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# New genera of Alleculinae (Coleoptera: Tenebrionidae) from Palaearctic and Oriental Regions. Part III - *Bobina* gen. nov.

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# Taxonomy, description, new species, new genus, key, Coleoptera, Tenebrionidae, Alleculinae, *Bobina*, Palaearctic and Oriental Regions

Abstract. A new genus of Alleculinae *Bobina* gen. nov. is described to include the following five new species: *Bobina baliica* sp. nov. from Indonesia (isl. Bali), *Bobina emeiica* sp. nov. from China (Sichuan), *Bobina fikaceki* sp. nov. from China (Guangdong), Taiwan and Vietnam, *Bobina jendeki* sp. nov. from China (Hunan, Jiangxi, Sichuan) and Vietnam (as a type species) and *Bobina masumotoi* sp. nov. from Laos and Thailand. The new genus is compared with similar genera from the Palaearctic and Oriental Regions. All the new species are illustrated and keyed together.

### INTRODUCTION

Fairmaire (1896 and 1897) established *Cistelopsis* Fairmaire, 1896 with its type species *Cistelopsis rufina* Fairmaire, 1896 and *Borboresthes* Fairmaire, 1897 with its type species *Allecula cruralis* Marseul, 1876 as new genera of Alleculinae. Similar genera were separated by Borchmann (1932) as *Cteisodes* Borchmann, 1932, *Ommatochara* Borchmann, 1932 and *Stilbocistela* Borchmann, 1932, by Pic (1930) as *Liodocistela* Pic, 1930 and by Novák (2009 and 2011) as *Borbochara* Novák, 2009 and *Microsthes* Novák, 2011. Species of these genera live in eastern and south-eastern parts of the Palaearctic Region and in the Oriental Region.

Five new species of the new genus *Bobina* gen. nov. are described, illustrated and keyed here: *Bobina baliica* sp. nov. from Indonesia (Bali isl.), *Bobina emeiica* sp. nov. from China (Sichuan), *Bobina fikaceki* sp. nov. from China (Guangdong), Taiwan and Vietnam, *Bobina jendeki* sp. nov. from China (Hunan, Jiangxi, Sichuan) and Vietnam (as a type species) and *Bobina masumotoi* sp. nov. from Laos and Thailand.

The species of *Bobina* gen. nov. are similar to species of the genera *Borboresthes*, *Borbochara*, *Cistelopsis*, *Cteisodes*, *Liodocistela*, *Microsthes*, *Ommatochara* and *Stilbocistela* mainly by the body shape. They differ mainly by further important characters: large body (length of body from 10 to 13 mm), antenna filiform, anterior angles of pronotum distinct, excised anterior margin of pronotum, male protibia bent, distinct and visible sexual dimorphism, and small extension of apex of each elytron. These characters are compared in Table 1.

### MATERIAL AND METHODS

Two important morphometric characteristics used for descriptions of species in the subfamily Alleculinae, the 'ocular index' dorsally (Campbell & Marshall 1964), calculated by measuring the minimum distance between the eyes and dividing this value by the maximum dorsal width across eyes (the quotient resulting from this division is converted into the index by multiplying by 100), and the 'pronotal index' (Campbell 1965) expressing the ratio of the length of the pronotum along the midline to the width at basal angles (this ratio is multiplied by 100 for convenience in handling) are used in the present paper.

The following codens are used in the paper:

- ASHG private collection of Andre Skale, Hof, Germany;
- KMTJ private collection of Kimio Masumoto, Tokio, Japan;
- MNFI Museo di Storia Naturale, Firenze, Italy;
- NHMB Naturhistorisches Museum, Basel, Switzerland;
- NMPC National Museum, Praha, Czech Republic;
- NMTJ National Museum, Tokio, Japan;
- VNPC private collection of Vladimir Novák, Praha, Czech Republic.

Measurements were made with Olympus SZ 40 stereoscopic microscope with continuous magnification and with Soft Imaging System AnalySIS. Measurements of body parts and corresponding abbreviations used in text are as follows:

- AL total antennae length
- BL maximum body length
- EL maximum elytral length
- EW maximum elytral width
- HL maximum length of head (visible part)
- HW maximum width of head
- OI ocular index dorsally
- PI pronotal index dorsally
- PL maximum pronotal length
- PW pronotal width at base

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

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

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

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

### TAXONOMY

### Bobina gen. nov.

(Figs. 1-21)

Type species: Bobina jendeki sp. nov.

**Description.** General shape as in Figs. 4, 9 and 14, body large, parallel, narrow, elongate Borboresthes-shaped, dorsal surface somewhat shiny, with long, pale setation, punctuation and microgranulation. Head (as in Figs. 5, 10 and 15) widest through the eyes, distinctly narrower than base of pronotum, posterior part with punctuation, anterior part and clypeus paler than posterior part, with shallow punctuation, microgranulation and pale setation, denser than in posterior part. Eves very large, transverse, deeply excised by gena, space between eves very narrow, distinctly narrower than diameter of one eye, wider than length of antennomere 2; usualy as wide as or slightly narrower than length of antennomere 3. Maxillary palpus with fine microgranulation and pale setation. Palpomeres 2, 3 and penultimate palpomere distinctly widest on apex, penultimate palpomere relatively short, palpomere 2 long and narrow, ultimate palpomere large, broadly triangular, axe-shaped. Antenna (as in Figs. 5, 10 and 15) long, filiform, slightly longer than half body length. Antennomeres narrow, with short and dense pale setation, fine microgranulation and small punctures. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. Pronotum (as in Figs. 5. 10 and 15) wide, transverse, widest at base, as wide as elytra in base, with microgranulation, dense punctuation and pale setation. Posterior angles distinctly sharp-angled, anterior angles distinct, rectangular or slightly obtuse-angled. Anterior margin more or less excised, base bisinuate. Sides evenly or slightly arcuately narrowing from base to apex. Elytra elongate, parallel, narrow, with pale setation, slightly shiny. Elytral striae with more or less distinct rows of closed punctures, elytral interspaces flat or slightly convex, with microgranulation and very small or small punctures. Apex of elytra terminated more or less separately, with or without very small extension. Elytral epipleura well developed, regularly narrowing to ventrite 1, then leading parallel, with pale setation. Legs long, and narrow, with microgranulation, punctuation and dense, pale setation. Protibia and femora strong, protibia (as in Figs. 6, 11 and 16) more or less bent on inner side near base. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomere 3 widened with membranous lobes. Aedeagus (as in Figs. 7, 8, 12, 13, 17 and 18) pale, with very long basal piece and specifically shaped apical piece.

