New *Borboresthes* species (Coleoptera: Tenebrionidae: Alleculinae) from China and Oriental Region

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Abstract. Seven new species of the genus *Borboresthes* Fairmaire, 1897 are described as *Borboresthes andreasi* sp. nov. and *B. jenisi* sp. nov. from China (Yunnan), *B. daxueensis* sp. nov. from China (Sichuan), *B. cameronensis* sp. nov. from Malaysia, *B. chiangraiensis* sp. nov. from Thailand, *B. cucphuongensis* sp. nov. and *B. quadrimaculatus* sp. nov. from Vietnam. Redescription of *Borboresthes major* Pic, 1934 is added as well as new distributional data for *B. major* - China (Hubei and Shaanxi).

INTRODUCTION

Fairmaire (1897) described the genus *Borboresthes* Fairmaire, 1897 with *Borboresthes cruralis* Marseul, 1876 as a type species from Japan, Taiwan and Far East. Species of this genus has oval or elongate oval, egg-shaped body, filiform antennae with antennomere 3 approximately as long as or slightly shorter than antennomere 4 and semicircular pronotum near base as wide as or very slightly narrower than base of elytra. Widened and lobed are protarsomeres and mesotarsomeres 3 and 4 and metatarsomeres 3.

Species of this genus are distributed in the Eastern and South Eastern Palaearctic Regions and in the Oriental Region. Borchmann (1910) knew only 2 species, Mader (1928) listed 7 and Novák & Pettersson (2008) later 43 species of this genus from the Palaearctic Region. New species from Palaearctic and Oriental Regions were described by Akita & Masumoto (2008, 2015) from Japan and by Novák (2012, 2015) from China, Laos, Malaysia, Thailand and Vietnam. At present we know more than 100 species from both regions. Most of them are small species in range between 4 and 8 mm.

Seven new large (range between 9 and12 mm) species of the genus *Borboresthes* Fairmaire, 1897 are described as *Borboresthes andreasi* sp. nov. and *B. jenisi* sp. nov. from China (Yunnan), *B. daxueensis* sp. nov. from China (Sichuan), *B. cameronensis* sp. nov. from Malaysia, *B. chiangraiensis* sp. nov. from Thailand, *B. cucphuongensis* sp. nov. and *B. quadrimaculatus* sp. nov. from Vietnam. Redescription of *Borboresthes major* Pic, 1934 is added as well as new distributional data for *B. major* - China (Hubei and Shaanxi).

New species are illustrated and compared with a similar large species *Borboresthes major* Pic, 1934.

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 × minimum dorsal distance between eyes) / (maximum width of head across eyes). The pronotal index is calculated as (100 × length of pronotum along midline) / (width across basal angles of pronotum).

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

The following codens are used:

APEG private collection of Andreas Pütz, Eisenhüttenstadt, Germany;
KMTJ private collection of Kimio Masumoto, Tokio, Japan;
MNFI Museo di Storia Naturale, Firenze, Italy;
MNHN Muséum National d´Histoire naturelle, Paris, France;
NMEG Naturkundemuseum, Erfurt, Germany;
NMPC National Museum, Praha, Czech Republic;
NMTJ National Museum, Tokio, Japan;
VNPC private collection of Vladimír Novák, Prague, Czech Republic.

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

Other abbreviations used in text: hb= handwritten black; pb= printed black.

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

TAXONOMY

Borboresthes andreasi sp. nov.

(Figs. 1-4)

Type locality. China S, Yunnan, Xishuangbanna, cca 30 km NW Jinghong, Hua Zhuliangzi Mts., N22°08.1, E100°31.54, 1700-2000 m.

Type material. Holotype (♂): C CHINA S-YUNNAN / (Xishuangbanna) / ca 30 km NW Jinghong / vic. Bameng, 17-2000 m // Hua Zhuliangzi Mts. / N22°08.1/E100°31.54 / 1700-2000m 30.V.2008 / leg. A.Weigel sec. forest, (NMEG); Paratypes: (2 ♂♂ 1 ♀): same data as holotype, (NMEG, VNPC). The types are provided with a printed red label: 'Borboresthes andreasi sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 1, body large, oval, convex, dorsal surface from pale brown to dark brown, with punctuation, microgranulation and ochre yellow setation, BL 10.35 mm. Widest near elytral half; BL/EW 2.77.

Head (Fig. 2) relatively small, posterior part dark brown, with sparser, ochre yellow setation, microgranulation dense and coarser punctuation, shiny. Anterior part reddish brown with denser and longer ochre yellow setation and rather shallower punctuation, clypeus pale brown. HW 1.57 mm; HW/PW 0.57. HL (visible part) 1.39 mm. Eyes relatively large, transverse, distinctly excised, space between eyes distinctly wider than diameter of one eye, approximately as wide as antennomere 3 long; OI equal to 46.84.

Antennae. Long, filiform, pale brown, with microgranulation and relatively long, dense ochre yellow setation, AL 7.23 mm, AL/BL 0.71. Antennomere 2 shortest, antennomere 4 longest, antennomeres 5-11 very slightly longer than antennomere 3. RLA (1-11): 0.53 : 0.23 : 1.00 : 1.26 : 1.08 : 1.05 : 1.06 : 1.05 : 1.01 : 1.00 : 1.02. RL/WA (1-11): 2.19 : 1.37 : 5.60 : 6.41 : 5.50 : 5.90 : 5.67 : 5.85 : 5.65 : 5.60 : 5.70.

Figs. 1-4: *Borboresthes andreasi* sp. nov.: 1- Habitus of male holotype; 2- head and pronotum of male holotype; 3- aedeagus, dorsal view; 4- aedeagus, lateral view.

Maxillary palpus. Pale brown with microgranulation and ochre yellow setation. Ultimate palpomere broadly triangular. Palpomeres 2 and 3 distinctly narrowest at base, slightly dilated anteriorly.

Pronotum (Fig. 2). Dark brown, almost semicircular, with long, dense, ochre yellow setation near sides, setation on disc sparse, microgranulation and dense punctuation, punctures small-sized, interspaces between punctures very narrow. Border lines distinct and complete, only in the middle of anterior margin not clearly conspicuous. Anterior margin arcuate, lateral margins straight and apically rounded, posterior margin bisinuate, anterior angles indistinct, posterior angles slightly obtuse angled. PL 1.46 mm; PW 2.78 mm. PI equal to 52.52.

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

Elytron brown, with ochre yellow setation and microgranulation, rather matte. Elytral striae with distinct rows of small-sized punctures, elytral interspaces very slightly convex, with microgranulation and very small, sparse, shallow punctures. EL 7.50 mm. Broadest near half elytral length, EW 3.74 mm. EL/EW 2.01.

Scutellum. Brown, widely pentagonal with microgranulation, small punctures and a few setae.

Elytral epipleura well-developed, blackish brown with pale setae, regularly narrowing to ventrite 1 in basal half, then leading parallel.

Legs. Femora and tibia reddish brown, with dense and long, ochre yellow setation and microgranulation. Tibiae slightly dilated anteriorly. Tarsi from ochre yellow to pale brown, protarsomeres and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: protarsus: 1.00 : 0.76 : 0.74 : 0.94 : 1.61; metatarsus: 1.00 : 0.33 : 0.22 : 0.59.

Both anterior tarsal claws with 15 visible teeth.

Aedeagus (Figs. 3, 4). Ochre yellow, slightly shiny. Basal piece regularly arcuate laterally and narrow, slightly narrowing dorsally. Apical piece narrow dorsally and beak-shaped laterally. Ratio of length of apical piece to length of basal piece 1: 3.65.

Female without distinct differences, only both anterior tarsal claws with 10 visible teeth. Measurements. BL 11.27 mm; HL 1.23 mm; HW 1.82 mm; OI 46.25; PL 1.44 mm; PW 3.38 mm; PI 42.60; EL 8.60 mm; EW 4.40 mm; BL/EW 2.56; HW/PW 0.54; EL/EW 1.95.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=3). BL 10.73 mm (10.35-10.93 mm); HL 1.36 mm (1.33-1.39 mm); HW 1.61 mm (1.57-1.64 mm); OI 44.29 (41.67-46.84); PL 1.49 mm (1.44-1.56 mm); PW 2.96 mm (2.78-3.14 mm); PI 50.41 (46.02-52.69); EL 7.89 mm (7.50-8.13 mm); EW 3.90 mm (3.74-4.00 mm).

