

## New and rare species of the family Cryptophagidae from northern Palaearctic (former USSR) (Coleoptera: Clavicornia)

## Новые и редкие виды семейства Cryptophagidae из северной Палеарктики (бывш. СССР) (Coleoptera: Clavicornia)

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KEY WORDS: Cryptophagidae, *Cryptophagus*, *Micrambe*, Palaearctic Region, taxonomy, description.

КЛЮЧЕВЫЕ СЛОВА: Cryptophagidae, *Cryptophagus*, *Micrambe*, Палеарктика, систематика, описания.

ABSTRACT: Seven new species of Cryptophagidae are described from the former USSR: *Cryptophagus schaitan* sp.n., *C. cristatus* sp.n., *C. dzhungaricus* sp.n., *C. anitidus* sp.n., *C. rufomaculus* sp.n., *C. daghestanicus* sp.n., *Micrambe alatauensis* sp.n. Males of *C. cellaroides* Reitter, 1921, *C. szekessyi* Bruce, 1938, *C. laterangulus* Reitter, 1891 are described and illustrated for the first time. The species are defined according to their external features and the shape of the aedeagus. *Micrambe morula* Bruce, 1943 is found in Kuril Islands (Kunashir).

РЕЗЮМЕ: Описывается семь новых видов жуков семейства Cryptophagidae с территории бывшего СССР. *Cryptophagus schaitan* sp.n., *C. cristatus* sp.n.,

*C. dzhungaricus* sp.n., *C. anitidus* sp.n., *C. rufomaculus* sp.n., *C. daghestanicus* sp.n., *Micrambe alatauensis* sp.n. Описываются ранее неизвестные самцы *C. cellaroides* Reitter, 1921, *C. szekessyi* Bruce, 1938, *C. laterangulus* Reitter, 1891. *Micrambe morula* Bruce, 1943, описанный из Южного Китая, найден на Кунашире — новый вид для фауны России.

### Introduction

This work is chiefly based on material from Zoological Museum of Moscow State University (ZMMU). All materials, including types, have been deposited in this museum. The cryptophagid fauna of Palaearctic is currently known to contain a few hundred species, including about 150 species from the genus *Cryptophagus*. Palaearctic is the best investigated region, but at the species level the fauna of the Palaearctic realm has been studied insufficiently.

### Taxonomy

#### CRYPTOPHAGIDAE

#### *Cryptophagus* Herbst, 1792

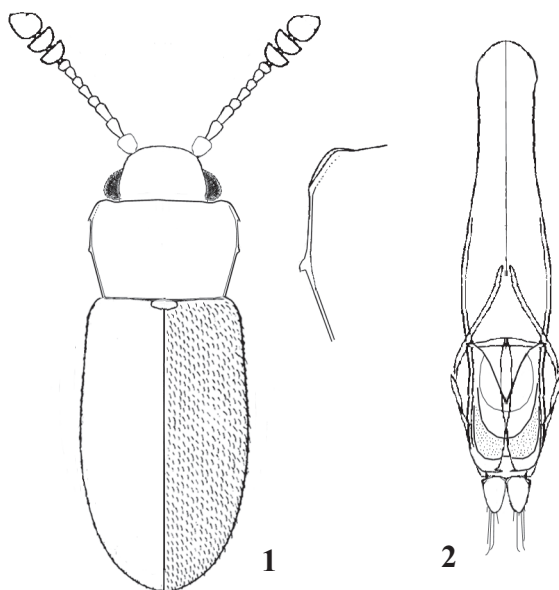
A few species of this genus are found in Caucasus, Middle Asia, and Russian Far East (Primorie).

#### *Cryptophagus schaitan* sp.n.

Fig. 1,2.

MATERIAL: Holotype (♂): Caucasus, Karachaevo-Cherkessia, near Vazhnoe, bank of Kuban River, Shaitan-Tamak, 15.08.1970, leg. S.I.Levushkin. Paratypes: the same data, 12 spec.

DESCRIPTION. Body broadly elongate (Fig. 1), slightly convex; head, prothorax, and elytra reddish brown. Elytra slightly convex, uniform, with an almost adpressed or slightly elevated pubescence. Pubescence short, shorter than length of scutellum, the hairs inclined at an angle of less than 30 degrees to surface of elytra.



Figs. 1–2. *Cryptophagus schaitan* sp.n., habitus (1), male genitalia (2).

Рис. 1–2. Общий вид (1) и гениталии самца (2) *Cryptophagus schaitan* sp.n.

Head transverse, normal in size, with prominent, hemispherical or flat, eye facet of normal size, the diameter of facet 0.0008–0.0011 mm. Head feebly and sparsely punctured, the diameter of puncture less than 0.0012 mm, punctures separated by about 1–2 diameters.

Antennae long, slender, bearing a strongly delimited club, with half-club reaching beyond base of prothorax, joints 1–3 elongated, with 1<sup>st</sup> joint narrower than 2/3 length of eye; 2<sup>nd</sup> 1.5 times as long as broad, 3<sup>rd</sup> slightly elongated, 1.5 times as long as broad, equal in length to or shorter than 2<sup>nd</sup>; 4, 5<sup>th</sup> slightly elongated, 1.5 times as long as broad, joints 6 to 8 almost equal in length, subquadrate or slightly elongated, 9<sup>th</sup> and 10<sup>th</sup> strongly transverse, 1.5 times as broad as long and more, 11<sup>th</sup> obliquely oval.

Prothorax distinctly transverse, barely (0.71–0.78) broader than long, 0.45–0.47 times longer than length of elytra, moderately strongly and moderately densely punctured, punctures separated by about 1 diameter, somewhat convex with slightly angular sides, tapering towards both base and apex or parallel toward apex, sides of prothorax forming an angle at a minute but distinct lateral tooth situated at or near midway of lateral side. Sides normally or finely margined, anterior edge straight, weakly sinuate, not concave, turning into an acutangular flat callosity, latter occupying at most one-eighth to one-seventh of side margin, sometimes with point, with a small, elongate-oval patch of bare surface, invisible from above, with an acutangular caudolateral corner or without corner. This bare surface forms an angle of 55 degrees with longitudinal axis of body. Callosity thickness equal to lateral band of pronotum, latter normal or thin, its thickness equal to one-third length of scutellum. Lateral margin between callosity and lateral tooth straight or slightly sinuated, extent between lateral tooth and posterior angle converging posteriorly, straight. Posterior angles obtuse, base round, slightly sinuate, basal groove narrow, reduced, basal pits reduced.

Legs of male 5-5-4, of female 5-5-5, slender, anterior tibia rounded at apex, posterior tarsus short, shorter than posterior tibia, equal to length of middle tarsus.

Scutellum small, transverse.

