

## New species of the genus *Coprophilus* Latreille, 1829 from North India (Coleoptera: Staphylinidae: Oxytelinae)

### Новый вид рода *Coprophilus* Latreille, 1829 из Северной Индии (Coleoptera: Staphylinidae: Oxytelinae)

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КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Staphylinidae, *Coprophilus*, новый вид, Северная Индия.

**ABSTRACT:** *Coprophilus* (s. str.) *maximus* **sp.n.** from Uttarakhand State, North India is described and illustrated. Until now, the subgenus *Coprophilus* included only six species: *Coprophilus* (s. str.) *striatulus* (Fabricius, 1792); *C.* (s. str.) *impressus* Sharp, 1889; *C.* (s. str.) *sibiricus* Bernhauer, 1915; *C.* (s. str.) *castoris* Campbell, 1979; *C.* (s. str.) *formosanus* Shibata, 1993 and *C.* (s. str.) *qinlingensis* Gildenkov, 2017. Only *C.* (s. str.) *striatulus* and *C.* (s. str.) *sibiricus* have a fairly wide distribution, other species of the subgenus are quite locally distributed. Species of the *Coprophilus* subgenus were not previously known from India and neighboring territories (Tibet, Nepal, Bhutan, Bangladesh, Pakistan and Afghanistan). *Coprophilus* (s. str.) *maximus* **sp.n.** is the only species of the subgenus in the Oriental Biogeographic Region. The new species is the largest in the subgenus *Coprophilus*; it well differs from all other species from this subgenus not only in size, but also by the delicate microsculpture of the forebody.

**РЕЗЮМЕ:** Из Северной Индии, штата Уттаракханд, описан и проиллюстрирован *Coprophilus* (s. str.) *maximus* **sp.n.** Подрод *Coprophilus* до настоящего времени включал всего 6 видов: *Coprophilus* (s. str.) *striatulus* (Fabricius, 1792); *C.* (s. str.) *impressus* Sharp, 1889; *C.* (s. str.) *sibiricus* Bernhauer, 1915; *C.* (s. str.) *castoris* Campbell, 1979; *C.* (s. str.) *formosanus* Shibata, 1993 и *C.* (s. str.) *qinlingensis* Gildenkov, 2017. Только *C.* (s. str.) *striatulus* и *C.* (s. str.) *sibiricus* имеют достаточно широкое распространение, остальные виды подрода распространены достаточно локально. Из Индии и соседних с ней территорий (Тибет, Непал, Бутан, Бангладэш, Пакистан, Афганистан) представители подрода *Coprophilus* ранее не были известны. *Coprophilus* (s. str.) *maximus* **sp.n.**

является единственным видом подрода в составе Восточной биогеографической области. Новый вид является наиболее крупным в подроде *Coprophilus*, хорошо отличается от всех других видов не только размерами, но и нежной микроскульптурой покрова.

#### Introduction

Until now, the subgenus *Coprophilus* included only six species: *Coprophilus* (s. str.) *striatulus* (Fabricius, 1792); *C.* (s. str.) *impressus* Sharp, 1889; *C.* (s. str.) *sibiricus* Bernhauer, 1915; *C.* (s. str.) *castoris* Campbell, 1979; *C.* (s. str.) *formosanus* Shibata, 1993 and *C.* (s. str.) *qinlingensis* Gildenkov, 2017. Note that *C. alticola* Fauvel, 1904 and *C. kashmiricus* Cameron, 1941, previously included [Schülke, Smetana, 2015] in the subgenus *Coprophilus*, after studying the type materials, are considered in the subgenus *Zonyptilus* [Gildenkov, in pres.] and *C.* (s. str.) *chinensis* F.-K. Zheng, 1983 synonymized [Gildenkov, 2018] with *C. (Zonyptilus) marginalis* (Reitter, 1894). On the contrary, *C. impressus* Sharp, 1889 and *C. sibiricus* Bernhauer, 1915, whose belonging to a particular subgenus [Schülke, Smetana, 2015] was unclear (species incertae sedis), are now included in the subgenus *Coprophilus* [Gildenkov, 2016]. At the same time, *Coprophilus adachii* Watanabe and Shibata, 1961 was synonymized with *C. sibiricus* [Gildenkov, 2016].

