

New genera of Alleculinae (Coleoptera: Tenebrionidae) from Oriental Region VI - *Ksukolcula* gen. nov.

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Taxonomy, new genus, new species, description, Coleoptera, Tenebrionidae, Alleculinae, *Ksukolcula*, Oriental Region, Laos, Thailand

Abstract. A new genus of Alleculinae *Ksukolcula* gen. nov. is described, illustrated and keyed, to include the following four new species: *Ksukolcula hesperia* sp. nov., *Ksukolcula issoria* sp. nov. and *Ksukolcula ochlodes* sp. nov. from Laos and *Ksukolcula zerynthia* sp. nov. from Thailand.

INTRODUCTION

The genus *Allecula* Fabricius, 1801 with type species *Cistela morio* Fabricius, 1787 was established by Fabricius (1801). Borchmann (1910) knew only 151 species from the whole world and Mader (1928) listed only 29 species from the Palaearctic Region. The genus comprises today more than 500 often very different species, in all zoogeographical regions (Novák 2014a). Therefore were later described new genera as *Apalmia* Fairmaire, 1896, *Asticostena* Fairmaire, 1897, *Bearnicistela* Pic, 1909, *Bobina* Novák, 2015, *Bolbostetha* Fairmaire, 1896, *Borboresthes* Fairmaire, 1897, *Cisteloida* Fairmaire, 1882, *Dioxycula* Fairmaire, 1896, *Evaostetha* Novák, 2008, *Gerdacula* Novák, 2015, *Indricula* Novák, 2016, *Kombacula* Novák, 2012, *Makacula* Novák, 2012, *Mycetocula* Novák, 2015, *Netopha* Fairmaire, 1893, *Palpichara* Borchmann, 1932, *Petrostetha* Novák, 2008 and *Potocula* Novák, 2012 with species in the Oriental Region.

A new genus of Alleculinae *Ksukolcula* gen. nov. is described to include the following four new species as follows: *Ksukolcula hesperia* sp. nov., *Ksukolcula issoria* sp. nov. and *Ksukolcula ochlodes* sp. nov. from Laos and *Ksukolcula zerynthia* sp. nov. from Thailand.

The species of new genus *Ksukolcula* gen. nov. are similar to the species of *Indricula* Novák, 2016. *Ksukolcula* species differ from *Indricula* species mainly by all femora broadened and protibia of males with two distinct thorns on inner side.

MATERIAL AND METHODS

Two important morphometric characteristics used for the descriptions of species of the subfamily Alleculinae, the 'ocular index' dorsally (Campbell & Marshall 1964) and 'pronotal index' (Campbell 1965), are used in the present paper as well. The ocular index equals $(100 \times \text{minimum dorsal distance between eyes}) / (\text{maximum width of head across eyes})$. The

pronotal index is calculated as $(100 \times \text{length of pronotum along midline}) / (\text{width across basal angles of pronotum})$.

In the list of type or examined material, a slash (/) separates data in separate rows, a double slash (//) separates different labels.

The following collection codens are used:

DHBC private collection of David Hauck, Brno, Czech Republic;

KMTJ private collection of Kimio Masumoto, Tokio, Japan;

NHMB Naturhistorisches Museum, Basel, Switzerland;

NMTJ National Museum, Tokio, Japan;

VNPC private collection of Vladimír Novák, Praha, Czech Republic.

Measurements of body parts and corresponding abbreviations used in text are as follows:

AL - total antennae length, BL - maximum body length, EL - maximum elytral length, EW - maximum elytral width, HL - maximum length of head (visible part), HW - maximum width of head, OI - ocular index dorsally, PI - pronotal index dorsally, PL - maximum pronotal length, PW - pronotal width at base, RLA - ratios of relative lengths of antennomeres 1-11 from base to apex (3=1.00), RL/WA - ratios of length / maximum width of antennomeres 1-11 from base to apex, RLT - ratios of relative lengths of tarsomeres 1-5 respectively 1-4 from base to apex (1=1.00).

Measurements were made with Olympus SZ 40 stereoscopic microscope with continuous magnification and with Soft Imaging System AnalySIS.

TAXONOMY

DESCRIPTION OF THE GENUS *KSUKOLCULA* GEN. NOV.

Type species: *Ksukolcula hesperia* sp. nov.

Description. Habitus as in Figs. 1, 6, 11, 16, body narrow, elongate, parallel, *leptura*-shaped, from ochre yellow to black, dorsal surface setose, with punctuation and fine microgranulation, shiny. BL from 7,5 to 12,5 mm. Widest in base of elytra; from base to half of elytra length parallel or slightly narrowing, BL/EW from 3.4 to 3.7. Head (Figs. 2, 7, 12, 17) relatively small and narrow, approximately as wide as anterior margin of pronotum, dorsal surface with pale setation and dense punctuation. Posterior part usually darker than anterior part or clypeus. HW/PW 0.70-0.76. Eyes large, transverse, strongly excised, space between eyes narrow; narrower than diameter of one eye, wider than length of antennomere 2; OI in males from 20 to 27. Antennae (Figs. 2, 7, 12, 17) long, very narrow, filiform, with short setation, fine microgranulation and punctures, AL/BL 0.8-0.9. Antennomere 2 shortest, antennomeres 9-11 usually slightly shorter than antennomeres 5-8. Maxillary palpus with pale setae and fine microgranulation. Palpomeres 2, 3 distinctly narrowest in base and widest in apex. Ultimate palpomere triangular. Pronotum (Figs. 2, 7, 12, 17) narrow, convex, widest near middle of side margins, approximately as long as wide in base, with short, pale setation and dense punctuation. PI of 72-98. Border lines narrow, lateral and anterior margins slightly

arcuate, base finely bisinuate. Posterior and anterior angles distinct. Elytron elongate, narrow, parallel, widest near half of elytra length, dorsal surface shiny. Elytral striae with distinct rows of punctures, elytral intervals with sparse, very small punctures and very fine microgranulation. Elytral epipleura well developed, very wide in base, with pale setae and punctuation, regularly narrowing to metasternum or ventrite 1, then very narrow and parallel. Legs relatively narrow, with pale setation, microgranulation and punctuation. Protibia (Figs. 3, 8, 13, 18) short, with two thorns near middle of inner side. All femora strong and broad. Protarsomeres 2-4 or 3 and 4, mesotarsomeres 3, 4 and metatarsomeres 3 distinctly widened and lobed. Anterior tarsal claws pectinate, with visible teeth. Aedeagus (Figs. 4, 5, 9, 10, 14, 15, 19, 20).

