



## A new species of *Cornucistela* Campbell, 1980 (Coleoptera: Tenebrionidae: Alleculinae: Gonoderina) from Iran

VLADIMÍR NOVÁK<sup>1</sup> & MAXIM NABOZHENKO<sup>2,3</sup>

<sup>1</sup>*Nepasické náměstí 796, CZ-190 14 Prague 9 - Klánovice, Czech Republic. E-mail: alleculinae.vn@centrum.cz*

<sup>2</sup>*Caspian Institute of Biological Resources of the Russian Academy of Sciences, M. Gadzhiev str., 45, Makhachkala, Republic of Dagestan, 367000, Russia. E-mail: nalassus@mail.ru*

<sup>3</sup>*Dagestan State University, M. Gadzhiev str. 43a, Makhachkala, 367000, Russia*

### Abstract

A second species of the previously monotypic genus *Cornucistela* (*C. anichtchenkoi* sp. nov.) is described, illustrated and compared with *C. serrata* Campbell, 1980 (type species). It is a first record of the genus in Iran (South Khorasan Province).

**Key words:** taxonomy, darkling beetles, comb-clawed beetles, Palaearctic Region, Iran

### Introduction

The genus *Cornucistela* was established by Campbell (1980), based on four specimens assigned to a newly introduced *Cornucistela serrata* Campbell, 1980 (Saudi Arabia). The type series of this species originated from the Büttiker's collection. The species belongs to the tribe Alleculini Laporte, 1840 and the subtribe Gonoderina Seidlitz, 1896. Novák & Pettersson (2008) listed only one species of *Cornucistela*.

During a recent taxonomic investigation a new species of *Cornucistela* (South Khorasan Province) was discovered from Iran. The description and diagnosis of the species *Cornucistela anichtchenkoi* sp. nov. are presented below. This new discovery constitutes a new record of the genus for Iran. At this moment, 71 species representing 13 genera of Alleculinae are known from Iran (Novák & Ghahari 2015).

### Material and methods

The following codes for collections are used:

CNC—Canadian National Collection, Ottawa, Canada;

ZIN—Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia.

In the label information a slash (/) separates data in separate rows. Moreover, the following abbreviations were used to describe the labels: bf—black frame; hb—handwritten black; pb—printed black; wl—white label; yl—yellow label.

Some morphometric characteristics used in this study were adopted from the previous alpha-taxonomic works on Alleculinae, i.e. the ocular index (OI) (Campbell & Marshall 1964) and pronotal index (PI) (Campbell 1965). The ocular index equals  $(100 \times \text{minimum dorsal distance between eyes}) / (\text{maximum width of head across eyes})$ , while the pronotal index is calculated as  $(100 \times \text{length of pronotum along midline}) / (\text{width across basal angles of pronotum})$ .

Measurements of body parts and corresponding abbreviations used in the text are as follows: AL—total antennae length, BL—maximum body length, EL—maximum elytral length, EW—maximum elytral width, HL—maximum length of head (visible part), HW—maximum width of head, OI—ocular index dorsally, PI—pronotal index

dorsally, PL—maximum pronotal length, PW—pronotal width at base, RLA—ratios of relative lengths of antennomeres 1–11 from base to apex (3=1.00), RL/WA—ratios of length/maximum width of antennomeres 1–11 from base to apex, RLT—ratios of relative lengths of tarsomeres 1–5 respectively 1–4 from base to apex (1=1.00).

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

## Taxonomy

### Genus *Cornucistela* Campbell, 1980

*Cornucistela* Campbell, 1980: 133 (type species *Cornucistela serrata* Campbell, 1980; by original designation).

### *Cornucistela anichtchenkoi* sp. nov.

(Figs 1–7, 11)

**Type locality.** Iran, South Khorasan Province, 10 km west of Deh Salm.

**Type.** Holotype (male): wl with bf: IRAN/S Khorasan prov./10 km W of Deh Salm/26.V.2008/leg. A.Anichtchenko. Coordinates: 31°12'60"N, 59°17'40" (ZIN).

Holotype is provided with printed red label: *Cornucistela anichtchenkoi* sp. nov./Holotype/V. Novák & M. Nabozhenko det. 2018.