Species of the subgenus *Coprophilus* are mostly distributed rather locally: *C.* (s. str.) *castoris* is known only for Canada and the United States of America (Quebec, New Brunswick, New York); *C.* (s. str.) *impressus* — only for Japan and the Kuril Islands [Gildenkov, 2016];

*C. (s. str.) formosanus* — only for Taiwan (indications for the Chinese province of Sichuan are doubtful and require confirmation); *C. (s. str.) qinlingensis*, described recently [Gildenkov, 2017a] from central China, remains known only for the Shaanxi province. *Coprophilus (s. str.) sibiricus* is much more widespread; it was known for Japan (Honshu Island), Eastern Siberia (Trans-Baikal Territory), northeastern China (Heilongjiang, Jilin), and the Kuril Islands (Kunashir) [Schülke, Smetana, 2015; Gildenkov, 2016]. The most widespread is the well-known *Coprophilus (s. str.) striatulus*, it is widespread in Europe, noted from the Caucasus and eastern Turkey [Gildenkov, Khachikov, 2017], penetrated into North America, the Great Lakes region in Canada and the United States (Ontario, Quebec, New York), where it should be distinguished from *C. castoris* [Gildenkov, 2017b]. Species of the subgenus *Coprophilus* were not previously known from India and adjacent territories (Tibet, Nepal, Bhutan, Bangladesh, Pakistan, Afghanistan). *Coprophilus (s. str.) maximus*, which is described from the Bageshwar region of the northern Indian state of Uttarakhand, is the first species of a subgenus in the Oriental Biogeographic Region.

## Material and methods

This paper is based on the specimens deposited in the following collections: cMG — private collection of Mikhail Gildenkov, Smolensk; cMSch — private collection of Michael Schülke, Berlin; cYSh — private collection of Yasutoshi Shibata, Machida, Tokyo; TULE — Laboratory of Entomology, Tokyo University of Agriculture, Tokyo, Japan.

The type specimens of *C. (s. str.) formosanus* is studied and illustrated below: ♂ Holotypus — “(SUNG-CHUANKANG) Nantou, TAIWAN, Mar. 27<sup>th</sup> 1986 | Y. Shibata leg.”, “[HOLOTYPE] *Coprophilus formosanus* Y. Shibata, 1993 ♂” (TULE) — (Fig. 3); 1♀ Paratypus — “(KUANSHAN YAKOU) Taitung, Taiwan, Aug. 21<sup>st</sup> 1987, Y. Shibata leg.”, “[PARATYPE] *Coprophilus formosanus*, ♀ | Y. Shibata, 1993” (cYSh) — (Fig. 2). Additionally the specimens of *C. (s. str.) sibiricus* from the Far East of Russia (South Primorye) and central China (Shaanxi) were studied as well: 1♀ — “Far Eastern Russia | South Primorye Lazovskiy nature reserve | kordon Amenka | 16.05.2007 | S. Shabalin” (cMG); 1 ex. — “Far Eastern Russia | South Primorye Lazovskiy nature reserve | kordon Amenka | 15.05.2007 | S. Shabalin” (cMG); 1♂1♀ — “CHINA Shaanxi 1999 Foping Nat. Res., Panda area 1600 m, 33°45'N, 107°48'E 6–11.4.; Sinaiev & Plutenko” “Sammlung M. Schülke Berlin Ankauf Plutenkov 1999” (1♀ — cMSch; 1♂ — cMG).

The standard methods were used for the taxonomic research of insects; the preparations were made on an MBS-10 binocular microscope. The genital preparations were processed using 10% KOH and then fixed in euparal. The labels are given in the original transcription. Photographs were taken with a Canon EOS 5D Mark III camera and a Canon MP-E 65 mm objective lens using the extended focus technology.

## Taxonomy

### *Coprophilus (s. str.) maximus* Gildenkov, **sp. n.**

Fig. 1.

**MATERIAL.** Holotype, ♀, North India, Uttaranchal: with labels “N INDIA: Uttaranchal state, 30 km N Bageshwar, Khati vill env., 2100–2300m, 27–30.VI.2003, Kejval & Tryzna” (cMSch).

**DESCRIPTION (holotype).** Length 8.8 mm. Body slightly convex, the integument integument slightly shining. Colouration brown, with a reddish tint; antennae black-brown (Fig. 1). Head slightly transverse, widest across eyes. Ratio of its length (from base to anterior margin of clypeus) to maximum width (mm) about 1.07:1.39. Eyes moderately large, slightly convex (Fig. 1). Forehead finely and sparsely punctate. (Fig. 1); vertex with noticeably larger and denser punctation (Fig. 1). Puncture diameter on the vertex is about 1.5 times more than diameter of the eye facet and diameter of points on the forehead, distances between punctures noticeably more than their diameter, interspaces smooth, slightly shining (Fig. 1). Neck large, coarsely and densely punctate. Puncture diameter is about 3 times more than diameter of eye facet, distances between punctures noticeably smaller than their diameter, interspaces smooth, slightly shining. Antennae rather long (Fig. 1). Antennal segment 1 elongate, conical, more than twice longer than its maximum width; segment 2 elongate, conical, about twice as long as its maximum broad, much shorter and narrower than segment 1; segment 3 conical, more than twice longer than its maximum broad; segments 4–6 cylindrical, slightly broadened to apex, only slightly longer than their maximum broad; segments 7–10 conical, much more massive than segments 4–6, slightly transverse; segment 11 pointed apically, about 1.5 times as long as broad. Last 5 segments form loose club (Fig. 1).

