



## Description of a new species of *Anthrenus* Geoffroy from Xizang, China (Coleoptera: Dermestidae: Megatominae)

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### Abstract

A new species of *Anthrenus* Geoffroy, *A. medogensis* Zhou, Háva, Da & Bai, **sp. nov.**, is described from Mêdog County, Xizang Autonomous Region, China. The new species is illustrated and compared with morphologically similar species: *A. himalayensis* Háva, Wachkoo & Maqbool, *A. katrinkrauseae* Háva, and *A. occultus* Háva. It differs from these species in the scale pattern, antennal structure, and male genitalia. Ecological observations and habitat photographs are also provided.

**Key words:** skin beetles, taxonomy, larva, museum, Mêdog County

### Introduction

At present, over 1,954 species of Dermestidae are known worldwide (Háva 2025a). The genus *Anthrenus* Geoffroy, one of the largest genera in the family, comprises about 333 species distributed globally, of which only 36 species have been recorded from China (4 species of *Anthrenodes* Chobaut, 2 species of *Anthrenops* Reitter, 6 species of *Anthrenus* s. str., 11 species of *Florilinus* Mulsant & Rey, 11 species of *Nathrenus* Casey, and 2 species of *Solskinus* Mroczkowski), a recognized biodiversity hotspot (Mi *et al.* 2021). Based on the number of antennomeres, the genus *Anthrenus* is divided into 10 subgenera (Háva 2025a). Among them, the subgenus *Anthrenodes* is characterized by having 10 antennomeres, and only four species are known from China: *A. globiger* Arrow, 1915, *A. maculifer* Reitter, 1881, *A. debilis* Háva, 2005 and an unnamed species to be described soon (Wu 1937; Hua 2002; Zhou *et al.* unpublished data).

During the examination of specimens at the Mêdog Biodiversity Field Scientific Observation and Research Station, Xizang Autonomous Region, China, a new species was discovered. Herein, the new species is described based on external morphology and genital characters.

## Material and methods

Dry specimens were softened by placing them in distilled water at approximately 80°C for 30 min. After softening, specimens were dissected under the Olympus SZX10 stereomicroscope. The male and female genitalia were then separated from the abdominal segments and mounted on a glass slide with a drop of glycerin for examination and preservation.

Digital images of the habitus (at 60×), antenna (at 145×) and genitalia (at 145×) were captured and stacked using a Leica DVM6A. Adobe Photoshop CC 2025 was used to process the images, and ImageJ version 1.53j was used to take measurements. Schematic drawings of male genitalia were made in Adobe Illustrator 2019.

The new species described in this paper is provided with red, printed label with text as follows: “正模 [HOLOTYPE] [or] 副模 [PARATYPE] | 墨脱圆皮蠹 [*Anthrenus* | (*Anthrenodes*) *medogensis* | sp. nov.] | Jíří Háva & Xuan Zhou det. | 2025”; on the white printed labels are the collecting data “墨脱生物多样性西藏自治区 | 野外科学观测研究站 [Médog | Biodiversity Field Scientific | Observation and Research | Station, Xizang Autonomous | Region], 墨脱县 [Médog | County], || 林芝市 [Nyingchi City], | 中国西藏自治区 [Xizang | Autonomous Region, China] | 29°19.59'N, 95°20.29'E; | alt. 1007 m; 8.VI.2025 | 周璇 [Xuan Zhou] leg.”. The individual lines of each label are separated by a single vertical bar (|), and individual labels are separated by a double vertical bar (||).

The holotype of the new species is deposited in the Institute of Plateau Biology of Xizang Autonomous Region, Lhasa, Xizang, China (IPBX). The paratypes are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China (IZCAS, curator: Ming Bai).

TL: total length—linear distance from anterior margin of pronotum to apex of elytra. EW: elytral width—maximum linear transverse distance.

## Taxonomy

### *Anthrenus* (*Anthrenodes*) *medogensis* Zhou, Háva, Da & Bai, sp. nov.

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(Figs 1–5)

**Type material.** **HOLOTYPE:** CHINA: ♂, ‘墨脱生物多样性西藏自治区野外科学观测研究站 [Médog Biodiversity Field Scientific Observation and Research Station], 墨脱县 [Médog County], 林芝市 [Nyingchi City], 中国西藏自治区 [Xizang Autonomous Region, China]; 29°19.59'N, 95°20.29'E; alt. 1007 m; 8.VI.2025; 周璇 [Xuan Zhou] leg.’ (IPBX). **PARATYPES:** CHINA: 6 ♀, same collecting data as holotype (IZCAS).