Differential diagnosis. Male of *Borboresthes andreasi* sp. nov. distinctly differs from similar species *Borboresthes major* Pic, 1934 mainly by legs and antennae brown or dark brown, space between eyes approximately as wide as length of antennomere 3, anterior tarsal claws with 15 teeth and by shape of aedeagus (Figs. 3 and 4). Male of *Borboresthes major* Pic, 1934 has antennae and legs ochre yellow, space between eyes distinctly wider than length of antennomere 3, anterior tarsal claws have 19 teeth and shape of aedeagus as in Figs. 27 and 28.

Etymology. New species is dedicated to the collector of the type material - Andreas Weigel (Erfurt, Germany).

Distribution. China (Yunnan).

Borboresthes cameronensis sp. nov.

(Figs. 5-8)

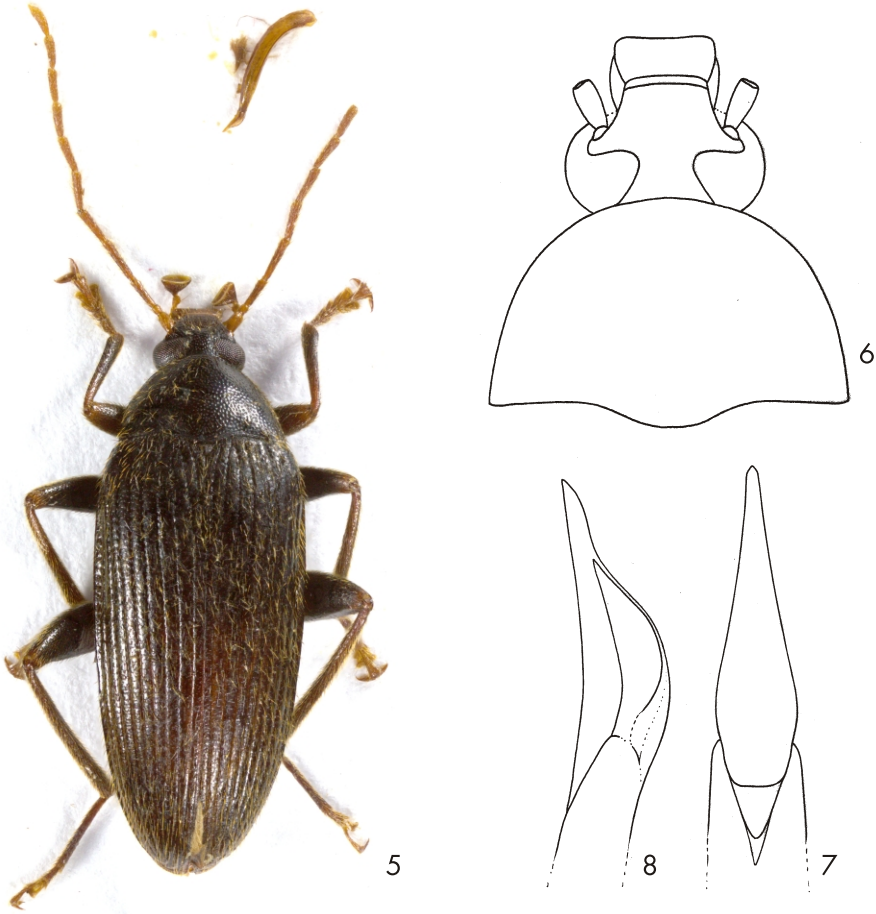
Type locality. W Malaysia, Cameron Highlands, Tanah Rata, Mt. Gunung Jasar, 04°28.4-7´N, 101°21.6-22.1´E.

Type material. Holotype (♂): W Malaysia / Cameron Highlands / Tanah Rata - Mt. Gunung Jasar / 30.1.-24.2.2008 / P. Viktora lgt., (VNPC); Paratypes: (1 ♀): Malaysia NW / Cameron Highlands / Tanah Rata / 16.-29.1.2006 / P. Viktora lgt., (VNPC); (1 ♀): MALAYSIA, PAHANG / Cameron Highlands / TANAH RATA vill. env. / Gunung Jasar [Mt.]; 1470-1705 m / 04°28.4-7´N, 101°21.6-22.1´E / Jiří Hájek leg. 18.iv.-10.v.2009, (NMPC). The types are provided with a printed red label: 'Borboresthes cameronensis sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 5, body large, elongate oval, convex, dorsal surface from reddish brown to black, with punctuation, microgranulation and ochre yellow setation, slightly shiny, BL 9.22 mm. Widest near elytral half; BL/EW 2.90.

Head (Fig. 6) relatively small with ochre yellow setation, microgranulation and dense punctuation, posterior part black. Anterior part dark brown and clypeus reddish brown. HW 1.40 mm; HW/PW 0.59. HL (visible part) 1.29 mm. Eyes large, transverse, distinctly excised, space between eyes narrow, distinctly narrower than diameter of one eye, approximately as wide as antennomere 1 long; OI equal to 27.56.

Antennae. Long, filiform, reddish brown, with microgranulation and dense, pale setation, AL 5.58 mm, AL/BL 0.61. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11.



Figs. 5-8: *Borboresthes cameronensis* sp. nov.: 5- Habitus of male holotype; 6- head and pronotum of male holotype; 7- aedeagus, dorsal view; 8- aedeagus, lateral view.

RLA (1-11): 0.63 : 0.29 : 1.00 : 1.53 : 1.24 : 1.22 : 1.17 : 1.09 : 1.05 : 1.01 : 1.10.
RL/WA (1-11): 2.08 : 1.35 : 4.39 : 6.05 : 4.90 : 4.17 : 4.18 : 4.10 : 4.61 : 4.21 : 4.35.

Maxillary palpus. Reddish brown, with microgranulation and pale setation. Ultimate palpomere broadly triangular. Palpomeres 2 and 3 distinctly narrowest at base, slightly dilated anteriorly.

Pronotum (Fig. 6). Black, semicircular, with long, ochre yellow setation, microgranulation and shallow punctuation, punctures in middle small, near sides larger, medium-sized. Border lines distinct and complete, lateral margins in posterior part straight, in anterior half arcuate. Anterior margin arcuate, posterior margin bisinuate, anterior angles indistinct, posterior angles rectangular. PL 1.19 mm; PW 2.39 mm. PI equal to 49.79.

Ventral side of body black, shiny, with short, sparse, pale setation and dense punctuation, punctures small. Abdomen black, with longer, pale setation, small, shallow punctures and microgranulation. Ultimate ventrite partly apically pale brown with distinct shallow impression in apex.

Elytron black or blackish brown, with long and dense ochre yellow setation. Elytral striae with distinct rows of small-sized punctures, elytral interspaces slightly convex, with microgranulation and very small, shallow punctures. EL 6.74 mm. Broadest near half elytral length, EW 3.18 mm. EL/EW 2.12.

Scutellum. Black, roundly triangular with microgranulation and a few setae, matte.

Elytral epipleura well-developed, dark blackish brown, with pale setae and small punctures, shiny, regularly narrowing to ventrite 1 in basal half, then leading parallel.

Legs. Black, apex of femora, base of tibia and tarsi reddish brown, with dense, ochre yellow setation, fine microgranulation and small punctures. Tibiae slightly dilated anteriorly. Protarsomeres 2-4, mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: protarsus: 1.00 : 0.73 : 0.73 : 0.79 : 1.48; metatarsus: 1.00 : 0.21 : 0.20 : 0.42.

Both anterior tarsal claws with 27 visible teeth.

Aedeagus (Figs. 7, 8). Pale brown, shiny. Basal piece rounded laterally and narrowing dorsally. Apical piece narrow and beak-shaped laterally and dorsally. Ratio of length of apical piece to length of basal piece 1: 3.96.

Female without distinct differences, only both anterior tarsal claws with 10 visible teeth.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Females (n=2). BL 9.53 mm (9.21-9.84 mm); HL 1.22 mm (1.21-1.23 mm); HW 1.49 mm (1.45-1.52 mm); OI 32.65 (29.63-35.66); PL 1.45 mm (1.43-1.46 mm); PW 2.68 mm (2.57-2.78 mm); PI 54.13 (51.44-56.81); EL 7.01 mm (6.82-7.20 mm); EW 3.38 mm (3.22-3.54 mm).