**Female.** General shape as in Figs. 1 and 19, body large, wider, elongate-oval, *borboresthes*-shaped, dorsal surface somewhat shiny, with long, pale setation, punctuation and microgranulation. Space between eyes distinctly wider than that in males; protibia more or less straight. Anterior tarsal claws with less teeth.

**Differential diagnosis.** Species of the new genus *Bobina* gen. nov. have large, long, elongate or elongate-oval body, *Borboresthes*-shaped. Similar genera are *Borbochara* Novák, 2009,

*Cistelopsis* Fairmaire, 1896, *Ctenisodes* Borchmann, *Liodocistela* Pic, 1930, *Microsthes* Novák, 2011, *Ommatochara* Borchmann, 1932, *Stilbocistela* Borchmann, 1932 and mainly *Borboresthes* Fairmaire, 1897. Typical characters of *Bobina* species are large and long body (length of body 10-13 mm), filiform antenna, anterior angles of pronotum, excised anterior margin of pronotum, bent male protibia, sexual dimorphism and small extension of apex of each elytron. These characters are compared with the same characters of similar genera (Tab. 1). Most important differences, which separate the species of *Bobina* from those of other similar genera are the excised anterior margin of the pronotum and a small extension of the apex of each elytron.

Genus	Body length (mm)	Antenna filiform	Anterior angles of pronotum	Anterior margin of pronotum	Male protibia	Extension of elytral apex	Visible sexual dimorphism
Bobina	Large (10-13)	yes	distinct	excised	bent	yes	yes
Borbochara	Small (4-6.5)	yes	indistinct	arcuate	bent	no	yes
Borboresthes	Medium (3-10.5)	yes	indistinct	arcuate	straight	no	no
Cistelopsis	Small (3-8)	no	indistinct	arcuate	straight	no	no
Cteisodes	Small (5-6)	no	distinct	excised	straight	no	?
Liodocistela	Small (3-5)	no	indistinct	arcuate	straight	no	yes
Microsthes	Small (3-5.5)	more or less	indistinct	arcuate	straight	no	no
Ommatochara	Small (3-6)	no	indistinct	arcuate	straight	no	yes
Stilbocistela	Small (3-8)	no	distinct	straight	straight	no	yes

Table 1: Typical characters of the new genus Bobina compared with similar genera.

**Etymology.** The new genus is named after my four-leg friend, a female of French bulldog Bobina. Gender: feminine.

**Distribution.** China (Guangdong, Hunan, Jiangxi, Sichuan), Indonesia (Bali isl.), Laos, Taiwan, Thailand, Vietnam.

# KEY TO THE SPECIES OF BOBINA GEN. NOV.

<sup>1(2)</sup> Antennomeres 4-11 bicolour, two thirds from base blackish-brown, apical third pale brown. Habitus of female holotype as in Fig. 19; head, pronotum and antennomeres 1-4 (Fig. 20); apical part of elytra (Fig. 21). Laos, Thailand.
2(1) Antennomeres unicolour.
3 3(4) Elytron terminated by distinct thorn-like extension. Habitus of female holotype as in Fig. 1; head, pronotum

and antennomeres 1-4 (Fig. 2); apical part of elytra (Fig. 3). Indonesia (Bali isl.). ......Bobina baliica sp. nov.

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7
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<i>a jendeki</i> sp. nov.
s e a t t l a a u

# Bobina baliica sp. nov.

(Figs. 1-3)

Type locality. Indonesia, Bali, Bedegul region, Tamblingan lakes N. R., 1200 m.

**Type material.** Holotype ( $\bigcirc$ ): INDONESIA, Bali / Bedegul reg., 11.2004 / Tamblingan lakes N. R. / 1 200 m, St. Jakl lgt., (VNPC). Paratypes: (2  $\bigcirc \bigcirc$ ): same data as holotype, (VNPC). The types are provided with a printed red label: 'Bobina baliica sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2014'.



**Description of holotype.** Habitus of female holotype as in Fig. 1. Dorsal surface with punctuation, microgranulation and sparse, pale setation. Body relatively large and wide, elongate oval, from pale reddish-brown to brown, BL 10.43 mm, widest near half elytra length, maximum width 3.98 mm, 2.62 times longer than wide.

Head (Fig. 2) relatively small, transverse, with pale setation, punctuate, punctures smallsized. Microgranulation of brown posterior part sparse, reddish-brown anterior part and pale brown clypeus with dense microgranulation and microrugosities. Head widest across eyes, HW 1.70 mm, approximately 0.53 as wide as pronotal base. HL (visible part) 0.85 mm. Eyes large, transverse, deeply excised. Space between eyes narrow, distinctly wider than diameter of one eye and distinctly wider than length of antennomere 3, OI equal to 44.08.

Antenna (Fig. 2). Filiform, relatively long, (5.25 mm, i.e. reaching 0.50 body length), pale reddish-brown, with short pale setation and microgranulation. Antennomeres 1-3 slightly shiny, antennomeres 4-11 more matte, with sparse punctuation, punctures small-sized. Antennomere 2 shortest, antennomeres 4-11 each longer than antennomere 3. RLA (1-11) equal to 0.83 : 0.32 : 1.00 : 1.48 : 1.34 : 1.28 : 1.38 : 1.25 : 1.29 : 1.18 : 1.16. RL/WA (1-11) equal to <math>2.03 : 1.09 : 3.30 : 3.44 : 4.64 : 4.22 : 4.57 : 4.32 : 4.08 : 4.29 : 3.83.

