

## Fauna of the genus *Borboresthes* Fairmaire from Houaphanh province in northeastern Laos (Coleoptera: Tenebrionidae: Alleculinae: Alleculini)

Vladimír NOVÁK

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

**Taxonomy, new species, descriptions, Coleoptera, Tenebrionidae, Alleculinae, Alleculini, *Borboresthes*, Oriental Region, Laos, Houaphanh province**

**Abstract.** New species of the alleculine genus *Borboresthes* Fairmaire, 1897 from Laos (Houaphanh province, Mt. Phu Pane) are described as follows: *Borboresthes bufo* sp. nov., *Borboresthes hyla* sp. nov., *Borboresthes lacerta* sp. nov., *Borboresthes lissotriton* sp. nov., *Borboresthes natrix* sp. nov., *Borboresthes podacris* sp. nov., *Borboresthes rana* sp. nov. and *Borboresthes salamandra* sp. nov. Species *Borboresthes maguanensis* Novák, 2012 is listed from Laos for the first time. All new species are illustrated, compared to and keyed together with other *Borboresthes* species known from the Houaphanh province. A list of currently known species of the genus is added.

### INTRODUCTION

Many entomologists and expeditions visited northern Laos and collected material there, mainly in the province of Houaphanh and the Phu Pane massif in the last two decades. I had a possibility to see material of Alleculinae, and conclusions dealing with species of the genus *Borboresthes* Fairmaire, 1897 including descriptions of eight new species are presented here.

Species of the genus *Borboresthes* are living mainly in southeastern parts of the Palaearctic Region, Novák (2020) listed 111 species (while Mader (1924) knew 7 species and Novák and Pettersson (2008) listed 43 species). Borchmann (1910) listed 2 species in Alleculidae part of Catalogue of Coleoptera, further species were described later mainly by Borchmann, Pic and Novák from the Oriental Region, now more than 60 species are known here. So far, 5 species from Phu Pane mountain and its surroundings in the province of Houaphanh (northeastern Laos) were described relatively recently by Novák (2005, 2012, 2015).

Eight new species of the genus *Borboresthes* from Laos, province of Houaphanh (Phu Pane mountain) are described below as follows: *Borboresthes bufo* sp. nov., *Borboresthes hyla* sp. nov., *Borboresthes lacerta* sp. nov., *Borboresthes lissotriton* sp. nov., *Borboresthes natrix* sp. nov., *Borboresthes podacris* sp. nov., *Borboresthes rana* sp. nov. and *Borboresthes salamandra* sp. nov. New distributional data on *Borboresthes maguanensis* Novák, 2012 (Laos, Hoaphanh province) are added. All new species are illustrated, compared to and keyed together with other *Borboresthes* species known from Mt. Phu Pane (*Borboresthes haucki* Novák, 2005; *Borboresthes maguanensis* Novák, 2012; *Borboresthes phongsalyensis* Novák, 2012; *Borboresthes phuphanensis* Novák, 2012 and *Borboresthes vitakubani* Novák, 2015. A list of the presently known species from Phu Pane mountain is added.

### MATERIAL AND METHODS

Two important morphometric characteristics used for the descriptions of species of the subfamily Alleculinae, the 'ocular index' dorsally (Campbell & Marshall 1964) and 'pronotal index' (Campbell 1965), are used in this paper as well. The ocular index equals (100 × 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 slash (/) separates data in separate rows.

The following acronyms are used for particular collections:

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

ERMI private collection of Enrico Ruzier, Mirano, Italy;

NHMB collection of Naturhistorische museum, Basel, Switzerland;

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

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

## TAXONOMY

### *Borboresthes bufo* sp. nov.

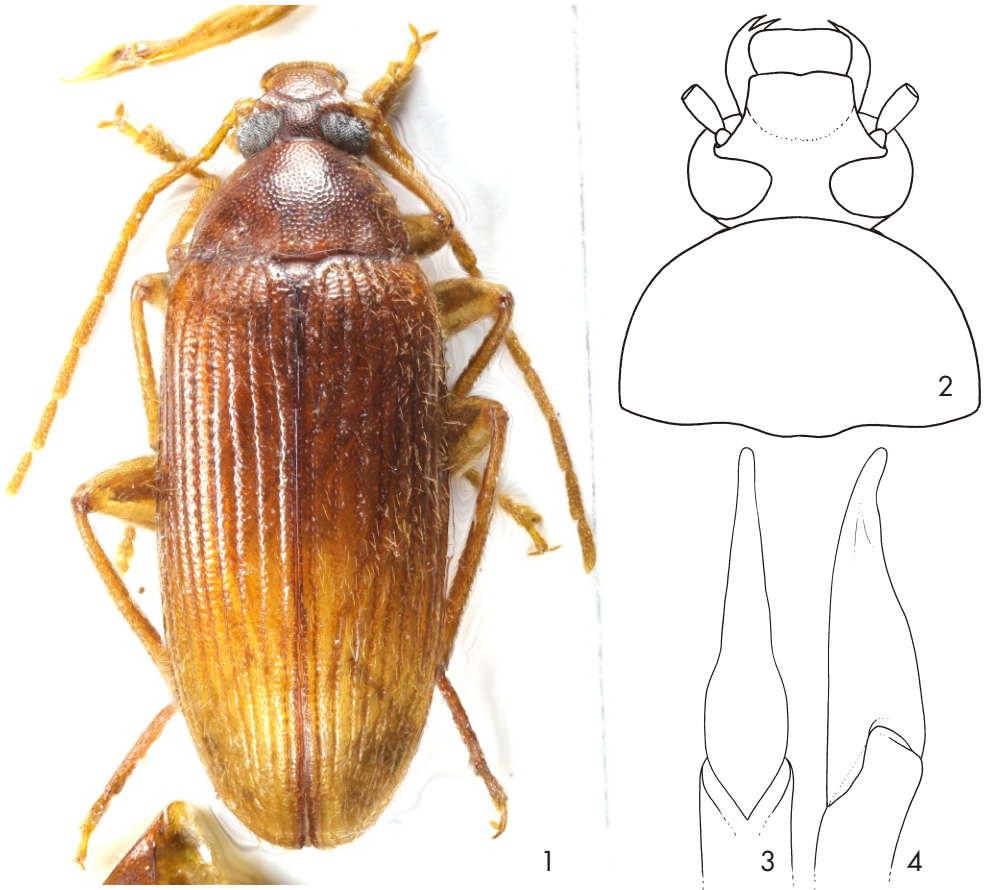
(Figs. 1-4)

**Type locality.** Northeastern Laos, Houaphanh Province, Ban Saleui, Phou Pan Mt., 20°12'N, 104°01'E, 1300-1900 m.

**Type material.** Holotype (♂): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG). Paratypes: (9 ♂♂, 13 ♀♀): same data as holotype, (NMEG, VNPC); (2 ♂♂): LAOS - NE; HUA PHAN prov.; / BAN SALUEI; Phu Phan Mt.; / 20°15'N 104°02'E; 1500-2000m; / D. Hauck leg.; 26.iv.11.v.2001, (DHBC, VNPC); (1 ♀): LAOS-NE, Houa Phan prov. / 20°12'-13.5'N 103°59.5'-104°01'E, / Ban Saleui→Phou Pane Mt., / 1340-1870 m, 2.-22.vi.2011, / Vit. Kubáň & Lao coll. leg. // Primary mountain forest, / at light+ individual collecting. / **Laos 2011** Expedition / National Museum Prague, / Czech Republic, (NMPC); (1 ♂): NE LAOS, Hua Phan prov., / Ban Saleui, Phu Phan Mt. env., / 20°13'N 103°59'E, 1300-2000 m, / 6.-18.v.2004, J. Bezděk lgt., (SMNS). The types are provided with a printed red label: 'Borboresthes / bufo sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.

**Description of holotype.** Habitus as in Fig. 1, body elongate, slightly oval, convex, from ochre yellow to brown, dorsal surface shiny with pale setation, punctuation and fine microgranulation, BL 7.74 mm. Widest near half elytra length; BL/EW 2.30.

Head (Fig. 2) wider than long, through the eyes distinctly narrower than base of pronotum. Dorsal surface with punctures, microgranulation and few pale setae. Posterior part reddish brown, anterior part pale reddish brown. Clypeus pale reddish brown, wide and transverse, lateral margins rounded, slightly shiny, with long, pale setation and microgranulation. Mandibles pale reddish brown with darker apex, glabrous, shiny, with a few pale setae on sides. HW 1.32 mm; HW/PW 0.61; HL (visible part) 1.11 mm. Eyes large, transverse, excised, space between eyes narrow, distinctly narrower than diameter of one eye; slightly wider than length of antennomere 1; OI equal to 27.59.



Figs. 1-4. *Borboresthes bufo* sp. nov. (male holotype): 1-habitus; 2- head and pronotum; 3- apical piece of aedeagus, dorsal view; 4- apical piece of aedeagus, lateral view.

Antenna. Long, narrow (AL 5.04 mm, reaching almost two thirds body length - AL/BL 0.65). Antennomeres 1-3 ochre yellow, slightly shiny, antennomeres 4-11 pale brown, rather matte, each distinctly longer than antennomere 3. Surface with pale setation, microgranulation and small punctures. Antennomere 2 shortest, antennomere 4 longest. Ultimate antennomere widest before apex.

RLA(1-11): 0.61 : 0.40 : 1.00 : 1.53 : 1.39 : 1.50 : 1.47 : 1.42 : 1.34 : 1.23 : 1.40.

RL/WA(1-11): 1.76 : 1.45 : 3.31 : 4.63 : 4.20 : 4.18 : 3.90 : 4.84 : 4.44 : 3.61 : 4.23.

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

Pronotum (Fig. 2) brown, shiny, convex, almost semicircular, widest at base. Dorsal surface with pale setation denser near lateral margins, fine microgranulation and dense, coarse punctuation, punctures relatively large, intervals between punctures almost narrower than diameter of punctures. PL 1.24 mm; PW 2.17 mm; PI equal to 57.08. Border lines very narrow, margins

conspicuous from dorsal view. Lateral and anterior margins arcuate, base finely bisinuate. Posterior angles obtuse.

Elytra. Pale brown or brown, elongate, slightly oval, convex, shiny. Dorsal surface with semierect, pale setation. EL 5.39 mm; EW 3.36 mm; EL/EW 1.60. Elytral striae with rows of relatively large and coarse punctures (approximately as large as those in pronotum), intervals between punctures in rows almost narrower than diameter of punctures. Elytral intervals slightly convex, with microgranulation and dense punctures slightly smaller than those in rows.

Scutellum. Pale reddish brown with sides darker, roundly triangular, rather matte, with a few shallow punctures, microgranulation and a few setae.

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

Legs. Long and narrow, ochre yellow, dorsal surface with pale setation. Tibiae with short, strong setae in inner side. Pro- and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.45 : 0.44 : 0.59 : 1.08 (protarsus); 1.00 : 0.26 : 0.24 : 0.23 : 0.61 (mesotarsus); 1.00 (metatarsus).

Protarsal claws with 13 and 14 visible teeth.

Ventral side of body reddish brown, with pale setae and punctures, distinctly larger in metaventrite than in prothorax. Abdomen reddish brown, shiny, with small and shallow punctures, fine microgranulation and rugosities near lateral margins.

Aedeagus (Figs. 3, 4) large, ochre yellow. Basal piece rather matte. Apical piece slightly shiny, narrowly triangular dorsally, beak shaped from dorsal and lateral view. Ratio of length of apical piece to length of basal piece in dorsal view 1 : 2.70.

