

A new species of *Eulichas* (Coleoptera: Eulichadidae) from Laos

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Abstract. *Eulichas pantherina* sp. nov. from Laos is described, illustrated and compared with related species. The new species belongs to the *E. pacholatkoii* species complex of the *E. funebris* species group, and can be distinguished by the different shape of male genitalia. *Eulichas pantherina* sp. nov. has a lanceolate median lobe and parameres with a very small subapical hook moved to the mid-length of the paramere. New distributional data are published for the following species: *Eulichas haucki* Hájek, 2007, and *E. pacholatkoii* Jäch, 1995, from Laos, and *E. kubani* Hájek, 2007, from Thailand.

Keywords. Coleoptera, Eulichadidae, *Eulichas*, new species, new records, Oriental region, Laos, Thailand

Introduction

The small elateriform family Eulichadidae comprises of two extant genera: the monotypic Californian genus *Stenocolus* LeConte, 1853, and the predominately Oriental genus *Eulichas* Jacobson, 1913, with 30 described and more than 10 undescribed species (JÄCH 1995; HÁJEK 2007, in prep.). The larvae of both genera are aquatic, while the adults live on vegetation near water, and especially the genus *Eulichas* is often attracted at light. *Eulichas* is currently divided into two subgenera, and the nominotypical subgenus is divided into two species groups and several species complexes (see HÁJEK 2007).

While finishing the first part of the revision of *Eulichas*, I received another new species belonging to the *E. pacholatkoii* species complex of the *E. funebris* species group. As I had no possibility to include the new species into the revision, I describe it here separately along with new distributional data for two other *Eulichas* species from Laos and one species from Thailand. These data increase the number of known species from Laos and Thailand to eight and four, respectively.

Material and methods

In the description, I follow the style used in the first part of my revision (HÁJEK 2007). The shape of the aedeagus was studied and drawn when dry. The male genitalia were preserved dry on the same card as the beetle or on a separate card beneath the beetle if it was pinned.

Exact label data are cited for the type material. A forward slash (/) separates different lines and a double slash (//) divides different labels of data. Additional remarks are found in square brackets.

The specimens included in this study are deposited in the following collections:

- BMNH NATURAL HISTORY MUSEUM [FORMER BRITISH MUSEUM], LONDON, GREAT BRITAIN (MAXWELL V. L. BARCLAY);
 HNHM HUNGARIAN NATURAL HISTORY MUSEUM [MAGYAR TERMÉSZETTUDOMÁNYI MÚZEUM], BUDAPEST, HUNGARY (OTÍÓ MERKL);
 NHMB NATURHISTORISCHES MUSEUM, BASEL, SWITZERLAND (MICHEL BRANCUCCI);
 NHMW NATURHISTORISCHES MUSEUM, WIEN, AUSTRIA (MANFRED A. JÄCH);
 NKME NATURKUNDE MUSEUM ERFURT, GERMANY (MATTHIAS HARIMANN);
 NMPC NÁRODNÍ MUZEUM, PRAHA, CZECH REPUBLIC (JIŘÍ HÁJEK).

Taxonomy

Eulichas (Eulichas) pantherina sp. nov.

(Figs. 1-3)

Type locality. Laos, Champasak province, Bolovens plateau, Ban Itou, ca. 15°10.4'N 106°05.8'E, ca. 800 m a.s.l.

Type material. HOLOTYPE: ♂, 'LAOS SOUTH / BOLAVEN PLATEAU / BAN ITOU / 23.-27.5.2007 / B.MAKOVSKÝ Lgt. [printed]' // 'HOLOTYPE / EULICHAS (s. str.) ♂ / pantherina sp. nov. / Jiří Hájek det. 2007 [red label, printed]' (NMPC). PARATYPES: 16 ♂♂ (nos. 1-16) 2 ♀♀ (nos. 17-18), same label data as holotype (1 ♂ BMNH, 1 ♂ HNHM, 1 ♂ NHMW, 1 ♂ NKME, rest in NMPC); 3 ♂♂ (nos. 19-21), labelled: 'LAO-NE, Hua Phan prov., / ~20°12'N 104°01'E, / PHU PHAN Mt., 1500- / 1900 m, 17.v.-3.vi.2007, / M. Brancucci leg. [printed]' // 'NHMB Basel, / expedition to / Laos, 2007 [printed]' (2 ♂♂ NHMB, 1 ♂ NMPC). Each paratype is provided with a red label similar to that of the holotype, except 'PARATYPE' instead of 'HOLOTYPE', the respective sex symbol, and a collection number.