Maxillary palpus with microgranulation and yellow setation. Palpomeres 2-4 distinctly widest at apex, penultimate palpomere shorter than palpomere 2 and ultimate palpomere. Ultimate palpomere in form of long triangle, axe-shaped, slightly darker than ochre yellow penultimate palpomere.

Pronotum (Fig. 2) brown, at base as wide as elytra at base, with sparse pale setation, sparse microgranulation and dense punctuation, punctures medium-sized, at base 1.91 as wide as head across eyes, longest at middle, PL 0.85 mm and widest at base, PW 1.70 mm. PI equal to 43.62. Borders complete and distinct only in the middle of anterior margin and at base near posterior angles not clearly conspicuous. Posterior margin twice arcuate from both sides. Posterior angles roundly sharp-angled, anterior angles distinct, slightly obtuse-angled, lateral margins evenly narrowing from base to anterior part. Anterior margin distinctly arcuately excised.

Elytra (Fig. 3) unicolor, brown, with sparse, pale setation, near lateral margins denser, EL 8.22 mm; EW 3.98 mm, at base as wide as pronotum base, widest near half elytra length. EL/ EW ratio equal to 2.07. Elytral striae with distinct rows of medium-sized punctures, separated by less than one diameter. Surface of elytral intervals slightly shiny, with microgranulation and sparse punctuation, punctures small and shallow. Apex of elytra with each elytron terminated separately with distinct, short thorn-like extension.

Elytral epipleura well-developed, brown as elytron itself, with golden yellow setation. Slightly narrowing to ventrite 1 in basal half, in apical part wide, finely narrowing to apex.

Scutellum small, brown, pentagonal, with fine microgranulation and few pale setae.

Legs brown with golden yellow setation, fine microgranulation and punctuation, punctures very small. Tarsi slightly paler than tibia and femora. Protibia shorter than long and anteriorly dilated meso- and metatibia. Femora strong, thicker than tibia. Protarsomere 2-4, mesotarsomere 3 and 4 and metatarsomere 3 of each tarsus distinctly widened, with

membranous lobes. RLT 1-5 and 1-4 equal to 1.00 : 0.78 : 0.94 : 1.28 : 3.11 (protarsus), 1.00 : 0.63 : 0.61 : 0.64 : 1.64 (mesotarsus), and 1.00 : 0.44 : 0.41 : 0.72 (metatarsus).

Both anterior tarsal claws with 12 visible teeth.

Ventral side of body brown, with golden yellow setation and punctuation, punctures small-sized. Abdomen reddish-brown, with golden yellow setation and dense punctuation, punctures small.

Male. Unknown.

**Variability.** The type specimens somewhat vary in size; each characteristic is given as its mean, with a full range in parentheses. Females (n = 3). BL 10.39 mm (10.33-10.43 mm); HL 0.79 mm (0.72-0.85 mm); HW 1.68mm (1.66-1.70 mm). OI 42.86 (37.68-47.19). PL (along midline) 1.44 mm (1.36-1.51 mm); PW at base 3.33 mm (3.24-3.44 mm). PI 43.23 (41.92-45.62). EL 8.17 mm (8.03-8.25 mm); EW 3.97 mm (3.88-4.06 mm).

**Differential diagnosis.** *Bobina baliica* sp. nov. differs from Bobina masumotoi sp. nov. by antennomeres unicolour, while *B. masumotoi* has antennomeres bicolour. *B. baliica* is clearly different from the species *Bobina emeiica* sp. nov., *Bobina fikaceki* sp. nov. and *Bobina jendeki* sp. nov. mainly by each elytron terminated by a distinct and longer thorn-shaped extension; while *B. emeiica*, *B. fikaceki* and *B. jendeki* have elytra with indistinct extensions or with very short thorns. For further details see the key above.

Etymology. Toponymic, named after the type locality - island Bali (Indonesia).

Distribution. Indonesia (Bali Isl.).

### Bobina emeiica sp. nov.

(Figs. 4-8)

Type locality. China, Sichuan, Mt. Emei, 600-1050 m.

**Type material.** Holotype ( $\mathcal{S}$ ): CHINA: Sichuan / Mt. EMEI, 600-1050m / 5.-19.5.1989 / Lad. Bocák lgt., (VNPC). Paratypes: (1  $\mathcal{Q}$ ): CHINA, pr. Sichuan / EMEI Mt. 1000 m / 4.-20.5.1989 / Vít Kubáň Leg., (VNPC); (1  $\mathcal{Q}$ ): CHINA: Sichuan / Mt. EMEI, 600-1050m /5.-19.5.1989 / Lad. Bocák, lgt., (NHMB). The types are provided with a printed red labels: 'Bobina emeiica sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2014'.

**Description of holotype.** Habitus of male holotype as in Fig. 4. Dorsal surface with punctuation, microgranulation and sparse, pale setation. Body relatively large, elongate, from pale brown to reddish-brown, BL 11.75 mm, widest near half elytra length, maximum width 3.59 mm, 3.27 times longer than wide.

Head (Fig. 5) reddish-brown, relatively small, transverse, with short and sparse pale setation, punctuation, punctures small-sized, microgranulation of posterior part sparse, anterior half and clypeus with dense microgranulation. Head widest across eyes, HW 1.77 mm, approximately 0.60 times as wide as pronotal base. HL (visible part) 1.20 mm. Eyes large, transverse, distinctly excised. Space between eyes very narrow, narrower than diameter



of one eye, distinctly narrower than length of antennomere 3, OI equal to 15.92.

