

New genera of Alleculinae (Coleoptera: Tenebrionidae: Alleculinae) from Palearctic and Oriental Regions

Vladimír NOVÁK

Nepasické náměstí 796, CZ-190 14 Prague 9 - Klánovice
e-mail: alleculinae.vn@centrum.cz

Taxonomy, new genera, new species, Coleoptera, Tenebrionidae, Alleculinae, *Kombacula* gen. nov., *Makicula* gen. nov. and *Potocula* gen. nov., Palearctic and Oriental Regions

Abstract. Three new genera clearly belonging to the *Bolbostetha* genera group are established - *Kombacula* gen. nov. with the species *Kombacula kantneri* sp. nov. from Laos and Malaysia and *Kombacula tortipes* (Borchmann, 1934) comb. nov. from Sumatra; *Makicula* gen. nov. with the species *Makicula andreasi* sp. nov. and *Makicula mengi* sp. nov. from China (Yunnan), *Makicula bobikae* sp. nov., *Makicula doriae* sp. nov. and *Makicula phoupaneica* sp. nov. from Laos; *Potocula* gen. nov. with the species *Potocula kubani* sp. nov. from Thailand. A key to the males of genera of the *Bolbostetha* genera group and a key to species of *Makicula* are added. All the new species are compared with related species and illustrated.

INTRODUCTION

The tenebrionid genus *Allecula* Fabricius, 1801 was described by Fabricius (1801) for a single species *Allecula morio* (Fabricius, 1787), previously described as *Cistela* Geoffroy, 1762. Fairmaire (1896) described a new genus *Bolbostetha* - similar to the genus *Allecula*. Species of this new genus distinctly differ mainly by antennomere 3 shorter than antennomere 4, strongly broadened and lobed anterior tarsomere 1-4 or 2-4, anterior tibia of males with teeth, excisions, depressions and anterior femora of males distinctly broadened (Novák 2008a). Two new genera similar to *Bolbostetha* were described by Novák (2008b) as *Evaostetha* Novák, 2008 and *Petrostetha* Novák, 2008 and the group including these similar genera was named the *Bolbostetha* genera group.

Three new genera clearly belonging to the *Bolbostetha* genera group are established as follows: *Kombacula* gen. nov. with the species *Kombacula kantneri* sp. nov. from Laos and Malaysia and *Kombacula tortipes* (Borchmann, 1934) comb. nov. from Sumatra; *Makicula* gen. nov. with the species *Makicula andreasi* sp. nov. and *Makicula mengi* sp. nov. from China (Yunnan), *Makicula bobikae* sp. nov., *Makicula doriae* sp. nov. and *Makicula phoupaneica* sp. nov. from Laos; *Potocula* gen. nov. with the species *Potocula kubani* sp. nov. from Thailand. A key to the males of genera of the *Bolbostetha* genera group and a key to the males of species of *Makicula* are added. All new species are compared and illustrated.

MATERIAL AND METHODS

The following two important morphometric characteristics are used in descriptions of species of the subfamily Alleculinae: the 'ocular index' dorsaly (Campbell & Marshall

1964) is calculated by measuring the minimum distance between the eyes and dividing this value by the maximum dorsal width across eyes, the quotient resulting from this division being converted into an index by multiplying by 100, and ‘pronotal index’ (Campbell 1965) expresses the ratio of the length of the pronotum along midline to the width at the basal angles, this ratio being multiplied by 100 for convenience in handling.

The following codens are used in the paper:

- DHBC private collection of David Hauck, Brno, Czech Republic;
 NHMB collection of Naturhistorische Museum Basel, Switzerland;
 NMEG collection of Naturkundemuseum, Erfurt, Germany;
 NMPC collection of National Museum, Prague, Czech Republic;
 VNPC private collection of Vladimír Novák, Prague, Czech Republic;
 ZMUH collection of Zoologisches Institut und Museums der Universität Hamburg, Germany.

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

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).

Moreover, a double slash (//) separates data on different labels and a slash (/) data in different lines.

TAXONOMY

KEY TO THE GENERA (MALES)

- 1 (2) Anterior femora distinctly broadened, tibia with teeth, angles, protuberances, processes, depressions and excisions 3
 2 (1) Anterior femora and tibia normal *Allecula* Fabricius, 1801
 3 (4) Anterior tibia flat, paddle-shaped, with obtuse tooth on inner margin 5
 4 (3) Anterior tibia normal, with teeth or angles 7
 5 (6) Inner margin of anterior tibia with one obtuse tooth in posterior half and one obtuse tooth in anterior half
 *Petrostetha* Novák, 2008

6 (5) Inner margin of anterior tibia with obtuse tooth in anterior half only	<i>Kombacula</i> gen. nov.
7 (8) All femora strongly broadened	<i>Makicula</i> gen. nov.
8 (7) Only anterior femora broadened	9
9 (10) Anterior femora with foveae or sharp tooth	11
10 (9) Anterior femora normal without tooth or foveae	<i>Bolbostetha</i> Fairmaire, 1896
11 (12) Anterior femora with foveae	<i>Evaostetha</i> Novák, 2008
12 (11) Anterior femora with tooth	<i>Potocula</i> gen. nov.

***Kombacula* gen. nov.**

Type species: *Kombacula kantneri* sp. nov.

Description. General shape as in Fig. 1, body elongate, parallel, narrow, *leptura*-shaped, with setation. Upper part of body shiny. Head (as in Fig. 2), with punctuation, microgranulation and pale brown setation, slightly narrower than pronotum, eyes large, transverse, deeply excised, space between eyes narrow, distinctly narrower than diameter of eye. Mandibles shiny. Maxillary palpus with microgranulation and setation, with broadly triangular ultimate palpomere. Palpomere 2 and penultimate palpomere distinctly broadest on apex. Antennae long with microgranulation, punctuation and setation, antennomeres very narrow, antennomere 2 shortest, antennomere 3 distinctly shorter than antennomere 4. Pronotum (as in Fig. 2) long and relatively narrow, with dense punctuation and pale brown setation, shiny. Elytra long, parallel, narrow, with pale brown setation. Elytral striae with distinct rows of closed punctures, elytral interspaces distinctly rounded, shiny. Elytral epipleura well-developed, regularly narrowing to abdominal ventrite 1, then leads parallel, with punctuation and setation. Legs with microgranulation, punctuation and setation. All femora of males strongly broadened, anterior tibia (as in Fig. 4) flat, paddle-shaped, with obtuse teeth on inner side. Anterior and middle tarsomeres 3 and 4 and posterior tarsomeres 3 broadened and lobed. Aedeagus large and strong (as in Figs 5, 6), apical piece with short spines and beak-shaped laterally.

Female unknown.

Differential diagnoses. (for further differences see the key above). Males of *Kombacula* gen. nov. clearly differs from males of similar genera *Bolbostetha* Fairmaire, 1896, *Evaostetha* Novák, 2008, *Makicula* gen. nov. and *Potocula* gen. nov. mainly by flat, paddle-shaped anterior tibia, while males of *Bolbostetha*, *Evaostetha*, *Makicula* and *Potocula* have anterior tibia normal. Males of *Kombacula* gen. nov. clearly differs from males of similar genus *Petrostetha* Novák, 2008 mainly by inner side of anterior tibia with one obtuse tooth in anterior part, while males of *Petrostetha* have one obtuse tooth in anterior part and one in posterior part of inner side of anterior tibia.

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

Distribution. Laos, Malaysia, Sumatra.

Kombacula kantneri sp. nov.

(Figs 1-6)

Type locality. Laos, Hua Phan prov., Ban Saluei, Phu Phan Mt., 20°13'N 103°59'E.

Type material. Holotype (♂): NE LAOS, Hua Phan prov. / Ban Saluei, Phu Phan Mt. / 20°13'N 103°59'E; 6.-18.v. / 2004; 1300-2000 m; / F. & L. Kantner leg., (VNPC); (1 ♂): MALAYSIA W, KELANTAN / 60KM NE of Tanah Rata / TANAH KERAJAAN, 12.-30.iv.2007, 1000m / Petr Cechovsky lgt., (VNPC); (1 ♂): LAOS-NE, Houa Phan prov., / 20°12-13.5'N 103°59.5-104°01'E / Ban Saluei→Phou Pane Mt., / 1340-1870m, 15.iv.-15.v. / 2008, Lao collectors leg., (NMPC); (3 ♂♂): LAOS-NE, Houa Phan / prov. 20°12-13.5'N 103° / 59.5-104°01'E, Ban Saluei / →Phou Pane Mt., 1340- / 1870 m, 10.v.-16.vi.2009 M. / Brancucci & local coll. leg. // NMMB Basel, NMPC / Prague Laos 2009 / Expedition: M. Brancucci, / M. Geiser, Z. Kraus, D. / Hauck, V. Kubáň, (DHBC, NHMB, VNPC).

Description of holotype. Habitus as in Fig. 1, body elongate, narrow, parallel, from ochre yellow to blackish-brown, shiny, with pale brown setation, BL 12.57 mm. Widest near elytral base; BL/EW 4.00.

Head (Fig. 2). Posterior part blackish-brown, with sparse, pale brown setation, dense and coarse punctuation and rugosities, slightly shiny. Interspaces between punctures very narrow and shiny. Anterior part and clypeus distinctly paler, with pale brown setation denser and longer than in posterior part. Clypeus distinctly excised in middle, with microgranulation and shallow punctuation, dark brown mandibles shiny. HW 1.70 mm; HW/PW 0.78. HL (visible part) 1.44 mm. Eyes large, transverse, deeply excised, space between eyes slightly narrower than length of antennomere 1; OI equal to 23.77.

Antennae. Long, very narrow, AL 10.47 mm, AL/BL 0.83. Antennomeres ochre yellow, with microgranulation and short and dense yellow setation. Apex of all antennomeres with a few longer setae. Antennomere 2 shortest. Antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.50: 0.22: 1.00: 1.32: 1.34: 1.32: 1.32: 1.29: 1.20: 1.16: 1.10. RL/WA (1-11): 2.05: 1.54: 6.00: 7.93: 6.72: 7.44: 7.44: 8.29: 9.82: 10.40: 7.62.

