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# New species of the genus *Microsthes* Novák, 2011 (Coleoptera: Tenebrionidae: Alleculinae) from Palaearctic and Oriental Regions

Vladimír NOVÁK

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

**Taxonomy, description, new species, key, Coleoptera, Tenebrionidae, Alleculinae, *Microsthes*, Palaearctic and Oriental Regions**

**Abstract.** Eight new species of the genus *Microsthes* are described as follows: *Microsthes chamahensis* sp. nov., *Microsthes guamusangensis* sp. nov., *Microsthes kelantanensis* sp. nov., *Microsthes petri* sp. nov. and *Microsthes ululalatensis* sp. nov. from Malaysia and *Microsthes majeri* sp. nov. from India (Andaman Isl.), *Microsthes tryznai* sp. nov. from India (Uttar Pradesh), and *Microsthes holzschuhi* sp. nov. from Nepal. Last two species represent the first record of the genus from the Palaearctic region. *Microsthes pusio* (Borchmann, 1925) comb. nov. and *Microsthes suturalis* (Borchmann, 1937) comb. nov. from Indonesia and *Microsthes quadrimaculata* (Pic, 1914) comb. nov. from India are transferred from the genus *Cistelopsis* Fairmaire, 1896. *Microsthes quadrimaculata* is redescribed. All the new species are illustrated and keyed together with other species of *Microsthes*.

## INTRODUCTION

The genus *Microsthes* Novák, 2011 was established by Novák (2011) to include six species from Indonesia and Malaysia. Species of this genus look as small *Borboresthes* Fairmaire, 1897 species, have elongate eliptical, egg-shaped body and differ from the species of the genus *Borboresthes* by their small body, only penultimate tarsomere indistinctly widened, antennomeres 3-10 slightly wider than narrow and filiform antennae of *Borboresthes* species (ratio length/width of antennomeres 3-10 reaching 3.5 maximum; mostly is among 2-3 in *Microsthes* species and always more than 3; mostly more than 4 in *Borboresthes* species.

Eight new species, *Microsthes chamahensis* sp. nov., *Microsthes guamusangensis* sp. nov., *Microsthes kelantanensis* sp. nov., *Microsthes petri* sp. nov. and *Microsthes ululalatensis* sp. nov. from Malaysia and *Microsthes majeri* sp. nov. from India (Andaman Isl.), *Microsthes tryznai* sp. nov. from India (Uttar Pradesh), and *Microsthes holzschuhi* sp. nov. from Nepal are described here as new. Last two species represent the first record of the genus from Palaearctic region. *Microsthes pusio* (Borchmann, 1925) comb. nov. and *Microsthes suturalis* (Borchmann, 1937) comb. nov. from Indonesia and *Microsthes quadrimaculata* (Pic, 1914) comb. nov. from India are transferred from the genus *Cistelopsis* Fairmaire, 1896. *Microsthes quadrimaculata* is redescribed.

New species are illustrated and keyed together with other species of *Microsthes*.

## MATERIAL AND METHODS

Two important morphometric characteristics used for the descriptions of the species of the subfamily Alleculinae, the ‘ocular index’ dorsally (Campbell & Marshall 1964) is

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 an index by multiplying by 100 and 'pronotal index' (Campbell 1965) expresses the ratio of the length of the pronotum along the midline to the width at the basal angles, this ratio is multiplied by 100 for convenience in handling, are used in this paper as well.

The following codens are used in the paper:

DHBC private collection of David Hauck, Brno, Czech Republic;
IRSN Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium;
NHMB Naturhistorisches Museum, Basel, Switzerland;
NMEG Naturkundesmuseum Erfurt, Germany;
SMNS Staatliches Museum für Naturkunde Stuttgart, Germany;
VNPC private collection of Vladimir Novák, Praha, Czech Republic;
ZMUH Zoologisches Institut und Museums der Universität Hamburg, Germany.

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)

Other used abbreviations: bf= black frame; hb= handwritten black; pb= printed black; pl= pink label; wl= white label; yl= yellow label.

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

## TAXONOMY

### KEY TO THE SPECIES OF THE GENUS *MICROSTHES* NOVÁK, 2011

1(2) Elytra unicolour. ..... 3
2(1) Elytra bicolour. ..... 15
3(4) Space between eyes distinctly wider than diameter of one eye (OI equal to 39). Habitus as in Fig. 9; head and pronotum as in Fig. 10; aedeagus (Figs 11 and 12). Nepal. ..... *Microsthes holzschuhi* sp. nov.
4(3) Space between eyes approximately as wide as or narrower than diameter of one eye (OI less than 34). ..... 5
5(6) Space between eyes distinctly narrower than length of antennomere 4 (OI equal or less than 29 ..... 7
6(5) Space between eyes distinctly wider than length of antennomere 4 (OI more than 31). ..... 9

7(8) Space between eyes wider than length of antennomere 3 (OI equal to 29). Habitus as in Fig. 13; head and pronotum as in Fig. 14; aedeagus (Figs 15 and 16). Malaysia. ..... *Microsthes kelantanensis* sp. nov.
8(7) Space between eyes narrower than length of antennomere 3 (OI equal to 20). Habitus as in Fig. 35; head and pronotum as in Fig. 36; aedeagus (Figs 37 and 38). Malaysia. ..... *Microsthes ululalatensis* sp. nov.
9(10) Antennomere 4 only slightly longer than antennomere 3 (ratio 1.12). ..... 11
10(9) Antennomere 4 distinctly longer than antennomere 3 (ratio more than 1.23). ..... 13
11(12) Punctures of pronotum small-sized. ..... *Microsthes cameronensis* Novák, 2011
12(11) Punctures of pronotum large-sized. Habitus as in Fig. 17; head and pronotum as in Fig. 18; aedeagus (Figs 19 and 20). Andaman Isl. ..... *Microsthes majeri* sp. nov.
13(14) Body narrower (BL/EW 2.80), pronotum narrower (PI equal to 55).....*Microsthes molucensis* Novák, 2011
14(13) Body wider (BL/EW 2.55), pronotum wider (PI equal to 50). Habitus as in Fig. 31; head and pronotum as in Fig. 32; aedeagus (Figs 33 and 34). India. ..... *Microsthes tryznai* sp. nov.
15(16) Anterior third of elytra unicolour; pale reddish-brown or orange. ..... *Microsthes barborae* Novák, 2011
16(15) Anterior third of elytra unicolour; dark brown or bicolour. ..... 17
17(18) Elytra with four spots. Habitus as in Fig. 26; head and pronotum as in Fig. 27; aedeagus (Figs 28 and 29). India. ..... *Microsthes quadrimaculata* (Pic, 1914) comb. nov.
18(17) Elytra with one spot. ..... 19
19(20) Space between eyes distinctly wider than diameter of one eye (OI equal to 42); species from Indonesia. .... ..... 21
20(19) Space between eyes approximately as wide or narrower as diameter of one eye (OI less than 33); species from Malaysia. ..... 25
21(22) Elytral spot indistinct. .....*Microsthes bruggei* Novák, 2011
22(21) Elytral spot distinct. ..... 23
23(24) Body narrow (BL/EW 2.90), spot wide, antennomere 4 approximately as long as antennomere 3. Habitus as in Fig. 25. Indonesia. .....*Microsthes pusio* (Borchmann, 1925) comb. nov.
24(23) Body wide (BL/EW 2.50), spot narrow, antennomere 4 distinctly longer than antennomere 3. Habitus as in Fig. 30. Indonesia. ..... *Microsthes suturalis* (Borchmann, 1937) comb. nov.
25(26) Space between eyes as wide or narrower than length of antennomere 3. ..... 27
26(25) Space between eyes distinctly wider than length of antennomere 3. ..... 29
27(28) Elytral spot wide, punctures of pronotum large-sized. Habitus as in Fig. 1; head and pronotum as in Fig. 2; aedeagus (Figs 3 and 4). Malaysia. ..... *Microsthes chamahensis* sp. nov.
28(27) Elytral spot narrow, punctures of pronotum small-sized. ..... *Microsthes rolciki* Novák, 2011
29(30) Space between eyes wider than length of antennomere 4. Habitus as in Fig. 5; head and pronotum as in Fig. 6; aedeagus (Figs 7 and 8). Malaysia. ..... *Microsthes guamusangensis* sp. nov.
30(29) Space between eyes narrower than length of antennomere 4. ..... 31
31(32) Reddish-brown spot not reaching base of elytra. ..... *Microsthes zizui* Novák, 2011
32(31) Spot and base of elytra ochre yellow. Habitus as in Fig. 21; head and pronotum as in Fig. 22; aedeagus (Figs 23 and 24). Malaysia. ..... *Microsthes petri* sp. nov.

## *Microsthes chamahensis* sp. nov.

(Figs 1-4)

**Type locality.** Malaysia West, Kelantan, 30 km NW of Gua Musang, Ulu Lalat Mt. 800-1000 m, Kompong Sungai Om.

**Type material.** Holotype (♂): MALAYSIA W, KELANTAN / 30 km NW of Gua Musang / Ulu Lalat Mt. 800-1000m / KAMPONG SUNGAI OM; 27. / v.-19.vi.2011; P.Čechovský lgt., (VNPC); Paratypes: (5 ♂♂ 2 ♀♀): same data as holotype, (VNPC); (2 ♂♂ 2 ♀♀): same data as holotype, but 22.v.-14.vi.2012, (VNPC); (1 ♂ 1 ♀): MALAYSIA W, Kelantan / 70km NW of Gua Musang / Mt. Chamah, 1900m / Kampong Peria / 17.iv.-9.v.2014 / P. Cechovsky lgt., (VNPC). The types are provided with printed red labels: Microsthes chamahensis sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

**Description of holotype.** Habitus as in Fig. 1, body small, elongate eliptical, egg-shaped, from pale brown to dark brown, slightly shiny, with golden yellow setation, BL 3.69 mm.

