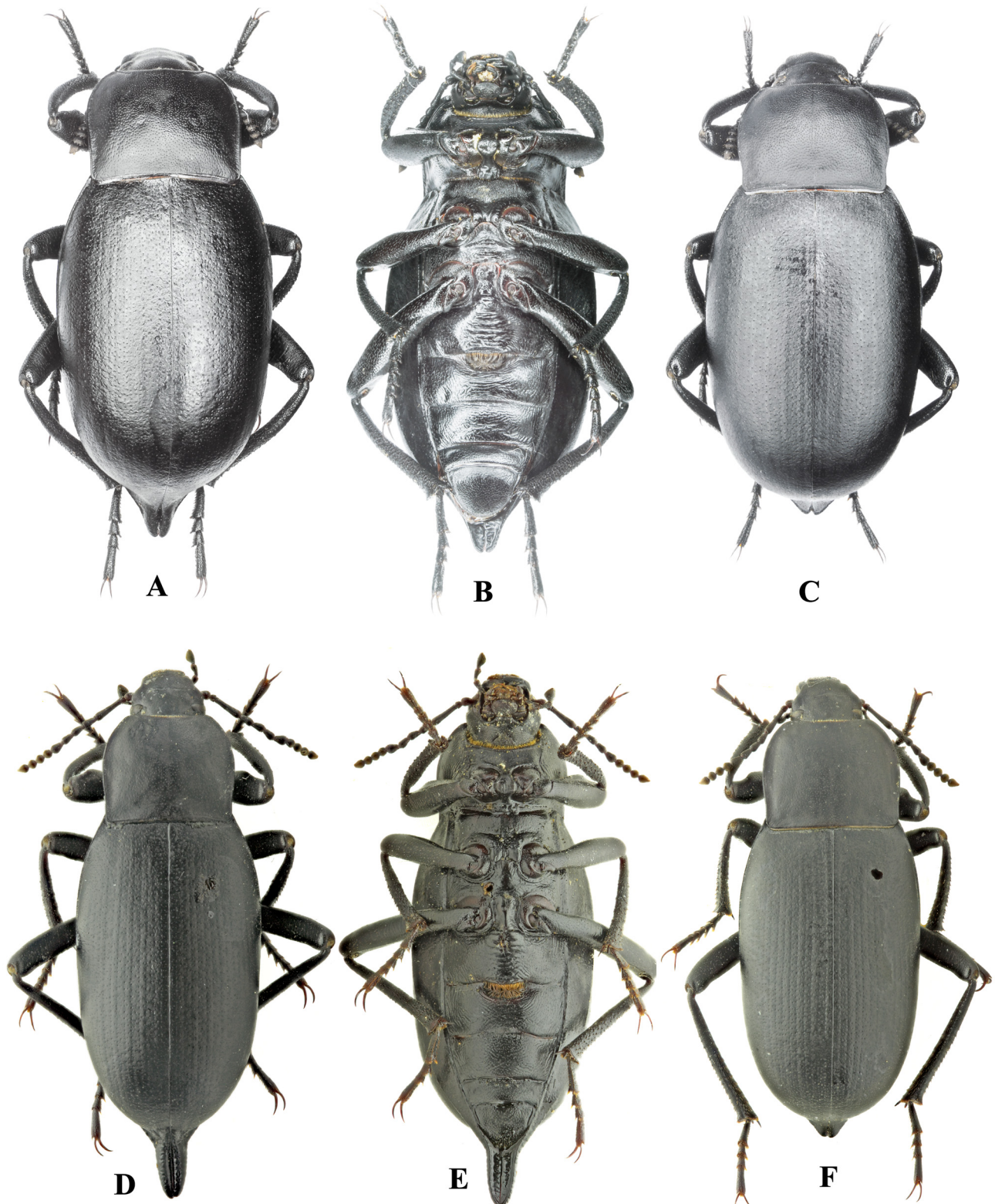


FIGURE 11. Habitus of *Blaps* spp. A–C. *B. lethifera*, D–F. *B. seriata*. A, C, D, F. Dorsal view. B, E. Ventral view. A, B, D, E. Males. C, F. Females.