**Description.** Habitus as in Fig. 1, body elongate oval, from pale brown to reddish brown, dorsal surface moderately shiny, with very short pale setation (visible only from lateral view) and long and dense, pale setae near posterior angles of pronotum and humeri, BL 6.23 mm. Widest near half of elytral length; BL/EW 2.37.

Head (Fig. 2) dark reddish brown, rather matte, distinctly wider than long. Posterior part with a few dark setae behind eyes, dense and coarse punctuation (puncture diameter subequal to distance between punctures), punctures behind eyes smaller than medium sized punctures between eyes, interspaces between punctures narrow, with microgranulation. Anterior part with shallower and sparser punctuation than posterior part, apex and epistome pale brown, with microgranulation, punctuation indistinct. HW 1.28 mm; HW/PW 0.55; HL (visible part) 0.95 mm. Mandibles pale brown with outer sides and apex darker. Eyes relatively large, transverse, distinctly excised. Space between eyes relatively wide, distinctly wider than transverse diameter of one eye, OI equal to 40.23. Maxillary palpomeres ochre yellow with short, yellow setae.

Antennae (Fig. 3). Short (with only three apical antennomeres extending beyond base of pronotum), pale brown, with short, pale setation, fine microgranulation and small, sparse and shallow punctures. Antennomere 1 transverse and slightly darker, antennomeres 1 and 2 slightly shiny, antennomeres 3–11 rather mat. antennomeres 3–10 serrate, antennomeres 4–10 wider than long. AL 2.15 mm; AL/BL 0.35. Antennomere 2 shortest, antennomere 3 longest, antennomeres 4–11 shorter than length of antennomere 3. Antennomere 11 narrow, elongate, with obtuse come-shaped apex.

RLA(1–11): 0.52:0.41:1.00:0.80:0.74:0.74:0.80:0.75:0.65:0.63:0.84.

RL/WA(1–11): 0.85:1.00:1.56:0.97:0.77:0.76:0.82:0.82:0.76:0.80:1.84.

