

**New genera of Alleculinae (Coleoptera: Tenebrionidae) from the Palaeartic Region.
Part I - *Borbonalia* gen. nov.**

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Abstract. A new genus *Borbonalia* gen. nov. is proposed, comprising seven new species - *Borbonalia brancuccii* sp. nov., *Borbonalia jizuica* sp. nov., *Borbonalia murzini* sp. nov., *Borbonalia nepalica* sp. nov., *Borbonalia schneideri* sp. nov., *Borbonalia tibetica* sp. nov. and *Borbonalia wrasei* sp. nov. from Palaeartic region, which are described, illustrated and keyed.

INTRODUCTION

Mulsant (1856) established *Hymenalia* Mulsant, 1856 with type species *Cistela fusca* Illiger, 1794 and Fairmaire (1897) described *Borboresthes* Fairmaire, 1897 with type species *Allecula cruralis* Marseul, 1876 as new genera of Alleculinae. Borchmann (1910) listed 11 species of *Hymenalia* and 2 species of *Borboresthes*; Mader (1928) knew 15 species of *Hymenalia* and 7 species of *Borboresthes*, Novák & Pettersson (2008) 33 species of *Hymenalia* and 43 species of *Borboresthes* in the Palaeartic Region. Later, 19 species of *Hymenalia* were described by Novák (2007, 2008 and 2010) from the Palaeartic Region (mainly China); 13 new species of *Borboresthes* were added by Akita & Masumoto (2008) and Novák (2012) from Japan, China, Laos, Thailand and Vietnam.

Species of *Borbonalia* gen. nov. are similar to *Hymenalia*, mainly species of the *bocaki* group (Novák, 2010) from China, by the body shape - with elytra broadest at two thirds of their length in direction of the apex and square-shaped pronotum; they differ mainly by a broader space between eyes, which is approximately the same in males as in females, by antenna filiform, by antennomere 3 more than twice longer than antennomere 2 and antennomere 4 only slightly longer than antennomere 3 for both - males and females; while males of the *bocaki* group have a very narrow space between eyes (distinctly narrower than in females), antenna slightly serrate and antennomere 3 approximately as long as or only slightly longer than antennomere 2, antennomere 4 more than twice longer than antennomere 3. Species of *Borbonalia* gen. nov. are also similar to *Borboresthes* by antenna filiform, relatively broad space between eyes (no differences in the antenna and space between eyes of males and females); they are different by an anteriorly widened shape of the body and square-shaped pronotum; while species of *Borboresthes* have pronotum semicircular and egg-shaped body.

Seven new species of new genus *Borbonalia* gen. nov. are described, illustrated and keyed: *Borbonalia brancuccii* sp. nov., *Borbonalia jizuica* sp. nov. and *Borbonalia wrasei* sp. nov. from China (Yunnan), *Borbonalia murzini* sp. nov. from China (Sichuan, Tibet and Yunnan), *Borbonalia nepalica* sp. nov. from Nepal, *Borbonalia schneideri* sp. nov. from China (Sichuan) and *Borbonalia tibetica* sp. nov. from China (Tibet).

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 double slash (//) separates data on different labels and a slash (/) data in different rows.

The following codens are used:

NMBS Naturhistorische Museum Basel, Switzerland;

NMEG Naturkundemuseum, Erfurt, Germany;

NMPC National Museum, Praha, Czech Republic;

SMNS Staatliches Museum für Naturkunde Stuttgart, Germany;

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

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

AL total antennae length

BL maximum body length

EL maximum elytral length

EW maximum elytral width

HL maximum length of head (visible part)

HW maximum width of head

OI ocular index dorsally

PI pronotal index dorsally

PL maximum pronotal length

PW pronotal width at base

RLA ratios of relative lengths of antennomeres 1-11 from base to apex (3=1.00)

RL/WA ratios of length / maximum width of antennomeres 1-11 from base to apex

RLT ratios of relative lengths of tarsomeres 1-5 respectively 1-4 from base to apex (1=1.00).

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

TAXONOMY

Borbonalia gen. nov.

Type species. *Borbonalia brancuccii* sp. nov.

Description. General shape as in Fig. 1, body elongate, distinctly widened in direction of elytral apex, broadest at two thirds of elytral length, *hymenalia*-shaped, shiny, dorsal surface with punctuation, fine microgranulation and setation or almost glabrous. Head (as in Fig. 2) broadest through the eyes, distinctly narrower than base of pronotum, with punctuation and fine microgranulation, anterior part paler than posterior part. Setation sparse, pale brown, setation of clypeus distinctly denser than that of in posterior half. Eyes relatively large, transverse, deeply excised, space between eyes as broad as or broader than diameter of one eye. Maxillary palpus slightly shiny, with microgranulation and pale brown setation. Palpomeres 2 and penultimate palpomere distinctly broadest at apex, penultimate palpomere relatively short, palpomere 2 long and narrow, ultimate palpomere broadly triangular, axe-shaped. Antenna long, filiform, distinctly longer than half body length. Antennomeres narrow, with short and dense pale brown setation and fine microgranulation. Antennomere 2 shortest, antennomere 4 longest. Antennomere 3 more than twice longer than antennomere 2, antennomere 4 slightly, but distinctly longer than antennomere 3. Pronotum (as in Fig. 2) more square-shaped, slightly narrower than elytra, with microgranulation, dense punctuation and sparse setation, shiny. Margins distinct in their entire length, lateral margins broadest at base. Posterior angles roundly obtuse, anterior angles rounded, indistinct. Anterior margin straight or very finely rounded, base very finely bisinuate. Elytra long, distinctly widened anteriorly, broadest near two thirds elytral length, with long and sparse, pale brown setation or almost glabrous, shiny. Elytral striae with distinct rows of medium-sized punctures, elytral interspaces flat with very fine microgranulation and very small, sparse punctures. Elytral epipleura well-developed, regularly narrowing to ventrite 1, then leading parallel, with short, pale brown setation. Legs with microgranulation, punctuation and short and dense, pale brown setation. Tibia very narrow, protarsomeres and mesotarsomeres 3 and 4, metatarsomere 3 distinctly broadened and lobed. Each anterior tarsal claw with different number of teeth. Aedeagus pale brown, with microgranulation, slightly shiny.

Female without distinct differences, only anterior tarsal claws with less teeth.

Differential diagnosis. Species of *Borbonalia* gen. nov. are similar to the species of the genera *Borboresthes* Fairmaire, 1897 and *Hymenalia* Mulsant, 1856 (mainly to those of the *bocaki* group from China); they differ from species of the genus *Borboresthes* mainly by anteriorly widened shape of body and square-shaped pronotum; while species of *Borboresthes* have semicircular pronotum and egg-shaped body. Species of *Borbonalia* gen. nov. are clearly different from *Hymenalia* species of the *bocaki* group mainly by its broader space between eyes, which is approximately the same in males as in females, by antenna filiform, by antennomere 3 more than twice longer than antennomere 2 and antennomere 4 only slightly longer than antennomere 3 for both - males and females; while males of the *bocaki* group have a very narrow space between eyes (distinctly narrower than in females), antenna slightly serrate and antennomere 3 approximately as long or only slightly longer than antennomere 2, antennomere 4 more than twice longer than antennomere 3.

Etymology. Compound name marking similarity to the genus *Borboresthes* (*Borbo-*) and genus *Hymenalia* (*-nalia*). Gender feminine.

Distribution. South-eastern Palaearctic region - China (Sichuan, Tibet, Yunnan), Nepal.

KEY FOR IDENTIFYING MALES OF *BORBONALIA*

- 1(2) Space between eyes narrow, approximately as long as diameter of one eye. Dorsal surface dark brown, elytra with green metallic lustre..... 3
- 2(1) Space between eyes broad, distinctly broader than diameter of one eye. Dorsal surface unicolored brown or bicolour, elytra without green metallic lustre..... 5
- 3(4) Antennomeres 5-11 only 0.88-1.26 times longer than antennomere 3; metatarsomere 1 distinctly shorter than lengths of metatarsomeres 2-4 together; anterior tarsal claws with 12 and 13 teeth. Habitus as in Fig. 5; head, pronotum and antennomeres 1-4 as in Fig. 6; aedeagus as in Figs 7, 8. China (Yunnan). *Borbonalia jizuica* sp. nov.
- 4(3) Antennomeres 5-11 1.30-1.55 times longer than antennomere 3; metatarsomere 1 almost as long as metatarsomeres 2-4 together; anterior tarsal claws with 14 and 16 teeth. Habitus as in Fig. 17; head, pronotum and antennomeres 1-4 as in Fig. 18; aedeagus as in Figs 19, 20. China (Sichuan). *Borbonalia schneideri* sp. nov.
- 5(6) Elytra unicolored..... 7
- 6(5) Elytra bicolour..... 9
- 7(8) Larger species, setation of dorsal surface relatively sparse. Anterior tarsal claws with 18 and 20 teeth. Habitus as in Fig. 13; head, pronotum and antennomeres 1-4 as in Fig. 14; aedeagus as in Figs 15, 16. China (Sichuan)..... *Borbonalia nepalica* sp. nov.
- 8(7) Smaller species, setation of dorsal surface relatively dense. Anterior tarsal claws with 12 and 14 teeth. Habitus as in Fig. 25; head, pronotum and antennomeres 1-4 as in Fig. 26; aedeagus as in Figs 27, 28. China (Sichuan). *Borbonalia wrasei* sp. nov.
- 9(10) Elytron with one yellow terminal spot, elytra more broadened towards apex (BL/EW less than 2.5); punctures of pronotum small-sized. Habitus as in Fig. 21; head, pronotum and antennomeres 1-4 as in Fig. 22; aedeagus as in Figs 23, 24. China (Sichuan)..... *Borbonalia tibetica* sp. nov.
- 10(9) Elytron with two yellow separated spots near apex, elytra less broadened towards apex (BL/EW more than 2.7); punctures of pronotum medium-sized..... 11
- 11 (12) Disc of pronotum without distinct microgranulation, dorsal surface with only a few setae. Habitus as in Fig. 1; head, pronotum and antennomeres 1-4 as in Fig. 2; aedeagus as in Figs 3, 4. China (Sichuan)..... *Borbonalia brancuccii* sp. nov.
- 12 (11) Disc of pronotum with distinct microgranulation, dorsal surface near lateral margins with relatively dense setation. Habitus as in Fig. 9; head, pronotum and antennomeres 1-4 as in Fig. 10; aedeagus as in Figs 11, 12. China (Sichuan)..... *Borbonalia murzini* sp. nov.

***Borbonalia brancuccii* sp. nov.**

(Figs 1-4)

Type locality. China, Yunnan, Jizu Mts., 2300 m.

