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Description of *Laius zappii* sp.n. (Coleoptera: Melyridae) from Thailand

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Abstract

The genus *Laius* Guérin-Méneville, 1830 (Melyridae: Malachiinae: Malachiini: Apalochrina) is recorded from Thailand for the second time. *Laius zappii* sp.n. from Pha-Ngan island in the Gulf of Thailand is described, differentially diagnosed, and illustrated.

Key words: Coleoptera, Melyridae, *Laius*, taxonomy, new species, Thailand.

Zusammenfassung

Die Gattung *Laius* Guérin-Méneville, 1830 (Melyridae: Malachiinae: Malachiini: Apalochrina) wird zum zweiten Mal für Thailand gemeldet. *Laius zappii* sp.n. wird von der Insel Pha-Ngan im Golf von Thailand beschrieben, differenzial-diagnostiziert und illustriert.

Introduction

The genus *Laius* Guérin-Méneville, 1830, was erected by monotypy and rediagnosed by Evers (1994). Species of *Laius* are supralittoral shore beetles (Jäch 1998). Forty-one species are known from East Africa to south-eastern Asia, Australia and from some islands in the western Pacific (Champion 1921, Wittmer 1999, Yoshitomi 2008, 2010, 2014, Yoshitomi & Lee 2010, Constantin 2015, Liu et al. 2015, Yoshitomi et al. 2015). Heretofore, only one species was recorded for Thailand, viz. *Laius alfredpuchneri* Plonski & Puchner, 2014. In this paper, a second species from Thailand is described, based upon a collection of six males from Pha-Ngan island in the Chumphong archipelago.

Material and methods

Six male specimens were available for this study. The material is dry preserved and housed in the institutional and private collections abbreviated as follows:

CIP Coll. Isidor Plonski, Vienna, Austria.

CIZ Coll. Iuri Zappi, Casalecchio di Reno, Italy.

NMW Naturhistorisches Museum, Vienna, Austria.

This material was compared with the holotype of *L. alfredpuchneri*, four atypical male vouchers from the type locality (Palawan Island) of *L. submariniformis* Wittmer, 1985, and five male vouchers from Mindoro Island (Philippines) matching the iconotype of *L. submariniformis* (data, final taxonomic treatment and housing of this material will be communicated in Plonski et al., in prep.).

Label data citation, softening of the holotype of the new taxon and dissection of its terminalia follows the procedure described in Plonski & Puchner (2014). Terminology of endophallic sclerites follows Yoshitomi (2014).

A Bresser Researcher ICD binocular was used for examination and making descriptive statements at 40× and 80× magnification. Re-examination and dissections were made under an Olympus SMZ 10 stereo-microscope with different illumination and optical field. Measurements were made with help of a Nikon SMZ 1500 stereo-microscope equipped with an ocular micrometre at 16×, 24×, and 40× magnification. Line drawings of terminalia were made by hand with the help of an Olympus BX 40 microscope equipped with a camera lucida. Digital photographs were made with a Leica Microsystem, stacked with Zerene Stacker v1.04, and edited with GIMP v2.10.

Measurements are given in millimetres. The following abbreviations are used for morphometry:

AeL	aedeagal length
AnL	antennal length
AM	arithmetic mean
EL	elytral length
EW	elytral width
GL	gonoporal piece length
HL	head capsule length
HW	head capsule width
IOW	interocular width
LL	ligula length
LW	ligula width
PL	pronotal length
PW	pronotal width
TL	total length

Taxonomy

Laius zappii sp.n. (Figs. 3–5)

Type locality: Easternmost outcrops (9°46'22.40" N, 99°57'49.38" E) of the rock formation below the buildings of the Haad Yao Overbay Resort (Figs. 1, 2); Ko Pha-Ngan subdistrict and district, Surat Thani province, Thailand. The exact position of the sampling site and its coordinates have been provided by I. Zappi.