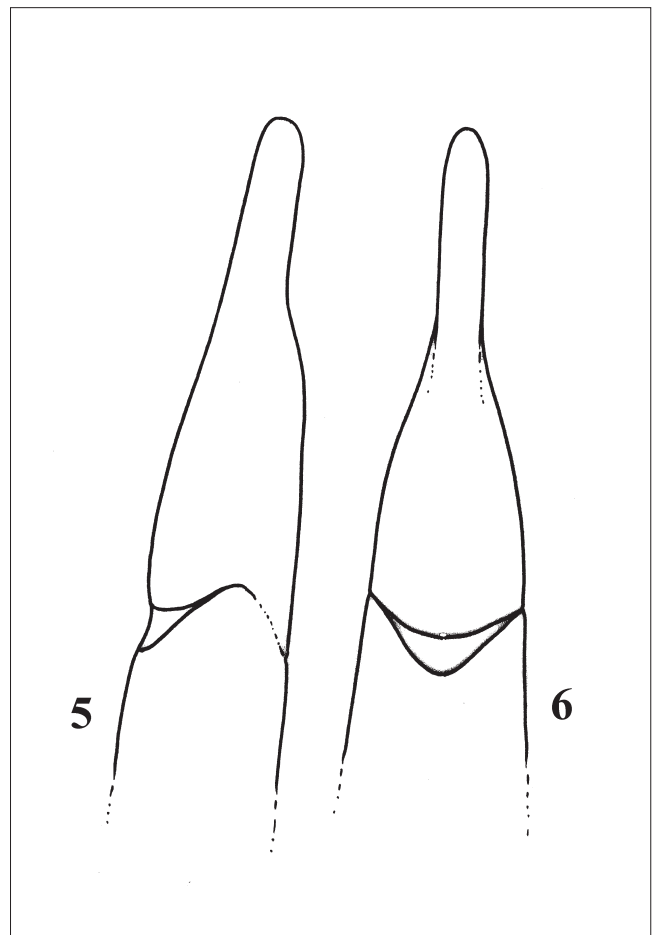
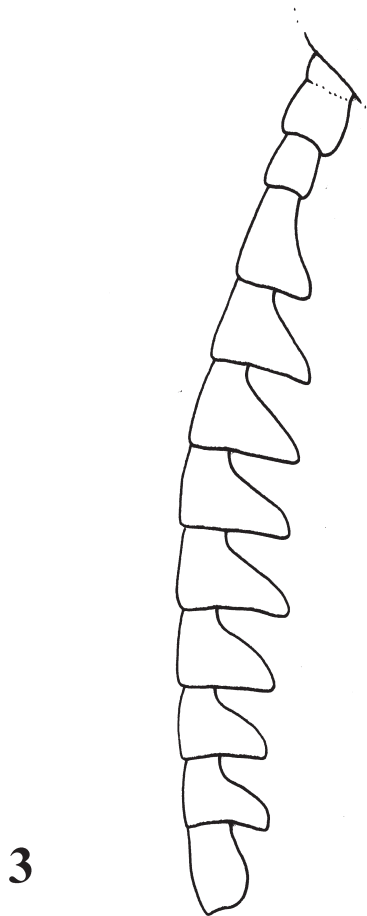
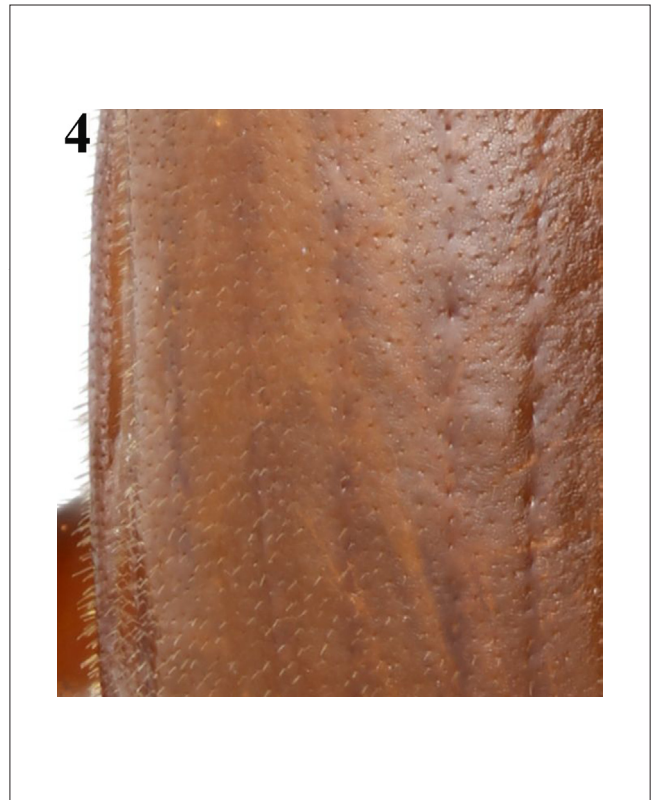
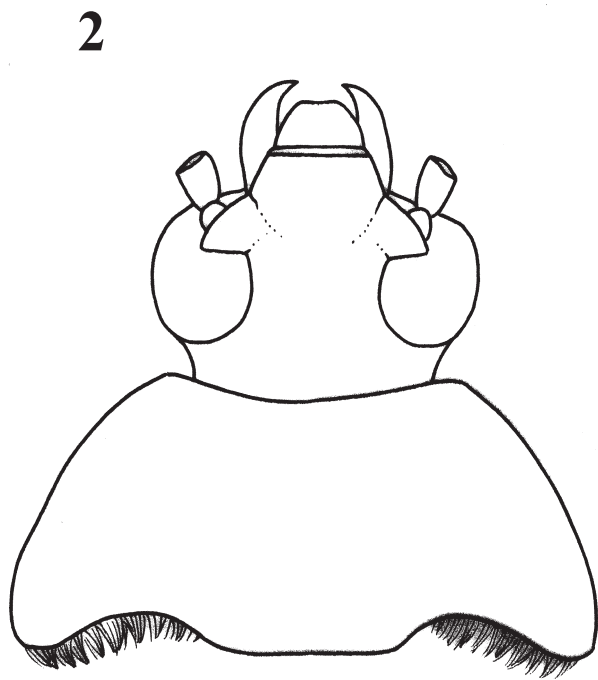
Pronotum (Fig. 2). Pale brown, slightly darker than elytron, broadly transverse, 1.84 times as wide as head, sides slightly arcuate, widest at base, distinctly wider than elytra at base, strongly narrowed to truncate apex. Dorsal surface with sparse and very short pale setae (visible only from lateral view), dense and shallow punctuation, punctures small sized, interpuncture space distinctly wider than puncture diameter. Base truncate medially, then abruptly concavely emarginate at lateral third. Disc slightly impressed medially, broadly deeply impressed before central third of base. PL 1.11 mm; PW 2.35 mm; PI equal to 47.23. Border lines not conspicuous, lateral margins slightly arcuate. Margins not beaded. Posterior angles roundly sharp angled, anterior angles obtuse, rounded. Anterior margin slightly emarginate.

