

New *Anthracula* Fairmaire (Coleoptera: Tenebrionidae: Alleculinae) species from Palearctic Region

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Abstract. A new species of the genus *Anthracula* Fairmaire, 1897 are described as *Anthracula fouquei* sp. nov., *Anthracula humlaica* sp. nov., *Anthracula renei* sp. nov. *Anthracula sanamica* sp. nov. from Nepal and *Anthracula lawaraica* sp. nov. from Pakistan. The new species are described, illustrated and compared with the species *Anthracula latifrons* Fairmaire, 1897.

INTRODUCTION

Genus *Anthracula* Fairmaire, 1897 with the type species *Anthracula latifrons* Fairmaire, 1897 from India (Himachal Pradesh) was established by Fairmaire (1897). Borchmann (1910), Mader (1928) and Novák & Pettersson (2008) listed only this one species.

Species of the genus *Anthracula* are similar to the species of the genus *Allecula* Fabricius, 1801, they have relatively short antennae (reaching only half the body length), elytra widened apically (widest near two thirds from base to apex), elytral interspaces shiny and distinctly convex with relatively dense punctuation and relatively large punctures, anterior tarsal claws with more teeth (in males more than 10 teeth). Species of the genus *Allecula* have antennae distinctly longer than half the body length, elytra narrow, parallel (widest near half the body length or at base), elytral interspaces almost matte, very slightly convex with very small and sparse punctures and anterior tarsal claws with only a few teeth.

The new species are described as *Anthracula fouquei* sp. nov., *Anthracula humlaica* sp. nov., *Anthracula renei* sp. nov., *Anthracula sanamica* sp. nov. from Nepal and *Anthracula lawaraica* sp. nov. from Pakistan. They are described, illustrated, keyed and compared with the species *Anthracula latifrons* Fairmaire, 1897.

New distributional data on *Anthracula latifrons* Fairmaire, 1897 from India (Uttaranchal state) are added.

MATERIAL AND METHODS

Two important morphometric characteristics used for the descriptions of species of the subfamily Alleculinae, the 'ocular index' dorsally (Campbell & Marshall 1964) and 'pronotal index' (Campbell 1965), are used in the present paper as well. The ocular index equals $(100 \times \text{minimum dorsal distance between eyes}) / (\text{maximum width of head across eyes})$. The pronotal index is calculated as $(100 \times \text{length of pronotum along midline}) / (\text{width across basal angles of pronotum})$.

In the list of type or examined material, a slash (/) separates data in separate rows, a double slash (//) separates different labels.

The following collection codens are used:

NMEG - Naturkundemuseum, Erfurt, Germany;

SMNS - Staatliches Museum für Naturkunde, Stuttgart, Germany;

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

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

Type material information is taken from locality labels (white labels, printed black). Other abbreviations used in text are as follows: hb - handwritten black, pb - printed black, rl - red label, wl - white label, yl - yellow label.

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

TAXONOMY

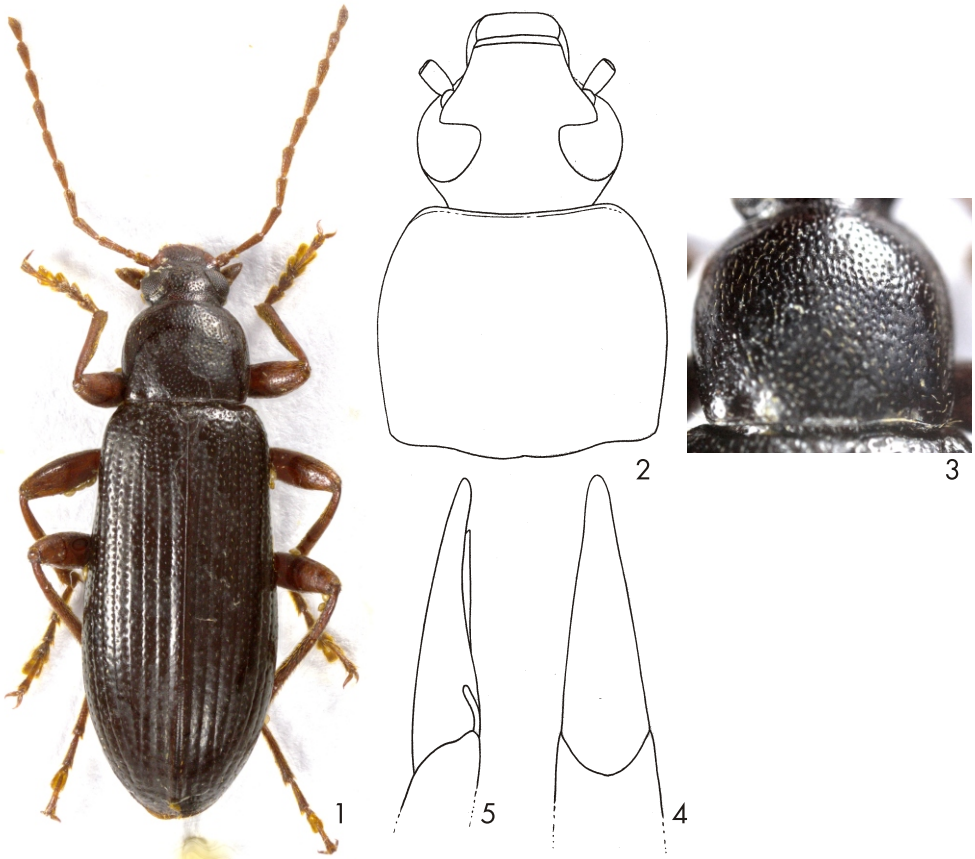
KEY TO THE SPECIES OF THE GENUS *ANTHRACULA* FAIRMAIRE

- A (B) Antennae distinctly longer than half body length, elytra narrow, parallel (widest near half body length or at base), elytral interspaces almost matte, very slightly convex with very small and sparse punctures and anterior tarsal claws with only a few teeth *Allecula* Fabricius, 1801
- B (A) Antennae relatively short (reaching only half body length), elytra widened apically (widest near two thirds from base to apex), elytral interspaces shiny and distinctly convex with relatively dense punctuation and relatively large punctures, anterior tarsal claws with more teeth (in males more than 10 teeth). *Anthracula* Fairmaire, 1897 1
- 1 (2) Punctures of pronotum small-sized. 3
- 2 (1) Punctures of pronotum medium or large-sized. 7
- 3 (4) Punctuation of pronotum sparser, anterior margin of pronotum in middle not clearly distinct. Habitus as in Fig. 1, head and pronotum (Fig. 2), punctuation of dorsal surface of pronotum (Fig. 3), aedeagus (Figs. 4, 5). Nepal (prov. Gandaki). *Anthracula fouquei* sp. nov. 5
- 4 (3) Punctuation of pronotum dense, anterior margin of pronotum in middle clearly distinct. 5
- 5 (6) Sides of pronotum more arcuate, anterior margin of pronotum wider than head through the eyes, punctures in elytral interspaces smaller than punctures in elytral striae. Female: habitus as in Fig. 16, head and pronotum (Fig. 17), punctuation of dorsal surface of pronotum (Fig. 18). Bhutan, India (Arunachal state, Uttaranchal state). *Anthracula latifrons* Fairmaire, 1897
- 6 (5) Sides of pronotum slightly arcuate, anterior margin of pronotum as wide as head through the eyes, punctures in elytral interspaces larger than punctures in elytral striae. Habitus as in Fig. 24, head and pronotum (Fig. 25), punctuation of dorsal surface of pronotum (Fig. 26), aedeagus (Figs. 27, 28). Nepal (prov. Sanam). *Anthracula sanamica* sp. nov.
- 7 (8) Dorsal surface of pronotum and elytra with fine microgranulation, head between eyes partly with smooth area without punctures. Habitus as in Fig. 19, head and pronotum (Fig. 20), punctuation of dorsal surface of pronotum (Fig. 21), aedeagus (Figs. 22, 23). Nepal (prov. Gandaki). *Anthracula renei* sp. nov.
- 8 (7) Dorsal surface of pronotum and elytra shiny, without distinct microgranulation, head between eyes with regular punctuation. 9
- 9 (10) Antennomere 3 shorter than each of antennomeres 4-11, punctuation of pronotum very dense, interspaces between punctures narrower than diameter of punctures. Habitus as in Fig. 6, head and pronotum (Fig. 7), punctuation of dorsal surface of pronotum (Fig. 8), aedeagus (Figs. 9, 10). Nepal (prov. Humla). *Anthracula humlaica* sp. nov.
- 10 (9) Antennomere 3 longest, longer than each of antennomeres 4-11, punctuation of pronotum dense, but interspaces between punctures as wide as diameter of punctures. Habitus as in Fig. 11, head and pronotum (Fig. 12), punctuation of dorsal surface of pronotum (Fig. 13), aedeagus (Figs. 14, 15). Pakistan. *Anthracula lawaraica* sp. nov.

