New species from Nepal I - genera *Oracula* Novák, 2019 and *Zizu* Novák, 2019 (Insecta: Coleoptera: Tenebrionidae: Alleculinae: Alleculini)

Vladimír Novák

Abstract

Five species from Nepal are described as new for science: *Oracula* (*Duocula*) *annapurna* sp. nov., *Oracula* (*D.*) *cechovskyi* sp. nov., *Oracula* (*D.*) *mechiica* sp. nov., *Zizu buriensis* sp. nov. and *Zizu flavis* sp. nov. The new species are illustrated, including male genitalia, and compared with similar species from Nepal. Keys to the species of the genus *Oracula* Novák, 2019 and genus *Zizu* Novák, 2019 inhabiting Nepal are provided.

Key words: Taxonomy, new species, descriptions, Coleoptera, Tenebrionidae, Alleculinae, Alleculini, Alleculina, *Oracula*, *Duocula*, *Zizu*, Nepal, Palaearctic Region

Introduction

The fauna of comb-clawed beetles (Alleculinae) of Nepal is poorly explored. Novák (2020) listed 37 species in 17 genera in the new Catalogue of Palaearctic Coleoptera (Volume 5 - Tenebrionoidea). Nine species of Alleculinae were described by Novák (2021a) as new from the territory of Nepal, and the species of the genera *Asticostena* Fairmaire, 1897 (*Asticostena arunica* Novák, 2021), *Borborella* Novák, 2020 (*Borborella nepalica* Novák, 2021) and *Cistelopsis* Fairmaire, 1896 (*Cistelopsis manaslu* Novák, 2021) were the first records of these genera in Nepal. Novák (2021b, c) described the species *Chitwania fulva* Novák, 2021, *Cistelochara aspera* Novák, 2021 and *Cistelochara maculata* Novák, 2021. At present, 49 species in 21 genera are known to occur in Nepal.
Five new species in the genera *Oracula* Novák, 2019 (Novák 2019a) and *Zizu* Novák, 2019 (Novák 2019b) are described as follows: *Oracula* (*Duocula*) *annapurna* sp. nov., *Oracula* (*D.*) *cechovskyi* sp. nov., *Oracula* (*D.*) *mechiica* sp. nov., *Zizu buriensis* sp. nov. and *Zizu flavis* sp. nov. All new species are illustrated including male genitalia, and compared with similar species from Nepal. Keys to the species of *Oracula* and *Zizu* from Nepal are provided.

Materials and methods

Two important morphometric characteristics used for the descriptions of species of the subfamily Alleculinae, the 'ocular index' dorsally (Campbell & Marshall 1964) and 'pronotal index' (Campbell 1965), are also used in this paper. The ocular index equals (100 × minimum dorsal distance between eyes) / (maximum width of head across eyes). The pronotal index is calculated as (100 × length of pronotum along midline) / (width across basal angles of pronotum). In the list of type material, a slash (/) separates data in separate rows, a double slash (//) separates different labels.

The following collection codes are used:

HNHM - collection of the Hungarian Natural History Museum, Budapest, Hungary;
NMEG - collection of the Naturkundemuseum, Erfurt, Germany;
VNPC - private collection of Vladimír Novák, Praha, Czech Republic.

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

Measurements were made using an Olympus SZ 40 stereoscopic microscope with continuous magnification and with a Soft Imaging System AnalySIS. Snapshots were taken using a Canon EOS 550 D camera, a Canon Macro Photo Lens MP-E and Helicon Focus 7.7.5 software.

Taxonomy

Subfamily Alleculinae Laporte, 1840
Tribe Alleculini Laporte, 1840
Subtribe Alleculina Laporte, 1840

Genus *Oracula* Novák, 2019
Type species *Oracula bicolor* Novák, 2019.

Subgenus *Duocula* Novák, 2019
Type species *Oracula clara* Novák, 2019.

***Oracula* (*Duocula*) *annapurna* sp. nov.**
(Figs. 1-4)

Type locality. Nepal, Annapurna Mountains.
Type material. Holotype (♂): ***NEPAL*** / *ANNAPURNA HIMAL* / *LUMLE* / *17.-22.06.1999* / *A. KUDRNA JR. LGT.*, (VNPC). Paratypes: (1 ♂): same data as holotype, (VNPC); (1 ♂): NEPAL HIMALAYA / Annapurna-Mts. / lg. Schmidt 1995 // Madi Khola / below Sikles / 1500m, 4.8., (NMEG); (1 ♂): NEPAL-HIMALAYA / Annapurna Mts. / 1993 lg. Schmidt // Ulleri südl. / Ghorepani / ca 2000m, 16.6., (VNPC). The types are provided with a printed red label: 'Oracula (Duocula) / annapurna sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2023'.