Widest near middle of elytral length; BL/EW 2.53.

Head (Fig. 2). Posterior part brown, with microgranulation, microrugosities, and large shallow punctures, slightly shiny. Anterior part with sparse golden yellow setae, shallow punctures, microrugosities and microgranulation. Clypeus distinctly paler than anterior part. HW 0.72 mm; HW/PW 0.60. HL 0.32 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes approximately as wide as antennomere 3 long and slightly narrower than length of antennomere 4; OI equal to 24.41.

Antennae. Long, relatively narrow, pale brown, with microgranulation and relatively long, golden yellow setation. Antennomeres 1-3 slightly shiny, antennomeres 4-11 more matte. AL 2.06 mm, AL/BL 0.56. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.92 : 0.62 : 1.00 : 1.21 : 1.18 : 1.18 : 1.33 : 1.31 : 1.23 : 1.08 : 1.31. RL/WA (1-11): 2.40 : 1.60 : 2.44 : 2.47 : 3.07 : 2.88 : 2.89 : 2.68 : 2.82 : 2.33 : 3.19.

Maxillary palpus. Pale brown, slightly shiny. Ultimate palpomere broadly triangular.

Pronotum (Fig. 2). Reddish-brown, transverse, semicircular, with microgranulation, long, golden yellow setation and dense punctuation, punctures large. PL 0.74 mm; PW 1.21 mm. PI equal to 60.58. Border lines complete, base bisinuate. Posterior angles very slightly sharp, anterior angles indistinct.

Ventral side of body. Reddish-brown, slightly shiny. Abdomen with sparse grey setation, microrugosities, microgranulation, punctuation indistinct, slightly shiny. Ventrites 4 and 5 distinctly darker than ventrites 1-3.

Elytron. Bicolour, covered by dense and long pale brown setation; sides and apical fourth dark brown, basal three fourth with reddish-brown drop-shaped spot reaching in middle up to fifth elytral interval and near base up to sixth or seventh elytral interval. EL 2.63 mm. Widest near middle of elytra, EW 1.46 mm. EL/EW 1.80. Elytral striae with distinct rows of large-sized punctures. Elytral intervals slightly convex, with sparse, small-sized punctures and microgranulation, slightly shiny.

Scutellum. Wide, pentagonal, reddish-brown, with sparse setae and microgranulation.

Elytral epipleura. Reddish-brown, distinctly paler than side of elytra, with long and sparse yellow setae, regularly narrowing to ventrite 1, then leads parallel.

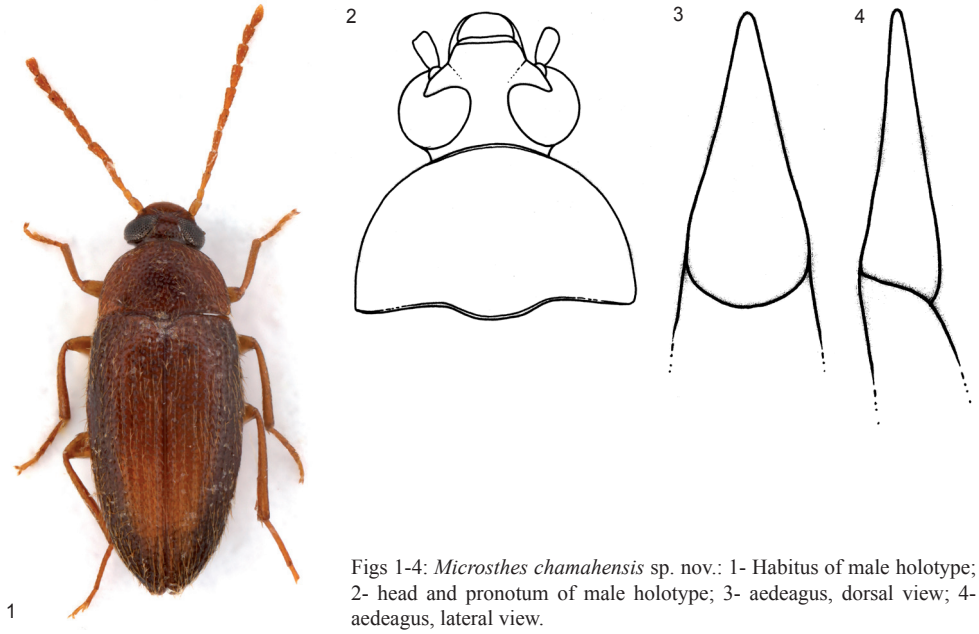
Legs. Narrow, pale brown, with yellow setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus very slightly widened and distinctly lobed. RLT: protarsus: 1.00 : 0.66 : 0.82 : 0.98 : 1.68; mesotarsus: 1.00 : 0.50 : 0.37 : 0.42 : 0.83; metatarsus: 1.00 : 0.44 : 0.22 : 0.34.

Both anterior tarsal claws with 6 teeth.

Aedeagus (Figs 3, 4). Short, pale brown, slightly shiny. Basal piece slightly rounded laterally and slightly narrowing dorsally. Apical piece short, triangular dorsally and laterally. Ratio of length of apical piece to length of basal piece 1: 3.82.

**Female** without distinct differences, only the space between eyes is distinctly wider than that in the male and anterior tarsal claws with 5 teeth.

**Variation.** Measurements: mean (minimum - maximum). Males (n=10). BL 3.73 mm (3.50-4.01 mm); HL 0.30 mm (0.24-0.35 mm); HW 0.75 mm (0.72-0.79 mm); OI 24.78 (22.35-27.62), PL 0.71 mm (0.63-0.78 mm); PW 1.27 mm (1.18-1.38 mm); PI 56.12 (50.52-60.56); EL 2.72 mm (2.55-2.90 mm); EW 1.47 mm (1.38-1.60 mm). Females (n=4). BL 3.78 mm




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

(3.58-3.95 mm); HL 0.29 mm (0.26-0.36 mm); HW 0.75 mm (0.71-0.79 mm); OI 29.49 (28.16-30.81), PL 0.66 mm (0.60-0.70 mm); PW 1.26 mm (1.18-1.39 mm); PI 52.22 (50.55-54.29); EL 2.83 mm (2.72-2.99 mm); EW 1.52 mm (1.39-1.64 mm).

**Differential diagnosis.** (For details see the key above). A species with bicolour elytra. *Microsthes chamahensis* sp. nov. clearly differs from similar species *Microsthes barborae* Novák, 2011 mainly by its anterior third of elytra bicolour; while *M. barborae* has the anterior third of elytra unicolour reddish-brown or orange. *M. chamahensis* is clearly different from a similar species *Microsthes quadrimaculata* (Pic, 1914) mainly by elytra with one spot; while *M. quadrimaculata* has elytra with four spots. *M. chamahensis* differs from similar species *Microsthes bruggei* Novák, 2011, *Microsthes pusio* (Borchmann, 1925) and *Microsthes suturalis* (Borchmann, 1937) mainly by its space between eyes distinctly narrower than the diameter of eye; while the space between eyes of *M. bruggei*, *M. pusio* and *M. suturalis* is distinctly wider than diameter of eye. *M. chamahensis* is clearly different from similar species *Microsthes guamusangensis* sp. nov., *Microsthes petri* sp. nov. and *Microsthes zizui* Novák, 2011 mainly by its space between eyes as wide as antennomere 3 long; while *M. guamusangensis*, *M. petri* and *M. zizui* have the space between eyes distinctly wider than length of antennomere 3. *M. chamahensis* differs from similar species *Microsthes rolciki* Novák, 2011 mainly by punctures of pronotum large-sized; while *M. rolciki* has punctures of pronotum small-sized.

**Etymology.** Toponymic, after the name of Mount Chamah.

**Distribution.** Malaysia.

## *Microsthes guamusangensis* sp. nov.
(Figs 5-8)

**Type locality.** Malaysia West, Kelantan,70 km NW of Gua Musang, Mt. Chamah, 1900m, Kampong Peria.

**Type material.** Holotype (♂): MALAYSIA W, Kelantan / 70km NW of Gua Musang / Mt. Chamah, 1900m / Kampong Peria / 17.iv.-9.v.2014 / P. Cechovsky lgt., (VNPC); Paratypes: (1 ♂): same data as holotype, (VNPC); (3 ♂♂ 2 ♀♀): MALAYSIA W, KELANTAN / 30 km NW of Gua Musang / Ulu Lalat Mt. 800-1000m / KAMPONG SUNGAI OM; 27. / v.-19.vi.2011; P.Čechovský lgt., (VNPC). The types are provided with printed red labels: Microsthes guamusangensis sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

**Description of holotype.** Habitus as in Fig. 5, body small, elongate eliptical, egg-shaped, from pale brown to dark brown, slightly shiny, with golden yellow setation, BL 3.08 mm. Widest near middle of elytral length; BL/EW 2.46.

Head (Fig. 6). Relatively narrow, small, with sparse yellow setae, microgranulation, microrugosities and shallow, relatively large punctures. Posterior part reddish-brown, anterior part and clypeus distinctly paler than posterior part. HW 0.57 mm; HW/PW 0.54. HL 0.30 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes distinctly wider than length of antennomere 3 and approximately as long as antennomere 4; OI equal to 31.77.

Antennae. Long, relatively narrow, unicolour pale brown, with microgranulation and relatively long, yellow setation. Antennomeres 1-3 slightly shiny, antennomeres 4-11 more matte. AL 1.86 mm, AL/BL 0.60. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-11. RLA (1-11): 0.84 : 0.69 : 1.00 : 1.22 : 1.34 : 1.34 : 1.38 : 1.56 : 1.38 : 1.34 : 1.53. RL/WA (1-11): 1.59 : 1.38 : 2.13 : 2.29 : 2.39 : 2.26 : 2.10 : 2.63 : 2.10 : 2.05 : 2.45.