**Female** without distinct differences, space between eyes slightly wider, protarsal claws have 6 or 7 visible teeth.

**Variability.** The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Specimens ( $n=27$ ). BL 8.00 mm (7.22-8.57 mm); HL 1.05 mm (0.92-1.13 mm); HW 1.25 mm (1.10-1.34 mm); OI 30.00 (27.59-31.55); PL 1.26 mm (1.05-1.44 mm); PW 2.22 mm (1.86-2.48 mm); PI 57.47 (55.12-58.78); EL 5.69 mm (5.20-6.19 mm); EW 2.83 mm (2.48-3.12 mm).

**Differential diagnosis.** Similar species with space between eyes as wide or narrower than diameter of one eye are *Borboresthes jendeki* Novák, 2012 from Laos (Bolikhamsai province) and Vietnam (Novák 2012: 238-241; figs.: 7- habitus; 8- head and pronotum; 9 and 10- aedeagus), *Borboresthes tamdaoensis* Novák, 2012 from Vietnam (Novák 2012: 260-262; figs.: 40- habitus; 41- head and pronotum; 42 and 43- aedeagus) and *Borboresthes natrix* sp. nov. (Figs. 19-22).

*Borboresthes bufo* sp. nov. distinctly differs from similar species *B. jendeki*, *B. tamdaoensis* and *B. natrix* mainly by dorsal surface unicolored brown and by shape of aedeagus (Figs. 3, 4); while *B. jendeki*, *B. tamdaoensis* and *B. natrix* have dorsal surface bicolor (head and pronotum are distinctly darker than elytra) aedeagus is as in figs. 9 and 10 (Novák 2012: 239 for *B. jendeki*); respectively figs. 42 and 43 (Novák 2012: 260 for *B. tamdaoensis*) or as in Figs. 21 and 22 for *B. natrix*.

**Etymology.** The name of this species, a noun in apposition, is the Latin generic name of the European toad or toad *Bufo bufo* (Laurenti, 1768).

**Distribution.** Laos (Houaphanh Province).

***Borboresthes haucki* Novák, 2005**

(Fig. 5)

*Borboresthes haucki* Novák, 2005: 123.

**Type locality.** Northeastern Laos, Houaphanh province, Ban Saluei, Phou Pane mountain, 20°15'N, 104°02'E, 1500-2000 m.

**Type material.** Holotype (♂): LAOS - NE; HUA PHAN prov.; / BAN SALUEI; Phu Phan Mt.; / 20°15'N 104°02'E; 1500-2000m; / D. Hauck leg.; 26.iv.-11.v.2001, (VNPC).

**Material examined.** (1 ♂): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG).

**Remarks.** *Borboresthes haucki* Novák, 2005 was described by Novák (2005) from Laos (Houaphanh province). Description of male holotype in Novák (2005: 123-126); habitus of male holotype (fig. 1); head and pronotum and aedeagus dorsal and lateral views are in Novák (2005: 125: figs. 6, 12 and 13).

**Distribution.** Laos (Houaphanh province).

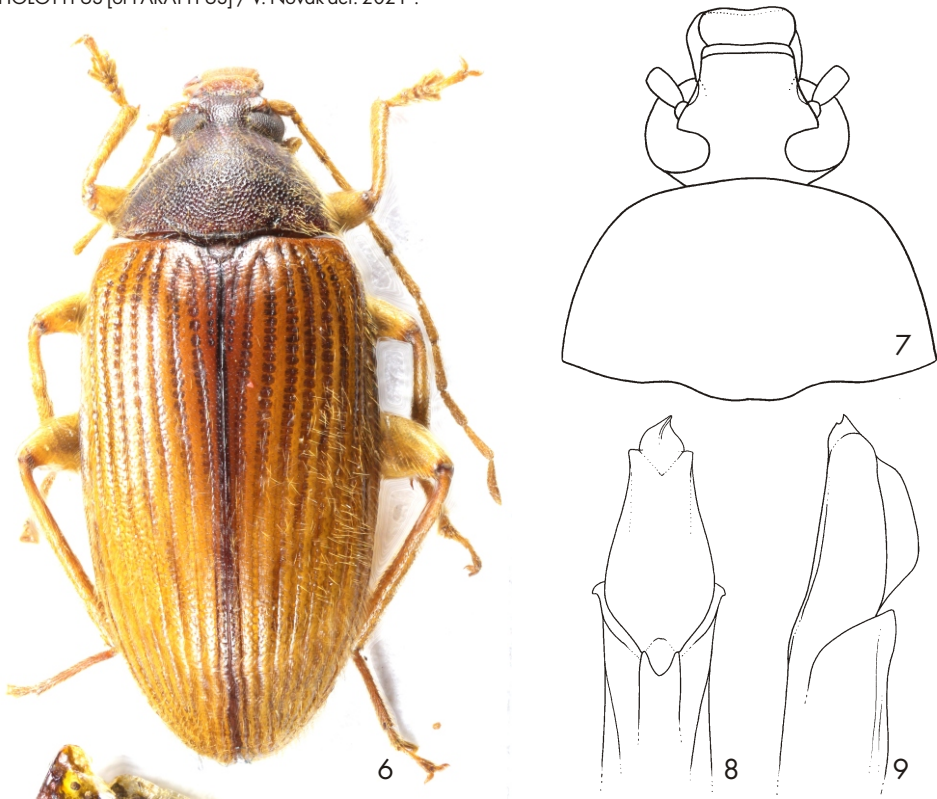


Fig. 5. *Borboresthes haucki* Novák, 2005: 5- habitus of male holotype.

***Borboresthes hyla* sp. nov.**  
(Figs. 6-9)

**Type locality.** Northeastern Laos, Houaphanh province, Phou Pane mountain.

**Type material.** Holotype (♂): NE Laos, Huaphanne, / Mt. Phu Pane, 1.-20.V.2014 / St. Jakl and natives lgt., (VNPC). Paratypes: (1 ♀): same data as holotype, (VNPC); (1 ♂): LAOS, Houaphanh / province, Bam Saleui / 15-17.vii.2013 / X. Gouverneur leg., (ERM); (1 ♀): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / Ban Saleuy→Phou Pane Mt., / 1340-1870 m, 2.-22.vi.2011, / Vit. Kubáň & Lao coll. leg. // Primary mountain forest, / at light+ individual collecting. / **Laos 2011** Expedition / National Museum Prague, / Czech Republic, (NMPC); (2 ♀♀): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / PHOU PANE Mt., / 1870 m, 14.-24.iv.2012, / Vit. Kubáň leg. // Primary mountain forest, / flight intercept trap / **Laos 2012** Expedition / National Museum Prague, / Czech Republic., (NMPC, VNPC); (1 ♀): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG). The types are provided with a printed red label: '*Borboresthes / hyla* sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.



Figs. 6-9. *Borboresthes hyla* sp. nov. (male holotype): 6-habitus; 7-head and pronotum; 8-apical piece of aedeagus, dorsal view; 9-apical piece of aedeagus, lateral view.

**Description of holotype.** Habitus as in Fig. 6, body large, oval, egg shaped, convex, from ochre yellow to dark reddish brown, dorsal surface slightly shiny with pale setation, punctuation and fine microgranulation, BL 10.05 mm. Widest near half elytra length; BL/EW 2.58.

Head (Fig. 7) wider than long, through the eyes distinctly narrower than base of pronotum. Dorsal surface with punctures, microgranulation and pale setae. Posterior part dark reddish

brown with a few dark setae behind eyes, anterior part and clypeus pale reddish brown. Clypeus wide and transverse, lateral margins rounded, slightly shiny, with small and shallow punctures, long, pale setation and microgranulation. Mandibles ochre yellow, glabrous, shiny, with darker apex and few pale setae on sides. HW 1.54 mm; HW/PW 0.52; HL (visible part) 1.27 mm. Eyes larger, transverse, excised, space between eyes narrow, slightly wider than diameter of one eye; approximately as wide as length of antennomere 3; OI equal to 37.46.

Antenna. Long, narrow, rather matte (AL 6.13 mm, exceeding half body length - AL/BL 0.61). Antennomeres filiform, ochre yellow, surface with semierect, pale setation, microgranulation and small punctures. Antennomere 2 shortest, antennomere 4 longest, antennomeres 4-8 longer than antennomere 3. Ultimate antennomere widest before apex.

RLA(1-11): 0.61 : 0.27 : 1.00 : 1.22 : 1.11 : 1.15 : 1.11 : 1.08 : 0.97 : 0.91 : 1.08.

RL/WA(1-11): 2.16 : 1.44 : 5.36 : 6.54 : 5.52 : 6.42 : 6.73 : 5.54 : 5.20 : 5.55 : 6.26.

Maxillary palpus pale brown, surface with pale setae, microgranulation and small, shallow punctures. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.

Pronotum (Fig. 7) dark reddish brown, rather matte, convex, wide, transverse, slightly wider than semicircular, widest at base. Dorsal surface with long pale setation, fine microgranulation and dense, coarse punctuation, punctures relatively large, intervals between punctures almost narrower than diameter of punctures. PL 1.74 mm; PW 2.94 mm; PI equal to 59.42. Border lines very narrow, margins conspicuous from dorsal view. Lateral margins straight and parallel in basal part, arcuate in apical half, base finely bisinuate. Posterior angles almost rectangular.

Elytra. Ochre yellow, near narrowly brown suture pale reddish brown, oval, convex, slightly shiny. Dorsal surface with semierect, pale setation. EL 7.04 mm; EW 3.90 mm; EL/EW 1.81. Elytral striae with rows of large and coarse punctures (approximately as large as those in pronotum), intervals between punctures in rows narrower than diameter of punctures. Elytral intervals slightly convex, with microgranulation and dense, very small and shallow punctures.

Scutellum. Reddish brown, semi elliptical, slightly shiny, with a few shallow punctures, microgranulation and a few pale setae.

Elytral epipleura well-developed, in basal part bicolor, ochre yellow and dark reddish brown with one row of large punctures near metaventricle, widest in base, with pale setae distinctly narrowing to ventrite 1, then ochre yellow, parallel with dense, pale setation in apical part.

Legs. Long, ochre yellow, apex of femora narrowly darker, dorsal surface with fine microgranulation, pale setation and small, shallow punctures. Tibiae with short strong setae in outer side. Pro- and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLt: 1.00 : 0.56 : 0.86 : 0.86 : 1.33 (protarsus); 1.00 : 0.24 : 0.23 : 0.43 (metatarsus).

Both protarsal claws with 14 visible teeth.

Ventral side of body dark reddish brown, shiny, with pale setae and punctures. Abdomen reddish brown or dark reddish brown, shiny, with pale setae, small and shallow punctures and very fine microgranulation. Setation in middle of ventrites 1-3 denser than in sides or in ultimate and penultimate ventrites.

Aedeagus (Figs. 8, 9) pale brown, slightly shiny. Basal piece slightly narrowing in dorsal view and very finely rounded laterally. Apical piece unusually shaped. Ratio of length of apical piece to length of basal piece in dorsal view 1 : 5.70.

**Female** without distinct differences, protarsal claws have 10 visible teeth.

**Variability.** The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Specimens ( $n=7$ ). BL 9.70 mm (8.69-10.31 mm); HL 1.19 mm (1.05-1.27 mm); HW 1.43 mm (1.26-1.58 mm); OI 39.58 (37.46-42.11); PL 1.69 mm (1.42-1.85 mm); PW 2.96 mm (2.63-3.11 mm); PI 57.02 (53.58-59.49); EL 6.83 mm (6.09-7.41 mm); EW 3.81 mm (3.43-4.13 mm).