***Anthracula fouquei* sp. nov.**
(Figs. 1-5)

Type locality. Nepal, prov. Gandaki, Manang, Timang, 2500-2600 m.

Type material. Holotype (♂): NEPAL, Gandaki, Manang / TIMANG, alt. 2500-2600 m / old open forest, grassland / 10.-12.5.2007 / lgt. Fouquè R. + H, (VNPC). Paratypes: (3 ♂♂ 2 ♀♀): same data as holotype, (VNPC); (1 ♂): NEPAL, prov. Gandaki / 28°35'50"N, 84°26'51"E / Yak Kharka, Dudh Khola / 3000 m, 25.V.2013 / leg.: J. Weipert, (NMEG). The types are provided with a printed red label: '*Anthracula fouquei* sp. nov. / HOLOTYPUS or PARATYPUS / V. Novák det. 2016'.



Figs. 1-5: *Anthracula fouquei* sp. nov.: 1-habitus of male holotype; 2-head and pronotum of male holotype; 3-punctuation of dorsal surface of pronotum; 4-aedeagus, dorsal view; 5-aedeagus, lateral view.

Description of holotype. Habitus as in Fig. 1, body relatively large, elongate, from reddish brown to black, dorsal surface with short and sparse pale setation, punctuation and fine microgranulation, slightly shiny. BL 12.82 mm. Widest near two thirds of elytra length from base to apex, BL/EW 3.18.

Head (Fig. 2) relatively small, approximately as wide as long, with microgranulation and punctuation, posterior part black, slightly shiny, punctures larger than in reddish brown and rather

matte anterior part. Clypeus reddish brown, with longer, golden setation. HL (visible part) 1.88 mm; HW 1.84 mm; HW/PW 0.75. Eyes very large, transverse, deeply excised, space between eyes narrow, distinctly wider than diameter of one eye or length of antennomere 3, OI equal to 38.30.

Antenna. Relatively short, brown, reaching approximately half body length, antennomeres relatively narrow, with pale setation, microgranulation and microrugosities and small punctures, AL(1-11) 6.25 mm; AL(1-11)/BL 0.49. Antennomeres 1-5 slightly shiny, antennomeres 6-11 rather matte. Antennomeres 3-10 slightly dilated apically, antennomere 2 shortest, antennomeres 4-10 each slightly longer than antennomere 3.

RLA (1-11): 0.61 : 0.33 : 1.00 : 1.12 : 1.02 : 1.07 : 1.11 : 1.09 : 1.09 : 1.03 : 0.96.

RL/WA (1-11): 1.93 : 1.15 : 3.07 : 3.82 : 2.77 : 2.97 : 3.29 : 2.86 : 3.23 : 3.17 : 2.75.

Maxillary palpus brown, with pale setae and fine microgranulation. Palpomeres 2, 3 distinctly narrowest at base and widest in apex. Ultimate palpomere large, shoe-shaped.

Pronotum (Figs. 2, 3). Black, slightly shiny, with a few pale setae, dense punctuation and microgranulation; punctures small-sized, interspaces between punctures narrow. PL 2.08 mm; PW 2.47 mm; PI equal to 84.21. Border lines very narrow, in the middle of anterior margin indistinct. Lateral margins arcuate in apical half, pronotum widest near two thirds from base to apex, base finely bisinuate. Anterior margin more or less straight. Posterior angles roundly obtuse, anterior angles indistinct. Base with two oblique, shallow furrows.

Ventral side of body blackish brown, with short, pale setation and small punctures, slightly shiny. Abdomen blackish brown, shiny, with sparse and short, pale setae, small punctures and distinct microgranulation.

Elytron. Black, widest at two thirds of length from base to apex, at base distinctly wider than pronotum at base, dorsal surface slightly shiny, with sparse and short, pale setae. Elytral striae with distinct rows of medium-sized punctures, elytral intervals slightly convex, with microgranulation and medium-sized punctures. EL 8.96 mm; EW 4.03 mm; EL/EW 2.22.

Scutellum black as elytron itself, semicircular, with fine microgranulation.

Elytral epipleura. Well developed, blackish brown as elytron itself, widest at base, with sparse, pale setae and small punctures, regularly narrowing to ventrite 1, then relatively wide, leading parallel.

Legs reddish brown, narrow, long, with pale setation, microgranulation and small punctures. Protarsomeres and mesotarsomeres 3 and 4 and metatarsomeres 3 slightly widened and distinctly lobed. RLt: 1.00 : 0.93 : 0.77 : 1.02 : 1.54 (protarsus); 1.00 : 0.54 : 0.57 : 0.66 : 1.01 (mesotarsus); 1.00 : 0.42 : 0.32 : 0.54 (metatarsus).

Anterior tarsal claws with 15 visible teeth.

Aedeagus (Figs. 4, 5). Ochre yellow, slightly shiny. Basal piece slightly rounded laterally and slightly narrowing dorsally. Apical piece elongate, triangular dorsally and beak-shaped laterally. Ratio of length of apical piece to length of basal piece 1 : 2.90.

Female. Without distinct differences, only anterior tarsal claws with 9 teeth.

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 12.59 mm (12.46-12.80 mm); HL 1.85 mm (1.78-1.89 mm); HW 1.88 mm (1.82-1.93 mm); OI 40.08 (38.30-41.77); PL 2.20 mm (2.08-2.29 mm); PW 2.48 mm (2.42-2.56 mm); PI 87.65 (84.21-91.13); EL 8.62 mm (8.51-8.96 mm); EW 4.14 mm (4.03-4.31 mm). Females (n=2). BL 12.32 mm (12.03-12.60 mm); HL 1.82 mm (1.72-1.92 mm); HW 1.98 mm (1.94-2.02 mm); OI 44.62 (43.80-45.43); PL 2.43 mm (2.30-

2.56 mm); PW 2.69 mm (2.59-2.79 mm); PI 90.28 (88.80-91.76); EL 8.07 mm (7.81-8.32 mm); EW 4.23 mm (4.09-4.36 mm).