Maxillary palpus. Pale brown, slightly shiny. Ultimate palpomere broadly triangular.

Pronotum (Fig. 6). Reddish-brown, transverse, semicircular, with microgranulation, golden yellow setation, dense and relatively large punctuation. PL 0.57 mm; PW 1.05 mm. PI equal to 54.74. Border lines complete, base bisinuate. Posterior angles very slightly sharp, anterior angles indistinct.

Ventral side of body. Reddish-brown, with punctuation. Abdomen brown, with sparse yellow setation, microrugosities, microgranulation and relatively dense, shallow punctuation, slightly shiny. Ventrites 4 and 5 near sides distinctly darker than ventrites 1-3.

Elytron. Bicolour, covered by dense and long golden yellow setation; sides and apical half dark brown, basal half with reddish-brown drop-shaped spot reaching up to fifth elytral interval near base. EL 2.21 mm. Widest near middle of elytra, EW 1.25 mm. EL/EW 1.77. Elytral striae with distinct rows of very large punctures. Elytral intervals narrow with microgranulation and very sparse small punctures, slightly shiny.

Scutellum. Wide, pentagonal, reddish-brown, with sparse, yellow setae and microgranulation.

Elytral epipleura. Slightly paler than sides of elytron, with long and sparse yellow setation, regularly narrowing to ventrite 1, then leads parallel.

Legs. Narrow, pale brown, with yellow setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus very slightly widened and distinctly

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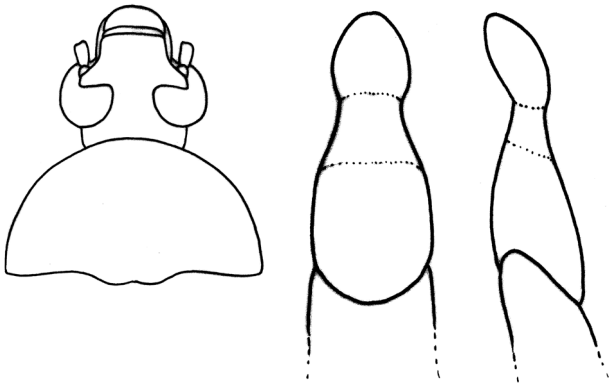


Figs 5-8: *Microsthes guamusangensis* sp. nov.: 5- Habitus of male holotype; 6- head and pronotum of male holotype; 7- aedeagus, dorsal view; 8- aedeagus, lateral view.

lobed. RLT: protarsus: 1.00 : 0.42 : 0.47 : 0.47 : 1.63; mesotarsus: 1.00 : 0.68 : 0.36 : 0.36 : 0.68; metatarsus: 1.00 : 0.42 : 0.36 : 0.44.

Both anterior tarsal claws with 6 teeth.

Aedeagus (Figs 7, 8). Large, ochre yellow, slightly shiny. Basal piece long, basal half slightly rounded laterally, apical half laterally straight and dorsally parallel. Apical piece very short, triangular with drop-shaped top. Ratio of length of apical piece to length of basal piece 1: 9.38.

**Female** without distinct differences, only the space between eyes distinctly wider than that in male and anterior tarsal claws with 5 teeth.

**Variation.** Measurements: mean (minimum - maximum). Males (n=5). BL 3.38 mm (3.08-3.92 mm); HL 0.24 mm (0.20-0.30 mm); HW 0.64 mm (0.57-0.73 mm); OI 33.32 (30.26-35.50), PL 0.62 mm (0.57-0.76 mm); PW 1.15 mm (1.05-1.34 mm); PI 54.24 (51.66-56.91); EL 2.52 mm (2.21-2.93 mm); EW 1.37 mm (1.25-1.56 mm). Females (n=2). BL 3.54 mm (3.50-3.57 mm); HL 0.23 mm (0.23-0.23 mm); HW 0.72 mm (0.70-0.73 mm); OI 39.88 (38.77-40.99), PL 0.64 mm (0.60-0.68 mm); PW 1.26 mm (1.17-1.35 mm); PI 51.17 (50.48-51.85); EL 2.67 mm (2.66-2.67 mm); EW 1.47 mm (1.37-1.57 mm).

**Differential diagnosis.** (For details see the key above). A species with bicolour elytra. *Microsthes guamusangensis* sp. nov. clearly differs from a similar species *Microsthes barborae* Novák, 2011 mainly by its anterior third of elytra bicolour; while *M. barborae* has the anterior third of elytra unicolour reddish-brown or orange. *M. guamusangensis* is clearly different from a similar species *Microsthes quadrimaculata* (Pic, 1914) mainly by its elytra with one spot; while *M. quadrimaculata* has elytra with four spots. *M. guamusangensis* differs

from similar species *Microsthes bruggei* Novák, 2011, *Microsthes pusio* (Borchmann, 1925) and *Microsthes suturalis* (Borchmann, 1937) mainly by the space between eyes distinctly narrower than diameter of eye; while the space between eyes of *M. bruggei*, *M. pusio* and *M. suturalis* is distinctly wider than diameter of eye. *M. guamusangensis* is clearly different from similar species *Microsthes chamahensis* sp. nov. and *Microsthes rolciki* Novák, 2011 mainly by its space between eyes distinctly wider than length of antennomere 3; while *M. chamahensis* and *M. rolciki* have the space between eyes as wide or narrower than length of antennomere 3. *M. guamusangensis* differs from similar species *Microsthes petri* sp. nov. and *Microsthes zizui* Novák, 2011 mainly by its space between eyes distinctly wider than length of antennomere 4; while *M. petri* and *M. zizui* have the space between eyes distinctly narrower than length of antennomere 4.

**Etymology.** Toponymic, after the name of the town Gua Musang (near of Mount Chamah).

**Distribution.** Malaysia.

### *Microsthes holzschuhi* sp. nov.

(Figs 9-12)

**Type locality.** Central Nepal, Dhawalagiri, Myagdi distr., Kali Gandaki Khola, Tatopani 1100-1400 m.

**Type material.** Holotype (♂): C-NEPAL, Dhawalagiri, 1986 / Kali Gandaki-Khola, Myagdi / Distr., Tatopani, 1100-1400 m / leg. C. Holzschuh, 14.-17.VI., (DHBC); Paratypes: (1 ♂ 3 ♀♀): same data as holotype, (DHBC, VNPC); (1 ♂): C - NEPAL , 1500 m / Kathmandu Valley / Godavari, 15. - 21.5.1983 / leg. C. Holzschuh, (DHBC); (1 ♀): 632 NEPAL: Kathmandu / Baneshwar / 1350m, 18.-24.VI.2000 / leg. W. Schawaller, (MNSG); (1 ♂): NEPAL Kathmandu / Thamel Hotel Norbhu / Linkha,LF 1300m 05. / VI.1995 leg. A. Weigel, (NMEG); (1 ♀): NEPAL Kathmandu, N / Bagmati River, 1300 / m NN, 06.VI.1995 / leg. M. Hartmann, (NMEG); (1 ♂): NEPAL, P: Bagmati / D: Lalitpur, Kathmandu / valley, Godamachaur // 1345m, N27°36´61´´ / E 85°17´09´´ , 04.VII / 2011, leg. Küßner, #63, (VNPC). The types are provided with printed red labels: Microsthes holzschuhi sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

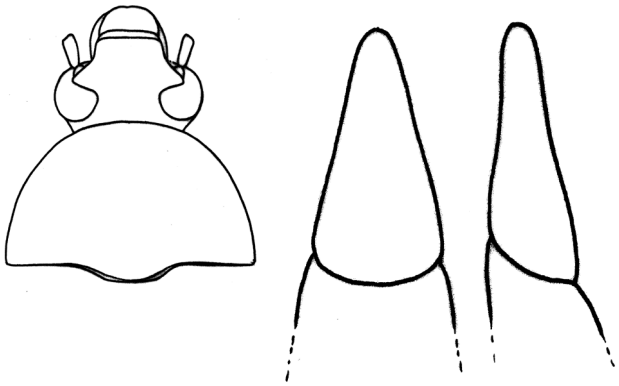
**Description of holotype.** Habitus as in Fig. 9, body small, elongate, eliptical, egg-shaped, from pale brown to brown, slightly shiny, with yellow setation, BL 3.59 mm. Widest near middle of elytral length; BL/EW 2.49.

Head (Fig. 10). Reddish-brown, with sparse, yellow setation, microgranulation and microrugosities, slightly shiny. Punctuation dense, punctures medium-sized and shallow. Anterior part and clypeus distinctly paler than posterior part. HW 0.68 mm; HW/PW 0.58. HL 0.28 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes broad, distinctly wider than length of antennomere 3 or 4; OI equal to 42.99.

Antennae. Long, relatively narrow, pale brown with microgranulation and yellow setation, slightly shiny; AL 2.11 mm, AL/BL 0.61. Antennomere 2 shortest, antennomere 3 distinctly longer than antennomere 2; antennomere 4 distinctly longer than antennomere 3. RLA (1-11): 1.00 : 0.67 : 1.00 : 1.17 : 1.17 : 1.42 : 1.33 : 1.58 : 1.33 : 1.36 : 1.53. RL/WA (1-11): 2.00 : 1.60 : 2.57 : 2.63 : 2.63 : 2.68 : 2.40 : 2.71 : 2.29 : 2.45 : 2.62.

Maxillary palpus. Pale brown with sparse, yellow setae. Palpomeres 2-4 distinctly narrowest at base and widest at apex, with microgranulation, slightly shiny. Ultimate palpomere broadly triangular.