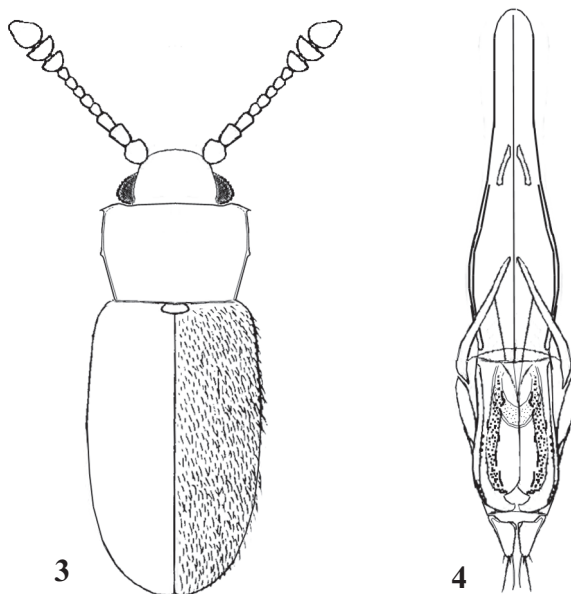
Elytra oval, humeral angles rounded, shoulders a little broader than prothorax at lateral tooth, 1.5 times and more longer than combined width, moderately convex, slightly flattened behind scutellum, with moderately strongly rounded sides and a broadly rounded apex; punctuation somewhat more strong than on prothorax, the diameter of puncture less than 0.0011 mm, separated by about 1 diameter. Shoulder tooth absent. Membranous wings absent.

Body length 1.9–2.2 mm.

Male genitalia (Fig. 2). Apodema of aedeagus almost not dilated apically, uniformly narrowing, apex rounded, widest at one-third of length. Armature of endophallus simple, slightly sinuate, equally wide throughout its length. Apex of aedeagal lobe rounded externally and straight internally. Aedeagus equally wide in one-half of length and slightly convex in apical half, long, over 1.7 times as long as broad, over 2.3 times shorter than apodema. Parameres wide triangular, less than 2 times as long as broad, less than 0.5 of length of aedeagus. Base of paramere with double-sided nodule, apex of paramere with 2–3 long setae and 1 short seta, these long setae more than 0.75 times as long as length of paramere.

DISTRIBUTION. Caucasus.

REMARKS. This species differs from nearest species with acute callosity (for example, *C. distinguendus* Sturm, 1845) in being wingless. *C. schaitan* differs from related *minor* Lyubarsky, 1997, *okalii* Reska, 1982 by male genitalia,



Figs. 3–4. *Cryptophagus cristatus* sp.n., habitus (3), male genitalia (4).

Рис. 3–4. Общий вид (3) и гениталии самца (4) *Cryptophagus cristatus* sp.n.

form of antennae, form of eyes, and disposition of callosity, the bare surface the latter forming an angle of 55 degrees with longitudinal axis of body.

#### *Cryptophagus cristatus* sp.n.

Fig. 3,4.

MATERIAL. Holotype (♂): Russia, Evreyskaya [=Jewish] Autonomous Region, Amur River, near Radde, Dichun, 16.08.1978, leg. S. Kurbatov. Paratypes: the same data, 1 spec, the same locality, 16–18.08.1978, leg. V. Belov, S. Kurbatov, 9 spec.

DESCRIPTION. Body broadly elongate (Fig. 3), slightly convex; head, prothorax, and elytra reddish brown. Elytra slightly convex, uniform, with an almost adpressed or slightly elevated pubescence. Pubescence short, shorter than length of scutellum.

Head transverse, normal in size, with strongly prominent, hemispherical eyes, the diameter of facet 0.0008–0.0011 mm. Head sparsely punctured, the diameter of puncture less than 0.0012 mm, punctures separated by less than 1 diameter.

Antennae long, slender, bearing a strongly delimited club, with half-club reaching beyond base of prothorax, joints 1–3 elongated, with 1<sup>st</sup> joint wider than 2/3 length of eye; 2<sup>nd</sup> 1.5 times as long as broad, 3<sup>rd</sup> slightly elongated, 1.5 times as long as broad, equal in length to or shorter than 2<sup>nd</sup>; 4, 5<sup>th</sup> slightly elongated, 1.5 times as long as broad or subquadrate, joints 6 to 8 almost equal in length, subquadrate or slightly elongated, 9<sup>th</sup> and 10<sup>th</sup> strongly transverse, 1.5 times as long as broad and more, 11<sup>th</sup> obliquely oval.

Prothorax distinctly transverse, barely (0.71–0.78) broader than long, 0.40–0.43 times longer than length of elytra, moderately strongly and densely punctured, punctures separated by less than 1 diameter, somewhat convex with slightly angular sides, tapering towards base and parallel toward apex, sides of prothorax forming an angle at a minute but distinct lateral tooth situated at or near midway of lateral side. Sides normally

margined, anterior edge straight, weakly sinuate, not concave, turning into an acutangular flat callosity, latter occupying at most one-eighth to one-seventh of side margin, sometimes with point, with a small, elongate-oval patch of bare surface, invisible from above, with an acutangular caudolateral corner. This bare surface forms an angle of 55 degrees with longitudinal axis of body. Callosity thickness equal to lateral band of pronotum or thinner, latter normal or thin, thickness equal to one-third length of scutellum or somewhat thicker. Lateral margin between callosity and lateral tooth straight, extent between lateral tooth and posterior angle converging posteriorly, straight or slightly convex. Posterior angles obtuse, rarely right, base round, slightly sinuate, basal groove narrow, reduced, basal pits normally developed.

Legs of male 5-5-4, of female 5-5-5, slender, anterior tibia slightly dilated at apex, posterior tarsus short, shorter than posterior tibia, equal to length of middle tarsus, 2<sup>nd</sup>, 3<sup>rd</sup> joint of tarsus elongated, more than 1.5 times as long as broad.

Scutellum small, transverse.

Elytra oval, humeral angles rounded, shoulders a little broader than prothorax at lateral tooth, 1.5–1.6 times and more longer than combined width, moderately convex, slightly flattened behind scutellum, with moderately strongly rounded sides and a broadly rounded apex; moderately strongly and densely punctured, the diameter of puncture 0.0008–0.0011 mm, separated by about 1 diameter. Shoulder tooth absent. Membranous wings present.

Length 1.9–2.2 mm.

Male genitalia (Fig. 4). Apodema of aedeagus not dilated apically, uniformly narrowing, widest at one-third of length, 3 times as long as broad. Armature of endophallus simple, equally wide throughout its length. Apex of aedeagus slightly dilated, aedeagal lobe sinuated apically. Aedeagus elongated, near 2 times as long as broad, 2 times shorter than apodema. Internal structure of endophallus acuted apically, located in basal half of aedeagus. Precucial sac bifid, base not distinct. Parameres wide triangular, less than 2 times as long as broad, less than 0.3 times as long as length of aedeagus. Base of paramere with double-sided nodule, without stalk, apex of paramere with 2–3 long setae, these long setae more than 0.75 times as long as length of paramere.