Differential diagnosis. (For details see the key). *Anthracula fouquei* sp. nov. distinctly differs from all similar species *Anthracula humlaica* sp. nov., *Anthracula lawaraica* sp. nov. and *Anthracula renei* sp. nov. mainly by small-sized punctures on dorsal surface of pronotum; while *A. humlaica*, *A. lawaraica* and *A. renei* have larger punctures on dorsal surface of pronotum.

A. fouquei is clearly different from similar species *Anthracula sanamica* sp. nov. and *Anthracula latifrons* Fairmaire, 1897 mainly by punctuation of pronotum sparser, anterior margin of pronotum in middle not clearly distinct; while *A. sanamica* and *A. latifrons* have punctuation of pronotum distinctly denser and anterior margin of pronotum in middle is distinct.

Etymology. Dedicated in memoriam to René Fouqué (Liberec, Czech Republic), an expert in the beetle family Tenebrionidae, who tragically died last year.

Distribution. Nepal.

Anthracula humlaica sp. nov.

(Figs. 6-10)

Type material. Holotype (♂): NEPAL Prov. Karnali, Distr. Humla / 20km W Simikot, 2km S Chala / Kairang Khola, 32-3500m HF/KL / 29°59'27''N, 81°37'30''E 26.06. / 2001 river valley leg. A. Kopetz [pb], (NMEG). Paratypes: (1 ♂): NEPAL Prov. Karnali, Distr. / Humla, 500m W Simikot / 29°58'N, 81°49'E terrace / fields 16.-17.06.2001 / 30-3200m leg. A. Kopetz, (VNPC); (1 ♀): NEPAL Prov. Seti, Distr. Bajura / 16kmSW Simikot N Chachour / Kuwadi Khola 3500m, / 29°50'41''N, 81°45'00''E / leg. A. Kopetz, 06.07.2001 / coniferous-oak-wood, (NMEG); (1 ♂): NEPAL, Prov. Koshi / Tashigaon / 2100 m NN / 11.X.2002 LF / leg.: J. Weipert, (NMEG); (1 ♂): NEPAL Karnali Humla / 500m W Simikot 3100m / 29°58'00''N, 81°48'48''E / 16.-17.VI.2001 conifer. / forest leg. A. Weigel KL, (VNPC). The types are provided with a printed red label: '*Anthracula humlaica* sp. nov. / HOLOTYPUS or PARATYPUS / V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 6, body relatively large, elongate, from reddish brown to blackish brown, dorsal surface shiny, with punctuation and very sparse pale setae. BL 11.55 mm. Widest near two thirds elytra length, BL/EW 3.09.

Head (Fig. 7) relatively small, approximately as wide as long, shiny, posterior part blackish brown with sparse pale setae and a few dark setae behind eyes, dense punctuation sparser between eyes, punctures medium-sized. Anterior part reddish brown with longer pale setae and smaller punctures, clypeus pale reddish brown with microgranulation and smaller punctures than those in anterior part. HL (visible part) 1.55 mm; HW 1.65 mm; HW/PW 0.71. Eyes very large, transverse, deeply excised, space between eyes narrow, distinctly wider than diameter of one eye or length of antennomere 3; OI equal to 41.18.

Antenna. Reddish brown, relatively short, reaching approximately half body length, antennomeres relatively narrow, with longer, pale setation and punctures, AL(1-11) 5.40 mm; AL(1-11)/BL 0.47. Antennomeres 1, 2 short, antennomere 2 shortest, antennomeres 1-5 slightly shiny. Antennomeres 4-11 each distinctly longer than antennomere 3, antennomeres 4-10 slightly dilated apically.

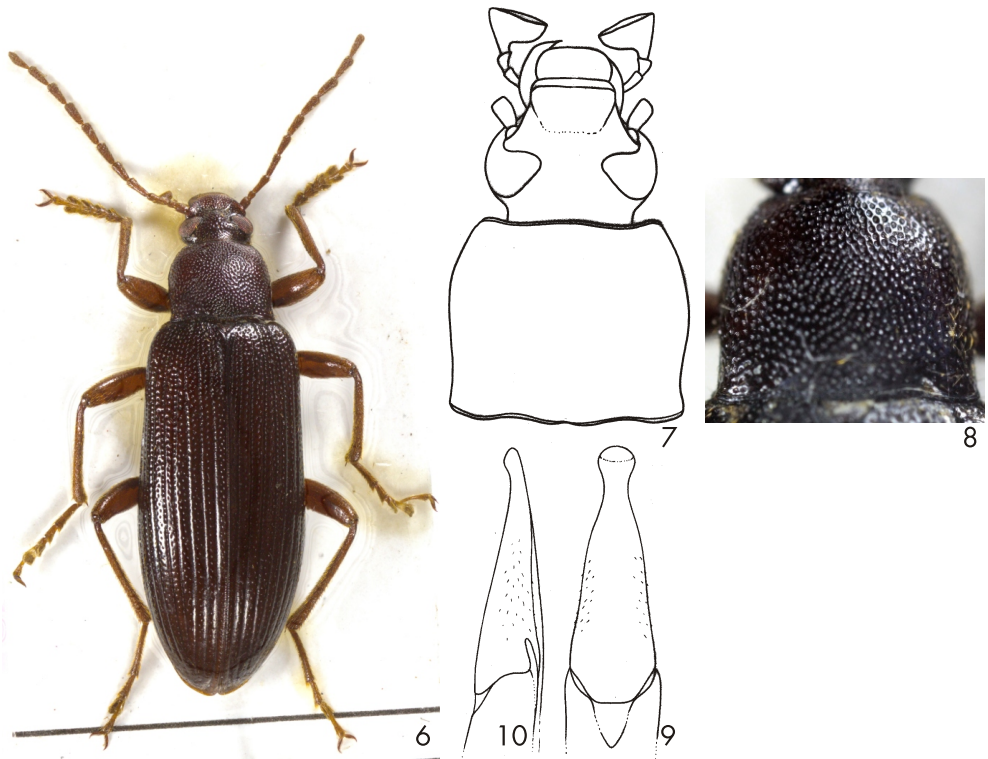
RLA (1-11): 0.63 : 0.36 : 1.00 : 1.15 : 1.00 : 1.18 : 1.19 : 1.26 : 1.23 : 1.23 : 1.23.

RL/WA (1-11): 1.64 : 1.44 : 3.32 : 3.65 : 2.28 : 2.69 : 2.81 : 2.88 : 3.10 : 3.21 : 3.10.

Maxillary palpus reddish brown, with pale setae and fine microgranulation. Palpomeres 2, 3 distinctly narrowest at base and widest in apex. Ultimate palpomere large, shoe-shaped.

Pronotum (Fig. 7, 8). Blackish brown, shiny, with a few pale setae near sides, dense and coarse

punctuation, punctures relatively large, interspaces between punctures very narrow. PL 1.64 mm; PW 2.21 mm; PI equal to 74.21. Border lines very narrow. Lateral margins slightly arcuate in apical half, base finely bisinuate. Anterior margin more or less straight. Posterior and anterior angles obtuse. Base with two oblique, shallow furrows.