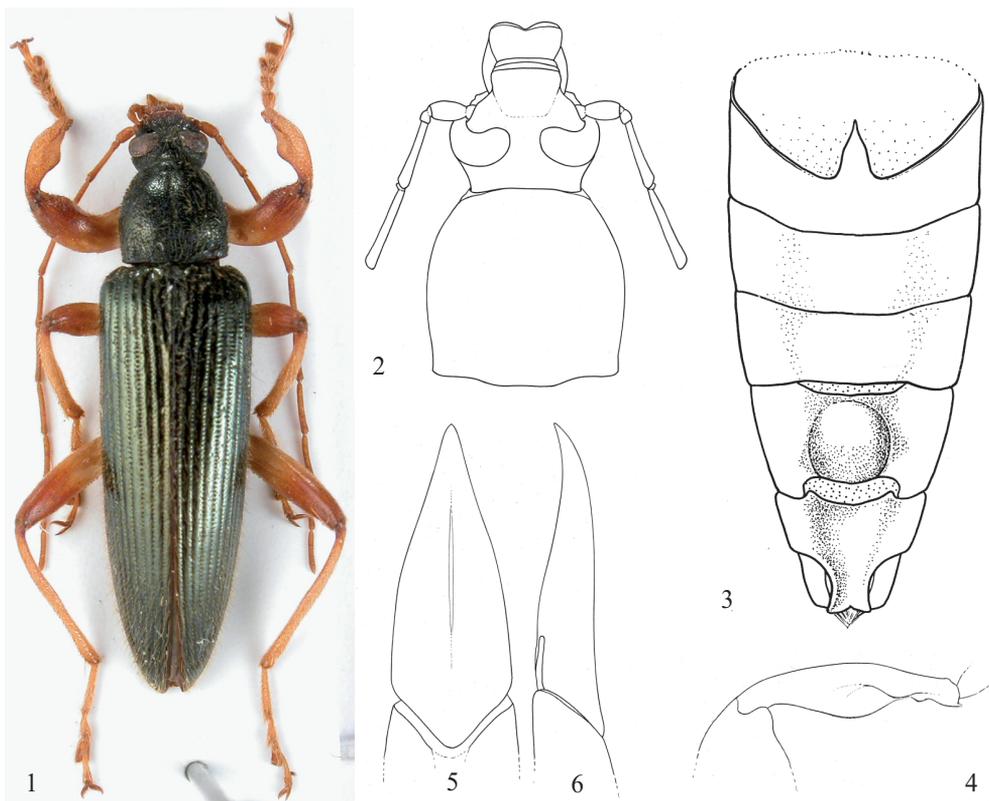
Maxillarypalpus. Palpomeres ochre yellow with long, yellow setation and microgranulation, palpomere 2 and penultimate palpomere distinctly broadest on apex. Ultimate palpomere broadly triangular.

Pronotum (Fig. 2). Dark blackish-brown, slightly shiny, with pale brown setation and dense punctuation, punctures small, distinctly smaller than those on posterior part of head. PL 2.20 mm; PW 2.18 mm. Distinctly longer than wide, broadest near middle, PI equal to 101.02. Border lines complete, narrow, only in middle of anterior margin indistinct. Base very finely bisinuate, posterior and anterior angles not clearly distinct, roundly obtuse, sides finely rounded.

Ventral side of body. Dark blackish-brown, with short, pale brown setation and punctuation.

Abdomen (Fig. 3). From pale brown to brown with microgranulation and distinct rugosities. Sparse, pale brown setation only near sides of ventrites. Abdominal ventrite 4 with large and deep rounded hole in middle, ventrite 5 with longitudinal broad and deep depression in middle and with large rounded excision from both sides of anterior half and fine excision in apex.

Elytron. Long, narrow, parallel, dark blackish-brown with green metallic lustre, with pale brown setation, shiny. EL 8.93 mm. Broadest near elytral base, EW 3.14 mm. EL/EW



Figs 1-6: *Kombacula kantneri* sp. nov.: 1- Habitus of male holotype; 2- Head and pronotum of male holotype; 3- Abdomen of male; 4- Anterior tibia of male holotype; 5- Aedeagus, dorsal view; 6- Aedeagus, lateral view.

2.84. Elytral striae with rows of closed, medium-sized punctures, distinctly larger than those of pronotum. Elytral intervals with fine microgranulation and very sparse and very small punctures, distinctly rounded.

Scutellum. Small, triangular, dark, without lustre, with microgranulation and setation.

Elytral epipleura. Well-developed, dark blackish-brown as elytron itself with punctuation and pale brown setation, regularly narrowing to abdominal ventrite 1, then leads parallel.

Legs (anterior tibia as in Fig. 4). Ochre yellow with very narrow dark blackish-brown ring on apex of femora, with pale brown setation and microgranulation. Inner side of anterior tibia flat and strongly broadened, with longitudinal depression in middle, large obtuse tooth in ventral margin and two smaller rounded tooth in upper margin in anterior part of tibia. Anterior femora strongly broadened, with large oblique depression in middle and small tooth on inner sides near apex. Anterior and middle tarsomeres 3-4, posterior tarsomere 3 distinctly broadened and lobed.

RLT: protarsus: 1.00: 1.02: 0.74: 1.14: 2.07; mesotarsus: 1.00: 0.55: 0.43: 0.35: 0.76; metatarsus: 1.00: 0.48: 0.64: 0.85.

Both anterior tarsal claws with 36 visible teeth.

Aedeagus (Figs 5, 6). Strong and large, basal piece ochre yellow, shiny, rounded laterally and regularly narrowing dorsally. Apical piece longitudinally triangular dorsally and longitudinally beak-shaped laterally, covered with short spines. Ratio of length of apical piece to length of basal piece 1: 2.75.

Female. Unknown.

Variability. Measurements: mean (minimum - maximum). Males (n=6). BL 11.48 mm (9.22-13.80 mm); HL 1.35 mm (1.22-1.56 mm); HW 1.55 mm (1.22-1.85 mm); OI 27.18 (23.77-29.57), PL 2.10 mm (1.65-2.46 mm); PW 2.10 mm (1.60-2.56 mm); PI 99.89 (96.13-102.51); EL 8.37 mm (6.35-9.94 mm); EW 3.04 mm (2.39-3.62 mm).

Differential diagnoses. Male of *Kombacula kantneri* sp. nov. is clearly different from male of similar species *Kombacula tortipes* (Borchmann, 1934) comb. nov. mainly by broader space between eyes (OI equal to 27), abdominal ventrite 4 with rounded foveae in middle, antennomere 3 twice longer than antennomere 1, shape of anterior tibia and dense punctuation of elytral intervals, while males of *K. tortipes* have space between eyes narrower (OI equal to 18), abdominal ventrite 4 without rounded foveae, antennomere 3 approximately as long as antennomere 1 and elytral intervals with sparse punctures.

Etymology. Dedicated to one of the collectors of the type material - František Kantner.

Distribution. Laos.

***Kombacula tortipes* (Borchmann, 1934) comb. nov.**
(Figs 7-11)

Allecula tortipes Borchmann, 1934: 13, Sumatra.

Type locality. Boekit Sabah, Sumatra.

Type material. Holotype (♂): white label: Boekit Sabah / Z. W. K Sumatra / Leg. H. Lucht (printed in black) / 3. 1919 (black handwritten) // pink label: Type (printed in black) // white label: *Allecula / tortipes* n. sp. (black handwritten) // white label: Sammlung / F. Borchmann / Eing. Nr. 5, 1943 (printed in black); (ZMUH).

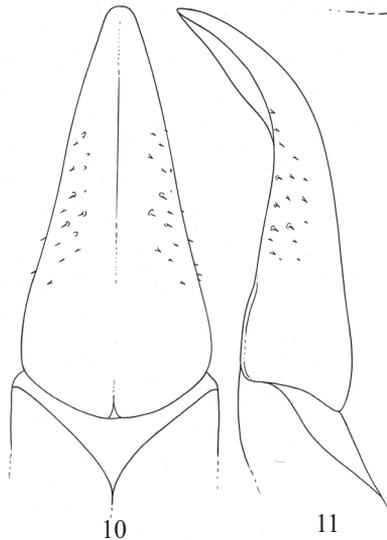
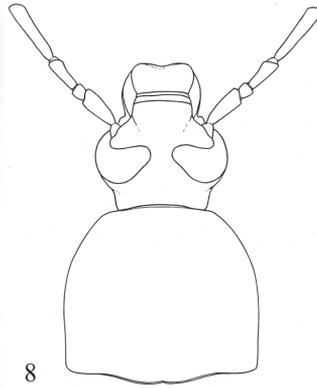
Other material examined. (1 ♂): W. Sumatera / MT. Sanggui / 10.2004.1200m, local collectors, (VNPC).

Remarks. Habitus of male as in Fig. 7, body relatively narrow, parallel. Head and pronotum of male as in Fig. 8, punctuation of pronotum dense and coarse, punctures relatively large. Anterior tibia as in Fig. 9. Aedeagus as in Figs 10 and 11. BL 10.32 mm; HL 0.96 mm; HW 1.50 mm; OI 17.90; PL 1.82 mm; PW 2.27 mm; PI 80.17; EL 7.54 mm; EW 3.37 mm; AL 10.13 mm; AL/BL 0.98; AED (apical piece / basal piece) 1: 4.03.

RLA (1-11): 0.96: 0.35: 1.00: 2.08: 2.27: 2.25: 2.45: 2.53: 2.39: 2.35: 2.33.

RL/WA (1-11): 2.04: 1.00: 2.45: 4.86: 5.71: 4.96: 5.71: 5.91: 6.16: 6.05: 8.77.

RLT: protarsus: 1.00: 0.80: 0.92: 1.14: 1.96; mesotarsus: 1.00: 0.72: 0.91: 1.08: 1.68; metatarsus: 1.00: 0.61: 0.65: 0.89.



Figs 7-11: *Kombacula tortipes* (Borchmann, 1934) comb. nov.: 7- Habitus of male; 8- Head and pronotum of male; 9- Anterior tibia of male; 10- Aedeagus, dorsal view; 11- Aedeagus, lateral view.

Makicula gen. nov.

Type species: *Makicula phoupaneica* sp. nov.

Description. General shape as in Fig. 38, body elongate, parallel, relatively narrow, *leptura*-shaped, with setation. Upper part of body with microgranulation, dull. Head (as in Fig. 39) with punctuation, microgranulation and pale brown setation, slightly narrower than pronotum, eyes large, transverse, deeply excised, space between eyes narrow, distinctly narrower than eye diameter. Mandibles strong, shiny. Maxillary palpus with microgranulation and setation, with broadly triangular ultimate palpomere. Palpomeres 2 and penultimate palpomere distinctly broadest on apex. Antennae long with microgranulation, punctuation and setation, antennomeres very narrow, antennomere 2 shortest, antennomere 3 distinctly shorter than

antennomere 4. Pronotum (as in Fig. 39) long and relatively narrow, with dense punctuation, microgranulation and pale brown setation, dull. Elytra long, parallel and relatively narrow, with microgranulation and pale brown setation. Elytral striae with distinct rows of closed punctures, elytral interspaces with microgranulation, dull. Elytral epipleura well-developed, regularly narrowing to abdominal ventrite 1, then leads parallel, with punctuation and setation. Legs with microgranulation, punctuation and setation. All femora of males strongly broadened, tibia (Figs 40, 41) with teeth, excision, paddle-shaped process, depression and protuberances. Tarsomeres broadened and lobed. Aedeagus large and strong (as in Figs 42, 43).