Pronotum (Fig. 10). Reddish-brown, transverse, rather dull, with yellow setation, fine

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

microgranulation and dense punctuation. Punctures large-sized, interspaces between punctures narrow. PL 0.71 mm; PW 1.17 mm. PI equal to 60.68. Border lines complete, base bisinuate. Posterior corners rectangular, anterior angles indistinct.

Ventral side of body. Reddish-brown, with punctuation. Abdomen brown, slightly shiny, ventrites in middle slightly paler than in sides, with grey setation, fine microgranulation and punctuation, punctures small-sized.

Elytron. Unicolour, reddish-brown, covered by dense and long, yellow setation. EL 2.60 mm. Widest near middle of elytra, EW 1.40 mm. EL/EW 1.86. Elytral striae with distinct rows of large-sized punctures, interspaces between punctures in rows very narrow, narrower than diameter of punctures. Elytral intervals slightly convex, with sparse, small punctures and microgranulation, slightly shiny.

Scutellum. Reddish-brown, pentagonal, with microgranulation.

Elytral epipleura. Reddish-brown, regularly narrowing to ventrite 1, then leads parallel.

Legs. Narrow, pale brown, with dense yellow setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus very slightly widened and distinctly lobed. RLT: protarsus: 1.00 : 0.60 : 0.60 : 0.80 : 1.76; mesotarsus: 1.00 : 0.56 : 0.67 : 0.85 : 1.26; metatarsus: 1.00 : 0.34 : 0.18 : 0.46.

Both anterior tarsal claws with 7 teeth.

Aedeagus (Figs 11, 12). Long, pale brown, slightly shiny. Basal piece very long, basal piece laterally straight and dorsally parallel. Apical piece very short, triangular. Ratio of length of apical piece to length of basal piece 1: 12.04.

**Female** without distinct differences, only the space between eyes very slightly wider than that in male. Anterior tarsal claws with 5 visible teeth.

**Variation.** Measurements: mean (minimum - maximum). Males (n=5). BL 3.78 mm (3.49-4.05 mm); HL 0.33 mm (0.28-0.43 mm); HW 0.72 mm (0.67-0.80 mm); OI 41.88 (39.61-

42.99), PL 0.68 mm (0.61-0.78 mm); PW 1.23 mm (1.11-1.40 mm); PI 55.60 (51.75-58.40); EL 2.70 mm (2.59-2.89 mm); EW 1.49 mm (1.40-1.56 mm). Females (n=5). BL 4.12 mm (3.68-4.54 mm); HL 0.33 mm (0.28-0.42 mm); HW 0.75 mm (0.68-0.84 mm); OI 44.44 (41.44-47.47), PL 0.70 mm (0.66-0.74 mm); PW 1.40 mm (1.24-1.56 mm); PI 49.83 (46.09-55.57); EL 3.10 mm (2.74-3.50 mm); EW 1.67 mm (1.53-1.89 mm).

**Differential diagnosis.** (For details see the key above). A species with unicolour elytra. *Microsthes holzschuhi* sp. nov. is clearly different from all similar species with unicolour elytra mainly by wide space between eyes (OI more than 39); while other species have space between eyes narrow (OI less than 34).

**Etymology.** The new species is dedicated to one of the collectors - Carolus Holzschuh (Villach, Austria), well-known specialist in Cerambycidae.

**Distribution.** Nepal.

### *Microsthes kelantanensis* sp. nov.
(Figs 13-16)

**Type locality.** Malaysia West, Kelantan, 30 km NW of Gua Musang, Ulu Lalat Mt. 800-1000 m, Kampong Sungai Om.

**Type material.** Holotype (♂): MALAYSIA W, KELANTAN / 30 km NW of Gua Musang / Ulu Lalat Mt. 800-1000m / KAMPONG SUNGAI OM; 27. / v.-19.vi.2011; P.Čechovský lgt., (VNPC); Paratypes: (2 ♂♂ 2 ♀♀): same data as holotype, (VNPC). The types are provided with printed red labels: Microsthes kelantanensis sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

**Description of holotype.** Habitus as in Fig. 13, body small, elongate eliptical, egg-shaped, from pale brown to reddish-brown, slightly shiny, with yellow setation, BL 3.54 mm. Widest near middle of elytral length; BL/EW 2.48.

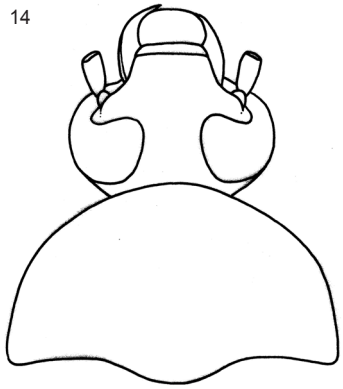
Head (Fig. 14). Posterior half reddish-brown, with large, shallow punctures and dense microgranulation. Anterior part and clypeus pale brown, with sparse, yellow setation and dense microgranulation, slightly shiny. HW 0.72 mm; HW/PW 0.59. HL 0.25 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes distinctly wider than length of antennomere 3, almost as long as antennomere 4; OI equal to 28.98.

Antennae. Long, antennomeres relatively narrow, pale brown with microgranulation and relatively long, yellow setation. AL 2.37 mm, AL/BL 0.67. Antennomere 2 shortest, antennomeres 4-11 each distinctly longer than antennomere 3. RLA (1-11): 0.98 : 0.53 : 1.00 : 1.40 : 1.40 : 1.42 : 1.66 : 1.68 : 1.53 : 1.40 : 1.58. RL/WA (1-11): 1.76 : 1.33 : 2.11 : 2.41 : 2.79 : 3.18 : 3.15 : 3.20 : 2.76 : 2.79 : 3.33.

Maxillary palpus. Pale brown with sparse, yellow setation. Palpomeres 2-4 distinctly widest at apex, with microgranulation, slightly shiny. Ultimate palpomere broadly triangular.

Pronotum (Fig. 14). Unicoloured reddish-brown, transverse, semicircular, with dense microgranulation and punctuation. Punctures large and dense. PL 0.59 mm; PW 1.22 mm. PI equal to 48.37. Border lines complete, base bisinuate. Posterior angles very slightly sharp, anterior angles indistinct. Surface with relatively sparse and long, yellow setation, directed backwards.

13



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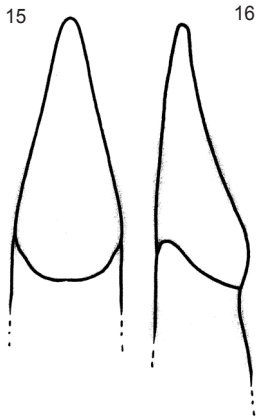


15 16

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

Ventral side of body. Brown, shiny. Ventrites 1-3 reddish-brown with yellow setation, shallow punctures and microgranulation, slightly shiny. Ventrites 4 and 5 distinctly darker than ventrites 1-3, without punctures, with fine microgranulation, matte.

Elytron. Pale reddish-brown covered by long, yellow setation. EL 2.70 mm. Widest near middle of elytra, EW 1.43 mm. EL/EW 1.89. Elytral striae with distinct rows of relatively large-sized punctures, interspaces between punctures in rows narrower than diameter of punctures. Elytral intervals with fine microgranulation.

Scutellum. Brown, wide, pentagonal, with fine microgranulation.

Elytral epipleura. Pale reddish-brown as elytron itself, regularly narrowing to ventrite 1, then leading parallel.

Legs. Narrow, pale brown, with pale brown setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus slightly widened and distinctly lobed. RLT: protarsus: 1.00 : 0.85 : 0.60 : 0.85 : 1.50; mesotarsus: 1.00 : 0.43 : 0.27 : 0.48 : 0.67; metatarsus: 1.00 : 0.43 : 0.16 : 0.26.

Both anterior tarsal claws with 6 teeth.

Aedeagus (Figs 15, 16). Large, pale brown, slightly shiny. Basal piece long, basal half rounded laterally, apical half laterally straight and dorsally parallel. Apical piece short, triangular. Ratio of length of apical piece to length of basal piece 1: 7.77.

**Female** without distinct differences; only the space between eyes is slightly wider than that in male, anterior tarsal claws with 5 teeth.

**Variation.** Measurements: mean (minimum - maximum). Males (n=3). BL 3.46 mm (3.32-3.54 mm); HL 0.28 mm (0.25-0.30 mm); HW 0.70 mm (0.66-0.72 mm); OI 29.46 (28.98-29.94), PL 0.61 mm (0.59-0.65 mm); PW 1.18 mm (1.12-1.22 mm); PI 51.99 (48.37-54.71); EL 2.58 mm (2.43-2.70 mm); EW 1.39 mm (1.33-1.43 mm). Females (n=2). BL 3.73 mm (3.51-3.95 mm); HL 0.36 mm (0.31-0.40 mm); HW 0.71 mm (0.69-0.73 mm); OI 35.20 (34.32-36.08), PL 0.66 mm (0.59-0.73 mm); PW 1.21 mm (1.14-1.27 mm); PI 54.55 (51.80-57.29); EL 2.72 mm (2.61-2.82 mm); EW 1.49 mm (1.39-1.58 mm).

**Differential diagnosis.** (For details see the key above). A species with unicolour elytra. *Microsthes kelantanensis* sp. nov. is clearly different from a similar species *Microsthes holzschuhi* sp. nov. mainly by a narrow space between eyes (OI about 29); while *M. holzschuhi* has space between eyes wide (OI more than 39). *M. kelantanensis* clearly differs from similar species *Microsthes cameronensis* Novák, 2011, *Microsthes majeri* sp. nov., *Microsthes molucensis* Novák, 2011 and *Microsthes tryznai* sp. nov. mainly by their space between eyes distinctly narrower than length of antennomere 4; while *M. cameronensis*, *M. majeri*, *M. molucensis* and *M. tryznai* have space between eyes distinctly wider than length of antennomere 4. *M. kelantanensis* is clearly different from similar species *Microsthes ululalatensis* sp. nov. mainly by its space between eyes distinctly wider than the length of antennomere 3 (OI more than 29); while *M. ululalatensis* has its space between eyes distinctly narrower than the length of antennomere 3 (OI 21-26).