Female. Body more robust, space between eyes wider than those in males. Protibia without thorns. Anterior tarsal claws with less teeth than in male.

Differential diagnosis. Species of new genus *Ksukolcula* gen. nov. are similar to the species of the genus *Indricula* Novák, 2016. They differ mainly by all femora strong and broad and protibia of male with two thorns near middle of inner side; while species of *Indricula* have profemora distinctly broader than meso- and metafemora and protibia of male have only one thorn in middle of inner side.

Etymology. The compound name consisting of the Czech name (Ksukol) of a species of low monkey family Daubentoniidae and ending -cula indicating affinity to the genus *Allecula* Fabricius, 1801. Gender feminine.

Distribution. Laos, Thailand.

Key to the male species of *Ksukolcula* gen. nov.

- A(B) Male protibia with one distinct thorn on inner side; profemora distinctly wider than meso- and metafemora. *Indricula* Novák
- B(A) Male protibia with two distinct thorns on inner side; all femora strong and broad.
- Ksukolcula* gen. nov. 1
- 1(2) Metatibia distinctly excised on inner side. 3
- 2(1) Metatibia without excision on inner side. 5
- 3(4) Basal half of elytra with long pale setae, pronotum shorter and wider (PI 72-81) with sides more arcuate. Habitus as in Fig. 16, head and pronotum (Fig. 17), protibia of male (Fig. 18), metatibia of male (Fig. 19), aedeagus (Figs. 20 and 21). Thailand. *Ksukolcula zerynthia* sp. nov.
- 4(3) Basal half of elytra with sparse and short pale setae, pronotum longer and narrower (PI 87-97) with sides very slightly arcuate. Habitus as in Fig. 1, head and pronotum (Fig. 2), protibia of male (Fig. 3), aedeagus (Figs. 4 and 5). Laos. *Ksukolcula hesperia* sp. nov.
- 5(6) Scutellum pentagonally shaped, antennomere 5 distinctly longer than antennomere 4. Habitus as in Fig. 6, head and pronotum (Fig. 7), protibia of male (Fig. 8), aedeagus (Figs. 9 and 10). Laos. *Ksukolcula issoria* sp. nov.
- 6(5) Scutellum roundly triangular, antennomere 4 distinctly longer than antennomere 5. Habitus as in Fig. 11, head and pronotum (Fig. 12), protibia of male (Fig. 13), aedeagus (Figs. 14 and 15). Laos. *Ksukolcula ochlodes* sp. nov.

***Ksukolcula hesperia* sp. nov.**

(Figs. 1-5)

Type locality. Laos, Savannakhet prov., Phou Xhang He near Ban Pa Phanknau, 17°00'N; 105°38'E, 250-400 m.

Type material. Holotype (♂): LAOS, Savannakhet prov. / Phou Xhang He NBCA, ca 5km / SW Ban Pa Phanknau, / 250-400m, 31.v.-6.vi. / 2011; 17°00'N; 105°38'E // NHMB Basel Expedition: / M. Brancucci, M. Geiser, / D. Hauck, Z. Kraus, A. / Phantala & E. Vongphachan, (NHMB). Paratypes: (13 ♂♂ 7 ♀♀): same data as holotype, (DHBC, NHMB, VNPC). The types are provided with a printed red label: '*Ksukolcula hesperia* sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 1, body more robust, elongate, parallel, from ochre yellow to blackish brown, dorsal surface setose, with punctuation, shiny. BL 11.29 mm. Widest in base of elytra; from base to elytral half parallel, BL/EW 3.53.

Head (Fig. 2) relatively small and narrow, slightly wider than anterior margin of pronotum, dorsal surface with long, pale setation and dense punctuation, punctures small-sized. Posterior part dark blackish brown, anterior part distinctly paler - brown, clypeus reddish brown with fine microgranulation, distinctly excised in middle of anterior margin. HL (visible part) 1.25 mm; HW 1.63 mm; HW/PW 0.71. Eyes large, transverse, strongly excised, space between eyes narrow; narrower than diameter of one eye, approximately as wide as length of antennomere 1; OI equal to 20.40.

Antennae (Fig. 2). Long, narrow, filiform, with short pale setation, fine microgranulation and punctures, AL 9.16 mm; AL/BL 0.81. Antennomeres 1-7 pale brown, antennomeres 8-11 slightly darker. Antennomeres 1-3 slightly shiny, antennomeres 4-11 matte. Antennomere 2 shortest, antennomere 4 more than 1.5 longer than antennomere 3.

RLA (1-11): 0.57 : 0.23 : 1.00 : 1.62 : 1.82 : 1.65 : 1.67 : 1.60 : 1.50 : 1.38 : 1.21.

RL/WA (1-11): 1.93 : 1.21 : 5.50 : 8.42 : 9.00 : 8.15 : 8.68 : 8.78 : 7.79 : 8.06 : 6.00.

Maxillary palpus reddish brown, with long, pale setae and fine microgranulation. Palpomeres 2, 3 distinctly narrowest in base and widest in apex. Ultimate palpomere slightly darker, triangular.