Figs. 6-10: *Anthracula humlaica* sp. nov.: 6- habitus of male holotype; 7- head and pronotum of male holotype; 8- punctuation of dorsal surface of pronotum; 9- aedeagus, dorsal view; 10- aedeagus, lateral view.

Ventral side of body blackish brown, with short, pale setation and dense punctuation. Ventrites 1-3 blackish brown, shiny, with sparse, pale setation and small punctures. Ultimate and penultimate ventrites reddish brown, rather matte, with very sparse and very small punctures.

Elytron. Blackish brown, elongate, slightly convex, widest near two thirds elytra length, at base distinctly wider than pronotum at base, dorsal surface shiny, with a few pale setae near sides. Elytral striae with distinct rows of large punctures, elytral intervals with relatively dense and coarse punctures, punctures in intervals slightly smaller than those in striae. EL 8.36 mm; EW 3.74 mm; EL/EW 2.24.

Scutellum blackish brown as elytron itself, triangular, with a few pale setae and punctures, shiny.

Elytral epipleura. Well developed, blackish brown as elytron itself, widest at base, with punctures in basal half, regularly narrowing to ventrite 1, then relatively wide, leading parallel.

Legs reddish brown, narrow, long, with golden setation, microrugosities and punctuation, punctures small and shallow. Protarsomeres and mesotarsomeres 4 and metatarsomeres 3 slightly widened and distinctly lobed. RLT: 1.00 : 0.90 : 1.13 : 1.27 : 1.66 (protarsus); 1.00 : 0.50 : 0.53

: 0.59 : 0.87 (mesotarsus); 1.00 : 0.41 : 0.37 : 0.62 (metatarsus).

Anterior tarsal claws with 18 and 22 visible teeth.

Aedeagus (Figs. 9, 10). Ochre yellow. Basal piece slightly rounded laterally and narrowing dorsally. Apical piece elongate, triangular, with drop-shaped apex in dorsal view, beak-shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece 1 : 1.99.

Female. Without distinct differences, only space between eyes slightly wider than in male, anterior tarsal claws with 10 or 11 teeth.

Measurements of female body parts. BL 12.22 mm; HL 1.60 mm; HW 1.72 mm; OI 43.12; PL 1.83 mm; PW 2.46 mm; PI 74.39; EL 8.79 mm; EW 3.97 mm.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=4). BL 11.88 mm (11.55-12.44 mm); HL 1.58 mm (1.56-1.65 mm); HW 1.68 mm (1.65-1.72 mm); OI 40.26 (38.96-41.55); PL 1.86 mm (1.64-1.95 mm); PW 2.34 mm (2.21-2.47 mm); PI 79.37 (74.21-84.72); EL 8.29 mm (7.94-8.64 mm); EW 3.86 mm (3.72-4.09 mm).

Differential diagnosis. (For details see the key). *Anthracula humlaica* sp. nov. distinctly differs from all similar species *Anthracula fouquei* sp. nov., *Anthracula sanamica* sp. nov. and *Anthracula latifrons* Fairmaire, 1897 mainly by large-sized punctures on dorsal surface of pronotum; while *A. fouquei*, *A. sanamica* and *A. latifrons* have small-sized punctures on dorsal surface of pronotum.

A. humlaica is clearly different from similar species *Anthracula renei* sp. nov. mainly by dorsal surface of pronotum and elytra shiny, without distinct microgranulation, head between eyes with regular punctuation; while *A. renei* has dorsal surface of pronotum and elytra with microgranulation and head between eyes with smooth part without punctuation.

A. humlaica clearly differs from similar species *Anthracula lawaraica* sp. nov. mainly by antennomere 3 shorter than each of antennomeres 4-11, punctuation of pronotum very dense, interspaces between punctures narrower than diameter of punctures; while *A. lawaraica* has antennomere 3 longest, longer than each of antennomeres 4-11, punctuation of pronotum dense, but interspaces between punctures as wide as diameter of punctures.

Etymology. Toponymic, named after the type locality - district Humla in Nepal.

Distribution. Nepal.

Anthracula latifrons Fairmaire, 1896

(Figs. 11-13)

Material examined. (♀): wl: N - INDIA, Uttaranchal state, / ca 30 km N of Bageshwar, / SE of DHAKURI will., / 2600-2800 m, 25.-26.vi.2003 / Z. Kejval & M. Trýzna lgt. [pb], (VNPC).

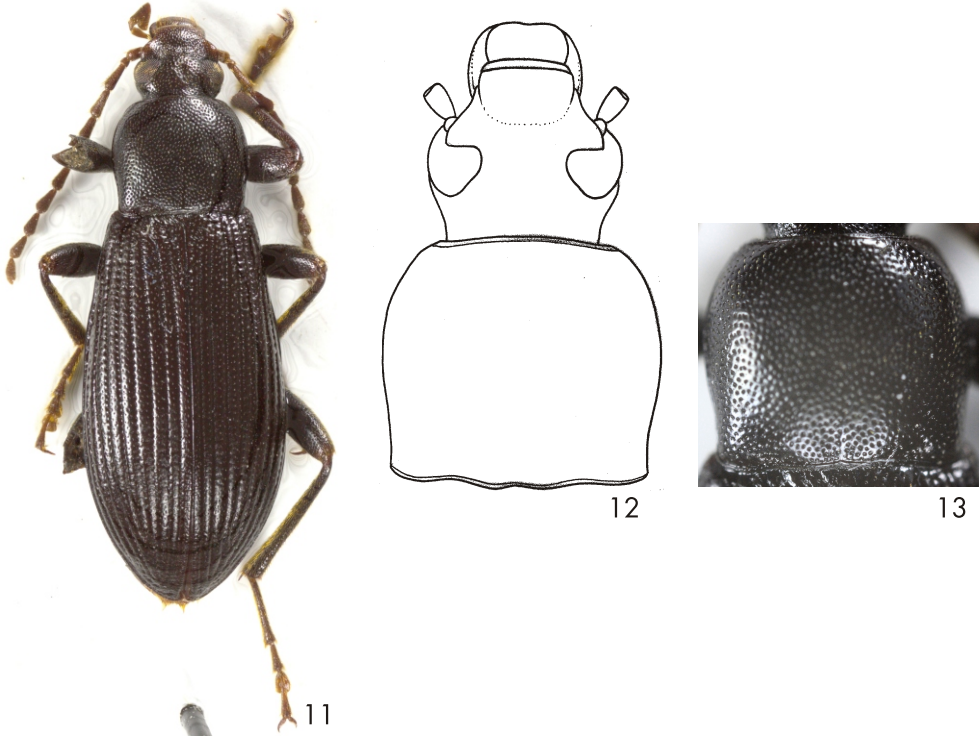
Measurements of body parts. BL 12.55 mm; BL/EW 2.84; HL 1.38 mm; HW 1.93 mm; OI 48.65; PL 2.49 mm; PW 2.69 mm; PI 93.26; EL 8.68 mm; EW 4.42 mm; AL 6.14 mm; AL/BL 0.49; EL/EW 1.96; HW/PW 0.72.

RLA (1-11): 0.66 : 0.26 : 1.00 : 1.08 : 0.98 : 0.91 : 0.98 : 0.98 : 0.88 : 0.95 : 0.96.

RL/WA (1-11): 1.81 : 0.76 : 3.27 : 3.31 : 2.67 : 2.62 : 2.67 : 2.29 : 2.15 : 2.39 : 2.85.