Type material. Holotype (♂): YUNNAN, 2300 m / JIZU MTS. / 18. - 20. JUL 1995 / BOLM lgt. (NMBS). Paratypes: (16 ♂♂ 11 ♀♀): same data as holotype, (NMBS, VNPC). The types are provided with printed red label: *Borbonalia brancuccii* sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

Description of holotype. Habitus of male holotype elongate, as in Fig. 1. Body from yellow to brown, dorsal surface shiny, nearly glabrous with a few long setae. BL 7.66 mm, widest near two thirds of elytral length, maximum width 2.78 mm, 2.96 times longer than wide.

Head (Fig. 2) brown, anterior part and clypeus pale brown, relatively small and narrow, shiny, with dense punctuation, microgranulation and microrugosities. Posterior half with sparse, pale brown setae, setation behind eyes darker. Clypeus with dense and long yellow setation. Head widest across eyes, HW 1.19 mm; approximately 0.68 times as wide as pronotal base. HL (visible part) 0.99 mm. Eyes large, transverse, distinctly excised. Space between eyes relatively broad, broader than diameter of eye, OI equal to 44.34.

Antenna (Fig. 2). Relatively long (AL 4.57 mm, i.e. reaching 0.60 of body length), filiform, unicolored pale brown with dense pale brown setation, punctuation and microgranulation, slightly shiny. Antennomere 2 shortest, antennomere 3 more than 2.5 times longer than antennomere 2, antennomeres 4 distinctly longer than antennomere 3. RLA (1-11) equal to: 0.48 : 0.36 : 1.00 : 1.43 : 1.11 : 0.89 : 0.89 : 0.90 : 0.97 : 0.98 : 1.09. RL/WA (1-11) equal to: 1.67 : 1.71 : 4.56 : 5.09 : 4.10 : 3.16 : 3.43 : 3.92 : 3.79 : 3.86 : 4.96.

Maxillary palpus pale brown, with microgranulation and short pale brown setation, penultimate palpomere and palpomere 2 with a few long pale brown setae at apex, slightly shiny. Palpomeres 2-4 distinctly widest at apex, palpomere 2 longest. Ultimate palpomere in form of triangle, axe-shaped.

Pronotum (Fig. 2) brown, transverse, rectangular, nearly glabrous with very few pale brown setae, with dense punctuation, at base 1.48 as wide as head across eyes, longest in middle, PL 1.05 mm; PW 1.76 mm; PI equal to 59.66. Borders complete and distinct. Posterior margin finely bisinuate, straight before scutellum. Posterior angles rounded, obtuse, anterior angles indistinct, rounded. Lateral margins parallel in posterior half, rounded and narrowed in anterior half.

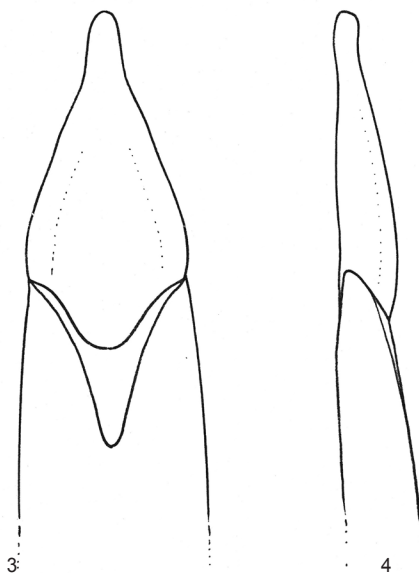
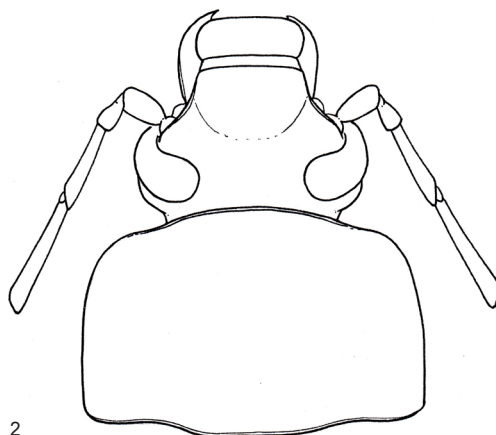
Elytra brown, shiny, almost glabrous with a few pale brown setae. Apex with two yellow spots, one from the third elytral interspace to the ninth elytral interspace and the second smaller than the first from the second elytral interspace to the ninth elytral interspace in apex of elytron. EL 5.62 mm; EW 2.78 mm; EL/EW ratio equal to 2.02. Elytral striae with rows of medium-sized punctures, elytral interspaces with very fine microgranulation and sparse punctures, distinctly smaller than those in striae.

Elytral epipleura well-developed, brown with sparse brown setae and large punctures, evenly narrowing in basal half to ventrite 1, in apical half parallel-sided.

Scutellum pentagonal, brown, shiny with distinct punctuation.

Legs relatively narrow, pale brown, distinctly paler than dorsal surface, with dense, pale brown setation. Femora and tibiae with fine microgranulation. Tibia narrow, slightly dilated anteriorly. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomere 3 with membranous lobes. RLT (1-5 or 1-4) equal to: 1.00 : 0.71 : 0.63 : 0.74 : 1.11 (protarsus), 1.00 : 0.38 : 0.33 : 0.51 : 0.83 (mesotarsus), and 1.00 : 0.31 : 0.30 : 0.63 (metatarsus). Anterior tarsal claws with 12 and 13 visible teeth.

Ventral side of body brown, with short and sparse pale brown setation and punctuation. Abdomen pale brown, with sparse, long, white setation, and punctuation, punctures small



Figs 1-4: *Borbonalia brancuccii* sp. nov.: 1- Habitus of male holotype; 2- Head, pronotum and antennomeres 1-4 of male holotype; 3- Aedeagus, dorsal view; 4- Aedeagus, lateral view.

and shallow, ventrites 3-5 with distinct microgranulation and microrugosities, microgranulation of ventrites 1 and 2 indistinct.

Aedeagus (Figs 3, 4). Relatively short, pale brown, with fine microgranulation. Basal piece slightly rounded laterally and finely narrowing dorsally, 2.0 times longer than apical piece. Apical piece broadly triangular with rounded top in dorsal view and slightly beak-shape and narrowly triangular in lateral view.

Female. Without distinct differences. Both anterior tarsal claws with 7 and 8 visible teeth. BL 8.05 mm; HL 0.96 mm; HW 1.22 mm; OI equal to 45.28; PL 1.09 mm; PW 1.85 mm; PI equal to 59.07; EL 6.00 mm; EW 2.93 mm; AL 5.15 mm; AL/BL 0.64; BL/EW 2.75; EL/EW 2.05; HW/PW 0.66. RLA (1-11) equal to: 0.53 : 0.34 : 1.00 : 1.36 : 1.12 : 1.11 : 1.10 : 1.08 : 1.04 : 0.98 : 1.17. RL/WA (1-11) equal to: 1.46 : 1.29 : 4.09 : 4.69 : 3.89 : 3.85 : 3.81 : 3.73 : 3.62 : 3.52 : 4.57. RLT (1-5 and 1-4) equal to: 1.00 : 0.54 : 0.63 : 0.97 : 1.90 (protarsus), 1.00 : 0.52 : 0.40 : 0.51 : 1.02 (mesotarsus), and 1.00 : 0.39 : 0.32 : 0.74 (metatarsus).

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n = 17). BL 8.03 mm (7.57-8.65 mm); HL 0.96 mm (0.92-1.04 mm); HW 1.21 mm (1.14-1.28 mm); OI 43.07 (38.62-47.39); PL (along midline) 1.10 mm (0.99-1.20 mm); PW at base 1.83 mm (1.69-2.05 mm); PI 60.27 (56.62-63.93); EL 5.97 mm (5.55-6.58 mm); EW 2.83 mm (2.71-3.00 mm). Females (n = 11). BL 8.26 mm (7.49-8.63 mm); HL 0.97 mm (0.83-1.04 mm); HW 1.25 mm (1.14-1.36 mm); OI 46.12 (45.03-47.32); PL (along midline) 1.14 mm (1.01-1.28 mm); PW at base 1.88 mm (1.75-2.08 mm); PI 60.85 (55.40-65.29); EL 6.15 mm (5.44-6.64 mm); EW 3.00 mm (2.81-3.26 mm).

Differential diagnosis. (For further differences see the key above). *Borbonalia brancuccii* sp. nov. differs from *Borbonalia jizuica* sp. nov., *B. nepalica* sp. nov., *B. schneideri* sp. nov. and *B. wrasei* sp. nov. mainly by bicolour elytra; while *B. jizuica*, *B. nepalica*, *B. schneideri* and *B. wrasei* with elytra unicolored. *B. brancuccii* clearly differs from similar species *B. tibetica* sp. nov. mainly by apex of elytra with two yellow spots; while *B. tibetica* has apex with only one yellow spot. *B. brancuccii* is different from similar species *B. murzini* sp. nov. mainly by disc of pronotum without microgranulation; while disc of pronotum of *B. murzini* has distinct microgranulation.

Etymology. New species is dedicated to Michel Brancucci (†), last head of Department of entomology (NMBS).

Distribution. China: Yunnan.

Borbonalia jizuica sp. nov.

(Figs 5-8)

Type locality. China, Yunnan, Jizu Mts., 2300 m.

Type material. Holotype (♂): YUNNAN, 2300 m / JIZU MTS. / 18. - 20. JUL 1995 / BOLM lgt., (NMBS). Paratypes: (7 ♂♂ 4 ♀♀): same data as holotype, (NMBS, VNPC); (1 ♂): CHINA, Yunnan, Dali zhou, / Binchuan county, Jizushan, / 2500-3200 m, 26.-31.VII.1993, / leg. C. Holzschuh, (VNPC); (1 ♂): CHINA, YUNNAN prov. / Dali zhou, 31.vii. / 1993, 2500-3200 m / Binchuan c., JIZUSHAN / leg. C. Holzschuh, (VNPC). The types are provided with printed red labels: *Borbonalia jizuica* sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

Description of holotype. Habitus of male holotype elongate, as in Fig. 5. Body brown, dorsal surface shiny, elytra with green metallic lustre, nearly glabrous with a few long setae. BL 7.34 mm, widest near two thirds of elytral length, maximum width 2.48 mm, 2.96 times longer than wide.

Head (Fig. 6) brown, anterior part and clypeus pale brown, relatively small and narrow, shiny, with dense punctuation, microgranulation and microrugosities. Posterior half with a few brown setae behind eyes. Clypeus with sparse pale brown setation. Head widest across eyes, HW 1.08 mm; approximately 0.68 times as wide as pronotal base. HL (visible part) 0.93 mm. Eyes large, transverse, distinctly excised. Space between eyes relatively broad, broader than diameter of eye, OI equal to 37.93.