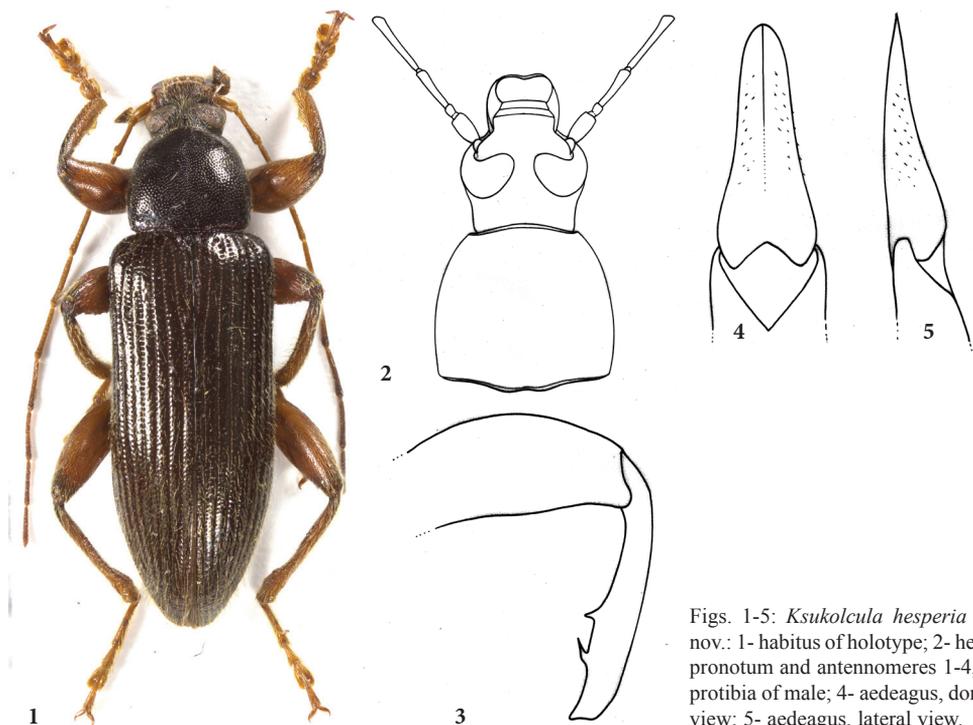
Pronotum (Fig. 2). Blackish brown, convex, widest near middle of side margins, in base slightly wider than long in middle, pale setation sparse, dense punctuation with relatively small punctures and very sparse and fine microgranulation. PL 2.21 mm; PW 2.30 mm; PI equal to 96.05. Border lines narrow, lateral and anterior margins slightly arcuate, base finely bisinuate. Posterior and anterior angles obtuse.

Ventral side of body black, with short and sparse, pale setation and punctures, slightly shiny. Abdomen black, with pale setation, fine microgranulation, matte. Ultimate ventrite with large shallow impression.

Elytron. Blackish brown, elongate, parallel widest in base, dorsal surface with relatively dense and long, pale setation. Elytral striae with distinct rows of medium-sized punctures, elytral intervals with sparse, small punctures, microgranulation not clearly distinct, shiny. EL 7.83 mm; EW 3.20 mm. EL/EW 2.45.

Scutellum wide, blackish brown, roundly triangular, shiny.

Elytral epipleura. Well developed, black, widest in base, with pale setae and punctuation, regularly narrowing to ventrite 1, then narrow leads parallel.



Figs. 1-5: *Ksukulcula hesperia* sp. nov.: 1- habitus of holotype; 2- head, pronotum and antennomeres 1-4, 3- protibia of male; 4- aedeagus, dorsal view; 5- aedeagus, lateral view.

Legs reddish brown, strong, with long, pale setation, microgranulation and punctuation, punctures very small and shallow. Protibia (Fig. 3) shorter and wider with two shorter thorns in apical half of inner side. Profemora stronger than meso- and metafemora. Protarsomeres 2-4, mesotarsomes 3 and 4 and metatarsomeres 3 distinctly widened and lobed. RLT: 1.00 : 0.44 : 0.80 : 1.04 : 1.81 (protarsus); 1.00 : 0.65 : 0.96 : 0.64 : 0.97 (mesotarsus); 1.00 : 0.36 : 0.54 : 0.89 (metatarsus).

Anterior tarsal claws long with 26 visible teeth.

Aedeagus (Figs. 4, 5). Ochre yellow, slightly shiny. Basal piece rounded laterally and narrowing dorsally. Apical piece beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece 1: 3.30.

Female. More robust, elytra widest in two thirds of elytral length, space between eyes distinctly wider, protibia without thorns, femora thicker, tarsomeres narrower, anterior tarsal claws with 12-14 teeth.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=14). BL 10.40 mm (8.42-12.42 mm); HL 1.12 mm (0.96-1.28 mm); HW 1.52 mm (1.24-1.79 mm); OI 22.32 (20.40-24.30); PL 1.91 mm (1.47-2.21 mm); PW 2.08 mm (1.61-2.49 mm); PI 92.22 (86.65-97.21); EL 7.38 mm (5.48-8.96 mm); EW 3.05 mm (2.41-3.68 mm). Females (n=7). BL 10.30 mm (8.82-11.98 mm); HL 1.23 mm (0.97-1.43 mm); HW 1.50 mm (1.32-1.67 mm); OI 30.35 (28.96-31.86);

PL 1.81 mm (1.56-2.03 mm); PW 2.09 mm (1.71-2.46 mm); PI 92.67 (83.99-99.35); EL 7.27 mm (6.29-8.52 mm); EW 3.23 mm (2.86-3.66 mm).

