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Contribution to the taxonomy of the genus *Laius* GUÉRIN-MÉNEVELLE in Indonesia, with description of a new species (Coleoptera: Malachiidae)

H. YOSHITOMI

Abstract

Laius satoi sp.n. (Coleoptera: Malachiidae) is described from Bali, Indonesia. This species was obtained together with *L. pankowi* WITTMER and *L. sp.* Antennae and male genitalia of *L. pankowi* and *L. flavicornis* (FABRICIUS) are described.

Key words: Coleoptera, Malachiidae, *Laius*, taxonomy, new species, Indonesia, Bali.

Introduction

The genus *Laius* GUÉRIN-MÉNEVELLE, 1830, which consists of about 250 species from Africa, Asia and Australia, had been one of the large genera in the family Malachiidae, until EVERS (1994) redefined this genus. He listed 22 species and regarded the following characters as autapomorphies of the genus: male protibia thickened basally and inside of basal area distinctly hollow, elytra greenish or bluish luster. Subsequent authors (e.g. WITTMER 1997, SATÔ et al. 2006) have followed his generic definition. However, the taxonomic status of many species of the genus remains to be solved.

Up to the present, two species of the genus *Laius* (sensu EVERS 1994) have been recorded from Indonesia, i.e., *L. pankowi* WITTMER from Bali and *L. flavicornis* (FABRICIUS) from Java and Borneo. In the present paper, a new species, *L. satoi*, is described from Bali. This species was collected together with *L. pankowi* and *L. sp.* at the same locality. Antennae and male genitalia of *L. pankowi* and *L. flavicornis* are also described herein.

Abbreviations:

EUM	Ehime University, Matsuyama, Japan		
MZB	Museum Zoologicum Bogoriense, Cibinong, Indonesia		
NMW	Naturhistorisches Museum Wien, Austria		
SEHU	Laboratory of Systematic Entomology, Hokkaido University, Sapporo, Japan		
EL	elytral length	PW	pronotal width
EW	elytral width	TL	total length
PL	pronotal length		

Laius satoi sp.n.

TYPE LOCALITY: Nusa Dua, Bali, Indonesia.

TYPE MATERIAL: **Holotype** ♂ (EUM): “Nusa Dua, Bali, Indonesia, 30–IV–2000 M. Sato leg.”, genit. s. no. HY 1005. **Paratypes** (EUM, NMW): 4 ♀ ♀, same locality data as holotype, genit. s. no. HY 1044; 2 ♀ ♀, same locality but “5–I–2000”.

DESCRIPTION: Male (Fig. 1): Body oblong, strongly shining, closely covered with short setae. Coloration of body almost black; head and pronotum with greenish luster; elytra with bluish luster; mouth parts yellowish brown except for infusate labial and maxillary palpi; antennal segments I–III yellowish brown and segments IV–XI blackish brown; legs yellowish brown, but mesal parts of tibiae and tarsi blackish brown.

Head narrower than pronotum; vertex flattened, but slightly convex in mesal part. Eyes moderate in size, prominent. Antennae (Fig. 8) stout; segment I slightly curved outwardly; segment III (Fig. 10) subtriangular, almost straight on inner margin, shallowly concave in dorsal surface, $L/W = 1.6$; relative length of each antennal segment ($n = 1$) as $6.8 : 1.0 : 5.8 : 2.3 : 2.2 : 2.2 : 2.0 : 2.0 : 1.8 : 3.0$. Pronotum quadrate, widest at near anterior margin, rounded in antero- and postero-lateral angles, closely covered with fine punctures; $PW/PL = 1.35$. Scutellum semi-circular, punctate as in pronotum. Elytra oblong, broadest at apical 1/3; lateral sides gradually expanded postero-laterally; $EL/EW = 1.42$; $EL/PL = 2.74$; $EW/PW = 1.43$; $TL/EW = 2.19$. Legs relatively long and stout; protibia slightly thickened basally with the basal area hollowed inside.

Caudal margin of tergite VIII (Fig. 20) widely concave. Spiculum simply pointed at antero-lateral corners. Aedeagus about 1.4 mm, long and slender, irregularly bisinuate in lateral sides; apex of aedeagus long, square, shallowly concave in apical margin, bearing short setae; inner spine long, lightly curved.