Antenna (Fig. 6). Relatively long (AL 5.01 mm, i.e. reaching 0.71 of body length), filiform, unicolored pale brown with dense pale brown setation, punctuation and microgranulation,

matter. Antennomere 2 shortest, antennomere 3 more than 2.5 times longer than antennomere 2, antennomeres 4 distinctly longer than antennomere 3. RLA (1-11) equal to: 0.64 : 0.35 : 1.00 : 1.39 : 1.24 : 1.26 : 1.16 : 0.88 : 1.17 : 1.15 : 1.21. RL/WA (1-11) equal to: 2.30 : 1.65 : 3.86 : 5.17 : 4.79 : 4.61 : 4.31 : 3.80 : 4.67 : 4.28 : 4.37.

Maxillary palpus pale brown, with microgranulation and short pale brown setation, penultimate palpomere and palpomere 2 with a few long pale brown setae at apex, slightly shiny. Palpomeres 2-4 distinctly widest at apex, palpomere 2 longest. Ultimate palpomere in form of triangle, axe-shaped.

Pronotum (Fig. 6) brown, transverse, rectangular, disc with sparse pale brown setation, setation near lateral margins denser, with dense punctuation, at base 1.38 as wide as head across eyes, longest in middle, PL 0.97 mm; PW 1.49 mm; PI equal to 65.10. Borders complete and distinct. Posterior margin finely bisinuate, very finely emarginate before scutellum. Disc near base with three indistinct impressions, one longitudinal against scutellum, two oblique impressions near emargination. Posterior angles rounded, obtuse, anterior angles indistinct, rounded. Lateral margins parallel in posterior half, rounded and narrowed in anterior half.

Elytra brown with green metallic lustre, shiny, with sparse, pale brown setation. EL 5.44 mm; EW 2.48 mm; EL/EW ratio equal to 2.19. Elytral striae with rows of medium-sized punctures, elytral interspaces with very fine microgranulation and sparse punctures, distinctly smaller than those in striae.

Elytral epipleura well-developed, brown with sparse brown setae and punctures, evenly narrowing in basal half to ventrite 1, in apical half parallel-sided.

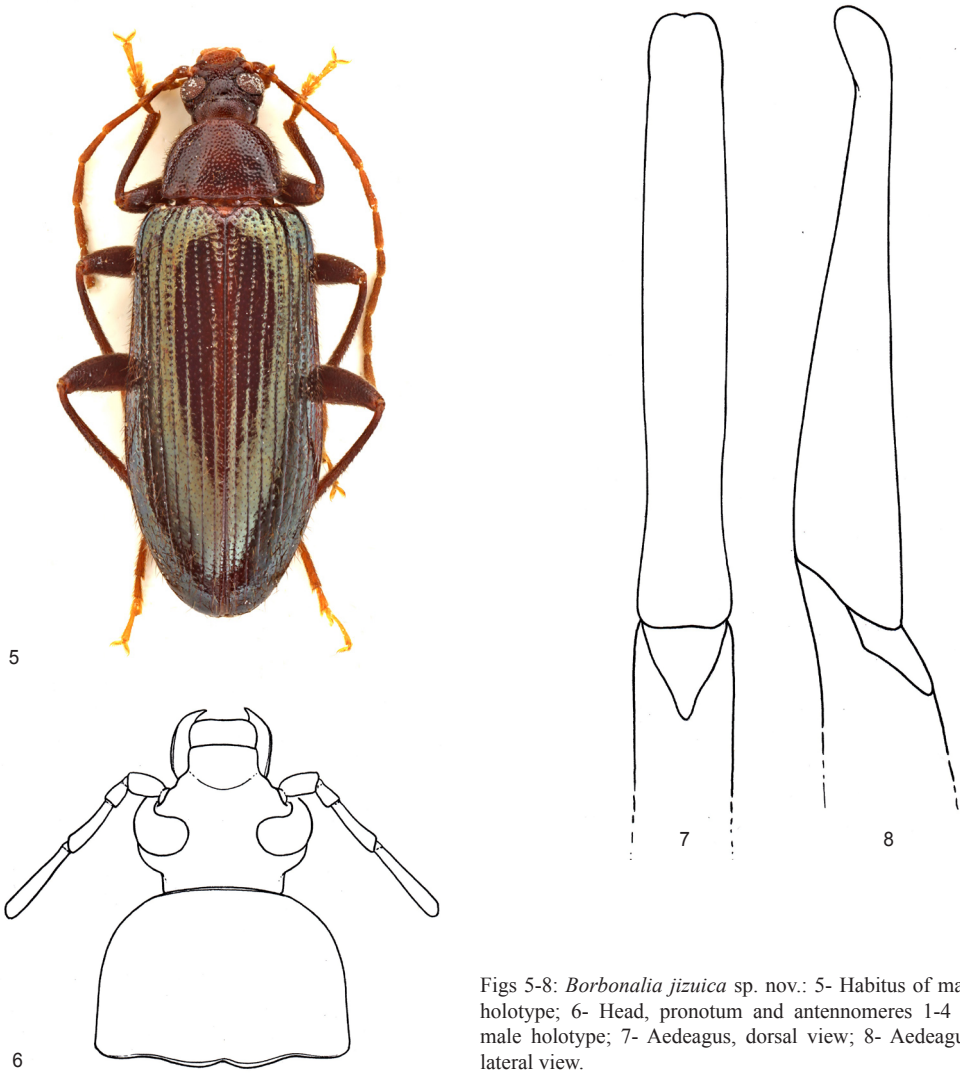
Scutellum pentagonal, pale brown with dark margins, distinctly paler than elytron itself, shiny, without punctures, with microrugosities.

Legs relatively narrow with dense, pale brown and brown setation. Femora and tibiae brown, tibia narrow, with fine microgranulation and punctuation, slightly dilated anteriorly, femora with distinct microrugosities. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomere 3 with membranous lobes. RLT (1-5 or 1-4) equal to: 1.00 : 0.69 : 0.69 : 0.81 : 2.00 (protarsus), 1.00 : 0.54 : 0.41 : 0.41 : 0.96 (mesotarsus), and 1.00 : 0.33 : 0.24 : 0.62 (metatarsus). Anterior tarsal claws with 12 and 13 visible teeth.

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

Aedeagus (Figs 7, 8). Large, ochre yellow, with fine microgranulation. Basal piece strongly rounded laterally and regularly narrowing dorsally, 3.34 times longer than apical piece. Apical piece in dorsal view parallel and in lateral view longitudinally beak-shaped.

Female. Without distinct differences. Space between eyes very finely broader than in male. Both anterior tarsal claws with 8 visible teeth. BL 7.78 mm; HL 0.92 mm; HW 1.16 mm; OI equal to 44.38; PL 1.15 mm; PW 1.81 mm; PI equal to 63.58; EL 5.71 mm; EW 2.76 mm; AL 5.66 mm; AL/BL 0.73; BL/EW 2.82; EL/EW 2.07; HW/PW 0.64. RLA (1-11) equal to: 0.70 : 0.34 : 1.00 : 1.43 : 1.17 : 1.26 : 1.21 : 1.20 : 1.23 : 1.17 : 1.21. RL/WA (1-11) equal to: 2.14 : 1.24 : 3.33 : 5.16 : 3.75 : 4.19 : 3.41 : 3.60 : 3.96 : 3.75 : 4.19. RLT (1-5 and 1-4) equal to: 1.00 : 0.73 : 0.77 : 0.87 : 1.57 (protarsus), 1.00 : 0.50 : 0.37 : 0.47 : 0.89 (mesotarsus), and 1.00 : 0.36 : 0.28 : 0.64 (metatarsus).



Figs 5-8: *Borbonalia jizuica* sp. nov.: 5- Habitus of male holotype; 6- Head, pronotum and antennomeres 1-4 of male holotype; 7- Aedeagus, dorsal view; 8- Aedeagus, lateral view.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n = 10). BL 7.80 mm (7.34-8.32 mm); HL 0.96 mm (0.93-1.02 mm); HW 1.13 mm (1.07-1.21 mm); OI 37.79 (37.06-38.79); PL (along midline) 1.03 mm (0.97-1.14 mm); PW at base 1.68 mm (1.49-1.84 mm); PI 63.47 (60.41-65.60); EL 5.72 mm (5.42-6.33 mm); EW 2.71 mm (2.48-2.89 mm). Females (n = 4). BL 8.09 mm (7.78-8.36 mm); HL 0.95 mm (0.92-0.97 mm); HW 1.16 mm (1.06-1.21 mm); OI 42.59 (40.59-44.38); PL (along midline) 1.12 mm (1.09-1.15 mm); PW at base 1.78 mm (1.68-1.82 mm); PI 63.21 (60.78-64.83); EL 6.01 mm (5.71-6.29 mm); EW 2.83 mm (2.72-2.91 mm).

Differential diagnosis. (For further differences see the key above). *Borbonalia jizuica* sp. nov. differs from *Borbonalia brancuccii* sp. nov., *B. murzini* sp. nov. and *B. tibetica* sp. nov. mainly by unicolored elytra; *B. brancuccii*, *B. murzini* and *B. tibetica* have elytra bicolour. *B. jizuica* is different from similar species *B. nepalica* sp. nov. and *B. wrasei* sp. nov. mainly by elytra with green metallic lustre and space between eyes relatively narrow; while *B. nepalica* and *B. wrasei* have dorsal surface without green metallic lustre and space between eyes relatively broad. *B. jizuica* differs from *B. schneideri* sp. nov. mainly by antennomeres 5-11 only 0.88-1.26 times longer than antennomere 3; while *B. schneideri* has antennomeres 5-11 1.30-1.55 times longer than antennomere 3.

Etymology. Toponymic, named after the type locality Jizu mountains (China).

Distribution. China (Yunnan).

***Borbonalia murzini* sp. nov.**

(Figs 9-12)

Type locality. China, Sichuan, Daxue Shan Mts., near Mianning, 2750 m, 28°34'N 102°00'E.

