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A new soft-winged flower beetle (Coleoptera, Malachiidae) from Siberian Altai, with notes on Siberian *Ebaeus* species

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Abstract

A new species, *Ebaeus ukokus* **sp.n.**, from Russian Altai (Kosh-Agach) is described. Diagnosis, figures of male genitalia and urites, and a distribution map are provided. *E. patricius* Abeille de Perrin, 1900 is firstly recorded from East Siberia, and given as senior synonym of *E. mandchuricus* Pic, 1911, **syn.n.** A key is also presented for the Siberian *Ebaeus* species.

Key words: Coleoptera, Malachiidae, *Ebaeus*, Siberia.

Резюме

В работе описывается новый вид: *Ebaeus ukokus* sp.n. (Горный Алтай: Кош-Агачский район), близкий к виду *E. limbellus* Peyr., отличающийся от него тёмной окраской верха с узкой боковой светлой полоской, формой придатка самца (Figs. 1B,C), апикального стернита (Fig. 1E) и эдеагуса (Fig. 1G). Даны рисунки гениталий и придатков надкрылий самца нового вида, показан локалитет на карте. *E. patricius* Abeille de Perrin, 1900 впервые приводится для фауны Восточной Сибири и представлен в качестве старшего синонима *E. mandchuricus* Pic, 1911, syn.n. Приведена определительная таблица видов рода *Ebaeus* фауны Сибири.

Ключевые слова: Coleoptera, Malachiidae, *Ebaeus*, Сибирь.

Introduction

The genus *Ebaeus* is represented in Siberia by 10 species, most of which have more or less colored bodies, but a few species are almost completely dark. A detailed review of Siberian species of *Ebaeus* is provided by Tshernyshev (2003).

A new dark *Ebaeus* species has been found amongst the beetles collected by A. and R. Dudko in 1985 and A.V. Barkalov in 2005 from the high altitude mountains of Altai (Russia). It differs in the male by the shape of the external appendage with carina at the middle and the structure of the genitalia; these and other characters can be used to separate it from the other Siberian *Ebaeus* species in the following key.

Key to species

1. Pronotum monochromously dark 2
– Pronotum yellow or orange, sometimes with dark spot in the middle expanding all over the pronotum except at the margins 7
2. Coloration of elytra in both sexes non-metallic and completely dark, lacking a yellow stripe or spot at the apices. Elytral appendages of male black, triangular in shape, with rounded angles, and upper side of the appendage shorter than the lower ..... ***erythropus*** PEYRON, 1877
– Apices of elytra in both sexes light or with narrow light margins 3
3. Dark coloration of elytra with metallic lustre, apices of elytra in females with narrow yellow margin, and with yellow outer appendages in males. The shape of the outer appendage triangular with rounded angles, the inner one oval and membranous ..... ***transbaikalicus*** PIC, 1912
– elytra with non-metallic coloration and distinctly light apices, sometimes light coloration is expanded over the middle of elytra, outer appendages of male elytra light 4
– Elytra with light lateral borders 5
– Elytra with dark laterals 6
5. Elytra usually light with dark triangular spot at the base in male, and with additional two spots below the middle in female. Dark coloration of elytra in melanistic forms is narrowly expanded over the middle to the apical fours. External appendage of male as rounded plate ..... ***limbellus*** PEYRON, 1877
– Elytra almost completely dark, except for orange-red small apical part and lateral margins. External appendages of male narrow, slightly curved, with small carina at the middle ..... ***Ukokus*** TSHERNYSHEV, sp.n.
6. Only the basal half of antennae yellow colored, body wide, black, elytra black except for yellow 1/6 of apical part. External appendage of male yellow, massive, triangular-shaped from above, and bracket-shaped in profile ..... ***pedicularis*** (FABRICIUS, 1777)

– Antennae completely yellow, body narrow, black, elytra black with yellow 1/5 apical part; external appendage of male yellow, thin, round, lamelliform, with three round impressions in the middle .... ***rufipes*** MORAWITZ, 1861