Description of holotype. Habitus as in Fig. 1, body larger, narrow, elongate, *Leptura*-shaped, shiny, from yellow to blackish brown, dorsal surface with pale setation, punctuation and very fine microgranulation, BL 11.65 mm. Widest near middle of the elytra; BL/EW 3.65.
Head (Fig. 2) almost as long as wide, through the eyes distinctly wider than anterior margin and narrower than base of pronotum. Dorsal surface shiny with long, pale setae, fine microgranulation and coarse punctures. Posterior part blackish brown, darker than reddish brown anterior part with pale reddish brown apex. Clypeus wide, transverse, half heart shaped, pale reddish brown with apex excised in the middle. Dorsal surface with large, shallow punctures, denser, long pale setae, microgranulation, semi-matt. Mandibles pale reddish or reddish brown with darker sides and apex, glabrous, shiny, with pale setae in sides. HW 1.71 mm; HW/PW 0.74; HL (visible part) 1.68 mm. Eyes large, transverse, excised, space between eyes narrow, distinctly narrower than diameter of one eye; approximately as wide as length of antennomere 1; OI equal to 23.40.
Antenna. Long, narrow, ochre yellow (AL 8.60 mm, almost reaching three quarters body length - AL/BL 0.74). Antennomeres 1-3 slightly shiny, remainder rather matt. Surface with microgranulation and dense, pale setation. Antennomere 2 shortest, antennomeres 4-11 shorter than or the same length as antennomere 3. Ultimate antennomere widest before apex.
RLA (1-11): 0.42 : 0.24 : 1.00 : 0.98 : 0.97 : 0.99 : 1.05 : 1.01 : 0.97 : 0.95 : 0.95.
RL/WA (1-11): 2.15 : 1.72 : 8.81 : 8.06 : 7.16 : 6.67 : 7.40 : 6.46 : 7.16 : 7.05 : 7.88.
Maxillary palpus ochre yellow, rather matt, with long, pale setation and fine microgranulation and very small punctures. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.
Pronotum (Fig. 2) blackish brown, shiny, convex, widest in base, distinctly narrower than elytra at humera. Dorsal surface with fine microgranulation, dense punctures and sparse pale setae denser near lateral margins. PL 2.07 mm; PW 2.32 mm; PI equal to 89.22. Border lines very narrow, margins conspicuous from dorsal. Lateral margins finely arcuate, base finely bisinuate, anterior margin distinctly arcuate near middle, anterior and posterior angles obtuse.
Elytra. Brown or dark brown, narrow, elongate, slightly convex, shiny, widest near middle. Dorsal surface with dense, long, pale setation. EL 7.90 mm; EW 3.19 mm; EL/EW 2.48. Elytral striae with rows of coarse punctures distinctly larger than those on pronotum, intervals between punctures in rows narrower than diameter of punctures. Elytral intervals finely convex, with very fine microgranulation and very small punctures.
Scutellum. Blackish brown, semi-elliptical, shiny, with small punctures and microrugosities.
Elytral epipleura well-developed, brown, with smaller punctures and pale setae distinctly narrowing to ventrite 1, then wider leads parallel in apical part.
Legs. Long and narrow, ochre yellow, with long, pale setation, femora yellow with black apex and partly dark setation, base of tibiae narrowly black. Dorsal surface with fine microgranulation and small, shallow punctures. Pro- and mesotibiae finely curved in apex. Pro- and mesotarsomeres 3 and 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.42 : 0.89 : 1.17 : 1.07 (protarsus), 1.00 : 0.47 : 0.58 : 0.75 : 1.24 (mesotarsus), 1.00 : 0.49 : 0.55 : 0.82 (metatarsus).
Tarsal claws large with teeth from both sides of hollow claw, both upper protarsal claws with more than 30 visible teeth.
Ventral side of body blackish brown with pale setae and small punctures. Abdomen blackish brown, semi-matt, with pale setae, fine microgranulation and dense, small punctures. Ultimate ventrite pale reddish brown.
Aedeagus (Figs. 3, 4) large, ochre yellow. Basal piece strong, finely rounded laterally and slightly narrowing in dorsal view. Apical piece narrow, elongate with rounded tip in dorsal view, hook-shaped in lateral view. Ratio of length of apical piece to length of basal piece in dorsal view 1: 3.37.
Female unknown.
Differential diagnosis. (For details see the key below). The species *Oracula* (*Duocula*) *annapurna* sp. nov. differs distinctly from the similar species *Oracula* (*Duocula*) *cechovskyi* sp. nov., *Oracula* (*Duocula*) *magnifica* Novák, 2019 and *Oracula* (*Duocula*) *mechiica* sp. nov. mainly by antennomere 4 shorter than antennomere 3; while *O*. (*D*.) *cechovskyi*, *O*. (*D*.) *magnifica* and *O*. (*D*.) *mechiica* have antennomere 4 longer than antennomere 3.
O. (*D*.) *annapurna* is clearly different from the similar species *Oracula* (*Duocula*) *amica* Novák, 2019 mainly by the smaller body (BL approximately 11.3 mm in males), by the shiny dorsal surface, by elytron dark brown or brown, by the ultimate ventrite distinctly paler than the penultimate and without an impression in the middle and by the shape of the apical piece of aedeagus (as in Figs. 3 and 4); while *O. (D.) amica* has body larger (BL approximately 12.4 mm in males), the dorsal surface is semi-matt, elytron is almost pale brown, ultimate ventrite has shallow impression in the middle and is the same colour as penultimate, and the shape of the apical piece of the aedeagus is as in Novák 2019: 59: figs. 3 and 4.
Variability. The type specimens vary somewhat in size; each character is given as its mean value, with full range in parentheses. Males (n= 4). BL 11.32 mm (10.47-11.83 mm); HL 1.75 mm (1.58-1.99 mm); HW 1.78 mm (1.61-2.03 mm); OI 22.08 (20.72-23.40); PL 1.99 mm (1.83-2.08 mm); PW 2.24 mm (2.06-2.24 mm); PI 88.98 (88.84-89.22); EL 7.57 mm (7.06-7.90 mm); EW 3.17 mm (3.05-2.28 mm).
Etymology. Toponymic, named after the type locality Annapurna Mountains in Nepal.
Distribution. Nepal.

***Oracula* (*Duocula*) *cechovskyi* sp. nov.**
(Figs. 5-8)

Type locality. East Nepal, District Arun Valley, Kosi Zone Dhaukuta, Ilille - Shidua Bhedetar, 2000-2700 m.
Type material. Holotype (♂): Nepal East, Kosi Zone Dhaukuta / distr. Arun valley, Ilille - Shidua / Bhedetar 2000-2700 m, 24.-28.v. / 1996, P. Čechovský lgt., (VNPC). Paratypes: (4 ♂♂): same data as holotype, (VNPC). The types are provided with a printed red label: 'Oracula (Duocula) / cechovskyi sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2023'.

Description of holotype. Habitus as in Fig. 5, body larger, narrow, elongate, *Leptura*-shaped, shiny, from yellow to brown, dorsal surface with pale setation, punctuation and fine microgranulation, BL 10.25 mm. Widest near middle of the elytra; BL/EW 3.45.