Differential diagnosis. (For details see the key above). Males of *Ksukolcula hesperia* sp. nov. differ from males of similar species *Ksukolcula issoria* sp. nov. and *Ksukolcula ochlodes* sp. nov. mainly by metatibia distinctly excised on inner side; while males of *K. issoria* and *K. ochlodes* have metatibia without excision on inner side. *K. hesperia* is distinctly different from similar species *Ksukolcula zerynthia* sp. nov. mainly by pronotum longer and narrower (PI 87-97) with sides very slightly arcuate and basal half of elytra with sparse and short pale setae; while *K. zerynthia* has basal half of elytra with long pale setae and pronotum shorter and wider (PI 72-81) with sides more arcuate.

Etymology. The name of this species, a noun in apposition, is the Latin generic name of the butterfly Silver-Spotted Skipper *Hesperia comma* (Linnaeus, 1758).

Distribution. Laos.

Ksukolcula issoria sp. nov.

(Figs. 6-10)

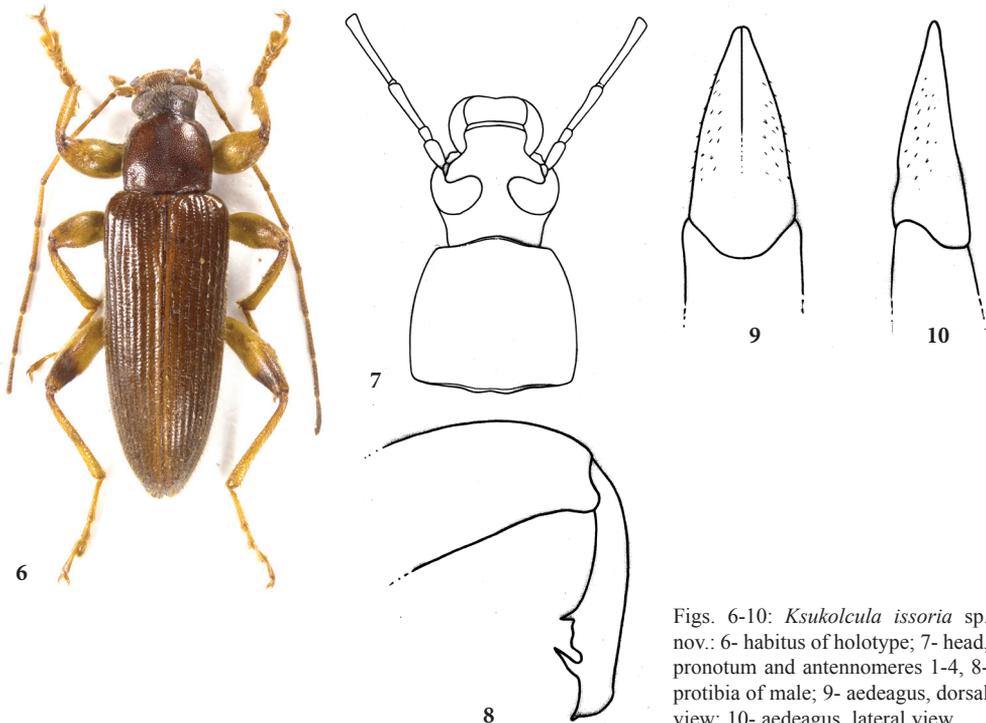
Type locality. Laos, Champasak prov., Ban Nong Panouan env., 15°02'N, 106°31-34'E, 770-800 m.

Type material. Holotype (♂): LAOS, Champasak Prov. / 15°02'N; 106°31-34'E; / Ban Nong Panouan env., / 770-800m, 10.-17.vi.2010; M. Geiser & D. Hauck leg. // NHMB Basel / Laos 2010 Expedition: / M. Brancucci, M. Geiser, / D. Hauck, (NHMB). Paratypes: (6 ♂♂ 26 ♀♀): same data as holotype, (DHBC, NHMB, VNPC). (6 ♂♂ 8 ♀♀): LAOS, Champasak Prov. / 13°06'N; 106°35-38'E; Ban / Nam Touad env. (near Xe / Katamtok), 500-800m, 8.-10.vi. / 2010 M. Geiser & D. Hauck leg. // NHMB Basel / Laos 2010 Expedition: / M. Brancucci, M. Geiser, / D. Hauck, (DHBC, NHMB, VNPC). The types are provided with a printed red label: 'Ksukolcula issoria sp. nov. HOLOTYPE [or PARATYPE] V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 6, body robust, elongate, parallel, from ochre yellow to brown, dorsal surface setose, with dense punctuation and very fine microgranulation, shiny. BL 9.40 mm. Widest in base of elytra; from base to elytral half parallel, BL/EW 3.67.

Head (Fig. 7) relatively small, slightly wider than anterior margin of pronotum, dorsal surface with long, pale setation and dense punctuation. Posterior part dark blackish brown, anterior part distinctly paler - reddish brown, clypeus pale brown with fine microgranulation and microrugosities, distinctly excised in middle of anterior margin. HL (visible part) 1.17 mm; HW 1.38 mm; HW/PW 0.76. Eyes large, transverse, strongly excised, space between eyes narrow; narrower than diameter of one eye, approximately as wide as length of antennomere 1; OI equal to 23.94.

Antennae (Fig. 7). Long, narrow, filiform, with short, dense setation, punctuation and fine microgranulation, AL 8.34 mm; AL/BL 0.89. Antennomeres 1-8 ochre yellow, antennomeres 4-8 with darker apex, antennomeres 8-11 brown, distinctly darker than antennomere 1-8. Antennomeres 4-11 matter than slightly shiny antennomeres 1-3. Antennomere 2 shortest, antennomere 4 more than 1.5 longer than antennomere 3.



Figs. 6-10: *Ksukolcula issoria* sp. nov.: 6- habitus of holotype; 7- head, pronotum and antennomeres 1-4, 8- protibia of male; 9- aedeagus, dorsal view; 10- aedeagus, lateral view.

RLA (1-11): 0.68 : 0.32 : 1.00 : 1.69 : 1.80 : 1.76 : 1.70 : 1.77 : 1.67 : 1.51 : 1.43.