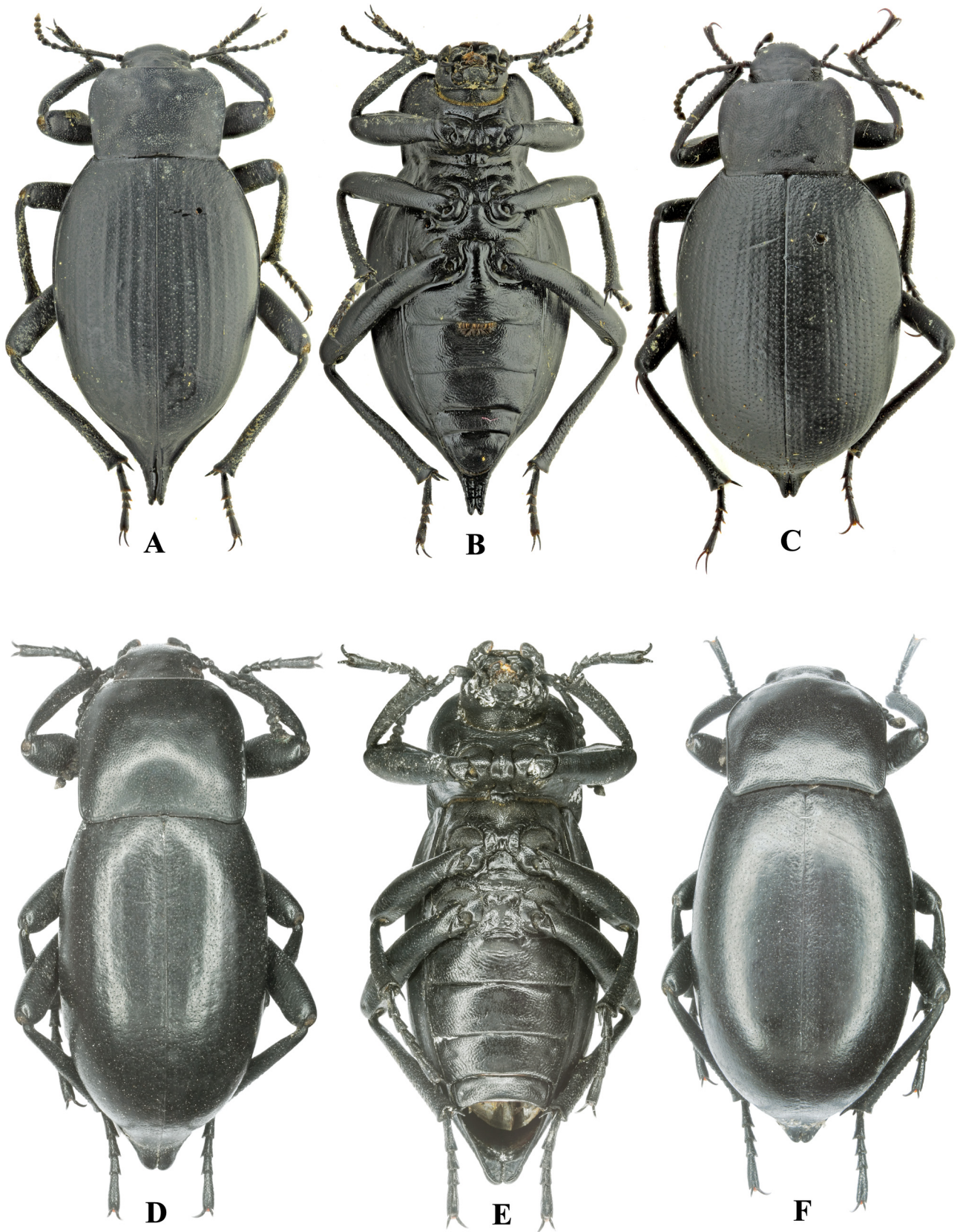


FIGURE 12. Habitus of *Blaps* spp. A–C. *B. holconota*, D–F. *B. halophila*. A, C, D, F. Dorsal view. B, E. Ventral view. A, B, D, E. Males. C, F. Females.

