

## New species of *Makicula* Novák, 2012 from the Oriental Region (Coleoptera: Tenebrionidae: Alleculinae: Alleculini)

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**Abstract.** New species of Alleculini (subtribe Alleculina Laporte, 1840) genus *Makicula* Novák, 2012 are described as follows: *Makicula danangica* sp. nov. from Vietnam (Da Nang Province), *Makicula imperator* sp. nov. from Cambodia (Siem Reap Province) and Thailand (Chonburi Province), *Makicula kadinka* sp. nov. from Thailand (Chiang Mai Province), *Makicula monica* sp. nov. from Myanmar (Mon State), *Makicula phuwiangica* sp. nov. from Thailand (Khon Kaen Province) and *Makicula speciosa* sp. nov. from Laos (Vientiane). The new species are described, illustrated, compared and keyed together. A check-list of the species of *Makicula* is added.

### INTRODUCTION

Novák (2012) described the genus *Makicula* with the type species *Makicula phoupaneica* Novák, 2012. Species in this genus are known from the south-eastern Palaearctic Region (China, Yunnan Province) and northern parts of the Oriental Region (Laos). There are currently two species in the Palaearctic Region (Novák 2020) and further three species in the Oriental Region (Novák 2012). Species of this genus have relatively narrow, elongate body with rather matte dorsal surface, long filiform antenna, males have a narrow space between eyes and irregularly shaped tibiae. New species are described as *Makicula danangica* sp. nov. from Vietnam (Da Nang Province), *Makicula imperator* sp. nov. from Cambodia (Siem Reap Province) and Thailand (Chonburi Province), *Makicula kadinka* sp. nov. from Thailand (Chiang Mai Province), *Makicula monica* sp. nov. from Myanmar (Mon State), *Makicula phuwiangica* sp. nov. from Thailand (Khon Kaen Province) and *Makicula speciosa* sp. nov. from Laos (Vientiane).

The new species are described, illustrated, compared and keyed together. Check-list of the species of *Makicula* is added.

### 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 this 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.

The following collection code is used:

- IRSNB Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium;
- MNFI Museo di Storia Naturale, Firenze, Italy;
- NMEG Naturkundemuseum, Erfurt, Germany;
- NMTJ National Museum, Tokio, Japan;
- VNPC private collection of Vladimír Novák, Praha, Czech Republic.

Measurements of body parts and corresponding abbreviations used in the 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 ( $1=1.00$ ).

Other abbreviations used in the text: yl= yellow label.

Measurements were made with Olympus SZ 40 stereoscopic microscope with continuous magnification and with Soft Imaging System AnalySIS. Snapshots were taken by using camera Canon EOS 550 D, and Canon Macro Photo Lens MP-E and software Helicon Focus 5.2.

## TAXONOMY

### genus *Makicula* Novák, 2012

**Type species.** *Makicula phoupaneica* Novák, 2012: 287.

### *Makicula danangica* sp. nov.

(Figs. 1-6)

**Type locality.** Vietnam, Da Nang Province, Son Tra Mountain, 800 m.

**Type material.** Holotype (♂): son tra mt, da nang pro / VietNam 800 m 04/2018, (VNPC). Paratype: (1 ♂): same data as holotype, (VNPC); (1 ♂): C-VIETNAM - Tua Thien Hue Prov. / Bach Ma Natl Park, surr. Hotel Morin / (1350-1400 m), 16,2°N 107,85°E // legit. L. Bartolozzi, G. Chelazzi, / A. Bandinelli, S. Bambi, / F. Fabiano (n° Magazz. 2978), (MNFI). The types are provided with a printed red label: '*Makicula / danangica* sp. nov. / HOLOTYPE [or PARATYPE] / V. Novák det. 2021'.

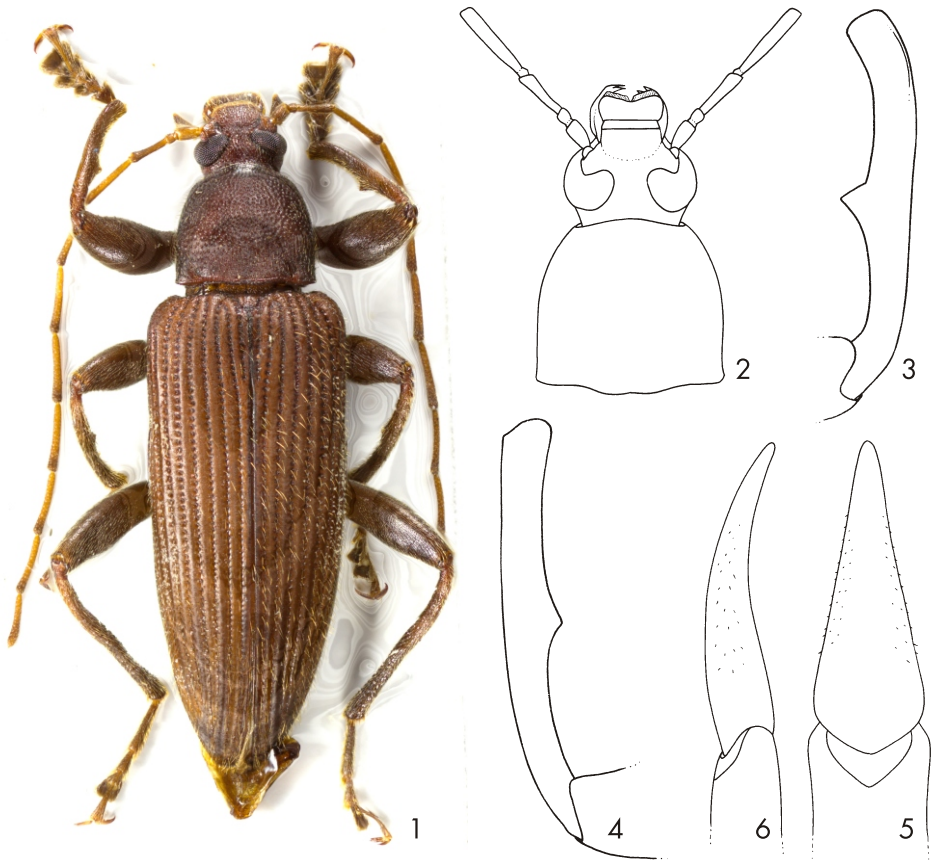
**Description of the holotype.** Habitus as in Fig. 1, body narrow, elongate, parallel, from pale reddish brown to reddish brown, dorsal surface matte, with pale setation, punctuation and microgranulation, BL 11.86 mm. Widest near middle elytra length; BL/EW 3.45.

Head (Fig. 2) relatively small, reddish brown, slightly wider than long, through the eyes distinctly wider than anterior margin of pronotum, slightly narrower than pronotum in base. Dorsal surface with pale setation, microgranulation and punctures. Clypeus wide and transverse, matte, half heart shaped, dorsal surface with long pale setation, sparse, shallow almost indistinct punctures and microgranulation, lateral margins rounded, apex ochre yellow with dense, shorter, pale setation, distinctly excised in middle. Mandibles pale reddish brown, shiny, glabrous dorsally with sides and apex darker and long, pale setae on sides. HW 1.62 mm; HW/PW 0.67; HL (visible part) 1.49 mm. Eyes very large, transverse, distinctly excised, space between eyes narrow, distinctly narrower than diameter of one eye; slightly narrower than length of antennomere 1; OI equal to 25.00.

Antenna. Long and narrow (AL 10.41 mm, distinctly exceeding three quarters body length - AL/BL 0.88). Antennomeres almost filiform with pale setation, fine microgranulation and sparse, small punctures. Antennomere 1 reddish brown, slightly shiny, antennomeres 2 and 3 and apex of ochre yellow antennomeres 4-11 distinctly darker. Antennomere 2 shortest, antennomeres 4-11 distinctly longer than antennomere 3, antennomeres 4-11 more than 7 times longer than wide.

RLA(1-11): 0.59 : 0.24 : 1.00 : 1.60 : 1.63 : 1.67 : 1.73 : 1.69 : 1.60 : 1.54 : 1.38.

RL/WA(1-11): 1.94 : 1.13 : 4.15 : 7.16 : 7.91 : 8.13 : 8.82 : 9.00 : 7.73 : 8.19 : 7.33.



Figs. 1-6. *Makicula danangica* sp. nov.: Figs. 1-4: male holotype: 1-habitus; 2-head and pronotum; 3-protibia; 4-mesotibia; 5-apical piece of aedeagus, dorsal view; 6-apical piece of aedeagus, lateral view.