RL/WA (1-11): 2.11 : 1.35 : 3.65 : 7.10 : 7.55 : 8.22 : 7.94 : 6.77 : 7.00 : 7.47 : 6.67.

Maxillary palpus pale brown, with pale setation and fine microgranulation. Palpomeres 2, 3 distinctly narrowest in base and widest in apex. Ultimate palpomere triangular.

Pronotum (Fig. 7). Brown, shiny, convex, widest near middle of side margins, approximately as long as wide in base, with sparse, pale setation near sides and dense punctuation, punctures small-sized. Dorsal surface with three shallow impressions; one near middle of anterior margin, further two oblique near base. PL 1.72 mm; PW 1.81 mm; PI equal to 95.00. Border lines narrow, lateral and anterior margins slightly arcuate, base very finely bisinuate. Posterior and anterior angles roundly obtuse.

Ventral side of body dark brown, with sparse and short, pale setation and punctures, shiny. Abdomen pale brown, with pale setation, punctures and fine microgranulation, shiny. Ultimate ventrite partly darker.

Elytron. Brown, near suture pale brown, elongate, parallel, widest in base, dorsal surface with relatively long, pale setation. Elytral striae with distinct rows of medium-sized punctures, elytral intervals with sparse, small punctures and very fine microgranulation, shiny. EL 6.51 mm; EW 2.56 mm. EL/EW 2.54.

Scutellum wide, roundly triangular, brown with sides darker, shiny, with punctures and fine microgranulation.

Elytral epipleura. Well developed, dark brown, shiny, widest in base, with pale setae and punctuation, regularly narrowing to metasternum, then leads parallel.

Legs ochre yellow, apex of femora narrowly darker, with long, ochre yellow setation, microgranulation and punctuation, punctures very small. Protibia (Fig. 8) shorter and wider with two thorns in apical half of inner side. Profemora stronger than meso- and metafemora. Pro- and mesotarsomeres 3, 4 and metatarsomeres 3 distinctly widened and lobed. RLT: 1.00 : 0.56 : 0.73 : 0.97 : 1.68 (protarsus); 1.00 : 0.51 : 0.52 : 0.78 : 1.28 (mesotarsus); 1.00 : 0.39 : 0.38 : 0.71 (metatarsus).

Anterior tarsal claws long with 19 visible teeth.

Aedeagus (Figs. 9, 10). Ochre yellow, slightly shiny. Basal piece rounded laterally and slightly narrowing dorsally. Apical piece beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece 1: 3.87.

Female. More robust, elytra widest near two thirds of elytral length, space between eyes distinctly wider, protibia without spines, femora thicker, tarsomeres narrower, anterior tarsal claws with 10 or 11 teeth.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=13). BL 8.53 mm (7.41-10.00 mm); HL 1.09 mm (1.01-1.17 mm); HW 1.24 mm (1.07-1.44 mm); OI 23.91 (21.65-26.90); PL 1.49 mm (1.27-1.78 mm); PW 1.66 mm (1.39-1.97 mm); PI 89.52 (85.39-95.00); EL 5.94 mm (5.09-7.05 mm); EW 2.29 mm (1.98-2.72 mm). Females (n=34). BL 9.27 mm (7.74-10.47 mm); HL 1.13 mm (1.07-1.18 mm); HW 1.31 mm (1.12-1.48 mm); OI 32.49 (29.38-34.87); PL 1.55 mm (1.22-1.94 mm); PW 1.79 mm (1.36-2.05 mm); PI 82.60 (79.19-85.53); EL 6.59 mm (5.45-7.92 mm); EW 2.81 mm (2.20-3.04 mm).

Differential diagnosis. (For details see the key above). Males of *Ksukolcula issoria* sp. nov. differ from males of similar species *Ksukolcula hesperia* sp. nov. and *Ksukolcula zerynthia* sp. nov. mainly by metatibia without excision on inner side; while males of *K. hesperia* and *K. zerynthia* have metatibia distinctly excised on inner side. *K. issoria* is distinctly different from similar species *Ksukolcula ochlodes* sp. nov. mainly by scutellum pentagonally shaped and antennomere 5 distinctly longer than antennomere 4; while *K. ochlodes* has scutellum roundly triangular and antennomere 4 distinctly longer than antennomere 5.

Etymology. The name of this species, a noun in apposition, is the Latin generic name of the butterfly Queen of Spain Fritillary *Issoria lathonia* (Linnaeus, 1758).

Distribution. Laos.

Ksukolcula ochlodes sp. nov.

(Figs. 11-15)