Head (Fig. 6) pale brown or pale reddish brown, slightly longer than wide, through the eyes distinctly wider than anterior margin, finely narrower than base of pronotum. Dorsal surface slightly shiny with long, pale setae, fine microgranulation and dense punctures. Clypeus wide, transverse, half heart shaped, pale reddish brown with apex excised in the middle. Dorsal surface with shallow punctures, long, pale setae, microgranulation and microrugosities, semi-matt. Mandibles reddish brown with darker sides and apex, glabrous, shiny, with pale setae in sides. HW 1.51 mm; HW/PW 0.76; HL (visible part) 1.59 mm. Eyes large, transverse, excised, space between eyes narrow, distinctly narrower than diameter of one eye; approximately as wide as length of antennomere 1; OI equal to 20.81.
Antenna. Long, narrow, ochre yellow (AL 8.45 mm, distinctly exceeding three quarters body length - AL/BL 0.82). Antennomeres 1-3 slightly shiny, remainder rather matt. Surface with dense, pale setation, microgranulation and small punctures. Antennomere 2 shortest, antennomeres 4 longest, antennomeres 5-11 shorter than antennomere 3. Ultimate antennomere widest before apex.
RLA (1-11): 0.47 : 0.23 : 1.00 : 1.13 : 0.83 : 0.89 : 0.85 : 0.90 : 0.95 : 0.94 : 1.00.
RL/WA (1-11): 1.71 : 1.17 : 6.23 : 6.65 : 6.13 : 6.18 : 6.81 : 7.00 : 5.70 : 5.00 : 5.08.
Maxillary palpus ochre yellow, rather matt, with pale setation and very fine microgranulation. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.
Pronotum (Fig. 6) dark brown, shiny, convex, widest in base, distinctly narrower than elytra at humera. Dorsal surface with very fine microgranulation not clearly distinct everywhere, dense smaller punctures and pale setae. PL 1.76 mm; PW 2.00 mm; PI equal to 88.00. Border lines very narrow, margins conspicuous in dorsal view, only in anterior margin not clearly distinct. Lateral margins rather straight in basal part, arcuate in apical half. Base finely bisinuate, anterior margin almost straight, very finely rounded in the middle, anterior and posterior angles obtuse.
Elytra. Brown, narrow, elongate, slightly convex, shiny, widest near middle. Dorsal surface with dense, semi-erect, pale setation. EL 6.90 mm; EW 2.97 mm; EL/EW 2.32. Elytral striae with rows of coarse punctures distinctly larger than those on pronotum, intervals between punctures in rows narrower than diameter of punctures. Elytral intervals finely convex, with fine microgranulation and very small punctures.
Scutellum. Brown with darker sides, semi-elliptical, with a few larger shallow punctures.
Elytral epipleura well-developed, dark brown, with punctures and pale setae distinctly narrowing to ventrite 1, then relatively narrow and parallel in apical part.
Legs. Long and narrow, ochre yellow, with long, pale setation, apex of meso-femora finely darker, apex of metafemora distinctly darker. Tibiae normally shaped, slightly widened apically. Pro- and mesotarsomeres 3 and 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.58 : 0.83 : 1.25 : 2.03 (protarsus), 1.00 : 0.51 : 0.67 : 0.94 (metatarsus).
Tarsal claws large with teeth from both sides of hollow claw, both upper protarsal claws with more than 20 visible teeth.
Ventral side of body dark brown with pale setae and small punctures. Abdomen reddish brown or dark reddish brown, shiny, with pale setae, fine microgranulation and dense, small punctures.
Aedeagus (Figs. 7, 8) smaller, ochre yellow, matt. Basal piece rounded laterally and narrowing in dorsal view. Apical piece elongate triangular with rounded tip in dorsal view, beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece in dorsal view 1: 3.06.
Female unknown.
Differential diagnosis. (For details see the key below). The species *Oracula* (*Duocula*) *cechovskyi* sp. nov. distinctly differs from the similar species *Oracula* (*Duocula*) *amica* Novák, 2019 and *Oracula* (*Duocula*) *annapurna* sp. nov. mainly by antennomere 4 shorter than antennomere 3; while *O*. (*D*.) *amica* and *O*. (*D*.) *annapurna* have antennomere 4 longer than antennomere 3.
O. (*D*.) *cechovskyi* is clearly different from the similar species *Oracula* (*Duocula*) *magnifica* Novák, 2019 and *Oracula* (*Duocula*) *mechiica* sp. nov. mainly by each of antennomeres 5-9 distinctly shorter than antennomere 3 and by the shape of the apical piece of the aedeagus as in Figs. 7 and 8; while *O*. (*D*.) *magnifica* and *O*. (*D*.) *mechiica* have each of antennomeres 5-9 distinctly longer than antennomere 3 and shape of aedeagus is as in Novák 2019: 64: figs. 11 and 12 for *O*. (*D*.) *mechiica* and as in Figs. 11 and 12 for the species *O*. (*D*.) *mechiica*.
Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n= 5). BL 10.78 mm (10.14-11.91 mm); HL 1.69 mm (1.57-1.87 mm); HW 1.61 mm (1.49-1.78 mm); OI 21.83 (20.07-24.62); PL 1.89 mm (1.76-2.27 mm); PW 2.17 mm (2.00-2.65 mm); PI 87.36 (85.66-88.24); EL 7.19 mm (6.69-7.77 mm); EW 3.13 mm (2.97-3.58 mm).
Etymology. Patronymic, named for the collector of the type specimens - Petr Čechovský (Brno, Czech Republic), after his surname.
Distribution. Nepal.

Oracula (*Duocula*) *mechiica* sp. nov.
(Figs. 9-12)

Type locality. Nepal, Province Mechi, District Taplejung, 15-20 km eastern of Taplejung, from Phumphe to Khesawa, 27°22´30´´N, 87°48´54´´E, 1900-2200 m.
Type material. Holotype (♂): NEPAL, P: Mechi D: Taple- / jung, 20-15 km E Taplejung, / Phumphe to Khesawa 1900- / 2200m, 27°22´30´´N, 87°48´/ 54´´E, 25.V.2003, deciduous / forest, leg. A. Weigel, (NMEG). Paratype: (1 ♂): same data as holotype, (VNPC). The types are provided with a printed red label: 'Oracula (Duocula) / mechiica sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2023'.

Description of holotype. Habitus as in Fig. 9, body larger, narrow, elongate, *Leptura*-shaped, shiny, from ochre yellow to dark brown, dorsal surface with pale setation, punctuation and fine microgranulation, BL 11.35 mm. Widest near middle of the elytra; BL/EW 3.47.
Head (Fig. 10) slightly longer than wide, through the eyes distinctly wider than anterior margin, narrower than base of pronotum. Dorsal surface shiny with dense punctures. Posterior part dark brown, reddish brown anterior part with long, pale setae and fine microgranulation. Clypeus wide, transverse, half heart shaped, pale reddish brown with apex excised in the middle. Dorsal surface with shallow punctures, long and dense,

pale setae, microgranulation and microrugosities, semi-matt. Mandibles pale reddish brown with darker sides and apex, glabrous, shiny, with pale setae in sides. HW 1.69 mm; HW/PW 0.75; HL (visible part) 1.83 mm. Eyes large, transverse, excised, space between eyes narrow, distinctly narrower than diameter of one eye; slightly narrower than length of antennomere 1; OI equal to 22.13.

Antenna. Long, narrow (AL 9.67 mm, distinctly exceeding three quarters body length - AL/BL 0.85). Antennomeres 1-5 semi-matt, remainder matt and slightly darker. Surface with dense, pale setation, microgranulation and small, shallow punctures. Antennomere 2 shortest, antennomeres 4-11 almost longer than antennomere 3.

RLA (1-11): 0.40 : 0.20 : 1.00 : 1.12 : 1.03 : 1.07 : 1.08 : 1.06 : 1.05 : 0.99 : 1.00.

RL/WA (1-11): 2.25 : 1.48 : 7.43 : 9.22 : 8.05 : 9.28 : 9.94 : 8.88 : 7.46 : 7.00 : 8.67.

Maxillary palpus ochre yellow, semi-matt, with long, pale setation, fine microgranulation and very small punctures. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.

Pronotum (Fig. 10) dark brown, shiny, convex, widest in basal half, distinctly narrower than elytra at humera. Dorsal surface with dense smaller punctures, microgranulation almost indistinct and few pale setae near lateral margins. PL 1.88 mm; PW 2.27 mm; PI equal to 82.72. Border lines very narrow, margins conspicuous in dorsal view. Lateral margins parallel in basal half, narrowing in apical part. Base finely bisinuate, anterior margin very finely excised, anterior and posterior angles obtuse.

Elytra. Brown, narrow, elongate, slightly convex, shiny, widest near middle. Dorsal surface with long, pale setation. EL 7.64 mm; EW 3.27 mm; EL/EW 2.34. Elytral striae with rows of coarse punctures distinctly larger than those on pronotum, intervals between punctures in rows narrower than diameter of punctures. Elytral intervals finely convex, with fine microgranulation and double punctuation with small and very small punctures.

Scutellum. Brown, semi-elliptical, semi-matt with a few shallow punctures, few long, pale setae, microgranulation and microrugosities.

Elytral epipleura well-developed, brown, with punctures narrowing to ventrite 1 in basal half, with denser and longer pale setae leads narrow and parallel in apical part.

Legs. Long and narrow, ochre yellow, with long, pale setation and fine microgranulation, femora with brown apex more pronounced in metafemora than in pro- or mesofemora. Tibiae normally shaped, mesotibiae slightly curved apically. Pro- and mesotarsomeres 3 and 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.79 : 0.82 : 0.89 : 1.47 (protarsus), 1.00 : 0.55 : 0.52 : 0.61 : 1.22 (mesotarsus), 1.00 : 0.59 : 0.56 : 0.94 (metatarsus).