Female (Fig. 2): Similar to male in coloration. Antennae (Fig. 9) rather slender; segment III oblong, $L/W = 2.8$; relative length of each antennal segment ($n = 1$) as $6.3 : 1.0 : 4.7 : 2.2 : 2.2 : 2.2 : 2.3 : 2.0 : 2.0 : 3.3$. $PW/PL = 1.24$ – 1.29 (1.27); $EL/EW = 1.42$ – 1.48 (1.45); $EL/PL = 2.63$ – 2.76 (2.70); $EW/PW = 1.42$ – 1.52 (1.47); $TL/EW = 2.15$ – 2.49 (2.26).

MEASUREMENTS: Male ($n = 1$): $TL = 5.70$ mm; $PW = 1.82$ mm; $PL = 1.35$ mm; $EW = 2.60$ mm; $EL = 3.70$ mm. Female ($n = 4$): $TL = 5.30$ – 5.60 (5.45) mm; $PW = 1.50$ – 1.80 (1.65) mm; $PL = 1.20$ – 1.40 (1.30) mm; $EW = 2.13$ – 2.60 (2.42) mm; $EL = 3.15$ – 3.80 (3.51) mm.

DISTRIBUTION: Indonesia (Bali).

TAXONOMIC REMARKS: This species is somewhat similar to *Laius pankowi* in coloration of the body, but can be easily separated from it by much smaller body size, coloration of antennae, shape of male antennal segment III, and male genitalia.

ETYMOLOGY: The species is named for the late Dr. Masataka Satô.

Laius pankowi WITTMER, 1999

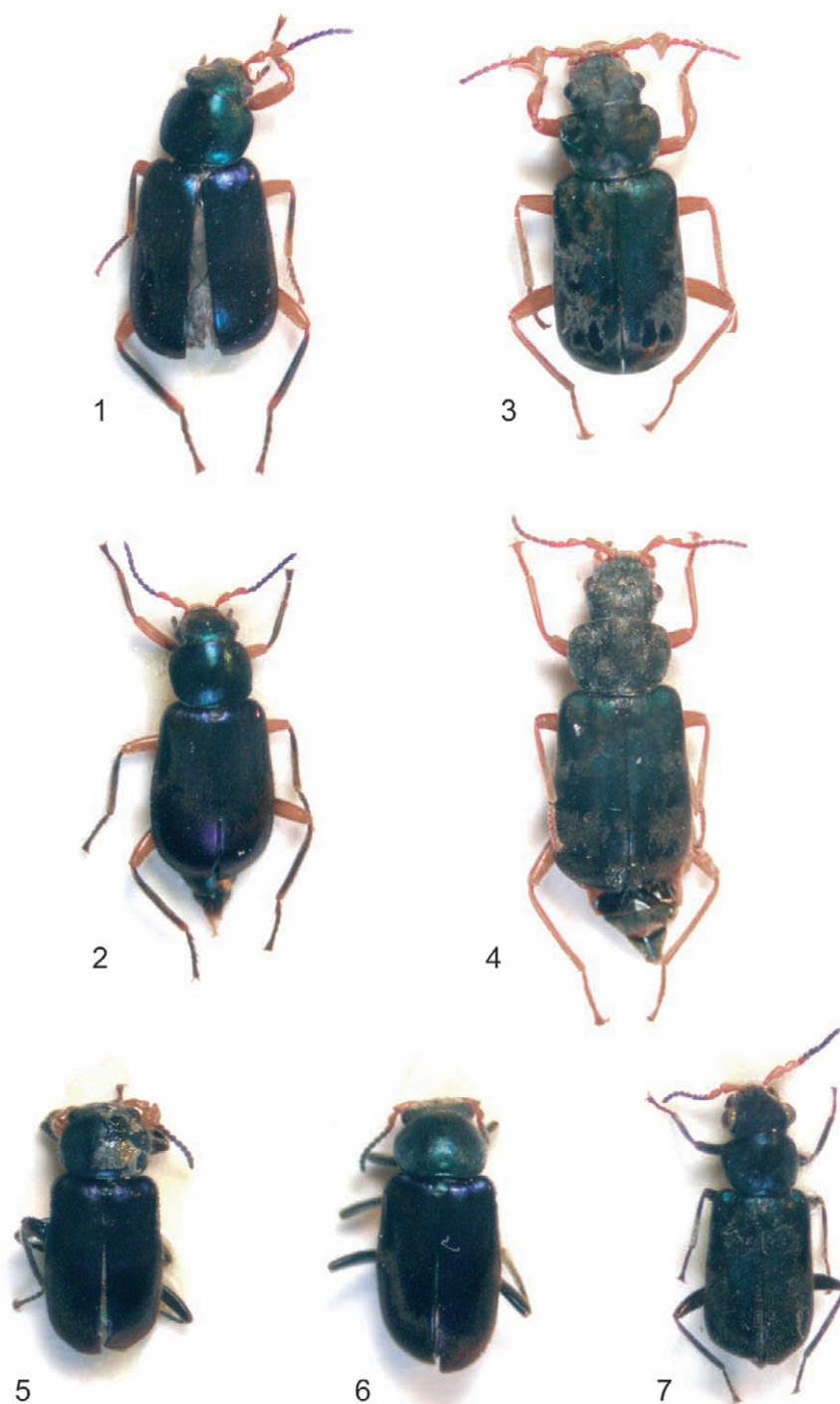
Laius pankowi WITTMER 1999: 202.