Differential diagnosis. Male of *Borboresthes cameronensis* sp. nov. distinctly differs from similar species *Borboresthes major* Pic, 1934 mainly by legs and antennae dark brown or brown, space between eyes distinctly narrower than diameter of one eye (OI 27.6), anterior tarsal claws with 27 teeth and by shape of aedeagus (Figs. 7 and 8). Male of *Borboresthes major* Pic, 1934 has antennae and legs ochre yellow, space between eyes distinctly wider than diameter of one eye (OI 45.5), anterior tarsal claws have 19 teeth and shape of aedeagus as in Figs. 27 and 28.

Etymology. Toponymic, after the type locality - Cameron Highlands in Malaysia.

Distribution. Malaysia.

***Borboresthes chiangraiensis* sp. nov.**

(Figs. 9-12)

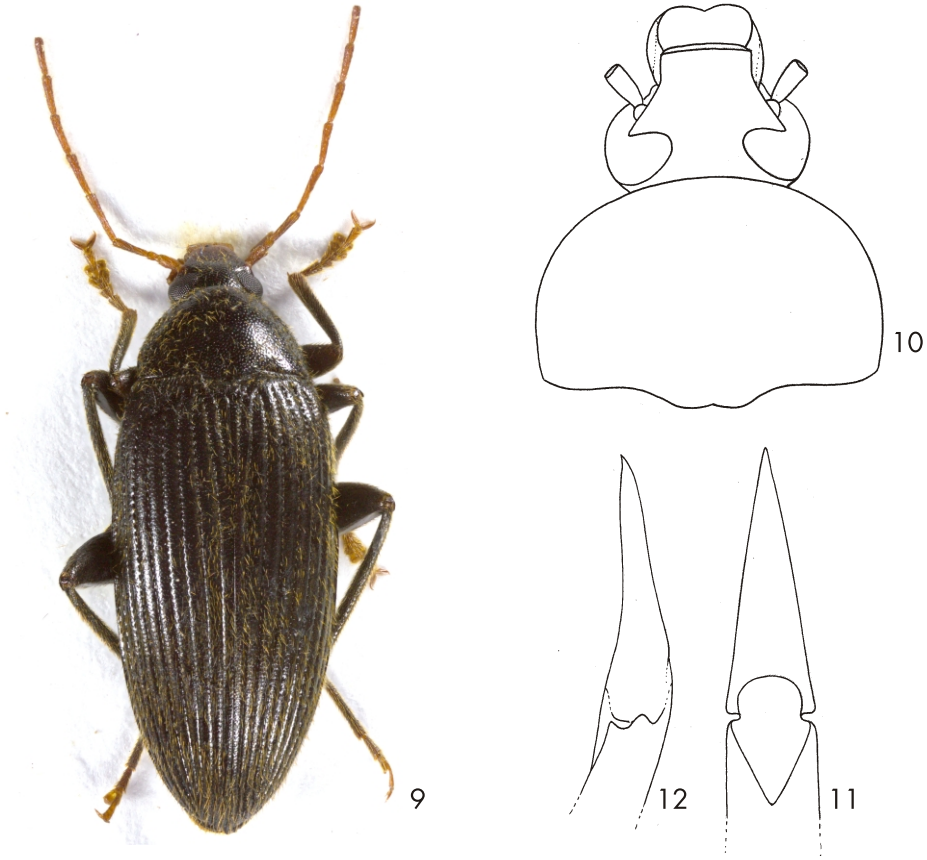
Type locality. Thailand, Chiang Rai prov., Wiang Pa Pao.

Type material. Holotype (♂): Thailand N, Chiang Rai / prov., WIANG PA PAO / 5.-10.vi.2016 / K. Takahashi leg., (NMTJ). Paratypes: (1 ♂ 1 ♀): same data as holotype, (KMTJ, VNPC). The types are provided with a printed red label: 'Borboresthes chiangraiensis sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 9, body large, elongate oval, convex, dorsal surface from reddish brown to black, with punctuation, microgranulation and ochre yellow

setation, shiny, BL 10.00 mm. Widest near elytral half; BL/EW 2.80.

Head (Fig. 10) relatively small with sparser, ochre yellow setation, microgranulation and dense punctuation, posterior part black. Anterior part and clypeus reddish brown, clypeus slightly paler and matter. HW 1.52 mm; HW/PW 0.55. HL (visible part) 1.23 mm. Eyes relatively large, transverse, distinctly excised, space between eyes slightly wider than diameter of one eye, distinctly wider than length of antennomere 1; OI equal to 47.12.



Figs. 9-12: *Borboresthes chiangraiensis* sp. nov.: 9- Habitus of male holotype; 10- head and pronotum of male holotype; 11- aedeagus, dorsal view; 12- aedeagus, lateral view.

Antennae. Long, filiform, pale reddish brown, with microgranulation and relatively short, dense ochre yellow setation, AL 6.26 mm, AL/BL 0.63. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-8. RLA (1-11): 0.62 : 0.31 : 1.00 : 1.43 : 1.21 : 1.14 : 1.09 : 1.05 : 1.01 : 0.97 : 0.99.
RL/WA (1-11): 2.06 : 1.50 : 4.08 : 6.86 : 4.92 : 4.65 : 3.97 : 4.11 : 4.12 : 5.15 : 5.00.

Maxillary palpus. Pale reddish brown, with microgranulation and pale setation. Ultimate palpomere broadly triangular. Palpomeres 2 and 3 distinctly narrowest at base, slightly dilated anteriorly.

Pronotum (Fig. 10). Black, semicircular, with long, ochre yellow setation, sparse

microgranulation and dense punctuation, punctures small-sized, interspaces between punctures wider. Border lines distinct and complete, lateral and anterior margins arcuate, posterior margin bisinuate, anterior angles indistinct, posterior angles slightly obtuse angled. PL 1.39 mm; PW 2.76 mm. PI equal to 50.40.

Ventral side of body black, with sparse, pale setation and small punctures. Abdomen black, with sparse, pale setation, very small punctures and microgranulation, shiny.

Elytron pale blackish brown, with ochre yellow setation. Elytral striae with distinct rows of small-sized punctures, elytral interspaces slightly convex, with fine microgranulation and very small punctures. EL 7.38 mm. Widest near half elytral length, EW 3.57 mm. EL/EW 2.07.

Scutellum. Black, roundly triangular, with microgranulation and a few setae, shiny.

Elytral epipleura well-developed, black, with pale setae and punctures, regularly narrowing to ventrite 1 in basal half, then leading parallel.

Legs. Black, with dense, pale setation, fine microgranulation and small punctures. Tibiae slightly dilated anteriorly, apex of protibiae and protarsi reddish brown. Protarsomeres 2-4, mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: protarsus: 1.00 : 0.57 : 0.80 : 0.82 : 1.57; metatarsus: 1.00 : 0.32 : 0.26 : 0.35.

Anterior tarsal claws with 19 and 22 visible teeth.

Aedeagus (Figs. 11, 12). Yellow, slightly shiny. Basal piece only finely rounded laterally and slightly narrowing to apex. Apical piece elongate, beak-shaped laterally and longitudinally triangular dorsally. Ratio of length of apical piece to length of basal piece 1: 3.51.

Female more robust, both anterior tarsal claws with 9 visible teeth.
Measurements: BL 10.28 mm; HL 1.28 mm; HW 1.54 mm; OI 45.75; PL 1.47 mm; PW 3.05 mm; PI 48.08; EL 7.53 mm; EW 4.04 mm; BL/EW 2.55; HW/PW 0.51; EL/EW 1.86.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=2). BL 10.00 mm; HL 1.24 mm (1.23-1.25 mm); HW 1.51 mm (1.50-1.52 mm); OI 45.22 (43.31-47.12); PL 1.44 mm (1.39-1.49 mm); PW 2.74 mm (2.71-2.76 mm); PI 52.70 (50.40-55.00); EL 7.37 mm (7.36-7.38 mm); EW 3.57 mm.