Tarsal claws large with teeth from both sides of hollow claw, both upper protarsal claws with about 40 visible teeth.

Ventral side of body dark brown with pale setae and small punctures. Abdomen brown, shiny, with pale setation denser near lateral margins, fine microgranulation and dense, small punctures. Ultimate ventrite slightly paler than penultimate.

Aedeagus (Figs. 11, 12) ochre yellow, shiny. Basal piece finely rounded laterally and slightly narrowing in dorsal view. Apical piece beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece in dorsal view 1: 3.65.

Female unknown.

Differential diagnosis. (For details see the key below). The species *Oracula* (*Duocula*) *mechiica* sp. nov. distinctly differs from the similar species *Oracula* (*Duocula*) *amica* Novák, 2019 and *Oracula* (*Duocula*) *annapurna* sp. nov. mainly by antennomere 4 shorter than antennomere 3; while *O*. (*D*.) *amica* and *O*. (*D*.) *annapurna* have antennomere 4 longer than antennomere 3.

O. (*D*.) *mechiica* is clearly different from the similar species *Oracula* (*Duocula*) *cechovskyi* sp. nov. and *O*. (*D*.) *magnifica* mainly by each of the antennomeres 5-9 being longer than antennomere 3, by the shape of the apical piece of aedeagus as in Figs. 11 and 12; while *O*. (*D*.) *cechovskyi* and *O*. (*D*.) *magnifica* have each of antennomeres 5-9 shorter than antennomere 3 and the shape of the apical piece of the aedeagus is as in Figs. 7 and 8 for species *O*. (*D*.) *cechovskyi* and as in Novák 2019: 64: figs. 11 and 12 for species *O*. (*D*.) *magnifica*.

Variability. The type specimens vary somewhat in size; each character is given as its mean value, with the full range in parentheses. Males (n= 2). BL 12.07 mm (11.35-12.79 mm); HL 1.92 mm (1.83-2.00 mm); HW 1.76 mm (1.69-1.83 mm); OI 24.31 (22.13-26.48); PL 1.96 mm (1.88-2.03 mm); PW 2.35 mm (2.27-2.42 mm); PI 83.30 (82.72-83.88); EL 8.20 mm (7.64-8.76 mm); EW 3.50 mm (3.27-3.72 mm).

Etymology. Toponymic, named after the type locality, the Province of Mechi in Nepal.

Distribution. Nepal.

Key to the *Oracula* Novák, 2019 species from Nepal

1 (2) Antennomere 4 shorter than antennomere 3. ..... **3**

2 (1) Antennomere 4 longer than antennomere 3. ..... **5**

3 (4) Body larger (BL approximately 12.4 mm in males), dorsal surface semi-matt, elytron almost pale brown, ultimate ventrite with shallow impression in the middle and in same colour as penultimate. .... ***Oracula* (*Duocula*) *amica* Novák, 2019**

4 (3) Body smaller (BL approximately 11.3 mm in males), dorsal surface shiny, elytron dark brown or brown, ultimate ventrite without impression in the middle, distinctly paler than penultimate. Habitus as in Fig. 1, head and pronotum Fig. 2, apical piece of aedeagus (Figs. 3 and 4). ..... ***Oracula* (*Duocula*) *annapurna* sp. nov.**

5 (6) Each of antennomeres 5-9 distinctly longer than antennomere 3. Habitus as in Fig. 9, head and pronotum Fig. 10, apical piece of aedeagus (Figs. 11 and 12). .... ***Oracula* (*Duocula*) *mechiica* sp. nov**.

6 (5) Each of antennomeres 5-9 distinctly shorter than antennomere 3. ..... **7**

7 (8) Body larger (BL approximately 12 mm in males), profemora with dark apex, pronotum shorter (PI approximately 80 in males) and slightly rounded in lateral margins. .... ***Oracula* (*Duocula*) *magnifica* Novák, 2019**

8 (7) Body smaller (BL approximately 10.8 mm in males), profemora pale in apex, pronotum longer (PI approximately 87 in males), lateral margins of pronotum parallel in basal part. Habitus as in Fig. 5, head and pronotum Fig. 6, apical piece of aedeagus (Figs. 7 and 8). .... ***Oracula* (*Duocula*) *cechovskyi* sp. nov.**

Genus *Zizu* Novák, 2019
Type species *Zizu kejvali* Novák, 2019.

***Zizu buriensis* sp. nov.**
(Figs. 13-17)

Type locality. West Nepal, Buri Gandaki, Sudi-Labubesi, 1300-1650 m.
Type material. Holotype (♂): W-NEPAL, Buri Gandaki / Sudi-Labubesi, 1300- / 1650m, 27. Mai 1990 / leg. PROBST, (VNPC). The type is provided with a printed red label: ’Zizu / buriensis sp. nov. / HOLOTYPUS / V. Novák det. 2023‘.

Description of holotype. Habitus as in Fig. 13, body large, wide, oval, semi-matt, from yellow to brown, dorsal surface with pale setation, punctuation and fine microgranulation, BL 11.36 mm. Widest near middle of the elytra; BL/EW 2.72.
Head (Fig. 14) reddish brown or pale reddish brown, a little wider than long, through the eyes distinctly narrower than anterior margin or base of pronotum. Dorsal surface semi-matt with sparse, pale setae, fine microgranulation and dense, small punctures. Clypeus wide, transverse, half heart shaped, pale reddish brown with apex excised in the middle. Dorsal surface with shallow punctures, pale setae, and microgranulation, matt. Mandibles reddish brown with darker sides and apex. HW 1.68 mm; HW/PW 0.54; HL (visible part) 1.58 mm. Eyes large, transverse, excised, space between eyes narrow, distinctly narrower than diameter of one eye; approximately as wide as length of antennomere 1; OI equal to 28.90.
Antenna (Fig. 15). Long, narrow, ochre yellow (AL 1-9) 5.11 mm, almost reaching half body length - AL(1-9)/BL 0.45). Antennomeres matt, surface with sparse and short, pale setae and very small, sparse punctures. Antennomere 2 shortest, antennomeres 4-9 finely widened apically and longer than antennomere 3.
RLA (1-9): 0.74 : 0.28 : 1.00 : 1.33 : 1.21 : 1.13 : 1.26 : 1.10 : 1.13.
RL/WA (1-9): 2.23 : 1.22 : 3.90 : 4.95 : 4.70 : 4.00 : 4.67 : 4.30 : 5.18.
Maxillary palpus ochre yellow, rather matt. Palpomeres 2 and 3 distinctly narrowest at base and widest at apex, ultimate palpomere widely triangular.
Pronotum (Fig. 14) reddish brown, wide, transverse, semi-matt, convex, widest in base, approximately as wide as elytra at humera. Dorsal surface with fine microgranulation, dense small and shallow punctures and pale setation. PL 1.91 mm; PW 3.14 mm; PI equal to 60.83. Border lines very narrow, margins conspicuous in dorsal view. Lateral margins very finely arcuate. Base finely bisinuate, anterior margin slightly arcuate, anterior and posterior angles obtuse.
Elytra. Pale reddish brown, wide, oval, slightly convex, semi-matt, widest near middle. Dorsal surface with pale setation. EL 7.87 mm; EW 4.18 mm; EL/EW 1.88. Elytral striae with rows of small, coarse punctures approximately as large as those on pronotum, intervals between punctures in rows narrower than diameter of punctures. Elytral intervals very finely convex, with fine microgranulation and small, shallow punctures.
Elytral epipleura well-developed, pale reddish brown, with punctures and pale setae distinctly narrowing to ventrite 1, then relatively narrow and parallel in apical part.
Legs. Long and narrow, yellow or ochre yellow, with pale setation, femora with narrowly black apex and base of tibiae brown. Dorsal surface with fine microgranulation and shallow punctures. Tibiae normally shaped, slightly widened apically. Pro- and mesotarsomeres 3 and 4 and metatarsomere 3 widened and lobed. RLT: 1.00 : 0.52 : 0.51 : 0.58 : 1.31 (protarsus), 1.00 : 0.38 : 0.35 : 0.35 : 0.79 (mesotarsus), 1.00 : 0.31 : 0.32 : 0.49 (metatarsus).
Both protarsal claws with 14 visible teeth.
Ventral side of body pale reddish brown with pale setae and small punctures. Abdomen pale reddish brown, shiny, with sparse, pale setae denser near lateral margins, fine microgranulation and dense, small and shallow punctures. Ultimate ventrite with large, shallow triangular impression in the middle, distinctly darker than penultimate.
Aedeagus (Figs. 16, 17) large, ochre yellow, semi-matt. Basal piece strong, almost straight laterally and slightly narrowing in dorsal view. Apical piece elongate triangular in dorsal view, beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece in dorsal view 1: 5.57.
Female unknown.