RLT: 1.00 : 0.67 : 0.53 : 0.35 : 0.93 (protarsus); 1.00 : 0.63 : 0.53 : 0.57 : 0.96 (mesotarsus);
1.00 : 0.45 : 0.33 : 0.64 (metatarsus).

Distribution. Bhutan, India (Arunachal Pradesh). New for India (Uttaranchal state).



Figs. 11-13: *Anthracula latifrons* Fairmaire, 1897 (female): 11- habitus; 12- head and pronotum; 13- punctation of dorsal surface of pronotum.

***Anthracula lawaraiica* sp. nov.**

(Figs. 14-18)

Type material examined. Holotype: (♂): wl: Pakistan (Dir): / Lawarai - Paß / 2700-3300m, 28.VI.1982 / Erber & Heinz leg. [hb], (SMNS). Paratype: (1 ♂): same data as holotype, (VNPC). The types are provided with a printed red label: '*Anthracula lawaraiica* sp. nov. / HOLOTYPE or PARATYPE / V. Novák det. 2016'.

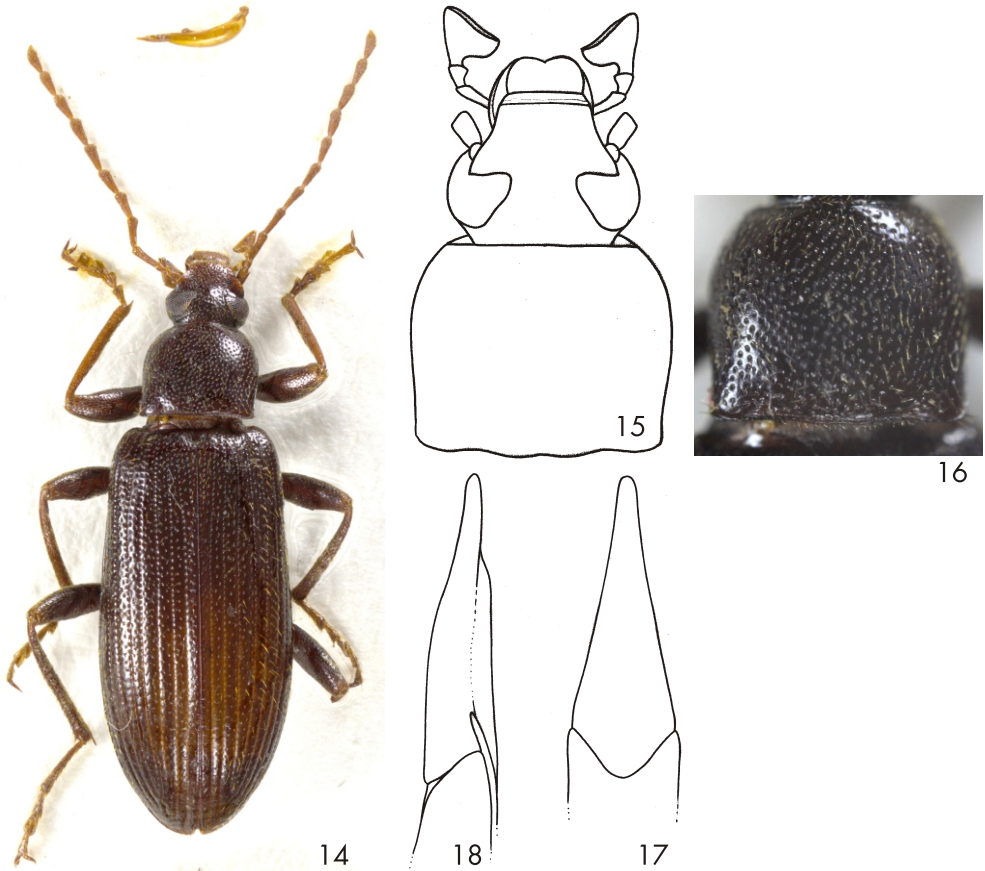
Description of holotype. Habitus as in Fig. 14, body relatively large, elongate, from pale brown to blackish brown, dorsal surface with sparse pale setation, with punctuation and very fine microgranulation, shiny. BL 10.90 mm. Widest near two thirds of elytra length, BL/EW 2.75.

Head (Fig. 15) relatively small, slightly wider than long, shiny, posterior part blackish brown with a few dark setae, dense punctuation, punctures relatively large, anterior part and clypeus reddish brown with longer pale setation and dense punctuation, clypeus distinctly paler with punctures distinctly smaller and shallower. HL (visible part) 1.49 mm; HW 1.57 mm; HW/PW 0.73. Eyes very large, transverse, deeply excised, space between eyes very narrow, slightly narrower than diameter of one eye and as wide as length of antennomere 3; OI equal to 37.03.

Antenna. Reddish brown, relatively short, reaching approximately half of body length, with pale setation, microgranulation and punctures, AL(1-11) 5.36 mm; AL(1-11)/BL 0.49. Antennomeres 1, 2 short, antennomere 2 shortest, antennomere 3 longest. Antennomeres 1-5 slightly shiny, antennomeres 6-11 rather matte. Antennomeres 4-11 each distinctly shorter than antennomere 3.

RLA (1-11): 0.45 : 0.32 : 1.00 : 0.98 : 0.93 : 0.95 : 0.97 : 0.98 : 0.93 : 0.91 : 0.96.

RL/WA (1-11): 1.44 : 1.40 : 3.35 : 3.57 : 3.38 : 3.03 : 2.71 : 2.93 : 3.00 : 2.82 : 3.00.



Figs. 14-18: *Anthracula lawaraica* sp. nov.: 14- habitus of male holotype; 15- head and pronotum of male holotype; 16- punctuation of dorsal surface of pronotum; 17- aedeagus, dorsal view; 18- aedeagus, lateral view.

Maxillary palpus pale brown, with pale setae and fine microgranulation. Palpomeres 2, 3 distinctly narrowest at base and widest in apex. Ultimate palpomere large, slightly shoe-shaped.

Pronotum (Figs. 15, 16). Blackish brown, shiny, with pale setation and dense punctation; punctures relatively large, interspaces between punctures narrow. PL 1.66 mm; PW 2.14 mm; PI equal to 77.57. Border lines very narrow. Lateral margins slightly arcuate in apical half, pronotum widest near two thirds from base to apex, base finely bisinuate. Anterior margin straight. Posterior and anterior angles roundly obtuse. Base with two, oblique, shallow furrows.

Ventral side of body blackish brown, shiny, with larger punctures, each with short pale setae.

Abdomen dark blackish brown, slightly shiny, with short, pale setae and small, shallow punctures and distinct microgranulation. Apex of ultimate ventrite pale brown.

Elytron. Dark brown, elongate oval, shiny, at base distinctly wider than pronotum at base, dorsal surface with pale setation. Elytral striae with distinct rows of medium-sized punctures, elytral intervals slightly convex, with fine microgranulation and punctures approximately as large as in striae. Elytra widest near two thirds from base to apex; EL 7.75 mm; EW 3.96 mm; EL/EW 1.98.

Scutellum dark blackish brown as elytron itself, roundly pentagonally shaped, with a few small punctures.

Elytral epipleura. Well developed, with punctures and sparse, pale setae, blackish brown and shiny in basal half, regularly narrowing to ventrite 1, then brown, relatively wide, leading parallel.