Type material: Holotype ♂ (NMW) labelled "THAILAND \ Ko Phangan [= Pha-Ngan island] \ Haad Yow [= Yao beach] \ 1-VIII-2003 \ Leg. I. Zappi" [white, printed], "HOLOTYPUS \ *Laius* \ *zappii* sp. n. \ det. I. Plonski 2020" [red, printed]. — Paratypes (1 ♂ CIP; 4 ♂♂ CIZ) with identical locality-collector labels and respective type labels.

Description of holotype: Habitus as pictured (Fig. 3).

Figs. 1–2: Type locality of *Laius zappii* sp.n.: (1) overview from Yao beach, viewed from the east; (2) detail of the habitat. © I. Zappi.

Colouration: Head capsule, pronotum and elytra black with azure bluish hue; last maxillary palpomere, antennomeres IV–XI, pro- and mid-femora, and hind legs black; basal two maxillary palpomeres and antennomeres I–III orange-red; antennal sockets, pro- and mid-tibiae and pro- and mid-tarsi in part brownish brightened.

Pubescence: Body covered with short, dark setae, except on the genae between antennal sockets and compound eyes; pronotum, in addition, with intermingled longer dark setae.

Structures: Head capsule narrower than pronotum. Vertex not flattened but evenly arched towards frons, which does not drop off rapidly towards genae. Epistoma indicated and mesally extended backwards until the level of anterior eye margins. Genae slightly excavated. Eyes moderate in size and protruding. Head surface sculpture finely and densely punctate, with shiny interstices, except between antennal sockets and compound eyes, where the genae are composed of a smooth impressed part next to the antennal sockets and of a smooth part below. Antennae stout; scape (Fig. 4) elongate, clavate, proximal half conical, distal half broadened, broadest at apex, which bears long, thick setae; pedicel (Fig. 4) globular, sunken into the scape for one third to half of length; antennomere III (Fig. 4) with the main part resting on a short stalk; main part a bit broader than long, leading margin highly arched and surrounding a deep impression which is crossed by a short costa; antennomeres IV–X moniliform, each segment slightly longer than broad; antennomere XI egg-shaped, as broad as and a bit longer than preceding segments. Pronotum square, widest near anterior margin; antero- and posterolateral angles rounded, the former more than the latter; basal and side margins rimmed; surface sculpture composed of punctures similar in size to those on vertex, but puncturation denser. Scutellum semi-circular, puncture size and density as on pronotum. Elytra oblong, broadest at apical third; sides gradually expanded posterolaterally; surface structure composed of punctures as large as on pronotum, but with indistinct margins in basal quarter of length, and puncturation becoming more indistinct towards apex. Legs stout; profemur subapically with a small and shallow excavation on flexor side; protibia strongly thickened basally, with a basal excavation on flexor side.

Terminalia: Spicular fork normal. Pygidium normal, transverse, 1.8 times as broad as long; caudal margin concave. Sternite VIII normal, bipartite; halves lanceolate.

Aedeagus: Tegmen normal, half as long as median lobe, with projections at basal corners. Median lobe (Fig. 5) 4.9 times as long as broad, sides subparallel; apex balanced in length/width-ratio; sides conically converging towards tip and in apical margin concave; gonoporal piece (Fig. 5) with thickened base and a short process, remaining parts slim, bent sinuously; ligula (Fig. 5) with thickened base, conical in basal two thirds, then bent and becoming more slender towards tip.

Measurements and ratios: TL: 4.65; AnL: 2.04; HL: 1.07; HW: 1.13; IOW: 0.74; PL: 1.00; PW: 1.32; EL: 2.69; EW: 1.83; AeL: 1.17; GL: 0.60; LL: 0.24; LW: 0.06. Ratios: TL/EW = 2.54; HW/HL = 1.06; PW/PL = 1.48; EL/PL = 3.02; EW/PW = 1.39; EL/EW = 1.47; GL/AeL = 0.52; LL/LW = 3.70; GL/LL = 2.54.