Differential diagnosis. (Comparison of males). Similar species from Nepal are *Zizu flavis* sp. nov. and *Zizu nepalensis* Novák, 2019.
Zizu buriensis sp. nov. distinctly differs from the similar species *Z. flavis* mainly by wider space eyes between (OI 29) - approximately as wide as length of antennomere 1, by antennomeres 4-9 1.10-1.33 times longer than antennomere 3 and by the shape of the apical piece of the aedeagus an in Figs. 16 and 17; while *Z. flavis* has narrower space between eyes (OI approximately 15) - only a little wider than length of antennomere 2, antennomeres 4-9 are 1.34-1.77 times longer than antennomere 3 and shape of the apical piece of the aedeagus is as in Figs. 21 and 22.
Z. buriensis is clearly different from the similar species *Z. nepalensis* mainly by larger body (BL approximately 11 mm), by dorsal surface and antenna reddish brown or pale reddish brown and by the shape of the apical piece of the aedeagus (as in Figs. 16 and 17); while *Z. nepalensis* has smaller body (BL approximately 7.4 mm), dorsal surface is dark brown and antennomeres 4-11 are brown, shape of the apical piece of the aedeagus is as in Novák 2019b: 193 (figs. 14 and 15).
Etymology. Toponymic, named after the first name of the type locality Buri in West Nepal.
Distribution. Nepal.

***Zizu flavis* sp. nov.**
(Figs. 18-22)

Type locality. Central Nepal, Bagmati, Bhote-Koshi-K, from Tatopani to Malaphu, 700 m.
Type material. Holotype (♂): C-Nepal / Bagmati / C. Holzschuh // Bhote-Koshi-K / Tatopani - / Malaphu 700m / 30. VI. 1987, (VNPC). Paratypes: (1 ♂): INDIA, W Bengal / Darjeeling Distr. / Sukna, 180 m / leg. Gy. Topál // netting in under- / growth near river / 22. V. 1980, (HNHM). The types are provided with a printed red label: ’Zizu / flavis sp. nov. / HOLOTYPUS [or PARATYPUS] / V. Novák det. 2023‘.

Description of holotype. Habitus as in Fig. 18, body larger, oval, convex, semi-matt, from yellow to reddish brown, dorsal surface with pale setation, punctuation and fine microgranulation, BL 9.99 mm. Widest near middle of the elytra; BL/EW 2.71.

Head (Fig. 19) slightly wider than long, through the eyes distinctly narrower than base of pronotum. Dorsal surface slightly shiny with long, pale setation, fine microgranulation and punctures. Posterior part reddish brown, darker than pale reddish brown anterior part. Clypeus wide, transverse, rounded, pale reddish brown, matt. Dorsal surface with shallow punctures, long, pale setae, microgranulation and microrugosities. Mandibles reddish brown with darker sides and apex, glabrous with pale setae in sides. HW 1.55 mm; HW/PW 0.54; HL (visible part) 1.43 mm. Eyes large, transverse, excised, space between eyes narrow, distinctly narrower than diameter of one eye; slightly wider than length of antennomere 2; OI equal to 15.64.

Antenna (Fig. 20). Long, narrow, ochre yellow (AL 5.60 mm, exceeding half body length - AL/BL 0.56). Antennomeres narrow, rather matt, surface with fine microgranulation, pale setae, and small, shallow punctures. Antennomere 2 shortest, antennomeres 4-9 longer than antennomere 3, antennomeres 3-10 finely widened apically. Ultimate antennomere widest before apex, half drop-shaped.

RLA (1-11): 0.60 : 0.38 : 1.00 : 1.77 : 1.51 : 1.49 : 1.37 : 1.34 : 1.34 : 1.00 : 0.92.

RL/WA (1-11): 1.47 : 1.47 : 3.84 : 5.86 : 4.40 : 4.74 : 4.55 : 3.77 : 4.90 : 4.07 : 3.88.

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

Pronotum (Fig. 19) pale reddish brown, semi-circular, rather matt, convex, widest in base, approximately as wide as elytra at humera. Dorsal surface with fine microgranulation, dense small, shallow punctures and long, pale setation, denser near lateral margins. PL 1.60 mm; PW 2.90 mm; PI equal to 55.17. Border lines very narrow, margins conspicuous in dorsal view. Lateral margins arcuate, base bisinuate, anterior margin finely rounded, anterior angles indistinct, posterior angles obtuse.

Elytra. Pale reddish brown, oval, convex, semi-matt, widest near middle. Dorsal surface with pale setation. EL 6.96 mm; EW 3.69 mm; EL/EW 1.87. Elytral striae with rows of smaller, coarse punctures a little larger than those on pronotum, intervals between punctures in rows as large or narrower than diameter of punctures. Elytral intervals finely convex, with fine microgranulation and very small punctures.

Scutellum. Pale reddish brown, pentagonal, semi-matt, with small punctures and microgranulation.

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

Legs. Long and narrow, ochre yellow, with long, pale setation. Dorsal surface with fine microgranulation and small, shallow punctures. Tibiae normally shaped, meso- and metatibiae more widened apically then protibiae. Pro- and mesotarsomeres 3 and 4 and metatarsomeres 3 widened and lobed. RLT: 1.00 : 0.56 : 0.58 : 0.55 : 0.96 (protarsus), 1.00 : 0.27 : 0.22 : 0.43 (metatarsus).

Both protarsal claws with 10 visible teeth.