Differential diagnosis. Male of *Borboresthes chiangraiensis* sp. nov. distinctly differs from similar species *Borboresthes major* Pic, 1934 mainly by legs blackish brown, antennae and maxillary palpus reddish brown, longer antennae (AL/BL 0.63), narrower body (BL/EW 2.80), anterior tarsal claws with 19 and 22 teeth and by shape of aedeagus (Figs. 11 and 12). Male of *Borboresthes major* Pic, 1934 has antennae and legs ochre yellow, antennae shorter (AL/BL 0.53), wider body (BL/EW 2.63), anterior tarsal claws have 19 teeth and shape of aedeagus as in Figs. 27 and 28.

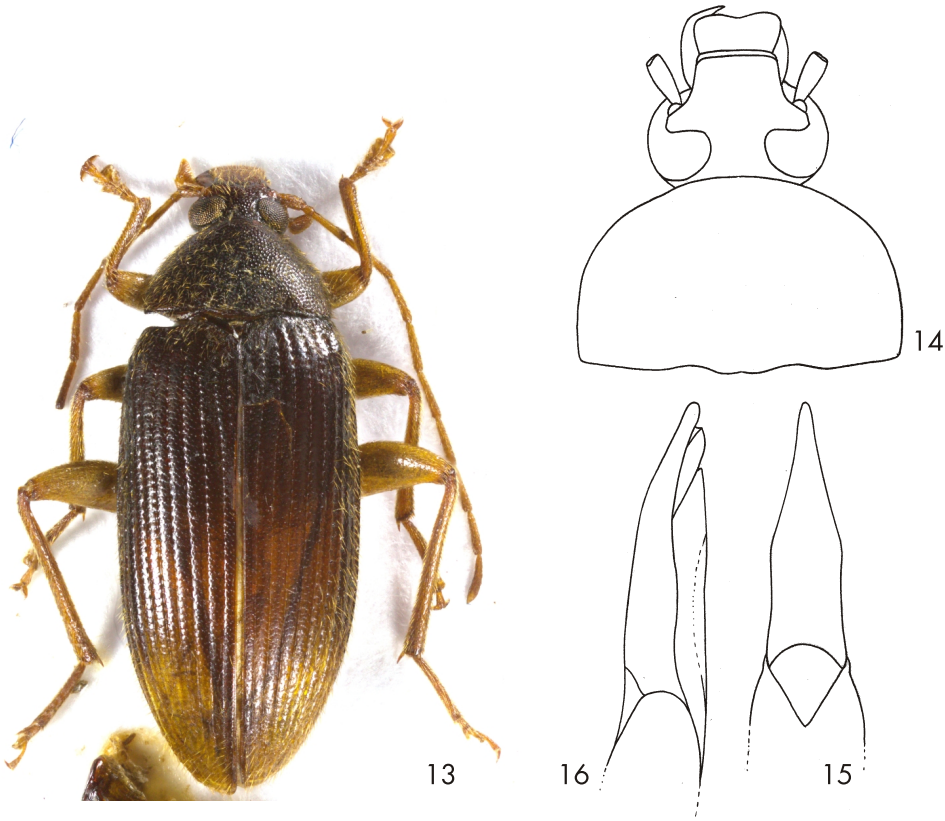
Etymology. Toponymic, after the type locality - province Chiang Rai in Thailand.

Distribution. Thailand.

***Borboresthes cucphuongensis* sp. nov.**
(Figs. 13-16)

Type locality. Northern Vietnam, Ninh Binh prov., Cuc Phuong NP, 20°17.572´N, 105°40.052´E, 270 m.

Type material. Holotype (♂): N-VIETNAM, Ninh Binh Prov. / Cuc Phuong NP, N20°17.572´ E / 105°40.052, 270m, 22.5. - / 24.5.2015, leg. A. Skale, (NMEG). Paratypes: (1 ♀): same data as holotype, but A. Weigel lgt., (VNPC); (2 ♀♀): N-VIETNAM Ninh Binh / Prov.90Km SW Hanoi, vic. / Cuc Phuong NP, 190m, / primates rescue centre, / N20°14´24´´, E105°42´53´´/ 19.-25.IV.2012, leg. A. Weigel, (NMEG, VNPC); (1 ♀): N - VIETNAM Ninh Binh / Pr.90km SW Hanoi Cuc / Phuong village, / 20.IV.2012, 160m, / 20°14´01´´N, 105°43´19´´E / leg. A. Weigel Tümp.; (1 ♀): VIETNAM - Ninh Binh Prov. / Cuc Phuong Natl Park (200 m), / 20°19´21´´N 105°37´36´´E 3-5.V.2014 // legit L. Bartolozzi, G. Chelazzi, / A. Bandinelli, S. Bambi, / F. Fabiano (n° Magazz. 2978), (MNFI). The types are provided with a printed red label: 'Borboresthes cucphuongensis sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.



Figs. 13-16: *Borboresthes cucphuongensis* sp. nov.: 13- Habitus of male holotype; 14- head and pronotum of male holotype; 15- aedeagus, dorsal view; 16- aedeagus, lateral view.

Description of holotype. Habitus as in Fig. 13, body large, oval, convex, dorsal surface from ochre yellow to blackish brown, with punctuation, microgranulation and ochre yellow setation, slightly shiny, BL 8.94 mm. Widest near elytral half; BL/EW 2.73.

Head (Fig. 14) relatively small with ochre yellow setation, microgranulation and punctuation, posterior part blackish-brown. Anterior part brown and clypeus reddish brown. HW 1.37 mm; HW/PW 0.53. HL (visible part) 1.16 mm. Eyes relatively large, transverse, distinctly excised, space between eyes narrow, distinctly narrower than diameter of one eye, approximately as wide as antennomere 1 long; OI equal to 31.80.

Antennae. Long, filiform, ochre yellow, with microgranulation, long, dense ochre yellow setation and punctures, AL 6.54 mm, AL/BL 0.73. Antennomere 2 shortest, antennomere 3

distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.73 : 0.29 : 1.00 : 1.51 : 1.35 : 1.30 : 1.29 : 1.33 : 1.25 : 1.15 : 1.28. RL/WA (1-11): 2.02 : 1.36 : 4.88 : 7.08 : 6.58 : 5.63 : 5.81 : 6.24 : 5.41 : 5.19 : 6.82.

Maxillary palpus reddish brown with pale setation. Ultimate palpomere broadly triangular. Palpomeres 2 and 3 distinctly narrowest at base, slightly dilated anteriorly.

Pronotum (Fig. 14). Blackish-brown, semicircular, with long, ochre yellow setation, dense and coarse punctuation, punctures relatively large, medium-sized, interspaces between punctures very narrow, shiny. Surface in punctures with microgranulation. Border lines distinct and complete, lateral and anterior margins arcuate. Posterior margin bisinuate, anterior angles indistinct, posterior angles slightly obtuse angled. PL 1.33 mm; PW 2.57 mm. PI equal to 51.75.

Ventral side of body black, with punctuation. Abdomen black, with sparse, pale setation, small, shallow punctures and microgranulation.

Elytron dark brown, with ochre yellow setation. Elytral striae with distinct rows of small-sized punctures, elytral interspaces slightly convex, with distinct microgranulation and relatively dense, small punctures. EL 6.45 mm. Widest near half of elytral length, EW 3.27 mm. EL/EW 1.97.

Scutellum. Black, small, roundly triangular with microgranulation, slightly shiny.

Elytral epipleura well-developed, with a few pale setae, regularly narrowing to ventrite 1 in basal half, then leading parallel.

Legs. Pale reddish brown, with dense and long, ochre yellow setation and fine microgranulation. Tibiae slightly dilated anteriorly. Protarsomeres 2-4, mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: protarsus: 1.00 : 0.38 : 0.57 : 0.69 : 1.43; mesotarsus: 1.00 : 0.25 : 0.29 : 0.36 : 0.74; metatarsus: 1.00 : 0.27 : 0.27 : 0.40.

Both anterior tarsal claws with 13 visible teeth.

Aedeagus (Figs. 15, 16). Ochre yellow, shiny. Basal piece rounded laterally. Apical piece beak-shaped laterally and dorsally. Ratio of length of apical piece to length of basal piece 1: 2.21.