DISTRIBUTION. Russian Far East.

REMARKS. This species differs from nearest *C. callosipennis* Grouvelle, 1919 by disposition of callosity; latter character similar to *varius* Woodroffe et Combs, 1961, but different by male genitalia and other characters.

#### *Cryptophagus dzhungaricus* sp.n.

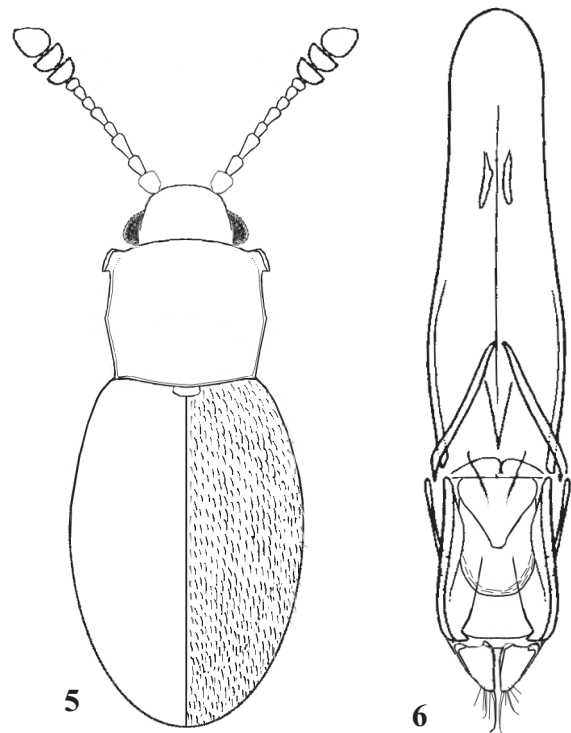
Fig. 5,6.

MATERIAL. Holotype (♂): N slope E branch Dzhungarskiy Alatau Mountain, NE slope Mt. Sadyktak, 11.08.1991, left source Mynteks river, h=2100 m, canyon, deciduous-fir forest, litter & under stones, leg. A. Tishechkin. Paratypes: the same data, 3 spec.

DESCRIPTION. Body broadly elongate (Fig. 5), slightly convex; head, prothorax, and elytra reddish brown. Elytra slightly convex, uniform, with an adpressed pubescence. Pubescence short, shorter than length of scutellum.

Head transverse, normal in size, with prominent, hemispherical eyes, little in size, reduced to a few facets. The number of eye facets in dorsal view (when counted from dorsal view at the greatest length of eye) less than 10, the diameter of facet 0.0008–0.0011 mm. Head sparsely punctured, the diameter of puncture less than 0.0012 mm, punctures separated by more than 1 diameter.

Antennae long, slender, bearing a strongly delimited club, with half-club reaching beyond base of prothorax, joints 1–3



Figs. 5–6. *Cryptophagus dzhungaricus* sp.n., habitus (5), male genitalia (6).

Рис. 5–6. Общий вид (5) и гениталии самца (6) *Cryptophagus dzhungaricus* sp.n.

elongated, with 1<sup>st</sup> joint narrower than 2/3 length of eye; 2<sup>nd</sup> 1.5 times as long as broad, 3<sup>rd</sup> slightly elongated, 1.5 times as long as broad, equal in length to 2<sup>nd</sup>; 4, 5<sup>th</sup> slightly elongated, 1.5 times as long as broad or subquadrate, joints 6 to 8 almost equal in length, subquadrate or slightly elongated, 9<sup>th</sup> and 10<sup>th</sup> strongly transverse, 1.5 times as long as broad and more, 11<sup>th</sup> obliquely oval.

Prothorax slightly transverse, 0.8 times longer than broad, 0.38–0.40 times longer than length of elytra, finely and sparsely punctured, punctures separated by 1 diameter or more, somewhat convex with slightly angular sides, tapering towards base and almost parallel toward apex, sides of prothorax forming an angle at a minute but distinct lateral tooth situated at or near midway of lateral side. Sides normally margined, anterior edge straight, weakly sinuate, not concave, turning into an obtuseangular callosity, latter occupying at most one-eighth to one-seventh of side margin, without point, with a small, elongate-oval patch of bare surface, invisible from above, with an obtuseangular caudolateral corner. This bare surface forms an angle of 35–45 degrees with longitudinal axis of body. Callosity thick, 2 times thicker than width of lateral band of pronotum or more, latter thin, thickness equal to less than one-third length of scutellum. Lateral margin between callosity and lateral tooth straight, extent between lateral tooth and posterior angle converging posteriorly, straight or slightly concave. Posterior angles right, base round, slightly sinuate, basal groove narrow, reduced, basal pits reduced.

Legs of male 5-5-4, of female 5-5-5, slender, anterior tibia slightly dilated at apex, posterior tarsus short, shorter than posterior tibia, equal to length of middle tarsus, 2<sup>nd</sup>, 3<sup>rd</sup> joint of tarsus elongated, more than 1.5 times as long as broad.



Scutellum small, transverse.

Elytra oval, humeral angles rounded, shoulders a little broader than prothorax at lateral tooth, 1.5–1.6 times and more longer than combined width, moderately convex, slightly flattened behind scutellum, with moderately strongly rounded sides and a broadly rounded apex; moderately strongly and sparsely punctured, the diameter of puncture 0.0008–0.0011 mm, separated by more than 1 diameter. Shoulder tooth absent. Membranous wings absent.

Length of body 1.6–2.2 mm.

Male genitalia (Fig. 6). Apodema of aedeagus not dilated apically, uniformly narrowing, widest at one-third of length, 3 times as long as broad. Armature of endophallus simple, equally wide throughout its length. Apex of aedeagus slightly dilated, aedeagal lobe pointed apically. Aedeagus elongated, near 1.3 times as long as broad, 2.6 times shorter than apodema. Internal structure of endophallus rounded apically, located in basal half of aedeagus. Prepuccial sac bifid, base not distinct, center structurized. Parameres wide triangular, less than 1.5 times as long as broad, less than 0.3 times as long as length of aedeagus. Base of paramere with double-sided nodule, without stalk, apex of paramere with 3–4 long setae, these long setae more than 0.75 times as long as length of paramere.

DISTRIBUTION. Asia Middle.

REMARKS. This species differs from nearest *C. quadrimaculatus* Reitter, 1877 by wings absent, flattened small eyes, slightly transverse pronotum, dilated anterior tibia, short posterior tarsi, latter shorter than posterior tibia, small callosity, large apodema and aedeagus, more transverse paramera.

*Cryptophagus anitidus* sp.n.

Fig. 7,8.