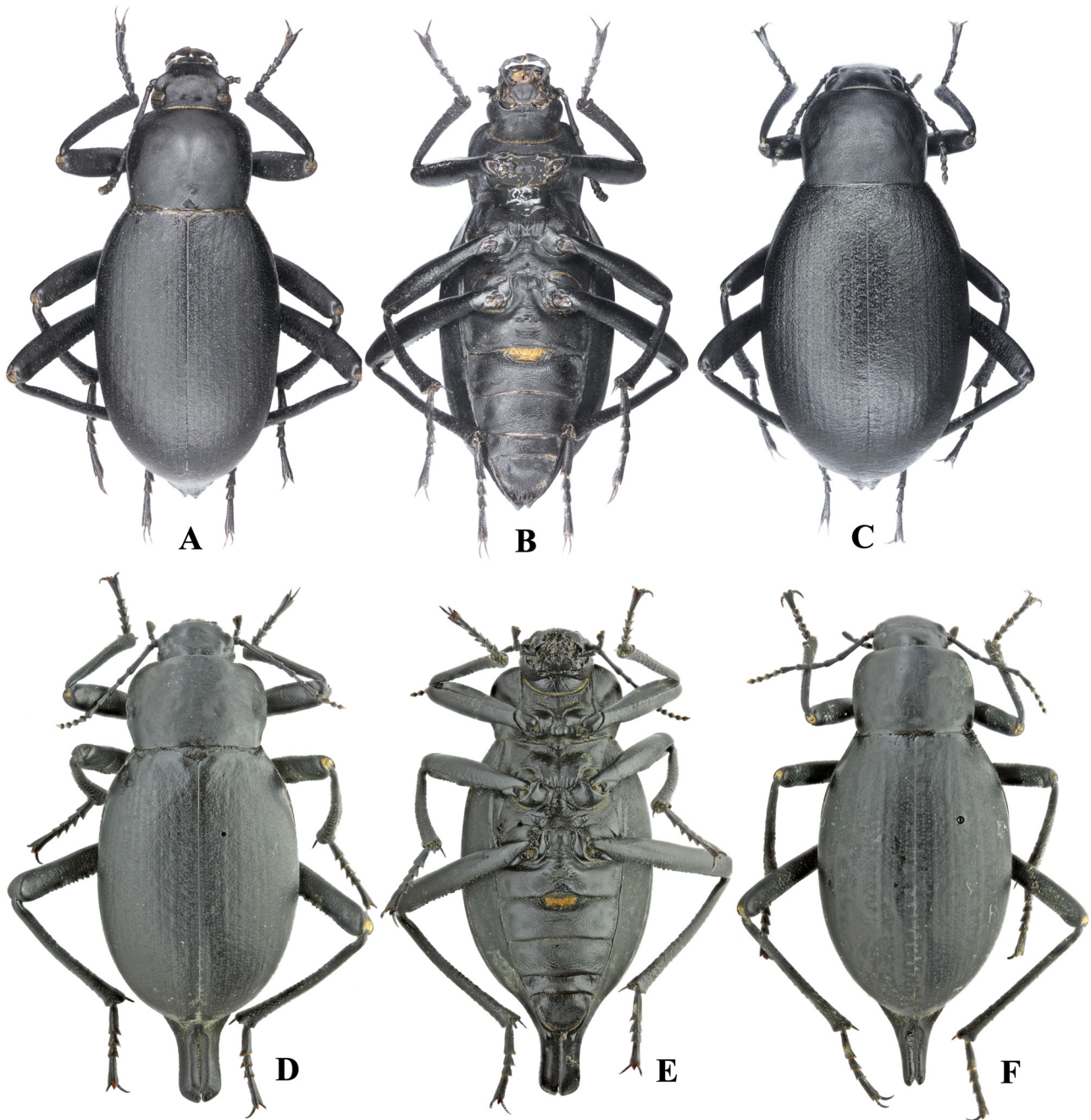


FIGURE 13. Habitus of *Blaps* spp. A–C. *B. pruinosa*, D–F. *B. titanus*. A, C, D, F. Dorsal view. B, E. Ventral view. A, B, D, E. Males. C, F. Females.