Female more robust, space between eyes distinctly wider, both anterior tarsal claws with 9 visible teeth.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Females (n=5). BL 9.21 mm (9.01-9.49 mm); HL 1.19 mm (1.16-1.22 mm); HW 1.41 mm (1.35-1.45 mm); OI 40.70 (37.75-42.90); PL 1.27 mm (1.15-1.34 mm); PW 2.72 mm (2.61-2.83 mm); PI 46.67 (44.06-48.90); EL 6.75 mm (6.64-6.97 mm); EW 3.41 mm (3.32-3.50 mm).

Differential diagnosis. Male of *Borboresthes cucphuongensis* sp. nov. distinctly differs from similar species *Borboresthes major* Pic, 1934 mainly by punctuation of pronotum coarser, punctures larger, elytral intervals with clear microgranulation, small and relatively dense punctures, longer antennae (AL/BL 0.63), narrower body (BL/EW 2.80), anterior tarsal claws with 13 teeth and by shape of aedeagus (Figs. 15 and 16). Male of *Borboresthes major* Pic, 1934 has punctuation of pronotum shallower, punctures smaller, elytral intervals with very fine and indistinct microgranulation, very sparse and very small punctures, antennae shorter (AL/BL 0.53), wider body (BL/EW 2.63), anterior tarsal claws have 19 teeth and shape of aedeagus as in Figs. 27 and 28.

Etymology. Toponymic, after the type locality - National Preserve Cuc Phuong in Vietnam.

Distribution. Vietnam.

***Borboresthes daxueensis* sp. nov.**

(Figs. 17-20)

Type locality. China, S Sichuan, pass 30 km SW Mianning, 3000-3400 m.

Type material. Holotype (♂): CHINA S SICHUAN pr. / pass 30 km SW Mianning / 3000-3400 m, 11.-13.vii. / 2007; S. Murzin leg., (VNPC); Paratypes: (2 ♂♂): same data as holotype, (VNPC); (2 ♂♂): CHINA, SICHUAN DAXUE / SHAN Mts., 40km W Mianning / 2750m; 28°34´N 102°00´E 7-8. / 07.1999; leg. Siniaev & Plutenko, (VNPC). The types are provided with a printed red label: 'Borboresthes daxuensis sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.

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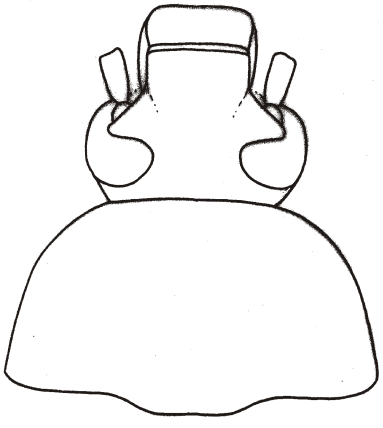

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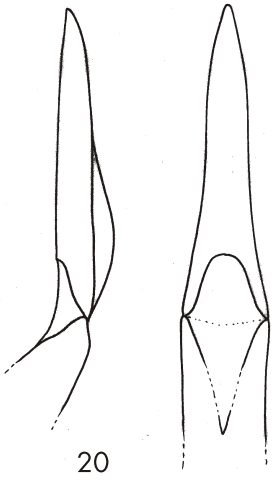

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Figs. 17-20: *Borboresthes daxueensis* sp. nov.: 17- Habitus of male holotype; 18- head and pronotum of male holotype; 19- aedeagus, dorsal view; 20- aedeagus, lateral view.

Description of holotype. Habitus as in Fig. 17, body large, elongate oval, narrower and flat, dorsal surface from ochre yellow to reddish brown, with punctuation, microgranulation and ochre yellow setation, BL 8.85 mm. Widest near elytral half; BL/EW 2.86.

Head (Fig. 18) relatively small, reddish brown, with pale setation, microgranulation and punctuation, clypeus distinctly paler. HW 1.34 mm; HW/PW 0.60. HL (visible part) 1.25 mm. Eyes relatively large, transverse, distinctly excised, space between eyes narrow, slightly wider than diameter of one eye, slightly narrower than length of antennomere 3; OI equal to 34.50.

Antennae. Long, filiform, ochre yellow, with microgranulation, punctuation and relatively long, dense ochre yellow setation, AL 5.93 mm, AL/BL 0.67. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.47 : 0.31 : 1.00 : 1.43 : 1.17 : 1.15 : 1.09 : 1.17 : 1.02 : 1.05 : 1.14. RL/WA (1-11): 1.76 : 1.39 : 4.09 : 5.84 : 4.80 : 5.05 : 5.58 : 5.00 : 4.27 : 4.41 : 4.75.

Maxillary palpus. Ochre yellow with microgranulation and ochre yellow setation. Ultimate palpomere broadly triangular. Palpomeres 2 and 3 distinctly narrowest at base, slightly dilated anteriorly.

Pronotum (Fig. 18). Reddish brown, almost semicircular, with ochre yellow setation, fine microgranulation and dense punctuation, punctures small-sized, interspaces between punctures very narrow. Border lines distinct and complete, only in the middle of base and in the middle of anterior margin not clearly conspicuous. Anterior margin rather straight than arcuate, lateral margins straight and arcuate in apical half, posterior margin bisinuate, anterior angles indistinct, posterior angles slightly obtuse angled. PL 1.16 mm; PW 2.23 mm. PI equal to 52.02.

Ventral side of body pale reddish brown with punctuation. Abdomen reddish brown, with sparse, pale setation and fine microgranulation.

Elytron reddish brown, near sides and in apex distinctly paler with longer and denser ochre yellow setation. Elytral striae with distinct rows of small-sized punctures, elytral interspaces slightly convex, with fine microgranulation and very small, sparse, shallow punctures. EL 6.44 mm. Broadest near elytral half, EW 3.09 mm. EL/EW 2.08.

Scutellum. Reddish brown, with fine microgranulation and a few ochre yellow setae.

Elytral epipleura well-developed with pale setae. Basal part reddish brown regularly narrowing to ventrite 1, then in apical half ochre yellow leading parallel.

Legs. Ochre yellow, with dense, yellow setation and fine microgranulation and punctures. Tibiae slightly dilated anteriorly. Protarsomeres and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: protarsus: 1.00 : 0.42 : 0.58 : 0.60 : 1.44; mesotarsus: 1.00 : 0.39 : 0.38 : 0.43 : 0.75; metatarsus: 1.00 : 0.30 : 0.30 : 0.54.

Both anterior tarsal claws with 15 visible teeth.

Aedeagus (Figs. 19, 20). Ochre yellow, slightly shiny. Basal piece regularly arcuate laterally, narrow and apically narrowing dorsally. Apical piece narrowly beak-shaped laterally and dorsally. Ratio of length of apical piece to length of basal piece 1: 5.51.

Female unknown.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=5). BL 9.09 mm (8.85-9.62 mm); HL 1.24 mm (1.21-1.31 mm); HW 1.35 mm (1.27-1.43 mm); OI 35.36 (33.90-38.39); PL 1.21 mm (1.16-1.27 mm); PW 2.23 mm (2.19-2.25 mm); PI 53.73 (52.02-55.71); EL 6.64 mm (6.44-6.91 mm); EW 3.15 mm (3.09-3.20 mm).

Differential diagnosis. Male of *Borboresthes daxueensis* sp. nov. distinctly differs from similar species *Borboresthes major* Pic, 1934 mainly by longer antennae (AL/BL 0.67), narrower body (BL/EW 2.86), anterior tarsal claws with 15 teeth and by shape of aedeagus (Figs. 19 and 20). Male of *Borboresthes major* Pic, 1934 has antennae shorter (AL/BL 0.53), wider body (BL/EW 2.63), anterior tarsal claws have 19 teeth and shape of aedeagus as in Figs. 27 and 28.

Etymology. Toponymic, after Daxue Shan Mts., locality where new species occurs.

Distribution. China (Sichuan).

***Borboresthes jenisi* sp. nov.**

(Figs. 21-24)

Type locality. China mer., Yunnan prov., Gaoling Shan, pass SW from Baoshan.

Type material. Holotype (♂): CHINA mer. Yunnan prov. / (pass SW from Baoshan) / Gaoligong Shan; 4.-8.6. / 2005; Ivo Jeniš leg., (VNPC); Paratypes: (1 ♂ 3 ♀♀): same data as holotype, (VNPC); (2 ♂♂): SW CHINA, Yunnan, Yunfeng Shan / W Gudong, Tenhong env. / N 25°22.623´, E 98°24.351´, 2400-1400m / 1.-2.VI.2013, P. Viktora lgt., (VNPC). The types are provided with a printed red label: 'Borboresthes jenisi, sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.