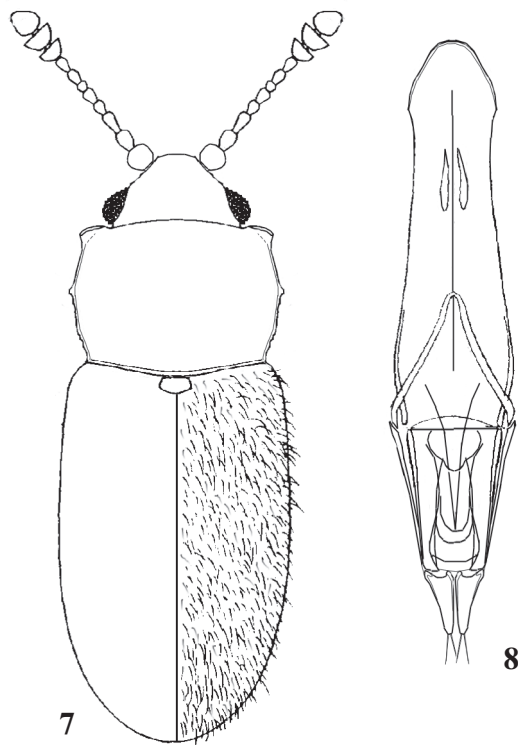
MATERIAL. Holotype (♂): China, Inner Mongolia, Uangab, leg. Zhang Shenfang. Paratypes: the same data, 16 spec.

DESCRIPTION. Body broadly elongate (Fig. 7), slightly convex; head, prothorax, and elytra reddish brown or yellowish brown. Elytra slightly convex, uniform, with an outstanding pubescence. Pubescence long, more than length of scutellum, the hairs inclined at an angle about 45–50 degrees to surface of elytra.

Head transverse, normal in size, with prominent, hemispherical eyes, normal in size, facettes normal in size, the diameter of facet 0.0008–0.0011 mm. Head densely punctured, the diameter of puncture less than 0.0012 mm, punctures separated by less than 1 diameter.

Antennae long, slender, bearing a strongly delimited club, with half-club reaching beyond base of prothorax, joints 1–3 elongated, with 1<sup>st</sup> joint wider than 2/3 length of eye; 2<sup>nd</sup> elongated, more than 1.5 times as long as broad, 3<sup>rd</sup> strongly elongated, more than 1.5 times as long as broad, distinctly longer than 2<sup>nd</sup>, 5<sup>th</sup> elongated, 1.5 times as long as broad, joints 6 to 8 almost equal in length, subquadrate or slightly elongated, 9<sup>th</sup> and 10<sup>th</sup> strongly transverse, 1.5 times as long as broad and more, 11<sup>th</sup> obliquely oval.

Prothorax slightly transverse, about 0.75 times as long as broad, 0.40–0.43 times as long as length of elytra, moderately strongly and densely punctured, punctures separated by less than 1 diameter, somewhat convex with slightly angular sides, tapering towards base and almost parallel toward apex, sides of prothorax forming an angle at a minute but distinct lateral tooth situated at or near midway of lateral side. Sides normally margined, anterior edge straight, weakly sinuate, not concave, turning into an obtuseangular callosity, latter occupying at



Figs. 7–8. *Cryptophagus anitidus* sp.n., habitus (7), male genitalia (8).

Рис. 7–8. Общий вид (7) и гениталии самца (8) *Cryptophagus anitidus* sp.n.

most one-seventh to one-sixth of side margin, without point, with a small, elongate-oval patch of bare surface, visible from above, with an obtuseangular caudolateral corner. This bare surface forms an angle of 45–50 degrees with longitudinal axis of body. Thickness of callosity normal, lateral band normal, thickness equal to about one-third length of scutellum. Lateral margin between callosity and lateral tooth straight, extent between lateral tooth and posterior angle converging posteriorly, straight or slightly convex. Posterior angles obtuse, base round, slightly sinuate, basal groove narrow, reduced, basal pits normally developed.

Legs of male 5-5-4, of female 5-5-5, stout, anterior tibia slightly dilated in apex, posterior tarsus short, shorter than posterior tibia, equal to length of middle tarsus, 2<sup>nd</sup>, 3<sup>rd</sup> joint of tarsus elongated, more than 1.5 times as long as broad.

Scutellum small, transverse.

Elytra oval, humeral angles rounded, shoulders a little broader than prothorax at lateral tooth, 1.5–1.6 times and more longer than combined width, moderately convex, slightly flattened behind scutellum, with moderately strongly rounded sides and a broadly rounded apex; moderately strongly and densely punctured, the diameter of puncture 0.0008–0.0011 mm, separated by 1 diameter. Shoulder tooth absent. Membranous wings absent.

Length of body 2.8–3.5 mm.

Male genitalia (Fig. 8). Apodema of aedeagus dilated apically, normal length, widest at one-third of length, 3 times as long as broad. Armature of endophallus simple, equally wide throughout its length. Apex of aedeagus not dilated, aedeagal lobe externally rounded and internally straight. Aedeagus elongated, near 1.5–2 times as long as broad.

Prepuccial sac united, base not distinct. Parameres slender, more than 2 times as long as broad, more than 0.5 as length of aedeagus. Base of paramere with double-sided nodule, without stalk, apex of paramere with 2–3 long setae, these long setae less than 0.75 times as long as length of paramere.

DISTRIBUTION. N. China.

REMARKS. This species differs from nearest *C. schmidti* by wings absent, from *C. nitidulus* Miller, 1858 by parallel side margin of pronotum, body longer, small callosity, strong outstanding pubescence, form of elytra, structure of aedeagus. *C. anitidus* sp.n. differs from *C. lycoperdi* (Scopoli, 1763) by wings absent, obtuse callosity, thin lateral band, anterior tibia without tooth, antennae longer, paramere slender.

*Cryptophagus rufomaculus* sp.n.

Fig. 9,10.

MATERIAL. Holotype (♂): Russia, Zeya State Reserve, 01.07.1978, leg. V. Belov, S. Kurbatov. Paratype: Russia, Primorie, Vladivostok, Okeanskaya, forest, 09.05. 1979, leg. G. Lafer, 1 spec.; Primorie, Ussuri State Reserve, 15.07.1987, leg. S. Kurbatov, 1 spec.

DESCRIPTION. Body broadly elongate (Fig. 9), slightly convex; bicolorous, head and prothorax reddish brown or yellowish brown, elytra dark brown or black, shoulders lighter. Elytra slightly convex, uniform, with an adpressed pubescence. Pubescence short, the hairs shorter than length of scutellum.