Antenna (Fig. 5). Filiform, relatively long, (6.88 mm, i.e. reaching 0.59 of body length), pale brown, with short, pale brown setation and microgranulation. Antennomeres 1-3 slightly shiny, antennomeres 4-11 more matte, with sparse punctuation, punctures small-sized. Antennomere 2 shortest, antennomeres 4-11 each longer than antennomere 3. RLA (1-11) equal to 1.11 : 0.46 : 1.00 : 1.97 : 1.74 : 1.82 : 1.89 : 1.79 : 1.78 : 1.76 : 1.64. RL/WA (1-11) equal to 2.86 : 1.38 : 3.27 : 5.92 : 5.95 : 5.70 : 6.18 : 6.45 : 6.10 : 7.47 : 6.94.

Maxillary palpus pale brown, with microgranulation and yellow setation. Palpomeres 2-4 distinctly widest at apex, penultimate palpomere shorter than palpomere 2 and ultimate palpomere. Ultimate palpomere in form of long triangle, axe-shaped, slightly darker.

Pronotum (Fig. 5) reddish-brown, at base as wide as elytra at base, with sparse pale setation, microgranulation and dense punctuation, punctures medium-sized and slightly

coarser; at base 1.66 as wide as head across eyes, longest at middle, PL 1.28 mm, widest at base, PW 2.94 mm. PI equal to 43.54. Borders complete and distinct. Posterior margin bisinuate. Posterior angles roundly sharp-angled, anterior angles distinct, rectangular, lateral margins evenly narrowing from base to anterior part. Anterior margin distinctly excised.

Elytra unicolor, reddish-brown, with few short pale setae near lateral margins, EL 9.27 mm; EW 3.59 mm, in base as wide as pronotum base, widest near half elytra length. EL/EW ratio equal to 2.58. Elytral striae with distinct rows of medium-sized punctures, separated by less than one diameter. Surface of elytral intervals with microgranulation and sparse punctuation, punctures very small and shallow, slightly shiny. Suture distinctly darker. Apex of elytra with each elytron terminating separately by very short extension.

Elytral epipleura well-developed, reddish-brown as elytron itself, with golden yellow setation in basal half, slightly narrowing to ventrite 1, in apical half, glabrous, parallel-sided.

Scutellum small, reddish-brown pentagonal, as colour as elytron itself, with fine microgranulation.

Legs (Fig. 6). Brown with golden yellow setation, fine microgranulation and punctuation, punctures very small. Protibia shorter and strong, distinctly bent on inner side near base. Meso and metatibia long and narrow, dilated anteriorly. Femora strong, thicker than tibia. Protarsomere 1-4, mesotarsomere 3 and 4 and metatarsomere 3 of each tarsus distinctly widened, with membranous lobes. RLT 1-5 and 1-4 equal to 1.00 : 0.78 : 1.31 : 1.69 : 3.83 (protarsus), 1.00 : 0.64 : 0.64 : 0.76 : 1.41 (mesotarsus), and 1.00 : 0.36 : 0.27 : 0.52 (metatarsus).

Both anterior tarsal claws with 26 visible teeth.

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

Aedeagus (Figs. 7, 8). Large, long, ochre yellow, with fine microgranulation. Basal piece slightly rounded laterally and narrowing dorsally, 5.28 times longer than apical piece. Apical piece beak-shaped in dorsal and lateral views.

**Female.** Space between eyes distinctly wider than in male. Protibia straight. RLT 1-5 and 1-4 equal to 1.00: 0.66: 0.79: 1.19: 1.30 (protarsus), 1.00: 0.63: 0.75: 0.79: 1.46 (mesotarsus), and 1.00: 0.37: 0.35: 0.66 (metatarsus). Both anterior tarsal claws with 11 visible teeth.

**Variability.** The type specimens somewhat vary in size; each characteristic is given as its mean, with full range in parentheses. Females (n = 2). BL 11.52 mm (11.38-11.65 mm); HL 0.88 mm (0.84-0.91 mm); HW 1.89 mm. OI 29.49 (27.68-31.25). PL (along midline) 1.35 mm (1.31-1.38 mm); PW at base 3.33 mm (3.27-3.39 mm). PI 40.42 (38.64-42.20). EL 9.30 mm (9.23-9.36 mm); EW 4.29 mm (4.24-4.33 mm).

**Differential diagnosis.** Bobina emeiica sp. nov. differs from Bobina masumotoi sp. nov. mainly by antennomeres unicolour, while *B. masumotoi* has antennomeres bicolour. *B. emeiica* is clearly different from the species Bobina filaceki sp. nov. mainly by its distinct

elytral striae near the base of the elytron while elytral striae near the base of elytra in *B. fikaceki* are indistinct. *B. emeiica* differs from *Bobina baliica* sp. nov. mainly by the elytral apex terminated by a very short extension, while the termination of the elytron in *B. baliica* has a distinct and longer thorn-shaped extension. *B. emeiica* is clearly different from the species *Bobina jendeki* sp. nov. mainly by its dorsal surface with sparse setation, space between eyes of male narrower than length of antennomere 3, male protibia narrower, lateral margins of pronotum evenly narrowing, while *B. jendeki* has a dense setation of the dorsal surface, the space between eyes wider than the length of antennomere 3, the male protibia wider and lateral margins of pronotum slightly arcuate. For further details see the key above.

Etymology. Toponymic, named after the type locality - mount Emei (China: Sichuan).

Distribution. China (Sichuan).

### Bobina fikaceki sp. nov. (Figs. 9-13)

**Type locality.** China, Guangdong prov., W of Qixing, Heishiding nature reserve, forested stream valley, 23°27.9'N, 111°54.3'E, 190 m.