TYPE LOCALITY: Bali Island, Indonesia.

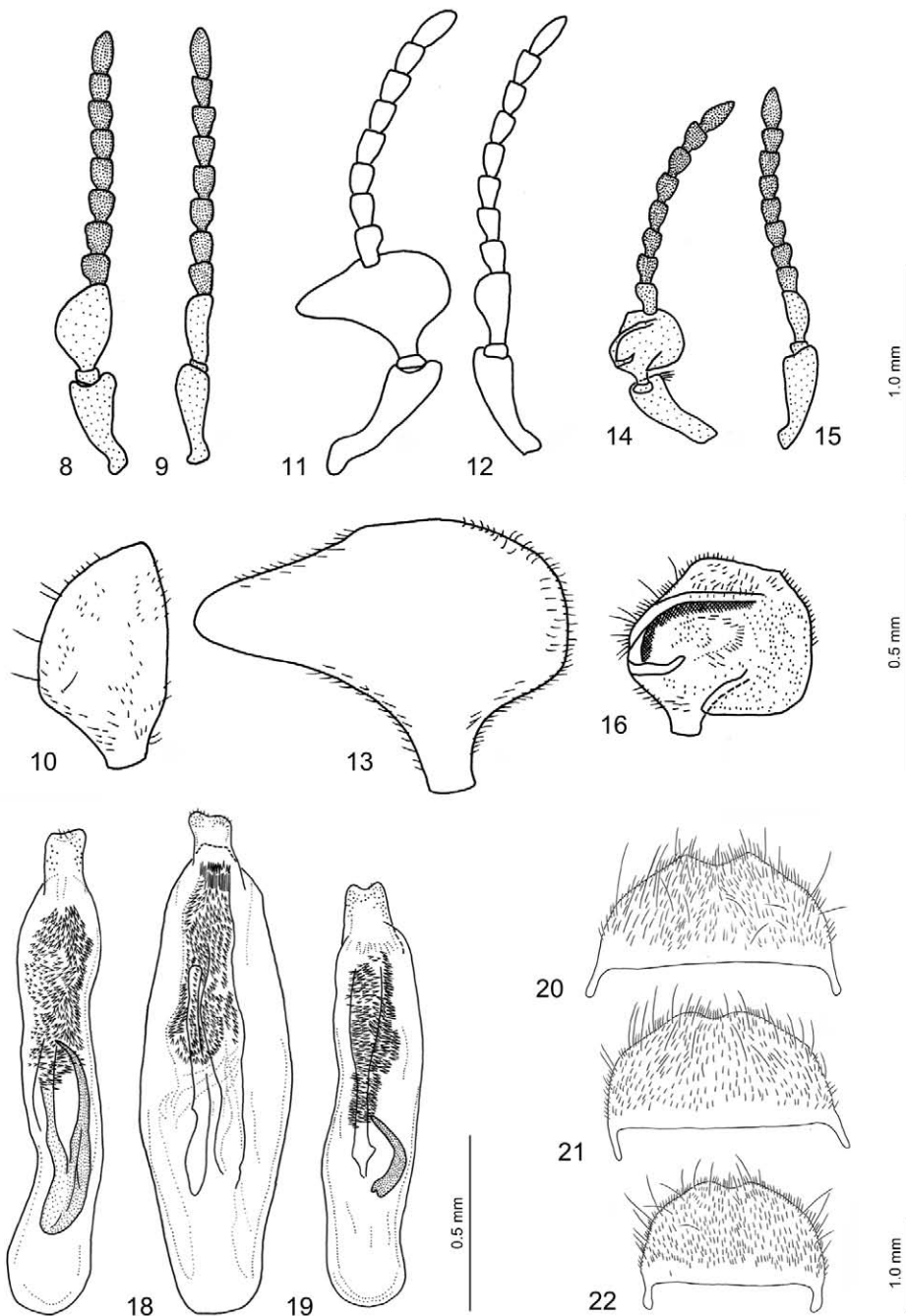
MATERIAL EXAMINED: 7 ♂♂, 5 ♀♀ (EUM, NMW): “Nusa Dua, Bali Isl., Indonesia, 5–I–2000 M. Satô, N. Ohbayashi, & H. Yoshitomi leg.”, genit. s. no. HY 1004, 1043.