Ventral side of body pale reddish brown with pale setae and small punctures. Abdomen pale reddish brown, shiny, with long, recumbent, pale setae denser near lateral margins, fine microgranulation and small punctures. Ultimate ventrite with large, shallow impression near apex finely excised in the middle.

Aedeagus (Figs. 21, 22) large, ochre yellow, shiny. Basal piece strong, rounded laterally and narrowing in dorsal view. Apical piece narrow, elongate, beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece in dorsal view 1: 3.92.

Female unknown.

Differential diagnosis. (Comparision of males). Similar species from Nepal are *Zizu buriensis* sp. nov. and *Zizu nepalensis* Novák, 2019.

Zizu flavis sp. nov. distinctly differs from the similar species *Z. buriensis* mainly by the narrower space between eyes (OI approximately 15) - only a little wider than the length of antennomere 2, by antennomeres 4-9 1.34-1.77 times longer than antennomere 3 and by the shape of the apical piece of the aedeagus (as in Figs. 21 and 22); while *Z. buriensis* has the space between eyes wider (OI 29), its antennomeres 4-9 are only 1.10-1.33 times longer than antennomere 3 and the shape of the apical piece of the aedeagus is an in Figs. 16 and 17.

Z. flavis is clearly different from the similar species *Z. Nepalensis,* mainly by the larger body (BL approximately 10 mm), by dorsal surface and antenna pale and by the shape of the apical piece of the aedeagus (as in Figs. 21 and 22); while *Z. nepalensis* has a smaller body (BL approximately 7.4 mm), dorsal surface is dark and antennomeres 4-11 are brown, and the shape of the apical piece of the aedeagus is as in Novák 2019b: 193 (figs. 14 and 15).

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n= 2). BL 9.89 mm (9.79-9.99 mm); HL 1.40 mm (1.36-1.43 mm); HW 1.52 mm (1.48-1.55 mm); OI 14.71 (13.78-15.64); PL 1.62 mm (1.60-1.64 mm); PW 2.87 mm (2.83-2.90 mm); PI 56.56 (55.02-57.95); EL 6.88 mm (6.79-6.96 mm); EW 3.66 mm (3.62-3.69 mm).

Etymology. From Latin *flavis* (meaning 'yellow').

Distribution. India (West Bengal, Darjeeling), Nepal.

Key to the *Zizu* Novák, 2019 species from Nepal

1 (2) Body smaller (BL approximately 7.4 mm), dorsal surface dark brown, antennomeres 4-11 brown..... .....***Zizu nepalensis* Novák, 2019**

2 (1) Body larger (BL from 9.8-11 mm), dorsal surface from pale brown to reddish brown, antennomeres pale..... **3**

3 (4) Space between eyes narrower (OI approximately 15), antennomeres 4-9 1.34-1.77 times longer than antennomere 3. Habitus as in Fig. 18, head and pronotum (Fig. 19), antenna (Fig. 20) and apical piece of aedeagus (Figs. 21 and 22). .....***Zizu flavis* sp. nov.**

4 (3) Space between eyes wider (OI approximately 29), antennomeres 4-9 1.10-1.33 times longer than antennomere 3. Habitus as in Fig. 13, head and pronotum (Fig. 14), antenna (Fig. 15) and apical piece of aedeagus (Figs. 16 and 17). .....***Zizu buriensis* sp. nov.**

Acknowledgements

Sincere thanks are due to Matthias Hartmann (NMEG) and Ottó Merkl (†) (MNHM) for loaning me material under their care. Special thanks are due to Zuzana Čadová (Liberec, Czech Republic) for excellent drawings and Maxwell V.L. Barclay (London) for English review.

References

Campbell, J. M. (1965): A revision of the genus *Charisius* (Coleoptera: Alleculidae). - The Coleopterists Bulletin **19**: 43-56.

Campbell, J. M. & J. D. Marshall (1964): The ocular index and its applications to the taxonomy of the Alleculidae (Coleoptera). - The Coleopterist´s Bulletin **18**: 42.

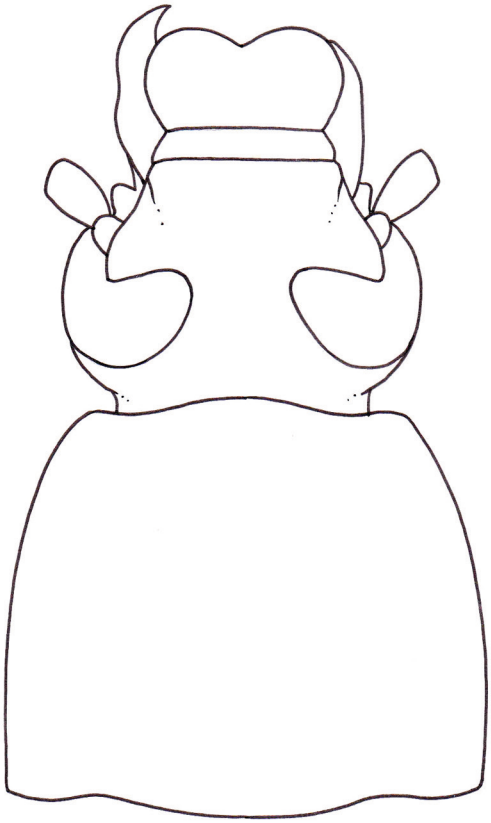
Novák, V. (2019a): New genera of Alleculinae (Coleoptera: Tenebrionidae) from Palaearctic and Oriental Regions XI - *Oracula* gen. nov. - Folia Heyrovskyana, Series A **27** (2): 52-86.

- (2019b): New genera of Alleculinae (Coleoptera: Tenebrionidae: Alleculinae: Alleculini) from Palaearctic and Oriental Regions VIII - *Zizu* gen. nov. Studies and Reports Taxonomical Series **15** (1): 185-203.
- (2020): Subfamily Alleculinae Laporte, 1840, pp. 417-453. - In: Iwan, D. & I. Löbl (eds). Catalogue of Palaearctic Coleoptera. Volume 5. Revised and Updated Second Edition. Tenebrionoidea. - Brill, Leiden/Boston, 945 pp.
- (2021a): Check-list of Alleculinae (Insecta: Coleoptera: Tenebrionidae) of Nepal, with description of a new species pp. 545-566. - In: Hartmann, M.; M. Barclay & J. Weipert (eds.): Biodiversität und Naturausstattung im Himalaya VII. - Erfurt 2021.
- (2021b): New species of *Chitwania* Novák, 2015 (Coleoptera: Tenebrionidae: Alleculinae: Alleculini) from the Palaearctic and the Oriental Regions. Folia Heyrovskyana, Series A **29** (2): 91-115.
- (2021c): New genera of Alleculinae (Coleoptera: Tenebrionidae: Alleculinae: Alleculini) from the Palaearctic and the Oriental Regions XIII - *Cistelochara* gen. nov. Studies and Reports, Taxonomical Series **17** (2): 381-394.