Type material. Holotype (♂): CHINA, SICHUAN DAXUE / SHAN Mts. 40 km W Mianning / 2750m; 28°34'N 102°00'E 7-8. / 07.1999, leg. Sinaiev & Plutenko, (VNPC). Paratypes: (1 ♂): same data as holotype, (VNPC); (1 ♂ 1 ♀): CHINA S SICHUAN pr. / pass 30 km SW Mianning / 3000-3400 m, 11.-13.vii. / 2007; S. Murzin leg., (VNPC); (1 ♀): CHINA: Yunnan prov., 1.3-2.0 / km S of HABA, 17.-20.vi.2007 / Haba Xueshan Mts., 2830- / 3000 m, 27°22.1'N 100°08.2'E, / J. Hájek & J. Růžička leg. // individually collected on soil / surface and on plants and / shrubs, sparse mixed forest / (with dominant *Pinus*) near the / brook [Ch32-35], (NMPC); (1 ♀): CHINA, YUNNAN prov. / 18.6.-4.7. 1993 / HEISHUI=35km N Lijiang / 27,13 N; 100, 19 E / lgt. S. Becvar, (VNPC); China Yunnan 1.-19.VII. / HEISHU 27.13N 100.19S / 35 km N of Lijiang / legit. S.Bečvár 1992, (VNPC); (1 ♀): CHINA (N-Yunnan) Diqing Tibet. / Aut. Pref. Deqin Co., / Meili Xue Shan., E-side, 14 km / W Deqin / 28°27.47'N, 98°46.35' E, 2580m / small creek valley below glacier / (mixed forest, sifted from leaf litter, / moss, dead wood) / 11.VI.2005 M. Schülke [09], (SMNS); (1 ♀): CHINA N-Yunnan [C2005-09] / Diqing Tibet. Aut. Pref. / Deqin Co., Meili Xue Shan., / E-side, 14 km W Deqin, 2580 m, // 28°27.47'N, 98°46.35'E, creek / valley below glacier, mixed forest, / leaf litter, moss, dead wood, sifted / 11.VI.2005 M. Schülke [C2005-09], (SMNS); (1 ♀): CHINA S Sichuan / 15km SW PINGCHUAN / 3200m. 26.Jun 1998 / M.Bocak lgt. / 27.33N 101.49E, (SMNS); (1 ♀): CHINA (N-Yunnan) Zhongdian Co. / 46 km SSE Zhongdian, 3050- / 3100m, 27°27.0'N, 99°54.7'E / (creek valley, secondary mixed / forest, bamboo, mushrooms) / 17.VIII.2003 Wrase [05], (SMNS); (1 ♀): CHINA (N-Yunnan) Zhongdian / Co. 51 km SSE Zhongdian / 2970m, 27°25.3'N, 99°56.5'E / (creek valley, mixed conif. forest / with shrubby veget., bamboo) / 16.VIII.2003 Wrase [04], (SMNS). The types are provided with a printed red labels: *Borbonalia murzini* sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

Description of holotype. Habitus of male holotype elongate, as in Fig. 9. Body from pale brown to brown, dorsal surface shiny, elytra with yellow spots, with pale brown setation. BL 8.07 mm, widest near two thirds of elytral length, maximum width 3.05 mm, 2.65 times longer than wide.

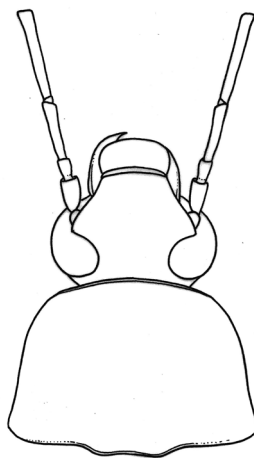
Head (Fig. 10) brown, anterior part and clypeus pale reddish-brown, relatively small and narrow, shiny, with dense punctuation, microgranulation and microrugosities. Posterior half with a few brown setae behind eyes and a few pale brown setae between eyes. Pale brown setation of clypeus distinctly denser than in posterior part. Head widest across eyes, HW 1.32 mm; approximately 0.69 times as wide as pronotal base. HL (visible part) 0.94 mm. Eyes large, transverse, distinctly excised. Space between eyes relatively broad, broader than diameter of eye, OI equal to 43.12.

Antenna (Fig. 10). Relatively long (AL 5.40 mm, i.e. reaching 0.67 of body length), filiform, unicolored pale brown with dense pale brown setation, punctuation and microgranulation, matter. Antennomere 2 shortest, antennomere 3 more than 2.5 times longer than antennomere 2, antennomeres 4 distinctly longer than antennomere 3. RLA (1-11) equal to: 0.57 : 0.37 : 1.00 : 1.52 : 1.11 : 1.07 : 1.08 : 1.10 : 1.04 : 0.97 : 1.04. RL/WA (1-11) equal to: 1.71 : 1.59 : 3.62 : 5.50 : 4.00 : 3.45 : 4.03 : 3.97 : 4.00 : 3.50 : 3.50.

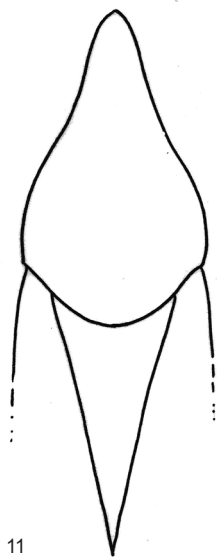
Maxillary palpus pale brown, with microgranulation and short pale brown setation, penultimate palpomere and palpomere 2 with a few long pale brown setae at apex, slightly shiny. Palpomer 2-4 distinctly widest at apex, palpomere 2 longest. Ultimate palpomere in form of triangle, axe-shaped.



9



10



11



12

Figs 9-12: *Borbonalia murzini* sp. nov.: 9- Habitus of male holotype; 10- Head, pronotum and antennomeres 1-4 of male holotype; 11- Aedeagus, dorsal view; 12- Aedeagus, lateral view.

Pronotum (Fig. 10) brown, transverse, rectangular, disc with sparse pale brown setation, setation near lateral margins denser. At base 1.45 as wide as head across eyes, longest in middle, PL 1.16 mm; PW 1.91 mm; PI equal to 58.73. Borders complete and distinct. Posterior margin finely bisinuate, against scutellum straight. Posterior angles rounded, obtuse, anterior angles indistinct, rounded. Lateral margins parallel in posterior half, rounded and narrowed in anterior half.

Elytra brown, shiny, with sparse, pale brown setation. Apex with two yellow spots, one from the third elytral interspace to the ninth elytral interspace and the second smaller than the first from the second elytral interspace to the ninth elytral interspace in apex of elytron. EL 5.97 mm; EW 3.05 mm; EL/EW ratio equal to 1.96. Elytral striae with rows of medium-sized punctures, elytral interspaces with very fine microgranulation and sparse punctures, distinctly smaller than those in striae.

Elytral epipleura well-developed, brown with sparse brown setae and punctures, evenly narrowing in basal half to ventrite 1, in apical half parallel-sided.

Scutellum pentagonal, brown as elytron itself, shiny, with shallow punctures.

Legs relatively narrow with dense, pale brown and brown setation. Femora and tibiae brown, distinctly paler than dorsal surface, with fine microgranulation and punctuation, tibia slightly dilated anteriorly. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomere 3 with membranous lobes. RLT (1-5 or 1-4) equal to: 1.00 : 0.61 : 0.60 : 0.87 : 1.66 (protarsus), 1.00 : 0.34 : 0.33 : 0.43 : 0.95 (mesotarsus), and 1.00 : 0.39 : 0.33 : 0.71 (metatarsus). Anterior tarsal claws with 13 and 15 teeth.

Ventral side of body brown, with short and sparse pale brown setation and punctuation, slightly shiny. Abdomen brown, with sparse, pale brown setation, microgranulation and microrugosities, matte.

Aedeagus (Figs 11, 12). Pale brown, slightly shiny. Basal piece almost parallel laterally and slightly narrowing dorsally, 3.58 times longer than apical piece. Apical piece shortly triangular in dorsal view, finely and longitudinally beak-shaped laterally.

Female. Without distinct differences. Both anterior tarsal claws with 9 visible teeth. BL 8.00 mm; HL 0.96 mm; HW 1.24 mm; OI equal to 49.81; PL 1.10 mm; PW 2.05 mm; PI equal to 53.83; EL 5.94 mm; EW 3.10 mm; AL (1-9) 3.88 mm; AL(1-9)/BL 0.49; BL/EW 2.55; EL/EW 1.92; HW/PW 0.61. RLA (1-9) equal to: 0.59 : 0.43 : 1.00 : 1.40 : 1.18 : 1.09 : 1.11 : 1.15 : 1.06. RL/WA (1-9) equal to: 1.66 : 1.59 : 3.73 : 6.39 : 4.22 : 4.24 : 3.79 : 4.48 : 3.63. RLT (1-5 and 1-4) equal to: 1.00 : 0.67 : 0.67 : 0.72 : 1.59 (protarsus), 1.00 : 0.45 : 0.33 : 0.46 : 0.96 (mesotarsus), and 1.00 : 0.33 : 0.38 : 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 = 3). BL 8.28 mm (8.07-8.40 mm); HL 0.93 mm (0.91-0.94 mm); HW 1.27 mm (1.24-1.32 mm); OI 42.66 (40.86-44.01); PL (along midline) 1.16 mm (1.15-1.16 mm); PW at base 1.88 mm (1.81-1.91 mm); PI 61.11 (58.73-63.65); EL 6.19 mm (5.97-6.30 mm); EW 2.91 mm (2.83-3.05 mm). Females (n = 8). BL 8.41 mm (7.90-9.04 mm); HL 1.00 mm (0.96-1.05 mm); HW 1.27 mm (1.19-1.35 mm); OI 46.84 (42.55-49.40); PL (along midline) 1.11 mm (1.01-1.28 mm); PW at base 1.93 mm (1.76-2.13 mm); PI 57.69 (53.71-64.59); EL 6.29 mm (5.73-6.90 mm); EW 3.17 mm (2.99-3.37 mm).

Differential diagnosis. (For further differences see the key above). *Borbonalia murzini* sp. nov. differs from *Borbonalia jizuica* sp. nov., *B. nepalica* sp. nov., *B. schneideri* sp. nov. and *B. wrasei* sp. nov. mainly by bicolour elytra; while *B. jizuica*, *B. nepalica*, *B. schneideri* and *B. wrasei* with elytra unicolored. *B. murzini* is different from *B. tibetica* sp. nov. mainly by two yellow spots near apex of elytron; while *B. tibetica* has elytron with one terminal yellow spot. *B. murzini* clearly differs from similar species *B. brancuccii* sp. nov. mainly by disc of pronotum with distinct microgranulation; while disc of pronotum of *B. brancuccii* without distinct microgranulation.

Etymology. New species is dedicated to one of the collectors of type material Sergei Murzin.

Distribution. China (Sichuan, Tibet, Yunnan).

***Borbonalia nepalica* sp. nov.**

(Figs 13-16)

Type locality. W Nepal, Ghar Khola, Chitre, 2400m.