DIAGNOSIS: Male (Fig. 3): Antennae (Fig. 11) stout; segment III (Fig. 13) $L/W = 0.1$; relative length of each antennal segment ($n = 1$) as $10.0 : 1.0 : 7.0 : 2.7 : 2.3 : 2.2 : 2.3 : 2.3 : 2.3 : 3.7$. $PW/PL = 1.31$ – 1.46 (1.36); $EL/EW = 1.53$ – 1.56 (1.54); $EL/PL = 2.63$ – 2.89 (2.74); $EW/PW = 1.27$ – 1.35 (1.31); $TL/EW = 2.38$ – 2.44 (2.41).

Caudal margin of tergite VIII (Fig. 21) concave. Spiculum simply pointed at antero-lateral corners. Aedeagus (Fig. 18) about 1.4 mm, broad, broadest at the middle; apex relatively short, square, shallowly concave in apical margin, bearing short setae; inner spine indistinct, rounded at apical end.



Figs. 1–7: Habitus of *Laius* spp.; 1–2) *L. satoi* sp.n., 1) male, 2) female; 3–4) *L. pankowi*, 3) male, 4) female; 5–6) *L. flavicornis*, 5) male, 6) female; 7) *L.* sp. (Bali).



Figs. 8–16: Right (8, 9, 12, 14) and left (11, 15) antennae of *Laius* spp., dorsal view; 8–10) *L. satoi* sp.n., 8) male, 9) female, 10) male antennal segment III; 11–13) *L. pankowi*, 11) male, 12) female, 13) male antennal segment III; 14–16) *L. flavicornis*, 14) male, 15) female, 16) male antennal segment III.

Figs. 17–19: Aedeagus (dorsal view) of *Laius* spp.; 17) *L. satoi* sp.n.; 18) *L. pankowi*; 19) *L. flavicornis*.

Figs. 20–22: Tergite VIII of *Laius* spp.; 20) *L. satoi* sp.n.; 21) *L. pankowi*; 22) *L. flavicornis*.

Female: Antennae (Fig. 12) stout; segment III L/W = 2.3; relative length of each antennal segment (n = 1) as 7.7 : 1.0 : 4.7 : 2.5 : 2.2 : 2.2 : 2.2 : 2.0 : 2.2 : 3.3. PW/PL = 1.43–1.48 (1.45); EL/EW = 1.46–1.57 (1.51); EL/PL = 2.82–3.12 (2.98); EW/PW = 1.35–1.37 (1.36); TL/EW = 2.17–2.44 (2.33).

MEASUREMENTS: Male (n = 5). TL = 6.13–6.55 (6.34) mm; PW = 1.90–2.15 (2.01) mm; PL = 1.40–1.60 (1.48) mm; EW = 2.55–2.75 (2.63) mm; EL = 3.90–4.20 (4.05) mm. Female (n = 3). TL = 5.65–6.40 (6.12) mm; PW = 1.88–2.00 (1.93) mm; PL = 1.30–1.40 (1.33) mm; EW = 2.58–2.70 (2.63) mm; EL = 3.90–4.05 (3.97) mm.