**Differential diagnosis.** The most similar species is *Borboresthes romai* Novák, 2015 from Vietnam (Novák 2015: 84-86; 85: figs.: 17- habitus; 18- head and pronotum; 19 and 20- aedeagus).

*Borboresthes hyla* sp. nov. distinctly differs from the similar species *B. romai* mainly by large body (BL 8.7-10.3 mm) and by shape of aedeagus (Figs. 8 and 9); while *B. romai* has smaller body (BL 7.2-8.4 mm) and aedeagus is as in figs. 19 and 20 (Novák 2015: 85).

**Etymology.** The name of this species, a noun in apposition, is the Latin generic name of the European tree frog *Hyla arborea* (Linnaeus, 1758).

**Distribution.** Laos (Houaphanh province).

### *Borboresthes lacerta* sp. nov.

(Figs. 10-13)

**Type locality.** Northeastern Laos, Houaphanh province, Ban Saluei, Phou Pane mountain, 20°15'N, 104°02'E, 1500-2000 m.

**Type material.** Holotype (♂): LAOS-NE: HUA PHAN / prov. BAN SALUEI; / Phu Pan Mt.; 1500-2000 m / 20°15'N 104°02'E / D. Hauck leg. - (26.IV.-11.V. / 2001 hb at the bottom of locality label), (VNPC). Paratype: (1 ♂): LAOS - NE; HUA HAN prov. / PHU LOEI N. P.; BAN SAKOK; / 20°10'N 103°12'E; J. Bezděk leg.; 23.-26.v.2001, (VNPC). The types are provided with a printed red label: 'Borboresthes / lacerta sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.

**Description of holotype.** Habitus as in Fig. 10, body small, oval, convex, from yellow to brown, dorsal surface shiny with pale setation, punctuation and very fine microgranulation, BL 6.65 mm. Widest near half elytra length; BL/EW 2.78.

Head (Fig. 11) approximately as wide as long, through the eyes distinctly narrower than base of pronotum. Dorsal surface pale reddish brown, with punctures, fine microgranulation and sparse, pale setae. Posterior part between eyes slightly darker than behind eyes, apex of anterior part and clypeus. Clypeus wide and transverse, lateral margins rounded, slightly shiny, with small and shallow punctures, pale setae and microgranulation, finely excised in the middle of apex. Mandibles pale reddish brown with darker apex, glabrous, shiny, with few pale setae in sides. HW 1.08 mm; HW/PW 0.63; HL (visible part) 1.04 mm. Eyes larger, transverse, excised, space between eyes wide, distinctly wider than diameter of one eye; approximately as wide as length of antennomere 4; OI equal to 48.01.

Antenna. Narrow, slightly shiny, antennomeres yellow, filiform. Surface with recumbent pale setation. Antennomere 2 shortest, antennomeres 4-6 longer than antennomere 3.

RLA(1-6): 0.63 : 0.37 : 1.00 : 1.33 : 1.16 : 1.22.

RL/WA(1-6): 1.82 : 1.46 : 3.96 : 5.25 : 4.58 : 4.64.

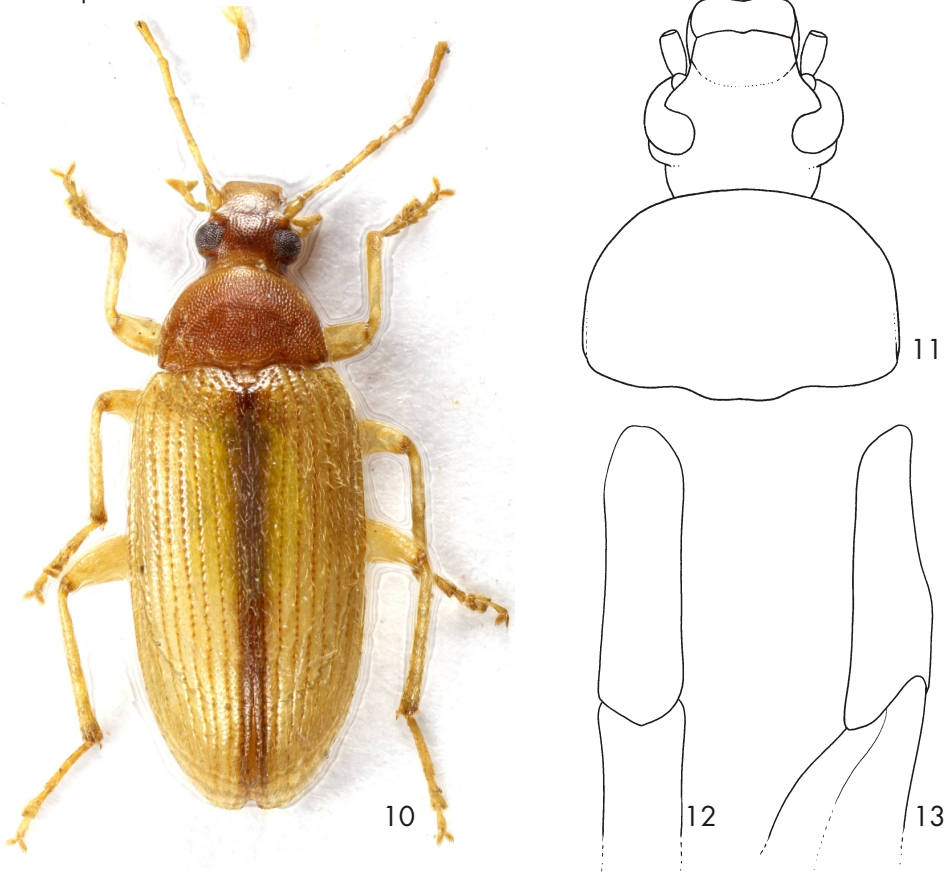
Maxillary palpus yellow, slightly shiny, with long, pale setation, microgranulation and small, shallow punctures. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.



Pronotum (Fig. 11) pale reddish brown, shiny, convex, slightly wider than semicircular, widest at base. Dorsal surface with a few pale setae (setation denser near lateral margins) and dense, large and coarse punctures, intervals between punctures very narrow. PL 1.11 mm; PW 1.72 mm; PI equal to 64.57. Border lines very narrow, margins conspicuous in dorsal view. Lateral margins straight and parallel in basal part, arcuate in apical half, base bisinuate, anterior margin arcuate. Posterior angles indistinct, rounded.

Elytra. Yellow with brown suture, elongate oval, convex, shiny. Dorsal surface with semierect, pale setation. EL 4.50 mm; EW 2.79 mm; EL/EW 1.88. Elytral striae with rows of large and coarse punctures (approximately as large as those in pronotum), intervals between punctures in rows narrower than or as wide as diameter of punctures. Elytral intervals slightly convex, with small and shallow punctures, microgranulation indistinct.

Scutellum. Pale reddish brown, pentagonal, shiny, with microgranulation, few pale setae and shallow punctures.



Figs. 10-13. *Borboresthes lacerta* sp. nov. (male holotype): 10- habitus; 11- head and pronotum; 12- apical piece of aedeagus, dorsal view; 13- apical piece of aedeagus, lateral view.

Elytral epipleura well-developed, yellow, shiny, with a few pale setae and punctures as large as those in elytral striae in basal part, widest in base, distinctly narrowing to ventrite 1, then relatively

wide and parallel in apical part.

Legs. Long, narrow, yellow, dorsal surface with pale setation, microgranulation not clearly distinct. Pro-tibiae with short, strong setae on outer side. Pro- and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.55 : 0.63 : 0.79 : 1.28 (protarsus); 1.00 : 0.37 : 0.35 : 0.53 : 1.04 (mesotarsus); 1.00 : 0.28 : 0.25 : 0.49 (metatarsus).

Both protarsal claws with 14 visible teeth.

Ventral side of body pale reddish brown, prothorax slightly darker, surface with pale setae and punctures (distinctly larger in meso- and metaventrite than in prothorax). Abdomen yellow or ochre yellow, shiny, with few pale setae, very small and shallow punctures and very fine microgranulation.

Aedeagus (Figs. 12, 13) yellow, shiny. Basal piece strongly rounded laterally. Apical piece slightly darker, narrow, beak shaped in dorsal and lateral views. Ratio of length of apical piece to length of basal piece in dorsal view 1 : 2.21.

**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= 2). BL 6.59 mm (6.52-6.65 mm); HL 1.03 mm (1.02-1.04 mm); HW 1.07 mm (1.06-1.08 mm); OI 48.81 (48.01-49.60); PL 1.06 mm (1.00-1.11 mm); PW 1.73 mm (1.72-1.74 mm); PI 60.92 (57.47-64.37); EL 4.50 mm; EW 2.42 mm (2.39-2.44 mm).

**Differential diagnosis.** The most similar species is *Borboresthes cinctipennis* (Pic, 1909) from China (Yunnan province) (see Novák 2012: 234; fig.: 3-habitus).

*Borboresthes lacerta* sp. nov. distinctly differs from the similar species *B. cinctipennis* mainly by elytral suture narrowly darker, by sides of elytra yellow; while *B. cinctipennis* has dark spot near elytral suture wide (near base reaching 4th elytral interspace), sides of elytra are distinctly narrowly dark.

**Etymology.** The name of this species, a noun in apposition, is the Latin generic name of the sand lizard *Lacerta agilis* Linnaeus, 1758.

**Distribution.** Laos (Houaphanh province).

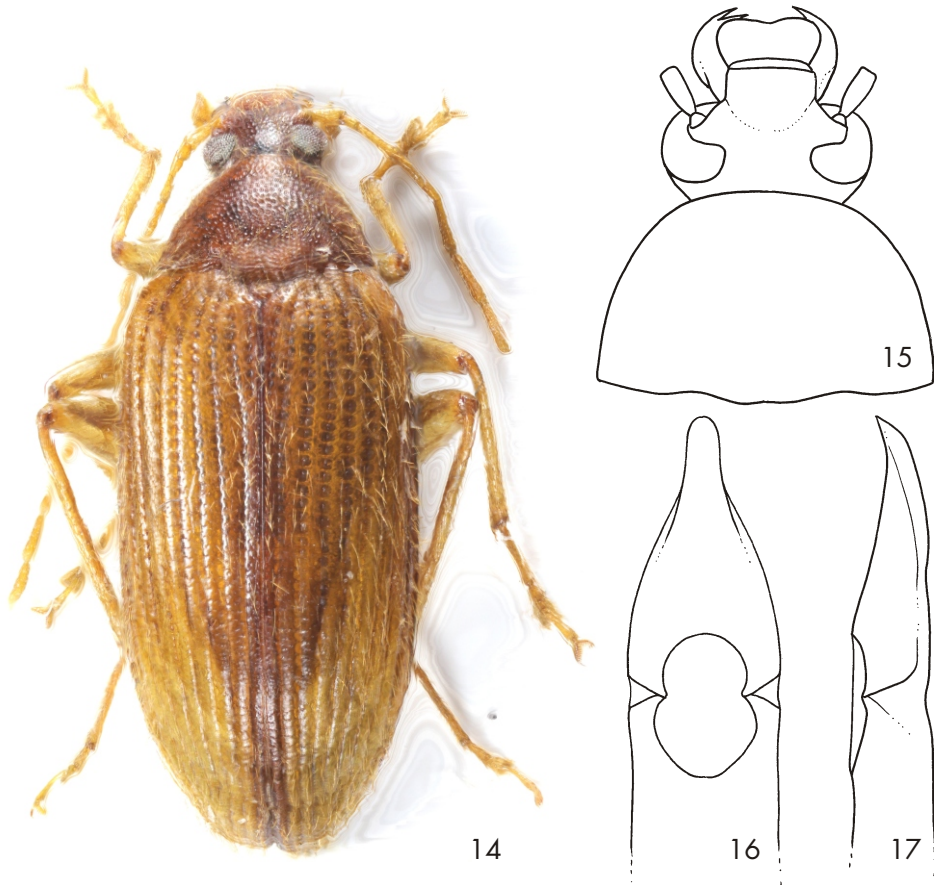
### ***Borboresthes lissotriton* sp. nov.**

(Figs. 14-17)

**Type locality.** Northeastern Laos, Houaphanh province, Ban Saleui, Phou Pane mountain, 20°12'N, 104°01'E, 1300-1900 m.