**Etymology.** Toponymic, named after a Malasia province: Kelantan.

**Distribution.** Malaysia.

### *Microsthes majeri* sp. nov.
(Figs 17-20)

**Type locality.** India, Andaman Is., Havelock I, env. of village No. 7, 11°59´N, 92°58´E.

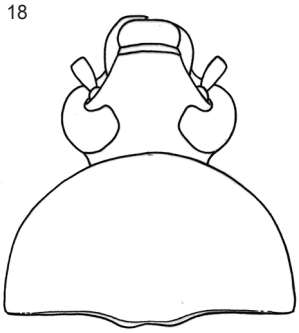
**Type material.** Holotype (♂): ANDAMAN Is: Havelock I / env. of village No. 7, / 11°59´N, 92°58´E, / 22.iv.-14.v.1998, / Karel & Simon Majer leg., (NHMB); Paratypes: (13 ♂♂ 27 ♀♀): same data as holotype, (NHMB, VNPC). The types are provided with printed red labels: Microsthes majeri sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

**Description of holotype.** Habitus as in Fig. 17, body small, elongate eliptical, egg-shaped, from pale brown to reddish-brown, slightly shiny, with yellow setation, BL 3.80 mm. Widest near middle of elytral length; BL/EW 2.55.

Head (Fig. 18) with relatively dense, large and shallow punctures, microrugosities and microgranulation, slightly shiny. Posterior part reddish-brown, anterior part pale reddish-brown with sparse yellow setae. Clypeus paler than anterior part, without distinct punctuation. HW 0.73 mm; HW/PW 0.58. HL 0.41 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes distinctly wider than length of antennomere 3 or 4; OI equal to 32.94.

Antennae. Long, relatively narrow; pale brown with microgranulation. Antennomere 1-3 slightly shiny, antennomeres 4-11 more matte with punctuation and relatively long and dense, yellow setation. AL 2.22 mm, AL/BL 0.58. Antennomere 2 shortest, antennomere 3 distinctly

17



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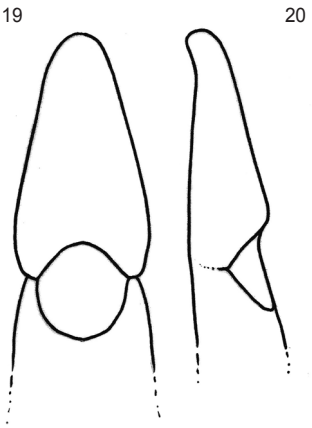


19 20

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

shorter than each of antennomeres 4-11. RLA (1-11): 0.81 : 0.63 : 1.00 : 1.12 : 1.20 : 1.27 : 1.34 : 1.39 : 1.29 : 1.15 : 1.42. RL/WA (1-11): 1.57 : 1.63 : 2.56 : 2.71 : 2.88 : 2.67 : 2.75 : 2.85 : 2.65 : 2.35 : 2.90.

Maxillary palpus. Pale brown with a few long pale brown setae. Palpomeres 2-4 distinctly narrowest at base and widest at apex. Ultimate palpomere broadly triangular, with microgranulation, slightly shiny.

Pronotum (Fig. 18). Reddish-brown, transverse, semicircular, with long, yellow setation, microgranulation and dense punctation. Punctures large-sized, space between punctures narrower than diameter of punctures. PL 0.62 mm; PW 1.26 mm. PI equal to 49.32. Border lines complete, base bisinuate. Posterior corners rectangular, anterior angles indistinct.

Ventral side of body. Reddish-brown, distinctly darker than elytron, with punctuation, slightly shiny. Abdomen reddish-brown with pale brown setation, slightly shiny. Ventrites 1-3 with distinct microgranulation, microrugosities and punctuation, distinctly in sides paler than ventrites 4 and 5 with only very fine microgranulation.

Elytron. Unicolour, pale reddish-brown, covered by dense and long yellow setation. EL 2.77 mm. Widest near middle of elytra, EW 1.49 mm. EL/EW 1.86. Elytral striae with distinct rows of large-sized punctures, interspaces between punctures in rows very narrow, narrower than diameter of punctures. Elytral intervals with sparse, small punctures and microgranulation, slightly shiny.

Scutellum. Wide, pentagonal, reddish-brown with sides narrowly darker, with a few punctures and setae and microgranulation.

Elytral epipleura. Pale reddish-brown as elytron itself, with yellow setation, regularly narrowing to ventrite 1, then leads parallel.

Legs. Narrow, pale brown, with dense yellow setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus very slightly widened and distinctly lobed. RLT: protarsus: 1.00 : 0.71 : 0.58 : 0.96 : 1.47; mesotarsus: 1.00 : 0.48 : 0.39 : 0.59 : 0.93; metatarsus: 1.00 : 0.33 : 0.21 : 0.93.

Both anterior tarsal claws with 7 teeth.

Aedeagus (Figs 19, 20). Large, pale brown, slightly shiny. Basal piece long, dorsally parallel. Apical piece very short, roundly triangular dorsally and beak-shaped laterally. Ratio of length of apical piece to length of basal piece 1: 8.56.

**Female** without distinct differences, only anterior tarsal claws with 4 visible teeth.

**Variation.** Measurements: mean (minimum - maximum). Males (n=14). BL 3.53 mm (3.28-3.80 mm); HL 0.33 mm (0.24-0.41 mm); HW 0.72 mm (0.68-0.73 mm); OI 34.62 (32.94-35.67), PL 0.65 mm (0.55-0.74 mm); PW 1.20 mm (1.10-1.26 mm); PI 52.75 (49.32-56.32); EL 2.55 mm (2.38-2.77 mm); EW 1.43 mm (1.32-1.50 mm). Females (n=27). BL 3.83 mm (3.62-4.15 mm); HL 0.31 mm (0.26-0.37 mm); HW 0.77 mm (0.71-0.82 mm); OI 36.06 (33.94-37.06), PL 0.68 mm (0.58-0.76 mm); PW 1.36 mm (1.25-1.51 mm); PI 50.13 (46.39-53.93); EL 2.87 mm (2.63-3.18 mm); EW 1.62 mm (1.49-1.77 mm).

**Differential diagnosis.** (For details see the key above). A species with unicolour elytra. *Microsthes majeri* sp. nov. is clearly different from a similar species *Microsthes holzschuhi* sp. nov. mainly by its narrow space between eyes (OI about 29); while *M. holzschuhi* has the space between eyes wide (OI more than 39). *M. majeri*

clearly differs from similar species *Microsthes kelantanensis* sp. nov. and *Microsthes ululalatensis* sp. nov. mainly by the space between eyes distinctly wider than the length of antennomere 4; while *M. kelantanensis*, and *M. ululalatensis* have the space between eyes distinctly narrower than length of antennomere 4. *M. majeri* is clearly different from similar species *Microsthes molucensis* Novák, 2011 and *Microsthes tryznai* sp. nov. mainly by antennomere 4 only slightly longer than antennomere 3; while *M. molucensis* and *M. tryznai* have antennomere 4 distinctly longer than antennomere 3 long. *M. majeri* clearly differs from a similar species *Microsthes cameronensis* Novák, 2011 mainly by pronotum with large-sized punctures; while *M. cameronensis* has pronotum with small-sized punctures.

**Etymology.** The new species is dedicated to one of the collectors - Karel Majer (†) (Brno, Czech Republic), well-known specialist in Dasytidae.

**Distribution.** India (Andaman isl.).

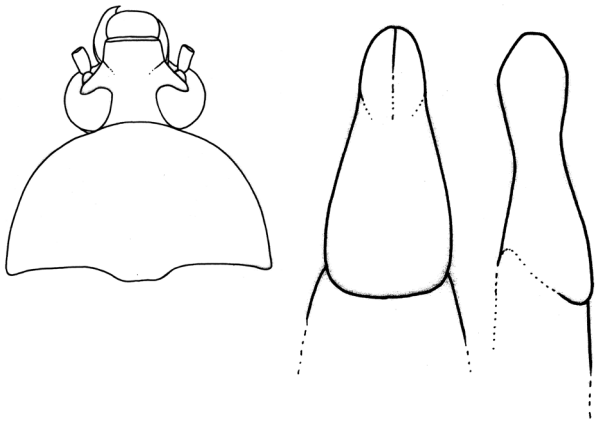
### *Microsthes petri* sp. nov.

(Figs 21-24)

**Type locality.** Malaysia West, Kelantan, 30 km NW of Gua Musang, Ulu Lalat Mt. 800-1000 m, Kampong Sungai Om.

**Type material.** Holotype (♂):, KELANTAN / 30 km NW of Gua Musang / Ulu Lalat Mt. 800-1000m / KAMPONG SUNGAI OM; 27. / v.-19.vi.2011; P.Čechovský lgt., (VNPC); Paratypes: (1 ♀): same data as holotype, (VNPC). The types are provided with printed red labels: Microsthes petri sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

21



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

**Description of holotype.** Habitus as in Fig. 21, body small, elongate eliptical, egg-shaped, from ochre yellow to brown, slightly shiny, with yellow setation, BL 3.98 mm. Widest near middle of elytral length; BL/EW 2.41.