Female with normal femora and tibia, space between eyes distinctly broader than in male.

Differential diagnoses. (for further differences see the key above). Males of the genus *Makicula* gen. nov. clearly differs from males of similar species of the *Bolbostetha* genera group mainly by all femora distinctly broadened and anterior tibia normal with one tooth, while males of other species of the *Bolbostetha* genera group have only anterior femora broadened or anterior tibia paddle-shaped.

Etymology. The compound name formed of the Czech name (*Maki*) of a species of low monkey family *Cheirogaleidae* and the ending – *cula* marking affinity to the genus *Allecula* Fabricius, 1801. Gender: feminine.

Distribution. China (Yunnan), Laos.

KEY TO THE MALES OF *MAKICULA* SPECIES

- 1 (2) Middle tibia with long paddle-shaped process on apex 3
- 2 (1) Middle tibia at most with short triangular process on apex 5
- 3 (4) Space between eyes approximately as long as length of antennomere 1, scutellum smaller, oval, upper part of body dark blackish-brown, tibia and femora bicolour, sides of pronotum slightly excised near posterior angles. Habitus as in Fig. 18; head and pronotum as in Fig. 19; anterior, middle and posterior tibia as in Figs 20-22; aedeagus as in Figs 23, 24. Laos. *Makicula bobikae* sp. nov.
- 4 (3) Space between eyes distinctly narrower than length of antennomere 1, scutellum broadly triangular, upper part of body brown, tibia and femora unicoloured, sides of pronotum regularly narrowing. Habitus as in Fig. 38; head and pronotum as in Fig. 39; anterior and middle tibia as in Figs 40, 41; aedeagus as in Figs 42, 43. Laos. *Makicula phoupaneica* sp. nov.
- 5 (6) Inner margin of anterior tibia with sharp tooth and rounded excision on apex, outer margin of anterior tibia with distinct depression on apex. Habitus as in Fig. 12; head and pronotum as in Fig. 13; anterior and middle tibia as in Figs 14 and 15; aedeagus as in Figs 16, 17. China (Yunnan)..... *Makicula andreasi* sp. nov.
- 6 (5) Inner margin of anterior tibia with sharp tooth only 7
- 7 (8) Middle and posterior tibia with sharp tooth on inner side. Habitus as in Fig. 31; head and pronotum as in Fig. 32; anterior, middle and posterior tibia as in Figs 33-35; aedeagus as in Figs 36, 37. China (Yunnan). *Makicula mengi* sp. nov.
- 8 (7) Middle and posterior tibia without sharp tooth on inner side. Habitus as in Fig. 25; head and pronotum as in Fig. 26; anterior tibia as in Figs 27; middle tibia as in Fig. 28; aedeagus as in Figs 29, 30. Laos. *Makicula dorae* sp. nov.

***Makicula andreasi* sp. nov.**
(Figs 12-17)

Type locality. China (Yunnan), Xishuangbanna, N22°09.49 E100°39.92, 730 m.

Type material: Holotype (♂) labelled: CHINA: S-YUNNAN, Xishuangbanna / 23 km NW Jinghong vic. Na Ban / (NNNR) N22°09.49 E100°39.92 / 730m 08.V.2009 leg. A. Weigel, (NMEG); Paratypes (1 ♂): CHINA: S-YUNNAN / (Xishuangbanna) / 23 km NW Jinghong / vic. Na Ban (NNNR) // N22°09.49/E100°39.92 / 730m 12.V.2008 traps / site leg. A. Weigel, (VNPC); (1 ♀): CHINA: S-YUNNAN / (Xishuangbanna) / 23 km NW Jinghong / vic. Na Ban (NNNR) // N22°09.49/E100°39.92 / 730m 20.V.2008 / leg. A. Weigel KL/LF / rubber plant./sec. forest, (NMEG); (1 ♀): CHINA: S-YUNNAN / (Xishuangbanna) / 23 km NW Jinghong / vic. Na Ban (NNNR) // N22°10.04 E100°39.52 / 680m 18.V.2008 valley / beh. stat. leg. A. Weigel, (VNPC); (1 ♂): CHINA: S-YUNNAN / (Xishuangbanna) / 25 km NW Jinghong / vic. Zhong Zhi Chang // N22°11.06, E100°39.05 / 780m 23.V.2008 EKL / leg. A. Weigel rubb. plant., (NMEG).

Description of holotype. Habitus as in Fig. 12, body elongate, parallel, from ochre yellow to blackish-brown, more dull, with dense pale brown setation, BL 13.99 mm. Widest near half of elytral length; BL/EW 3.84.

Head (Fig. 13). Blackish-brown, with short pale brown setation and dense punctuation, slightly shiny. Punctures medium-sized, interspaces between punctures very narrow and shiny. Anterior part and clypeus with distinct microgranulation, dark brown mandibles shiny. HW 1.90 mm; HW/PW 0.73. HL (visible part) 1.84 mm. Eyes dark, large, transverse, deeply excised, space between eyes slightly narrower than length of antennomere 1; OI equal to 18.58.

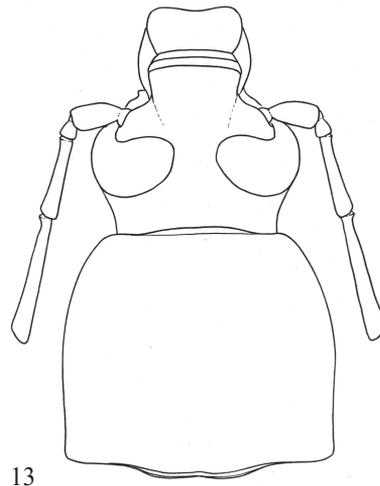
Antennae. Long, very narrow, AL 11.70 mm, AL/BL 0.84. Antennomeres 1, 2 ochre yellow, antennomeres 3-11 unicolored brown with microgranulation, punctuation and short pale brown setation. Apex of all antennomeres with a few longer setae. Antennomere 2 shortest; antennomere 3 distinctly shorter than each of antennomere 4-11. RLA (1-11): 0.75: 0.39: 1.00: 1.54: 1.71: 2.02: 2.27: 2.16: 2.00: 2.00: 1.87. RL/WA (1-11): 1.85: 1.63: 3.99: 5.15: 7.60: 9.00: 8.94: 8.19: 8.65: 8.93: 8.93.

Maxillary palpus. Penultimate palpomere and palpomere 2 ochre yellow with pale brown setation and microgranulation, distinctly broadest on apex. Ultimate palpomere dark brown with long and dense, pale brown setation and microgranulation, broadly triangular, slightly shiny.

Pronotum (Fig. 13). Dark blackish-brown, dull with dense and short pale brown setation and fine, dense punctuation, punctures distinctly smaller than those on posterior part of head. PL 2.30 mm; PW 2.62 mm. PI equal to 87.64. Border lines complete, narrow, only in middle of anterior margin indistinct. Base finely bisinuate, with two indistinct, short, oblique impressions and one transverse indistinct depression on ante-scutellar area; base very finely excised there. Posterior angles roundly rectangular, sides parallel up to two thirds from base, anterior angles rounded, indistinct.

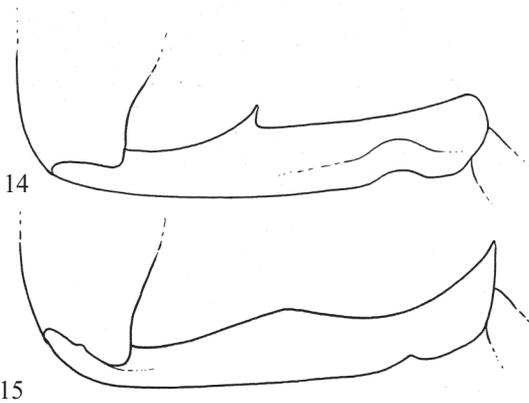
Ventral side of body. Dark blackish-brown, with short, pale brown setation and punctuation. Abdomen dark blackish-brown with dense, pale brown setation, microgranulation and fine rugosities.

Elytron. Long, relatively narrow, parallel, dark blackish-brown, with pale brown setation, dull. EL 9.85 mm. Broadest near elytral half, EW 3.64 mm. EL/EW 2.71. Elytral striae with



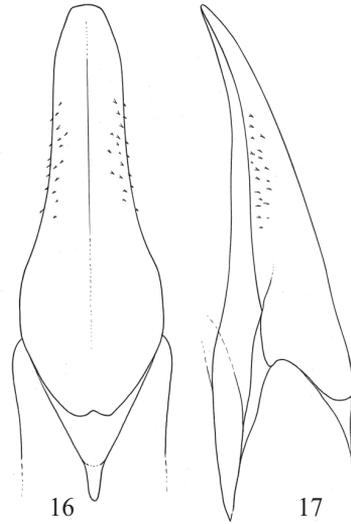
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13



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16

17

Figs 12-17: *Makicula andreasi* sp. nov.: 12- Habitus of male holotype; 13- Head and pronotum of male holotype; 14- Anterior tibia of male holotype; 15- Middle tibia of male holotype; 16- Aedeagus, dorsal view; 17- Aedeagus, lateral view.

distinct rows of closed, medium-sized punctures. Elytral intervals with fine microgranulation, very sparse and very small punctures, dull.

Scutellum. Broadly triangular, dark brown, shiny with fine rugosities and distinct depression in middle.

Elytral epipleura. Well-developed, dark blackish-brown as elytron itself, with punctuation, regularly narrowing to first abdominal sternite, then leads parallel. Pale brown setation of posterior half denser than those of anterior half.

Legs (Figs 14, 15). Ochre yellow with dark blackish-brown strip on apex of femora and base of tibia, with pale brown setation, microgranulation and punctuation. Inner side of anterior tibia (Fig. 14) with distinct sharp tooth near one third of tibia length, then in middle with distinct depression, then before apex with rounded excision. Outer part of anterior tibia with depression against excision. Inner margin of middle tibia with obtuse angle in middle, then with distinct depression (Fig. 15); apex of tibia with triangular extension. Inner margin of posterior tibia with protuberances. All femora strongly broadened. Anterior tarsomeres 1-4, middle tarsomeres 3 and 4 and posterior tarsomere 3 distinctly broadened and lobed. RLT: protarsus: 1.00: 0.69: 0.96: 1.21: 1.63; mesotarsus: 1.00: 0.55: 0.81: 1.01: 1.39; metatarsus: 1.00: 0.49: 0.69: 0.89.

Both anterior tarsal claws with 36 visible teeth.