Maxillary palpus pale brown, shiny, with dense and long, pale setation, fine microgranulation and small punctures. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular, brown, slightly darker than penultimate.

Pronotum (Fig. 2) reddish brown, narrow, convex, matte, in base distinctly narrower than elytra at humeri. Dorsal surface with relatively long, pale setation, fine microgranulation and punctuation, punctures medium sized and shallow. Intervals between punctures distinctly wider than diameter of punctures. PL 1.97 mm; PW 2.41 mm; PI equal to 89.14. Border lines very narrow. Margins conspicuous from dorsal view. Lateral margins finely arcuate, base finely bisinuate. Posterior angles obtuse, anterior angles indistinct.

Elytra. Pale reddish brown, narrow, elongate, parallel, with pale setation, matte. EL 8.40 mm; widest near middle, EW 3.44 mm; EL/EW 2.44. Elytral striae with rows of coarse punctures slightly larger than those in pronotum. Intervals between punctures in rows narrower than diameter of punctures. Elytral intervals slightly convex, with very fine microgranulation.

Scutellum. Reddish brown with sides blackish, short, pentagonal, with microgranulation and a few, small punctures, slightly shiny.

Elytral epipleura well-developed, reddish brown, widest in base, with large punctures in basal part, distinctly narrowing to ventrite 1, pale reddish brown, with pale setae relatively narrow and parallel leading in apical part.

Legs. Brown, long and narrow, with very fine microgranulation, pale setation and punctuation, punctures very small. Protibiae irregularly shaped, with thorn in middle of inner part and slightly excised in apical half (as in Fig. 3), upper part slightly elevated before apex. Mesotibiae with small thorn near middle of inner part (as in Fig. 4), metatibiae slightly excised in inner part of posterior half. Protarsomeres 2-4, mesotarsomeres 3, 4 and penultimate metatarsomeres strongly widened and lobed. RLT: 1.00 : 1.09 : 0.91 : 1.66 : 2.50 (protarsus); 1.00 : 0.44 : 0.56 : 0.86 (metatarsus).

Protarsal claws with 30 visible teeth.

Ventral side of body reddish brown with large punctures and pale setae, setation of prothorax denser than in meso- and metaventrite. Abdomen black, slightly shiny, with recumbent, pale setation, fine microgranulation and dense, very small and shallow punctures. Ultimate ventrite with large, shallow impression.

Aedeagus (Figs. 5, 6) pale brown, slightly shiny. Basal piece slightly narrowing in dorsal view, slightly rounded laterally. Apical piece elongate triangular in dorsal view, beak shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece from dorsal view 1 : 4.17.

**Female** unknown.

**Variability.** Two male paratypes have dorsal surface darker. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=3). BL 11.90 mm (10.63-13.20 mm); HL 1.51 mm (1.38-1.67 mm); HW 1.67 mm (1.50-1.81 mm); OI 24.42 (23.78-25.00); PL 2.07 mm (1.90-2.33 mm); PW 2.30 mm (2.03-2.66 mm); PI 90.11 (87.59-93.69); EL 8.32 mm (7.35-9.20 mm); EW 3.19 mm (2.78-3.44 mm).

**Differential diagnosis.** (See the key below for more information). The most similar species is *Makicula monica* sp. nov. from Myanmar (Mon State).

*Makicula danangica* sp. nov. clearly differs from the species *M. monica* mainly by protibiae of male with distinct thorn and without extension in inner side, by space between eyes of male wider (OI approximately 24), by femora dark brown and by larger and coarser punctures of pronotum than those in pronotum of *M. monica* which has male protibiae without thorn in inner side and angularly extended before apex, space between eyes of male is narrower (OI approximately 14), femora are largely ochre yellow and punctures of pronotum are smaller and shallower.

**Etymology.** Toponymic, after the type locality - Province Da Nang (Vietnam).

**Distribution.** Vietnam (Da Nang Province).

### ***Makicula imperator* sp. nov.**

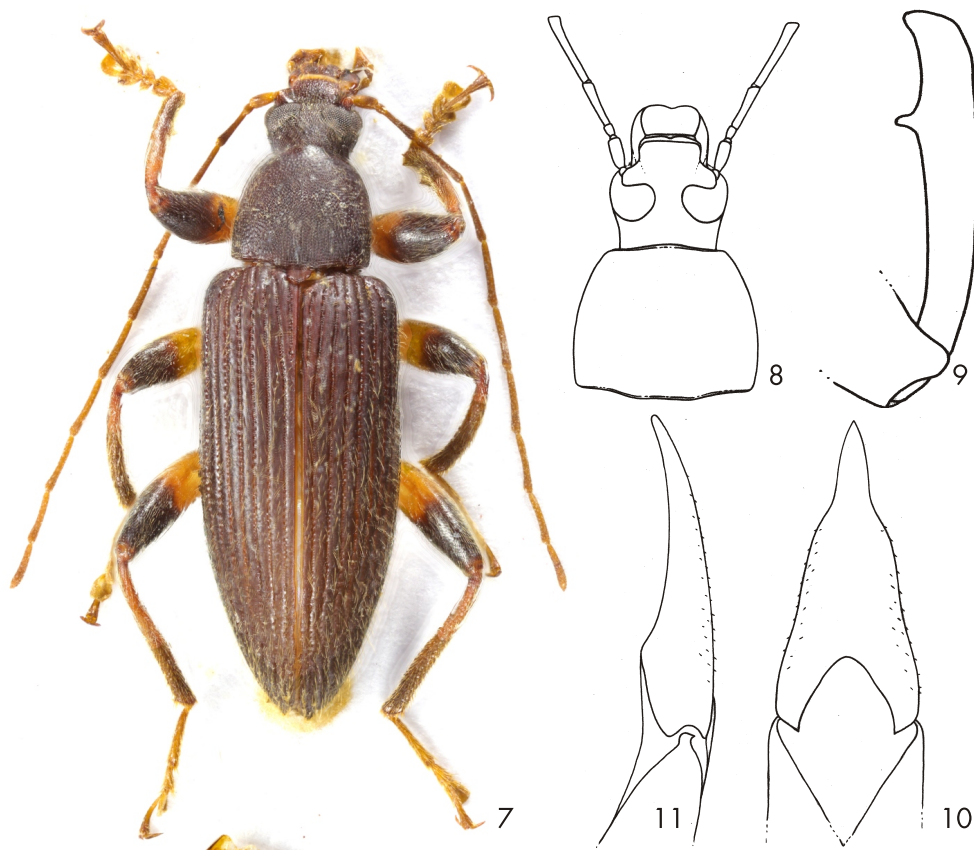
(Figs. 7-11)

**Type locality.** Thailand, Chonburi Province, 5 km East of Pattaya Elephantcamp.

**Type material.** Holotype (♂): THAILAND Provinz / Chonburi 5km E / Pattaya Elephantcamp / 30.I.1995 fc.Wiegel, (NMEG). Paratypes: (4 ♀♀): same data as holotype, (NMEG, VNPC); (1 ♂): same data as holotype, but 03.II.1995, (VNPC);



(1 ♂): yl: Coll. I. R. Sc. N. B. / CAMBODIA(Siem / Reap Prov) / Kbal Spean, Light Trap / 28.V/2005 / Legl. Var&P.Grootaert, (IRSNB); (1 ♂): yl: Coll. I. R. Sc. N. B. / CAMBODIA, Siem / Reap, Angkor Thom, / Light Trap / 26.V.2003 / Leg. J. Constant, K. / Smets & Grootaert P., (VNPC). The types are provided with a printed red label: '*Makicula / imperator* sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.



Figs. 7-11. *Makicula imperator* sp. nov.: Figs. 7-9: male holotype: 7- Habitus; 8- head and pronotum; 9- protibia; 10- apical piece of aedeagus, dorsal view; 11- apical piece of aedeagus, lateral view.

**Description of holotype.** Habitus as in Fig. 7, body narrow, elongate, parallel, from ochre yellow to blackish brown, dorsal surface matte, with pale setation, punctuation and fine microgranulation, BL 8.89 mm. Widest near middle elytra length; BL/EW 3.34.

Head (Fig. 8) relatively small, approximately as wide as long, through the eyes approximately as wide as anterior margin of pronotum. Dorsal surface slightly shiny with relatively dense and long, pale setation, microgranulation and dense punctuation, punctures small sized. Posterior part blackish brown, anterior half and clypeus reddish brown. Clypeus wide and transverse, slightly shiny, half heart shaped, with long pale setation and microgranulation, lateral margins rounded, apex distinctly excised in middle. Mandibles reddish brown, shiny, glabrous dorsally with sides and apex darker and pale setae in sides. HW 1.31 mm; HW/PW 0.61; HL (visible part) 1.33 mm. Eyes very large, transverse, distinctly excised, space between eyes narrow,

distinctly narrower than diameter of one eye; slightly narrower than length of antennomere 1; OI equal to 23.14.