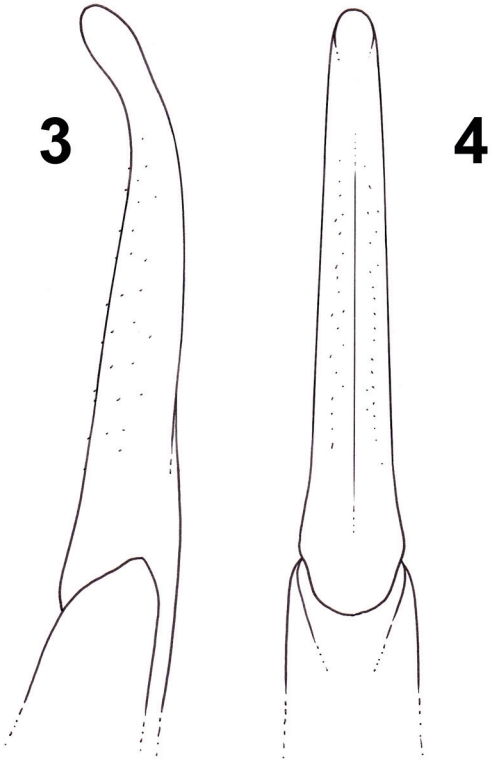
Author's address:

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

1



2

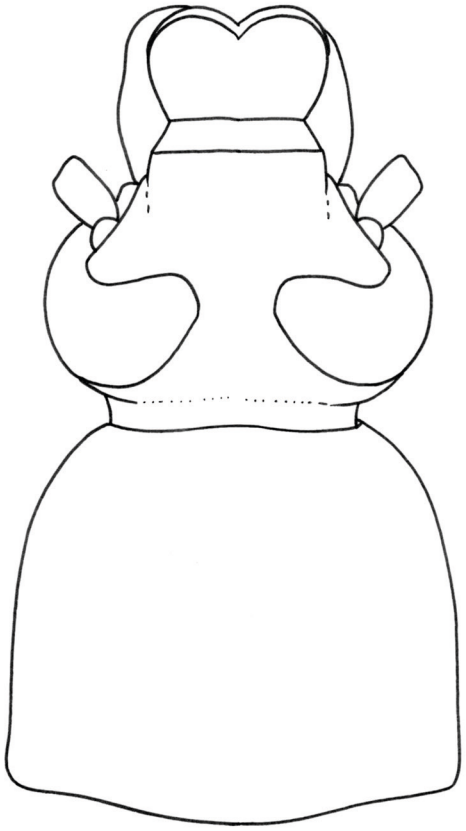


3

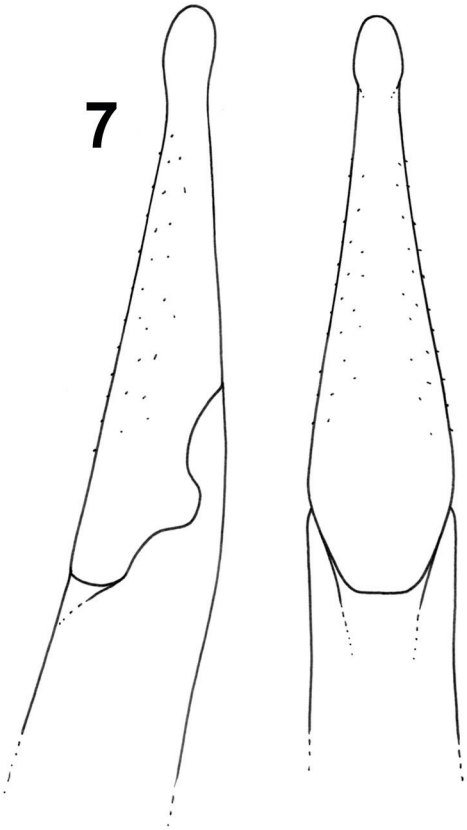
4

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

5



6

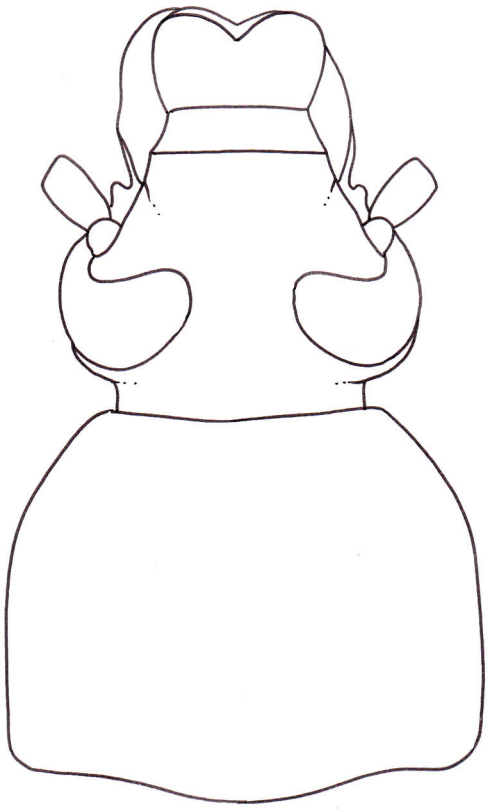


7

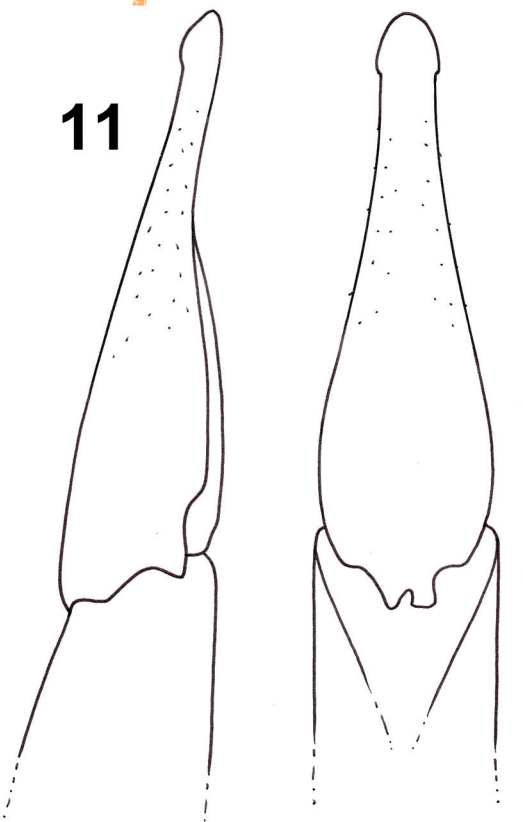
8

Figs. 5-8: *Oracula* (*Duocula*) *cechovskyi* sp. nov. (male holotype): **5** - habitus; **6** - head and pronotum; **7** - apical piece of aedeagus, lateral view; **8** - apical piece of aedeagus, dorsal view.