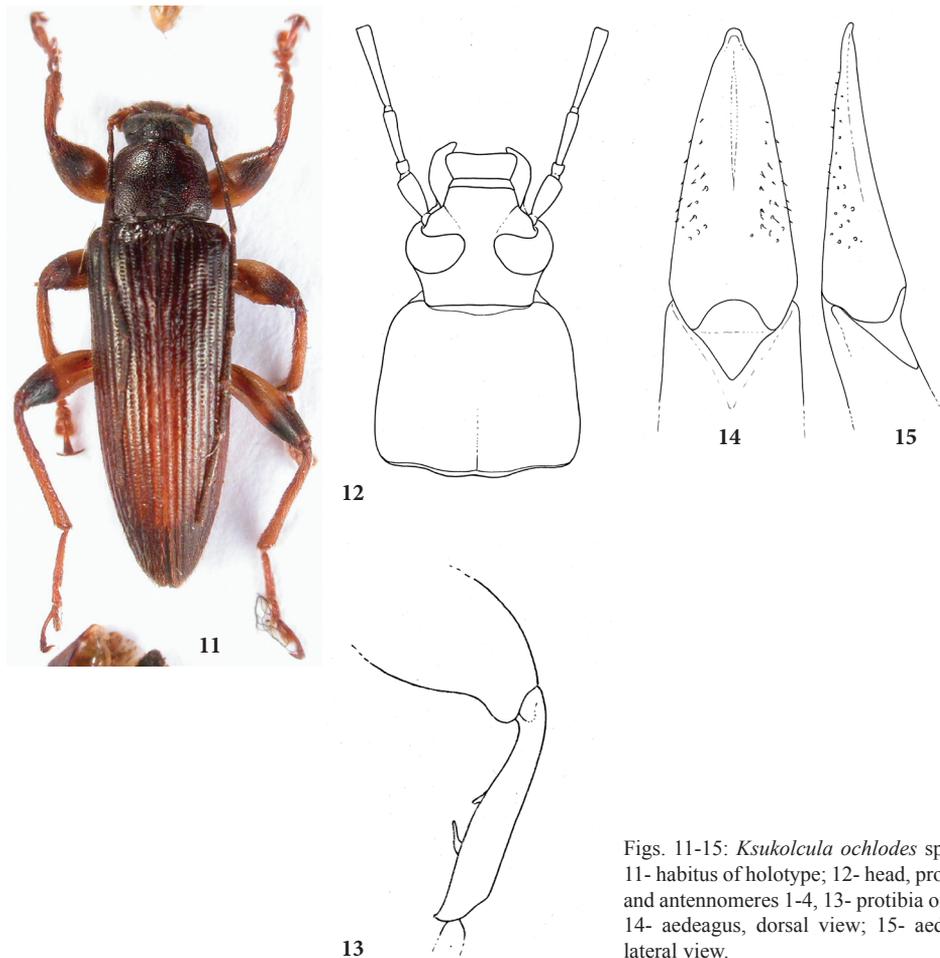
Type locality. Laos, Attapu prov., Bolaven Plateau, 15 km SE of Ban Houaykong, Nong Lom lake env., N 15°02', E 106°35', 800 m.

Type material. Holotype (♂): LAOS south., Attapu prov., / Bolaven Plateau, 18-30.IV.1999, / 15 km SE of Ban Houaykong, / NONG LOM (lake) env. / N 15°02', E 106°35', alt. 800m, / E. Jendek & O. Šauša leg., (VNPC). The type is provided with a printed red label: 'Ksukolcula ochlodes sp. nov. HOLOTYPUS V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 11, body narrow, elongate, from ochre yellow to brown, dorsal surface setose, with punctuation, shiny. BL 9.86 mm. Widest in base of elytra; from base to elytral half parallel, BL/EW 3.50.

Head (Fig. 12) relatively small and narrow, slightly narrower than pronotum, dorsal surface with pale setation and dense punctuation. Posterior part dark brown, anterior part distinctly paler, reddish brown, clypeus pale reddish brown with fine microgranulation, very slightly excised in middle of anterior margin. HL (visible part) 1.02 mm; HW 1.37 mm; HW/PW 0.71. Eyes large, transverse, strongly excised, space between eyes narrow; narrower than diameter of one eye, narrower than length of antennomere 1; OI equal to 22.88.

Antennae (Fig. 12). Long, narrow, filiform, with short, dense setation, fine microgranulation and punctures, AL(1-10) 7.70 mm; AL(1-10)/BL 0.78. Antennomeres 1 and 2 pale brown, antennomeres from the third antennomere dark brown. Antennomere 2



Figs. 11-15: *Ksukolcula ochlodes* sp. nov.: 11- habitus of holotype; 12- head, pronotum and antennomeres 1-4, 13- protibia of male; 14- aedeagus, dorsal view; 15- aedeagus, lateral view.

shortest, antennomere 4 longest, distinctly longer than antennomere 5.

RLA (1-10): 0.80 : 0.27 : 1.00 : 1.72 : 1.62 : 1.58 : 1.54 : 1.56 : 1.52 : 1.38.

RL/WA (1-10): 2.73 : 1.38 : 3.89 : 5.38 : 5.56 : 6.32 : 6.22 : 5.88 : 5.66 : 5.22.

Maxillary palpus pale brown, with pale setation and fine microgranulation, slightly shiny. Palpomeres 2, 3 distinctly narrowest in base and widest in apex. Ultimate palpomere distinctly darker, triangular.

Pronotum (Fig. 12). Dark brown, distinctly wider than in middle long, convex, widest near base, with sparse, pale setation and dense punctuation, shiny. PL 1.59 mm; PW 1.94 mm; PI equal to 81.94. Border lines narrow, lateral and anterior margins more straight, base finely bisinuate. Posterior and anterior angles indistinct, arcuate.

Ventral side of body black, with short and sparse, pale setation and punctures. Abdomen reddish brown, ultimate ventrite distinctly darker, with pale setation, fine microgranulation and small punctures, slightly shiny.

Elytron. Brown, elongate, narrow, widest near base, dorsal surface with relatively dense and long, pale setation. Elytral striae with distinct rows of medium-sized punctures, elytral intervals with sparse, small punctures and fine microgranulation, shiny. EL 7.25 mm; EW 2.82 mm. EL/EW 2.57.

Scutellum wide, roundly triangular, brown, shiny, with microgranulation.

Elytral epipleura. Well developed, dark brown, widest in base, with pale setae and punctuation, regularly narrowing to ventrite 1, then leads parallel.

Legs from ochre yellow to dark brown, with long, pale setation, microgranulation and punctuation, punctures of tarsi and tibia distinctly larger and coarser than those on femora. Tarsi and tibia pale reddish brown, femora ochre yellow with dark brown apex. Protibia (Fig. 13) shorter and wider with two shorter thorns near middle of inner side. Profemora stronger than meso- and metafemora. Pro- and mesotarsomeres 3, 4 and metatarsomeres 3 distinctly widened and lobed. RLT: 1.00 : 0.65 : 0.79 : 1.51 : 2.26 (protarsus); 1.00 : 0.68 : 0.54 : 0.80 : 1.43 (mesotarsus); 1.00 : 0.32 : 0.38 : 0.66 (metatarsus).