Aedeagus (Figs 16, 17). Strong and large, basal piece pale brown, shiny, rounded laterally and regularly narrowing dorsally. Apical piece longitudinally beak-shaped laterally, covered with short spines. Ratio of length of apical piece to length of basal piece 1: 2.80.

Female. Space between eyes broader than those in male, distinctly broader than length of antennomere 1. Legs without teeth, depressions, extensions or impressions. Both anterior tarsal claws with 13 visible teeth.

BL 11.56 mm; HL 1.39 mm; HW 1.75 mm; OI 30.75; PL 1.91 mm; PW 2.43 mm; PI 78.62; EL 8.26 mm; EW 3.84 mm; AL 11.64 mm; AL/BL 1.01.

RLA (1-11): 0.55: 0.23: 1.00: 1.62: 1.88: 2.01: 2.00: 1.87: 1.68: 1.54: 1.51. RL/WA (1-11): 1.83: 1.21: 5.29: 8.57: 7.70: 8.15: 7.99: 7.69: 7.59: 7.97: 7.44.

RLT: protarsus: 1.00:0.67: 0.75: 1.00: 1.59; mesotarsus: 1.00: 0.50: 0.76: 1.01: 1.40; metatarsus: 1.00: 0.45: 0.51: 0.86.

Variability. Measurements: mean (minimum - maximum). Males (n=3). BL 14.00 mm (13.35-14.66 mm); HL 1.57 mm (1.25-1.84 mm); HW 1.89 mm (1.82-1.95 mm); OI 25.09 (24.52-26.17), PL 2.22 mm (2.11-2.30 mm); PW 2.76 mm (2.62-2.85 mm); PI 87.10 (84.17-87.64); EL 10.21 mm (9.85-10.79 mm); EW 3.90 mm (3.64-4.10 mm); Females (n=2) BL 12.81 mm (11.56-14.05 mm); HL 1.45 mm (1.39-1.50 mm); HW 1.84 mm (1.75-1.92 mm); OI 32.90 (30.75-35.05), PL 2.01 mm (1.91-2.11 mm); PW 2.64 mm (2.43-2.85 mm); PI 76.40 (74.17-78.62); EL 9.35 mm (8.26-10.44 mm); EW 4.15 mm (3.84-4.45 mm).

Differential diagnoses. (for details see the key above). Males of *Makicula andreasi* sp. nov. clearly differs from males of similar species *Makicula bobikae* sp. nov. and *Makicula phoupaneica* sp. nov. mainly by ending of middle tibia normal, while ending of middle tibia of males of *M. bobikae* and *M. phoupaneica* has longitudinally paddle-shaped process. Males of *M. andreasi* are clearly different from males of similar species *Makicula mengi* sp. nov. and *Makicula dorae* sp. nov. mainly by anterior tibia with depressions and excisions, while anterior tibia of males of *M. mengi* and *M. dorae* bears only tooth.

Etymology. Dedicated to the collector of type material Andreas Weigel, after his first name.

Distribution. China (Yunnan).

***Makicula bobikae* sp. nov.**

(Figs 18-24)

Type locality. Laos, Bolikhamsai prov., Ban Nape, 18°21' N; 105°08' E.

Type material: Holotype (♂) labelled: LAOS– Bolikhamsai prov. / BAN NAPE (8 km NE) 600 m / 18°21' N; 105°08' E; 1.-18.v.2001 / V. Kubáň leg., (VNPC); Paratype: (2 ♂♂ 1 ♀): same data as holotype, (DHBC, VNPC); (2 ♂♂ 5 ♀♀): LAOS C., Bolikhamsai prov. / BAN NAPE env. / 7-16.V.2004, alt.400+-100 m, / 18°20' N, 105°08' E, / E. Jendek & O. Šauša leg., (DHBC, VNPC).

Description of holotype. Habitus as in Fig. 18, body elongate, narrow, parallel, from ochre yellow to blackish-brown, with pale brown setation, dull. BL 13.79 mm. Widest near half of elytra length; BL/EW 3.56.

Head (Fig. 19). Dark blackish-brown, with pale brown setation and dense punctuation, punctures medium-sized, inside with microgranulation, more dull, interspaces between punctures very narrow. Anterior part and clypeus with distinct microgranulation, dark brown mandibles shiny. HW 1.99 mm; HW/PW 0.69. HL (visible part) 1.85 mm. Eyes dark, large, transverse, deeply excised, space between eyes approximately as long as length of antennomere 1; OI equal to 22.48.

Antennae. Long, narrow, with short pale brown setation, microgranulation and punctuation, dull; AL 12.25 mm, AL/BL 0.89. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.62: 0.24: 1.00: 1.52: 1.67: 1.70: 1.79: 1.74: 1.73: 1.57: 1.51. RL/WA (1-11): 2.04: 1.11: 3.73: 6.94: 9.79: 10.00: 8.65: 8.94: 8.88: 7.59: 7.29.

Maxillary palpus. Penultimate palpomere and palpomere 2 pale brown with pale brown setation and microgranulation, distinctly broadest on apex. Ultimate palpomere pale brown with long and dense, pale brown setation and microgranulation, broadly triangular, slightly shiny.

Pronotum (Fig. 19). Dark blackish-brown, dull, with pale brown setation, microgranulation and dense punctuation, punctures only slightly smaller than those on posterior part of head or on elytra. PL 2.51 mm; PW 2.69 mm. PI equal to 93.43. Border lines incomplete, in sides not clearly conspicuous, in middle of base and anterior margin indistinct. Base finely bisinuate, with two indistinct short, oblique impressions. Space with one transverse indistinct depression on ante-scutellar area - here base very finely excised, and two small rounded indistinct depression near middle. Posterior angles roundly rectangular, sides parallel up to half of length, then narrowing, anterior angles rounded, indistinct.

Ventral side of body. Dark blackish-brown, shiny with pale brown setation and punctuation. Abdomen dark blackish-brown with dense, pale brown setation, microgranulation and fine rugosities.

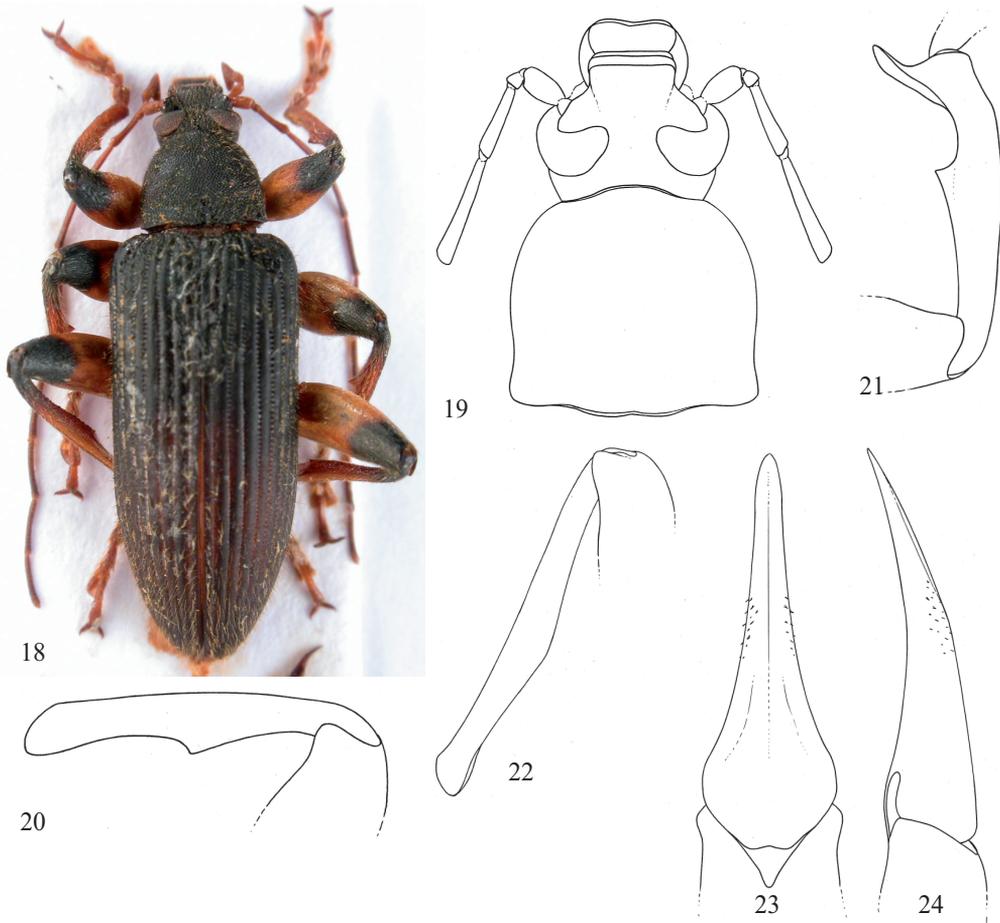
Elytron. Long, narrow, parallel, dark blackish-brown, with pale brown setation, dull. EL 9.43 mm. Broadest near elytral half, EW 3.87 mm. EL/EW 2.44. Elytral striae with distinct rows of closed, medium-sized punctures. Elytral intervals with fine microgranulation, very sparse and very small punctures, dull.

Scutellum. Smaller, oval, dark blackish-brown, with fine punctuation and rugosities, with distinct depression in middle.

Elytral epipleura. Well-developed, dark blackish-brown as elytron itself with pale brown setation and punctuation, regularly narrowing to metasternum, then leads parallel.

Legs (Figs 20-22). Ochre yellow with dark blackish-brown strip on apex of femora and base of tibia, with pale brown setation, microgranulation and punctuation. Inner side of anterior tibia with distinct sharp tooth near half of tibia length. Inner margin of middle tibia with distinct sharp tooth near two thirds of tibia length and apex of tibia with paddle-shaped process, then with distinct depression; inner margin of posterior tibia with protuberances in basal half, with obtuse angle in middle and depression in apical half. All femora strongly broadened. Anterior and middle tarsomeres 3-4 and posterior tarsomere 3 distinctly broadened and lobed.

RLT: protarsus: 1.00: 0.82: 1.00: 1.57: 2.05; mesotarsus: 1.00: 0.55: 0.79: 1.03: 1.74; metatarsus: 1.00: 0.60: 0.65: 0.92.



Figs 18-24: *Makicula bobikae* sp. nov.: 18- Habitus of male holotype; 19- Head and pronotum of male holotype; 20- Anterior tibia of male holotype; 21- Middle tibia of male holotype; 22- Posterior tibia of male holotype; 23- Aedeagus, dorsal view; 24- Aedeagus, lateral view.

Both anterior tarsal claws with 32 visible teeth.

Aedeagus (Figs 23, 24). Strong and large, slightly shiny, basal half pale brown, regularly narrowing dorsally, apical half brown, basal half of basal piece rounded laterally, apical half of basal piece straight laterally. Apical piece longitudinally beak-shaped laterally, longitudinally triangular dorsally, covered with short spines. Ratio of length of apical piece to length of basal piece 1: 3.47.