Legs narrow, long, with pale setation, microrugosities and small punctures, blackish brown, tarsi and anterior tibia reddish brown. Pro- and mesotarsomes 3, 4 and penultimate metatarsomeres distinctly widened and lobed. RLT: 1.00 : 0.78 : 0.65 : 0.88 : 1.42 (protarsus); 1.00 : 0.72 : 0.53 : 0.63 : 0.98 (mesotarsus); 1.00 : 0.40 : 0.31 : 0.56 (metatarsus).

Anterior tarsal claws with 18 visible teeth.

Aedeagus (Figs. 17, 18). Ochre yellow, rather matte. Basal piece slightly rounded laterally and slightly narrowing dorsally. Apical piece elongate triangular dorsally and beak-shaped laterally. Ratio of length of apical piece to length of basal piece 1 : 2.42.

Female. Unknown.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=2). BL 10.91 mm (10.90-10.92 mm); HL 1.46 mm (1.43-1.49 mm); HW 1.58 mm (1.57-1.58 mm); OI 36.49 (35.95-37.03); PL 1.74 mm (1.66-1.82 mm); PW 2.14 mm (2.13-2.14 mm); PI 81.51 (77.57-85.45); EL 7.71 mm (7.67-7.75 mm); EW 3.83 mm (3.70-3.96 mm).

Differential diagnosis. (For details see the key). *Anthracula lawaraica* sp. nov. distinctly differs from all similar species *Anthracula fouquei* sp. nov., *Anthracula sanamica* sp. nov. and *Anthracula latifrons* Fairmaire, 1897 mainly by large-sized punctures on dorsal surface of pronotum; while *A. fouquei*, *A. sanamica* and *A. latifrons* have small-sized punctures on dorsal surface of pronotum.

A. lawaraica is clearly different from similar species *Anthracula renei* sp. nov. mainly by dorsal surface of pronotum and elytra shiny, without distinct microgranulation, head between eyes with regular punctuation; while *A. renei* has dorsal surface of pronotum and elytra with microgranulation and head between eyes with smooth part without punctuation.

A. lawaraica clearly differs from similar species *Anthracula humlaica* sp. nov. mainly by antennomere 3 longest, longer than each of antennomeres 4-11, punctuation of pronotum dense, but interspaces between punctures as wide as diameter of punctures; while *A. humlaica* has antennomere 3 shorter than each of antennomeres 4-11, punctuation of pronotum very dense, interspaces between punctures narrower than diameter of punctures.

Etymology. Toponymic, named after the type locality - Lawarai pass (Pakistan), where the new species was collected.

Distribution. Pakistan.

***Anthracula renei* sp. nov.**

(Figs. 19-23)

Type material. Holotype (♂): NEPAL, Gandaki, Manang / TIMANG, alt. 2500-2600 m / old open forest, grassland / 10.-12.5.2007 / lgt. Fouquè R. + H, (VNPC). Paratypes: (1 ♀): same data as holotype, (VNPC); (1 ♂): wl: 612 NEPAL:Dolakha Distr. / N slope of Khare Khola / 2200m, 30.V.-1.VI.2000 / leg. W. Schawaller, (SMNS); (1 ♀): wl: NEPAL-Expedition / Jochen Martens // 324 Panchthar Distr., Dhorpar / Kharka, mature Rhododendron-Lithocarpus forest, 2700 m, 13.- / 16 Apr 88 MARTENS & SCAWALLER, (SMNS). The types are provided with a printed red label: 'Anthracula renei sp. nov. / HOLOTYPE or PARATYPE / V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 19, body relatively large, elongate, from reddish brown to black, dorsal surface with sparse and very short, pale setae, dense punctuation and very fine microgranulation, shiny. BL 11.53 mm. Widest near two thirds of elytra length, BL/EW 3.22.

Head (Fig. 20) relatively small, approximately as wide as long, shiny, as wide as anterior margin of pronotum. Posterior part black with sparser punctuation, anterior part with denser punctuation, pale setation and distinct microgranulation, apex and clypeus reddish brown. HL (visible part) 1.54 mm; HW 1.60 mm; HW/PW 0.72. Eyes very large, transverse, deeply excised, space between eyes narrow, but distinctly wider than diameter of one eye or length of antennomere 1; OI equal to 40.41.

Antenna. Relatively short, reddish brown, antennomeres with relatively long, pale setation, fine microgranulation and sparse punctures, AL(1-11) 5.04 mm; AL(1-11)/BL 0.44. Antennomeres 4-10 longer, matte, slightly dilated apically. Antennomere 2 shortest, antennomere 3 longest, antennomeres 4-11 each distinctly shorter than antennomere 3.

RLA (1-11): 0.64 : 0.30 : 1.00 : 0.98 : 0.88 : 0.92 : 0.93 : 0.91 : 0.88 : 0.82 : 0.81.

RL/WA (1-11): 1.96 : 1.10 : 3.48 : 2.85 : 2.37 : 2.96 : 3.27 : 3.27 : 3.24 : 3.15 : 3.24.

Maxillary palpus reddish brown, with ochre yellow setae and fine microgranulation. Palpomeres 2, 3 distinctly narrowest in base and widest in apex. Ultimate palpomere large, longly triangular.

Pronotum (Fig. 20, 21). Black, slightly shiny, with a few pale setae near sides, fine microgranulation and dense punctuation, punctures large, interspaces between punctures narrow. PL 1.60 mm; PW 2.23 mm; PI equal to 71.75. Border lines very narrow, indistinct in the middle of anterior margin. Lateral margins slightly arcuate, base bisinuate. Anterior margin very finely excised. Posterior and anterior angles obtuse. Base with two oblique, shallow furrows.

Ventral side of body black, slightly shiny, with punctuation and short, pale setae. Abdomen black, slightly shiny, with sparse, pale setae and punctuation, punctures small. Ultimate ventrite and sides of ventrites reddish brown.

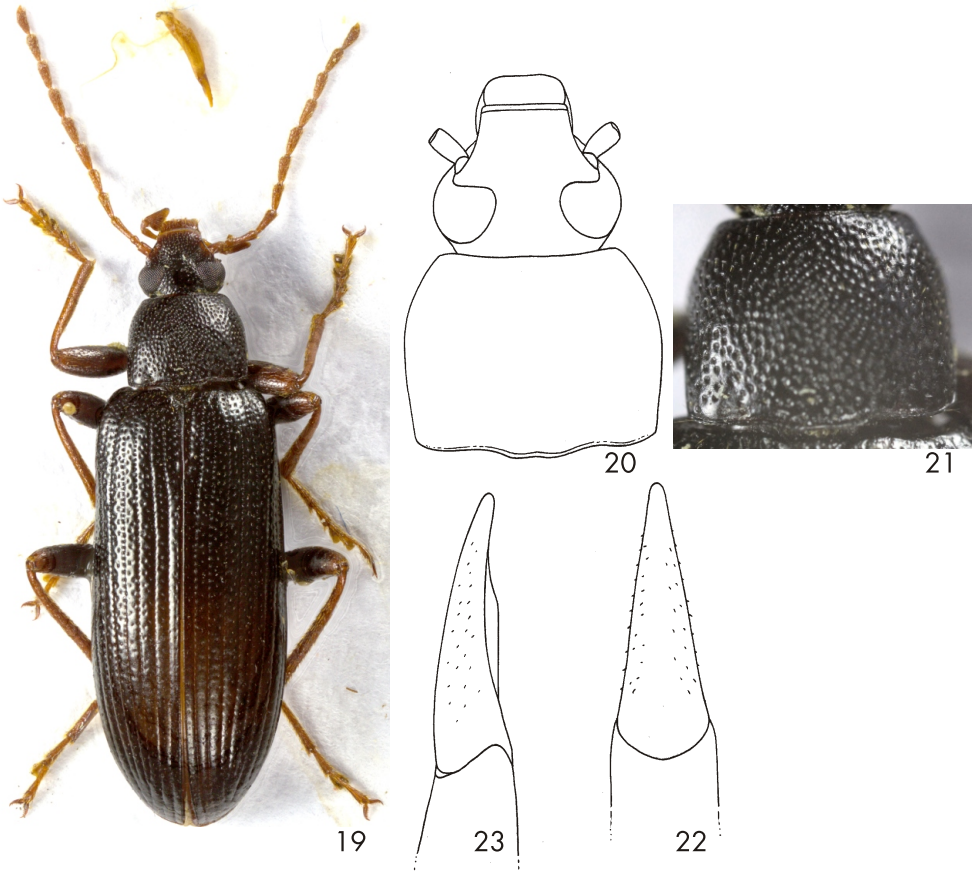
Elytron. Black, narrow, elongate, distinctly wider at base than pronotum at base, dorsal surface slightly shiny, with sparse and short, pale setae and microgranulation. Elytral striae with distinct rows of medium-sized punctures, elytral intervals slightly convex, with fine microgranulation and punctuation, punctures approximately as large as punctures in striae. EL 8.39 mm; EW 3.58 mm; EL/EW 2.34.