**Type material.** Holotype (♂): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG). Paratypes: (18 ♂♂, 14 ♀♀, 11 spec.): same data as holotype, (NMEG, VNPC); (1 ♂): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / Ban Saleuy→Phou Pane Mt., / 1340-1870 m, 2.-22.vi.2011, / Vit. Kubáň & Lao coll. leg. // Primary mountain forest, / at light+ individual collecting. / Laos 2011 Expedition / National Museum Prague, / Czech Republic, (NMPC); (2 ♂♂, 1 ♀): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'- / 104°01'E, 1340-1870 m, / Phou Pane Mt., 1.-24.vi.2012, / Vit. Kubáň & Lao coll. leg. // Primary mountain forest, / individual collecting. / Laos 2012 Expedition / National Museum Prague, / Czech Republic, (NMPC, VNPC); (1 ♂): wl: LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / Ban Saleuy→Phou Pane Mt., / 1340-1870 m, 15.iv.-15.v.2008, / Vit. Kubáň & Lao coll. leg., (NMPC); (1 ♂): LAOS-NE, Houa Phan prov. / 20°12-13.5'N

103°59.5'-104°01'E, / PHOU PANE Mt., / 1870 m, 14.-24.iv.2012, / Vít. Kubáň leg. // Primary mountain forest, / flight intercept trap / **Laos 2012** Expedition / National Museum Prague, / Czech Republic., (NMPC); (1 ♀): LAOS – NE; HUA PHAN prov.; / BAN SALUEI; Phu Phan Mt.; / 20°15'N 104°02'E; 1500-2000m; / D. Hauck leg.; 26.iv.-11.v.2001, (DHBC); (2 ♀♀): LAOS-NE, Houa Phan prov. / 20°13'09-19''N 103°59.54' - / 104°00'03''E, 1480-1550 m, / PHOU PANE Mt., 1.-16.vi. / 2009, Zdeněk Kraus leg. // NHMB Basel, NMPC Prague, / **Laos 2009** Expedition / M. Brancucci, M. Geiser, / Z. Kraus, D. Hauck, V. Kubáň, Czech Republic, (NHMB, NMPC). The types are provided with a printed red label: '*Borboresthes lissotriton* sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.



Figs. 14-17. *Borboresthes lissotriton* sp. nov. (male holotype): 14- habitus; 15- head and pronotum; 16- apical piece of aedeagus, dorsal view; 17- apical piece of aedeagus, lateral view.

**Description of holotype.** Habitus as in Fig. 14, body elongate oval, convex, from ochre yellow to dark reddish brown, dorsal surface slightly shiny with pale setation, punctuation and fine microgranulation, BL 6.73 mm. Widest near half elytra length; BL/EW 2.63.

Head (Fig. 15) wider than long, through the eyes distinctly narrower than base of pronotum. Dorsal surface with coarse punctures, long, pale setae and fine microgranulation. Posterior part dark reddish brown, anterior half pale reddish brown. Clypeus ochre yellow, wide and transverse, lateral margins rounded, slightly shiny, with small and shallow punctures, long, pale setation and microgranulation, excised in the middle of apex. Mandibles pale brown with darker

apex, glabrous, shiny, with a few pale setae in sides. HW 1.07 mm; HW/PW 0.58; HL (visible part) 0.87 mm. Eyes large, transverse, excised, space between eyes relatively wide, distinctly wider than diameter of one eye; wider than length of antennomere 3, narrower than length of antennomere 4; OI equal to 43.15.

Antenna. Long, narrow, rather matte (AL 4.63 mm, exceeding half body length - AL/BL 0.63). Antennomeres ochre yellow, filiform, surface with pale setation, microgranulation and sparse, small punctures. Antennomere 2 shortest, antennomeres 4 longest, antennomeres 4-11 longer than antennomere 3. Ultimate antennomere widest near middle.

RLA(1-11): 0.76 : 0.41 : 1.00 : 1.46 : 1.16 : 1.28 : 1.28 : 1.29 : 1.28 : 1.18 : 1.19.

RL/WA(1-11): 2.20 : 1.74 : 5.04 : 6.04 : 4.62 : 5.92 : 5.38 : 4.87 : 5.29 : 4.57 : 4.60.

Maxillary palpus ochre yellow, rather matte, with pale setae and microgranulation. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular, slightly shoe shaped.

Pronotum (Fig. 15) reddish brown, shiny, slightly convex, almost semicircular, widest at base. Dorsal surface with long, pale setation (denser near lateral margins), fine microgranulation and dense, coarse and large punctation, intervals between punctures very narrow. PL 1.13 mm; PW 1.84 mm; PI equal to 61.51. Border lines very narrow, margins conspicuous from dorsal view. Lateral and anterior margins arcuate, base finely bisinuate. Posterior angles finely obtuse.

Elytra. Ochre yellow with brown suture and unclear spot near suture in two thirds from base to apex, elongate oval, convex, shiny. Dorsal surface with long, pale setation. EL 4.73 mm; EW 2.56 mm; EL/EW 1.85. Elytral striae with rows of large and coarse punctures (approximately as large as those in pronotum), intervals between punctures in rows almost narrower than diameter of punctures. Elytral intervals slightly convex, with microgranulation and sparse, small and shallow punctures.

Scutellum. Pale reddish brown with sides darker, pentagonal, slightly shiny, with microgranulation and a few pale setae.

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

Legs. Long, narrow, ochre yellow, dorsal surface with fine microgranulation and pale setation. Pro- and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.41 : 0.57 : 0.61 : 1.27 (protarsus); 1.00 : 0.35 : 0.35 : 0.43 : 0.85 (mesotarsus); 1.00 : 0.25 : 0.23 : 0.44 (metatarsus).

Protarsal claws with 10 or 11 visible teeth.

Ventral side of body reddish brown with pale setae and punctures. Punctures of meso- and metaventrite larger than those in prothorax. Abdomen pale brown, shiny, with sparse, pale setae, small and shallow punctures and fine microgranulation. Ultimate ventrite paler, ochre yellow.

Aedeagus (Figs. 16, 17) ochre yellow or pale brown, rather matte. Basal piece slightly narrowing in dorsal view. Apical piece slightly darker, roundly triangular dorsally, beak shaped from dorsal and lateral view. Ratio of length of apical piece to length of basal piece in dorsal view 1: 4.06.

**Female** without distinct differences, protarsal claws have 7 visible teeth.

**Variability.** The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Specimens (n= 53). BL 6.99 mm (6.32-7.60 mm); HL 0.90 mm (0.86-0.99 mm); HW 1.10 mm (1.06-1.22 mm); OI 45.61 (43.15-47.70); PL 1.16 mm

(1.10-1.28 mm); PW 1.90 mm (1.81-2.09 mm); PI 61.17 (59.80-63.19); EL 4.94 mm (4.34-5.38 mm); EW 2.62 mm (2.48-2.84 mm).

**Differential diagnosis.** The most similar species is *Borboresthes hyla* sp. nov. and *Borboresthes romai* Novák, 2015 from Vietnam (Novák 2015: 84-86; 85: figs.: 17- habitus; 18- head and pronotum; 19 and 20- aedeagus).

*Borboresthes lissotriton* sp. nov. distinctly differs from the similar species *B. hyla* mainly by smaller body (6.3-7.6 mm) and by shape of aedeagus (Figs. 16 and 17); while *B. hyla* has larger body (BL 8.7-10.3 mm) and shape of aedeagus is as in Figs. 8 and 9.

*B. lissotriton* is clearly different from the further similar species *B. romai* mainly by elytron ochre yellow and by shape of aedeagus (Figs. 16 and 17); while *B. romai* has elytron pale brown and aedeagus is as in figs. 19 and 20 (Novák 2015: 85).

**Etymology.** The name of this species, a noun in apposition, is the Latin generic name of the northern smooth newt or common newt *Lissotriton vulgaris* (Linnaeus, 1758).

**Distribution.** Laos (Houaphanh province).

### ***Borboresthes maguanensis* Novák, 2012**

(Fig. 18)

*Borboresthes maguanensis* Novák, 2012: 249.



Figs. 18. *Borboresthes maguanensis* Novák, 2012 (male): 18- habitus.

**Type locality.** China, Yunnan province, Maguan, 23°04'N; 104°25'E, 1500-1600 m.

**Type material.** Paratype (♂): YUNNAN 1500-1600m / 23.04N 104.25E / MAGUAN 25-26.6.1994 / Vít Kubáň leg.

**Material examined.** (4 ♂♂, 2 ♀♀): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / Ban Saleuy Phou Pane Mt., / 1340-1870 m, 2.-22.vi.2011, / Vít. Kubáň & Lao coll. leg. // Primary mountain forest, / at light+ individual collecting. / **Laos 2011** Expedition / National Museum Prague, / Czech Republic, (NMPC, VNPC).

**Remarks.** *Borboresthes maguanensis* Novák, 2012 was described by Novák (2012) from China (Yunnan province). Description of male holotype in Novák (2012: 249-250; figs.: 23- habitus of male holotype; 24- head and pronotum; 25 and 26- aedeagus dorsal and lateral views).

**Distribution.** China (Yunnan province), Vietnam, new for Laos (Houaphanh province).

### *Borboresthes natrix* sp. nov.

(Figs. 19-22)

**Type locality.** Northeastern Laos, Houaphanh province, Ban Saleui, Phou Pane mountain, 20°12'N, 104°01'E, 1300-1900 m.

**Type material.** Holotype (♂): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG). Paratypes: (7 ♂♂, 5 ♀♀, 6 spec.): same data as holotype, (NMEG); (2 ♀♀): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / Ban Saleuy→Phou Pane Mt., / 1340-1870 m, 2.-22.vi.2011, / Vít. Kubáň & Lao coll. leg. // Primary mountain forest, / at light+ individual collecting. / **Laos 2011** Expedition / National Museum Prague, / Czech Republic, (NMPC); (1 ♂, 3 ♀♀): wl: LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / Ban Saleuy→Phou Pane Mt., / 1340-1870 m, 15.iv.-15.v.2008, / Vít. Kubáň & Lao coll. leg., (NMPC, VNPC); (1 ♂): NE LAOS: Hua Phan prov. / Ban Saleui env. / MT. PHU PANE / 1200-1600m, 6.-20.v.2014 / P. Viktora et local coll. lgt., (VNPC); (1 ♀): LAOS, Houaphanh / province, Ban Saleui / 15-17. vii. 2013 / X. Gouverneur leg. (ERM); (1 ♀): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'- / 104°01'E, 1340-1870 m, / Phou Pane Mt., 1.-24.vi.2012, / Vít. Kubáň & Lao coll. leg. // Primary mountain forest, / individual collecting. / Laos 2012 Expedition / National Museum Prague, / Czech Republic, (NMPC, VNPC); (1 ♀): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / PHOU PANE Mt., / 1870 m, 14.-24.iv.2012, / Vít. Kubáň leg. // Primary mountain forest, / flight intercept trap / **Laos 2012** Expedition / National Museum Prague, / Czech Republic, (NMPC). The types are provided with a printed red label: 'Borboresthes / natrix sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.