Female. Femora and tibia normal, tibia without teeth, excisions, depressions. Space between eyes distinctly broader than in male. Both anterior tarsal claws with 13 visible teeth.

BL 13.20 mm; HL 1.77 mm; HW 2.04 mm; OI 32.10; PL 2.06 mm; PW 2.56 mm; PI 80.47; EL 9.37 mm; EW 4.14 mm; AL 11.22 mm; AL/BL 0.85.

RLA (1-11): 0.44: 0.20: 1.00: 1.56: 1.22: 1.18: 1.21: 1.14: 1.12: 1.07: 1.00.

RL/WA (1-11): 2.12: 1.00: 3.56: 8.24: 8.98: 9.20: 8.88: 8.98: 8.84: 7.66: 7.18.

RLT: protarsus: 1.00: 0.82: 0.78: 1.02: 2.14; mesotarsus: 1.00: 0.62: 0.44: 0.78: 0.74; metatarsus: 1.00: 0.45: 0.53: 1.00.

Variability. Measurements: mean (minimum - maximum). Males (n=5). BL 13.54 mm (11.00-15.20 mm); HL 1.66 mm (1.18-2.02 mm); HW 2.00 mm (1.67-2.17 mm); OI 24.67 (22.48-26.85), PL 2.44 mm (1.95-2.74 mm); PW 2.67 mm (2.18-2.94 mm); PI 91.62 (89.81-93.43); EL 9.45 mm (7.87-10.30 mm); EW 3.90 mm (3.36-4.19 mm). Females (n=6). BL 13.26 mm (12.10-14.02 mm); HL 1.79 mm (1.62-1.88 mm); HW 2.02 mm (1.87-2.17 mm); OI 32.32 (29.58-34.16), PL 2.03 mm (1.89-2.19 mm); PW 2.58 mm (2.35-2.72 mm); PI 80.79 (78.21-83.43); EL 9.44 mm (8.59-9.95 mm); EW 4.12 mm (3.80-4.40 mm).

Differential diagnoses. (for details see the key above). Males of *Makicula bobikae* sp. nov. clearly differ from males of similar species *Makicula andreasi* sp. nov., *Makicula mengi* sp. nov. and *Makicula dorae* sp. nov. mainly by apex of middle tibia with paddle-shaped process, while apex of middle tibia of males of *M. andreasi*, *M. mengi* and *M. dorae* are normal, without paddle-shaped process. Males of *Makicula bobikae* sp. nov. are clearly different from males of similar species *Makicula phoupaneica* sp. nov. mainly by space between eyes as broad as antennomere 1 long, while males of *M. phoupaneica* have space between eyes distinctly narrower than length of antennomere 1.

Etymology. Dedicated to my four-leg friend, female of French bulldog - Bobika.

Distribution. Laos.

Makicula dorae sp. nov.

(Figs 25-30)

Type locality. Laos, Bolikhasai prov., Ban Nape, 18°21 N; 105°08 E.

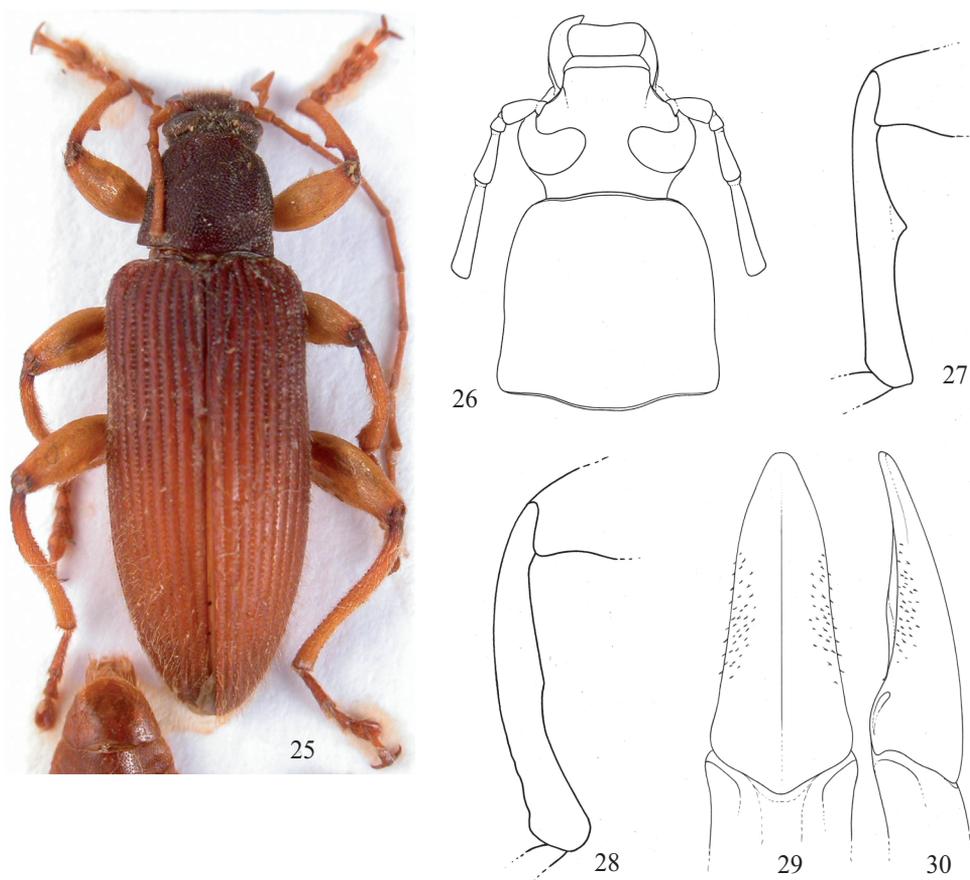
Type material: Holotype (♂) labelled: LAOS – Bolikhamsai prov. / BAN NAPE (8 km NE) 600 m / 18°21 N; 105°08 E; 1.-18.v.2001 / V. Kubáň leg., (VNPC).

Description of holotype. Habitus as in Fig. 25, body elongate, parallel, from ochre yellow to dark brown, with pale brown setation, dull. BL 14.61 mm. Widest near half of elytral length; BL/EW 3.60.

Head (Fig. 26). Posterior part dark brown, with pale brown setation and dense punctuation, punctures large, interspaces between punctures very narrow. Anterior part paler with dense punctuation, clypeus pale brown with pale brown setation and microgranulation, brown mandibles shiny. HW 2.04 mm; HW/PW 0.72. HL (visible part) 1.85 mm. Eyes large, transverse, deeply excised, space between eyes approximately as long as length of antennomere 1; OI equal to 22.26.

Antennae. Long, narrow, with short pale brown setation, microgranulation and punctuation, dull; AL 10.49 mm, AL/BL 0.72. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomere 4-11. RLA (1-11): 0.70: 0.25: 1.00: 1.54: 1.37: 1.63: 1.75: 1.70: 1.66: 1.76: 1.60. RL/WA (1-11): 2.08: 1.00: 3.23: 6.81: 5.39: 6.44: 6.53: 7.56: 6.05: 6.58: 7.57.

Maxillary palpus. Ochre yellow, with yellow setation and microgranulation, slightly shiny. Penultimate palpomere and palpomere 2 distinctly broadest on apex. Ultimate palpomere broadly triangular.



Figs 25-30: *Makicula dorae* sp. nov.: 25- Habitus of male holotype; 26- Head and pronotum of male holotype; 27- Anterior tibia of male holotype; 28- Middle tibia of male holotype; 29- Aedeagus, dorsal view; 30- Aedeagus, lateral view.

Pronotum (Fig. 26). Dark brown, dull, with yellow setation, microgranulation and dense punctuation, punctures medium-sized. PL 2.51 mm; PW 2.83 mm. PI equal to 88.55. Border lines complete, only in middle of anterior margin indistinct. Base finely bisinuate, posterior angles roundly obtuse, sides parallel, slightly excised in one third of pronotal length, in anterior third rounded, anterior angles indistinct.

Ventral side of body. Reddish-brown, with pale brown setation and punctuation. Abdomen brown with pale brown setation, microgranulation and shallow punctuation.

Elytron. Long, parallel, reddish-brown, with pale brown setation, dull. EL 10.25 mm. Broadest near elytral half, EW 4.06 mm. EL/EW 2.53. Elytral striae with distinct rows of closed, large punctures. Elytral intervals finely rounded, with fine microgranulation, very sparse and very small punctures and microgranulation, dull.

Scutellum. Reddish-brown pentagon with darker sides, with distinct microgranulation and sparse setae.

Elytral epipleura. Well-developed, reddish-brown as elytron itself with pale brown setation and punctuation, regularly narrowing to abdominal ventrite 1, then narrow leads parallel.

Legs (Figs 27, 28). Ochre yellow with yellow setation, microgranulation and punctuation. Inner side of anterior tibia with distinct sharp tooth near half of tibia length. Inner margin of middle tibia with distinct rounded depression; inner margin of posterior tibia with protuberances, indistinct depression in basal half and in apical half. All femora strongly broadened. Anterior and middle tarsomeres 3-4 and posterior tarsomere 3 distinctly broadened and lobed.

RLT: protarsus: 1.00: 0.96: 1.04: 1.49: 2.14; mesotarsus: 1.00: 0.62: 0.43: 0.74: 1.55; metatarsus: 1.00: 0.54: 0.50: 0.69.

Both anterior tarsal claws with 28 visible teeth.

Aedeagus (Figs 29, 30). Strong and large, slightly shiny, basal piece ochre yellow, apical piece slightly darker, both rounded laterally. Basal piece regularly narrowing dorsally, apical piece longitudinally beak-shaped laterally, longitudinally triangular dorsally, covered with short spines. Ratio of length of apical piece to length of basal piece 1: 4.22.

Female. Unknown.

Differential diagnoses. (for details see the key above). Male of *Makicula dora* sp. nov. clearly differs from males of similar species *Makicula bobikae* sp. nov. and *Makicula phoupaneica* sp. nov. mainly by normal apex of middle tibia, while apex of middle tibia of males of *M. bobikae* and *M. phoupaneica* has paddle-shaped process. Male of *M. dora* is clearly different from male of similar species *Makicula andreasi* sp. nov. mainly by anterior tibia only with one tooth, while anterior tibia of males of *M. andreasi* have depression and excision. Male of *M. dora* clearly differs from male of similar species *Makicula mengi* sp. nov. mainly by middle and posterior tibia without tooth, while middle and posterior tibia of male of *M. mengi* have one tooth.

Etymology. Dedicated to my first granddaughter Dora.

Distribution. Laos.

***Makicula mengi* sp. nov.**
(Figs 31-37)

Type locality. China, south Yunnan, Xishuangbanna, N22°11.45, E100°38.44.