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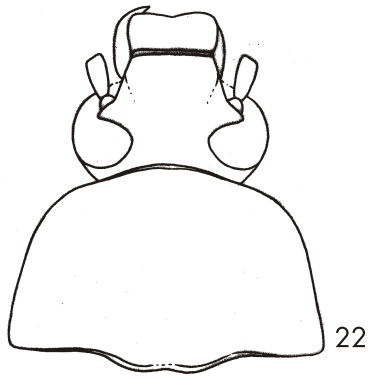

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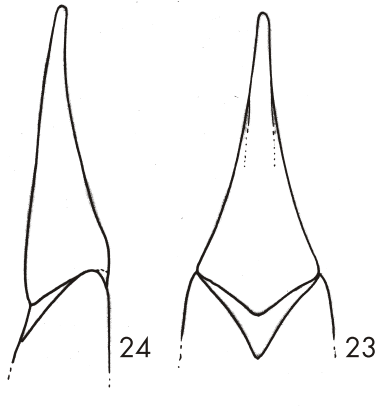

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Figs. 21-24: *Borboresthes jenisi* sp. nov.: 21- Habitus of male holotype; 22- head and pronotum of male holotype; 23- aedeagus, dorsal view; 24- aedeagus, lateral view.

Description of holotype. Habitus as in Fig. 21, body large, elongate oval, slightly convex, dorsal surface from ochre yellow to blackish brown, with punctuation, microgranulation and sparse, pale setation, shiny, BL 9.37 mm. Widest near elytral half; BL/EW 2.90.

Head (Fig. 22) blackish brown, relatively small with sparse setae, very fine microgranulation and coarse, dense punctures. Anterior part brown with shallower punctures, clypeus ochre yellow with dense ochre yellow setation. HW 1.30 mm; HW/PW 0.60. HL (visible part) 1.27 mm. Eyes relatively large, transverse, distinctly excised, space between eyes relatively narrow, slightly wider than diameter of one eye, narrower than length of antennomere 3; OI equal to 39.66.

Antennae. Long, filiform, ochre yellow, with microgranulation, punctures and relatively long and dense ochre yellow setation, AL 6.61 mm, AL/BL 0.71. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-8; antennomeres 9-11 shorter than antennomeres 4-8. RLA (1-11): 0.53 : 0.29 : 1.00 : 1.45 : 1.14 : 1.13 : 1.11 : 1.07 : 0.99 : 1.04 : 1.05. RL/WA (1-11): 2.19 : 1.52 : 4.87 : 8.53 : 6.40 : 6.30 : 5.91 : 4.29 : 4.44 : 5.80 : 6.50.

Maxillary palpus. Pale brown with microgranulation and ochre yellow setation. Ultimate palpomere broadly triangular. Palpomeres 2 and 3 distinctly narrowest at base, slightly dilated anteriorly.

Pronotum (Fig. 22). Blackish brown, semicircular, with sparse, pale setae and dense punctuation, punctures relatively large and coarse, interspaces between punctures very narrow, shiny. Border lines distinct and complete. Anterior margin arcuate, lateral margins rather straight, arcuate near apex, posterior margin bisinuate, anterior angles indistinct, posterior angles roundly rectangular. PL 1.25 mm; PW 2.17 mm. PI equal to 57.60.

Ventral side of body blackish brown with sparse, long, pale setae and punctuation, shiny. Abdomen blackish brown, with very small and sparse punctures and fine microgranulation.

Elytron blackish brown, with sparse, pale setae, shiny. Elytral striae with distinct rows of small-sized punctures, distinctly smaller than those in pronotum. Elytral interspaces slightly convex, with fine microgranulation and very small, sparse, shallow punctures. EL 6.85 mm. Broadest near half elytral length, EW 3.23 mm. EL/EW 2.12.

Scutellum blackish brown as elytron itself, pentagonally shaped, with a few pale setae and very fine microgranulation.

Elytral epipleura well-developed with a few pale setae. Blackish brown as elytron itself regularly narrowing to ventrite 1 in basal half, then leads parallel.

Legs with pale setation. Femora blackish brown, shiny. Tibiae blackish brown, with microganulation, rather matte, slightly dilated anteriorly. Tarsi pale brown, protarsomeres and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: protarsus: 1.00 : 0.68 : 0.70 : 0.85 : 1.47; mesotarsus: 1.00 : 0.32 : 0.27 : 0.35: 0.74; metatarsus: 1.00 : 0.35 : 0.29 : 0.52.

Both anterior tarsal claws with 12 visible teeth.

Aedeagus (Figs. 23, 24). Pale brown, slightly shiny. Basal piece only finely rounded laterally and relatively wide dorsally. Apical piece narrowly elongate triangular dorsally and laterally. Ratio of length of apical piece to length of basal piece 1: 2.48.

Female without distinct differences, only both anterior tarsal claws with 8 visible teeth.

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 9.93 mm (9.37-10.20 mm); HL 1.28 mm (1.25-1.31 mm); HW 1.42 mm (1.30-1.49 mm); OI 41.84 (39.66-43.85); PL 1.31 mm (1.24-1.43 mm); PW 2.35 mm (2.17-2.59 mm); PI 55.97 (53.22-57.83); EL 7.17 mm (6.85-7.60 mm);

EW 3.32 mm (3.23-3.43 mm). Females (n=3). BL 9.66 mm (9.45-9.89 mm); HL 0.84 mm (0.75-0.90 mm); HW 1.46 mm (1.36-1.52 mm); OI 40.95 (35.07-43.64); PL 1.49 mm (1.42-1.61 mm); PW 2.58 mm (2.48-2.67 mm); PI 57.79 (55.81-60.30); EL 7.36 mm (7.21-7.58 mm); EW 3.74 mm (3.61-3.86 mm).

Differential diagnosis. Male of *Borboresthes jenisi* sp. nov. distinctly differs from similar species *Borboresthes major* Pic, 1934 mainly by dorsal surface, tibiae and femora blackish brown, punctuation of pronotum coarser, punctures larger, longer antennae (AL/BL 0.71), narrower body (BL/EW 2.90), narrower pronotum (PI 56) anterior tarsal claws with 12 teeth and by shape of aedeagus (Figs. 23 and 24). Male of *Borboresthes major* Pic, 1934 has dorsal surface reddish brown, legs ochre yellow, punctuation of pronotum shallower, punctures smaller, antennae shorter (AL/BL 0.53), wider body (BL/EW 2.63), narrower pronotum (PI 49), anterior tarsal claws have 19 teeth and shape of aedeagus as in Figs. 27 and 28.

Etymology. New species is dedicated to the collector - Ivo Jeniš (Náklo, Czech Republic).

Distribution. China (Yunnan).

***Borboresthes major* Pic, 1934**

(Figs. 25-28)

Borboresthes major Pic, 1934: 21.