**Description of holotype.** Habitus as in Fig. 19, body small, elongate, slightly oval, convex, from ochre yellow to reddish brown, dorsal surface rather matte with pale setation, punctuation and fine microgranulation, BL 6.72 mm. Widest near half elytra length; BL/EW 2.67.

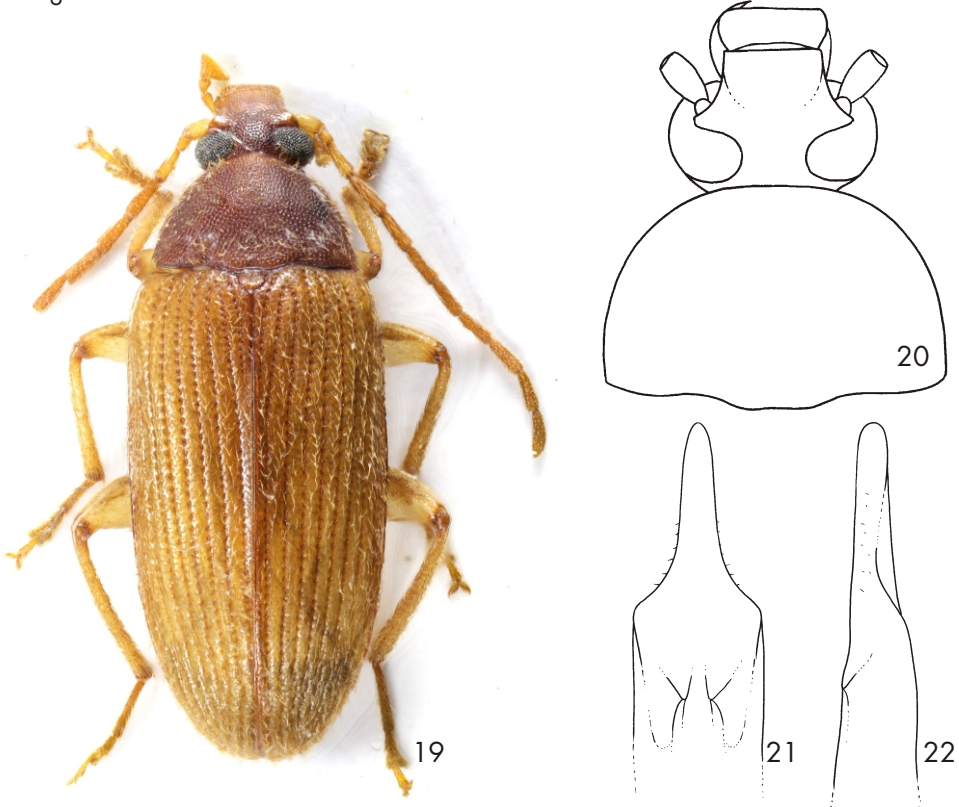
Head (Fig. 20) wider than long, through the eyes distinctly narrower than base of pronotum. Dorsal surface with dense punctuation, sparse, pale setae and microgranulation. Posterior part reddish brown, anterior half and clypeus pale reddish brown. Clypeus wide and transverse, lateral margins rounded, with small and shallow punctures, long, pale setation and microgranulation. Mandibles pale reddish brown with apex and sides darker, glabrous, shiny, with few pale setae on sides. HW 1.18 mm; HW/PW 0.59; HL (visible part) 1.02 mm. Eyes large, transverse, excised, space between eyes narrow, distinctly narrower than diameter of one eye; approximately as wide as length of antennomere 3; OI equal to 31.25.

Antenna. Long, rather matte (AL 4.20 mm, exceeding half body length - AL/BL 0.63). Antennomeres ochre yellow, surface with long and dense, pale setation, microgranulation and small punctures. Antennomere 2 shortest, antennomere 4 longest, antennomeres 4-11 each longer than antennomere 3. Antennomeres 3-10 slightly widened apically, only 3-4 times longer than wide. Ultimate antennomere widest before apex.

RLA(1-11): 0.84 : 0.42 : 1.00 : 1.38 : 1.17 : 1.19 : 1.28 : 1.06 : 1.12 : 1.20.

RL/WA(1-11): 1.83 : 1.29 : 3.00 : 3.63 : 3.32 : 3.38 : 3.62 : 3.36 : 3.50 : 3.47 : 3.07.

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



Figs. 19-22. *Borboresthes natrix* sp. nov. (male holotype): 19-habitus; 20-head and pronotum; 21-apical piece of aedeagus, dorsal view; 22-apical piece of aedeagus, lateral view.

Pronotum (Fig. 20) reddish brown, rather matte, convex, almost semicircular, widest at base. Dorsal surface with pale setation, denser near lateral margins, fine microgranulation and dense, coarse punctation, punctures relatively large, intervals between punctures narrower than diameter of punctures. PL 1.24 mm; PW 1.99 mm; PI equal to 62.08. Border lines very narrow, margins conspicuous in dorsal view, only in the middle of anterior margin not clearly conspicuous. Lateral and anterior margins arcuate, base finely bisinuate. Posterior angles obtuse.

Elytra. Ochre yellow, elongate, slightly oval, convex, rather matte. Dorsal surface with semierect, pale setation. EL 4.46 mm; EW 2.52 mm; EL/EW 1.77. Elytral striae with rows of large and coarse punctures (approximately as large as those in pronotum), intervals between punctures in rows narrower than or as wide as diameter of punctures. Elytral intervals slightly convex, with microgranulation and sparse, small and shallow punctures.

Scutellum. Ochre yellow with narrowly darker sides, semi elliptical, rather matte, with a few shallow punctures, microgranulation and a few pale setae.

Elytral epipleura well-developed, pale reddish brown, widest in base, distinctly narrowing to ventrite 1, with pale setae and larger punctures in basal part than those in relatively wide and parallel apical half.

Legs. Long, narrow, ochre yellow, apex of femora narrowly darker, dorsal surface with pale setation. Pro- and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLt: 1.00 : 0.56 : 0.81 : 0.85 : 1.64 (protarsus); 1.00 : 0.46 : 0.29 : 0.46 : 0.82 (mesotarsus); 1.00 : 0.28 : 0.31 : 0.52 (metatarsus).

Both protarsal claws with 11 visible teeth.

Ventral side of body reddish brown, shiny, with pale setae and punctures. Abdomen pale reddish brown, ventrites 1-3 with blackish brown spots, shiny, with sparse, pale setation, dense small and shallow punctures and fine microgranulation.

Aedeagus (Figs. 21, 22) from ochre yellow to pale brown, shiny. Basal piece parallel in dorsal view. Apical piece narrow in apical part, beak shaped in dorsal and lateral views. Ratio of length of apical piece to length of basal piece in dorsal view 1 : 5.03.

**Female** without distinct differences, protarsal claws have 7 or 8 visible teeth.

**Variability.** The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Specimens (n= 29). BL 6.97 mm (6.35-7.52 mm); HL 1.01 mm (0.92-1.09 mm); HW 1.17 mm (1.07-1.27 mm); OI 33.19 (27.43-37.03); PL 1.17 mm (1.08-1.25 mm); PW 1.95 mm (1.79-2.04 mm); PI 60.25 (58.18-62.08); EL 4.82 mm (4.35-5.28 mm); EW 2.53 mm (2.33-2.67 mm).

**Differential diagnosis.** The most similar species with space between eyes as wide as or narrower than diameter of one eye are *Borboresthes jendeki* Novák, 2012 from Laos (Bolikhamsai province) and Vietnam (Novák 2012: 238-241; 239: figs.: 7- habitus; 8- head and pronotum; 9 and 10- aedeagus), *Borboresthes tamdaoensis* Novák, 2012 from Vietnam (Novák 2012: 260-262; 260: figs.: 40- habitus; 41- head and pronotum; 42 and 43- aedeagus) and *Borboresthes bufo* sp. nov. (aedeagus as in Figs. 3 and 4).

*Borboresthes natrix* sp. nov. distinctly differs from the similar species *B. bufo* mainly by dorsal surface bicolor (head and pronotum are distinctly darker than elytra) and by shape of aedeagus (Figs. 21 and 22); while *B. bufo* has dorsal surface unicolored brown and aedeagus is as in Figs. 3 and 4.

*B. natrix* is clearly different from the further similar species *B. jendeki* mainly by pronotum reddish brown, by elytra more parallel in middle, by space between eyes wider (OI approximately 33); while *B. jendeki* has pronotum dark brown, elytra in middle are distinctly rounded, space between eyes is narrow (OI approximately 23).

*B. natrix* distinctly differs from similar species *B. tamdaoensis* mainly by elytra more parallel in middle and by shape of aedeagus (Figs. 21 and 22); while *B. tamdaoensis* has elytra in middle distinctly rounded and aedeagus is as in figs. 42 and 43 (Novák 2012: 260).

**Etymology.** The name of this species, a noun in apposition, is the Latin generic name of the grass snake *Natrix natrix* (Linnaeus, 1758).

**Distribution.** Laos (Houaphanh province).



***Borboresthes phongsalyensis* Novák, 2012**

(Figs. 23)

*Borboresthes phongsalyensis* Novák, 2012: 254.**Type locality.** Northern Laos, Phongsaly province, 21°41-2' N, 102°06-8' E.**Type material.** Paratype (♂): LAO-N, Phongsaly prov. / 21°41-2' N 102°06-8' E, / PHONGSALY env., / 6.-17.v.2004, ~ 1500m, / Vít Kubáň leg., (VNPC).**Material examined.** (3 ♂♂, 1 ♀): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG, VNPC); (1 ♂): NE Laos, Huaphanne, / Mt. Phu Pane, 1.- / 20.V.2014 / St. Ják and natives lgt., (VNPC); (1 ♀): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / PHOU PANE Mt., / 1870 m, 14.-24.iv.2012, / Vít. Kubáň leg. // Primary mountain forest, / flight intercept trap / Laos 2012 Expedition / National Museum Prague, / Czech Republic., (NMPC); (1 ♂): LAO-NE, Hua Phanprov., / ~ 20°12'N 104°01'E, / PHU PHAN Mt., 1500- / 1900 m, 17.v.-3.vi.2007, / M. Brancucci leg., // NHMB Basel, / expedition to / Laos, 2007, (NHMB); (1 ♀): LAO-NE, Hua Phan prov., / 20°12-13.5'N 103°59.5-104°01'E, / Ban Saleui → Phou Pane Mt. / 1340-1870 m, 15.iv.-15.v. / 2008, lao collectors leg., (VNPC).Figs. 23. *Borboresthes phongsalyensis* Novák, 2012 (male): 23-habitus.**Remarks.** *Borboresthes phongsalyensis* Novák, 2012 was described by Novák (2012) from northern Laos, Phongsaly province. Description of male holotype in Novák (2012: 254-255; 255: figs.: 30-habitus of male holotype; 31-head and pronotum; 32 and 33-aedeagus in dorsal and lateral views).**Distribution.** Laos (Houaphanh and Phongsaly provinces), Thailand (Chiang Mai province).