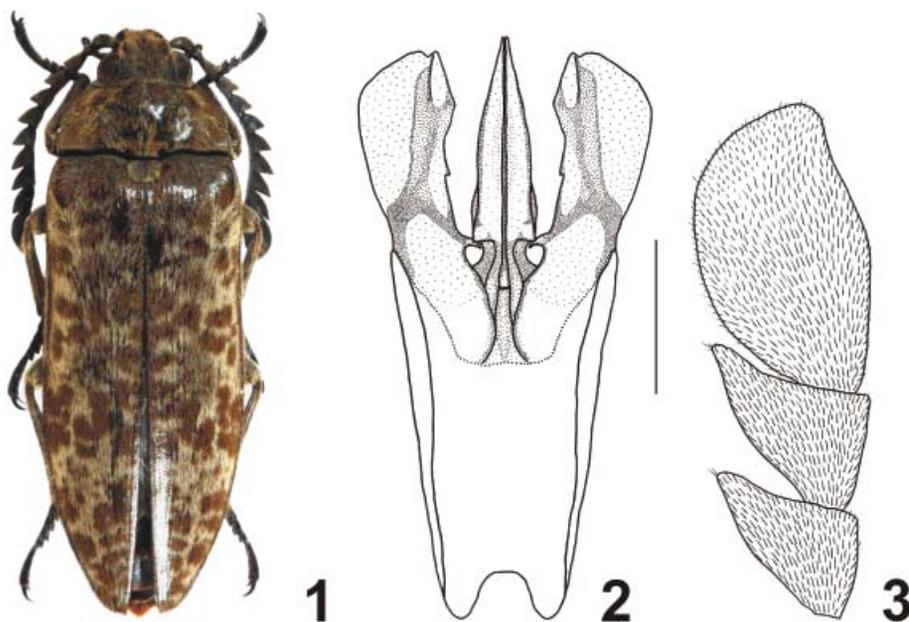
Description. Habitus elongate, fusiform. Body coloration dark brown. Setation consisting of dominant recumbent light brown setae, covering most of dorsal surface (body thus appearing paler than integument), and grey setae forming ocellations on pronotum and elytra (Fig. 1). Grey setae predominating over brown ones on abdominal sternites.

Measurements. Body length. Males: 20-27 mm (holotype 21 mm); females: 23-24 mm.

Head punctation consisting of sparse and moderately large setigerous punctures. Antenna robust, last antennomere ca. 1.85-2.00 times as long as wide (Fig. 3), its ventral side smooth with numerous small tubercles.

Pronotum strongly transverse, ca. 2.18-2.31 times as wide as long. Sides of variable shape, in some specimens almost regularly rounded, in others rather subparallel basally. Disc with two rounded shallow depressions. Punctation consisting of fine and sparse setigerous punctures on disc, becoming slightly coarser and denser laterally.

Elytra with numerous longitudinal rows of large punctures, and very fine interstitial setigerous punctures.



Figs. 1-3. *Eulichas pantherina* sp. nov. (holotype). 1 – habitus; 2 – aedeagus in dorsal view; 3 – male antennomeres IX-XI. Scale bar: 1 mm (Figs. 2-3).

Venter finely punctate, punctures sparse medially and becoming larger and denser laterally. Last abdominal ventrite evenly rounded towards apex.

Male. Aedeagus with phallobase longer than parameres. Parameres simple, apically slightly widened, their subapical hook very small, almost indistinct, moved basally to midlength of paramere. Median lobe narrowly lanceolate (Fig. 2).

Female. Similar to male in habitus. Antenna shorter and more slender.

Differential diagnosis. Given the long and slender phallobase, which is distinctly longer than the parameres, and the long basal parameral apophysis, the new species belongs clearly to the *E. funebris* species group sensu JÄCH (1995) and HÁJEK (2007). Furthermore, the enlargement of the parameres behind their midlength and the almost indistinct subapical parameral hook place this species in the *E. pachotatko* species complex sensu HÁJEK (2007). The new species resembles *E. haucki* in habitus, especially by the bicoloured, light brown and grey body setation. However *E. pantherina* sp. nov. differs from all other species in the complex by the small subapical parameral hook moved to the midlength of paramere, and the narrowly lanceolate median lobe.

Etymology. The species epithet refers to the characteristic elytral ocellation, which is reminiscent of the colour pattern on a panther's body.

Distribution. So far known only from two localities in southern and north-eastern Laos.

New records

Eulichas haucki Hájek, 2007

Material examined. LAOS: 1 ♂, 'LAOS, Hua Phan Prov., Ban Saluei, Phu Phane Mt., 20°15'N, 104°02'E, 1500-2000 m, v.2007, local coll. leg.' (NMPC).

Notes. The species was described from a single specimen from Thailand (Loei province). The additional specimen from north-eastern Laos agrees in all characters with the holotype and extends remarkably the known area of distribution of this species. **First record from Laos.**

Eulichas kubani Hájek, 2007

Material studied. THAILAND: 2 ♂♂, 'Thailand, S, Isthmus of Kra, TV-Station Ranong, 9°57'N, 98°38'E, 500 m, a.IX.2003, leg. native collectors, ex coll. S. Löffler' (1 ♂ NKME, 1 ♂ NMPC).