Pronotum (Fig. 1) slightly convex, maximum broad after about 2/3 of length, measured from the base. Ratio of pronotum length to its maximum broad (mm) about 1.63:1.60. Front angles rounded, lateral margin serrated (Fig. 1). Pronotal disc with deep depressions: 2 paired oval depressions at base, on either side of midline; unpaired broad rhomboid depression at disc centre and 2 broad, deep, triangular depressions near lateral margins (Fig. 1). Surface of pronotum with delicate, fine and sparsely punctation. Punctation irregular, the diameter of most punctures approximately 1.5 times more than diameter of eye facet, some punctures approximately equal to the diameter of eye facet; the distances between punctures are much longer than their diameter, interspaces smooth, slightly shining (Fig. 1). Punctures at the base of pronotum and along the lateral margins are larger and denser; their diameter about 3 times more than diameter of eye facet, distance between punctures significantly smaller than their diameter. Punctation most dense at basal angles and at bottom of depressions near lateral margins, interspaces between these punctures much smaller than their diameter.

Elytra convex, ratio of length of elytra to their combined width (mm) about 2.20:2.46. Six rather shallow grooves are clearly visible on the surface of each elytron (Fig. 1). Surface of elytra delicate, finely and sparsely punctate. Punctation irregular, diameter of most punctures approximately equal to diameter of eye facet, some punctures are 1.5 times more than diameter of eye facet, distances between punctures are much greater than their diameter, interspaces smooth, slightly shining (Fig. 1). Elytra finely bordered.

Abdomen with delicate, fine and sparsely punctation and delicately shagreened (Fig. 1).



Figs 1-4. *Coryphillus* spp., dorsal view: 1 — *C. (s. str.) maximus* sp.n., holotype, ♀; 2-3 — *C. (s. str.) formosanus* (2 — paratype, ♀; 3 — holotype, ♂); 4 — *C. (s. str.) striatulus*, ♀, Russia, Smolensk. Scale bar — 1.0 mm.

Рис. 1-4. *Coryphillus* spp., сверху: 1 — *C. (s. str.) maximus* sp.n., голотип, ♀; 2-3 — *C. (s. str.) formosanus* (2 — паратип, ♀; 3 — голотип, ♂); 4 — *C. (s. str.) striatulus*, ♀, Россия, Смоленск. Масштаб — 1,0 мм.



**Male.** Unknown.

**COMPARATIVE NOTES.** The new species is most similar in color and general habit to *C. (s. str.) formosanus* (Figs 1–3). Well differs from it by significantly larger body sizes. Basic dimensions *C. maximus*: body length 8.8 mm; length of pronotum 1.63 mm; maximum width of pronotum 1.60 mm, length of elytra 2.20 mm; maximum width of elytra 2.46 mm. Basic dimensions *C. formosanus* (♀, Paratype, Fig. 2): body length 8.0 mm; length of pronotum 1.23 mm; maximum width of pronotum 1.52 mm, length of elytra 1.96 mm; maximum width of elytra 2.15 mm. Basic dimensions *C. formosanus* (♂, Holotype, Fig. 3): body length 7.7 mm; length of pronotum 1.24 mm; maximum width of pronotum 1.54 mm, length of elytra 1.86 mm; maximum width of elytra 2.00 mm. From a rather large species of the genus and widely known in Europe *C. striatulus*, also well differs by significantly larger sizes: Basic dimensions *C. striatulus* (♀, Russia, Smolensk, Fig. 4) body length 7.0 mm; length of pronotum 1.13 mm; maximum width of pronotum 1.32 mm, length of elytra 1.72 mm; maximum width of elytra 1.62 mm. The new species well differs from *C. formosanus* by more delicate and fine punctation of head, pronotum, and elytra, and by less deep striae on the elytra (Figs 1–3). The new species well differs from *C. formosanus* and *C. striatulus* by the wide, only slightly longer than maximum broad unpaired rhomboid impression in center of pronotal disc; in *C. formosanus* and *C. striatulus* impression is much narrower and more elongated, more than 2 times longer as broad (Figs 1–4).

**DISTRIBUTION.** North India, Uttaranchal state.

**ETYMOLOGY.** From Latin “maximus” (greatest); the name is given due to the very large size.

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