Head (Fig. 22). Pale reddish-brown, with sparse, yellow setae, microgranulation, microrugosities, slightly shiny. Posterior half with large, shallow punctures. Anterior part and clypeus distinctly paler than posterior part. HW 0.74 mm; HW/PW 0.52. HL 0.26 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes distinctly wider than length of antennomere 3 and narrower than length of antennomere 4; OI equal to 29.16.

Antennae. Long, relatively narrow, ochre yellow with microgranulation and relatively long, yellow setation. Antennomeres 1-3 slightly shiny, antennomeres 4-11 with microgranulation and punctuation, more matte. AL 2.91 mm, AL/BL 0.61. Antennomere 2 shortest, antennomere 3 distinctly shorter than each of antennomeres 4-10. RLA (1-11): 1.00 : 0.51 : 1.00 : 1.34 : 1.24 : 1.27 : 1.34 : 1.39 : 1.34 : 1.17 : 1.34. RL/WA (1-11): 2.28 : 1.24 : 2.28 : 2.75 : 3.19 : 3.06 : 3.24 : 3.35 : 3.44 : 2.67 : 2.90.

Maxillary palpus. Ochre yellow, slightly shiny. Ultimate palpomere broadly triangular.

Pronotum (Fig. 22). Pale reddish-brown, transverse, semicircular, with microgranulation, yellow setation, dense and relatively large punctuation. PL 0.68 mm; PW 1.43 mm. PI equal to 47.85. Border lines complete, base bisinuate. Posterior angles very slightly sharp, anterior angles indistinct.

Ventral side of body. Ochre yellow, with punctuation, slightly shiny. Abdomen ochre yellow, with sparse yellow setation, microrugosities, microgranulation and relatively dense, shallow punctuation, shiny. Ultimate ventrite with large impression.

Elytron. Bicolour, covered by dense and long yellow setation; sides and apical fourth dark brown, basal three fourth with ochre yellow drop-shaped spot reaching in middle up to fourth elytral interval and near base up to sixth or seventh elytral interval. Base of elytra dark. EL 3.04 mm. Widest near middle of elytra, EW 1.65 mm. EL/EW 1.84. Elytral striae with distinct rows of medium-sized punctures. Elytral intervals slightly convex, with sparse, small-sized punctures and microgranulation, slightly shiny.

Scutellum. Wide, pentagonal, with sparse, yellow setae and microgranulation.

Elytral epipleura. Ochre yellow, with long and sparse yellow setation, regularly narrowing to ventrite 1, then leads parallel.

Legs. Narrow, ochre yellow, with yellow setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus very slightly widened and distinctly lobed. RLT: protarsus: 1.00 : 0.72 : 0.68 : 0.64 : 1.32; mesotarsus: 1.00 : 0.46 : 0.26 : 0.30 : 0.46; metatarsus: 1.00 : 0.23 : 0.32 : 0.36.

Both anterior tarsal claws with 7 teeth.

Aedeagus (Figs 23, 24). Large, ochre yellow, slightly shiny. Basal piece long, basal half rounded laterally, apical half laterally straight and dorsally parallel. Apical piece very short, triangular with drop-shaped top. Ratio of length of apical piece to length of basal piece 1: 5.15.

**Female** without distinct differences, only the space between eyes slightly wider than that in the male and anterior tarsal claws with 5 teeth. BL 3.42 mm; HL 0.39 mm; HW 0.66 mm; OI equal to 33.99; PL 0.59 mm; PW 1.19 mm; PI equal to 49.82; EL 2.44 mm; EW 1.39 mm.

**Differential diagnosis.** (For details see the key above). Species with bicolour elytra. *Microsthes petri* sp. nov. clearly differs from similar species *Microsthes barborae* Novák, 2011 mainly by the anterior third of elytra bicolour; while *M. barborae* has anterior third of elytra unicolour reddish-brown or orange. *M. petri* is clearly different from similar species *Microsthes quadrimaculata* (Pic, 1914) mainly by its elytra with one spot; while *M. quadrimaculata* has elytra with four spots. *M. petri* differs from similar species *Microsthes bruggei* Novák, 2011, *Microsthes pusio* (Borchmann, 1925) and *Microsthes suturalis* (Borchmann, 1937) mainly by the space between eyes narrower or as wide as diameter of one eye; while *M. bruggei*, *M. pusio* and *M. suturalis* have space between eyes distinctly wider than diameter of one eye. *M. petri* is clearly different from similar species *Microsthes chamahensis* sp. nov. and *Microsthes rolciki* Novák, 2011 mainly by its space between eyes distinctly wider than length of antennomere 3 long; while *M. chamahensis* and *M. rolciki* have space between eyes distinctly narrower than length of antennomere 3. *M. petri* differs from a similar species *Microsthes zizui* Novák, 2011 mainly by its base of elytra ochre yellow; while *M. zizui* has the base of elytra dark.

**Etymology.** The new species is dedicated to the collector Petr Čechovský (Brno, Czech Republic), after his first name.

**Distribution.** Malaysia.

## *Microsthes pusio* (Borchmann, 1925) comb. nov.
(Fig. 25)

*Cistelopsis pausio* Borchmann, 1925: 344.

**Type locality.** Indonesia, Sumatra isl., Si Rambé.

**Type material.** Holotype by monotypy: pl: Type [hb] // wl: with bf: SUMATRA / SI - RAMBÉ / *XII.90- III.91* / E. MODIGLIANI [pb] // wl: Coll. Kraatz [pb] // pl: Type [hb] // wl: Cistelopsis / pusio m. [hb] // wl: Sammlung / F. Borchmann / Eing. Nr. 5, 1943 [pb], (ZMUH).

**Type condition.** Specimen on a pin, relatively complete.

**Remark.** Habitus as in Fig. 25, a relatively larger species with bicolour elytra. The space between eyes wide, distinctly wider than the diameter of one eye. Antennomere 4 approximately as long as antennomere 3. BL 4.48 mm; HL 0.24 mm; HW 0.76 mm; OI equal to 42.86; PL 0.83 mm; PW 1.54 mm; PI equal to 53.90; EL 3.41 mm; EW 1.54 mm; HW/PW 0.49; BL/EW 2.36; EL/EW 1.80.

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Fig. 25: *Microsthes pusio* (Borchmann, 1925) comb. nov.: 25- Habitus of holotype.

**Distribution.** Indonesia (Sumatra Isl).

## *Microsthes quadrimaculata* (Pic, 1914) comb. nov.
(Figs 26-29)

*Cistelopsis quadrimaculata* Pic, 1914: 44.

**Type locality.** India, Chambaganor.

**Material examined.** (1 spec.): wl: Trichinopoly [hb] // wl: Cistelopsis / 4 maculata Pic [hb] // wl: Sammlung / F. Borchmann / Eing. Nr. 5, 1943 [pb], (ZMUH); (58 spec.): yl: *coll. R. I. Sc. N. B.* / S. India: Kodaikanal / Putney Hills / 6500ft [pb] V [hb] 195 [pb] 3 [hb] / P. S. Nathan [pb], (IRSN).

**Redescription.** Habitus as in Fig. 26, body small, elongate eliptical, egg-shaped, from yellow to black, with yellow setation, BL 3.23 mm. Widest near middle of elytral length; BL/EW 2.32. Head as in Fig. 27 with sparse, yellow setae, microgranulation, microrugosities and small punctures. Posterior part blackish-brown, anterior part and clypeus reddish-brown. HW 0.63 mm; HW/PW 0.54. HL 0.22 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes distinctly wider than diameter of one eye; OI equal to 41.24. Antenna with microgranulation and white setation, AL 2.06 mm; AL/BL 0.64. Antennomeres 1-3 yellow, antennomeres 4-11 blackish-brown. Antennomere 2 shortest. RLA (1-11): 0.85 : 0.66 : 1.00 : 1.27 : 1.10 : 1.18 : 1.32 : 1.48 : 1.45 : 1.21 : 1.48. RL/WA (1-11): 1.72 : 1.60 : 2.61 : 3.32 : 2.35 : 2.87 : 2.67 : 2.70 : 2.52 : 2.20 : 2.70. Maxillary palpus yellow, slightly shiny. Ultimate palpomere broadly triangular. Pronotum as in Fig. 27, blackish-brown, transverse, semicircular, with microgranulation, golden-yellow setation, dense and

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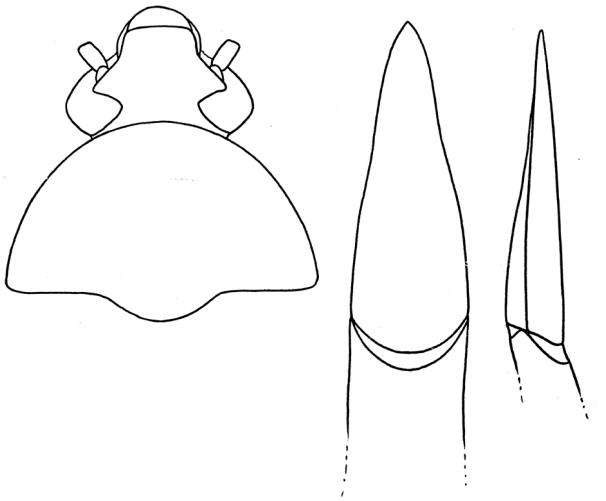

Figs 26-29: *Microsthes quadrimaculata* (Pic, 1914) comb. nov.: 26- Habitus of male; 27- head and pronotum of male; 28- aedeagus, dorsal view; 29- aedeagus, lateral view.

medium-sized punctuation. PL 0.55 mm; PW 1.17 mm. PI equal to 47.01. Base bisinuate, posterior corners rectangular, anterior angles indistinct. Ventral side of body blackish-brown. Abdomen dark brown, with microgranulation and relatively sparse, shallow punctuation, shiny. Ultimate ventrite distinctly paler than ventrites 1-4. Elytra bicolour, with four ochre yellow spots (as in Fig. 26), covered by dense and long, yellow setation. EL 2.46 mm. Widest near middle of elytra, EW 1.39 mm. EL/EW 1.77. Elytral striae with distinct rows of medium-sized punctures. Elytral intervals with sparse, small-sized punctures and microgranulation. Scutellum blackish-brown, pentagonal, with microgranulation. Elytral epipleura blackish-brown, with yellow setation, regularly narrowing to ventrite 1, then leads parallel. Legs narrow, yellow, with yellow setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus very slightly widened and distinctly lobed. Both anterior tarsal claws with 6 teeth. Aedeagus (as in Figs 28, 29) relatively large, ochre yellow, slightly shiny. Basal piece long, apical piece short, elongate triangular. Ratio of length of apical piece to length of basal piece
1: 5.15.