Type material. Holotype (♂): Chitre 2400 m / Ghar Khola / 26-31.V.84 // W-Nepal / C.Holzschuh, (SMNS). Paratypes: (1 ♂ 5 ♀♀): same data as holotype, (SMNS, VNPC); (1 ♂ 3 ♀♀): NEPAL, Annapurna Mts. / Banthanti S of Gorapani / 2300-2400m NN / 24.-26.V.2004 leg. Schmidt / 28°22,1'N, 83°43,4'E, (NMEG, VNPC); (2 ♂♂ 1 ♀): NEPAL Annapurna Mts. / Banthanti (Ghorapani / to Ulleri) 2300m / 13.9.03 lg Schmidt, (NMEG, VNPC); (3 ♀♀): NEPAL, Manaslu Mts. / Pewa, NE slope Budhi / Gandaki valley, 3km / SE Deng, 1800m, 25.V. / 2006, leg. J. Schidt, (NMEG, VNPC); (1 ♂ 3 ♀♀): NEPAL Myagdi distr. / upp. Bathlekharka / 2460 m, 20 . 6. 1998 / leg. BERNDT, SCHMIDT, (NMEG); (2 ♀♀): NEPAL HIMALAYA / Manaslu Mts. / lg. Schmidt 1995 // Dudh Pokhari Lekh / upp. Journey vill. / 21-2600m 15.9., (NMEG); (1 ♀): NEPAL, Helambu / upp. Chipling, 2200- / 2400m, 29.-30.VIII. / 1997, leg. S. Fabrizi / & D. Ahrens, (NMEG); (1 ♀): NEPAL, Annapurna / Region, Umg. Tikhedunga / 1500 m NN, 07 X 1992 / leg. A. Weigel, (NMEG); (1 ♀): NEPAL, Langtang / Syabru, Bamboo Lodge / 2160-1900m. 28°09'N / 85°14'E, 14.IX.1997 / leg. Fabrizi & D. Ahrens, (NMEG); (1 ♀): NEPAL Annapurna - / Mts. , leg. Fabrizi, Jäger, Schmidt // NE Sikles, Taunja / Danda W-slope 21- / 2300m 5.8.95, (NMEG); (1 ♀): NEPAL, Annapurna / Himal, Kali Gandaki / valley, Pangbu Khola / 2400m NN, 04.VI.2004 / leg. J. Schmidt, (NMEG); (1 ♀): NEPAL, Dhaulagiri Himal / S-slope Ruyachaur Duri / 24-2700 m, 22.6.1998 / leg. Berndt & Schmidt, (NMEG); (1 ♀): NEPAL, 15km S Kath- / mandu, Godawari-Phulchoki 1800-2200m 25.VI. / 1997 leg. A. Weigel KL, (NMEG); (1 ♂): NEPAL, Annapurna / South Himal, Khopra / to Narcheng, 2300m / NN, 25.V.2001 / leg. J. Schmidt, (VNPC); (1 ♂ 1 ♀): NEPAL, Annapurna / Himal, Sikles range / betw. 1400-2100m / V.1996, leg. J. Schmidt, (NMEG). The types are provided with a printed red labels: *Borbonalia nepalica* sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

Description of holotype. Habitus of male holotype elongate, as in Fig. 13. Body dark brown, dorsal surface shiny with pale setation. BL 9.65 mm, widest near two thirds of elytral length, maximum width 3.58 mm, 2.70 times longer than wide.

Head (Fig. 14) brown, anterior part, mandibles and clypeus pale brown, relatively small and narrow, shiny, with dense punctuation, microgranulation and microrugosities. Posterior half with sparse, anterior part and clypeus with denser pale brown setation. Head widest across eyes, HW 1.43 mm; approximately 0.68 times as wide as pronotal base. HL (visible part) 0.95 mm. Eyes large, transverse, distinctly excised. Space between eyes relatively broad, distinctly broader than diameter of eye, OI equal to 55.12.

Antenna (Fig. 14). Relatively long (AL 6.89 mm, i.e. reaching 0.71 of body length), filiform, unicolored pale brown with dense pale brown setation and very fine microgranulation,

slightly shiny. Antennomere 2 shortest, antennomere 3 more than 3.5 times longer than antennomere 2, antennomeres 4 distinctly longer than antennomere 3. RLA (1-11) equal to: 0.54 : 0.27 : 1.00 : 1.30 : 0.95 : 1.05 : 1.08 : 0.97 : 1.01 : 1.05 : 1.04. RL/WA (1-11) equal to: 2.12 : 1.35 : 4.50 : 5.63 : 3.61 : 3.73 : 3.82 : 3.93 : 4.07 : 3.73 : 3.94.

Maxillary palpus pale brown, with microgranulation and pale brown setation, penultimate palpomere and palpomere 2 with a few long pale brown setae at apex, slightly shiny. Palpomeres 2-4 distinctly widest at apex, palpomere 2 longest. Ultimate palpomere in form of triangle, axe-shaped.

Pronotum (Fig. 14) brown, transverse, rectangular, disc with sparse pale brown setation, setation near lateral margins denser, with dense punctuation, interspaces between punctures very narrow. At base 1.55 as wide as head across eyes, longest in middle, PL 1.39 mm; PW 2.22 mm; PI equal to 62.61. Borders complete and distinct. Posterior margin finely bisinuate, very finely emarginate before scutellum. Posterior angles rounded, obtuse, anterior angles indistinct, rounded. Lateral margins parallel in posterior half, very finely excised before posterior angles, rounded and narrowed in anterior half.

Elytra brown, shiny, with sparse, pale brown setation, setation near lateral margins distinctly denser. EL 7.31 mm; EW 3.58 mm; EL/EW ratio equal to 2.04. Elytral striae with rows of medium-sized punctures, elytral interspaces with distinct microgranulation and sparse, shallow punctures, small punctures distinctly smaller than those in striae.

Elytral epipleura well-developed, brown with sparse brown setae and punctures, evenly narrowing in basal half to ventrite 1, in apical half parallel-sided.

Scutellum roundly pentagonal, pale brown, distinctly paler than elytron itself, with a few small punctures, microgranulation and short pale brown setae.

Legs relatively narrow with dense, pale brown setation and distinct microgranulation and punctuation. Femora brown, tibiae and tarsi narrow, pale brown. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomere 3 with membranous lobes. RLT (1-5 or 1-4) equal to: 1.00 : 0.66 : 0.67 : 0.89 : 1.80 (protarsus), 1.00 : 0.22 : 0.22 : 0.25 : 0.87 (mesotarsus), and 1.00 : 0.32 : 0.26 : 0.71 (metatarsus). Anterior tarsal claws with 20 and 18 visible teeth.

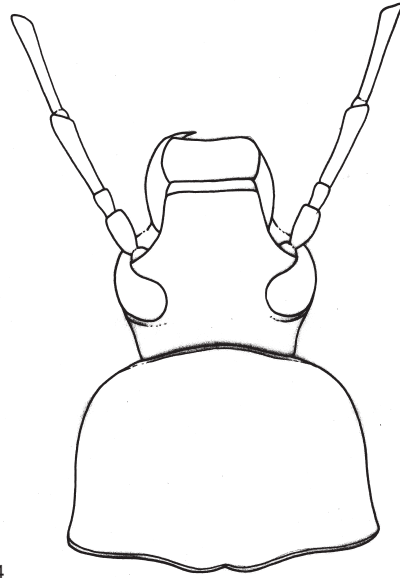
Ventral side of body dark brown as elytron, with short, sparse pale brown setation and punctuation. Abdomen dark brown, with sparse, pale brown setation, sparse, small punctures, microgranulation and microrugosities, matter. Ultimate ventrite with small rounded expression in middle and indistinct expression near apex.

Aedeagus (Figs 15, 16). Pale brown, with distinct microgranulation. Basal piece regularly rounded laterally and narrowing in apical half dorsally, 3.60 times longer than apical piece. Apical piece broadest in basal third, then shortly triangular in dorsal view and longitudinally beak-shaped in lateral view.

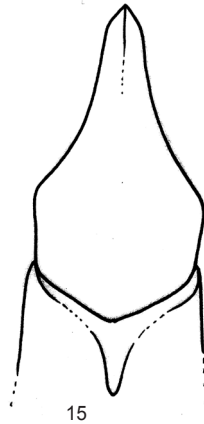
Female. Without distinct differences. Both anterior tarsal claws with 9 and 10 visible teeth. BL 9.92 mm; HL 1.07 mm; HW 1.61 mm; OI equal to 57.17; PL 1.50 mm; PW 2.49 mm; PI equal to 60.18; EL 7.35 mm; EW 3.91 mm; AL 6.25 mm; AL/BL 0.63; BL/EW 2.54; EL/EW 1.88; HW/PW 0.65. RLA (1-11) equal to: 0.61 : 0.28 : 1.00 : 1.19 : 1.00 : 1.04 : 1.01 : 1.03 : 1.03 : 0.92 : 1.07. RL/WA (1-11) equal to: 1.70 : 1.23 : 4.62 : 5.48 : 3.88 : 4.21 : 3.92 : 3.85 : 4.00 : 3.71 : 4.52. RLT (1-5 and 1-4) equal to: 1.00 : 0.64 : 0.55 : 0.90 : 1.76 (protarsus), 1.00 : 0.40 : 0.41 : 0.57 : 1.24 (mesotarsus), and 1.00 : 0.25 : 0.32 : 0.70 (metatarsus).



13



14



15



16

Figs 13-16: *Borbonalia nepalica* sp. nov.: 13- Habitus of male holotype; 14- Head, pronotum and antennomeres 1-4 of male holotype; 15- Aedeagus, dorsal view; 16- Aedeagus, lateral view.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n = 8). BL 9.13 mm (7.26-9.65 mm); HL 0.98 mm (0.89-1.06 mm); HW 1.42 mm (1.18-1.50 mm); OI 50.60 (44.85-55.12); PL (along midline) 1.23 mm (0.93-1.39 mm); PW at base 2.15 mm (1.80-2.34 mm); PI 57.33 (51.43-62.61); EL 6.91 mm (5.44-7.31 mm); EW 3.43 mm (2.56-3.63 mm). Females (n = 25). BL 9.27 mm (8.05-10.10 mm); HL 1.16 mm (0.97-1.39 mm); HW 1.46 mm (1.33-1.61 mm); OI 52.52 (50.88-57.17); PL (along midline) 1.33 mm (1.13-1.52 mm); PW at base 2.26 mm (1.94-2.49 mm); PI 58.73 (54.73-63.44); EL 6.85 mm (5.79-7.37 mm); EW 3.65 mm (3.12-4.02 mm).