9



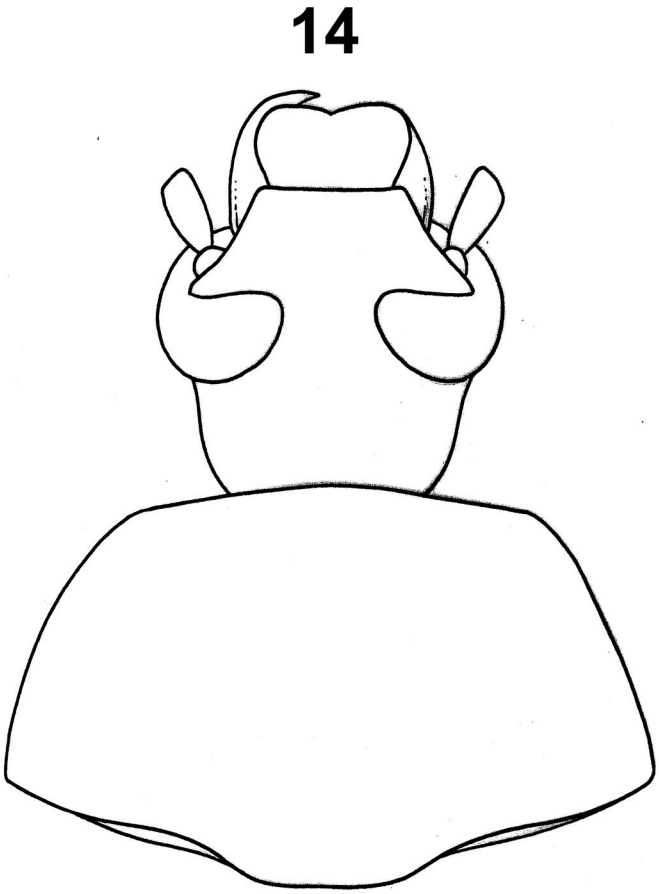
10

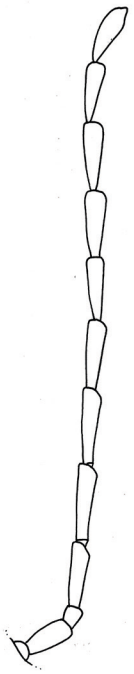


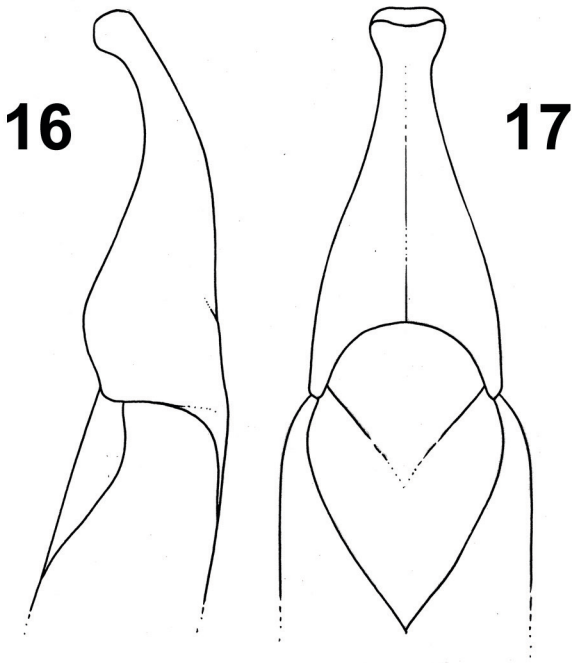
11

12

Figs. 9-12: *Oracula* (*Duocula*) *mechiica* sp. nov. (male holotype): **9** - habitus; **10** - head and pronotum; **11** - apical piece of aedeagus, lateral view; **12** - apical piece of aedeagus, dorsal view.

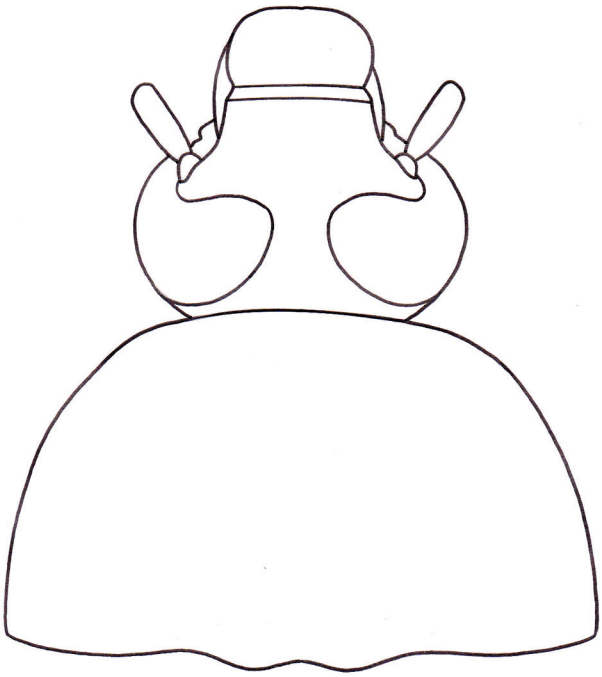




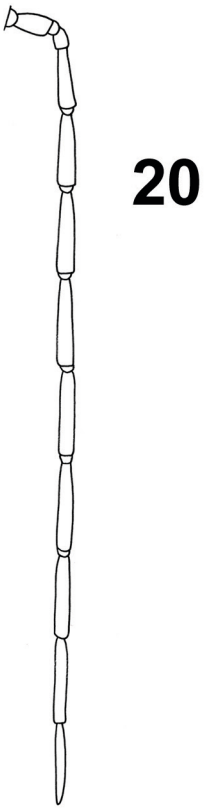


Figs. 13-17: *Zizu buriensis* sp. nov. (male holotype): **13** - habitus; **14** - head and pronotum; **15** - antenna; **16** - apical piece of aedeagus, lateral view; **17** - apical piece of aedeagus, dorsal view.

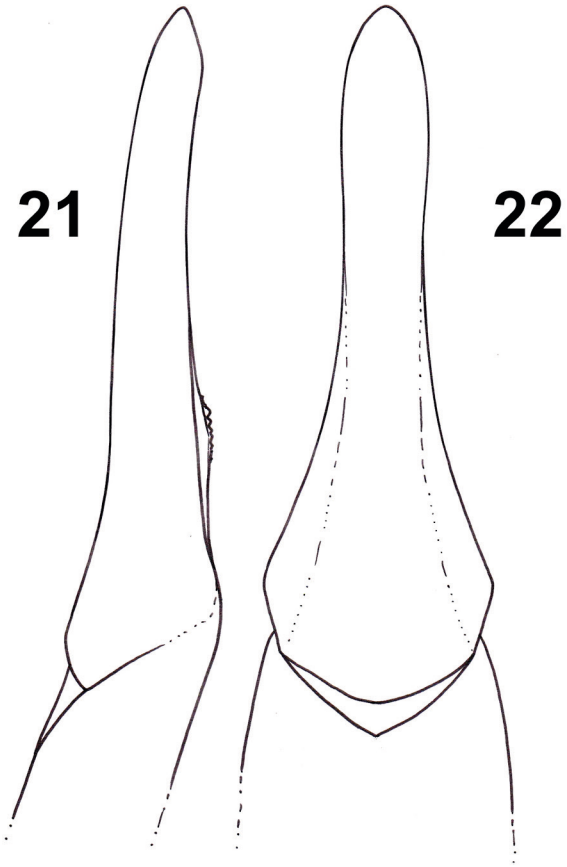
18



19



20



21 22

Figs. 18-22: *Zizu flavis* sp. nov. (male holotype): **18** - habitus; **19** - head and pronotum; **20** - antenna; **21** - apical piece of aedeagus, lateral view; **22** - apical piece of aedeagus, dorsal view.