Anterior tarsal claws long with 28 visible teeth.

Aedeagus (Figs. 14, 15). Pale brown, slightly shiny. Basal piece rounded laterally and slightly narrowing dorsally. Apical piece, beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece 1: 3.99.

Female. Unknown.

Differential diagnosis. (For details see the key above). Males of *Ksukulcula ochlodes* sp. nov. differ from males of similar species *Ksukulcula hesperia* sp. nov. and *Ksukulcula zerynthia* sp. nov. mainly by metatibia without excision on inner side; while males of *K. hesperia* and *K. zerynthia* have metatibia distinctly excised on inner side. *K. ochlodes* is distinctly different from similar species *Ksukulcula issoria* sp. nov. mainly by scutellum roundly triangular and antennomere 4 distinctly longer than antennomere 5; while *K. issoria* has scutellum pentagonally shaped and antennomere 5 distinctly longer than antennomere 4.

Etymology. The name of this species, a noun in apposition, is the Latin generic name of the butterfly Large Skipper *Ochlodes sylvanus* (Esper, 1777).

Distribution. Laos.

***Ksukolcula zerynthia* sp. nov.**

(Figs. 16-21)

Type locality. Thailand, Ubon Ratchathani prov., Phu Chong-Na Yoi N. P.

Type material. Holotype (♂): Phu Chong-Na Yoi N.P. / Ubon Ratchathani-Prov. / CE THAILAND / 10 V 2008 / Shigeo TSUYUKI leg., (NMTJ). Paratypes: (1 ♂ 3 ♀♀): same data as holotype, (KMTJ, VNPC). The types are provided with a printed red label: 'Ksukolcula zerynthia sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 16, body narrow, elongate, from ochre yellow to brown, dorsal surface setose, with punctuation and fine microgranulation, shiny. BL 10.65 mm. Widest near middle of elytra length; from base to elytral half parallel, BL/EW 3.42.

Head (Fig. 17) brown, relatively small and narrow, distinctly wider than anterior margin of pronotum, dorsal surface with long, pale setation and dense punctuation. Posterior part darker than anterior part, clypeus pale reddish brown with fine microgranulation and microrugosities, punctures very shallow, distinctly excised in middle of anterior margin. HL (visible part) 1.18 mm; HW 1.53 mm; HW/PW 0.70. Eyes large, transverse, strongly excised, space between eyes narrow; narrower than diameter of one eye, distinctly wider than length of antennomere 2; OI equal to 22.32.

Antennae (Fig. 17). Long, narrow, filiform, with short, dense setation, fine microgranulation and punctures, AL 9.45 mm; AL/BL 0.89. Antennomeres 1-3 ochre yellow, antennomeres 4-9 with darker apex, antennomeres 10 and 11 brown. Antennomeres 3-10 slightly wider in apex. Antennomere 2 shortest, antennomere 4 more than 1.5 longer than antennomere 3.

RLA (1-11): 0.65 : 0.22 : 1.00 : 1.57 : 1.58 : 1.76 : 1.62 : 1.60 : 1.67 : 1.44 : 1.33.

RL/WA (1-11): 2.11 : 1.07 : 4.00 : 7.06 : 7.83 : 8.43 : 9.32 : 7.67 : 8.93 : 7.43 : 6.62.

Maxillary palpus brown, with long, pale setae and fine microgranulation. Palpomeres 2, 3 distinctly narrowest in base and widest in apex. Ultimate palpomere slightly darker, triangular.

Pronotum (Fig. 17). Brown, narrow, slightly convex, widest near middle of side margins, approximately as long as wide in base, with long, pale setation, dense punctuation and fine microgranulation. PL 1.98 mm; PW 2.02 mm; PI equal to 98.20. Border lines narrow, lateral and anterior margins slightly arcuate, base finely bisinuate. Posterior and anterior angles distinct, roundly obtuse.

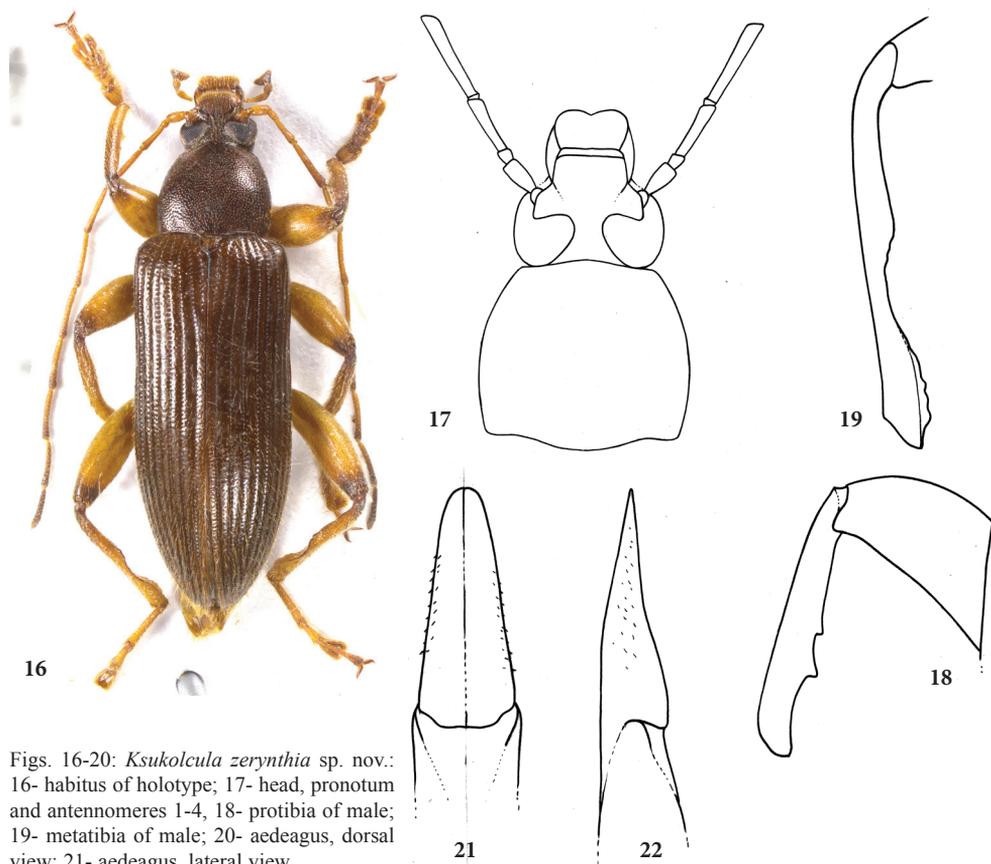
Ventral side of body blackish brown, with short, pale setation and punctures. Abdomen blackish brown, with pale setation, fine microgranulation and small, shallow punctuation.