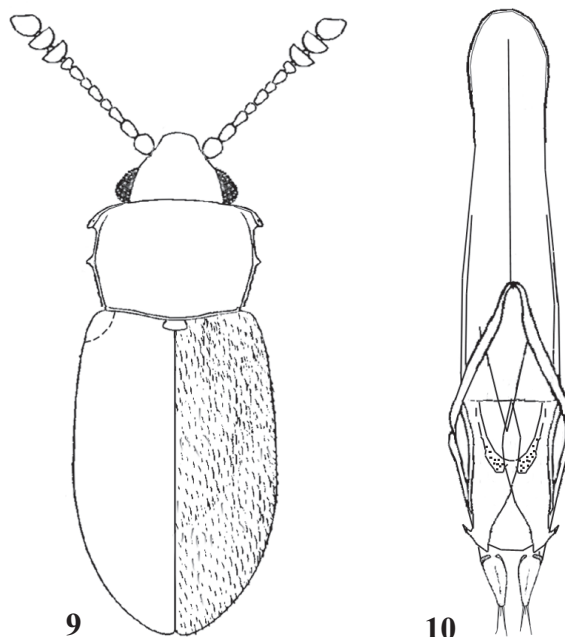
Head transverse, normal in size, with prominent, hemispherical eyes, normal in size, eye facettes fine, the diameter of facet less than 0.0008 mm. Head sparsely punctured, the diameter of puncture less than 0.001 mm, punctures separated by more than or about 1 diameter.

Antennae long, slender, bearing a strongly delimited club, with half-club reaching beyond base of prothorax, joints 1–3 elongated, with 1<sup>st</sup> joint narrower than 2/3 length of eye; 2<sup>nd</sup> elongated, 1.5 times as long as broad, 3<sup>rd</sup> slightly elongated, 1.5 times as long as broad, equal to or shorter than 2<sup>nd</sup>; 4, 5<sup>th</sup> slightly elongated, 1.5 times as long as broad or subquadrate, joints 6 to 8 almost equal in length, subquadrate, 9<sup>th</sup> and 10<sup>th</sup> strongly transverse, 1.5 times as long as broad and more, 11<sup>th</sup> obliquely oval.

Prothorax strongly transverse, about 0.67–0.75 times longer than broad, 0.34–0.40 times as long as length of elytra, moderately strongly and densely punctured, punctures separated by less than 1 diameter, somewhat convex with slightly angular sides, tapering toward base and almost parallel toward apex, sides of prothorax forming an angle at a minute but distinct lateral tooth situated near midway of lateral side. Sides normally margined, anterior edge straight, weakly sinuate, not concave, turning into an obtuseangular callosity, latter occupying at most one-fifth of side margin, without point, with a small, elongate-oval patch of bare surface, invisible from above, with an obtuseangular caudolateral corner. This bare surface forms an angle more than 55 degrees with longitudinal axis of body. Callosity thick, thickness equal to about 2–3 of breadth of lateral band, latter normal, thickness equal to about one-third of length of scutellum. Lateral margin between callosity and lateral tooth straight or slightly concave, extent between lateral tooth and posterior angle converging posteriorly, straight. Posterior angles obtuse or right, base round, slightly sinuate, basal groove and basal pits normally developed.

Legs of male 5-5-4, of female 5-5-5, slender, anterior tibia slightly dilated in apex, posterior tarsus short, shorter than posterior tibia, equal to length of middle tarsus, 2<sup>nd</sup>, 3<sup>rd</sup> joint of tarsus elongated, more than 1.5 times as long as broad.

Scutellum small, transverse.



Figs. 9–10. *Cryptophagus rufomaculus* sp.n., habitus (9), male genitalia (10).

Рис. 9–10. Общий вид (9) и гениталии самца (10) *Cryptophagus rufomaculus* sp.n.

Elytra oval, humeral angles rounded, shoulders a little broader than prothorax at lateral tooth, 1.5–1.6 times longer than combined width, moderately convex, slightly flattened behind scutellum, with moderately strongly rounded sides and a broadly rounded apex; moderately strongly and moderately densely punctured, the diameter of puncture 0.0008–0.0011 mm, separated by 1 diameter. Shoulder tooth absent. Membranous wings present.

Length of body 2.0–2.3 mm.

Male genitalia (Fig. 10). Apodema of aedeagus not dilated apically, uniformly narrowing, normal length, widest at base, 3 times as long as broad. Apex of aedeagus with hooked tooth. Aedeagus elongated, more than 2 times as long as broad, 0.5–0.6 times longer than apodema. Internal structure of endophallus pointed apically, located in basal half of aedeagus. Prepuccial sac bifid, base not distinct. Parameres slender, about 2 times as long as broad, more than 0.3 times as long as length of aedeagus. Base of paramere with double-sided nodule, without stalk, apex of paramere with 2 long setae, these long setae less 0.75 times as long as length of paramere.

DISTRIBUTION. Russian Far East.

REMARKS. This species is similar to *C. vagus* Bruce, 1938, *C. reichardt* Bruce, 1936, *C. cristatus* by situation of bare surface of callosity, which forms with longitudinal axis of body an angle of more than 55 degrees. *C. rufomaculus* sp.n. differs from these nearest species by thick callosity, form of pronotal side, and being bicolorous.

*Cryptophagus daghestanicus* sp.n.

Fig. 11, 12.

MATERIAL. Holotype (♂): Russia, Daghestan, cave near Karabudachkent, 1998, leg. M. Ilyin. Paratypes: the same data, 6 spec.

**DESCRIPTION.** Body broadly elongate (Fig. 11), slightly convex; unicolorous, head, prothorax and elytra reddish brown. Elytra slightly convex, uniform, with an adpressed pubescence. Pubescence short, the hairs shorter than length of scutellum.

Head transverse, normal in size, with flat, small eyes, number of eye facets reduced to 10 (in dorsal view at the greatest length of the eye), the diameter of facet about 0.0008–0.0011 mm. Head densely punctured, the diameter of puncture less than 0.001 mm, punctures separated by less than or about 1 diameter.

Antennae long, slender, bearing a strongly delimited club, with half-club reaching beyond base of prothorax, joints 1–3 elongated, with 1<sup>st</sup> joint narrower than 2/3 length of eye; 2<sup>nd</sup> elongated, 1.5 times as long as broad, 3<sup>rd</sup> elongated, more than 1.5 times as long as broad, distinctly longer than 2<sup>nd</sup>; 4, 5<sup>th</sup> slightly elongated, less than 1.5 times as long as broad, joints 6 to 8 slightly elongated or subquadrate, 9<sup>th</sup> and 10<sup>th</sup> strongly transverse, in 1.5 times as broad as long and more, 11<sup>th</sup> obliquely oval.