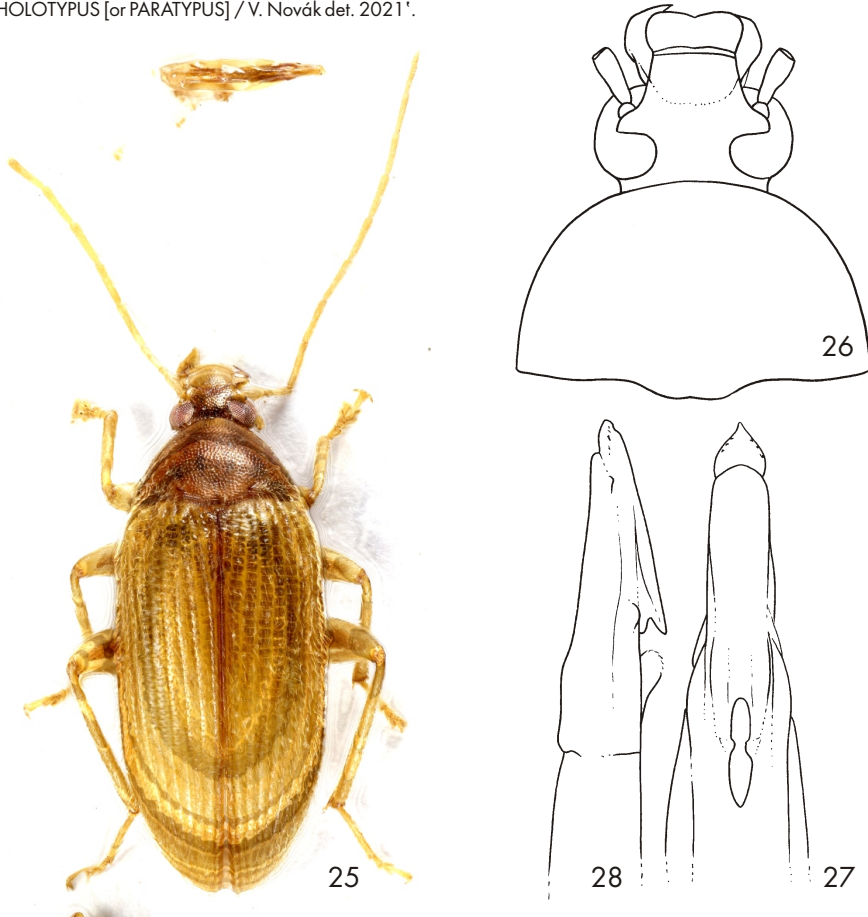
***Borboresthes phuphanensis* Novák, 2012**

(Fig. 24)

*Borboresthes phuphanensis* Novák, 2012: 256.**Type locality.** Northeastern Laos, Houaphanh province, Ban Saluei, Phou Pane mountain, 20°15'N, 104°02'E, 1500-2000 m.**Type material.** Paratype (♂): LAOS - NE; HUA PHAN prov.; / BAN SALUEI; Phu Phan Mt.; / 20°15'N 104°02'E; 1500-2000m; / D. Hauck leg.; 26.iv.-11.v.2001, (VNPC).**Material examined.** (2 ♂♂, 68 spec.): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG, VNPC).Fig. 24. *Borboresthes phuphanensis* Novák, 2012: 24-habitus of male paratype.**Remarks.** *Borboresthes phuphanensis* Novák, 2012 was described by Novák (2012) from northeastern Laos, Houaphanh province. Description of male holotype in Novák (2012: 256-257); habitus of male paratype (Fig. 24); head and pronotum and aedeagus dorsal and lateral views are in Novák (2005: 125: figs. 35-37).**Distribution.** Laos (Houaphanh province).

***Borboresthes podacris* sp. nov.**

(Figs. 25-28)

**Type locality.** Laos, Houaphanh province, Salemi.**Type material.** Holotype (♂): LAOS, SALEMI / HUA PHAN / 15.07.2013 / X. Gouverneur, (VNPC). Paratypes: (2 ♂♂, 1 ♀): same data as holotype, (ERMI, VNPC). The types are provided with a printed red label: '*Borboresthes* / *podacris* sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.

Figs. 25-28. *Borboresthes podacris* sp. nov. (male holotype): 25- habitus; 26- head and pronotum; 27- apical piece of aedeagus, dorsal view; 28- apical piece of aedeagus, lateral view.

**Description of holotype.** Habitus as in Fig. 25, body oval, convex, from yellow to pale reddish brown, dorsal surface shiny with pale setation, punctuation and fine microgranulation, BL 8.25 mm. Widest near half elytra length; BL/EW 2.73.

Head (Fig. 26) distinctly wider than long, through the eyes distinctly narrower than base of pronotum. Dorsal surface with small punctures, microgranulation and sparse, pale setae. Posterior part reddish brown, anterior half and clypeus ochre yellow. Clypeus wide and transverse, lateral margins rounded, shiny, with small and shallow punctures, long, pale setation

and microgranulation, apex finely excised in the middle of anterior margin. Mandibles ochre yellow with pale reddish brown apical part, glabrous, shiny, with few pale setae on sides. HW 1.27 mm; HW/PW 0.55; HL (visible part) 1.05 mm. Eyes larger, transverse, excised, space between eyes relatively narrow, distinctly narrower than diameter of one eye; approximately as wide as length of antennomere 3; OI equal to 38.00.

Antenna. Long, narrow, rather mate (AL 6.17 mm, reaching three quarters body length - AL/BL 0.75). Antennomeres filiform, yellow, surface with pale setation, microgranulation and small punctures. Antennomere 2 shortest, antennomere 4 longest, antennomeres 4-11 each longer than antennomere 3.

RLA(1-11): 0.64 : 0.24 : 1.00 : 1.56 : 1.32 : 1.39 : 1.39 : 1.37 : 1.29 : 1.20 : 1.31.

RL/WA(1-11): 2.10 : 1.15 : 4.26 : 7.65 : 5.45 : 7.16 : 6.33 : 6.38 : 6.30 : 6.94 : 8.00.

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

Pronotum (Fig. 26) reddish brown, rather matte, convex, almost semicircular, widest at base. Dorsal surface with long, pale setation, dense punctation, punctures medium sized, intervals between punctures with fine microgranulation almost narrower than diameter of punctures. PL 1.43 mm; PW 2.33 mm; PI equal to 61.23. Border lines very narrow, margins conspicuous from dorsal view. Lateral margins arcuate, base finely bisinuate. Posterior angles almost rectangular.

Elytra. Yellow with narrowly darker suture, elongate oval, convex, shiny. Dorsal surface with dense and long, semierect, pale setation. EL 5.77 mm; EW 3.02 mm; EL/EW 1.91. Elytral striae with rows of large and coarse punctures (slightly larger than those in pronotum), intervals between punctures in rows narrower than diameter of punctures. Elytral intervals slightly convex, with microgranulation and sparse, small and shallow punctures.

Scutellum. Pale reddish brown, roundly triangular, slightly shiny, with microgranulation and a few pale setae.

Elytral epipleura well-developed, in basal part bicolor, ochre yellow and dark reddish brown with one row of large punctures near metaventricle, widest in base, with pale setae distinctly narrowing to ventrite 1, then ochre yellow, parallel with dense, pale setation in apical part.

Legs. Long, narrow, yellow, slightly shiny, dorsal surface with pale setation. Pro- and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.73 : 0.71 : 1.05 : 2.32 (protarsus); 1.00 : 0.29 : 0.31 : 0.43 : 0.71 (mesotarsus); 1.00 : 0.24 : 0.24 : 0.50 (metatarsus).

Both protarsal claws with 12 visible teeth.

Ventral side of body reddish brown, prothorax pale reddish brown, with sparse, pale setae and punctures. Abdomen yellow with sides darker, shiny, with sparse, pale setae, small and shallow punctures and very fine microgranulation.

Aedeagus (Figs. 27, 28) ochre yellow, shiny. Basal piece slightly narrowing in dorsal view and slightly rounded laterally. Apical piece unusually beak shaped in dorsal and lateral views. Ratio of length of apical piece to length of basal piece from dorsal view 1 : 5.03.

**Female** without distinct differences, protarsal claws have 10 visible teeth.

**Variability.** The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Specimens (n= 4). BL 9.53 mm (8.25-10.44 mm); HL 1.18 mm (1.05-1.25 mm); HW 1.42 mm (1.27-1.51 mm); OI 39.83 (38.00-41.90); PL 1.69 mm (1.43-1.85 mm); PW 2.76 mm (2.33-2.98 mm); PI 61.08 (59.59-62.08); EL 6.66 mm (5.77-7.35 mm); EW 3.58 mm (3.02-3.88 mm).

**Differential diagnosis.** The most similar species is *Borboresthes rana* sp. nov.

*Borboresthes podacris* sp. nov. distinctly differs from the similar species *B. rana* mainly by dorsal surface of pronotum and posterior part of head reddish brown and by shape of aedeagus (Figs. 27, 28); while *B. rana* has dorsal surface of pronotum and head pale and aedeagus is as in Figs. 31 and 32.

**Etymology.** The name of this species, a noun in apposition, is the Latin generic name of the common wall lizard *Podacris muralis* (Laurenti, 1768).

**Distribution.** Laos (Houaphanh province).

### ***Borboresthes rana* sp. nov.**

(Figs. 29-32)

**Type locality.** Northeastern Laos, Houaphanh province, Ban Saleui, Phou Pan Mt., 20°12'N, 104°01'E, 1300-1900 m.

**Type material.** Holotype (♂): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG). Paratypes: (1 ♂, 1 ♀): LAOS - NE; HUA PHAN prov.; / BAN SALUEI; Phu Phan Mt.; / 20°15'N 104°02'E; 1500-2000m; / D. Hauck leg.; 26.iv.-11.v.2001, (DHBC, VNPC); (1 ♀): LAOS, Huaphanne prov., / Mt. Phu Pane, 1200-1900m, / Ban Saluei v. env., 21.-30.IV.2017, / 20°12'N 103°59'E / A. and R. Hergovits leg. +Lao collector, (VNPC); (1 ♂, 1 ♀): LAOS, Houaphanh / province , Bam Saleui / 15-17.vii.2013 / X. Gouverneur leg., (ERM); (1 ♀): NE LAOS, Hua Phan prov. / Ban Saluei, Phu Phan Mt. / 20°13'N / 103°59'E; 6.-18.v. / 2004; 1300-2000 m; / F. & L. Kantner leg., (VNPC); (1 ♂): LAOS-NE, Houa Phan prov. / 20°12'-13.5'N 103°59.5' - / 104°01'E, 1340-1870 m, / Phou Pane Mt., 1.-24.vi.2012, / Vit. Kubán & Lao coll. leg. // Primary mountain forest, / individual collecting. / Laos 2012 Expedition / National Museum Prague, / Czech Republic, (NMPC). The types are provided with a printed red label: \*Borboresthes / rana sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.

**Description of holotype.** Habitus as in Fig. 29, body large, elongate oval, convex, from ochre yellow to pale reddish brown, dorsal surface shiny with pale setation, punctuation and fine microgranulation, BL 10.84 mm. Widest near half elytra length; BL/EW 2.85.