Elytra 1.3 times as wide as pronotum and 2.05 times as wide as head. Pale brown, widest at middle, moderately shiny, dorsal surface with very short, pale suberect setation (visible only from lateral view). Strial punctures sparse, round and forming indistinct striae, especially at middle, where punctures depressed. Interstriae with very fine and

sparse rasp-shaped punctuation and fine microgranulation (Fig. 4). Humeri and elytral base with long and dense pale pubescence. EL 4.17 mm; EW 2.63 mm; EL/EW 1.59. Elytral suture narrowly depressed in basal half.



**FIGURE 1.** *Cornucistela anichtchenkoi* sp. nov. (Holotype): 1—Habitus.



**FIGURES 2–6.** *Cornucistela anichtchenkoi* sp. nov. (Holotype): 2—head and pronotum; 3—antenna; 4—punctuation of elytron, 5—aeedeagus, lateral view; 6—aeedeagus, dorsal view.



**FIGURE 7.** *Cornucistela anichtchenkoi* sp. nov. (Holotype): 7—habitat of *Cornucistela anichtchenkoi* sp. nov.: Dasht-e Lut desert W of Deh Salm, Southern Khorasan Province, Iran (photo of Alexander Anichtchenko, 2008).

Scutellum. Pentagonally shaped, pale brown, slightly darker than elytra itself, with microgranulation.

Elytral epipleura. Pale brown as elytra itself, delimited by groove extending from near base to apical quarter of elytra.

Legs. Pale brown, narrow and long, with microgranulation and sparse, small punctures and pale setation. Pro- and metatibiae straight, mesotibiae very weakly bent. Penultimate tarsomere of each tarsi without membranous lobes. RLT: 1.00:0.65:0.64:0.60:2.02 (protarsi); 1.00:0.55:0.37:0.32:1.07 (mesotarsi); 1.00:0.37:0.29:0.61 (metatarsi).

Anterior tarsal claws with 8 or 9 visible teeth.

Ventral side of body. Pale brown, slightly shiny, with short pale setation and small punctures. Abdomen pale reddish brown with relatively dense and short, pale setation, very small punctures and microgranulation.

Aedeagus (Figs. 5, 6). Ochre yellow, shiny. Basal piece slightly rounded laterally and distinctly narrowing dorsally. Apical piece beak shaped dorsally and laterally. Ratio of length of apical piece to length of basal piece 1: 1.98.

**Female.** Unknown.

**Differential diagnosis.** See table 1.

**Etymology.** A new species is dedicated to the collector, known specialist on Carabidae Aichtchenko (Daugavpils University, Latvia).

**Bionomics.** The species was collected under light trap in north of Dasht-e Lut desert with sand-stony habitats (Fig. 7).

**Distribution.** Iran (South Khorasan Province).

**TABLE 1.** Differences between two species of *Cornucistela*

<i>Cornucistela anichtchenkoi</i> sp. nov.	<i>Cornucistela serrata</i> Campbell, 1980
BL: 6.23 mm	BL: 6.5–7.3 mm (Campbell, 1980: 135)
dorsal surface more shiny, distinctly paler (pale brown or pale reddish brown)	dorsal surface dark brown, rather dull
pronotum and elytra with very fine microgranulation and sparser punctuation	pronotum and elytra with microgranulation clearer and punctuation slightly denser
protarsomere 1 distinctly longer than each of protarsomeres 2–4, ultimate protarsomere is approximately twice as long as protarsomere 1	protarsomere 1 as long as each of protarsomeres 2–4 and ultimate protarsomere is three times longer than protarsomere 1 (Campbell, 1980: 136)
antennomere 11 relatively narrow	antennomere 11 is obconical (see Campbell, 1980: 134, fig. 1)
shape of aedeagus (Figs 5, 6)	shape of aedeagus of <i>C. serrata</i> (see Campbell, 1980: 135, fig. 2)