Prothorax normally transverse, less than 0.8 times longer than broad, 0.38–0.40 times longer than length of elytra, moderately strongly and densely punctured, punctures separated by less than or about 1 diameter, somewhat convex with slightly angular or S-shaped sinuated sides, tapering towards base and apex, sides of prothorax forming an angle at a minute or reduced lateral tooth situated near midway of lateral side. Sides normally margined, anterior edge straight, weakly sinuate, not concave, turning into an obtuseangular callosity, latter occupying at most one-fourth of side margin, without point, with a small, elongate-oval patch of bare surface, visible from above, with an acutangular caudolateral corner. This bare surface forms an angle more than 35–45 degrees with longitudinal axis of body. Callosity thick, thickness equal to about 1.5–2 breadth of lateral band, latter normal, thickness equal to about one-third length of scutellum. Lateral margin between callosity and lateral tooth straight or slightly concave, extent between lateral tooth and posterior angle converging posteriorly, S-shaped sinuated or straight. Posterior angles sharp, base round, slightly sinuate, basal groove and basal pits reduced.

Legs of male 5-5-4, of female 5-5-5, slender, anterior tibia slightly dilated in apex, posterior tarsus short, shorter than posterior tibia, equal to length of middle tarsus, 2<sup>nd</sup>, 3<sup>rd</sup> joint of tarsus elongated, more than 1.5 times as long as broad.

Scutellum small, transverse.

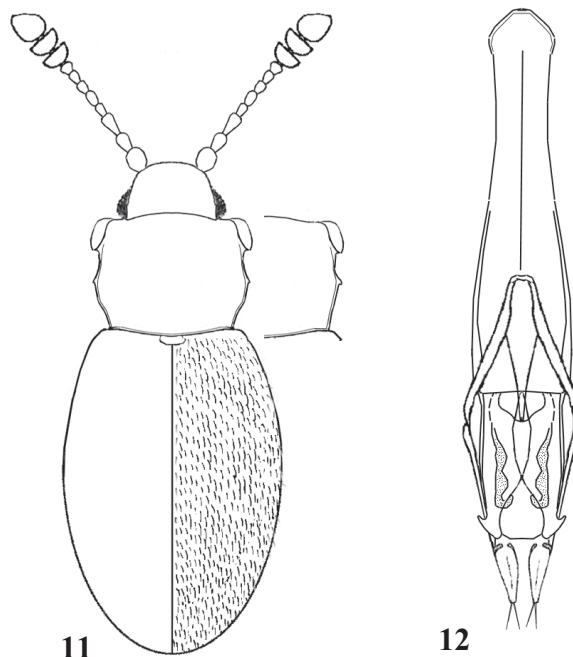
Elytra oval, humeral angles rounded, shoulders a little broader than prothorax at lateral tooth, 1.5–1.6 times longer than combined width, moderately convex, slightly flattened behind scutellum, with moderately strongly rounded sides and a broadly rounded apex; moderately strongly and sparsely punctured, the diameter of puncture 0.0008–0.0011 mm, separated by more than 1 diameter. Shoulders tooth absent. Membranous wings absent.

Length of body 2.2–2.7 mm.

Male genitalia (Fig. 12). Apodema of aedeagus dilated apically, normal length, widest at one-third of length, 3 times as long as broad. Apex of aedeagus with hooked tooth. Aedeagus elongated, normal length, more than 1.5 times as long as broad, 3 times shorter than apodema. Internal structure of endophallus rounded apically, located in basal half of aedeagus. Prepuccial sac united, base not distinct. Parameres slender, about 2 times as long as broad, more than 0.5 as long as length of aedeagus. Base of paramere with double-sided nodule, without stalk, apex of paramere with 2 long setae, these long setae less than 0.75 times as long as length of paramere.

**DISTRIBUTION.** Caucasus.

**REMARKS.** This species differs from nearest *C. altaicus* Bruce, 1938, *C. turcicus* Otero et Gillerfors, 1993 by flattened



Figs. 11–12. *Cryptophagus daghestanicus* sp.n., habitus (11), male genitalia (12).

Рис. 11–12. Общий вид (11) и гениталии самца (12) *Cryptophagus daghestanicus* sp.n.

small eyes, structure of male genitalia (aedeagal hook); from *C. altaicus* by callosity strongly turning into dorsal side.

#### *Cryptophagus cellaroides* Reitter, 1921

Fig. 13, 14.

**MATERIAL:** Caucasus: Araxesthal, leg. Leder, Reitter (type-locality), 1 spec.; Russia: Krasnodar Area, Caucasian State Reserve, 14.07.1976, leg. V. Belov, 2 spec.; N. Ossetia, near Mozdok, Novoosetinovka, forest belt, 06.08.1987, leg. S. Alexeev, 1 spec.; N. Ossetia, near Alagir, 12.08.1979, leg. S. Kurbatov, 1 spec.; N. Ossetia, Sunzhensky Mt. Ridge, between Kardzhin and Elchotovo, h=600 m, oak forest, 24.08.1985, leg. S. Alexeev, 1 spec.; N. Ossetia, near Mozdok, Kievskaya, right bank of Terek River, steppe, 03.12.1987, leg. S. Alexeev, 2 spec.; N. Ossetia, Bokovoy Mountain, basin of Ardon river, Kasarskoe canyon, Uilza tract, meadow, h=500 m, 15.08.1985, leg. S. Alexeev, 1 spec. Iran: Tegeran, 17.05.1938, leg. Jenjourist, 1 spec.

Male genitalia: Aedeagus has hitherto not been described, as in Fig. 14.

**DISTRIBUTION:** Caucasus, Central Asia.

#### *Cryptophagus szekessyi* Bruce, 1938

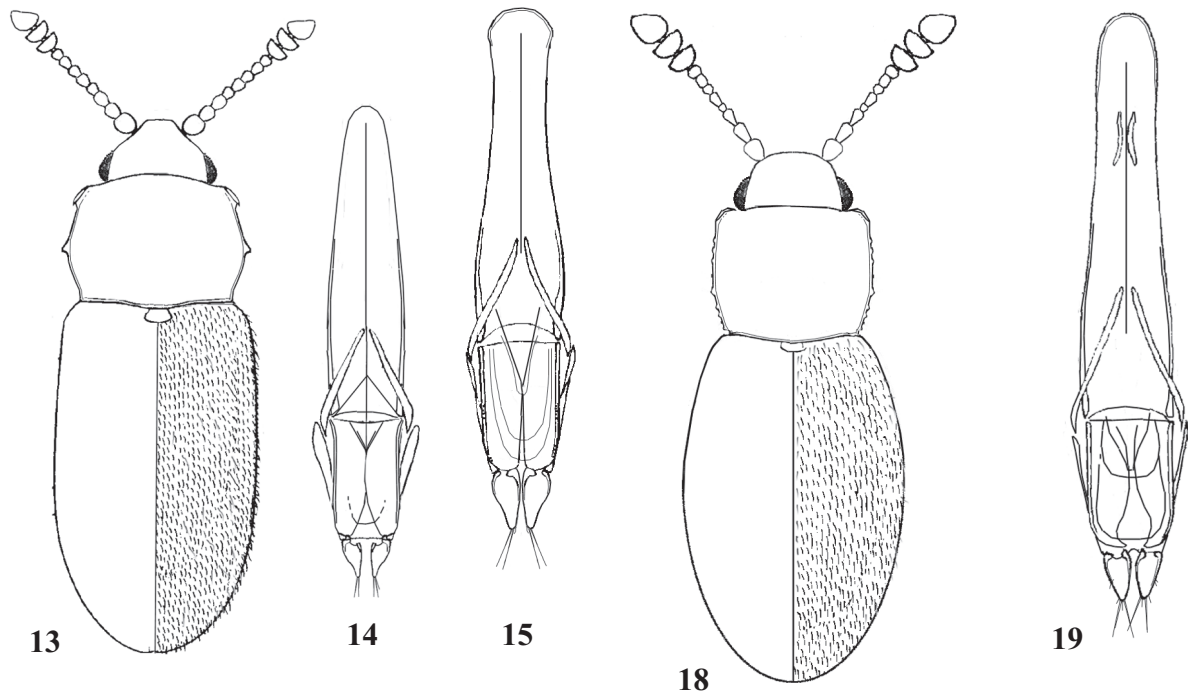
Fig. 15.