Head (Fig. 30) wider than long, through the eyes distinctly narrower than base of pronotum. Dorsal surface with pale setation and dense punctuation, punctures medium sized. Posterior part slightly shiny, anterior part rather matte with distinct microgranulation. Clypeus ochre yellow, wide and transverse, lateral margins rounded, shiny, with longer, pale setation and microgranulation. Mandibles ochre yellow with darker apex, glabrous, shiny, with a few pale setae in sides. HW 1.54 mm; HW/PW 0.51; HL (visible part) 1.39 mm. Eyes large, transverse, excised, space between eyes slightly wider than diameter of one eye; slightly narrower than length of antennomere 3; OI equal to 37.98.

Antenna. Long, narrow, ochre yellow (AL 6.46 mm, reaching almost two thirds body length - AL/BL 0.60). Antennomeres 1-3 slightly shiny, antennomeres 4-11 rather matte, surface with pale setation and small punctures. Antennomere 2 shortest, antennomere 4 longest, antennomeres 4-9 and 11 longer than antennomere 3. Ultimate antennomere widest near middle.

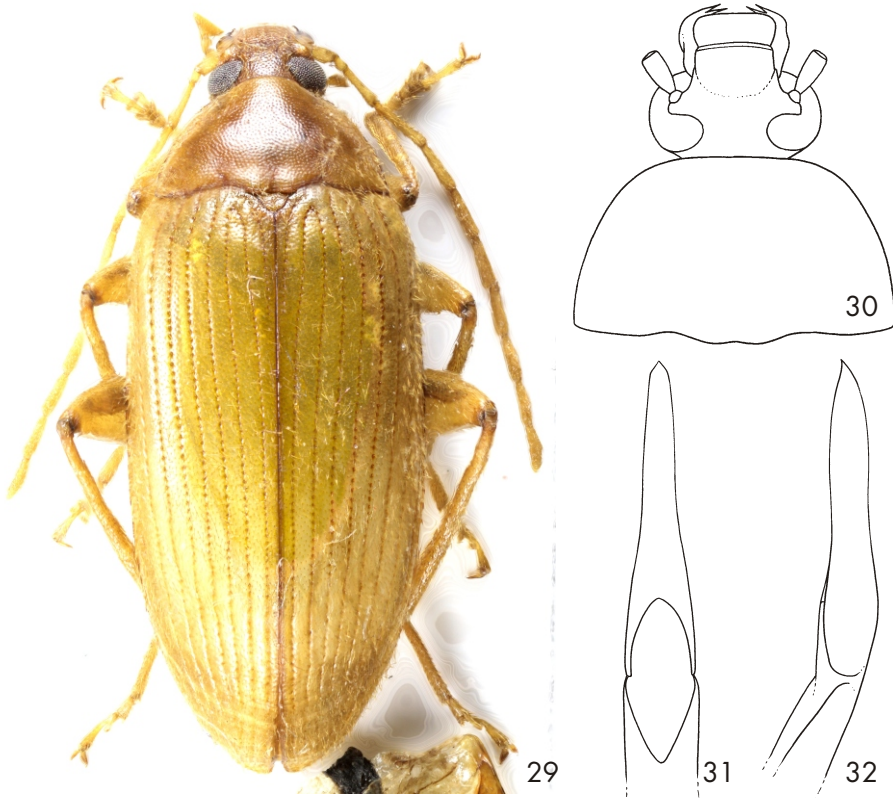
RLA(1-11): 0.54 : 0.26 : 1.00 : 1.35 : 1.10 : 1.08 : 1.12 : 1.04 : 1.02 : 0.96 : 1.03.

RL/WA(1-11): 1.77 : 1.25 : 4.60 : 6.74 : 4.20 : 4.28 : 4.03 : 3.87 : 3.66 : 3.55 : 3.81.

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

Pronotum (Fig. 30) pale reddish brown (distinctly paler than posterior part of head), shiny, convex, widest at base. Dorsal surface with pale setation (denser near lateral margins), very fine

microgranulation and dense, coarse punctuation, punctures medium sized. PL 1.79 mm; PW 3.04 mm; PI equal to 58.82. Border lines very narrow, margins conspicuous in dorsal view only in the middle of anterior margin not clearly distinct. Lateral margins arcuate, anterior margin almost straight, base finely bisinuate. Posterior angles obtuse.



Figs. 29-32. *Borboresthes rana* sp. nov. (male holotype): 29- habitus; 30- head and pronotum; 31- apical piece of aedeagus, dorsal view; 32- apical piece of aedeagus, lateral view.

Elytra. Ochre yellow, suture very narrowly and finely dark, oval, convex, finely matter than pronotum. Dorsal surface with pale setation. EL 7.66 mm; EW 3.81 mm; EL/EW 2.01. Elytral striae with rows of small and coarse punctures, intervals between punctures in rows wider than diameter of punctures. Elytral intervals flat, with microgranulation and relatively dense punctures smaller than those in rows.

Scutellum. Ochre yellow, roundly triangular, rather matte, with a few shallow punctures, microgranulation and a few pale setae.

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

Legs. Long, narrow, ochre yellow, femora narrowly darker at apex, dorsal surface with pale setation, fine microgranulation and small, shallow punctures. Protibiae with short and strong

setae on inner side. Pro- and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.41 : 0.42 : 0.62 : 1.70 (protarsus); 1.00 : 0.30 : 0.33 : 0.33 : 0.77 (mesotarsus); 1.00 : 0.31 : 0.28 : 0.49 (metatarsus).

Both protarsal claws with 16 visible teeth.

Ventral side of body pale reddish brown, shiny, with punctures larger in meso- and metaventrite than those in prothorax. Abdomen pale reddish brown, shiny, with sparse, pale setae near lateral margins of ventrites, small and shallow punctures and microgranulation.

Aedeagus (Figs. 31, 32) ochre yellow, slightly shiny. Basal piece narrowing in dorsal view and rounded laterally. Apical piece narrow, elongate triangular dorsally, beak shaped in dorsal and lateral views. Ratio of length of apical piece to length of basal piece from dorsal view 1 : 4.41.

**Female** without distinct differences, protarsal claws have 9 visible teeth.

**Variability.** The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Specimens (n= 8). BL 10.58 mm (9.31-11.45 mm); HL 1.34 mm (1.13-1.45 mm); HW 1.51 mm (1.38-1.61 mm); OI 42.34 (37.54-47.49); PL 1.80 mm (1.61-1.95 mm); PW 2.99 mm (2.69-3.17 mm); PI 60.02 (58.25-61.51); EL 7.44 mm (6.57-8.05 mm); EW 3.83 mm (3.5-4.12 mm).

**Differential diagnosis.** The similar species is *Borboresthes vaclavhaveli* Novák, 2015 from China, Laos and Thailand (Novák 2015: 89; figs. in page 90: 25- habitus; 26- head and pronotum; 27 and 28- aedeagus).

*Borboresthes rana* sp. nov. distinctly differs from the similar species *B. vaclavhaveli* mainly by suture very narrowly dark, by anterior margin of pronotum almost straight, by protarsal claws of male with 16 visible teeth and by shape of aedeagus (Figs. 31, 32); while *B. vaclavhaveli* has suture distinctly dark, anterior margin of pronotum is arcuate, protarsal claws of male have 12 visible teeth and aedeagus is as in Novák (2015: 90: figs. 27 and 28).

**Etymology.** The name of this species, a noun in apposition, is the Latin generic name of the common frog *Rana temporaria* Linnaeus, 1758.

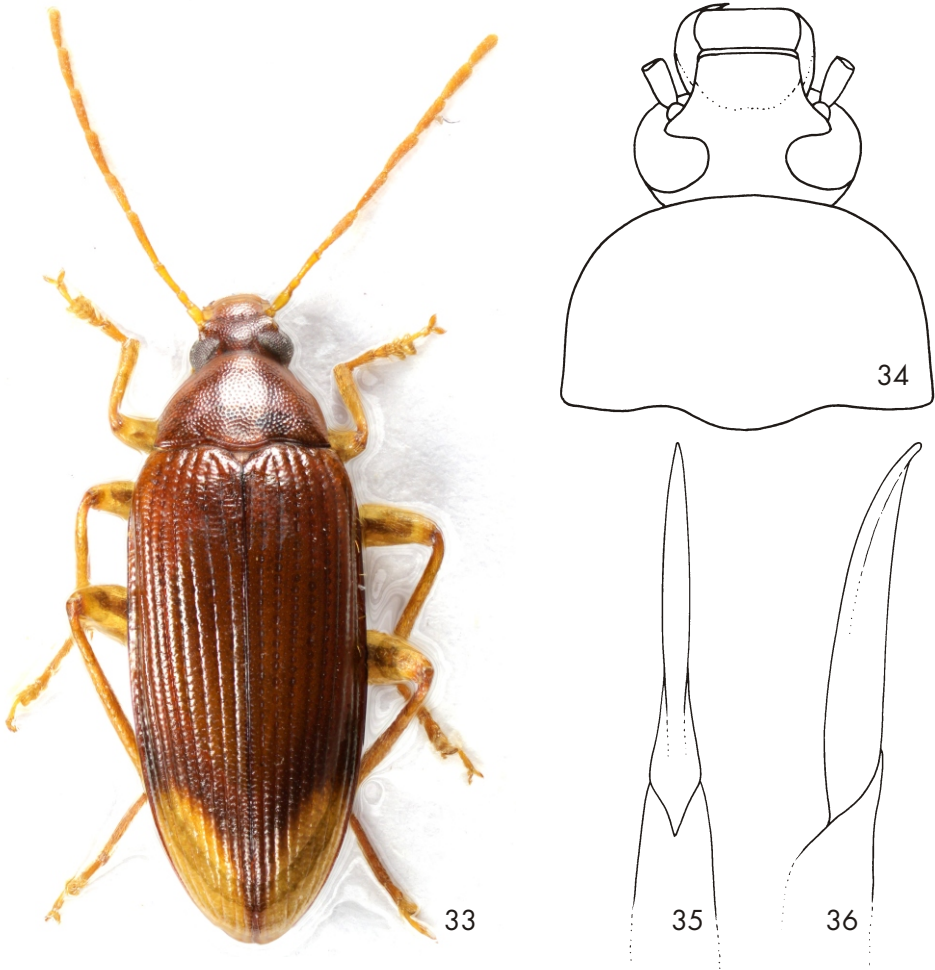
**Distribution.** Laos (Houaphanh province).

### ***Borboresthes salamandra* sp. nov.**

(Figs. 33-36)

**Type locality.** Northeastern Laos, Houaphanh province, Ban Saleui, Phou Pane Mountain, 20°12'N, 104°01'E, 1300-1900 m.

**Type material.** Holotype (♂): LAOS, NE, P: Hua Phan / Ban Saleui, Phou Pan / (Mt.), 1300-1900m, 03.- / 30.IV.2014, 20°12'N / 104°01'E, lg. Holzschuh, (NMEG). Paratypes: (1 ♂, 3 spec.): same data as holotype, (NMEG, VNPC); (1 ♂): NE LAOS, Huaphanne Pr. / Mt. PHU PANE, 1200-1900 / m, Ban Saluei env., 1-20.v. / 2014; 20°12'N 103°59'E / St. Jakl + Lao collectors leg., (VNPC); (1 ♂): LAOS, Huaphanne prov., / Mt. Phu Pane, 1200-1900m, / Ban Saluei v. env., 21.-30.IV.2017, / 20°12'N 103°59'E / A. and R. Hergovits leg. +Lao collector, (VNPC); (1 ♂): LAOS - NE; HUA PHAN prov.; / BAN SALUEI; Phu Phan Mt.; / 20°15'N 104°02'E; 1500-2000m; / D. Hauck leg.; 26.iv.-11.v.2001, (DHBC). The types are provided with a printed red label: 'Borboresthes / salamandra sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2021'.