**Description.** *Male* (holotype). General appearance. TL 3.3 mm, EW 2.3 mm; body shape oval, small (Fig. 1a).

**Color.** Body dark brown to black. Dorsal surface covered with dark brown, yellowish brown, and white scales; ventral surface mostly covered with white scales, ventrites II–V with upper lateral margins and median areas sparsely covered with pale yellow scales. Scales small, broadly flabellate to subtriangular in shape (Fig. 1a, b).

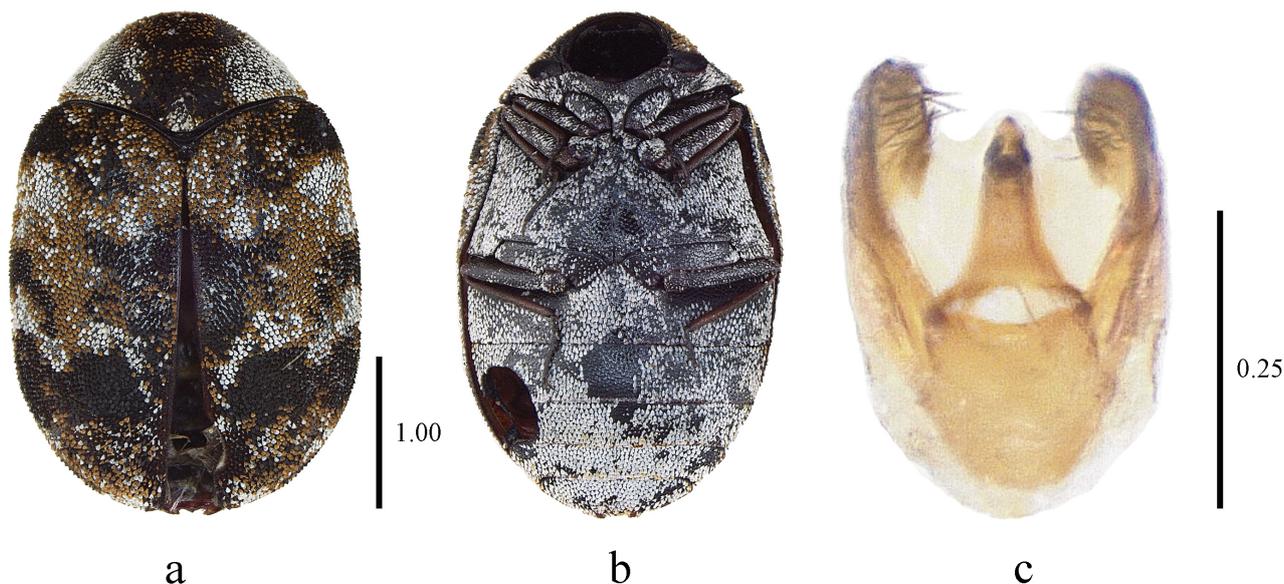
**Head.** Missing.

**Pronotum.** Subtriangular, transverse, with a maximum length to maximum width ratio of approximately 0.5. Lateral margins mainly covered with white scales, intermixed with sparse yellowish brown scales; disc predominantly covered with dark brown and yellowish brown scales, intermixed with sparse white scales (Fig. 1a).

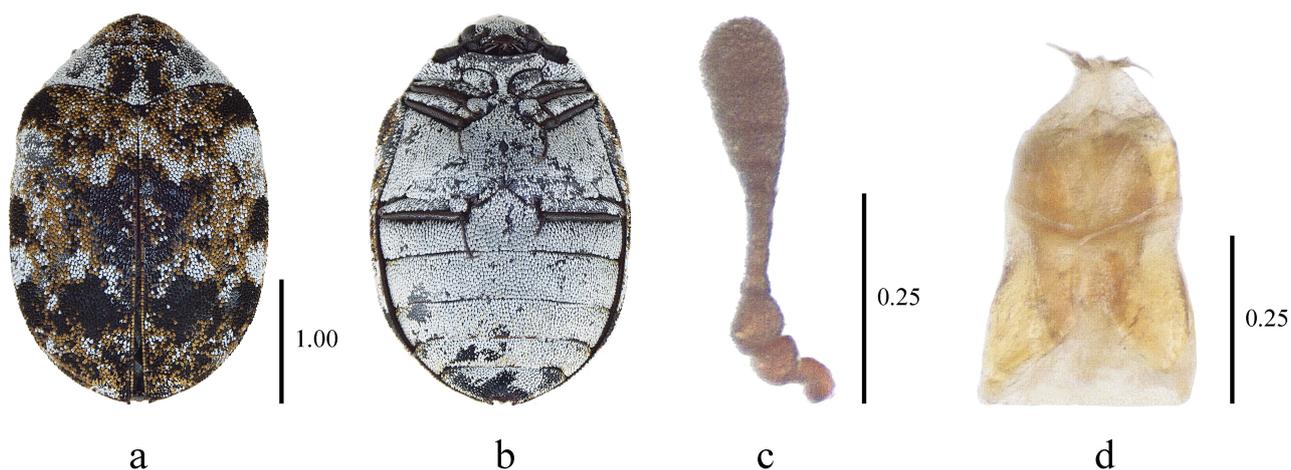
**Scutellum.** Very small, nearly invisible, triangular, and devoid of scales.