Scutellum black as elytron itself, triangular, with fine microgranulation, pale setae and small punctures.

Elytral epipleura. Well developed, black as elytron itself, widest at base, regularly narrowing to ventrite 1, then relatively wide, leading parallel.

Legs narrow, long, reddish brown, femora distinctly darker, with pale setation, microgranulation and punctuation, punctures small. Pro- and mesotarsomes 3, 4 and penultimate metatarsomes widened and distinctly lobed. RLT: 1.00 : 0.60 : 0.81 : 0.90 : 1.46 (protarsus); 1.00 : 0.53 : 0.52 : 0.53 : 0.91 (mesotarsus); 1.00 : 0.38 : 0.33 : 0.56 (metatarsus).

Anterior tarsal claws with 14 and 15 visible teeth.



Figs. 19-23: *Anthracula renei* sp. nov.: 19- habitus of male holotype; 20- head and pronotum of male holotype; 21- punctuation of dorsal surface of pronotum; 22- aedeagus, dorsal view; 23- aedeagus, lateral view.

Aedeagus (Figs. 22, 23). Ochre yellow, rather matte. Basal piece slightly rounded laterally and narrowing dorsally. Apical piece elongate, triangular dorsally and narrow, beak-shaped laterally. Ratio of length of apical piece to length of basal piece 1: 1.98.

Female. Slightly robust, anterior tarsal claws with 10 and 11 teeth.

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 12.04 mm (11.53-12.54 mm); HL 1.56 mm (1.54-1.57 mm); HW 1.68 mm (1.60-1.75 mm); OI 40.34 (40.27-40.41); PL 1.73 mm (1.60-1.85 mm); PW 2.32 mm (2.23-2.40 mm); PI 74.42 (71.75-77.08); EL 8.76 mm (8.39-9.12 mm); EW 3.74 mm (3.58-3.89 mm). Females (n=2). BL 11.27 mm (10.53-12.01 mm); HL 1.30 mm (1.23-1.36 mm); HW 1.69 mm (1.59-1.79 mm); OI 38.61 (38.38-38.83); PL 1.68 mm (1.62-1.74 mm); PW 2.33 mm (2.32-2.33 mm); PI 72.26 (69.83-74.68); EL 8.30 mm (7.68-8.91 mm); EW 3.72 mm (3.68-3.76 mm).

Differential diagnosis. (For details see the key). *Anthracula renei* sp. nov. distinctly differs from all similar species *Anthracula fouquei* sp. nov., *Anthracula sanamica* sp. nov. and *Anthracula latifrons* Fairmaire, 1897 mainly by smaller punctures on dorsal surface of pronotum; while *A. fouquei*, *A. sanamica* and *A. latifrons* have small-sized punctures on dorsal surface of pronotum.

A. renei is clearly different from similar species *Anthracula humlaica* sp. nov. and *Anthracula lawaraica* sp. nov. mainly by dorsal surface of pronotum and elytra with microgranulation and head between eyes with smooth part without punctuation; while *A. humlaica* and *A. lawaraica* have dorsal surface of pronotum and elytra shiny, without distinct microgranulation, head between eyes with regular punctuation.

Etymology. Dedicated in memoriam to René Fouqué (Liberec, Czech Republic), an expert in the beetle family Tenebrionidae, who tragically died last year, after his first name.

Distribution. Nepal.

Anthracula sanamica sp. nov.

(Figs. 24-28)

Type locality. Nepal, district Sanam, Solukhumbu, 2700-2800 m.

Type material. Holotype (♂): wl: 532 NEPAL: Solukhumbu / Distr. Sanam / 2700-2800 m, 22.-23.V.1997 / leg. M. HAUSER [pb], (SMNS). Paratypes: (5 ♂♂ 1 ♀): same data as holotype, (SMNS, VNPC); (3 ♀♀): same data as holotype, but W. Schawaller lgt., (SMNS, VNPC). The types are provided with a printed red label: 'Anthracula sanamica sp. nov. / HOLOTYPUS or PARATYPUS / V. Novák det. 2016'.

Description of holotype. Habitus as in Fig. 24, body relatively large, elongate, from reddish brown to black, dorsal surface of pronotum and elytra glabrous, with punctuation and fine microgranulation, slightly shiny. BL 12.49 mm. Widest near elytra midlength, BL/EW 3.13.

Head (Fig. 25) relatively small, approximately as wide as long, black, with dense punctuation and microgranulation, slightly shiny. Posterior part black, with a few setae behind eyes, anterior part and clypeus reddish brown, with sparse and long golden setation. HL (visible part) 1.72; HW 1.73; HW/PW 0.75. Eyes large, transverse, excised, space between eyes narrow, slightly wider than diameter of one eye, approximately as wide as length of antennomere 3; OI equal to 38.40.

Antenna. Reddish brown, relatively short, shorter than half body length, antennomeres narrow, with pale setation, microgranulation and sparse punctures, AL(1-11) 5.76 mm; AL(1-11)/BL 0.46. Antennomeres 1-3 slightly shiny, antennomeres 4-11 rather matte, antennomeres 4-10 slightly dilated apically. Antennomere 2 shortest.