Antenna. Long, narrow (AL 7.56 mm, distinctly exceeding three quarters body length - AL/BL 0.85). Antennomeres ochre yellow, antennomeres 3-5 slightly darker than antennomeres 6-11, surface with recumbent, pale setation, fine microgranulation and sparse, small punctures. Antennomere 2 shortest. Antennomeres 4-11 distinctly longer than antennomere 3, antennomeres 4-11 more than 6 times longer than wide.

RLA(1-11): 0.59 : 0.22 : 1.00 : 1.51 : 1.56 : 1.54 : 1.58 : 1.58 : 1.44 : 1.34 : 1.22.

RL/WA(1-11): 2.12 : 1.05 : 4.74 : 6.80 : 8.75 : 6.95 : 7.47 : 7.89 : 7.22 : 7.56 : 6.11.

Maxillary palpus pale brown, rather matte, with pale setae and fine microgranulation. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.

Pronotum (Fig. 8) blackish brown, relatively narrow, convex, matte, in base distinctly narrower than elytra at humeri. Dorsal surface matte, with long, pale setation, fine microgranulation and dense punctuation, punctures small and shallow. Intervals between punctures mostly narrower than diameter of punctures. PL 1.67 mm; PW 2.14 mm; PI equal to 78.04. Border lines very narrow. Margins conspicuous from dorsal view, only in the middle of anterior margin not clearly conspicuous. Lateral margins slightly arcuate, base finely bisinuate, anterior margin almost straight. Posterior angles finely obtuse, anterior angles distinct, obtuse.

Elytra. Reddish brown, matte, relatively narrow, elongate, parallel, with long, semierect, pale setation. EL 5.89 mm; widest near middle, EW 2.66 mm; EL/EW 2.21. Elytral striae with rows of coarse punctures distinctly larger than those in pronotum. Intervals between punctures in rows narrower than diameter of punctures. Elytral intervals slightly convex, with very small and shallow punctures and fine microgranulation.

Scutellum. Reddish brown with sides darker, pentagonal, with microgranulation and few pale setae, partly shiny.

Elytral epipleura well-developed, reddish brown, widest at base, with punctures as large as those in rows of elytral striae, distinctly narrowing to ventrite 1 in basal part, with pale setae relatively narrow and parallel in apical part.

Legs. Long and narrow, dorsal surface with fine microgranulation, long and dense, pale setation and punctuation, punctures very small, on surface of protibiae larger. Tibiae pale brown with apical part darker, pro- and mesotibiae short, protibiae with small thorn in two thirds of inner side from base to apex (as in Fig. 9), with distinct margin on outer side. Mesotibiae slightly bent. Tarsi and femora ochre yellow, apical third of femora blackish brown. Protarsomeres 2-4, mesotarsomeres 3, 4 and metatarsomere 3 strongly widened and lobed. RLI: 1.00 : 0.73 : 0.88 : 1.10 : 1.87 (protarsus); 1.00 : 0.38 : 0.52 : 0.76 (metatarsus).

Protarsal claws with 22 visible teeth.

Ventral side of body reddish brown with punctures and pale setation. Abdomen reddish brown with blackish brown parts, slightly shiny, with dense, recumbent, pale setation, fine microgranulation and dense, very small and shallow punctures. Ultimate ventrite with slightly roundly excised apex.

Aedeagus (Figs. 10, 11) ochre yellow, shiny. Basal piece slightly narrowing in dorsal view, arcuate laterally. Apical piece short, beak shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece from dorsal view 1 : 2.87.

**Female** has space between eyes wider than in male. Protibiae without thorn and shorter than in male, anterior tarsal claws have only 11 and 12 teeth.

Measurements of female body. BL 11.17 mm; HL 1.60 mm; HW 1.61 mm; OI 31.42; PL 1.95 mm; PW 2.70 mm; PI 72.22; EL 7.62 mm; EW 3.69 mm; AL(1-11) 9.00 mm; AL(1-11)/BL 0.81; HW/PW 0.60; BL/EW 3.03; EL/EW 2.07.

RLA(1-11): 0.65 : 0.23 : 1.00 : 1.60 : 1.67 : 1.71 : 1.56 : 1.60 : 1.50 : 1.29 : 1.25.

RL/WA(1-11): 2.52 : 1.20 : 4.73 : 8.30 : 9.16 : 9.89 : 8.53 : 8.74 : 8.21 : 7.44 : 8.13.

RLT: 1.00 : 0.71 : 1.29 : 1.61 : 2.07 (protarsus); 1.00 : 0.39 : 0.43 : 0.73 (metatarsus).

**Variability.** The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=4). BL 11.51 mm (8.89-14.13 mm); HL 1.64 mm (1.33-1.91 mm); HW 1.67 mm (1.31-2.03 mm); OI 22.55 (22.14-23.11); PL 2.05 mm (1.67-2.48 mm); PW 2.55 mm (1.67-2.48 mm); PI 80.49 (78.04-82.14); EL 7.82 mm (5.89-9.74 mm); EW 3.53 mm (2.66-4.47 mm). Females (n=4). BL 11.26 mm (10.43-12.00 mm); HL 1.61 mm (1.50-1.71 mm); HW 1.62 mm (1.51-1.74 mm); OI 33.34 (31.42-35.21); PL 1.99 mm (1.88-2.10 mm); PW 2.64 mm (2.27-2.94 mm); PI 75.75 (71.43-82.82); EL 7.67 mm (7.05-8.19 mm); EW 3.62 mm (3.31-3.78 mm).

**Differential diagnosis.** (See the key below for more information). The most similar species are *Makicula dorae* Novák, 2012 from Laos (Bolikhamsai Province) and *Makicula kadinka* sp. nov. from Thailand (Chiang Mai Province).

*Makicula imperator* sp. nov. clearly differs from the species *M. kadinka* mainly by having metatibiae of male normally shaped; while *M. kadinka* has male metatibiae distinctly flat in apical part.

*M. imperator* is clearly different from similar species *M. dorae* mainly by apical part of femora widely blackish brown, by mesotibiae of male only slightly arcuate, by protibiae of male with thorn in two thirds from base; while *M. dorae* has tibiae and femora largely ochre yellow, mesotibiae of male are strongly arcuate, protibiae of male have thorn at one third from base.

**Etymology.** The name *imperator* is taken from Latin (emperor).

**Distribution.** Cambodia (Siem Reap Province), Thailand (Chonburi Province).

### ***Makicula kadinka* sp. nov.**

(Figs. 12-16)

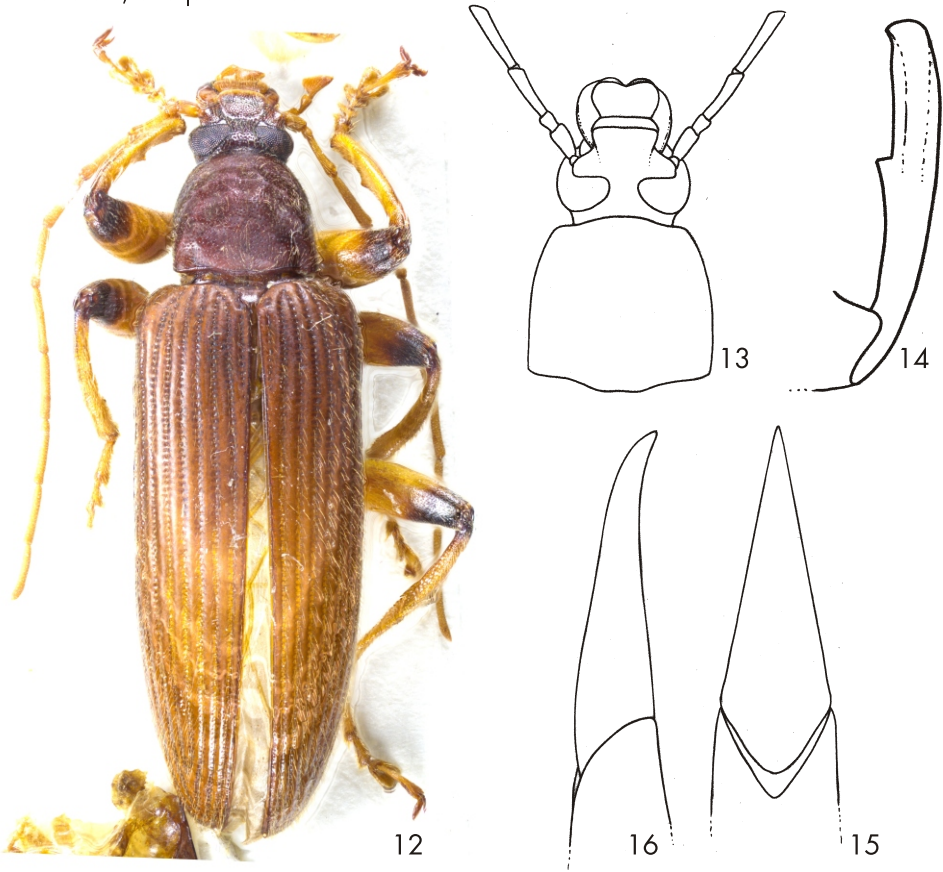
**Type locality.** Thailand, Chiang Mai Province, Fang District, Doi Ang Khang.