**MATERIAL:** Caucasus: Armenia, leg. Leder, Reitter (type-locality), 1 spec. Middle Asia: Kirgystan, Thalass Thal, 11.1907, leg. E. Fisher, 1 spec.; Turkmenistan, Kushtangtau, 30 km NE of Gaurdak, 04.04. 1983, leg. Nasreddinov, 1 spec., Turkmenistan, Balchan, Karagidzhak Canyon, litter&under stone, 25.04.1978, leg. V. Belov, 1 spec.

Male genitalia: Aedeagus has hitherto not been described, as in Fig. 15.

**DISTRIBUTION:** Caucasus, Asia Minor: Turkey [Gillerfors, Otero, 1993], Middle Asia (Turkmenistan, Kirgystan).





Figs. 13–15. *Cryptophagus cellaroides* Reitter, 1921 (13–14), *C. szekessyi* Bruce, 1938 (15), habitus (13) and male genitalia (14–15).

Рис. 13–15. *Cryptophagus cellaroides* Reitter, 1921 (13–14), *C. szekessyi* Bruce, 1938 (15), общий вид (13) и гениталии самца (14–15).

Figs. 18–19. *Micrambe alatauensis* sp.n., habitus (18), male genitalia (19).

Рис. 18–19. Общий вид (18) и гениталии самца (19) *Micrambe alatauensis* sp.n.

*Cryptophagus laterangulus* Reitter, 1891

Fig. 16, 17.

MATERIAL: Asia Middle: Turkmenistan, Syr-Darja, leg. Leder, Reitter (type-locality), 2 spec.; Turkmenistan, Syr-Darja, leg. Willberg, 1 spec.; Amu-Darya River, Nargyz Island, 100 km downstream flow from Chardjou, 04.1983, leg. S. Alexeev, 1 spec. Asia Central: Iraq, Baghdad, netting in grasses, 06.11.1977, leg. Topal, Zilahy, 1 spec. Caucasus: Russia, N Ossetia, Mozdok, 21.06.1987, leg. S. Alexeev, 1 spec.

VARIABILITY. Depicted four specimens from: Turkmenistan (E. Reitter determined); Turkmenistan: Amu-Darya; Iraq; N. Ossetia (Fig. 16).

Male genitalia: Aedeagus has hitherto not been described, as in Fig. 17.

DISTRIBUTION: Caucasus, Middle and Central Asia.

*Micrambe* Thomson, 1863

*Micrambe alatauensis* sp.n.

Fig. 18, 19.

MATERIAL: Holotype (♂): NE Dzhungarskiy Alatau, W Tastau Mountain, Mt. Zhumak, left bank of Kokmoyn River, 15 km from source, h=1800 m, fir-wood, litter&under stone, 06.08.1991, leg. A. Tishechkin. Paratypes: the same data, 2 spec.

DESCRIPTION. Body broadly elongate (Fig. 18), slightly convex; unicolorous, head, prothorax and elytra reddish brown. Elytra slightly convex, uniform, with an adpressed pubescence. Pubescence short, the hairs less than length of scutellum.

Head transverse, normal in size, with flat eyes, number of eye facets reduced to 10 (in dorsal view at the greatest length of the eye), the diameter of facet about 0.0008–0.0011 mm.

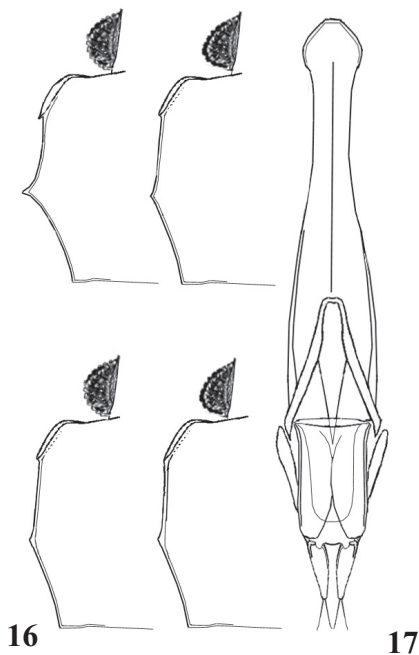


Fig. 16, 17. *Cryptophagus laterangulus* Reitter, 1891, lateral margin of prothorax (16), male genitalia (17).

Рис. 16, 17. Боковой край переднеспинки (16) и гениталии самца (17) *Cryptophagus laterangulus* Reitter, 1891.

Head densely punctured, the diameter of puncture less than 0.001 mm, punctures separated by less than 1 diameter.

Antennae long, slender, bearing a strongly delimited club, with half-club reaching beyond base of prothorax, joints 1–3 elongated, with 1<sup>st</sup> joint narrower than 2/3 length of eye; 2<sup>nd</sup> elongated, more than 1.5 times as long as broad, 3<sup>rd</sup> strongly elongated, more than 1.5 times as long as broad, equal to 2<sup>nd</sup>; 5<sup>th</sup> subquadrate or slightly elongated, 1.5 times as long as broad, joints 6 to 8 slightly elongated or subquadrate, 9<sup>th</sup> and 10<sup>th</sup> strongly transverse, 1.5 times as long as broad and more, 11<sup>th</sup> obliquely oval.