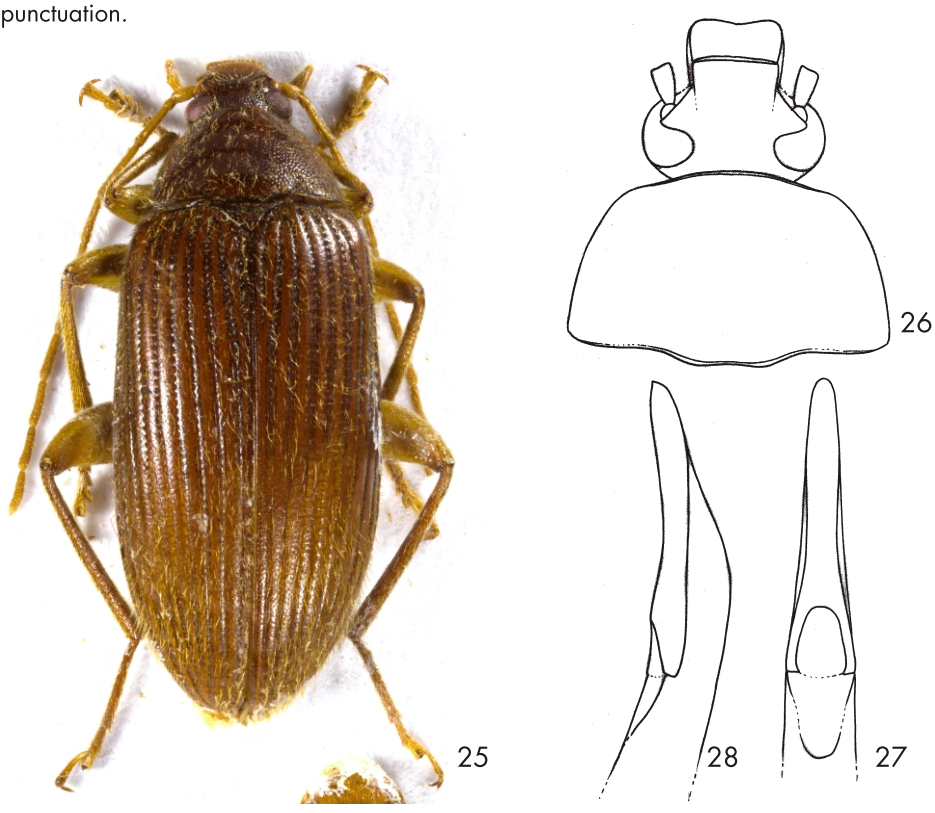
Type locality. China, Sichuan.

Type material. (1 spec.): wl: Sze-Tchouan / Allecula ? // Pr. major n.sp., (MNHN)

Material examined. (1 ♂ 2 ♀♀): CHINA: W-SICHUAN / Ya´an Pref., Shimian Co. / Xiaoxiang Ling, side valley ab. / Nanya Cun nr. Caluo, 11km S / Shimian, 1250m, 7.VII.1999 / leg. A. Putz, (APEG, VNPC); (2 ♀♀): CHINA: W-SICHUAN / Ya´an Pref., Shimian Co. / Xiaoxiang Ling, pass betw. / Shimian-Ganluo, 27km SE / Shimian, 2450m, springfed- / swamp, 29.02.75N, 102.31.48E / 8.VII.1999 / leg. A. Putz, (APEG, VNPC); (1 ♂): China - Sichuan / 12-14 July 1995 / Baoxing, 100 km N of Iaan / Zd. Jindra lgt., (VNPC); (1 ♂): CHINA, W - HUBEI, 1300- / 2000m, DASHENNONGJIA / massif - E slope, / 31°24-30´ 110°21-24´ / 28.6.-5.7.95 / L.+R.BUSINSKÝ lgt., (VNPC); (5 ♂♂ 5 ♀♀): CHINA, Sichuan 12.-14.VII. / Baoxing env. 1995 / cca 50 km NNW of Yaan / 30°22´N 102°50´E / M. Trýzna et O. Šafránek lgt., (VNPC); (1 ♂): CHINA, 1150-1300m, Shaanxi, Qinling mts. / FOPING (6 km N), 20.-21.vi.1998, / I. H. Marshal leg., (VNPC).

Redescription. Habitus as in Fig. 25, body large, oval, convex, dorsal surface from ochre yellow to reddish brown, with punctuation, microgranulation and ochre yellow setation, slightly shiny, BL 9.90 mm. Widest near elytral half; BL/EW 2.63. Head (Fig. 26) relatively small, transverse, with ochre yellow setation, microgranulation and dense punctuation, posterior part reddish brown. Anterior part and clypeus ochre yellow. HW 1.49 mm; HW/PW 0.51. HL (visible part) 1.28 mm. Eyes relatively large, transverse, distinctly excised, space between eyes narrow, distinctly wider than diameter of one eye or length of antennomere 1, slightly wider than antennomere 3 long; OI equal to 45.46. Antennae long, filiform, ochre yellow, with microgranulation and relatively long, dense, ochre yellow setation, AL 5.37 mm, AL/BL 0.54. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.63 : 0.33 : 1.00 : 1.54 : 1.23 : 1.21 : 1.16 : 1.15 : 1.23 : 1.04 : 1.17. RL/WA (1-11): 1.61 : 0.96 : 3.18 : 6.10 : 4.46 : 4.80 : 4.63 : 4.55 : 5.16 : 5.16 : 5.81. Maxillary palpus ochre yellow with microgranulation and ochre yellow setation. Ultimate palpomere broadly triangular.

Palpomeres 2 and 3 distinctly narrowest at base, slightly dilated anteriorly. Pronotum (Fig. 26) reddish brown, semicircular, with long, ochre yellow setation, fine microgranulation and dense punctuation, punctures small-sized, interspaces between punctures very narrow, shiny. Border lines distinct and complete. Anterior margin arcuate, lateral margins slightly arcuate, posterior margin bisinuate, anterior angles indistinct, posterior angles roundly obtuse angled. PL 1.42 mm; PW 2.91 mm. PI equal to 48.80. Ventral side of body dark brown with pale setation and punctuation.



Figs. 25-28: *Borboresthes major* Pic, 1934: 25- Habitus of male; 26- head and pronotum of male; 27- aedeagus, dorsal view; 28- aedeagus, lateral view.

Abdomen reddish brown, with pale setation, small and shallow punctures and fine microgranulation, shiny. Ultimate ventrite paler, ochre yellow. Elytron reddish brown, with long and ochre yellow setation, setation near sides and in apex distinctly denser. Elytral striae with distinct rows of small-sized punctures, punctures in striae larger than those on pronotum. Elytral interspaces slightly convex, with fine microgranulation and very small, very sparse, shallow punctures. EL 7.20 mm. Broadest near half elytral length, EW 3.77 mm. EL/EW 1.91. Scutellum reddish brown, triangular with microgranulation, small punctures and a few yellow setae, slightly shiny. Elytral epipleura brown, well-developed with pale setae, widest near base, regularly narrowing to ventrite 1 in basal half, then leading parallel. Legs ochre yellow, with dense and long, ochre yellow setation, fine microgranulation and very small punctures. Tibiae slightly dilated anteriorly. Protarsomeres and mesotarsomeres 3, 4 and metatarsomere 3 widened and

lobed. RLT: protarsus: 1.00 : 0.61 : 0.56 : 0.56 : 1.72; mesotarsus: 1.00 : 0.30 : 0.22 : 0.29 : 0.73; metatarsus: 1.00 : 0.27 : 0.25 : 0.43. Both anterior tarsal claws with 19 visible teeth. Aedeagus (Figs. 27, 28) ochre yellow, shiny. Basal piece regularly arcuate laterally and narrowing dorsally. Apical piece beak-shaped laterally and dorsally. Ratio of length of apical piece to length of basal piece 1: 4.13.

Variability. Some specimens have dark brown dorsal surface.

Distribution. China (Sichuan). New for Hubei and Shaanxi.

***Borboresthes quadrimaculatus* sp. nov.**
(Figs. 29-32)

Type locality. N-VIETNAM, Lao Cai Prov., Hoang Lien NP, Tram Ton, N 22°21.20´, E 103°46.51´, 1800-2050m.

Type material. Holotype (♂): N-VIETNAM, Lao Cai Prov. / Hoang Lien NP, Tram Ton, / N 22°21.20´, E 103°46.51´ / 1800-2050m, 15.V.2015, / leg. A. Weigel // yl: collection / NATURKUNDE- / MUSEUM ERFURT, (NMEG). Paratypes: (2 ♂♂ 2 ♀♀): same data as holotype, (NMEG, VNPC). The types are provided with a printed red label: 'Borboresthes quadrimaculatus, sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2016'.

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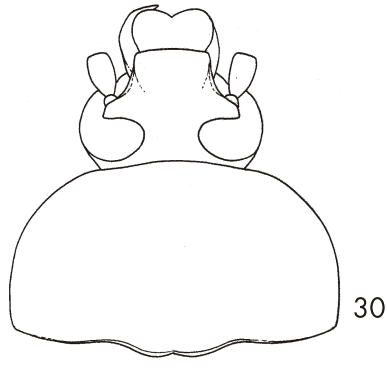

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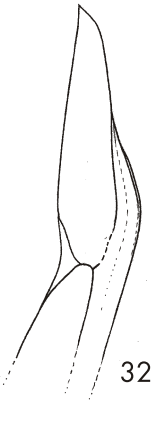

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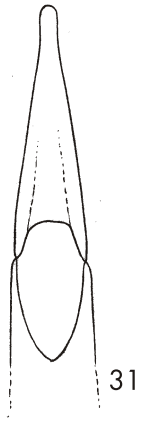

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Figs. 29-32: *Borboresthes quadrimaculatus* sp. nov.: 29- Habitus of male holotype; 30- head and pronotum of male holotype; 31- aedeagus, dorsal view; 32- aedeagus, lateral view.