Key to the species of the genus *Blaps* of Western Kazakhstan

- 1 Ventral lamella between two claws of the onychium of tarsi triangular, acute or narrowly rounded on apex. Dorsal margin of metafemora on inner side with small teeth. Male with hair tuft between abdominal ventrites 1 and 2 (figs 13A, B, D, E) 2
- Ventral lamella between two claws of the onychium of tarsi widely rounded or truncate. Dorsal margin of metafemora without small teeth on inner side. Male with or without hair tuft between abdominal ventrites 1 and 2 3
- 2 Mucro very short (0.5–0.7 mm), abruptly bifurcated at base in form of two triangular processes. Male abdominal ventrite 1 with 2 contiguous tubercles. Body length 20.0–29.0 mm *B. pruinosa*
- Mucro long (more than 3.0 mm), spatulate in the males, not bifurcate. Male abdominal ventrite 1 with one transverse tubercle. Body length 30.0–38.0 mm *B. titanus*
- 3 Spurs of mesotibiae oval, wide and long, their length subequal to mesotarsomere 1. *B. parvicollis*
- Spurs of mesotibiae narrow triangular, with acute apex, 1.5–3 times shorter than mesotarsomere 1 4

4	Male without hair tuft between abdominal ventrites 1 and 2	5
-	Male with hair tuft between abdominal ventrites 1 and 2	7
5	Elytra covered with coarse granules. Male metatibia with thickening in the middle on inner side	<i>B. inflexa</i>
-	Elytra punctate, sometimes weakly wrinkled on sides. Male metatibiae simple, without thickening	6
6	Elytral mucro narrow, distinctly separated. Punctuation of elytra coarse, coarser than on head. Outer margin of protibiae serrated	<i>B. kadyrbekovi</i>
-	Elytral mucro wide, weakly separated from elytra. Punctuation of elytra fine, not coarser than on head. Outer margin of protibiae not serrated (sometimes undulated)	<i>B. halophila</i>
7	Body large (length 25.0–45.0 mm), widely oval. Lateral margins of prothoracic hypomera widely flattened. Anterior angles of pronotum projecting because of the widely emarginated anterior margin. Elytral mucro with a distinct hiatus at apex; apices of mucro acute	<i>B. holconota</i>
-	Body elongate, narrower, elliptical or oblong in shape. Lateral margins of prothoracic hypomera not flattened. Anterior angles of pronotum not projecting. Elytral mucro not bifurcate at apex	8
8	Male antennae long, extending beyond base of pronotum when directed backwards, reaching pronotal base in female. Lateral sides of pronotum weakly but distinctly flattened. Base of pronotum not beaded. Male elytral mucro long (2.0–5.0 mm)	<i>B. seriata</i>
-	Male antennae reaching base of pronotum or shorter. Lateral sides of pronotum not flattened. Base of pronotum beaded (sometimes bead interrupted in middle). Male elytral mucro shorter (1.2–2.5 mm)	9
9	Body robust, elytra oblong in shape, with weakly rounded lateral margins in middle and strongly rounded margins at apical quarter. Pronotal base straight or nearly straight. Epipleura covered with sparse small granules. Fourth pair of coxites of ovipositor not wrinkled, with short setae. Reservoirs of spermatheca of different sizes, second reservoir smaller and round	<i>B. lethifera</i>
-	Body slender, elytra elliptical, with evenly, weakly rounded lateral margins. Pronotal base distinctly emarginated. Epipleura with punctuation. Fourth pair of coxites of ovipositor wrinkled, with long setae. Reservoirs of spermatheca elongate, equal in size	<i>B. caspica</i> sp. n.

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