Prothorax normally transverse, about 0.78 times as long as broad breadth, 0.42–0.45 times as long as length of elytra, finely and moderately densely punctured, punctures separated by about 1 diameter, somewhat convex with slightly rounded sides, tapering towards base and apex, sides of prothorax forming numerous (about 8–10) small teeth. Sides normally margined, anterior edge straight, weakly sinuate, not concave, turning into an obtuseangular callosity, latter occupying at most one-eighth to one-seventh of side margin, without point, with a small, elongate-oval patch of bare surface, invisible from above, with an obtuseangular caudolateral corner. This bare surface forms an angle of more than 35–45 degrees with longitudinal axis of body. Callosity flat, thickness equal to about 0.5–1 breadth of lateral band, latter normal, thickness equal to about one-third length of scutellum. Lateral margin between callosity and lateral tooth and between lateral tooth and posterior angle slightly convex. Posterior angles obtuse, base round, slightly sinuate, basal groove and basal pits reduced.

Legs of male 5-5-4, of female 5-5-5, slender, anterior tibia rounded at apex, posterior tarsus equal to posterior tibia, equal to length of middle tarsus, 2<sup>nd</sup>, 3<sup>rd</sup> joint of tarsus elongated, more than 1.5 times as long as broad.

Scutellum small, transverse.

Elytra oval, humeral angles rounded, shoulders a little broader than prothorax at lateral tooth, 1.5–1.6 times longer than combined width, moderately convex, slightly flattened behind scutellum, with moderately strongly rounded sides and a broadly rounded apex; moderately strongly and sparsely punctured, the diameter of puncture 0.0008–0.0011 mm, separated by more than 1 diameter. Shoulder tooth absent. Membranous wings absent.

Length of body 1.7–1.8 mm

Male genitalia (Fig. 19). Apodema of aedeagus not dilated apically, normal in length, widest at one-third of length, 3 times as long as broad. Apex of aedeagus not dilated, aedeagal lobe pointed apically. Aedeagus elongated, near 1.5 times as long as broad. Prepuccial sac united, base not distinct. Parameres wide triangular, less than 2 times as long as broad, less than 0.5 as long as length of aedeagus. Base of paramere with double-sided nodule, apex of paramere with 2–3 long setae and 1 short seta, these long setae less than 0.75 times as long as length of paramere.

DISTRIBUTION. Middle Asia.

REMARKS. This species differs from other palaeartic species by membranous wings absent; from *M. vini* (Panzer, 1797), *M. villosa* (Heer, 1841), *M. lindbergorum* Bruce, 1934, *M. perrisi* (Ch. Brisout, 1882), *M. silvanoides* (Reitter, 1878) by simple (not double) pubescence; from *M. bimaculata* (Panzer, 1798), *M. duclouxi* (Grouvelle, 1916), *M. micramboides* Reitter, 1874, *M. pumilia* (Reitter, 1874) by being unicolorous. *M. alatauensis* sp.n. differs from *M. umbripennis* (Reitter, 1887), *M. longitarsis* J. Sahlberg, 1900 by structure of aedeagus (without hook of aedeagal lobe), from *M. loebli* Otero, 1997, *M. morula* (Bruce, 1843), *M. abietis* (Paykull, 1798) by short callosity (latter occupying less than one-fourth of side margin); from *M. micramboides*, *M. sculpturata* (Bruce, 1941) by fine puncturation. *M. alatauensis*

sp.n. is similar to nearest *M. translata* (Grouvelle, 1916), *M. nigricollis* Reitter, 1876 by short callosity, slightly transverse pronotum, being unicolorous, adpressed pubescence, aedeagus without hook; the new species differs from these nearest species by the following key:

1. Length of body more than 2.3 mm. All joints of antennae elongate, 3<sup>rd</sup> longer than or equal to 2<sup>nd</sup>, 9<sup>th</sup> slightly transverse, conical. Prothorax slightly transverse, lateral margin from anterior to posterior angles straight. Callosity thick, thickness equal to about 1.5–2 breadths of lateral band. Lateral teeth often reduced, rarely very small, frequent. Parameres slender, more than 2 times as long as broad, aedeagus dilated apically. Membranous wings present. Length of body 2.3–2.5 mm. Caucasus, Asia Middle, Mongolia ..... *translata* Grouv.
- Length of body usually less than 2.3 mm. 6<sup>th</sup>–8<sup>th</sup> joint of antennae subquadrate, 9<sup>th</sup> strongly transverse, trapezoid. Prothorax strongly transverse, with slightly angular sides, tapering towards base and apex. Callosity flat, thickness equal to about 1 breadth of lateral band. Parameres wide triangular, less than 2 times as long as broad, aedeagus not dilated apically ..... 2
2. Membranous wings present. Elytra with shoulder knob, broadest at one-third of length. Anterior tibia dilated apically. Side margin rounded, tapering towards base and almost parallel toward apex. Lateral teeth reduced (lateral margin smooth) or very small, frequent, numerous (18–20), distance between these teeth equal to breadth of tooth base. Eyes normally prominent. 3<sup>rd</sup> joint of antennae longer than or equal to 2<sup>nd</sup>; 5<sup>th</sup> always elongated. Apex of paramere with 4 long setae. Apodema of aedeagus dilated apically. Length of body 1.7–2.4 mm. Caucasus, Asia Middle, Mongolia, N. China ..... *nigricollis* Rtt.
- Membranous wings absent. Elytra without shoulder knob, oval, broadest at one-half of length. Anterior tibia slender, not dilated apically. Side margin rounded, tapering towards base and apex. Lateral teeth small but distinctly visible, sparse, few in number (8–10), distance between teeth equal to 2–3 breadths of tooth base. Eyes flat, small, number of eye facets reduced to 10 (in dorsal view at the greatest length of the eye). 3<sup>rd</sup> joint of antennae equal than 2<sup>nd</sup>; 5<sup>th</sup> elongated or subquadrate. Apex of paramere with 2 long setae. Apodema of aedeagus not dilated apically. Length of body 1.7–1.8 mm. Asia Middle ..... *alatauensis* sp.n.

#### *Micrambe morula* Bruce, 1943

MATERIAL: Russia: Kunasir, near Mendeleev, 6–8.1985, leg. N. Nikitsky, 6 spec.; Kunasir, near Yuzhno-Kurilsk, 05.05.1989, leg. A. Basarukin, 1 spec.; Kunasir, near Mendeleev, 17.05.1989, leg. A. Basarukin, 1 spec.; Kunasir, near Kislyi stream, 12.05.1989, leg. A. Basarukin, 1 spec.; Sakhalin, Shikotan, Krabozavodskoe, 14.09.1997, leg. Yu. Marusik, 1 spec.; Anivsky Area, near Ulyanovskoe, Krimop Peninsula, 1–5.11.1989, leg. A. Basarukin, 1 spec.; Primorie, Shkotovsky Area, Anikina Pad, Peyshula, 21–22.06.1989, leg. N. Nikitsky, 1 spec.

New species for Russian fauna.

DISTRIBUTION. Russian Far East, China: Fukui (type locality).

#### References

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