**Type material.** Holotype (♂): Thailand, Fang, / Doi Ang Khang, / 8-10.XI.2012 / K. Takahashi leg., (NMTJ). The types are provided with a printed red label: '*Makicula / kadinka* sp. nov. / HOLOTYPE / V. Novák det. 2021'.

**Description of holotype.** Habitus as in Fig. 12, body narrow, elongate, parallel, from ochre yellow to dark brown, dorsal surface matte, with pale setation, punctuation and microgranulation, BL 15.42 mm. Widest near middle elytra length; BL/EW 3.56.

Head (Fig. 13) relatively small, approximately as wide as long, through the eyes approximately as wide as anterior margin of pronotum. Dorsal surface with longer, pale setation and dense punctuation, punctures small and coarse, microgranulation indistinct. Posterior part dark brown, anterior half reddish brown. Clypeus wide and transverse, shiny, pale reddish brown, half heart shaped, with long pale setation, shallow punctures, microgranulation almost indistinct, lateral

margins rounded, apex ochre yellow and distinctly excised in middle. Mandibles reddish brown, shiny, glabrous dorsally with apex darker and pale setae on sides. HW 2.06 mm; HW/PW 0.75; HL (visible part) 2.04 mm. Eyes very large, transverse, distinctly excised, space between eyes narrow, distinctly narrower than diameter of one eye; approximately as wide as length of antennomere 1; OI equal to 22.05.



Figs. 12-16. *Makicula kadinka* sp. nov. (male holotype): 12- habitus; 13- head and pronotum; 14- protibia; 15- apical piece of aedeagus, dorsal view; 16- apical piece of aedeagus, lateral view.

Antenna. Long, narrow (AL 11.75 mm, distinctly reaching three quarters body length - AL/BL 0.75). Antennomeres ochre yellow, almost filiform, with short, recumbent, pale setation, fine microgranulation and sparse, small punctures. Antennomeres 1-3 slightly shiny, antennomeres 4-11 rather matte, antennomere 2 shortest. Antennomeres 4-11 distinctly longer than antennomere 3, antennomeres 4-11 more than 4 times longer than wide.

RLA(1-11): 0.54 : 0.26 : 1.00 : 1.31 : 1.40 : 1.33 : 1.43 : 1.45 : 1.43 : 1.28 : 1.28.

RL/WA(1-11): 1.94 : 1.25 : 3.37 : 4.75 : 5.79 : 7.33 : 7.55 : 8.00 : 7.55 : 6.73 : 7.40.

Maxillary palpus pale brown, rather matte, with long, pale setation and fine microgranulation. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.

Pronotum (Fig. 13) dark reddish brown, narrow, matte, slightly convex, widest in base, here distinctly narrower than elytra at humeri. Dorsal surface with pale setation, fine microgranulation and punctuation, punctures small and shallow. Intervals between punctures distinctly wider than diameter of punctures. PL 2.49 mm; PW 2.76 mm; PI equal to 90.22. Border lines very narrow. Margins conspicuous from dorsal view, only in the middle of anterior margin not clearly distinct. Lateral margins almost straight in basal half, slightly narrowing in apical part, base finely bisinuate, anterior margin slightly arcuate. Posterior and anterior angles obtuse.

Elytra. Pale reddish brown, matte, narrow, elongate, parallel, with long, semierect, pale setation. EL 10.89 mm; widest near middle, EW 4.33 mm; EL/EW 2.52. Elytral striae with rows of small and coarse punctures distinctly larger than those in pronotum. Intervals between punctures in rows narrower than diameter of punctures. Elytral intervals slightly convex, with very fine microgranulation.

Scutellum. Pale reddish brown with sides narrowly darker, roundly triangular, with microgranulation and a few long, pale setae and a few very small punctures, slightly shiny.

Elytral epipleura well-developed, reddish brown, widest in base, with punctures in basal part, distinctly narrowing to ventrite 1, with dense, pale setation, narrow and parallel in apical part.

Legs. Ochre yellow, long and narrow, with fine microgranulation, pale setation and punctuation, punctures very small and shallow. Pro- and mesotibiae shorter than metatibiae, protibiae with thorn behind middle (as in Fig. 14) and excised in apical half of inner side, outer side of protibiae with distinct margin. Mesotibiae slightly bent, apical half of metatibiae more flat than in posterior part. Protarsomeres 2-4, mesotarsomeres 3, 4 and metatarsomere 3 strongly widened and lobed. RLT: 1.00 : 0.68 : 0.89 : 1.07 : 2.25 (protarsus); 1.00 : 0.68 : 0.97 : 1.03 : 1.87; (mesotarsus); 1.00 : 0.42 : 0.53 : 0.85 (metatarsus).

Protarsal claws with 32 visible teeth.

Ventral side of body reddish brown with small punctures and pale setation. Abdomen brown, shiny, with dense, recumbent, pale setation, very sparse, fine microgranulation and dense, very small and shallow punctures. Ultimate ventrite black with very sparse, very small punctures, few setae and small, shallow impression in middle of apex.

Aedeagus (Figs. 15, 16) pale brown, shiny, apical piece darker. Basal piece narrowing in dorsal view and rounded laterally. Apical piece short, elongate triangular dorsally and beak shaped in lateral view. Ratio of length of apical piece to length of basal piece from dorsal view 1 : 2.87.

**Differential diagnosis.** (See the key below for more information). The most similar species are *Makicula dorae* Novák, 2012 from Laos (Bolikhamsai Province) and *Makicula imperator* sp. nov. from Cambodia (Siem Reap Province) and Thailand (Chonburi Province).

*Makicula kadinka* sp. nov. clearly differs from the species *M. dorae* and *M. imperator* mainly by metatibiae of male distinctly flat in apical part; while males of *M. dorae* and *M. imperator* have metatibiae usually shaped.

**Etymology.** The name is dedicated to my last granddaughter Karolina, nicknamed *kadinka* (from Czech).

**Distribution.** Thailand.



***Makicula monica* sp. nov.**

(Figs. 17-21)

**Type locality.** Myanmar, Mon State, Kyaikto-Pauktaw.**Type material.** Holotype (♂): 3-6.VI.2003 / BURMA-MON STATE / KYAIKTO-PAUKTAW / KLÍCHA M. Lgt., (VNPC). Paratype: (1 ♀): 1-5.VI.2003 / BURMA-MON STATE / KYAIKTO / KLÍCHA M. Lgt., (VNPC). The types are provided with a printed red label: '*Makicula / monica* sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.**Description of holotype.** Habitus as in Fig. 17, body narrow, elongate, parallel, from yellow to blackish brown, dorsal surface matte, with short, pale setation, punctuation and microgranulation, BL 13.05 mm. Widest near middle elytra length; BL/EW 3.72.

Head (Fig. 18) relatively small, narrow, approximately as wide as long, through the eyes distinctly wider than anterior margin of pronotum, slightly narrower than pronotum at widest point. Dorsal surface with relatively dense, short setation, microgranulation and dense punctuation, punctures small. Posterior part blackish brown, with punctures coarser than those in dark reddish brown anterior part. Clypeus reddish brown, wide and transverse, matte, with long pale setation and microgranulation, lateral margins rounded, apex narrowly darker and distinctly excised in middle. Mandibles reddish brown, shiny, glabrous dorsally with distinct lateral margins and pale setae in sides. HW 1.85 mm; HW/PW 0.68; HL (visible part) 1.84 mm. Eyes very large, transverse, distinctly excised, space between eyes narrow, distinctly narrower than diameter of one eye; distinctly wider than length of antennomere 2, narrower than length of antennomere 1; OI equal to 14.06.