**Type material.** Holotype ( $\delta$ ): CHINA, GUANGDONG prov., / W of Qixing, 1.-3.v.2011 / HEISHIDING nature reserve / (forested stream valley; at light) / 23°27.9'N, 111°54.3'E, 190 m / M. Fikáček & J. Hájek leg., (NMPC). Paratypes: (1  $\mathfrak{P}$ ): N-VIETNAM Thai Nguyen prov., / vic. Ngoc Thanh, Me Linh (IEBR / station),12.V.2012, 21°23'3'N, / 105°42'44''E, 60-80m, leg. A. Skale, (ASHG); ( $\delta$ ): N-VIETNAM Cao Bang Prov., vic. / Vin Den, Nui Oac Nature Res. / 10.-15.V.2014, 22°33'53''N, / 105°52'53''E 900-1300m, A. Skale, (VNPC); ( $\delta$ ): Taiwan, Pingtung Pref., / Chunri Township, Mt. / Dahan Shan, 30.IV.2013, / H. Akiyama leg. (KMTJ); (1  $\delta$  1  $\mathfrak{P}$ ): TAIWAN; Pingtung Co. / Chunri Township / Mt. Dahan-shan, 1100m / 30. IV. 2011 / Hideo AKIYAMA leg., (KMTJ, VNPC). The types are provided with a printed red label: 'Bobina fikaceki sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2014'.

**Description of holotype.** Habitus of male holotype as in Fig. 9. Dorsal surface with punctuation, microgranulation and dense, pale setation. Body relatively large, elongate, from pale brown to blackish-brown, BL 10.75 mm, widest near half elytra length, maximum width 3.60 mm, 2.99 times longer than wide.

Head (Fig. 10) relatively small, transverse, with punctuation, punctures small-sized, reddish-brown posterior part with sparse microgranulation and a few pale setae, pale brown anterior half and slightly paler clypeus with dense microgranulation and golden yellow setation. Head widest across eyes, HW 1.70 mm, approximately 0.57 times as wide as pronotal base. HL (visible part) 1.14 mm. Eyes large, transverse, distinctly excised. Space between eyes very narrow, narrower than diameter of one eye, approximately as wide as length of antennomere 3, OI equal to 18.00.

Antenna (Fig. 10). Filiform, relatively long, (6.86 mm, i.e. reaching 0.64 of body length), pale brown, with short pale brown setation and microgranulation. Antennomeres 1-3 slightly shiny, antennomeres 4-11 more matter, with sparse punctuation, punctures small-sized. Antennomere 2 shortest, antennomeres 4-11 each longer than antennomere 3. RLA (1-11)



equal to 1.20 : 0.52 : 1.00 : 2.30 : 2.20 : 2.22 : 2.22 : 2.10 : 2.18 : 2.17 : 2.13. RL/WA (1-11) equal to 1.90 : 1.11 : 1.82 : 4.76 : 4.55 : 6.65 : 6.05 : 5.48 : 6.24 : 5.41 : 6.40.

Maxillary palpus pale brown, with microgranulation and sparse setation. Palpomeres 2-4 distinctly widest at apex, penultimate palpomere shorter than palpomere 2 and ultimate palpomere. Ultimate palpomere in form of long triangle, axe-shaped.

Pronotum (Fig. 10) blackish-brown, at base as wide as elytra at base, with long and dense, pale setation, microgranulation and dense punctuation, punctures small-sized and slightly coarser; at base 1.75 as wide as head across eyes, longest at middle, PL 1.42 mm and widest at base, PW 2.97 mm. PI equal to 47.81. Borders complete and distinct, only in the middle of anterior margin inconspicuous. Posterior margin bisinuate. Posterior angles finely sharp-angled, anterior angles distinct, obtuse-angled, lateral margins slightly arcuate, narrowing

from base to anterior angle. Anterior margin only slightly excised.

Elytra unicolor, blackish-brown, with long and dense, ochre yellow setation, EL 8.19 mm; EW 3.60 mm, in base as wide as pronotum base, widest near the half of elytra length. EL/ EW ratio equal to 2.28. Elytral striae with indistinct rows of small-sized punctures. Surface of elytral intervals with microgranulation and dense punctuation, punctures small, but almost as large as punctures in elytral striae. Each elytron rounded separately in apex and without extension.

Elytral epipleura well-developed, blackish-brown as elytron itself, with dense, ochre yellow setation, in basal half narrowing to ventrite 1, in apical half narrow and parallel-sided. Scutellum small, brown with microgranulation, punctures and a few setae.

Legs (Fig. 11). Reddish-brown with golden yellow setation, fine microgranulation and shallow punctuation, punctures very small. Protibia shorter, only slightly bent on inner side near base. Meso and metatibia long and narrow, dilated anteriorly. Femora strong, thicker than tibia. Protarsomere and mesotarsomere 3, 4 and metatarsomere 3 of each tarsus distinctly widened, with membranous lobes. RLT 1-5 and 1-4 equal to 1.00 : 0.72 : 0.86 : 1.02 : 2.04 (protarsus), 1.00 : 0.73 : 0.65 : 0.73 : 1.48 (mesotarsus), and 1.00 : 0.35 : 0.25 : 0.58 (metatarsus).

Both anterior tarsal claws with 22 visible teeth.

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

Aedeagus (Figs. 12, 13). Large, long, ochre yellow, with fine microgranulation. Basal piece slightly rounded laterally and narrowing dorsally, 6.07 times longer than apical piece. Apical piece beak-shaped in dorsal and lateral view.

**Female.** Antennae shorter (reaching only 0.55 of BL), space between eyes wider than in male. RLA (1-11) equal to 1.29 : 0.41 : 1.00 : 1.64 : 1.93 : 1.91 : 1.91 : 1.89 : 1.77 : 2.02 : 1.75. RL/WA (1-11) equal to 2.48 : 1.10 : 2.80 : 7.38 : 6.75 : 7.64 : 7.64 : 8.15 : 5.82 : 5.95 : 7.00. RLT 1-5 and 1-4 equal to 1.00 : 0.80 : 0.78 : 1.23 : 2.22 (protarsus), 1.00 : 0.58 : 0.71 : 0.69 : 1.37 (mesotarsus), and 1.00 : 0.36 : 0.32 : 0.58 (metatarsus). Both anterior tarsal claws with 12 visible teeth.