Differential diagnosis. (For further differences see the key above). *Borbonalia nepalica* sp. nov. differs from *Borbonalia brancuccii* sp. nov., *B. murzini* sp. nov. and *B. tibetica* sp. nov. mainly by unicolored elytra; *B. brancuccii*, *B. murzini* and *B. tibetica* have elytra bicolour. *B. nepalica* is different from similar species *B. jizuica* sp. nov. and *B. schneideri* sp. nov. mainly by elytra without green metallic lustre and space between eyes broad; while *B. jizuica* and *B. schneideri* have dorsal surface with green metallic lustre and space between eyes relatively narrow. *B. nepalica* differs from similar species *B. wrasei* sp. nov. mainly by its large body and sparse setation of dorsal surface; while *B. wrasei* has a small body and dense setation of dorsal surface.

Etymology. Toponymic, named after the type locality Nepal.

Distribution. Nepal.

***Borbonalia schneideri* sp. nov.**

(Figs 17-20)

Type locality. CHINA: Sichuan, Gongga Shan, Hailuogou, 29°35N 102°00E, 2600-2750m.

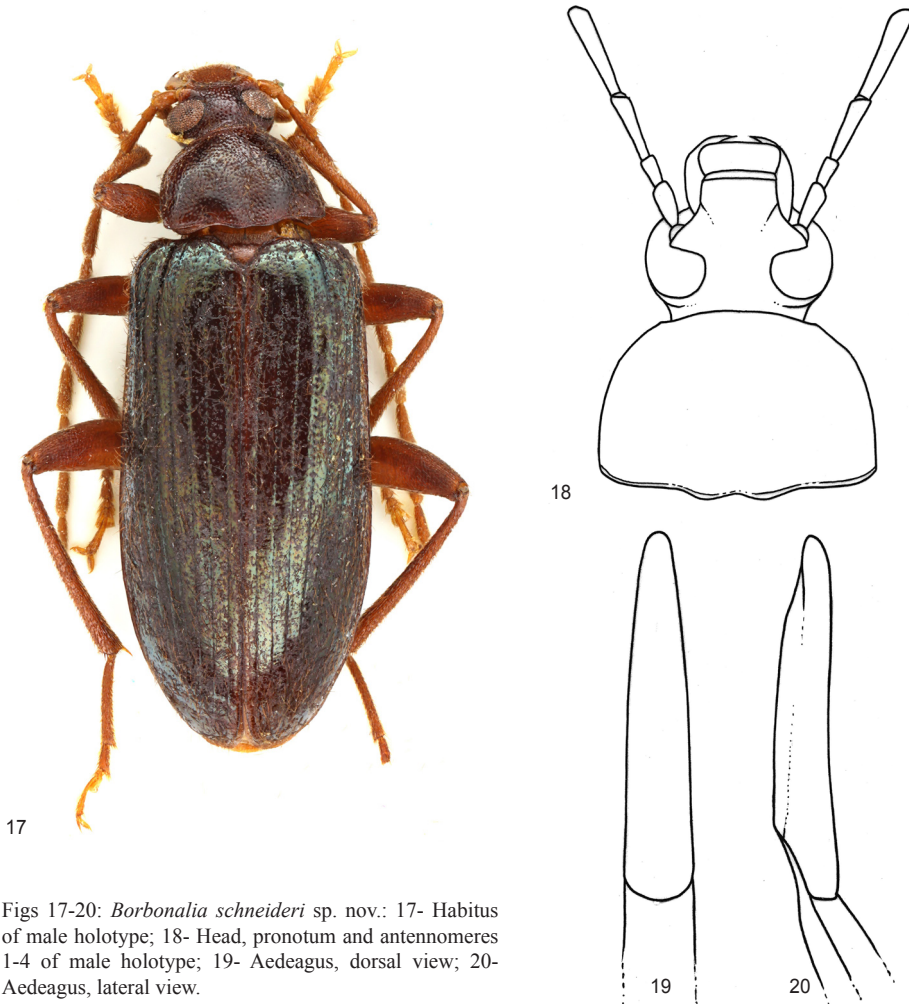
Type material. Holotype (♂): CHINA: Sichuan, Gongga / Shan, Hailuogou, above / Camp 2, 29°35N 102°00E / 2600-2750m, 3.-6.VII.1998 / J. Schneider // 1998 China Expedition / J. Farkač, D. Král, / J. Schneider / & A. Smetana, (NMBS). Paratypes: (2 ♂♂ 7 ♀♀): same data as holotype (NMBS, VNPC); (1 ♀): CHINA: W Sichuan / Pass Zheduo Shankou W Kangding, W slope / 29°58N 101°47E, 4000m / 17.-18.VII.98, J. Schneider // 1998 China Expedition / J. Farkač, D. Král, / J. Schneider / & A. Smetana, (VNPC). The types are provided with a printed red labels: *Borbonalia schneideri* sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

Description of holotype. Habitus of male holotype elongate, as in Fig. 17. Body brown, dorsal surface shiny, elytra with green metallic lustre, with sparse pale brown setation. BL 8.09 mm, widest near two thirds of elytral length, maximum width 2.89 mm, 2.80 times longer than wide.

Head (Fig. 18) brown, anterior part and clypeus pale brown, relatively small and narrow, shiny, with dense punctuation, microgranulation and microrugosities. Posterior half with sparse brown setation, clypeus with denser pale brown setation. Head widest across eyes, HW 1.36 mm; approximately 0.73 times as wide as pronotal base. HL (visible part) 0.94 mm. Eyes large, transverse, distinctly excised. Space between eyes relatively narrow, approximately as long as diameter of one eye, OI equal to 32.07.

Antenna (Fig. 18). Relatively long (AL 6.02 mm, i.e. reaching 0.74 of body length), filiform, unicolored brown, distinctly paler than dorsal surface, with dense and short, pale brown setation, punctuation and microgranulation, matter. Antennomere 2 shortest, antennomere 3 more than 2 times longer than antennomere 2, antennomeres 4 distinctly longer than antennomere 3. RLA (1-11) equal to: 0.61 : 0.45 : 1.00 : 1.65 : 1.45 : 1.55 : 1.38 : 1.39 : 1.41 : 1.30 : 1.54. RL/WA (1-11) equal to: 1.83 : 1.85 : 3.11 : 5.44 : 4.15 : 4.44 : 5.58 : 4.00 : 3.95 : 3.70 : 4.47.

Maxillary palpus pale brown, with microgranulation and short pale brown setation, penultimate palpomere and palpomere 2 with a few long pale brown setae at apex, slightly shiny. Palpomerer 2-4 distinctly widest at apex, palpomere 2 longest. Ultimate palpomere in form of triangle, axe-shaped.



Figs 17-20: *Borbonalia schneideri* sp. nov.: 17- Habitus of male holotype; 18- Head, pronotum and antennomeres 1-4 of male holotype; 19- Aedeagus, dorsal view; 20- Aedeagus, lateral view.

Pronotum (Fig. 18) brown, transverse, rectangular, disc with sparse pale brown setation and dense punctuation, at base 1.37 as wide as head across eyes, longest in middle, PL 1.03 mm; PW 1.86 mm; PI equal to 56.44. Borders complete and distinct. Posterior margin finely bisinuate, very finely emarginate before scutellum. Disc near base with three impressions, one longitudinal against scutellum, two oblique impressions near emargination of base on both sides. Posterior angles rounded, slightly obtuse, anterior angles indistinct, rounded. Lateral margins parallel in posterior half, rounded and narrowed in anterior half.

Elytra brown with green metallic lustre, shiny, with sparse, pale brown setation. EL 6.12 mm; EW 2.89 mm; EL/EW ratio equal to 2.12. Elytral striae with rows of medium-sized punctures, elytral interspaces with very fine microgranulation and sparse, small punctures,

distinctly smaller than those in striae.

Elytral epipleura well-developed, brown with sparse brown setae and punctures, evenly narrowing in basal half to ventrite 1, in apical half parallel-sided.

Scutellum pentagonal, pale brown, distinctly paler than elytron itself, mater, with small punctures and microgranulation.

Legs relatively narrow with dense, pale brown and brown setation and microgranulation. Femora and tibiae brown, distinctly paler than pronotum, tibia narrow, slightly dilated anteriorly. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomere 3 with membranous lobes. RLT (1-5 or 1-4) equal to: 1.00 : 0.58 : 0.54 : 0.68 : 1.61 (protarsus), 1.00 : 0.39 : 0.36 : 0.36 : 0.58 (mesotarsus), and 1.00 : 0.30 : 0.27 : 0.46 (metatarsus). Anterior tarsal claws with 14 and 16 teeth.

Ventral side of body brown, with short, sparse pale brown setation and punctuation. Abdomen brown, with sparse, short, white setation, microgranulation and sparse, shallow punctuation, punctures small, slightly shiny.

Aedeagus (Figs 19, 20). Large, pale brown, with fine microgranulation and microrugosities. Basal piece strongly rounded laterally and slightly narrowing dorsally, 3.67 times longer than apical piece. Apical piece longitudinally triangular with rounded top in dorsal view and knife-shaped in lateral view.

Female. Without distinct differences. Both anterior tarsal claws with 7 visible teeth. BL 8.85 mm; HL 0.92 mm; HW 1.37 mm; OI equal to 39.93; PL 1.37 mm; PW 2.06 mm; PI equal to 66.46; EL 6.56 mm; EW 3.22 mm; AL 6.28 mm; AL/BL 0.71; BL/EW 2.75; EL/EW 2.04; HW/PW 0.67. RLA (1-11) equal to: 0.96 : 0.43 : 1.00 : 1.65 : 1.37 : 1.36 : 1.28 : 1.31 : 1.29 : 1.23 : 1.35. RL/WA (1-11) equal to: 2.48 : 1.52 : 3.13 : 5.39 : 4.48 : 4.86 : 3.84 : 4.08 : 3.88 : 4.00 : 4.81. RLT (1-5 and 1-4) equal to: 1.00 : 0.48 : 0.48 : 0.55 : 1.32 (protarsus), 1.00 : 0.35 : 0.33 : 0.35 : 0.95 (mesotarsus), and 1.00 : 0.32 : 0.22 : 0.52 (metatarsus).

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 8.33 mm (8.00-8.49 mm); HL 0.96 mm (0.94-0.99 mm); HW 1.31 mm (1.26-1.36 mm); OI 34.97 (32.00-38.26); PL (along midline) 1.09 mm (1.03-1.15 mm); PW at base 2.48 mm (1.86-2.00 mm); PI 57.99 (57.43-58.90); EL 6.28 mm (6.12-6.41 mm); EW 2.96 mm (2.89-3.3 mm). Females (n = 8). BL 8.72 mm (8.39-9.05 mm); HL 1.03 mm (0.92-1.15 mm); HW 1.33 mm (1.28-1.38 mm); OI 39.67 (34.23-41.56); PL (along midline) 1.27 mm (1.16-1.37 mm); PW at base 1.99 mm (1.87-2.09 mm); PI 63.21 (56.56-68.33); EL 6.42 mm (6.07-6.75 mm); EW 3.08 mm (3.00-3.22 mm).