**Elytra.** Covered with intermixed dark brown, yellowish brown, and white scales. Basal area with all three types of scales; median part of the basal area mainly with yellowish brown scales, intermixed with scattered white scales; lateral margins of the basal area with dark brown scales. In the median area, yellowish brown scales form a longitudinal fascia on each elytron, while white and yellowish brown scales, predominantly white, form two transverse fasciae on each elytron. Apical area with a broad transverse fascia of dark brown scales, remaining parts covered with yellowish brown, dark brown and white scales, predominantly yellowish brown scales (Fig. 1a). The ratio elytral length to width is 2.4. Epipleuron covered with all three types of scales.

**Legs.** Dark brown; trochanters and femora covered with white scales and yellowish brown setae (Fig. 1b). Claws slender, pointed, and widely spaced.



**FIGURE 1.** *Anthrenus (Anthrenodes) medogensis* sp. nov. **a.** Habitus of the male holotype, dorsal view; **b.** Habitus of the male holotype, ventral view; **c.** Aedeagus of the male holotype. Scale bars in mm.



**FIGURE 2.** *Anthrenus (Anthrenodes) medogensis* sp. nov. **a.** Habitus of the female paratype, dorsal view; **b.** Habitus of the female paratype, ventral view; **c.** Left antenna of the female paratype; **d.** Ovipositor. Scale bars in mm.

*Abdomen.* Composed of five ventrites, densely covered with white scales and sparsely intermixed with pale yellow scales (Fig. 1b).

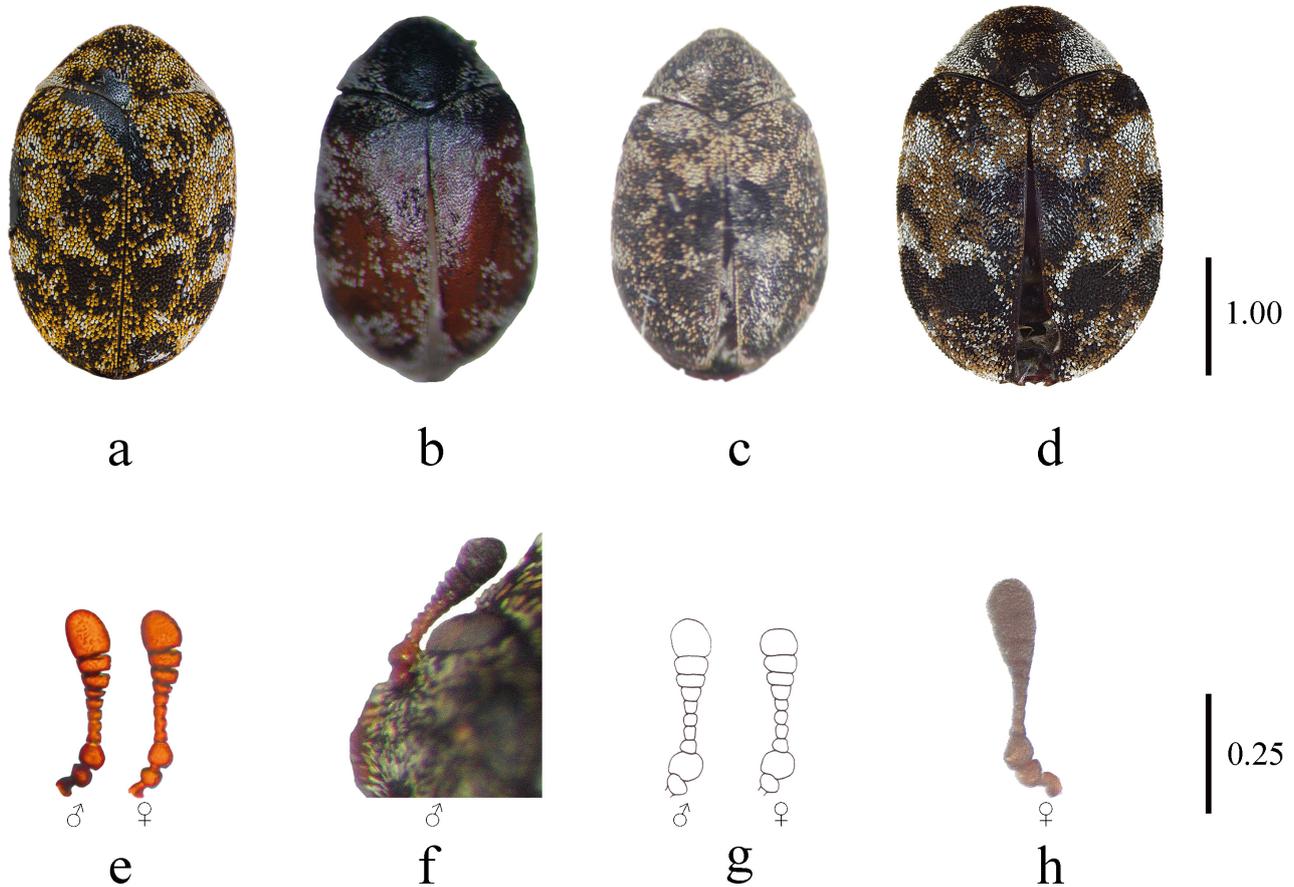
*Aedeagus.* Very small. Parameres symmetrical, with the phallobase forming a nearly U-shaped outline, slightly broadened apically; apices broadly rounded, with rather dense dark brown setae. Median lobe narrow, exposed between parameres, with apex curved and drop-shaped (Fig. 1c).