**Variability.** The type specimens somewhat vary in size; each value is given as a mean, with full range in parentheses. Males (n = 4). BL 11.26 mm (10.75-11.61 mm); HL 1.03 mm (0.95-1.14 mm); HW 1.98 mm (1.70-2.31 mm). OI 18.86 (18.00-19.71). PL (along midline) 1.57 mm (1.42-1.71 mm); PW at base 3.20 mm (2.97-3.31 mm). PI 48.97 (47.43-51.66). EL 8.66 mm (8.19-9.04 mm); EW 3.87 mm (3.60-4.00 mm). Females (n = 2). BL 12.31 mm (11.91-12.71 mm); HL 1.23 mm (0.98-1.47 mm); HW 1.99 mm (1.94-2.04 mm). OI 30.39 (30.19-30.58). PL (along midline) 1.54 mm (1.53-1.54 mm); PW at base 3.90 mm (3.88-3.91 mm). PI 39.41 (39.13-39.69). EL 9.55 mm (9.40-9.70 mm); EW 4.63 mm (4.61-4.65 mm).

Differential diagnosis. Bobina fikaceki sp. nov. differs from the species Bobina masumotoi

sp. nov. mainly by antennomeres unicolour; while *B. masumotoi* has antennomeres bicolour. *B. fikaceki* is clearly different from the species *Bobina baliica* sp. nov. mainly by the apex of elytron without extension; while *B. baliica* has a distinct long thorn-shaped extension of each elytron. *B. fikaceki* differs from the species *Bobina emeiica* sp. nov. and *Bobina jendeki* sp. nov. mainly by its elytral striae near the base of the elytron indistinct, while *B. emeiica* and *B. jendeki* have their elytral striae clearly distinct near the elytral base. For further details see the key above.

**Etymology.** Dedicated to Martin Fikáček (Praha, Czech Republic), one of the collectors of the new species and renowned expert in the beetle families Helophoridae, Georissidae, Hydrochidae, Spercheidae and Hydrophilidae.

Distribution. China (Guangdong), Taiwan, Vietnam.

# *Bobina jendeki* sp. nov. (Figs. 14-18)

Type locality. Vietnam N, 22°20'N 103°50'E, Sapa (Lao Cai).

**Type material.** Holotype ( $\delta$ ): Vietnam N, 25.5.-10.6. / 22°20'N 103°50'E / SAPA (Lao Cai) 1991 / E. Jendek leg., (VNPC). Paratypes: (1  $\delta$ ): VIETNAM N, 15.5.-16.6. / 75 KM NW FROM HANOI / TAM DAO 1991 / E.JENDEK leg., (VNPC); (1  $\delta$ ): N VIETNAM: Hoa Binh Prov., / Pa Co Hang Kia Nature Reserve / (700 m) 5-7. VI.2013 at light // legit L. Bartolozzi, S. Bambi, / F. Cianferoni, G. Mazza, / E. Orbach (n° Mag. 2950), (MNFI); (1  $\Diamond$ ): CHINA, Sichuan 27.VI.-2.VII. / Jiulonggou near Dayi 1995 / (=Chongquing Jiulong Valley) / cca 60km W of Chengdu / 31°00'N 103°30'E / M. Trýzna et O. Šafránek lgt., (VNPC); (1  $\Diamond$ ): China, N Hunan, 4.-7.VII. / Wuling Shan 29.4N 110.4E / ZHANGJIAJIE, 700m / Jaroslav Turna leg., 2003, (VNPC); (1  $\wp$ ): CHINA, NW HUNAN prov., / WULINGSHAN, 800 m / Tianzishan Nat. Res. / 16-18 Jun 1997, Bolm lgt., (NHMB); (1  $\wp$ ): CHINA, JIANGXI prov., 29.iv.2011 / Jinggang Shan Mts. / JIMGGANGSHAN ZHUFENG / (forested slopes of river valley) / 26°32.0'N, 114°08.6'E, 805 m / M. Fikáček & J. Hájek leg., (NMPC). The types are provided with a printed red label: 'Bobina jendeki sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2014'.

**Description of holotype.** Habitus of male holotype as in Fig. 14. Dorsal surface with punctuation, microgranulation and ochre yellow setation. Body relatively large, elongate, very slightly oval, from pale brown to brown, BL 12.40 mm, widest near the half of elytra length, maximum width 4.12 mm, 3.01 times longer than wide.

Head (Fig. 15) brown, relatively small, transverse, with ochre yellow setation, punctuation, punctures small-sized, microgranulation of posterior part sparse, anterior half and clypeus with dense microgranulation. Head widest across eyes, HW 2.02 mm, approximately 0.54 times as wide as pronotal base. HL (visible part) 0.67 mm. Eyes large, transverse, distinctly excised. Space between eyes narrow, distinctly narrower than diameter of one eye, approximately as wide as length of antennomere 3, OI equal to 18.57.

Antenna (Fig. 15). Filiform, relatively long, (8.12 mm, i.e. reaching 0.66 body length), pale brown, with short pale brown setation, antennomere 1 slightly darker. Antennomeres 1-3 slightly shiny, antennomeres 4-11 matter, with microgranulation and punctuation, punctures small-sized. Antennomere 2 shortest, antennomeres 4-11 each longer than antennomere 3. RLA (1-11) equal to 1.42 : 0.51 : 1.00 : 2.61 : 2.71 : 2.75 : 2.81 : 2.73 : 2.39 : 2.29.



RL/WA (1-11) equal to 2.40 : 1.00 : 2.46 : 4.81 : 4.71 : 5.40 : 4.77 : 5.36 : 5.75 : 5.22 : 4.66.