Figs. 33-36. *Borboresthes salamandra* sp. nov. (male holotype): 33- habitus; 34- head and pronotum; 35- apical piece of aedeagus, dorsal view; 36- apical piece of aedeagus, lateral view.

**Description of holotype.** Habitus as in Fig. 33, body medium sized, elongate, slightly oval, slightly convex, from ochre yellow to dark brown, dorsal surface shiny with pale setation, punctuation and fine microgranulation, BL 8.24 mm. Widest near half elytra length; BL/EW 2.87.

Head (Fig. 34) wider than long, through the eyes distinctly narrower than base of pronotum. Dorsal surface shiny with pale setation, microgranulation and dense punctuation, punctures larger. Posterior part darker than apex of anterior part. Clypeus pale reddish brown, wide and transverse, lateral margins rounded, shiny, with long, pale setation, small, shallow punctures and microgranulation, distinctly excised in middle of apex. Mandibles pale reddish brown, glabrous, shiny, with a few pale setae in sides. HW 1.25 mm; HW/PW 0.60; HL (visible part) 1.10 mm. Eyes large, transverse, excised, space between eyes almost as wide as diameter of one eye; approximately as wide as length of antennomere 3; OI equal to 35.46.



Antenna. Long, narrow, pale reddish brown (AL(1-10) 4.84 mm, distinctly exceeding half body length - AL(1-10)/BL 0.59). Antennomeres filiform, rather matte, surface with pale setation and microgranulation. Antennomere 2 shortest, antennomere 4 longest, antennomeres 4-10 longer than antennomere 3.

RLA(1-11): 0.71 : 0.34 : 1.00 : 1.59 : 1.31 : 1.24 : 1.25 : 1.20 : 1.09 : 1.06.

RL/WA(1-11): 2.50 : 1.50 : 3.93 : 6.46 : 4.63 : 4.09 : 4.26 : 4.23 : 4.11 : 4.48.

Maxillary palpus ochre yellow, rather matte, with pale setation, microgranulation and small, shallow punctures. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.

Pronotum (Fig. 34) reddish brown, shiny, convex, widest at base. Dorsal surface with pale setation (denser near lateral margins), very fine microgranulation and dense punctuation, punctures larger. PL 1.14 mm; PW 2.10 mm; PI equal to 56.66. Border lines very narrow, margins conspicuous from dorsal view. Lateral margins finely excised in basal part before distinctly obtuse posterior angles, arcuate in apical part. Anterior margin finely arcuate, base bisinuate. Anterior angles not clearly conspicuous.

Elytra. Elongate oval, convex, shiny, reddish brown with dark brown bordered yellow apical spots (as in Fig. 33). Dorsal surface with sparse, pale setae. EL 6.00 mm; EW 2.87 mm; EL/EW 2.09. Elytral striae with rows of coarse punctures, intervals between punctures in rows wider than diameter of punctures. Elytral intervals finely convex, with microgranulation and relatively dense, shallow punctures, smaller than those in rows.

Scutellum. Brown, pentagonal, rather matte, with a few shallow punctures, microgranulation and a few pale setae.

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

Legs. Long, narrow, ochre yellow, dorsal surface with pale setation, very fine microgranulation and small, sparse, shallow punctures. Pro- and mesotarsomeres 3, 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.41 : 0.53 : 0.47 : 1.92 (protarsus); 1.00 : 0.35 : 0.28 : 0.27 : 0.64 (mesotarsus); 1.00 : 0.35 : 0.18 : 0.44 (metatarsus).

Both protarsal claws with 9 visible teeth.

Ventral side of body reddish brown, with punctures larger in meso- and metaventrite than those in prothorax. Abdomen reddish brown, shiny, with dense, small and shallow punctures and microgranulation. Ultimate ventrite distinctly paler than penultimate.

Aedeagus (Figs. 35, 36) short, ochre yellow, slightly shiny. Basal piece slightly narrowing in dorsal view and rounded laterally. Apical piece narrow, elongate, knife shaped in dorsal and lateral views. Ratio of length of apical piece to length of basal piece in dorsal view 1 : 1.57.

**Female** without distinct differences, only space between eyes slightly wider (OI approximately 42.8) and protarsal claws have 7 teeth.

**Variability.** The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Specimens (n= 8). BL 7.97 mm (7.54-8.50 mm); HL 1.04 mm (0.99-1.10 mm); HW 1.18 mm (1.13-1.25 mm); OI 35.19 (34.82-35.51); PL 1.11 mm (1.01-1.18 mm); PW 2.00 mm (1.83-2.11 mm); PI 56.03 (53.56-59.26); EL 5.81 mm (5.54-6.28 mm); EW 2.75 mm (2.60-2.91 mm).

**Differential diagnosis.** The similar species are *Borboresthes masumotoi* Novák, 2015 from Thailand (Novák 2015: 80; figs.: 9- habitus; 10- head and pronotum; 11 and 12- aedeagus) and *Borboresthes napolovi* Novák, 2015 from Vietnam (Novák 2015: 82; figs.: 13- habitus; 14- head and pronotum; 15 and 16- aedeagus).

*Borboresthes salamandra* sp. nov. distinctly differs from the similar species *B. masumotoi* and *B. napolovi* mainly by dorsal surface shiny and by shape of aedeagus (Figs. 35, 36); while *B. masumotoi* and *B. napolovi* have dorsal surface rather matte and aedeagus is as in figs. 11 and 12 (Novák 2015: 80 for *B. masumotoi*); respectively figs. 15 and 16 (Novák 2015: 82 for *B. napolovi*).

**Etymology.** The name of this species, a noun in apposition, is the Latin generic name of the fire salamander *Salamandra salamandra* (Linnaeus, 1758).

**Distribution.** Laos (Houaphanh Province).

***Borboresthes vitakubani* Novák, 2015**  
(Fig. 37)

*Borboresthes vitakubani* Novák, 2015: 94.



Fig. 37. *Borboresthes vitakubani* Novák, 2015: 37- habitus of male holotype.

**Type locality.** Northeastern Laos, Houaphanh province, from Ban Saluey to Phou Pane Mountain, 20°12-13.5'N, 103°59.5'-104°01'E, 1340-1870 m.

**Type material.** Holotype (♂): LAOS-NE, Houa Phan prov. / 20°12-13.5'N 103°59.5'-104°01'E, / Ban Saluey→Phou Pane Mt., / 1340-1870 m, 15.iv.-15.v. / 2008 Lao collectors leg., (NMPC).

**Remarks.** *Borboresthes vitakubani* Novák, 2015 was described by Novák (2012) from northeastern Laos, Houaphanh province. Description of male holotype in Novák (2015: 94-95); habitus of male holotype (Fig. 37); head and pronotum and aedeagus dorsal and lateral views are in Novák (2005: 94: figs. 34-36).

**Distribution.** Laos (Houaphanh Province).

#### KEY TO THE *BORBORESTHES* SPECIES FROM HOUAPHANH PROVINCE IN NORTHEASTERN LAOS

- 1 (2) Reddish brown elytra with two yellow apical spots bordered dark brown. Habitus as in Fig. 33; head and pronotum (Fig. 34); aedeagus (Figs. 35, 36). ..... *Borboresthes salamandra* sp. nov.
- 2 (1) Dorsal surface of elytra unicolored or bicolor, without yellow apical spots. .... 3
- 3 (4) Space between eyes narrow, as wide as or narrower than diameter of one eye. .... 5
- 4 (3) Space between eyes distinctly wider than diameter of one eye. .... 7
- 5 (6) Dorsal surface rather matte, head and pronotum reddish brown, elytra ochre yellow. Habitus as in Fig. 19; head and pronotum (Fig. 20); aedeagus (Figs. 21, 22). ..... *Borboresthes natrix* sp. nov.
- 6 (5) Dorsal surface shiny, brown or pale brown. Habitus as in Fig. 1; head and pronotum (Fig. 2); aedeagus (Figs. 3, 4). ..... *Borboresthes bufo* sp. nov.
- 7 (8) Dorsal surface dark reddish brown. Habitus as in Fig. 37. .... *Borboresthes vitakubani* Novák, 2015
- 8 (7) Elytra yellow or ochre yellow with dark spots or darker suture. .... 9
- 9 (10) Large species, body approximately larger than 8 mm. .... 11
- 10 (9) Small species, body approximately smaller than 8 mm. .... 17
- 11 (12) Elytra with darker V-shaped spot in apical half. Habitus as in Fig. 23. ....  
..... *Borboresthes phongsalyensis* Novák, 2012
- 12 (11) Elytra without darker v-shaped spot in apical half. .... 13
- 13 (14) Pronotum dark reddish brown or reddish brown. .... 15
- 14 (13) Pronotum ochre yellow or pale brown. Habitus as in Fig. 29; head and pronotum (Fig. 30); aedeagus (Figs. 31, 32). ..... *Borboresthes rana* sp. nov.
- 15 (16) Elytra pale brown or darker ochre yellow. Habitus as in Fig. 6; head and pronotum (Fig. 7); aedeagus (Figs. 8, 9). ..... *Borboresthes hyla* sp. nov.
- 16 (15) Elytra yellow or ochre yellow. Habitus as in Fig. 25; head and pronotum (Fig. 26); aedeagus (Figs. 27, 28). ..... *Borboresthes podacris* sp. nov.
- 17 (18) Larger species (6.3-7.6 mm). Habitus as in Fig. 14; head and pronotum (Fig. 15); aedeagus (Figs. 16, 17). ..... *Borboresthes lissotriton* sp. nov.
- 18 (17) Smaller species (4.7-6.8 mm). .... 19
- 19 (20) Sides of elytra narrowly darker. .... 21
- 20 (19) Sides of elytra as colour as dorsal surface. Habitus as in Fig. 10; head and pronotum (Fig. 11); aedeagus (Figs. 12, 13). ..... *Borboresthes lacerta* sp. nov.
- 21 (22) Lateral margins of elytra in middle parallel. .... 23
- 22 (21) Lateral margins of elytra rounded. Habitus as in Fig. 18. .. *Borboresthes maguanensis* Novák, 2012
- 23 (24) Dorsal surface of elytra paler (basic color yellow or ochre yellow), posterior angles of pronotum almost rectangular. Habitus as in Fig. 5. .... *Borboresthes haucki* Novák, 2005
- 24 (23) Dorsal surface of elytra darker (basic color pale brown or pale reddish brown), posterior angles of pronotum roundly obtuse. Habitus as in Fig. 24. .... *Borboresthes phuphanensis* Novák, 2012

LIST OF THE *BORBORESTHES* SPECIES FROM HOUAPHANH PROVINCE IN NORTHEASTERN LAOS

*Borboresthes bufo* sp. nov.  
*Borboresthes haucki* Novák, 2005  
*Borboresthes hyla* sp. nov.  
*Borboresthes lacerta* sp. nov.  
*Borboresthes lissotriton* sp. nov.  
*Borboresthes maguanensis* Novák, 2012  
*Borboresthes natrix* sp. nov.  
*Borboresthes phongsalyensis* Novák, 2012  
*Borboresthes phuphanensis* Novák, 2012  
*Borboresthes podacris* sp. nov.  
*Borboresthes rana* sp. nov.  
*Borboresthes salamandra* sp. nov.  
*Borboresthes vitakubani* Novák, 2015

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