7. Pronotum orange-yellow, lacking black spots. Elytra with black spots at the base and in the middle; hind femora almost completely yellow (when black spots at the base and the middle merged, hind femora black - see couplet 11) 8
– Pronotum yellow or orange-yellow with black spot at the middle; sometimes dark coloration expanded all over the disk leaving only yellow margins 9
8. Dark triangular coloration expanded to the middle of the elytra, in females two dark spots additionally being below; in male appendages of elytra yellow, external triangular-shaped, impressed laterally and in the middle, with vallate depression above; hind legs yellow with specific dark spot at the apices of each femora ..... ***patricius*** ABEILLE DE PERRIN, 1900 (= *E. mandchuricus* PIC, 1911)
– Dark coloration of elytra consists of narrow transverse triangle at the base and two different round spots behind the middle of each elytra; external appendages of elytra in male yellow, rounded and bracket-shaped, strongly impressed from external side and slightly from above and below ..... ***kaszabi*** EVERS, 1968
9. Elytra black with narrow yellow stripes on sides from humeri to apices; external appendage of elytra of male black, angle-shaped and rounded at apex, with impression outside near outer corner .... ***modestus*** ABEILLE DE PERRIN, 1885
– Elytra contrasting, in melanistic forms laterals and apices always light, external appendages of male light 10
10. Dark coloration of elytra consists of triangular spot at the base and round ones behind the middle (the latter in males very often reduced); legs yellow with slightly darkened bases of femora; external appendages of male rectangular, narrow, with semi-transparent round impressions at the proximal part .... ***trimaculatus*** GEBLER, 1830
– Dark coloration of elytra is combined with merged basal and medial spots in longitudinal dark stripes. 11
11. Antennae wide, short, slightly lengthened over the elytral base, dark, but the basal segments yellowish; pronotum orange, with or without oval dark spot; legs strong, hind femora black; in elytra basal and medial dark spots slightly merged, suture yellow. External appendage of male acute-shaped, triangularly impressed at the outer side and with oval protuberance in the centre, orange-yellow in color, sometimes its inner part darkened .... ***cordiger*** EVERS, 1968
– Antenna thin and long, reaching middle of elytra, completely yellow; pronotum almost completely dark with only narrow yellow margins; legs thin, yellow, except for dark laterals of hind femora; basal and medial dark spots merged in elytra, suture darkened. Male unknown ..... ***mongolicus*** EVERS, 1968

Taxonomy

For the description and diagnosis of the species, some special male characters (genitalia and urites) have been studied. Once the genitalia had been studied, they were attached onto label paper using water soluble glue and pinned under the specimen. All specimens are kept in the Siberian Zoological Museum, Institute of Animal Systematics and Ecology, Siberian Branch of the Russian Academy of Sciences, Novosibirsk.

E. patricius ABEILLE DE PERRIN, 1900

E. mandchuricus PIC, 1911, syn.n.

MATERIAL EXAMINED: 2 males - East Siberia, Transbaikalia, Uda River, near Amey village, 21.6.1969, A. Rasnitsyn.

NOTES. This is a first record of this species outside Mongolia. *E. mandchuricus* PIC, 1911 was described from the unique female with specific coloration of hind legs, analogous to black spots in femora of *E. patricius*. Two males newly recorded for Transbaikalia are the proper *E. patricius*, and their locality is not far from "Mandchourie" in China where *E. mandchuricus* was described (PIC, 1911). The type specimen of *E. patricius* is available in Pic's collection, but strongly specific and constant colour pattern of *E. patricius* and *E. mandchuricus* sufficiently described in their original descriptions and allow to consider *E. mandchuricus* as a synonym of *E. patricius*.

Ebaeus ukokus new species
(Figs. 1A-H)

TYPE MATERIAL: Holotype, male, Russia, Gornyi Altai, Koch-Agachskiy district, Zerlyukol'-Nur Lake, 2300-2400 m a.s.l., 23.6.2005, leg. A. Barkalov; allotype, female, *idem*, in copula with male, holotype; paratypes: 1 male, 1 female - Russia, Gornyi Altai, Kosh-Agachskiy district, E part of South-Chuiskiy Mt. Range, 40 km SSW of Kosh-Agach village, left inflow of Tarkhata river, 2800 m a.s.l., tundra, 4.7.1996, leg. A. et R. Dudko; 1 female - 50 km E of Kosh-Agach, 4 km NW of Sailyugem Mt., 2300-2400 m a.s.l., alpine meadow, 4.7.1996, leg. A. et R. Dudko; 4 males - Russia, Gornyi Altai, Kosh-Agachskiy district, Ukok Plateau, Akkol' River, right influence of Ak-Alakha River, 2100-2200 m a.s.l., on tent, 12-14.07.2006, leg. R. Dudko; 3 females - Ukok Plateau, 8 km NE Maitobe Mountain, 2450-2550 m a.s.l., 6.7.2006, leg. V. Sorokina, T. Novgorodova.