Antenna. Long, narrow, ochre yellow (AL 10.54 mm, distinctly exceeding three quarters body length - AL/BL 0.81). Antennomeres rather matte, almost filiform with recumbent, pale setation, fine microgranulation and sparse, small punctures. Antennomere 2 shortest, antennomeres 4-10 distinctly longer than antennomere 3, antennomere 5 longest. Antennomeres 3-11 more than 7 times longer than wide.

RLA(1-11): 0.38 : 0.25 : 1.00 : 1.25 : 1.55 : 1.42 : 1.42 : 1.38 : 1.23 : 1.10 : 1.00.

RL/WA(1-11): 1.64 : 1.92 : 7.18 : 8.44 : 9.67 : 9.11 : 8.65 : 8.47 : 9.38 : 7.88 : 7.63.

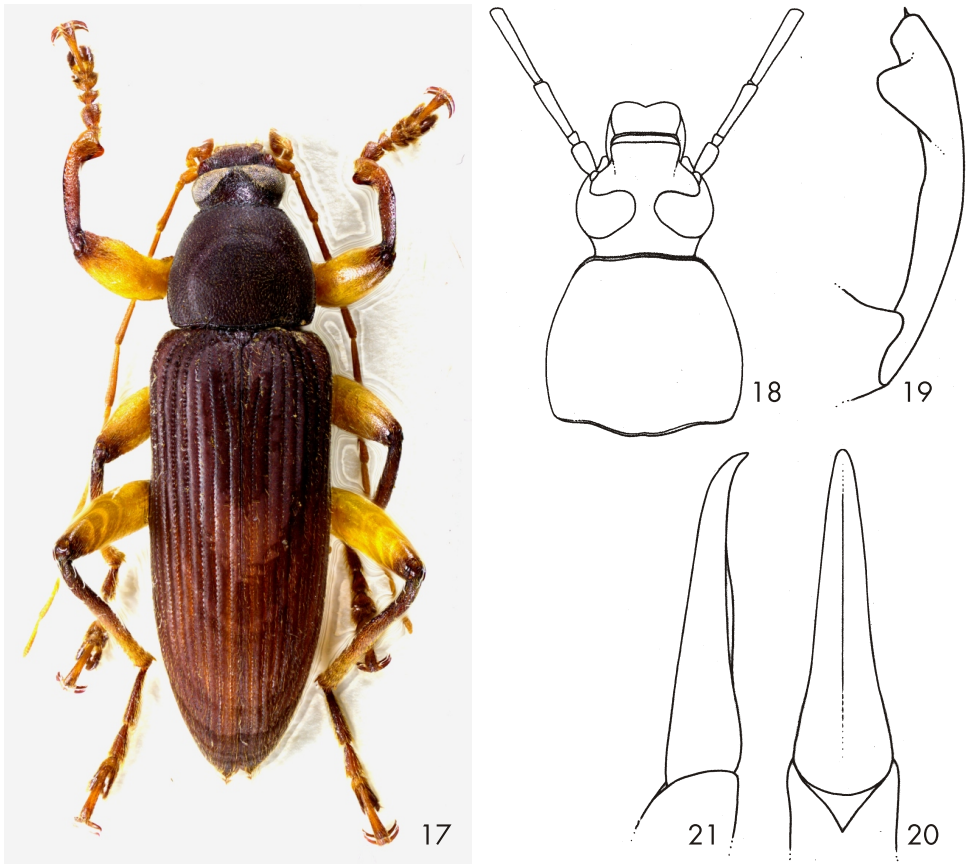
Maxillary palpus ochre yellow, slightly shiny, with pale setae and fine microgranulation. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular, distinctly darker than penultimate.

Pronotum (Fig. 18) blackish brown, narrow, convex, matte, in base slightly narrower than elytra at humeri. Dorsal surface with short, pale setation, fine microgranulation and dense punctuation, punctures very small. Intervals between punctures distinctly wider than diameter of punctures. PL 2.43 mm; PW 2.74 mm; PI equal to 88.69. Border lines very narrow. Margins conspicuous from dorsal view, only in the middle of anterior margin not clearly distinct. Lateral margins arcuate, base bisinuate, distinctly wider than almost straight anterior margin. Posterior and anterior angles roundly obtuse.

Elytra. Brown, narrow, elongate, parallel, with short, pale setation, matte. EL 8.78 mm; widest near middle, EW 3.51 mm; EL/EW 2.50. Elytral striae with rows of small, coarse punctures distinctly larger than those in pronotum. Intervals between punctures in rows narrower than diameter of punctures. Elytral intervals slightly convex, with very sparse, small and shallow punctures and fine microgranulation.

Scutellum. Blackish brown, roundly triangular, with microgranulation, pale setae and a few small punctures, slightly shiny.





Figs. 17-21. *Makicula monica* sp. nov. (male holotype): 17-habitus; 18-head and pronotum; 19-protibia; 20-apical piece of aedeagus, dorsal view; 21-apical piece of aedeagus, lateral view.

Elytral epipleura well-developed, reddish brown, widest in base, with dense punctuation in basal part, distinctly narrowing to ventrite 1, with pale setae relatively narrow and parallel in apical part.

Legs. Long and narrow, with fine microgranulation, pale setation and punctuation, punctures very small and shallow. Protibiae reddish brown, shiny, relatively short, irregularly shaped (angularly extended before apex) in anterior part (Fig. 19), with upper margin and large, coarse punctures, rather flat in posterior part. Meso- and metatibiae brown in posterior half, pale brown in apical part, mesotibiae slightly bent, metatibiae slightly excised in inner side of basal part. Femora yellow with narrowly darker apex, profemora distinctly cut out on the underside. Tarsi pale or reddish brown, protarsomeres and mesotarsomeres 3, 4 and metatarsomere 3 wide and lobed. RLT: 1.00 : 0.47 : 0.59 : 1.06 : 1.58 (protarsus); 1.00 : 0.50 : 0.60 : 0.88 : 1.34 (mesotarsus); 1.00 : 0.58 : 0.63 : 0.95 (metatarsus).

Protarsal claws with more than 20 visible teeth.

Ventral side of body blackish brown with small punctures and setae, prothorax and mesoventrite with rugosities.

Aedeagus (Figs. 20, 21) ochre yellow, shiny. Basal piece narrowing in dorsal view and rounded laterally. Apical piece short, elongate triangular in dorsal view, beak shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece from dorsal view 1 : 2.59.

**Female** has space between eyes distinctly wider than in male (approximately as wide as diameter of one eye - OI 32; distinctly wider than length of antennomere 1). Protibiae usually shaped. Metatibiae without excision in inner side of basal part. Protarsal claws have only 12 or 13 teeth.

Measurements of female body. BL 12.87 mm; HL 1.93 mm; HW 1.94 mm; OI 32.09; PL 2.09 mm; PW 2.88 mm; PI 72.57; EL 8.85 mm; EW 3.82 mm; AL 10.25 mm; AL/BL 0.80; HW/PW 0.67; BL/EW 3.37; EL/EW 2.32.

RLA(1-11): 0.46 : 0.63 : 1.00 : 1.26 : 1.40 : 1.65 : 1.66 : 1.58 : 1.46 : 1.29 : 0.93.

RL/WA(1-11): 1.89 : 1.12 : 4.78 : 6.95 : 7.70 : 12.07 : 13.00 : 11.60 : 10.73 : 9.47 : 7.29.

RLT: 1.00 : 0.33 : 0.54 : 0.75 : 1.50 (protarsus), 1.00 : 0.64 : 0.78 : 0.77 : 0.88 (mesotarsus), 1.00 : 0.49 : 0.45 : 0.87 (metatarsus).

**Differential diagnosis.** (See the key below for more information). The most similar species is *Makicula danangica* sp. nov. from Vietnam (Da Nang Province).

*Makicula monica* sp. nov. clearly differs from the species *M. danangica* mainly by male protibiae angularly extended before apex and without thorn in inner side, by space between eyes of male very narrow (OI approximately 14), by femora largely ochre yellow and by smaller and shallower punctures of pronotum than has pronotum of *M. danangica* which has protibiae of male with distinct thorn and without extension in inner side, space between eyes of male is wider (OI approximately 24) and femora are dark brown.