Type material. Holotype (1 ♂): CHINA: S-YUNNAN / (Xishuangbanna) / 26 km NW Jinghong / vic. An Man Xin Zhai // N22°11.45, E100°38.44 / 760m 10.X.2008 EKL / leg. L. Meng forest, (NMEG). Paratype (1 ♀): same data as holotype, (VNPC).

Description of holotype. Habitus as in Fig. 31, body elongate, parallel, from pale brown to dark brown, with pale brown setation, dull. BL 14.03 mm. Widest near half of elytra length; BL/EW 3.33.

Head (Fig. 32). Dark brown, clypeus and anterior part slightly paler, with pale brown setation, microgranulation and dense punctuation, punctures relatively large, interspaces between punctures very narrow. Punctuation of clypeus indistinct. HW 1.98 mm; HW/PW 0.69. HL (visible part) 1.64 mm. Eyes dark, large, transverse, deeply excised, space between eyes approximately as long as length of antennomere 1; OI equal to 20.50.

Antennae. Long, narrow, with short pale brown setation, microgranulation and punctuation, dull; AL 10.87 mm, AL/BL 0.78. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.68: 0.23: 1.00: 1.60: 1.09: 1.57: 1.81: 1.81: 1.69: 1.61: 1.57. RL/WA (1-11): 2.13: 0.85: 4.17: 5.71: 4.82: 6.21: 7.56: 8.50: 8.47: 9.31: 9.08.

Maxillary palpus. Pale brown with pale brown setation and microgranulation. Penultimate palpomere and palpomere 2 distinctly broadest on apex. Ultimate palpomere broadly triangular, with indistinct punctuation, slightly shiny.

Pronotum (Fig. 32). Dark brown, dull, with short, pale brown setation, microgranulation and dense punctuation, punctures small, interspaces distinctly broader than diameter of punctures. PL 2.67 mm; PW 2.87 mm. PI equal to 92.87. Border lines very narrow, complete. Base finely bisinuate, with two indistinct short, oblique impressions near base. Posterior angles finely roundly obtuse, sides parallel up to half of length, then narrowing, anterior angles rounded, indistinct.

Ventral side of body. Dark brown, with pale brown setation and punctuation. Abdomen pale brown with dense, pale brown setation near sides of ventrites, microgranulation and punctuation, punctures small and shallow. Abdominal ventrites 4 and 5 in sides darker.

Elytron. Long, parallel, pale brown, with pale brown setation, dull. EL 9.72 mm. Broadest near elytral half, EW 4.22 mm. EL/EW 2.30. Elytral striae with distinct rows of closed, medium-sized punctures; each puncture in oval brown spot. Elytral intervals with fine microgranulation, very sparse and very small punctures, finely rounded, dull.

Scutellum. Dark brown, with fine microgranulation and pale brown setae.

Elytral epipleura. Well-developed, upper part pale brown as elytron itself, ventral part dark brown, with pale brown setation and punctuation, regularly narrowing to abdominal ventrite 1, then leads parallel.

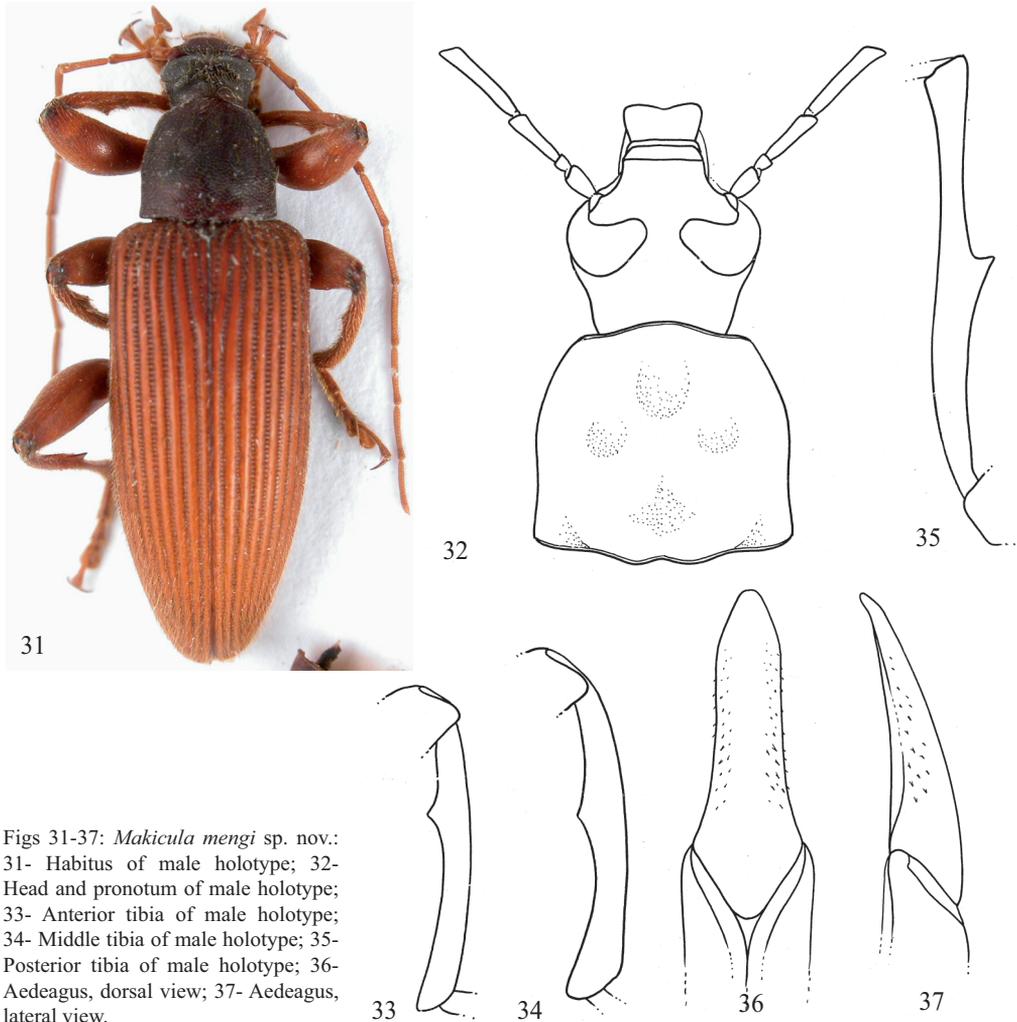
Legs (Figs 33-35). Pale brown, with dark brown, very narrow strip at apex of femora and pale brown setation, microgranulation and punctuation. Inner side of anterior tibia with

distinct sharp tooth near one third from base. Inner margin of middle tibia with distinct sharp tooth near one thirds of tibia length and anterior half of tibia slightly roundly excised; inner margin of posterior tibia with sharp tooth in middle. All femora strongly broadened. Anterior and middle tarsomeres 3-4 and posterior tarsomere 3 distinctly broadened and lobed.

RLT: protarsus: 1.00: 0.88: 0.90: 1.28: 1.58; mesotarsus: 1.00: 0.55: 1.00: 1.00: 1.36; metatarsus: 1.00: 0.55: 0.65: 0.92.

Both anterior tarsal claws with 34 visible teeth.

Aedeagus (Figs 36, 37). Strong and large, slightly shiny, basal piece ochre yellow, regularly narrowing dorsally and rounded laterally. Apical piece longitudinally beak-shaped laterally, longitudinally triangular dorsally, covered with short spines. Ratio of length of apical piece to length of basal piece 1: 4.38.



Figs 31-37: *Makicula mengi* sp. nov.:
 31- Habitus of male holotype; 32- Head and pronotum of male holotype;
 33- Anterior tibia of male holotype;
 34- Middle tibia of male holotype; 35- Posterior tibia of male holotype; 36- Aedeagus, dorsal view; 37- Aedeagus, lateral view.

Female. Femora and tibia normal, tibia without teeth, extensions, depressions. Space between eyes distinctly broader than in male. Both anterior tarsal claws with 12 visible teeth. BL 12.58 mm; HL 1.25 mm; HW 1.77 mm; OI 34.26; PL 2.22 mm; PW 2.67 mm; PI 89.11; EL 9.11 mm; EW 4.24 mm; AL 10.46 mm; AL/BL 0.83.
RLA (1-11): 0.68: 0.25: 1.00: 1.56: 1.71: 1.61: 1.81: 2.06: 1.87: 1.97: 1.43.
RL/WA (1-11): 2.25: 0.92: 3.69: 8.00: 8.77: 8.23: 8.57: 8.54: 8.39: 8.77: 9.17.
RLT: protarsus: 1.00: 0.80: 0.80: 1.01: 2.34; mesotarsus: 1.00: 0.67: 0.48: 0.80: 0.72; metatarsus: 1.00: 0.53: 0.41: 0.84.

Differential diagnoses. (for details see the key above). Male of *Makicula mengi* sp. nov. clearly differs from male of similar species *Makicula bobikae* sp. nov. and *Makicula phoupaneica* sp. nov. mainly by normal ending of middle tibia, while ending of middle tibia of males of *M. bobikae* and *M. phoupaneica* have longitudinally paddle-shaped process. Male of *M. mengi* is clearly different from male of similar species *Makicula dorae* sp. nov. mainly by all tibiae with distinct tooth, while male of *M. dorae* has distinct tooth only on anterior tibia. Male of *M. mengi* clearly differs from males of similar species *Makicula andreasi* sp. nov. mainly by anterior tibia without depressions and excisions, while anterior tibia of males of *M. andreasi* has depressions and excisions.

Etymology. Dedicated to the collector of type material L. Meng.

Distribution. China (Yunnan).

Makicula phoupaneica sp. nov.

(Figs 38-43)

Type locality. North-east Laos, Houa Phan prov., Phou Pane Mt., 20°12-13.5'N 103°59.5-104°01'E.