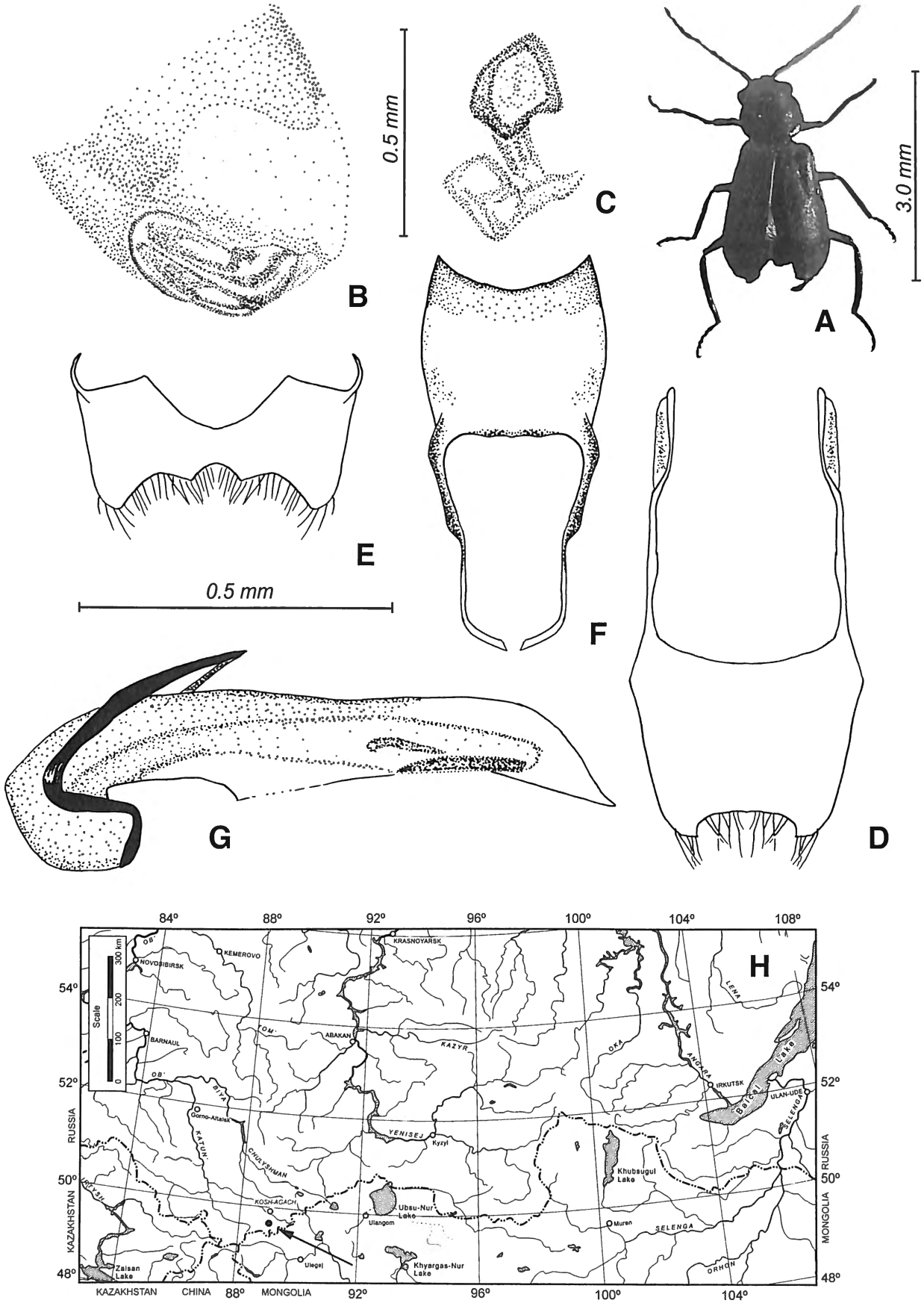

Fig. 1 — *Ebaeus ukokus* **sp.n.**, male: **A.** habitus. **B.** apex of right elytra with external appendage. **C.** inner appendage. **D.** apical tergite. **E.** apical sternite. **F.** tegmen. **G.** aedeagus, laterally. **H.** distribution map.