**Etymology.** Toponymic, named after the type locality - Mon State in Myanmar.

**Distribution.** Myanmar (Mon State).

### *Makicula phuwiangica* sp. nov.

(Figs. 22-28)

**Type locality.** Northeastern Thailand, Khon Kaen Province, Phu Wiang National Preserve.

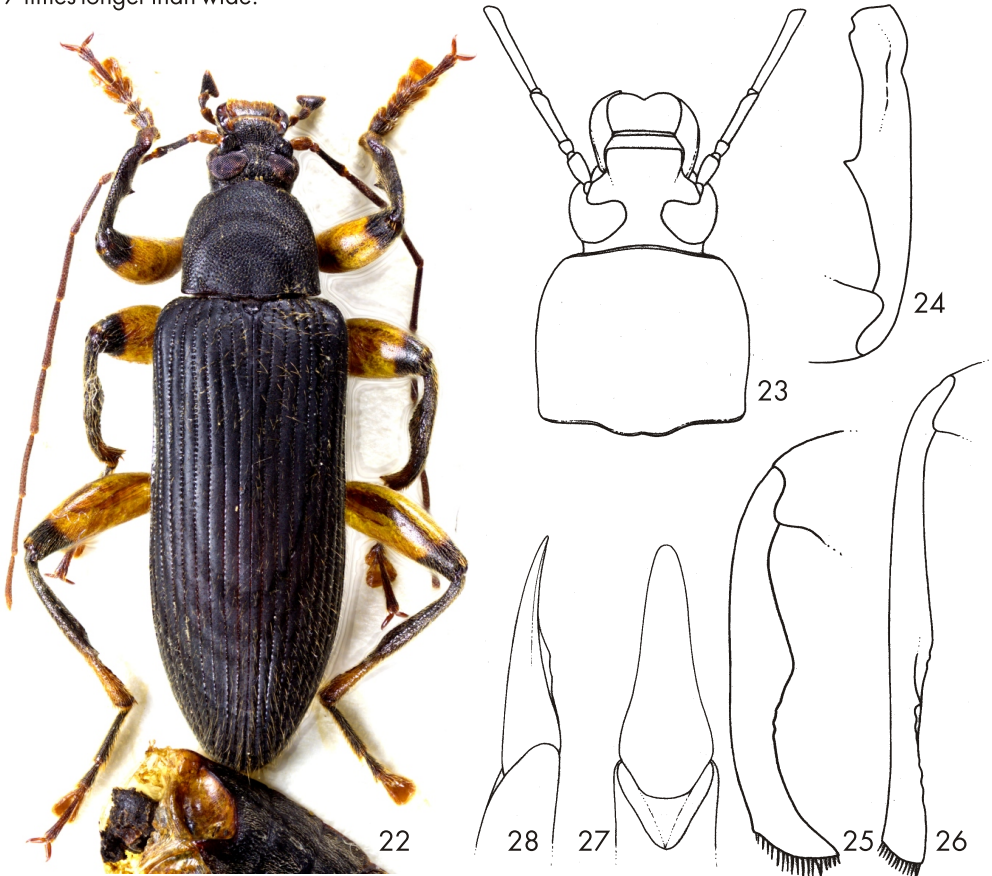
**Type material.** Holotype (♂): Phu Wiang N. P. / Khon Kaen-Prov. / NE-THAILAND / 11 V 2011 / S. TSUYUKI leg., (NMTJ). Paratype: (1 ♀): same data as holotype, (VNPC). The types are provided with a printed red label: 'Makicula / phuwiangica sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.

**Description of holotype.** Habitus as in Fig. 22, body narrow, elongate, parallel, from ochre yellow to black, dorsal surface matte, with pale setation, punctuation and fine microgranulation, BL 14.13 mm. Widest near middle elytra length; BL/EW 3.52.

Head (Fig. 23) black, relatively small, approximately as wide as long, through the eyes slightly narrower than anterior margin of pronotum. Dorsal surface with sparse, pale setae, microgranulation inside of dense and coarse punctures, interspaces between punctures very narrow and shiny. Clypeus reddish brown, wide and transverse, slightly shiny, half heart shaped, with long pale setation, microgranulation and shallow punctures, lateral margins rounded, apex distinctly excised in middle. Mandibles reddish brown, shiny, glabrous dorsally with sides and

apex black and pale setae in sides. HW 1.89 mm; HW/PW 0.66; HL (visible part) 1.89 mm. Eyes very large, transverse, distinctly excised, space between eyes narrow, distinctly narrower than diameter of one eye or narrower than length of antennomere 1; OI equal to 23.81.

Antenna. Long, narrow (AL 11.33 mm, distinctly exceeding three quarters body length - AL/BL 0.80). Antennomeres dark brown, filiform, matte, with short, recumbent, pale setation, fine microgranulation and sparse, shallow punctures. Antennomeres 1, 2, 11 and apex of antennomeres 3 and 4 reddish brown, antennomeres 1 and 2 slightly shiny, antennomere 2 shortest. Antennomeres 4-11 distinctly longer than antennomere 3, antennomeres 4-11 more than 7 times longer than wide.



Figs. 22-28. *Makicula phuwiangica* sp. nov. (male holotype): 22- habitus; 23- head and pronotum; 24- protibia; 25- mesotibia; 26- metatibia; 27- apical piece of aedeagus, dorsal view; 28- apical piece of aedeagus, lateral view.

RLA(1-11): 0.64 : 0.25 : 1.00 : 1.62 : 1.48 : 1.83 : 1.90 : 1.75 : 1.75 : 1.54 : 1.54.

RL/WA(1-11): 1.83 : 1.18 : 3.71 : 7.00 : 9.06 : 11.88 : 11.00 : 9.10 : 10.11 : 10.00 : 10.00.

Maxillary palpus dark brown, slightly shiny, with long, pale setae, fine microgranulation and small punctures. Palpomeres 2 and 3 distinctly narrowest at base and widest at narrowly reddish brown apex, ultimate palpomere widely triangular, blackish brown with reddish brown apex.

Pronotum (Fig. 23) black, narrow, slightly convex, matte, in base distinctly narrower than elytra

at humeri, widest near middle. Dorsal surface with relatively sparse, short, recumbent, pale setation, fine microgranulation and dense punctation, punctures small. Intervals between punctures distinctly wider than diameter of punctures. PL 2.41 mm; PW 2.78 mm; PI equal to 86.69. Border lines very narrow. Margins conspicuous from dorsal view, only in the middle of base and anterior margin not clearly distinct. Lateral margins straight in basal part, slightly arcuate in apical part, base bisinuate, anterior margin slightly arcuate. Posterior and anterior angles obtuse.

Elytra. Black, narrow, elongate, parallel, matte, with pale setation. EL 9.83 mm; widest near middle, EW 4.02 mm; EL/EW 2.45. Elytral striae with rows of small, coarse punctures distinctly larger than those in pronotum. Intervals between punctures in rows narrower than diameter of punctures. Elytral intervals flat, with sparse, very small punctures and fine microgranulation.

Scutellum. Black, pentagonally shaped, with microgranulation and pale setae, shiny.

Elytral epipleura well-developed, black, widest in base, with punctures in basal part, distinctly narrowing to ventrite 1, with long, pale setae leads parallel in apical part.

Legs. Black, brown, claws and apex of tibiae reddish brown, femora ochre yellow with black apex. Dorsal surface with fine microgranulation, long and dense, pale setation and punctation, punctures very small. Protibiae flat, irregularly shaped with tooth in middle of inner side and transversally excised in upper side before apex (as in Fig. 24). Mesotibiae bent with large angle near middle of inner side (as in Fig. 25), metatibiae irregularly shaped with tooth near middle of inner side (as in Fig. 26). Protarsomeres 1-4 wide, 2-4 strongly lobed, 3 and 4 reddish brown, mesotarsomeres 3, 4 and metatarsomere 3 reddish brown, strongly widened and lobed. RLT: 1.00 : 0.74 : 0.78 : 1.05 : 1.58 (protarsus); 1.00 : 0.43 : 0.53 : 0.87 (metatarsus).

Protarsal claws with more than 30 visible teeth.

Ventral side of body black with dense punctation and dense, pale setation. Abdomen black, slightly shiny, with dense, recumbent, pale setation, fine microgranulation and dense, very small punctures. Ultimate ventrite with ochre yellow apex.

Aedeagus (Figs. 27, 28) ochre yellow, shiny, apical piece brown. Basal piece narrowing in dorsal view, arcuate laterally. Apical piece short, triangular in dorsal view, beak shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece from dorsal view 1 : 2.69.

**Female** has space between eyes distinctly wider than in male. Body wider, tibiae usually shaped. Protarsal claws have only 12 visible teeth.

Measurements of female body. BL 14.71 mm; HL 2.07 mm; HW 2.08 mm; OI 30.28; PL 2.46 mm; PW 3.09 mm; PI 79.61; EL 10.18 mm; EW 4.61 mm; HW/PW 0.67; BL/EW 3.19; EL/EW 2.21.

**Differential diagnosis.** (See the key below for more information). The most similar species is *Makicula andreasi* Novák, 2012 from China (Yunnan Province).