**Female** without distinct differences, anterior tarsal claws with 5 visible teeth.

**Distribution.** India.

### *Microsthes suturalis* (Borchmann, 1937) comb. nov.

(Fig. 30)

*Cistelopsis suturalis* Borchmann, 1937: 224.

**Type locality.** Indonesia, Sumatra, Si - Rambé.

**Type material.** Syntype (♂): wl with bf: SUMATRA / SI - RAMBÉ / *XII.90- III.91* / E. MODIGLIANI [pb] // wl: Coll. Kraatz [pb] // pl: Type [hb] // wl: Cistelopsis / suturalis n. sp. [hb] // wl: Sammlung / F. Borchmann / Eing. Nr. 5, 1943 [pb], (ZMUH).

**Type condition.** Specimen glued on wl. Right legs and antenna complete; left antenna with antennomeres 1-8 and left legs glued under body.

**Remark.** The habitus as in Fig. 30, a relatively larger species with bicolour elytra. Space between eyes wide, distinctly wider than diameter of one eye. Antennomere 4 distinctly longer than antennomere 3. BL 4.34 mm; HL 0.36 mm; HW 0.78 mm; OI equal to 46.35; PL 0.82 mm; PW 1.50 mm; PI equal to 54.67; EL 3.16 mm; EW 1.74 mm; HW/PW 0.52; BL/EW 2.49; EL/EW 1.82.

**Distribution.** Indonesia (Sumatra isl.).

Fig. 30: *Microsthes suturalis* (Borchmann, 1937) comb. nov.: 30- Habitus of syntype.

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## *Microsthes tryznai* sp. nov.
(Figs 31-34)

**Type locality.** North India, Uttaranchal state, ca 13 km NV of Nainital, Khairna Bridge env., 970-1000 m.

**Type material.** Holotype (♂): N INDIA, Uttaranchal state, / ca 13 km NV of Nainital, / KHAIRNA BRIDGE env., 970- / 1000 m, 13.-17.vii.2003, / Z. Kejval & M. Trýzna lgt., (VNPC); Paratype: (1 ♀): same data as holotype, (VNPC). The types are provided with printed red labels: Microsthes tryznai sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

**Description of holotype.** Habitus as in Fig. 31, body small, elongate eliptical, egg-shaped, from pale brown to dark reddish-brown, slightly shiny, with yellow setation, BL 4.05 mm. Widest near middle of elytral length; BL/EW 2.55.

Head (Fig. 32). Reddish-brown, with long, relatively sparse yellow setation, microgranulation, microrugosities and punctuation, shallow punctures relatively large. Anterior part slightly paler than posterior part and clypeus distinctly paler than anterior part. HW 0.76 mm; HW/PW 0.58. HL 0.44 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes distinctly longer than length of antennomere 3, slightly longer than length of antennomere 4; OI equal to 31.22.

Antennae. Long, relatively narrow, with microgranulation, relatively long yellow setation, with punctures. Antennomeres 1-3 slightly shiny, pale brown; antennomeres 4-6 in apical part distinctly darker than in basal half. Antennomeres 7-11 brown. AL 2.10 mm, AL/BL 0.52. Antennomere 2 shortest, antennomere 3 distinctly longer than antennomere 2; antennomere 4 distinctly longer than antennomere 3. RLA (1-11): 0.90 : 0.55 : 1.00 : 1.23 : 1.26 : 1.21 : 1.28 : 1.33 : 1.18 : 1.15 : 1.44. RL/WA (1-11): 2.19 : 1.96 : 2.79 : 3.00 : 3.50 : 3.36 : 2.94 : 2.89 : 2.30 : 2.25 : 3.73.

Maxillary palpus. Pale brown with sparse, pale brown setation and a few long pale brown setae. Palpomeres 2-4 distinctly narrowest at base and widest at apex, slightly shiny. Ultimate palpomere broadly triangular.

Pronotum (Fig. 32). Unicoloured reddish-brown, transverse, matte, with fine microgranulation and dense punctuation. Punctures medium-sized, interspaces narrow, but distinctly wider than diameter of punctures. PL 0.66 mm; PW 1.32 mm. PI equal to 50.16. Border lines complete, base bisinuate. Posterior corners rectangular, anterior angles indistinct.

Ventral side of body. Reddish-brown, with punctuation, slightly shiny. Abdomen brown with yellow setation, with fine microgranulation and microrugosities, slightly shiny. Ventrites 1-3 with dense, shallow punctuation, ventrites 4 and 5 impunctate or with a few small punctures.

Elytron. Dark reddish-brown, covered by dense and long, yellow setation. EL 2.95 mm. Widest near middle of elytra, EW 1.59 mm. EL/EW 1.86. Elytral striae with distinct rows of large-sized punctures, interspaces between punctures in rows distinctly narrower than diameter of punctures. Elytral intervals slightly convex, with sparse, small punctures and microgranulation, slightly shiny.

Scutellum. Pentagonal, reddish-brown with sides dark brown, with pale brown setae and microgranulation.

Elytral epipleura. Dark reddish-brown, with yellow setation, regularly narrowing to ventrite 1, then leads parallel.

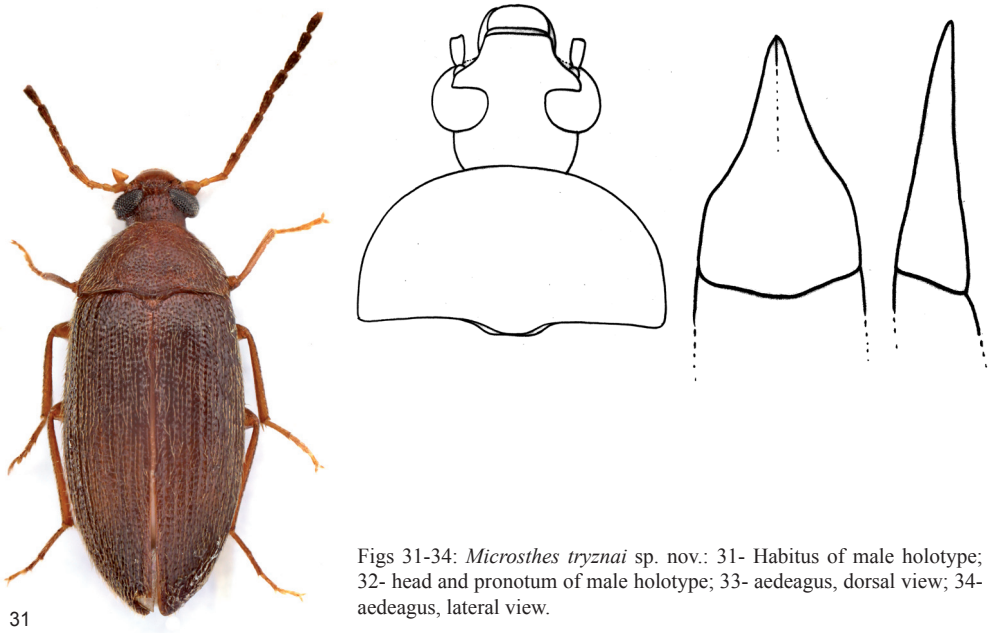
Legs. Narrow, pale brown, with dense yellow setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus very slightly widened and distinctly lobed. RLT: protarsus: 1.00 : 0.52 : 0.72 : 0.72 : 1.41; mesotarsus: 1.00 : 0.39 : 0.29 : 0.35 : 1.32; metatarsus: 1.00 : 0.37 : 0.15 : 0.41.

Both anterior tarsal claws with 7 visible teeth.

Aedeagus (Figs 33, 34). Relatively short, pale brown, slightly shiny. Apical piece short, triangular dorsally and laterally. Ratio of length of apical piece to length of basal piece 1: 3.33.

**Female** without distinct differences, only space between eyes slightly wider than that in male and anterior tarsal claws with 5 visible teeth. BL 4.32 mm; HL 0.38 mm; HW 0.79 mm; OI equal to 35.99; PL 0.76 mm; PW 1.46 mm; PI equal to 51.92; EL 3.18 mm; EW 1.80 mm.

**Differential diagnosis.** (For details see the key above). A species with unicolour elytra. *Microsthes tryznai* sp. nov. is clearly different from similar species *Microsthes holzschuhi* sp. nov. mainly by its narrow space between eyes (OI 31 in male and 36 in female); while *M. holzschuhi* has the space between eyes wide (OI more than 39). *M. tryznai* clearly differs from similar species *Microsthes kelantanensis* sp. nov. and *Microsthes ululalatensis* sp. nov. mainly by its space between eyes distinctly wider than the length of antennomere 4; while *M. kelantanensis* and *M. ululalatensis* have the space between eyes distinctly narrower than the length of antennomere 4. *M. tryznai* is clearly different from similar species *Microsthes cameronensis* Novák, 2011 and *Microsthes majeri* sp. nov. mainly by its antennomere 4 distinctly longer than antennomere 3; while *M. cameronensis* and *M. majeri* have antennomere



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Figs 31-34: *Microsthes tryznai* sp. nov.: 31- Habitus of male holotype; 32- head and pronotum of male holotype; 33- aedeagus, dorsal view; 34- aedeagus, lateral view.