Голотип, самец, Россия, Горный Алтай, Кош-Агачский район, озеро Зерлюколь-Нур, 2300-2400 м, 49°6′ с.ш. 88°2′ в.д., 23.6.2005, на камнях, колл. А. Баркалов (СЗМН); аллотип, самка, там же, in copula с голотипом (СЗМН); паратипы: 1 самец, 1 самка - Горный Алтай, В часть Южно-Чуйского хребта, 40 км ЮЮЗ Кош-Агача, лев. приток р. Тархата, 2800 м, тундра, 4.7.1996, колл. А. и Р. Дудко (СЗМН); 1 самка - 50 км В Кош-Агача, 4 км СЗ горы Сайлюгем, 2300-2400 м, альпийский луг, 4.7.1996, колл. А. и Р. Дудко (СЗМН); 4 самца - Горный Алтай, Кош-Агачский район, плато Укок, река Акколь, правый приток реки Ак-Алаха, 2100-2200 м, на палатке, 12-14.07.2006, колл. Р. Дудко (СЗМН); 3 самки - плато Укок, 8 км СВ горы Майтобе, 2450-2550 м, 6.7.2006, колл. В. Сорокина, Т. Новгородова (СЗМН).

DIAGNOSIS: Of all the Siberian species of *Ebaeus*, this newly described one is similar to *E. limbellus*, but can be easily distinguished by the following characters: the shape of outer appendages in the male elytra, the shape of aedeagus and urites, and melanistic coloration of covers and hind legs.

DESCRIPTION: *Male holotype:* Head black with the clypeus, base of antenna lighter. 1st, 2nd and 3rd antennal joints light-brown, the remaining ones dark. Pronotum black, elytra black with yellow-orange apices and sides, ventral side black, legs yellow except for black hind tibiae and base and apex of hind femora. Surface with dense short semi-erect dark pubescence. Vesicles yellow, trochanters and thorax mesepimers black.

Head narrower than the pronotum, front flat, genae short and straight, clypeus narrow, straight and transverse, labrum short, transverse, bearing sparse light hairs; palpi elongate, 1st and 2nd segments transversal, less than half the length of the 3rd; apical joint thin, cylindrical, sinuate at the apex; surface of head shining, punctures sparse, microsculpture visible, pubescent with sparse adpressed brownish hairs.

Antennae reaching the anterior half of the elytra, the 1st joint larger, oblongo-clavate, the 2nd joint the shortest, less than half of the length of the previous joint, intermediate segments 4-6, triangular, remaining ones cylindrical; evenly covered with brownish semi-erect pubescence.

Pronotum almost equilateral, 1.7 times wider than long, anterior margin slightly pronounced, posterior straight; all angles rounded; surface densely punctured, with microsculpture.

Scutellum transverse, short, rectangular, almost hidden by the pronotum.

Elytra parallel, slightly widening posteriorly, at the base not wider than the pronotum; shoulders distinct, not protrudent; apices evenly rounded, each one possessing a pair of appendages; surface roughened, densely punctured, with distinct and dense microsculpture. Inner appendage (Fig. 1C) black-brown, pentagon-shaped, thin; external (Fig. 1B) yellow, elongate and oval, slightly curved and with medial carina.

Legs of moderate size, posterior femora not reaching the elytral apices; tibiae thin, rounded, straight; all tarsi 5-segmented, narrow; claw segment the longest, somewhat longer than 1, 2 and 3 taken together for the anterior and intermediate legs, and of the same length as 1 and 2 taken together for posterior legs; 2nd joint of anterior tarsi with a small comb above; claws narrow, small.

Ventral surface of body sparsely punctured, shining, with sparse rufus adpressed pubescence; apical sternite transverse, strongly emarginate in the middle (Fig. 1E); apical tergite strongly elongate, narrowed to the apex and emarginate at the middle (Fig. 1D); tegmen wide with thin elongate processes (Fig. 1F); aedeagus elongate, simple, with two curved spines internal near the tip (Fig. 1G).
Length 3.0 mm, width (at elytral base) 1.0 mm.
Female: Similar to the male, except as follows: elytra more strongly widened posteriorly, appendages lacking; surface and legs darker, light margin on sides of elytra very fine; antennae shorter, segments narrower; tarsal comb on anterior legs absent, apical segments of abdomen simple.
Length 3.1 mm, width (at elytral base) 1.1 mm.

ETYMOLOGY: The name of the species, "*ukokus*" is derived from the Ukok Plateau of Altai mountains.

DISTRIBUTION: High altitudes of Altai near Kosh-Agach village.

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