Maxillary palpus pale brown, with microgranulation and yellow setation. Palpomeres 2-4 distinctly widest at apex, penultimate palpomere shorter than palpomere 2 and ultimate palpomere. Ultimate palpomere in form of long triangle, axe-shaped.

Pronotum (Fig. 15) brown, transverse, at base as wide as elytra at base, with dense yellow setation, microgranulation and dense punctuation, punctures small-sized and shallow; at base 1.86 as wide as head across eyes, longest at middle, PL 1.50 mm and widest at base, PW at base 3.76 mm. PI equal to 40.00. Borders complete and distinct. Posterior margin bisinuate. Posterior angles finely sharp-angled, anterior angles distinct, rectangular, lateral margins slightly arcuate and narrowing from base to anterior part. Anterior margin distinctly excised.

Elytra unicolour, reddish-brown, with long and dense golden yellow setation, EL 10.23 mm; EW 4.12 mm, at base as wide as pronotum base, widest near half elytra length. EL/EW ratio equal to 2.48. Elytral striae with distinct rows of small-sized punctures, separated by less

than one diameter. Surface of elytral intervals with microgranulation and sparse punctuation, punctures very small and shallow, slightly shiny. Apex of elytra with each elytron rounded separately, with very short extension.

Elytral epipleura well-developed, reddish-brown as elytron itself, with golden yellow setation, only slightly narrowing in basal half to ventrite 1, in apical half parallel-sided.

Scutellum small, reddish-brown pentagonal, as colour as elytron itself, with microgranulation and a few very small punctures and setae.

Legs (Fig. 16). Brown with yellowish-white setation, fine microgranulation and punctuation, punctures very small. Protibia short and strong, distinctly bent on inner side near base. Meso and metatibia long and narrow, dilated anteriorly. Femora strong, thicker than tibia. Pro and mesotarsomeres 3 and 4 and metatarsomere 3 of each tarsus distinctly widened, with membranous lobes. RLT 1-5 and 1-4 equal to 1.00 : 0.90 : 0.92 : 1.15 : 2.26 (protarsus), 1.00 : 0.64 : 0.76 : 0.85 : 1.63 (mesotarsus), and 1.00 : 0.32 : 0.29 : 0.50 (metatarsus).

Both anterior tarsal claws with 33 visible teeth.

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

Aedeagus (Figs. 17, 18). Long, ochre yellow, with fine microgranulation. Basal piece slightly rounded laterally and narrowing dorsally, 7.81 times longer than apical piece. Apical piece beak-shaped in dorsal and lateral views.

**Female.** Antennae shorter (reaching only 0.57 of BL), space between eyes broader than in male. Protibia straight. RLA (1-11) equal to 1.40 : 0.46 : 1.00 : 2.52 : 2.22 : 2.20 : 2.48 : 2.08 : 1.86 : 1.82 : 1.72. RL/WA (1-11) equal to 2.69 : 1.15 : 2.08 : 6.00 : 6.94 : 7.86 : 8.86 : 9.46 : 7.75 : 7.58 : 7.57. RLT 1-5 and 1-4 equal to 1.00 : 0.83 : 1.06 : 1.30 : 2.40 (protarsus), 1.00 : 0.60 : 0.56 : 0.79 : 1.51 (mesotarsus), and 1.00 : 0.36 : 0.33 : 0.48 (metatarsus). Both anterior tarsal claws with 11 visible teeth.

**Variability.** The type specimens somewhat vary in size; each characteristic is given as its mean, with full range in parentheses. Males (n = 3). BL 12.48 mm (11.89-13.14 mm); HL 0.80 mm (0.67-0.88 mm); HW 1.97 mm (1.88-2.02 mm). OI 20.41 (18.57-21.66). PL (along midline) 1.69 mm (1.50-1.87 mm); PW at base 3.70 mm (3.44-3.91 mm). PI 45.65 (40.00-49.13). EL 9.99 mm (9.35-10.39 mm); EW 4.18 mm (4.01-4.42 mm).

Females (n = 4). BL 11.88 mm (11.34-12.23 mm); HL 0.98 mm (0.90-1.09 mm); HW 1.90 mm (1.77-2.02 mm). OI 32.80 (31.19-34.45). PL (along midline) 1.43 mm (1.26-1.51 mm); PW at base 3.56 mm (3.35-3.71 mm). PI 40.06 (37.61-41.81). EL 9.45 mm (9.13-9.83 mm); EW 4.40 mm (4.15-4.52 mm).

**Differential diagnosis.** Bobina jendeki sp. nov. is clearly different from the species Bobina masumotoi sp. nov. mainly by its antennomeres unicolour, while B. masumotoi has antennomeres bicolour. B. jendeki differs from the species Bobina baliica sp. nov. mainly by its apex of elytron terminated by an only very short extension, while B. baliica has each

elytron with a distinct and longer thorn-shaped extension. *B. jendeki* is clearly different from the species *Bobina fikaceki* sp. nov. by its elytral striae near the elytral base distinct, while *B. fikaceki* has the elytral striae near the base indistinct. *B. jendeki* is clearly different from the species *Bobina emeiica* sp. nov. mainly by its dense setation of the dorsal surface, space between eyes approximately as wide as length of antennomere 3, male protibia wider and lateral margins of pronotum slightly arcuate, while *B. emeiica* has its dorsal surface with sparse setation, space between eyes of male narrower than length of antennomere 3, male protibia narrower and lateral margins of pronotum evenly narrowing. For further details see the key above.

**Etymology.** Dedicated to Eduard Jendek (Ottawa, Canada), one of the collectors of type material and renowned expert in the beetle family Buprestidae.

Distribution. China (Hunan, Jiangxi, Sichuan), Vietnam.

#### Bobina masumotoi sp. nov.

(Figs. 19-21)

Type locality. Thailand, Ang Khang.