DISTRIBUTION: Indonesia (Bali).

TAXONOMIC REMARKS: This species is characterised by the following features: body large, coloration of antennae and legs yellow throughout.

Laius sp.

MATERIAL EXAMINED: 6 ♀♀ (EUM): “Nusa Dua, Bali Isl., Indonesia, 5–I–2000, M. Satô, N. Ohbayashi, & H. Yoshitomi leg.”.

TAXONOMIC REMARKS: This species is similar to *Laius flavicornis* in the external features of the female specimens, but smaller than the females of latter species. A taxonomic study of this species will be done, when the male specimens will be discovered.

Laius flavicornis (FABRICIUS, 1801)

Paussus flavicornis FABRICIUS 1801: 75.

Megadeuterus flavicornis: WESTWOOD 1833: 678.

Laius flavicornis: LACORDAIRE 1857: 385. – CHAMPION 1921: 325 [male antenna illustrated]. – EVERS 1994: 175 [male antenna illustrated].

TYPE LOCALITY: Java, Indonesia.

MATERIAL EXAMINED: 6 ♂♂, 9 ♀♀ (MZB, SEHU): “[JA-05-MO-018] [Banten: Indonesia] P. Peucang, Ujung Kulon 13. March. 2005, M. Ohara 06°43.76’S 105°14.79’E”, male genit. s. no HY 1050.

DIAGNOSIS: Male (Fig. 5): Antennae (Fig. 14) stout; segment III L/W = 0.97; relative length of each antennal segment (n = 1) as 7.2 : 1.0 : 5.6 : 2.4 : 2.2 : 2.2 : 2.4 : 2.2 : 2.2 : 3.6. PW/PL = 1.28–1.36 (1.32); EL/EW = 1.44–1.53 (1.47); EL/PL = 2.55–2.91 (2.75); EW/PW = 1.31–1.50 (1.42); TL/EW = 2.41–2.62 (2.49).

Caudal margin of tergite VIII (Fig. 22) concave. Spiculum bidentate at antero-lateral corners. Aedeagus (Fig. 19) 1.2 mm, slender, irregularly curved in lateral sides; apex short and broad, square, shallowly concave, bearing short setae; inner spine short, strongly curved.

Female (Fig. 6): Antennae (Fig. 15) stout; segment III L/W = 2.1; relative length of each antennal segment (n = 1) as 8.2 : 1.0 : 4.2 : 1.8 : 1.6 : 1.8 : 1.8 : 1.8 : 1.6 : 3.6. PW/PL 1.30–1.36 (1.33); EL/EW = 1.43–1.56 (1.48); EL/PL = 2.76–2.93 (2.86); EW/PW = 1.39–1.50 (1.46); TL/EW = 2.36–2.63 (2.49).

MEASUREMENTS: Male (n = 6): TL = 4.37–4.98 (4.81) mm; PW = 1.20–1.45 (1.37) mm; PL = 0.92–1.10 (1.04) mm; EW = 1.80–2.05 (1.93) mm; EL = 2.65–3.00 (2.85) mm. Female (n = 6): TL = 4.95–5.40 (5.21) mm; PW = 1.38–1.50 (1.44) mm; PL = 1.05–1.10 (1.08) mm; EW = 2.00–2.25 (2.10) mm; EL = 2.90–3.22 (3.10) mm.

TAXONOMIC REMARKS: Judging from shape of the male antennae, this species is related to *Laius asahinai* NAKANE (distribution: Japan), *L. cyaneus* GUÉRIN-MÉNEVILLE (distribution after EVERS 1994: “E. Indies, New Guinea, Key Is., New Caledonia, Caroline”), *L. miyamotoi*

NAKANE (Japan), *L. riedeli* EVERS (Sarawak), *L. rufipes* MONTROUZ (New Caledonia), and *L. submarinus* CHAMPION (Philippines).

DISTRIBUTION (after EVERS 1994): "Indonesia (Java, Larat, Borneo), Key Isl., Malaysia (Sarawak), China".

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Hiroiyuki YOSHITOMI

Bioindicator Co., Ltd., Kita 1, Nishi 2–11, Chûô-ku, Sapporo, 060–0001 Japan (yoshitomi@bioindicator.co.jp)

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Autor(en)/Author(s): Yoshitomi Hiroyuki

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