Description of holotype. Habitus as in Fig. 29, body large, elongate oval, egg-shaped, convex, dorsal surface black with large, yellow maculae, with punctuation, fine microgranulation and yellow setation, shiny, BL 9.58 mm. Widest near elytral half; BL/EW 2.70.

Head (Fig. 30) relatively small with yellow setation, microgranulation and dense punctuation. Posterior part blackish brown, anterior part and clypeus pale brown, ochre yellow setation in clypeus longer. HW 1.42 mm; HW/PW 0.51. HL (visible part) 1.22 mm. Eyes relatively large, transverse, distinctly excised, space between eyes relatively narrow, as wide as diameter of one eye, slightly narrower than length of antennomere 3; OI equal to 33.33.

Antennae. Long, filiform, ochre yellow, with fine microgranulation, small punctures and relatively long and dense yellow setation, AL 6.19 mm, AL/BL 0.65. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.62 : 0.30 : 1.00 : 1.41 : 1.26 : 1.23 : 1.18 : 1.21 : 1.11 : 1.11 : 1.11. RL/WA (1-11): 1.93 : 1.29 : 4.60 : 6.04 : 5.56 : 6.39 : 5.64 : 5.14 : 4.75 : 5.32 : 4.71.

Maxillary palpus. Ochre yellow, slightly shiny, with microgranulation, very small punctures and yellow setation. Ultimate palpomere partly darker, broadly triangular. Palpomeres 2 and 3 distinctly narrowest at base, slightly dilated anteriorly.

Pronotum (Fig. 30). Blackish brown, semicircular, with yellow setation near sides denser and dense, small-sized punctuation, interspaces between punctures narrow, shiny with fine microgranulation. Border lines distinct and complete. Anterior margin slightly arcuate, lateral margins arcuate, posterior margin bisinuate, anterior angles indistinct, posterior angles roundly obtuse. PL 1.35 mm; PW 2.78 mm. PI equal to 48.86.

Ventral side of body blackish brown with sparse and short pale setae and small punctures, slightly shiny. Abdomen pale brown, with small-sized and dense punctuation and fine microgranulation.

Elytron blackish brown, each with two large yellow maculae (as in Fig. 29), with yellow setation, shiny. Elytral striae with distinct rows of medium-sized punctures, distinctly larger than those in pronotum. Elytral interspaces slightly convex, with fine microgranulation and small, shallow punctures. EL 7.01 mm. Broadest near half of elytral length, EW 3.55 mm. EL/EW 1.98.

Scutellum blackish brown as elytron itself, pentagonal, with fine microgranulation, small punctures and a few yellow setae.

Elytral epipleura well-developed with yellow setation and punctures. Blackish brown as elytron itself regularly narrowing to ventrite 1 in basal half, then leading parallel.

Legs with longer yellow setation, microgranulation and small-sized punctuation. Femora, tibia and tarsomeres 1 blackish brown, rest of tarsomeres pale brown. Protarsomeres and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: protarsus: 1.00 : 0.41 : 0.52 : 0.69 : 1.47; mesotarsus: 1.00 : 0.48 : 0.78 : 0.71: 1.19; metatarsus: 1.00 : 0.31 : 0.24 : 0.55.

Both anterior tarsal claws with 12 visible teeth.

Aedeagus (Figs. 31, 32). Ochre yellow, slightly shiny. Basal piece large, rounded laterally and slightly narrowing dorsally. Apical piece short, narrow, elongate triangular dorsally and beak-shaped laterally. Ratio of length of apical piece to length of basal piece 1: 5.88.

Female without distinct differences, only both anterior tarsal claws with 8 visible teeth.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=3). BL 9.90 mm (9.58-10.09 mm); HL 1.21 mm

(1.18-1.22 mm); HW 1.44 mm (1.42-1.48 mm); OI 36.60 (33.33-38.58); PL 1.37 mm (1.29-1.47 mm); PW 2.95 mm (2.78-3.09 mm); PI 46.70 (41.86-49.43); EL 7.32 mm (7.01-7.51 mm); EW 3.67 mm (3.55-3.75 mm). Females (n=2). BL 10.67 mm (10.31-11.03 mm); HL 1.12 mm (1.10-1.13 mm); HW 1.44 mm (1.42-1.46 mm); OI 41.00 (39.68-42.31); PL 1.55 mm (1.43-1.67 mm); PW 3.29 mm (2.88-3.69 mm); PI 47.56 (45.43-49.67); EL 8.01 mm (7.78-8.23 mm); EW 3.99 mm (3.81-4.05 mm).

Differential diagnosis. Male of *Borboresthes quadrimaculatus* sp. nov. distinctly differs from similar species *Borboresthes major* Pic, 1934 mainly by elytra with four large yellow maculae as in Fig. 29, blackish brown legs, anterior tarsal claws with 12 teeth and by shape of aedeagus (Figs. 15 and 16). Male of *Borboresthes major* Pic, 1934 has elytra without maculae, legs ochre yellow, anterior tarsal claws have 19 teeth and shape of aedeagus as in Figs. 27 and 28.

Etymology. New species is named after four large maculae on elytra.

Distribution. Vietnam.

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REFERENCES

AKITA K. & MASUMOTO K. 2008: New or Little-known Tenebrionid Species (Coleoptera) from Japan (7) Revisional Study of *Borboresthes* (Tenebrionidae: Alleculinae) Species from the Ryukyu Islands. *Entomological Review of Japan* 63(2): 109-120.

AKITA K. & MASUMOTO K. 2015: New or Little-known Tenebrionid Species (Coleoptera) from Japan (16) Descriptions of Eight New Species of Genera *Allecula* and *Borboresthes* (Alleculinae, Alleculini), and Redescriptions of the Known Species with Proposal for Two New Synonyms. *Elytra, Tokyo*, New Series, 5 (2): 357-377.

BORCHMANN F. 1910: Pars 3: Alleculidae. In: JUNK W. & SCHENKLING S. (eds.): *Coleopterorum Catalogus*. W. Junk: Berlin, 80 pp.

CAMPBELL J. M. 1965: A revision of the genus *Charisius* (Coleoptera: Alleculidae). *The Coleopterist's Bulletin* 19: 41-56.

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.

FAIRMAIRE L. 1897: Coléoptères du Szé-tchouen et de Koui-Tchéou (Chine). *Notes of the Leyden Museum* 19: 241-255.

MADER L. 1928: *Alleculidae*. Columns 901-913. - In: WINKLER A. (ed.) 1924-1932: *Catalogus coleopterorum regionis palaearcticae*. Wien: Winkler & Wagner, 1698 pp.

MARSEUL S. A. DE 1876: Coléoptères du Japan recqueillis par M. Georges Lewis. 2e Mémoire (1). Énumération des Hétéroméres avec la description des espéces nouvelles. *Annales de la Société Entomologique de France* (5) 16: 315-340.

NOVÁK V. 2012: New „yellow" *Borboresthes* (Coleoptera: Tenebrionidae: Alleculinae) from China and Oriental region. *Studies and Reports, Taxonomical Series* 8(1-2): 227-267.

NOVÁK V. 2015: New *Borboresthes* species (Coleoptera: Tenebrionidae: Alleculinae) from Palaearctic and Oriental Regions. *Folia Heyrovskyana, series A* 22 (2014) (2-4): 74-98.

NOVÁK V. & PETTERSSON R. 2008: *Alleculinae*. Pp. 319-339. In: LÖBL I. & A. SMETANA (eds.): *Catalogue of Palaearctic Coleoptera, Vol. 5. Tenebrionoidea*. Stenstrup: Apollo Books, 670 pp.

PIC M. 1934: Nouveautés diverses. *Mélanges Exotico-entomologiques* 64: 1-36.

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