Elytron. Brown, elongate, narrow, parallel widest near half of elytra length, dorsal surface with relatively dense and long, pale setation. Elytral striae with distinct rows of medium-sized punctures, elytral intervals with sparse, small punctures and very fine microgranulation, shiny. EL 7.89 mm; EW 3.11 mm. EL/EW 2.54.

Scutellum pentagonally shaped, pale brown with sides darker, with microrugosities, pale setae and punctures.

Elytral epipleura. Well developed, blackish brown, shiny, widest in base, with pale setae and punctuation, regularly narrowing to metasternum, then leads parallel.

Legs ochre yellow, with pale setation, microgranulation and punctuation, punctures very



Figs. 16-20: *Kukulcula zerynthia* sp. nov.: 16- habitus of holotype; 17- head, pronotum and antennomeres 1-4, 18- protibia of male; 19- metatibia of male; 20- aedeagus, dorsal view; 21- aedeagus, lateral view.

small. Base of tibia and apex of femora darker. Protibia (Fig. 18) shorter and wider with two shorter thorns near middle of inner side. Femora strong. Mesotibia with fine and metatibia (Fig. 19) with strong excision in inner side. Pro- and mesotarsomeres 3, 4 and metatarsomeres 3 distinctly widened and lobed. RLT: 1.00 : 0.63 : 0.75 : 1.07 : 1.28 (protarsus); 1.00 : 0.55 : 0.72 : 1.05 : 1.46 (mesotarsus); 1.00 : 0.41 : 0.49 : 0.80 (metatarsus).

Anterior tarsal claws long with 24 visible teeth.

Aedeagus (Figs. 19, 20). Ochre yellow, slightly shiny. Basal piece rounded laterally and narrowing dorsally. Apical piece beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece 1 : 3.77.

Female. More robust, elytra widest near middle, space between eyes distinctly wider, protibia without thorns, anterior tarsal claws with 9 teeth.

RLA (1-11): 0.94 : 0.62 : 1.00 : 2.27 : 2.12 : 2.46 : 2.46 : 2.52 : 2.30 : 2.33 : 2.58.

RL/WA (1-11): 1.70 : 1.59 : 1.83 : 3.41 : 3.04 : 3.38 : 3.24 : 3.19 : 3.30 : 3.08 : 3.54.

RLT: 1.00 : 0.55 : 0.49 : 0.55 : 1.38 (protarsus); 1.00 : 0.40 : 0.41 : 0.42 : 0.87 (mesotarsus);

1.00 : 0.38 : 0.23 : 0.55 (metatarsus).

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=2). BL 9.82 mm (8.99-10.65 mm); HL 1.10 mm (1.01-1.18 mm); HW 1.43 mm (1.32-1.53 mm); OI 22.68 (22.32-23.04); PL 1.60 mm (1.58-1.62 mm); PW 2.11 mm (2.01-2.20 mm); PI 76.35 (71.90-80.80); EL 7.13 mm (6.36-7.89 mm); EW 2.88 mm (2.65-3.11 mm). Females (n=3). BL 10.42 mm (9.40-11.01 mm); HL 1.25 mm (1.22-1.27 mm); HW 1.52 mm (1.48-1.56 mm); OI 29.85 (26.95-33.72); PL 1.72 mm (1.56-1.92 mm); PW 2.10 mm (1.83-2.35 mm); PI 82.42 (80.06-85.42); EL 7.45 mm (6.57-7.90 mm); EW 3.31 mm (3.15-3.43 mm).

Differential diagnosis. (For details see the key above). Males of *Ksukolcula zerynthia* sp. nov. differ from males of similar species *Ksukolcula issoria* sp. nov. and *Ksukolcula ochlodes* sp. nov. mainly by metatibia distinctly excised in inner side; while males of *K. issoria* and *K. ochlodes* have metatibia without excision in inner side. *K. zerynthia* is distinctly different from similar species *Ksukolcula hesperia* sp. nov. mainly by basal half of elytra with long pale setae and pronotum shorter and wider (PI 72-81) with sides more arcuate; while *K. hesperia* has basal half of elytra with sparse and short pale setae, pronotum longer and narrower (PI 87-97) with sides very slightly arcuate.

Etymology. The name of this species, a noun in apposition, is the Latin generic name of the butterfly Southern Festoon *Zerynthia polyxena* (Denis et Schiffermüller, 1775).

Distribution. Thailand.

ACKNOWLEDGEMENTS. Sincere thanks are due to David Hauck (DHBC), Kimio Masumoto (KMTJ), Michel Brancucci (†) and Michael Geiser (NHMB) for the loan of new material. Special thanks are due to Zuzana Čadová (Liberec, the Czech Republic) for excellent drawings.

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Received: 29.11.2016

Accepted: 10.12.2016