*Makicula phuwiangica* sp. nov. clearly differs from the species *M. andreasi* mainly by metatibiae with distinct thorn in inner side, by antenna blackish brown or brown, by only antennomeres 1 and 2 ochre yellow and by tibiae largely black; while *M. andreasi* has metatibiae without distinct thorn in inner side, antenna is ochre yellow and tibiae are largely ochre yellow.

**Etymology.** Toponymic, named after the type locality - Phu Wiang National Preserve in Khon Kaen Province (Thailand).

**Distribution.** Thailand (Khon Kaen Province).

***Makicula speciosa* sp. nov.**

(Figs. 29-35)

**Type locality.** Southern central Laos, environ of Ban Phabat village, 70 km Northeast of Vientiane, N18°16.1 E103°10.9, 150 m.

**Type material.** Holotype (♂): Laos SC, 27.IV.1.V1997 / 70km NE Vientiane, / BAN PHABAT vill. env., 150 m / N18°16.1 E103°10.9150m / N18°16.1 E103°10.9, / Roman Hergovits leg., (VNPC). Paratype: (1 ♀): same data as holotype, (VNPC). The types are provided with a printed red label: 'Makicula / speciosa sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.

**Description of holotype.** Habitus as in Fig. 29, body narrow, elongate, parallel, from ochre yellow to blackish brown, dorsal surface matte, with pale setation, punctuation and fine microgranulation, BL 12.84 mm. Widest near middle elytra length; BL/EW 3.62.

Head (Fig. 30) blackish brown, relatively small, slightly wider than long, through the eyes distinctly narrower than pronotum. Dorsal surface with relatively dense and long, pale setation. Posterior part with coarser and denser punctuation (inside with microgranulation, intervals between punctures narrow, shiny) than in anterior part. Clypeus wide and transverse, pale reddish brown, slightly shiny, half heart shaped, with long pale setation, sparse, small and very shallow almost indistinct punctures and with microgranulation, lateral margins rounded, apex ochre yellow and distinctly excised in middle. Mandibles reddish brown, shiny, glabrous dorsally with sides and apex darker and pale setae in sides. HW 1.81 mm; HW/PW 0.71; HL (visible part) 1.72 mm. Eyes very large, transverse, distinctly excised, space between eyes narrow, distinctly narrower than diameter of one eye; distinctly narrower than length of antennomere 1; OI equal to 20.49.

Antenna. Long, narrow, pale brown (AL(1-9) 9.14 mm, AL(1-9)/BL 0.71). Antennomeres filiform, with short, recumbent, pale setation, fine microgranulation and sparse, small punctures. Antennomeres 1-4 slightly shiny, antennomeres 5-9 rather matte, antennomere 2 shortest, antennomeres 4-9 distinctly longer than antennomere 3 and more than 7 times longer than wide.

RLA(1-9): 0.54 : 0.16 : 1.00 : 1.40 : 1.60 : 1.67 : 1.66 : 1.61 : 1.58.

RL/WA(1-9): 2.00 : 0.85 : 5.15 : 7.23 : 10.70 : 11.20 : 11.10 : 10.80 : 10.55.

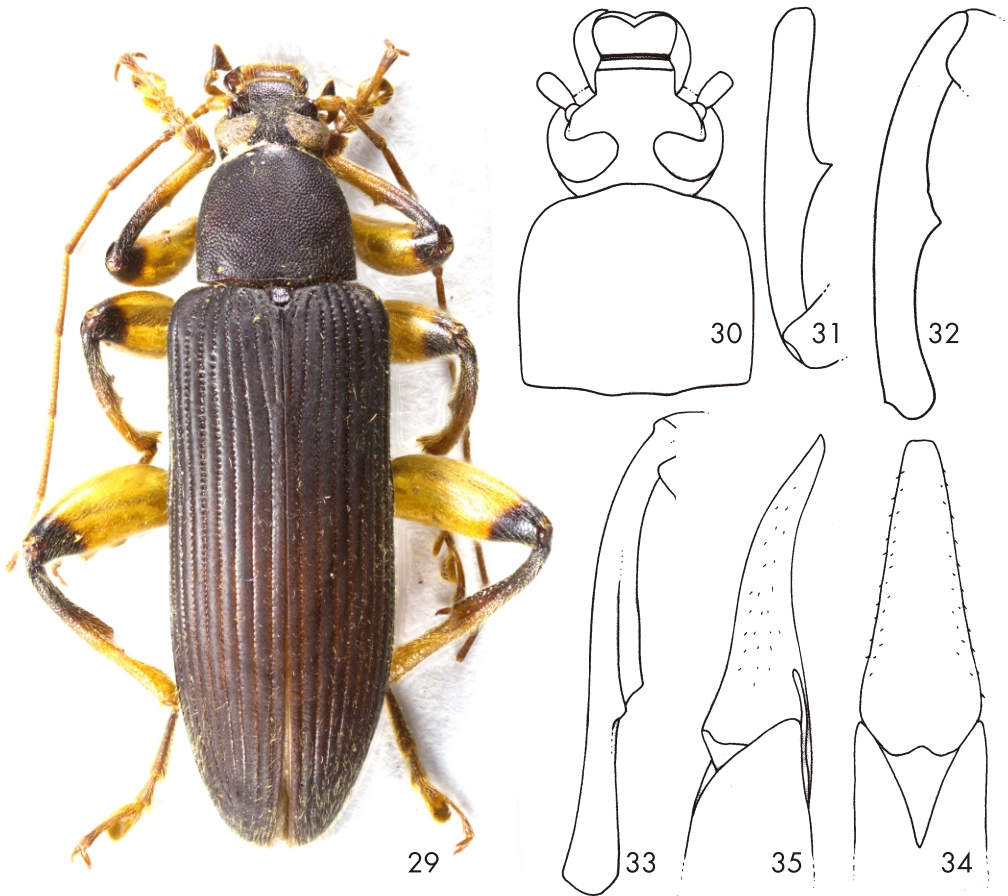
Maxillary palpus pale brown, rather matte, with pale setation and fine microgranulation. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular, brown, distinctly darker than penultimate.

Pronotum (Fig. 30) blackish brown, narrow, slightly convex, matte, in base distinctly narrower than elytra at humeri. Dorsal surface with relatively sparse, short, pale setae, fine microgranulation and dense punctuation, punctures small. Intervals between punctures narrow. PL 2.13 mm; PW 2.55 mm; PI equal to 83.53. Border lines very narrow, not clearly conspicuous from dorsal view. Lateral margins straight and parallel in basal part, rounded in anterior half. Base finely bisinuate, anterior margin arcuate. Posterior angles almost rectangular, anterior angles indistinct, rounded.

Elytra. Blackish brown, narrow, elongate, parallel, with sparse, short, pale setae. EL 8.99 mm; widest near middle, EW 3.55 mm; EL/EW 2.53. Elytral striae with rows of small, coarse punctures slightly larger than those in pronotum. Intervals between punctures in rows narrower than diameter of punctures. Elytral intervals flat, with very sparse and very small, shallow punctures and fine microgranulation.

Scutellum. Blackish brown, roundly triangular, partly with microgranulation and a few long setae, shiny.





Figs. 29-35. *Makicula speciosa* sp. nov. (male holotype): 29- habitus; 30- head and pronotum; 31- protibia; 32- mesotibia; 33- metatibia; 34- apical piece of aedeagus, dorsal view; 35- apical piece of aedeagus, lateral view.

Elytral epipleura well-developed, blackish brown, widest at base, with punctures in basal part, distinctly narrowing to ventrite 1, with pale setae relatively leads parallel in apical part.

Legs. Ochre yellow, apex of femora, basal third of tibiae blackish brown or brown, tarsi from pale brown to brown. Surface with pale setation, fine microgranulation and punctures. Protibiae with thorn in middle of inner side (Fig. 31). Mesotibiae slightly bent, with thorn in middle of inner side and slightly excised in apical half of inner side (as in Fig. 32). Metatibiae excised in inner side, with tooth in middle from both sides of inner side (Fig. 33). Protarsomeres 2-4, mesotarsomeres 3, 4 and metatarsomere 3 strongly widened and lobed. RLT: 1.00 : 0.69 : 0.71 : 1.09 : 1.53 (protarsus); 1.00 : 0.45 : 0.61 : 0.94 (metatarsus).

Protarsal claws with 30 visible teeth.

Ventral side of body blackish brown with dense pale setation and punctures. Abdomen blackish brown, slightly shiny, with dense, recumbent, pale setation, fine microgranulation and dense, very small and shallow punctures. Ultimate ventrite with narrowly ochre yellow apex.