*Female.* TL 3.0 mm, EW 2.0 mm; the ratio of elytral length to width is 2.5. Dorsal surface covered with dark brown, yellowish brown, and white scales; ventral surface mostly with white scales, sparsely pale yellow scales (Fig. 2a, b). Head mostly covered with white scales. Antennae dark brown, consisting of 10 antennomeres. Antennal club composed of 4 antennomeres, compact (Fig. 2c). Antennal fossa long and broad, large enough to receive the antennal club. Frons with a median ocellus. Eyes large, with entire median margin. Labrum short, broad, and dark brown. Except for the head characters, which could not be compared due to the absence of the male head, no obvious sexual dimorphism was observed in external morphology.

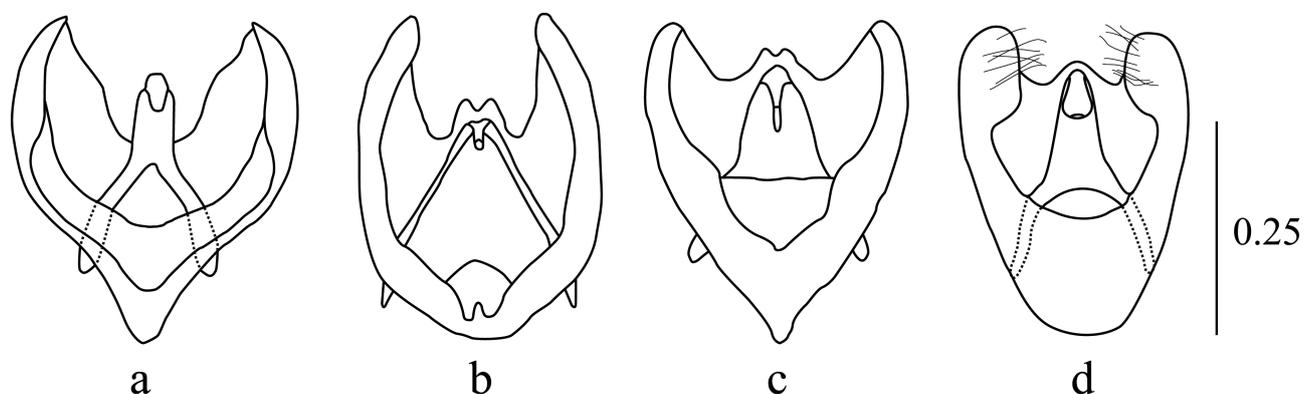
*Ovipositor.* Elongate. Styli small, with fine, elongate setae, positioned apically (Fig. 2d).