Differential diagnosis. (For further differences see the key above). *Borbonalia schneideri* sp. nov. differs from *Borbonalia brancuccii* sp. nov., *B. murzini* sp. nov. and *B. tibetica* sp. nov. mainly by unicolored elytra; *B. brancuccii*, *B. murzini* and *B. tibetica* have elytra bicolour. *B. schneideri* is different from similar species *B. nepalica* sp. nov. and *B. wrasei* sp. nov. mainly by elytra with green metallic lustre and space between eyes relatively narrow; while *B. nepalica* and *B. wrasei* have dorsal surface without green metallic lustre and space between eyes broad. *B. schneideri* differs from similar species *B. jizuica* sp. nov. mainly by antennomeres 5-11 1.30-1.55 times longer than antennomere 3; while *B. jizuica* has antennomeres 5-11 only 0.88-1.26 times longer than antennomere 3.

Etymology. Dedicated to my friend Jan Schneider, specialist in Scarabaeidae and Silphidae (Praha, Czech Republic).

Distribution. China (Sichuan).

***Borbonalia tibetica* sp. nov.**

(Figs 21-24)

Type locality. Eastern Tibet, Bomi env., 29°52'N, 95°45'E, 3000 m.

Type material. Holotype (♂): E TIBET, Bomi env. / 29°52'N, 95°45'E / 9.-10.VII.1997 / mixed forest, ca 3000m / M. Trýzna et O. Šafránek lgt., (VNPC). Paratypes: (1 ♀): same data as holotype, (VNPC); (3 ♂♂ 3 ♀♀): E Tibet, Bomi env., 3000m / 29°52'N, 95°45'E / mixed forest, 9.-10.VII.1997 / Jaroslav Turna leg., (VNPC). The types are provided with a printed red label: *Borbonalia tibetica* sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

Description of holotype. Habitus of male holotype as in Fig. 21, body elongate, elytra more oval. Body from ochre yellow to brown, dorsal surface shiny, elytron with ochre yellow spot, with very sparse ochre yellow setation. BL 8.14 mm, widest near two thirds of elytral length, maximum width 3.27 mm, 2.49 times longer than wide.

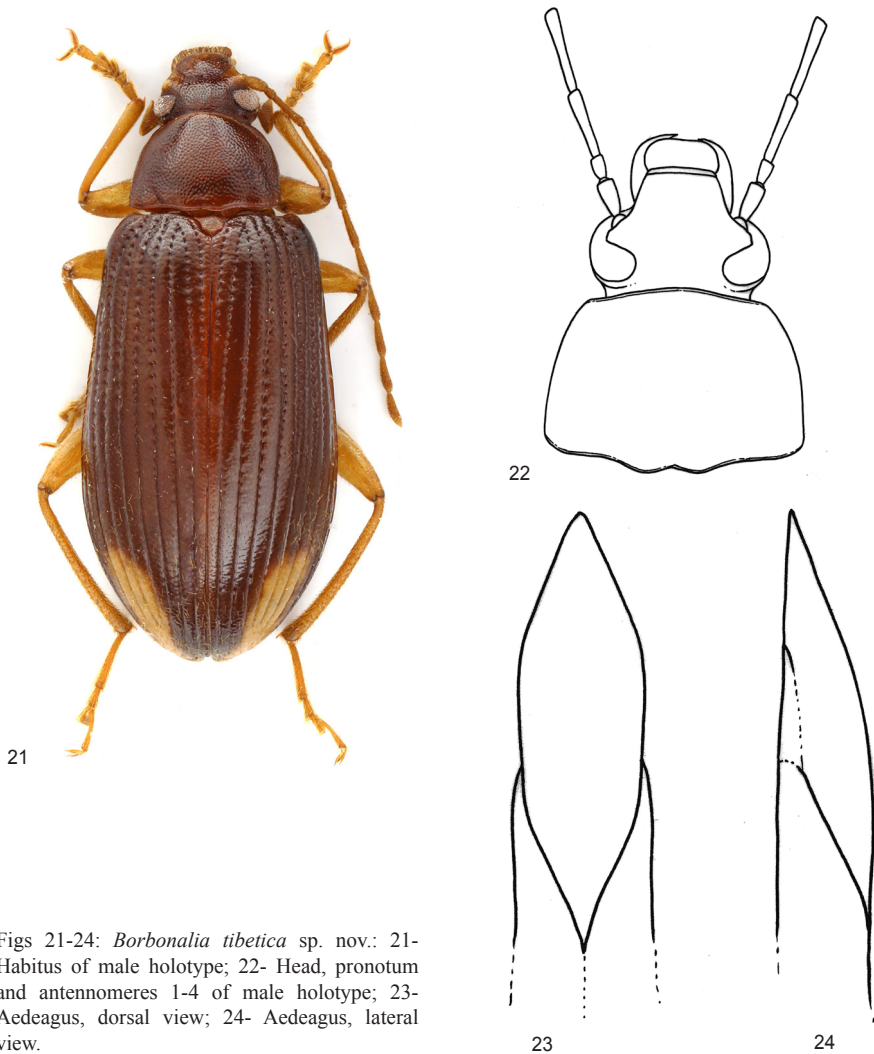
Head (Fig. 22) brown, relatively small and broad, with distinct punctuation, anterior part and clypeus with microgranulation, clypeus pale brown with short, yellow setation, anterior part on sides with a few long setae. Dorsal surface of posterior part shiny, nearly glabrous with a few brown setae behind eyes. Head widest across eyes, HW 1.38 mm; approximately 0.73 times as wide as pronotal base. HL (visible part) 0.99 mm. Eyes large, transverse, distinctly excised. Space between eyes relatively broad, broader than diameter of eye, OI equal to 52.95.

Antenna (Fig. 22). Relatively long (AL 5.33 mm, i.e. reaching 0.66 of body length), filiform, unicolored ochre yellow with dense ochre yellow setation and microgranulation, more matte. Antennomere 2 shortest, antennomere 3 three times longer than antennomere 2, antennomeres 4 distinctly longer than antennomere 3. RLA (1-11) equal to: 0.64 : 0.33 : 1.00 : 1.34 : 1.14 : 1.10 : 0.93 : 1.06 : 0.97 : 0.96 : 1.04. RL/WA (1-11) equal to: 2.53 : 1.64 : 4.85 : 6.50 : 5.30 : 5.15 : 4.33 : 4.59 : 4.21 : 4.03 : 4.23.

Maxillary palpus pale brown, with microgranulation and short ochre yellow setation, penultimate palpomere and palpomere 2 with a few long ochre yellow setae at apex, slightly shiny. Palpomerer 2-4 distinctly widest at apex, palpomere 2 longest. Ultimate palpomere in form of triangle, axe-shaped.

Pronotum (Fig. 22) brown, transverse, rectangular, shiny, with dense punctuation and very fine microgranulation, punctures small-sized, nearly glabrous, with a few setae near lateral margins. At base 1.38 as wide as head across eyes, longest in middle, PL 1.21 mm; PW 1.89 mm; PI equal to 63.99. Borders complete and distinct. Posterior margin finely bisinuate, very finely emarginate against scutellum. Posterior angles rounded, obtuse, anterior angles indistinct, rounded. Lateral margins parallel in posterior half, rounded and narrowed in anterior half.

Elytra brown, each elytron with one longitudinal terminal yellow spot from the second to the eighth elytral interspaces reaching apex, shiny, nearly glabrous with a few setae near



Figs 21-24: *Borbonalia tibetica* sp. nov.: 21- Habitus of male holotype; 22- Head, pronotum and antennomeres 1-4 of male holotype; 23- Aedeagus, dorsal view; 24- Aedeagus, lateral view.

lateral sides and apex. EL 5.94 mm; EW 3.27 mm; EL/EW ratio equal to 1.82. Elytral striae with rows of medium-sized punctures, elytral interspaces with very fine microgranulation and sparse punctures, distinctly smaller than those in striae.

Elytral epipleura well-developed, brown with sparse pale brown setae and punctures, evenly narrowing in basal half to ventrite 1, in apical half parallel-sided.

Scutellum pentagonal, pale brown, distinctly paler than elytron itself, shiny, with small, shallow punctures and microrugosities.

Legs relatively narrow with dense, ochre yellow setation. Femora and tibiae with fine microgranulation, tibia slightly dilated anteriorly. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomere 3 with membranous lobes. RLT (1-5 or 1-4) equal to: 1.00 : 0.49 : 0.64

: 0.85 : 1.91 (protarsus), 1.00 : 0.32 : 0.40 : 0.54 : 1.02 (mesotarsus), and 1.00 : 0.28 : 0.38 : 0.70 (metatarsus). Anterior tarsal claws with 26 and 32 teeth.

Ventral side of body blackish-brown, with short and sparse pale brown setation, punctuation and rugosities. Abdomen dark brown, with sparse, short, pale brown setation, microgranulation and dense and shallow punctuation, punctures small, slightly shiny. Ventrites 1-5 in middle of apical part paler.

Aedeagus (Figs 23, 24). Pale brown, with fine microgranulation. Basal piece straight in basal third then slightly rounded laterally and regularly narrowing dorsally, 4.46 times longer than apical piece. Apical piece beak-shaped with sharp top in lateral view, with sides parallel in basal half then triangular in dorsal view.

Female. Without distinct differences. Both anterior tarsal claws with 8 and 9 visible teeth. BL 8.35 mm; HL 1.32 mm; HW 1.50 mm; OI equal to 57.17; PL 1.45 mm; PW 2.18 mm; PI equal to 66.43; EL 5.58 mm; EW 3.38 mm; AL (1-10) 4.45 mm; AL(1-10)/BL 0.53; BL/EW 2.47; EL/EW 1.65; HW/PW 0.69. RLA (1-10) equal to: 0.54 : 0.30 : 1.00 : 1.45 : 1.17 : 1.18 : 1.13 : 1.13 : 1.07 : 1.00. RL/WA (1-10) equal to: 1.73 : 1.00 : 3.38 : 4.91 : 3.95 : 3.36 : 3.33 : 3.20 : 3.17 : 3.55. RLT (1-5 and 1-4) equal to: 1.00 : 0.50 : 0.55 : 0.83 : 1.43 (protarsus), 1.00 : 0.33 : 0.41 : 0.64 : 1.19 (mesotarsus), and 1.00 : 0.31 : 0.35 : 0.76 (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 8.35 mm (8.14-8.69 mm); HL 0.96 mm (0.93-0.99 mm); HW 1.44 mm (1.38-1.47 mm); OI 56.75 (52.95-59.76); PL (along midline) 1.32 mm (1.21-1.42 mm); PW at base 2.06 mm (1.89-2.12 mm); PI 64.21 (62.10-67.34); EL 6.05 mm (5.94-6.32 mm); EW 3.43 mm (3.27-3.58 mm). Females (n = 4). BL 8.42 mm (8.25-8.73 mm); HL 1.05 mm (0.90-1.32 mm); HW 1.43 mm (1.35-1.47 mm); OI 57.25 (56.14-57.74); PL (along midline) 1.39 mm (1.32-1.45 mm); PW at base 2.13 mm (2.11-2.18 mm); PI 64.99 (62.35-67.07); EL 5.98 mm (5.58-6.35 mm); EW 3.45 mm (3.38-3.60 mm).