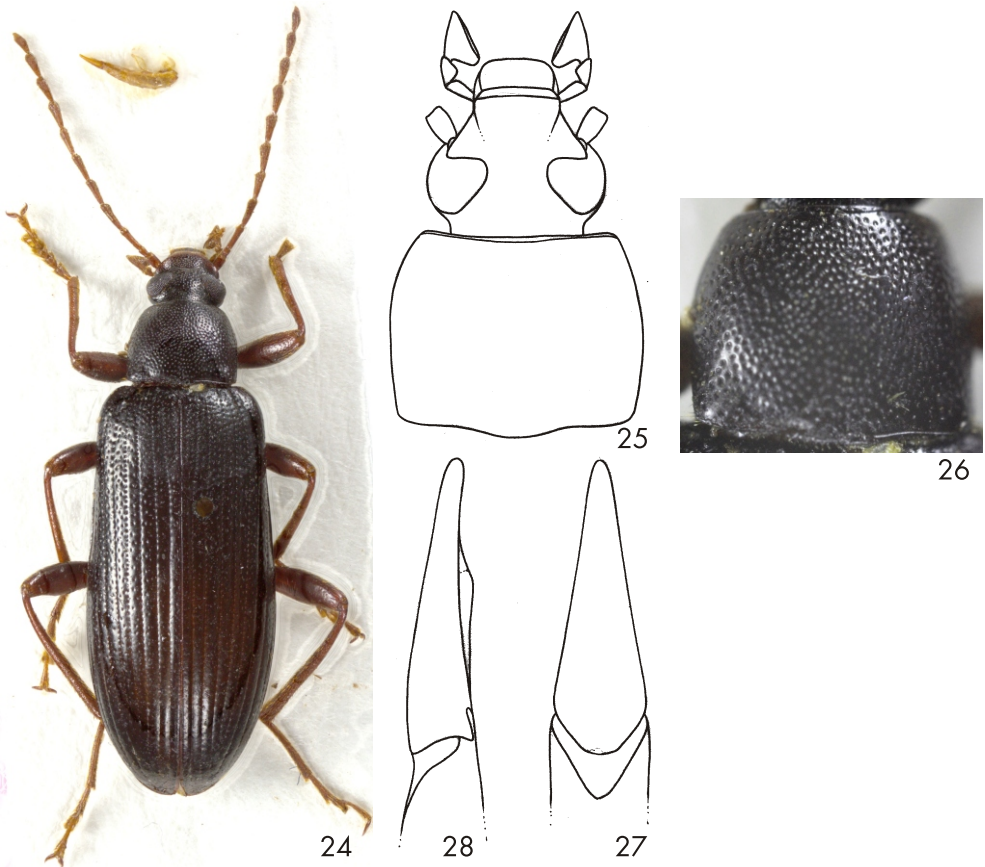
RLA (1-11): 1.02 : 0.51 : 1.00 : 1.11 : 0.86 : 1.06 : 1.09 : 1.07 : 0.96 : 0.86 : 0.76.

RL/WA (1-11): 1.87 : 1.12 : 3.92 : 4.04 : 3.07 : 3.50 : 2.82 : 2.94 : 3.18 : 2.69 : 3.14.

Maxillary palpus reddish brown, with golden setae and fine microgranulation. Palpomeres 2, 3 distinctly narrowest at base and widest in apex. Ultimate palpomere large, longly triangular.

Pronotum (Fig. 25, 26). Black, relatively narrow, glabrous, with dense punctuation and fine microgranulation; punctures medium-sized, interspaces between punctures narrow. PL 1.71 mm; PW 2.32 mm; PI equal to 73.71. Border lines very narrow, but distinct. Lateral margins very slightly arcuate, pronotum widest near middle, base finely bisinuate. Anterior margin more or less straight. Posterior angles roundly obtuse, anterior angles almost indistinct. Base with two, oblique, shallow furrows.

Ventral side of body black, slightly shiny, with short, pale setae and small, dense punctures.



Figs. 24-28: *Anthracula sanamica* sp. nov.: 24- habitus of male holotype; 25- head and pronotum of male holotype; 26- punctation of dorsal surface of pronotum; 27- aedeagus, dorsal view; 28- aedeagus, lateral view.

Abdomen blackish brown, slightly shiny, with sparse, short, pale setae, small punctures and very fine microgranulation. Ultimate ventrite paler, reddish brown.

Elytron. Black, elongate, slightly oval, convex, in base distinctly wider than pronotum in base, dorsal surface glabrous, slightly shiny. Elytral striae with distinct rows of medium-sized punctures, elytral intervals with very fine microgranulation and medium-sized punctures. EL 9.06 mm; EW 3.99 mm; EL/EW 2.27.

Scutellum transverse, black as elytron itself, pentagonally-shaped, with fine microgranulation.

Elytral epipleura. Well developed, black as elytron itself, shiny, with punctures and widest at base, regularly narrowing to ventrite 1, then leading parallel.

Legs reddish brown, narrow, long, with short, golden setation, very fine microrugosities and punctuation, punctures small. Protarsomeres and mesotarsomes 3 and 4 and metatarsomeres 3 distinctly widened and lobed. RLT: 1.00 : 0.56 : 0.78 : 0.96 : 1.46 (protarsus); 1.00 : 0.46 : 0.39 : 0.50 : 0.89 (mesotarsus); 1.00 : 0.38 : 0.28 : 0.53 (metatarsus).

Anterior tarsal claws with 15 visible teeth.

Aedeagus (Figs. 27, 28). Ochre yellow, slightly shiny. Basal piece slightly rounded laterally and

slightly narrowing dorsally. Apical piece elongate, triangular dorsally and beak-shaped laterally. Ratio of length of apical piece to length of basal piece 1 : 2.54.

Female. Without distinct differences, only elytra distinctly wider and anterior tarsal claws with 9 and 10 visible teeth.

Variability. The type specimens somewhat vary in size; each character is given as its mean value, with full range in parentheses. Males (n=6). BL 12.28 mm (11.56-12.64 mm); HL 1.68 mm (1.55-1.74 mm); HW 1.69 mm (1.59-1.75 mm); OI 40.19 (38.40-42.13); PL 1.63 mm (1.52-1.71 mm); PW 2.37 mm (2.19-2.56 mm); PI 69.23 (65.04-73.91); EL 8.97 mm (8.49-9.39 mm); EW 3.92 mm (3.55-4.13 mm). Females (n=4). BL 12.89 mm (11.63-13.99 mm); HL 1.67 mm (1.54-1.76 mm); HW 1.83 mm (1.68-1.93 mm); OI 38.71 (36.84-40.43); PL 1.78 mm (1.52-2.02 mm); PW 2.49 mm (2.37-2.60 mm); PI 71.59 (70.57-73.55); EL 9.28 mm (8.57-9.63 mm); EW 4.33 mm (3.80-4.73 mm).

Differential diagnosis. (For details see the key). *Anthracula sanamica* sp. nov. distinctly differs from all similar species *Anthracula humlaica* sp. nov., *Anthracula lawaraica* sp. nov. and *Anthracula renei* sp. nov. mainly by small-sized punctures on dorsal surface of pronotum; while *A. humlaica*, *A. lawaraica* and *A. renei* have larger punctures on dorsal surface of pronotum.

A. sanamica is clearly different from similar species *Anthracula fouquei* sp. nov. mainly by punctuation of pronotum distinctly denser and anterior margin of pronotum in middle distinct; while *A. fouquei* has punctuation of pronotum sparser and anterior margin of pronotum in middle is not clearly distinct.

A. sanamica clearly differs from similar species *Anthracula latifrons* Fairmaire, 1897 mainly by sides of pronotum slightly arcuate, anterior margin of pronotum as wide as head through the eyes and punctures in elytral interspaces are larger than punctures in elytral striae, while *A. latifrons* has sides of pronotum strongly arcuate, anterior margin of pronotum wider than head through the eyes and punctures in elytral interspaces are smaller than punctures in elytral striae.

Etymology. Toponymic, named after the type locality - district Sanam in Nepal.

Distribution. Nepal.

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