**Type material.** Holotype ( $\bigcirc$ ): Ang Khang, Thailand / 22-24.V.2011 / K.MASUMOTO & / K.TAKAHASHI leg., (NMTJ). Paratype: ( $\bigcirc$ ): LAOS,Phongsaly prov. / 21°41-2'N102°06-8'E, / PHONGSALY env., / 28.v.-20.vi.2003, ~ 1500m, / M.Brancucci leg., (NHMB). The types are provided with a printed red labels: 'Bobina masumotoi sp. nov. HOLOTYPUS [or PARATYPUS] V. Novák det. 2014'.

**Description of holotype.** Habitus of female holotype as in Fig. 19. Dorsal surface with punctuation, microgranulation and ochre yellow setation. Body relatively large, elongate, very slightly oval, from pale brown to blackish-brown, BL 10.17 mm, widest near half elytra length, maximum width 3.85 mm, 2.64 times longer than wide.

Head (Fig. 20) relatively small, transverse, with golden yellow setation, punctuation, punctures small-sized. Microgranulation of brown posterior part sparse, reddish-brown anterior half and pale brown clypeus with dense microgranulation. Head widest across eyes, HW 1.70 mm, approximately 0.52 as wide as pronotal base. HL (visible part) 0.75 mm. Eyes large, transverse, distinctly excised. Space between eyes narrow, approximately as wide as diameter of one eye, OI equal to 35.53.

Antenna (Fig. 20). Filiform, relatively long, (6.00 mm, i.e. reaching 0.59 of body length), with pale setation. Antennomeres 1-3 pale brown, slightly shiny, antennomeres 4-11 bicolour, blackish brown with pale brown apical third, more matte, with microgranulation. Antennomere 2 shortest, antennomeres 4-11 each longer than antennomere 3. RLA (1-11) equal to 1.15 : 0.50 : 1.00 : 1.90 : 1.90 : 1.83 : 1.83 : 1.93 : 1.98 : 1.83 : 1.78. RL/WA (1-11) equal to 2.46 : 1.36 : 3.00 : 5.43 : 5.70 : 5.00 : 5.80 : 5.17 : 5.79 : 4.28.

Maxillary palpus with microgranulation and golden yellow setation. Penultimate palpomere and palpomere 2 pale brown, distinctly widest at apex, penultimate palpomere shorter than palpomere 2 and ultimate palpomere. Ultimate palpomere blackish-brown, in form of long triangle, axe-shaped.



apical part of elytron.

Pronotum (Fig. 20) blackish-brown, transverse, at base as wide as elytra at base, with dense ochre yellow setation, microgranulation and dense punctuation, punctures small-sized; at base 1.94 as wide as head across eyes, longest in middle, PL 1.21 mm and widest at base, PW 3.29 mm. PI equal to 36.78. Borders complete and distinct, only in the middle of anterior margin and near sides of base inconspicuous. Posterior margin bisinuate. Posterior angles distinctly sharp-angled, anterior angles distinct, rectangular, lateral margins regularly narrowing from base to anterior part. Anterior margin distinctly excised.

Elytra unicolor, blackish-brown, with long and dense ochre yellow setation, EL 8.21 mm; EW 3.85 mm, at base as wide as pronotum base, widest near half elytra length. EL/ EW ratio equal to 2.13. Elytral striae with distinct rows of small-sized punctures, separated by less than one diameter. Surface of elytral intervals with microgranulation and sparse punctuation, punctures very small, matter. Each elytron terminated separately with distinct longer extension of apex (as in Fig. 21).

Elytral epipleura well-developed, blackish-brown as elytron itself, with golden yellow setation, only slightly narrowing in basal half to metasternum, in apical half parallel-sided.

Scutellum small, reddish-brown pentagonal, slightly paler than elytron itself, with microgranulation, punctuation and long ochre yellow setation.

Legs. Dark brown with golden yellow setation, fine microgranulation and punctuation, punctures very small. Penultimate and ultimate tarsomeres of each tarsus reddish-brown. Protibia short and strong. Meso- and metatibia long and narrow, dilated anteriorly. Femora strong, thicker than tibia. Pro- and mesotarsomere 3 and 4 and metatarsomere 3 of each tarsus distinctly widened, with membranous lobes. RLT 1-5 and 1-4 equal to 1.00 : 0.69 : 0.62 : 0.90 : 1.90 (protarsus), 1.00 : 0.57 : 0.66 : 0.77 : 1.41 (mesotarsus) and 1.00 : 0.39 : 0.37 : 0.62 (metatarsus).

Both anterior tarsal claws with 10 visible teeth.

Ventral side of body and abdomen blackish-brown, with dense ochre yellow setation and punctuation.

### Male. Unknown.

**Variability.** The type specimens somewhat vary in size; each characteristic is given as its mean, with full range in parentheses. Females (n = 2). BL 10.15 mm (10.13-10.17 mm); HL 0.75 mm; HW 1.71 mm (1.70-1.72 mm). OI 35.30 (33.57-37.03). PL (along midline) 1.21 mm; PW at base 3.25 mm (3.21-3.29 mm). PI 37.24 (36.78-37.70). EL 8.17 mm (8.13-8.21 mm); EW 3.84 mm (3.83-3.85 mm).

**Differential diagnosis.** *Bobina masumotoi* sp. nov. is clearly different from all the new species - *Bobina baliica* sp. nov., *Bobina emeiica* sp. nov., *Bobina fikaceki* sp. nov. and *Bobina jendeki* sp. nov. by bicolour antennomeres, while *B. baliica*, *B. emeiica*, *B. fikaceki* and *B. jendeki* have antennomeres unicolour. For further details see the key above.

**Etymology.** Dedicated to Kimio Masumoto (Tokio, Japan), a renowned expert in the beetle families Scarabaeidae and Tenebrionidae, who brought me one of the specimens of the new species.

Distribution. Laos, Thailand.

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