Type material: Holotype (♂) labelled: LAOS-NE, Houa Phan prov., / 20°12-13.5'N 103°59.5-104°01'E / Ban Saluei→Phou Pane Mt., / 1340-1870m, 15.iv.-15.v. / 2008, Lao collectors leg., (NMPC); (9 ♂♂ 5 ♀♀): same data as holotype, (NHMB, NMPC, VNPC); (3 ♂♂): LAO-NE, Hua Phan prov. / ~20°12'N 104°01'E, / PHU PHAN Mt., 1500- / 1900m, 17.v.-3.vi.2007 / M. Brancucci leg. // NHMB Basel, / expedition to / L a o s , 2007, (NHMB, VNPC); (4 ♂♂ 2 ♀♀): LAOS-NE, Houa Phan prov., / 20°12-13.5'N 103°59.5-104°01'E / Ban Saleuy→Phou Pane Mt., / 1340-1870m, 2.-22.vi.2011 / Vít Kubáň & Lao coll. leg., // Primary mountain forest, at light+ individual collecting. / Laos 2011 Expedition / National Museum Prague / Czech Republic., (NMPC, VNPC); (12 ♂♂ 12 ♀♀): LAOS-NE, Houa Phan / prov. 20°12-13.5'N 103° / 59.5-104°01'E, Ban Saluei / →Phou Pane Mt., 1340- / 1870 m, 10.v.-16.vi.2009 M. / Brancucci & local coll. leg. // NMMB Basel, NMPC / Prague Laos 2009 / Expedition: M. Brancucci, / M. Geiser, Z. Kraus, D. / Hauck, V. Kubáň, (DHBC, NHMB, VNPC); (3 ♂♂): LAOS-NE, Houa Phan / prov. 20°13'09-19'N 103° / 59.54'-104°00'03' E, 1480 / 1550 m, PHOU PANE Mt., / 9.-16.vi.2009 D. Hauck leg. // NMMB Basel, NMPC / Prague Laos 2009 / Expedition: M. Brancucci, / M. Geiser, Z. Kraus, D. / Hauck, V. Kubáň, (DHBC).

Description of holotype. Habitus as in Fig. 38, body elongate, parallel, from ochre yellow to blackish-brown, with pale brown setation, dull. BL 14.79 mm. Widest near half of elytral length; BL/EW 3.65.

Head (Fig. 39). Blackish-brown, with pale brown setation and dense punctuation, punctures medium-sized, inside with microgranulation, more dull, interspaces between punctures very narrow. Anterior part and clypeus slightly paler than posterior part, dark brown mandibles

and clypeus shiny. HW 2.06 mm; HW/PW 0.73. HL (visible part) 2.42 mm. Eyes dark, large, transverse, deeply excised, space between eyes slightly narrower than length of antennomere 1; OI equal to 18.34.

Antennae. Long, narrow, pale brown, with short pale brown setation, microgranulation and punctuation, dull; AL 11.54 mm, AL/BL 0.78. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.56: 0.21: 1.00: 1.50: 1.58: 1.70: 1.79: 1.68: 1.70: 1.51: 1.50. RL/WA (1-11): 1.88: : 0.90: 4.21: 7.50: 7.41: 7.56: 8.94: 8.93: 9.07: 8.07: 7.50.

Maxillary palpus. Pale brown, with pale brown setation and microgranulation. Penultimate palpomere and palpomere 2 distinctly broadest on apex. Ultimate palpomere slightly darker than penultimate palpomere, broadly triangular, slightly shiny.

Pronotum (Fig. 39). Blackish-brown, dull, with pale brown setation, microgranulation and dense punctuation, punctures distinctly smaller than those on posterior part of head or in elytral striae. PL 2.49 mm; PW 2.82 mm. PI equal to 87.94. Border lines complete, only in middle of anterior margin indistinct. Base finely bisinuate, with one transverse indistinct depression on ante-scutellar area. Posterior angles finely roundly obtuse, sides parallel up to half of length, then narrowing, anterior angles rounded, indistinct.

Ventral side of body. Blackish-brown, with pale brown setation and punctuation. Abdomen reddish-brown with pale brown setation, microgranulation and dense punctuation, punctures very small and shallow.

Elytron. Long, parallel, dark brown, with pale brown setation, dull. EL 10.43 mm. Broadest near elytral half, EW 4.05 mm. EL/EW 2.58. Elytral striae with distinct rows of closed, medium-sized punctures. Elytral intervals finely rounded, with fine microgranulation, very sparse and very small punctures, dull.

Scutellum. Brown pentagonal, with sides darker, indistinct punctuation and rugosities, with distinct depression in middle.

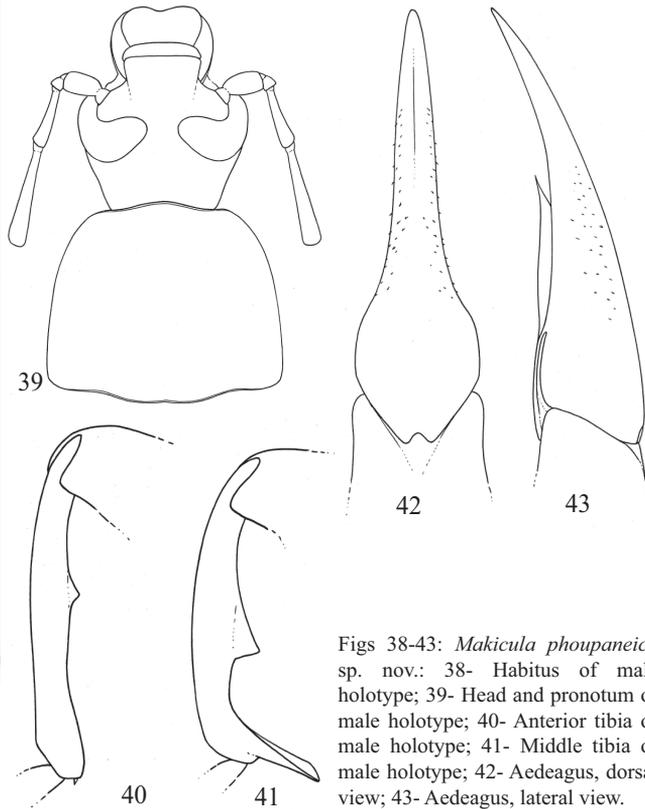
Elytral epipleura. Well-developed, dark brown as elytron itself with pale brown setation and punctuation, regularly narrowing to abdominal ventrite 1, then leads parallel.

Legs (Figs 40, 41). Ochre yellow with apex of femora and base of tibia distinctly darker, with pale brown setation, microgranulation and punctuation. Inner side of anterior tibia with distinct sharp tooth near half of tibia length. Inner margin of middle tibia with distinct sharp tooth near two thirds of tibia length then with distinct depression and apex of tibia with paddle-shaped process. Inner margin of posterior tibia with protuberances in basal half, with obtuse angle in two thirds of length and depression in apical half. All femora strongly broadened. Anterior and middle tarsomeres 3-4 and posterior tarsomere 3 distinctly broadened and lobed.

RLT: protarsus: 1.00: 0.76: 1.29: 1.62: 2.60; mesotarsus: 1.00: 0.44: 0.64: 0.86: 1.21; metatarsus: 1.00: 0.46: 0.42: 0.64.

Both anterior tarsal claws with 36 visible teeth.

Aedeagus (Figs 42, 43). Strong and large, slightly shiny, basal piece ochre yellow, regularly narrowing dorsally and rounded laterally, apical piece distinctly darker, longitudinally beak-shaped laterally, longitudinally triangular dorsally, covered with short spines. Ratio of length of apical piece to length of basal piece 1: 3.75.



Figs 38-43: *Makicula phoupaneica* sp. nov.: 38- Habitus of male holotype; 39- Head and pronotum of male holotype; 40- Anterior tibia of male holotype; 41- Middle tibia of male holotype; 42- Aedeagus, dorsal view; 43- Aedeagus, lateral view.

Female. Femora and tibia without teeth, depressions, excisions. Space between eyes distinctly broader than in male. Both anterior tarsal claws with 13 visible teeth.

BL 12.20 mm; HL 1.32 mm; HW 1.71 mm; OI 36.34; PL 2.04 mm; PW 2.54 mm; PI 80.45; EL 8.84 mm; EW 4.02 mm; AL 11.00 mm; AL/BL 0.90.

RLA (1-11): 0.51: 0.24: 1.00: 1.54: 1.79: 1.79: 1.90: 1.93: 1.80: 1.74: 1.67. RL/WA (1-11): 1.71: : 1.06: 4.12: 7.20: 8.93: 6.58: 8.31: 8.15: 8.40: 8.17: 7.80.

RLT: protarsus: 1.00: 0.85: 1.13: 1.40: 2.45; mesotarsus: 1.00: 0.52: 0.66: 0.97: 1.52; metatarsus: 1.00: 0.55: 0.51: 0.89.

Variability. Measurements: mean (minimum - maximum). Males (n=32). BL 13.67 mm (11.49-14.79 mm); HL 2.28 mm (2.08-2.51 mm); HW 2.02 mm (1.84-2.11 mm); OI 19.65 (18.34-21.55), PL 2.35 mm (1.92-2.49 mm); PW 2.45 mm (2.14-2.82 mm); PI 86.20 (82.18-89.72); EL 8.37 mm (7.01-9.16 mm); EW 3.04 mm (2.64-3.34 mm). Females (n=19). BL 12.63 mm (11.56-13.58 mm); HL 1.26 mm (1.09-1.35 mm); HW 1.79 mm (1.63-1.92 mm); OI 36.48 (32.28-39.93), PL 2.06 mm (1.73-2.39 mm); PW 2.58 mm (2.31-2.94 mm); PI 79.60 (74.96-83.5); EL 9.04 mm (8.29-10.43 mm); EW 3.65 mm (3.36-4.05 mm).

Differential diagnoses. Males of *Makicula phoupaneica* sp. nov. clearly differ from males of similar species *Makicula andreasi* sp. nov., *Makicula mengi* sp. nov. and *Makicula doraе* sp. nov. mainly by apex of middle tibia with paddle-shaped process, while apex of middle tibia of males of *M. andreasi*, *M. mengi* and *M. doraе* is normal, without paddle-shaped process. Males of *M. phoupaneica* are clearly different from males of similar species *Makicula bobikae* sp. nov. mainly by space between eyes distinctly narrower than length of antennomere 1, while males of *M. bobikae* have space between eyes as broad as antennomere 1 long.

Etymology. Toponymic, after the name of Phou Pane mountains.

Distribution. Laos.

Potocula gen. nov.

Type species: *Potocula kubani* sp. nov.

Description. General shape as in Fig. 44, body elongate, parallel, *leptura*-shaped, with setation. Upper part of body shiny with punctuation. Head (as in Fig. 45) with punctuation, microgranulation and pale brown setation, slightly narrower than pronotum, eyes large, transverse, deeply excised, space between eyes narrow, distinctly narrower than diameter of eye. Mandibles shiny. Maxillary palpus with microgranulation and setation, ultimate palpomere broadly triangular. Palpomeres 2 and penultimate palpomere distinctly broadest on apex. Antennae long with microgranulation, punctuation and setation, antennomeres very narrow, antennomere 2 shortest, antennomere 3 distinctly shorter than antennomere 4, antennomeres 3-10 distinctly broadest on apex. Pronotum (as in Fig. 45) long and relatively narrow, distinctly narrower than elytra, with dense punctuation and pale brown setation, shiny. Elytra long, parallel, with pale brown setation. Elytral striae with distinct rows of closed punctures, elytral interspaces distinctly rounded, shiny. Elytral epipleura well-developed, regularly narrowing to abdominal ventrite 1, then leads parallel, with punctuation and setation. Legs with microgranulation, punctuation and setation. Anterior femora of males strongly broadened, with small sharp tooth near apex, anterior tibia (as in Fig. 46) with flat process on inner side near apex. Anterior and middle tarsomeres 3 and 4 and posterior tarsomeres 3 broadened and lobed. Aedeagus large and strong (as in Figs 47, 48).