4 only very slightly longer than antennomere 3. *M. tryznai* clearly differs from a similar species *Microsthes molucensis* Novák, 2011 mainly by its wide pronotum and body (BL/EW 2.55; PI 50); while *M. molucensis* has the pronotum and body narrow (BL/EW 2.80; PI 55).

**Etymology.** The new species is dedicated to the one of the collectors - Miloš Trýzna (Děčín, Czech Republic), well-known specialist in Anthribidae.

**Distribution.** North India, Uttarachal state.

### *Microsthes ululalatensis* sp. nov.
(Figs 35-38)

**Type locality.** Malaysia West, Kelantan province, Kampong Sungai Om, 30 km NW of Gua Musang, Ulu Lalat Mt., 1000 m.

**Type material.** Holotype (♂): MALAYSIA W, KELANTAN / 30 km NW of Gua Musang / Ulu Lalat Mt. 800-1000m / KAMPONG SUNGAI OM; 27. / v.-19.vi.2011; P.Čechovský lgt., (VNPC); Paratypes: (5 ♂♂ 1 ♀): same data as holotype, (VNPC). The types are provided with printed red labels: Microsthes ululalatensis sp. nov. / HOLOTYPUS [or PARATYPUS resp.] / V. Novák det. 2013.

**Description of holotype.** Habitus as in Fig. 35, body small, elongate eliptical, egg-shaped, from pale brown to reddish-brown, slightly shiny, with yellow setation, BL 3.92 mm. Widest near middle of elytral length; BL/EW 2.60.

Head (Fig. 36). Posterior half reddish-brown, with fine microgranulation and large, shallow, very sparse punctures, more matte, distinctly darker than pale brown anterior part and clypeus. Anterior part and clypeus with dense microgranulation and microrugosities,

sparse, large and shallow punctures and long, yellow setation, slightly shiny. HW 0.74 mm; HW/PW 0.58. HL 0.36 mm (visible part). Eyes dark, large, transverse, deeply excised, space between eyes distinctly narrower than length of antennomere 3; OI equal to 20.34.

Antennae. Long, antennomeres relatively narrow, with yellow setation, slightly shiny, antennomeres 1-3 yellow, antennomeres 4-6 partly and 7-11 blackish-brown with microgranulation and punctuation. AL 2.31 mm, AL/BL 0.59. Antennomere 2 shortest, antennomeres 4-11 each distinctly longer than antennomere 3. RLA (1-11): 0.64 : 0.42 : 1.00 : 1.09 : 1.06 : 1.18 : 1.29 : 1.38 : 1.24 : 1.16 : 1.29. RL/WA (1-11): 1.45 : 1.19 : 2.65 : 2.58 : 2.42 : 2.65 : 3.22 : 3.44 : 3.29 : 3.06 : 3.63.

Maxillary palpus. Pale brown with sparse, yellow setation. Palpomeres 2-4 distinctly widest at apex, with microgranulation, slightly shiny. Ultimate palpomere broadly triangular.

Pronotum (Fig. 36). Reddish-brown, transverse, semicircular, with dense microgranulation and punctuation. Punctures large and dense. PL 0.70 mm; PW 1.27 mm. PI equal to 54.86. Border lines complete, base bisinuate. Posterior angles very slightly sharp, anterior angles indistinct. Surface with relatively sparse and long, yellow setation, directed backwards.

Ventral side of body. Pale reddish-brown, with punctuation, shiny. Ventrites 1-3 reddish-brown with yellow setation, shallow punctures and microgranulation, slightly shiny. Ventrites 4 and 5 distinctly darker than ventrites 1-3, without punctures, with fine microgranulation.

Elytron. Pale reddish-brown, covered by long, yellow setation. EL 2.86 mm. Widest near middle of elytra, EW 1.51 mm. EL/EW 1.89. Elytral striae with distinct rows of large-sized punctures, interspaces between punctures in rows narrower than diameter of punctures. Elytral intervals with fine microgranulation.

Scutellum. Reddish-brown wide, pentagonal, with fine microgranulation and punctures.

Elytral epipleura. Pale reddish-brown as elytron itself, with yellow setae, regularly narrowing to ventrite 1, then leads parallel.

Legs. Narrow, pale brown, with yellow setation. Tibia and tarsi narrow, tibia slightly dilated anteriorly. Penultimate tarsomere of each tarsus slightly widened and distinctly lobed. RLT: protarsus: 1.00 : 0.59 : 0.44 : 0.56 : 1.25; mesotarsus: 1.00 : 0.49 : 0.31 : 0.41 : 0.69; metatarsus: 1.00 : 0.32 : 0.29 : 0.39.

Both anterior tarsal claws with 7 teeth.

Aedeagus (Figs 37, 38). Large, pale brown, slightly shiny. Basal piece very long, basal half rounded laterally, apical half laterally straight and dorsally parallel. Apical piece very short, triangular. Ratio of length of apical piece to length of basal piece 1: 12.27.

**Female** without distinct differences; both anterior tarsal claws with 5 teeth. BL 3.89 mm; HL 0.32 mm; HW 0.75 mm; OI equal to 23.12; PL 0.62 mm; PW 1.30 mm; PI equal to 47.67; EL 2.95 mm; EW 1.55 mm.

**Variation.** Measurements: mean (minimum - maximum). Males (n=6). BL 3.89 mm (3.82-3.95 mm); HL 0.32 mm (0.23-0.36 mm); HW 0.77 mm (0.73-0.80 mm); OI 21.64 (20.00-25.70), PL 0.70 mm (0.65-0.72 mm); PW 1.28 mm (1.24-1.31 mm); PI 54.30 (53.80-55.71); EL 2.87 mm (2.80-2.94 mm); EW 1.54 mm (1.52-1.61 mm).

**Differential diagnosis.** (For details see the key above). A species with unicolour elytra. *Microsthes ululalatensis* sp. nov. is clearly different from similar species *Microsthes*

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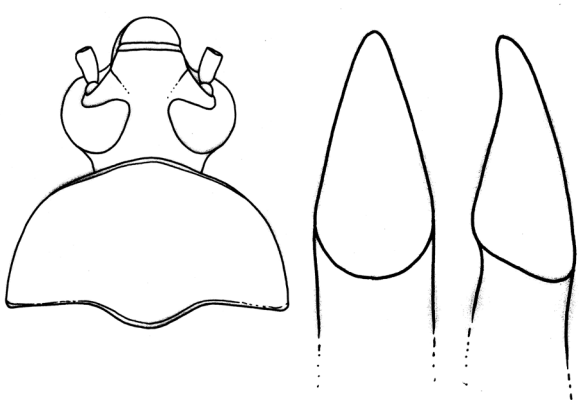

Figs 35-38: *Microsthes ululalatensis* sp. nov.: 35- Habitus of male holotype; 36- head and pronotum of male holotype; 37- aedeagus, dorsal view; 38- aedeagus, lateral view.

*holzschuhi* sp. nov. mainly by its narrow space between eyes (OI 20-26 in male and 23 in female); while *M. holzschuhi* has the space between eyes wide (OI more than 39). *M. ululalatensis* clearly differs from similar species *Microsthes cameronensis* Novák, 2011, *Microsthes majeri* sp. nov., *Microsthes molucensis* Novák, 2011 and *Microsthes tryznai* sp. nov. mainly by the space between eyes distinctly narrower than length of antennomere 4; *M. cameronensis*, *M. majeri*, *M. molucensis* and *M. tryznai* have space between eyes distinctly wider than length of antennomere 4. *M. ululalatensis* clearly differs from similar species *Microsthes kelantanensis* sp. nov. mainly by its space between eyes distinctly narrower than length of antennomere 3; while *M. kelantanensis* has the space between eyes wider than length of antennomere 3.

**Etymology.** Toponymic, after the name of Ulu Lalat Mountains.

**Distribution.** Malaysia.

## LIST OF THE SPECIES OF THE GENUS *MICROSTHES*

*Microsthes* Novák, 2011 type species *Microsthes barborae* Novák, 2011

| | |
|---|---|
| *Microsthes barborae* Novák, 2011 | Malaysia (Kelantan, Pahang) |
| *Microsthes bruggei* Novák, 2011 | Indonesia (Java) |
| *Microsthes cameronensis* Novák, 2011 | Malaysia (Kelantan, Pahang) |
| *Microsthes chamahensis* sp. nov. | Malaysia (Kelantan) |
| *Microsthes guamusangensis* sp. nov. | Malaysia (Kelantan) |
| *Microsthes holzschuhi* sp. nov. | Nepal |
| *Microsthes kelantanensis* sp. nov. | Malaysia (Kelantan) |

| | |
|---|---|
| *Microsthes majeri* sp. nov. | Andaman Is. |
| *Microsthes molucensis* Novák, 2011 | Indonesia (Moluccas, Halmahera) |
| *Microsthes petri* sp. nov. | Malaysia (Kelantan) |
| *Microsthes pusio* (Borchmann, 1925) | Indonesia (Sumatra) |
| *Microsthes quadrimaculata* (Pic, 1914) | India |
| *Microsthes rolciki* Novák, 2011 | Malaysia (Pahang) |
| *Microsthes suturalis* (Borchmann, 1937) | Indonesia (Sumatra) |
| *Microsthes tryznai* sp. nov. | India (Uttaranchal Pradesh) |
| *Microsthes ululalatensis* sp. nov. | Malaysia (Kelantan) |
| *Microsthes zizui* Novák, 2011 | Malaysia (Pahang) |

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