***Cornucistela serrata* Campbell, 1980**

(Figs 8–11)

*Cornucistela serrata* Campbell, 1980: 135.**Type locality.** Saudi Arabia, Wadi Khumra, 700 m.**Type material.** Paratype specimen: wl: Wadi Khumra/24.VIII.1978/700 m [hb]//SAUDI ARABIA/W. Buttiker [hb]//yl: PARATYPE [pb]/*Cornucistela serrata* [hb]/J. M. Campbell/CNC No. [pb] 16091 [hb]; (CNC).**Distribution.** Saudi Arabia.**Acknowledgements**

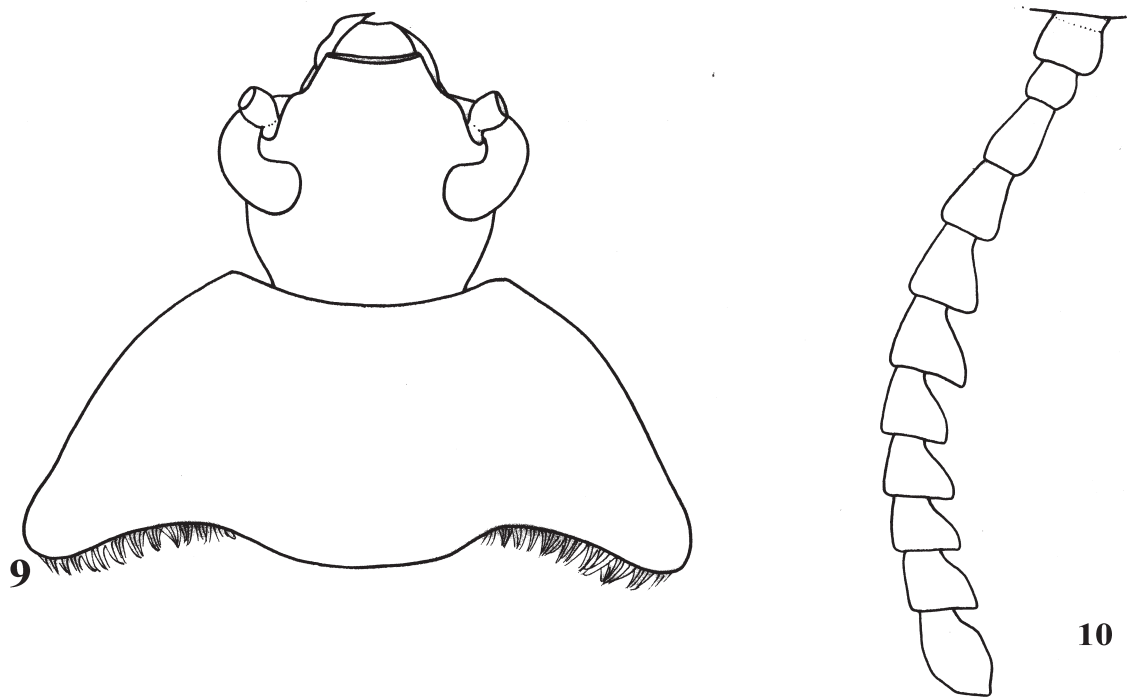
Sincere thanks are due to Pat Bouchard (CNC) for the loan of type material. Special thanks are due to Zuzana Čadová (Liberec, the Czech Republic) for excellent drawings, to Alexander Anichtchenko (Daugavpils University: Institute of Systematic Biology, Daugavpils, Latvia) and Kirill Makarov (Moscow Pedagogical State University) for provided material and photographs of a new species. This work was supported by the Russian state research project of Caspian Institute of Biological Resources AAAA-A17-117081640021-5 “Biological diversity, organization and dynamics of populations and communities of animal populations, the scientific basis for the management of biological resources of the East Caucasus Ecoregion” and by the Russian Foundation for Basic Research (Grant 18-04-00243-A).

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**FIGURE 8.** *Cornucistela serrata* Campbell, 1980: 8—Habitus.



FIGURES 9–10. *Cornucistela serrata* Campbell, 1980: 9—Head and pronotum; 10—antenna.



FIGURE 11. Distribution of the genus *Cornucistela*. Black circle—*C. serrata*, white circle—*C. anichtchenkoi*.