**Differential diagnosis.** Based on morphological characters, the new species is placed in the subgenus *Anthrenodes*, as indicated by the antennae comprising 10 antennomeres. It is visually similar to *A. himalayensis* Háva, Wachkoo & Maqbool, 2019 (India: Kashmir), *A. katrinkrauseae* Háva, 2018 (India: Kashmir), and *A. occultus* Háva, 2006 (India: Himachal, Kashmir, Uttar Pradesh), but can be distinguished from these species by the scale pattern (Fig. 3a–d), antennal structure (Fig. 3e–h) and male genitalia (Fig. 4a–d).

**Etymology.** The species name “*medogensis*” is an adjective referring to Médog, the type locality.



**FIGURE 3.** Comparison of habitus and antennae of related species. **a.** *A. himalayensis* Háva, Wachkoo & Maqbool, 2019, male; **b.** *A. katrinkrauseae* Háva, 2018, male; **c.** *A. occultus* Háva, 2006, male; **d.** *A. medogensis* sp. nov., male; **e.** Male (♂) and female (♀) antennae of *A. himalayensis*; **f.** Male (♂) antenna of *A. katrinkrauseae*; **g.** Male (♂) and female (♀) antennae of *A. occultus*; **h.** Female (♀) antenna of *A. medogensis* sp. nov. Scale bars in mm. a, e reproduced from Háva *et al.* (2019); b, f from Háva (2018); c from Herrmann (2025); g. from Háva (2006); d, h from this study.



**FIGURE 4.** Schematic drawings of male genitalia ventral view. **a.** *A. himalayensis* Háva, Wachkoo & Maqbool, 2019; **b.** *A. katrinkrauseae* Háva, 2018; **c.** *A. occultus* Háva, 2006; **d.** *A. medogensis* sp. nov. Scale bar in mm.

**Habitat.** The species was found in an insect specimen box at the Mêdog Field Observation and Research Station, Xizang Autonomous Region, China (Fig. 5a). The specimen was dead at the time of discovery, and its condition indicates that dermestid can feed on conspecific specimens. Numerous live larvae and booklice (Psocodea: Psocidae) were also present in the same insect specimen box. These larvae are most likely conspecific with the new species and were reared separately to document the number of molts and other biological traits (Fig. 5b–e).

**Distribution.** The species is currently known only from Mêdog, Xizang Autonomous Region, China.



**FIGURE 5.** Habitat of *Anthrenus (Anthrenodes) medogensis* sp. nov. **a.** Specimen box where the new species was discovered; **b, c, d.** Larvae found in the specimen box; **e.** Larvae were kept and reared in a container.

## Discussion

Dermestid beetles have been described at an increasing rate in recent years (Holloway *et al.* 2020; Háva 2023, 2024, 2025b), highlighting their remarkable diversity. In China, the fauna remains poorly explored and many species are likely to be discovered. Apart from *A. sarnicus* Mroczkowski (Holloway & Pinniger 2024), *A. medogensis* sp. nov. represents only the second *Anthrenodes* species known to feed on and damage dried insect specimens. The studies of Coombs & Woodroffe (1983) and Armes (1990, 1991) on the biology of *A. sarnicus* Mroczkowski provide a valuable framework for subsequent research. Adults of *Anthrenus* species, such as *A. verbasci*, *A. fuscus*, and *A. museorum*, are frequently found on flowers, where they feed on pollen, but oviposit in accumulations of animal-derived materials in buildings, nests of social insects, or bird nests. Their larvae are primarily responsible for damaging museum specimens (Yokoyama 1929; Woodroffe & Southgate 1954). Whether the new species exhibits flower-visiting behavior remains to be investigated. In addition, molecular data play an important role in clarifying the phylogenetic relationships within Dermestidae (Motyka *et al.* 2021); however, future studies should integrate both morphological and molecular evidence to achieve a more comprehensive understanding of the family's phylogeny.

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## 西藏圆皮蠹属 *Anthrenus*—新种 (鞘翅目: 皮蠹科: 长棒皮蠹亚科)

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**摘要:** 描述西藏墨脱圆皮蠹属 *Anthrenus*—新种, 即墨脱圆皮蠹 *A. medogensis* sp. nov.。对新种进行图示, 并与喜马拉雅圆皮蠹 *A. himalayensis*、克劳泽氏圆皮蠹 *A. katrinkrauseae* 以及隐圆皮蠹 *A. occultus* 等形态相似物种进行比较。新种与上述物种在鳞片斑纹、触角结构和雄性生殖器方面均有差异; 还提供了生态学观察记录和生境照片。

**关键词:** 皮蠹; 分类学; 幼虫; 博物馆; 墨脱县