Differential diagnosis. (For further differences see the key above). *Borbonalia tibetica* sp. nov. differs from *B. jizuica* sp. nov., *B. nepalica* sp. nov. *B. schneideri* sp. nov. and *B. wrasei* sp. nov. mainly by elytra bicolour; *B. jizuica*, *B. nepalica*, *B. schneideri* and *B. wrasei* have elytra unicolored. *B. tibetica* is different from similar species *B. brancuccii* sp. nov. and *B. murzini* sp. nov. mainly by apex of elytron with one yellow spot; *B. brancuccii* and *B. murzini* have two apical spots on elytron.

Etymology. Toponymic, named after the type locality Tibet.

Distribution. China (Tibet).

***Borbonalia wrasei* sp. nov.**

(Figs 25-28)

Type locality. China, N Yunnan, Dali Bai Nat. Aut. Pref., 1 km W of Dali old town, 2170 m, 25°41.9'N, 100°08.4'E.

Type material. Holotype (♂): CHINA (N- Yunnan) Dali Bai Nat. / Aut. Pref., 1 km W Dali old town, / creek valley at foothill of Dian- / cang Shan, 2170m, 25°41.9'N / 100°08.4'E (ruderal place) / 28.VIII.-1.IX.-3.IX.2003 Wrase [18], (NMEG). Paratypes: (8 ♂♂ 9 ♀♀): same data as holotype, (NMEG, VNPC). The types are provided with printed red labels: *Borbonalia wrasei* sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

Description of holotype. Habitus of male holotype elongate, as in Fig. 25. Body from pale brown to dark brown, dorsal surface slightly shiny, with punctuation and pale brown setation. BL 7.19 mm, widest near two thirds of elytral length, maximum width 2.81 mm, 2.56 times longer than wide.

Head (Fig. 26) brown, relatively small and narrow, shiny, with dense punctuation, anterior part and clypeus pale brown with fine microgranulation and microrugosities. Posterior half with a few brown setae behind eyes and a few pale brown setae between eyes. Clypeus with sparse pale brown setation. Head widest across eyes, HW 1.21 mm; approximately 0.64 times as wide as pronotal base. HL (visible part) 0.89 mm. Eyes large, transverse, distinctly excised. Space between eyes broad, approximately as broad as diameter of both eyes together, OI equal to 51.20.

Antenna (Fig. 26). Relatively long (AL 4.69 mm, i.e. reaching 0.65 of body length), filiform, with dense pale brown setation, punctuation and microgranulation, matter, antennomeres 1-4 pale brown, antennomeres 5-11 distinctly darker. Antennomere 2 shortest, antennomere 3 more than 3 times longer than antennomere 2, antennomeres 4 distinctly longer than antennomere 3. RLA (1-11) equal to: 0.68 : 0.31 : 1.00 : 1.38 : 1.13 : 1.08 : 1.04 : 1.13 : 1.09 : 1.09 : 1.10. RL/WA (1-11) equal to: 1.90 : 1.18 : 4.08 : 5.04 : 3.87 : 4.07 : 4.40 : 4.29 : 4.14 : 3.83 : 4.04.

Maxillary palpus pale brown, with microgranulation and short pale brown setation, penultimate palpomere and palpomere 2 with a few long pale brown setae at apex, slightly shiny. Palpomeres 2-4 distinctly widest at apex, palpomere 2 longest. Ultimate palpomere in form of triangle, axe-shaped.

Pronotum (Fig. 26) dark brown, transverse, rectangular, disc with sparse pale brown setation, setation near lateral margins denser, with dense punctuation. At base 1.57 as wide as head across eyes, longest in middle, PL 1.09 mm; PW 1.90 mm; PI equal to 56.27. Borders complete and distinct, only in the middle of anterior margin not clearly conspicuous. Posterior margin very finely bisinuate, against scutellum straight. Posterior angles rounded, obtuse, anterior angles indistinct, rounded. Lateral margins parallel in posterior half, rounded and narrowed in anterior half.

Elytra brown, shiny, with relatively dense, pale brown setation. EL 5.21 mm; EW 2.81 mm; EL/EW ratio equal to 1.85. Elytral striae with rows of medium-sized punctures, elytral interspaces with fine microgranulation and sparse punctures, distinctly smaller than those in striae.

Elytral epipleura well-developed, brown with sparse pale brown setae and punctures, evenly narrowing in basal half to ventrite 1, in apical half parallel-sided.

Scutellum triangular, brown as elytron itself, slightly shiny, with microgranulation and pale brown setae.

Legs relatively narrow with dense, pale brown setation and microgranulation. Tibia narrow, with distinct punctuation, slightly dilated anteriorly. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomere 3 with membranous lobes. RLT (1-5 or 1-4) equal to: 1.00 : 0.51 : 0.57 : 0.69 : 1.44 (protarsus), 1.00 : 0.30 : 0.34 : 0.45 : 0.82 (mesotarsus), and 1.00 : 0.30 : 0.31 : 0.62 (metatarsus). Anterior tarsal claws with 14 and 12 teeth.

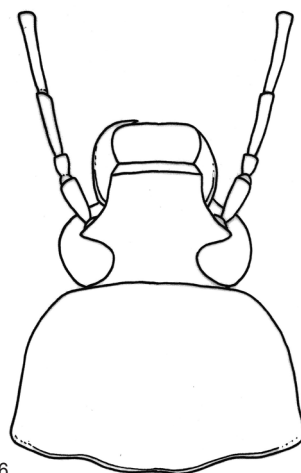
Ventral side of body blackish-brown, with short and sparse pale brown setation, punctuation and rugosities. Abdomen dark brown, with sparse, short, pale brown setation, microgranulation and dense and shallow punctuation, punctures small, slightly shiny. Ventrites 1-5 in middle of apical part paler.

Aedeagus (Figs 27, 28). Pale brown, with fine microgranulation. Basal piece rounded laterally and narrowing dorsally, 3.36 times longer than apical piece. Apical piece triangular in dorsal view and beak-shaped in lateral view.

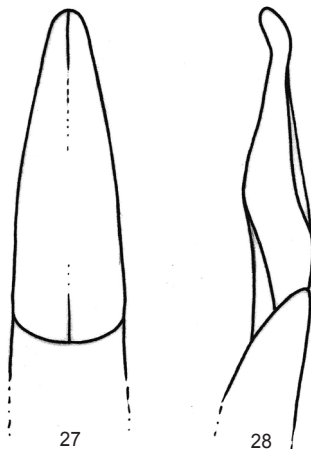
Female. Without distinct differences. Both anterior tarsal claws with 7 visible teeth. BL 7.38 mm; HL 0.93 mm; HW 1.24 mm; OI equal to 53.73; PL 1.15 mm; PW 1.96 mm; PI equal to 58.67; EL 5.30 mm; EW 2.88 mm; AL 4.16 mm; AL/BL 0.56; BL/EW 2.56; EL/EW 1.84; HW/PW 0.63. RLA (1-11) equal to: 0.63 : 0.42 : 1.00 : 1.53 : 1.02 : 1.08 : 1.03 : 1.07 : 1.02 : 1.05 : 1.16. RL/WA (1-11) equal to: 1.73 : 1.56 : 3.53 : 4.60 : 3.39 : 3.42 : 2.95 : 3.20 : 2.91 :



25



26



27

28

Figs 25-28: *Borbonalia wrasei* sp. nov.: 25- Habitus of male holotype; 26- Head, pronotum and antennomeres 1-4 of male holotype; 27- Aedeagus, dorsal view; 28- Aedeagus, lateral view.

2.86 : 3.31. RLT (1-5 and 1-4) equal to: 1.00 : 0.65 : 0.57 : 0.83 : 1.50 (protarsus), 1.00 : 0.33 : 0.28 : 0.42 : 0.96 (mesotarsus), and 1.00 : 0.31 : 0.31 : 0.59 (metatarsus).

Variability. The type specimens somewhat vary in size; each character is given as its mean value, full range in parentheses. Males (n = 9). BL 7.34 mm (6.99-7.77 mm); HL 0.86 mm (0.81-0.90 mm); HW 1.25 mm (1.11-1.40 mm); OI 49.97 (44.76-54.40); PL (along midline) 1.10 mm (0.97-1.23 mm); PW at base 1.92 mm (1.73-2.14 mm); PI 56.82 (51.84-61.91); EL 5.38 mm (5.10-5.66 mm); EW 2.74 mm (2.34-3.04 mm). Females (n = 9). BL 7.57 mm (7.04-7.96 mm); HL 0.90 mm (0.84-0.95 mm); HW 1.27 mm (1.16-1.42 mm); OI 53.52 (51.93-55.78); PL (along midline) 1.16 mm (1.03-1.25 mm); PW at base 2.02 mm (1.79-2.24 mm); PI 57.86 (51.93-63.21); EL 5.51 mm (5.17-5.87 mm); EW 2.89 mm (2.67-3.18 mm).

Differential diagnosis. (for further differences see the key above). *Borbonalia wrasei* sp. nov. differs from *B. brancuccii* sp. nov., *B. murzini* sp. nov. and *B. tibetica* sp. nov. mainly by elytra unicolored; while *B. brancuccii*, *B. murzini* and *B. tibetica* have elytra bicolour. *B. wrasei* is different from similar species *B. jizuica* sp. nov. and *B. schneideri* sp. nov. mainly by dorsal surface without green metallic lustre; while *B. jizuica* and *B. schneideri* have dorsal surface with green metallic lustre. *B. wrasei* differs from *B. nepalica* sp. nov. by small body and dorsal surface with dense setation; while *B. nepalica* has large body and dorsal surface with sparse setation.

Etymology. New species is dedicated to collector of the new species David W. Wrase (Berlin, Germany).

Distribution. China (Yunnan).

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