Aedeagus (Figs. 34, 35) ochre yellow, apical piece pale brown, slightly shiny. Basal piece



narrowing in dorsal view, arcuate laterally. Apical piece short, elongate triangular with cut apex in dorsal view, beak shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece in dorsal view 1 : 3.41.

**Female** has body and space between eyes distinctly wider than in male. Elytra widest near two thirds from base to apex. Tibiae usually shaped without thorns and teeth. Protarsal claws have only 12 visible teeth.

Measurements of female body. BL 12.50 mm; HL 1.73 mm; HW 1.66 mm; OI 38.66; PL 2.07 mm; PW 2.50 mm; PI 82.80; EL 8.70 mm; EW 4.22 mm; HW/PW 0.66; BL/EW 2.96; EL/EW 2.06.

**Differential diagnosis.** (See the key below for more information). The most similar species is *Makicula mengi* Novák, 2012 from China (Yunnan Province).

*Makicula speciosa* sp. nov. clearly differs from the species *M. mengi* mainly by metatibiae with two thorns in inner side, by elytra and pronotum blackish brown, by tibiae and femora partly blackish brown, partly ochre yellow; while *M. mengi* has metatibiae with one sharp thorn on inner side, elytra reddish brown or pale reddish brown, pronotum is dark reddish brown, legs are largely reddish brown.

**Etymology.** The name *speciosa* is taken from Latin (beautiful).

**Distribution.** Laos (Vientiane).

#### KEY TO MALES OF THE GENUS MAKICULA

- 1 (2) Mesotibiae of males with paddle shaped process in apex ..... 3
- 2 (1) Mesotibiae of males without paddle shaped process in apex ..... 5
- 3 (4) Space between eyes approximately as long as length of antennomere 1, dorsal surface of body dark blackish brown, tibiae and femora bicolour, sides of pronotum slightly excised near posterior angles. Figures see in Novák (2012: 281: habitus as in fig. 18; head and pronotum as in fig. 19; pro-, meso- and metatibia as in figs 20-22; aedeagus as in figs 23, 24). Laos (Bolikhamsai Province).  
..... *Makicula bobikae* Novák, 2012
- 4 (3) Space between eyes distinctly narrower than length of antennomere 1, dorsal surface of body brown, tibiae and femora unicoloured, sides of pronotum regularly narrowing. Figures see in Novák (2012: 289: habitus as in fig. 38; head and pronotum as in fig. 39; protibia as in fig. 40; mesotibia as in fig. 41; aedeagus as in figs. 42, 43). Laos (Houa Phan Province).  
..... *Makicula phoupaneica* Novák, 2012
- 5 (6) Protibiae of male rounded in apical part ..... 7
- 6 (5) Protibiae of male almost straight in apical part ..... 9
- 7 (8) Protibiae angularly extended before apex on inner side. Habitus as in Fig. 17, head and pronotum (Fig. 18), protibia (Fig. 19), apical piece of aedeagus (Figs. 20 and 21). Myanmar (Mon State).  
..... *Makicula monica* sp. nov.
- 8 (7) Protibiae of male without angular extension before apex on inner side. Habitus as in Fig. 1, head and pronotum (Fig. 2), protibia (Fig. 3); mesotibia (Fig. 4); apical piece of aedeagus (Figs. 5 and 6). Vietnam (Da Nang Province).  
..... *Makicula danangica* sp. nov.
- 9 (10) Protibiae of male with transverse excision at upper part before apex ..... 11
- 10 (9) Protibiae of male without transverse excision at upper part before apex ..... 13
- 11 (12) Metatibiae without distinct thorn on inner side, antenna ochre yellow, tibiae largely ochre yellow. Figures see in Novák (2012: 278: habitus as in fig. 12; head and pronotum as in fig. 13; protibia as

- in fig. 14; mesotibia as in figs. 15; aedeagus as in figs. 16, 17). China (Yunnan Province). ..... *Makicula andreasi* Novák, 2012
- 12 (11) Metatibiae with distinct thorn on inner side, antenna blackish brown or brown, only antennomeres 1 and 2 ochre yellow, tibiae largely black. Habitus as in Fig. 22; head and pronotum (Fig. 23); protibia (Fig. 24); mesotibia (Fig. 25); metatibia (Fig. 26); apical piece of aedeagus (Figs. 27 and 28). Thailand (Khon Kaen Province) ..... *Makicula phuwiangica* sp. nov.
- 13 (14) All tibiae with thorn on inner side ..... 15
- 14 (13) Only protibiae with thorn on inner side ..... 17
- 15 (16) Metatibiae with one sharp thorn on inner side, elytra reddish brown or pale reddish brown, pronotum dark reddish brown, legs largely reddish brown. Figures see in Novák (2012: 286: habitus as in fig. 31; head and pronotum as in fig. 32; protibia as in fig. 33; mesotibia as in fig. 34; metatibia as in fig. 35; aedeagus as in figs. 36, 37). China (Yunnan Province). ..... *Makicula mengi* Novák, 2012
- 16 (15) Metatibiae with two teeth on inner side, elytra and pronotum blackish brown, tibiae and femora partly blackish brown, partly ochre yellow. Habitus as in Fig. 29; head and pronotum (Fig. 30); protibia (Fig. 31); mesotibia (Fig. 32); metatibia (Fig. 33); apical piece of aedeagus (Figs. 34 and 35). Laos (Vientiane). ..... *Makicula speciosa* sp. nov.
- 17 (18) Metatibiae partly flat in apical part. Habitus as in Fig. 12; head and pronotum (Fig. 13); protibia (Fig. 14); apical piece of aedeagus (Figs. 15 and 16). Thailand (Chiang Mai Province). ..... *Makicula kadinka* sp. nov.
- 18 (17) Metatibiae normally shaped in apical part ..... 19
- 19 (20) Tibiae and femora largely ochre yellow, mesotibiae strongly arcuate, protibiae with thorn at one third from base. Figures see in Novák (2012: 283: habitus as in fig. 25; head and pronotum as in fig. 26; protibia as in fig. 27; mesotibia as in fig. 28; aedeagus as in figs. 29, 30). Laos (Bolikhamsai Province). ..... *Makicula doraе* Novák, 2012
- 20 (19) Apical part of femora widely blackish brown, mesotibiae slightly arcuate, protibiae with thorn at two thirds from base. Habitus as in Fig. 7; head and pronotum (Fig. 8); protibia (Fig. 9); apical piece of aedeagus (Figs. 10 and 11). Cambodia (Siem Reap Province), Thailand (Chonburi Province). ..... *Makicula imperator* sp. nov.

## LIST OF MAKICULA SPECIES

<i>Makicula andreasi</i> Novák, 2012	China (Yunnan)
<i>Makicula bobikae</i> Novák, 2012	Laos (Bolikhamsai Province)
<i>Makicula danangica</i> sp. nov.	Vietnam (Da Nang Province)
<i>Makicula doraе</i> Novák, 2012	Laos (Bolikhamsai Province)
<i>Makicula imperator</i> sp. nov.	Cambodia (Siem Reap Province), Thailand (Chonburi Province)
<i>Makicula kadinka</i> sp. nov.	Thailand (Chiang Mai Province)
<i>Makicula mengi</i> Novák, 2012	China (Yunnan)
<i>Makicula monica</i> sp. nov.	Myanmar (Mon State)
<i>Makicula phoupaneica</i> Novák, 2012	Laos (Houa Phan Province)
<i>Makicula phuwiangica</i> sp. nov.	Thailand (Khon Kaen Province)
<i>Makicula speciosa</i> sp. nov.	Laos (Vientiane)

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## REFERENCES

- CAMPBELL J. M. 1965: A revision of the genus *Charisius* (Coleoptera: Alleculidae). *The Coleopterist's Bulletin* 19: 43-56.
- CAMPBELL J. M. & MARSHALL J. D. 1964: The ocular index and its applications to the taxonomy of the Alleculidae (Coleoptera). *The Coleopterist's Bulletin* 18: 42.

- NOVÁK V. 2012: New genera of Alleculinae (Coleoptera: Tenebrionidae: Alleculinae) from Palaearctic and Oriental Regions. *Studies and Reports, Taxonomical Series* 8 (1-2): 269-293.
- NOVÁK V. 2020: Subfamily Alleculinae Laporte, 1840, pp. 417-453. In: IWAN D. & LÖBL I. (eds). *Catalogue of Palaearctic Coleoptera. Volume 5. Revised and Updated Second Edition. Tenebrionoidea*. Brill, Leiden/Boston, 945 pp.

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