Notes. The species was so far known only from a restricted area in the Annam Highlands on both sides of the border between Laos and Vietnam. The two specimens from southern Thailand have rather yellowish body setation (greyish in specimens from Laos), but agree well in all morphological characters with the type material. **First record from Thailand.**

Eulichas pacholatkoii Jäch, 1995

Material studied. LAOS: 4 ♂♂ 1 ♀, 'Laos, Champasak Prov., Dong Hua Xao NBCA, 2 km S of Ban Nong Luang, bank of Touay-Guai stream', '15°4'N, 106°13'E, 800 m, at light, No 24, 1-5.IV.1998, leg. O. Merkl & G. Csorba' (3 ♂♂ 1 ♀ HNHM, 1 ♂ NMPC); 2 ♂♂ 1 ♀, 'Laos south, Bolaven Plateau, Ban Itou, 23.-27.5.2007, B. Makovský leg.' (NMPC).

Notes. The species was described originally from southern Vietnam (Da Lat) (JÄCH 1995). Subsequently, HÁJEK (2007) published additional records of doubtful identification from central Vietnam (Pleiku). The specimens from Laos reveal that *E. pacholatkoii* represents a species with a rather variable habitus and body setation; the latter varies from light to dark brown and from grey-whitish to yellowish. **First record from Laos.**

Modified key to the *E. pacholatkoii* species complex

Numbers with asterisk (*) refer to figures in HÁJEK (2007). Passages in bold type are newly inserted or changed parts of the key to species in HÁJEK (2007).

4. Parameres almost parallel sided, their subapical hook well developed. Median lobe narrowly lanceolate. *E. funebris* species complex 5
- Parameres slightly widened behind middle, their subapical hook very small or reduced to an indistinct angle (Figs. 24*-26*). Median lobe very narrow, almost parallel sided, **or narrowly lanceolate**. *E. pacholatkoii* species complex 9
- ...
9. Subapical parameral hook very small and moved to midlength of paramere (Fig. 2). Median lobe narrowly lanceolate. Laos. *E. pantherina* sp. nov.
- Subapical parameral hook distinct, indistinct or reduced to an obtuse angle, but never moved medially 9a

- 9a. Parameres contracted before midlength, their subapical hook very small but distinct (Fig. 24*). **Laos** and Thailand. *E. haucki* Hájek, 2007
- Parameres not contracted near midlength, their subapical hook indistinct or reduced to an obtuse angle. 10
10. Subapical parameral hook almost indistinct (Fig. 26*). Habitus elongate, body setation **varying from light to dark brown and from grey-whitish to yellowish. Southern Laos** and Vietnam. *E. pacholatkoii* Jäch, 1995
- Subapical parameral hook reduced to an indistinct angle (Fig. 25*). Habitus more convex, body setation blackish and greyish **or yellowish. Central Laos, Vietnam, and southern Thailand.** *E. kubani* Hájek, 2007

Discussion

The discovery of a new *Eulichas* species in Laos poses additional questions on the zoogeography and bionomics of the group rather than on its taxonomy.

First, my initial idea of high endemism and restricted distributional areas of *Eulichas* species now appears incorrect as it has been probably only a result of a limited knowledge of the distribution of the family. The best example contradicting the initial hypothesis seems to be the finding of *E. kubani* in a mountain range that lies in southern Thailand about 1,000 km away from the type locality in the Annam Highlands. In addition, the discovery of *E. pantherina* sp. nov. at two localities about 600 km apart and the finding of *E. haucki* at a locality more than 400 km away from the type locality support the hypothesis of fragmented distribution in isolated patches of primary forest within a large area.

Second, several *Eulichas* species live together at most localities. *Eulichas pantherina* sp. nov. was at both localities collected together with *E. (Forficulichas) phoca* (Bourgeois, 1891); in addition, *E. pacholatkoii* was also collected at the locality of ‘Ban Itou’, while *E. haucki* was also found at the locality of ‘Hua Phan’. The most speciose locality is probably ‘Tanah Rata’ in the Cameron Highland, Malaysia, where seven *Eulichas* species live together (J. HÁJEK, unpublished data). An interesting hypothesis which unfortunately cannot be supported or refuted by the present data, based only on adults from light traps, is that the larvae of each species inhabit different microhabitats or parts of streams and rivers at these localities.

Finally, all *Eulichas* species from ‘Ban Itou’ and ‘Hua Phan’ are very similar to each other in body setation, which agrees with my previous suggestion of possible mimetic complexes (HÁJEK 2007). However the purpose of such potential mimetism remains unknown.

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References

- HÁJEK J. 2007: Revision of the genus *Eulichas* Jacobson, 1913 (Coleoptera: Eulichadidae) I. Introduction, morphology of adults, key to subgenera and species groups, and taxonomy of *E. funebris* species group. *Zootaxa* **1260**: 1-35.
- JÄCH M. A. 1995: Eulichadidae: Synopsis of the species of the genus *Eulichas* Jacobson from China, Laos and Vietnam (Coleoptera). Pp. 359-388. In: JÄCH M. A. & JI L. (eds.): *Water Beetles of China. Vol. 1*. Zoologisch-Botanische Gesellschaft in Österreich and Wiener Coleopterologenverein, Wien, 410 pp.