Female with anterior femora and tibia normal, space between eyes broader than in male.

Differential diagnoses. (for further differences see the key above). Males of the genus *Potocula* gen. nov. clearly differs from males of similar species of the *Bolbostetha* genera group mainly by anterior femora with distinct tooth near apex, while males of other species of the *Bolbostetha* genera group have anterior femora without teeth.

Etymology. The compound name formed of the Czech name (*Poto*) of some species of low monkey family *Lorisidae* and the ending - *cula* marking affinity to the genus *Allecula* Fabricius, 1801. Gender: feminine.

Distribution. Thailand.

***Potocula kubani* sp. nov.**
(Figs 44-48)

Type locality. Thailand north, Chiang Mai prov., San Pakia village, 19°19' N, 98°50' E. 1400 m.

Type material. Holotype (♂): THAI –N, 1-15. v. 1998, / Chiang Mai prov., / SAN PAKIA vill., 19°19'N 98°50'E, 1400m, / Vít Kubáň leg., (NHMB). Paratypes: (13 ♂♂ 10 ♀♀): same data as holotype, (DHBC, NHMB, VNPC).

Description of holotype. Habitus as in Fig. 44, body elongate, parallel, from ochre yellow to blackish-brown, with pale brown setation. BL 11.39 mm. Widest near half of elytral length; BL/EW 3.53.

Head (Fig. 45). Posterior part dark brown, with sparse, pale brown setae and dense punctuation, punctures medium-sized, interspace between punctures very narrow, more dull. Clypeus distinctly paler than posterior part, pale brown setation of clypeus distinctly denser than in posterior part, brown mandibles shiny. HW 1.73 mm; HW/PW 0.77. HL (visible part) 1.19 mm. Eyes large, transverse, deeply excised, space between eyes approximately as long as length of antennomere 1; OI equal to 23.29.

Antennae. Ochre yellow, long, narrow, with short pale brown setation, microgranulation and punctuation, dull; AL 8.75 mm, AL/BL 0.77. Antennomere 2 shortest. Antennomeres 3-10 slightly dilated anteriorly, antennomere 3 distinctly shorter than each of antennomere 4-11. RLA (1-11): 0.66: 0.31: 1.00: 1.55: 1.85: 1.54: 1.70: 1.70: 1.58: 1.52: 1.51. RL/WA (1-11): 1.52: 1.28: 4.18: 6.93: 6.20: 4.48: 4.96: 5.70: 4.82: 5.10: 5.32.

Maxillary palpus. Ochre yellow with microgranulation and pale brown setation. Penultimate palpomere and palpomere 2 distinctly broadest on apex. Ultimate palpomere broadly triangular.

Pronotum (Fig. 45). Dark blackish-brown, with dense punctuation, punctures relatively large, interspaces between punctures very narrow, sides with sparse, pale brown setae. PL 2.16 mm; PW 2.24 mm. PI equal to 96.04. Border lines very narrow, in middle of anterior margin indistinct. Base finely bisinuate, with two indistinct short, oblique impressions. Posterior angles roundly obtuse, sides parallel up to two thirds of length, here broadest, then roundly narrowing, anterior angles rounded, indistinct.

Ventral side of body. Dark blackish-brown, with relatively dense, pale brown setation and punctuation. Abdomen with pale brown setation, microgranulation and shallow punctures. Ventrites 4 and 5 brown, distinctly darker than reddish-brown ventrites 1-3.

Elytron. Long, narrow, parallel, dark blackish-brown, with pale brown setation, shiny. EL 8.40 mm. Broadest near elytral half, EW 3.23 mm. EL/EW 2.60. Elytral striae with distinct rows of closed, large punctures. Elytral intervals rounded, with fine microgranulation and very sparse and very small punctures.

Scutellum. Triangular, as colour as elytron itself, with microgranulation, dull.

Elytral epipleura. Well-developed, dark blackish-brown as elytron itself with pale brown setation and punctuation, regularly narrowing to abdominal ventrite 1, then very narrow leads parallel.

Legs (Fig. 46). Ochre yellow with pale brown setation. Inner side of anterior tibia near apex with relatively large flat process. Anterior femora strongly broadened, with distinct small sharp

tooth on inner side. Anterior tarsomeres 3-4, middle tarsomeres 4 and posterior tarsomere 3 distinctly broadened and lobed.

RLT: protarsus: 1.00: 1.01: 1.45: 1.79: 2.79; mesotarsus: 1.00: 0.78: 0.71: 0.90: 1.48; metatarsus: 1.00: 0.54: 0.58: 0.87.

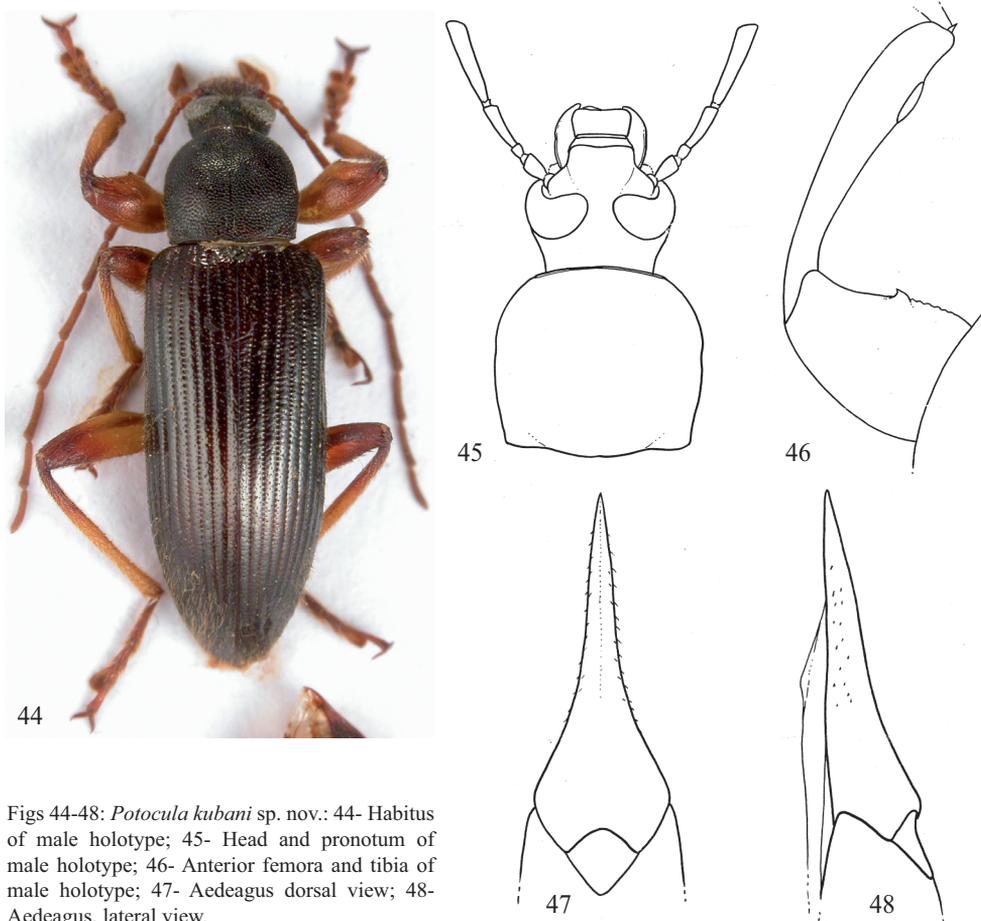
Both anterior tarsal claws with 32 visible teeth.

Aedeagus (Figs 47, 48). Basal piece ochre yellow, slightly narrowing dorsally and rounded laterally, apical piece darker, longitudinally triangular dorsally and laterally. Ratio of length of apical piece to length of basal piece 1: 3.39.

Female. Anterior tibia and femora normal, space between eyes broader than in male. Both anterior tarsal claws with 13 teeth.

BL 11.50 mm; HL 1.50 mm; HW 1.53 mm; OI 29.45; PL 1.91 mm; PW 2.11 mm; PI 86.18; EL 8.09 mm; EW 3.28 mm; AL 8.22 mm; AL/BL 0.72.

RLA (1-11): 0.62: 0.34: 1.00: 1.60: 1.72: 1.79: 1.89: 1.89: 1.98: 1.70: 1.17.



Figs 44-48: *Potocula kubani* sp. nov.: 44- Habitus of male holotype; 45- Head and pronotum of male holotype; 46- Anterior femora and tibia of male holotype; 47- Aedeagus dorsal view; 48- Aedeagus, lateral view.

RL/WA (1-11): 2.15: 1.20: 4.08: 4.25: 5.87: 5.59: 7.69: 6.25: 7.00: 6.92: 6.20.
RLT: protarsus: 1.00: 0.78: 1.18: 1.18: 2.02; mesotarsus: 1.00: 0.56: 0.74: 0.81: 1.21;
metatarsus: 1.00: 0.38: 0.47: 0.77.

Variability. Measurements: mean (minimum - maximum). Males (n=14). BL 13.70 mm (11.36-15.28 mm); HL 1.43 mm (1.16-1.61 mm); HW 2.05 mm (1.70-2.20 mm); OI 23.91 (21.42-26.35), PL 2.40 mm (1.95-2.83 mm); PW 2.61 mm (2.24-2.83 mm); PI 91.95 (87.11-96.04); EL 9.87 mm (8.00-10.84 mm); EW 3.89 mm (3.23-4.42 mm). Females (n=10). BL 13.86 mm (10.78-15.88 mm); HL 1.58 mm (0.99-2.08 mm); HW 1.84 mm (1.53-2.13 mm); OI 27.23 (25.00-29.45), PL 2.26 mm (1.79-2.64 mm); PW 2.72 mm (2.11-3.09 mm); PI 83.09 (79.91-86.18); EL 10.02 mm (8.00-11.16 mm); EW 3.29 mm (3.28-4.55 mm).

Differential diagnoses. Males of the genus *Potocula* gen. nov. clearly differ from males of similar species of the *Bolbostetha* genera group mainly by anterior femora with distinct tooth near apex and inner side of anterior tibiae, with flat process near apex, while males of other species of the *Bolbostetha* genera group have anterior femora without teeth and inner side of anterior tibia without flat process near apex.

Etymology. Dedicated to my friend and collector of the type material Vítězslav Kubáň – well known specialist in Buprestidae.

Distribution. Thailand.

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