Variability: Measurements and ratios of paratypes (n = 5): TL: 4.36–5.01 (AM: 4.72); AnL: 1.82–2.15 (AM: 2.00); HL: 0.85–1.04 (AM: 0.97); HW: 1.07–1.11 (AM: 1.09); IOW: 0.59–0.72 (AM: 0.66); PL: 1.00–1.41 (AM: 1.17); PW: 1.24–1.33 (AM: 1.30); EL: 2.47–2.66 (AM: 2.58); EW: 1.78–2.81 (AM: 2.21). TL/EW = 1.60–2.75 (AM: 2.23); HW/HL = 1.06–1.24 (AM: 1.13); PW/PL = 0.90–1.48 (AM: 1.13); EL/PL = 1.80–2.66 (AM: 2.27); EW/PW = 1.30–2.16 (AM: 1.69); EL/EW = 0.90–1.44 (AM: 1.22).

Diagnosis: *Laius zappii* sp.n. belongs into the group of species whose members possess a long gonoporal piece with a basal projection and a short, curved ligula ("group 2" sensu Yoshitomi 2014), and is most comparable to the Philippine species *L. submariniformis* sensu Yoshitomi (2014). Differences have been found in average body size (*L. zappii* sp.n. 4.36–5.01 mm vs. *L. submariniformis* 4.90–6.33 mm) and in antennal and aedeagal morphology: The flagellum (antennomeres IV–XI) is – relative to the combined length of the basal three antennomeres – shorter in *L. zappii* sp.n. than in *L. submariniformis*. Antennomere III differs only subtly, e.g., in the shape and position of the small costa crossing the mediolateral depression, and in the distance between the transverse costa originating from the side margin and the insertion of antennomere IV. The ligula of *L. zappii* sp.n. resembles that of *L. submariniformis*. The gonoporal piece of *L. zappii* sp.n. resembles that of *L. alfredpuchneri* in slenderness, except the base, which is broadened as in *L. submariniformis*. *Laius zappii* sp.n. can be differentiated from *L. alfredpuchneri* at first sight by the structures of antennomere III.

Note on classification: The so-called basal projection of the gonoporal piece is very short in both *L. submariniformis* and *L. zappii* sp.n. and not as distinct as in other species of Yoshitomi's group 2. It is suggested to include these two species in a group of their own.

Distribution: So far only known from the type locality in southern Thailand.

Etymology: The species epithet is a patronym: The new taxon is named after its collector, Iuri Zappi (Casalecchio di Reno), who is a specialist for checkered beetles (Cleridae).

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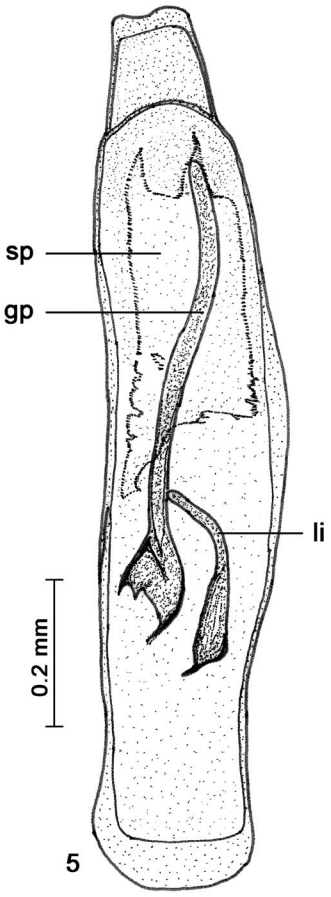

Figs. 3–5: *Laius zappii* sp.n., holotype: (3) habitus; (4) basal antennomeres (I–IV) of right antenna; (5) median lobus, ventral; dashed line indicating spinous area of endophallus (individual spines omitted); gp – gonoporal piece, li – ligula, sp – spinous area.

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