ISSN: 1989-6581

www.aegaweb.com/arquivos_entomoloxicos

Holloway (2025)
ARQUIVOS ENTOMOLÓXICOS, **33**: 267-273

Anthrenus (Anthrenus) chikatunovi Holloway, 2020 (Coleoptera: Dermestidae: Megatominae) from central Spain

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Abstract: During a survey of unidentified specimens in the Naturalis Biodiversity Centre, Leiden, The Netherlands, a single specimen from central Spain belonging to the Palaearctic *Anthrenus (A.) pimpinellae* (Fabricius, 1775) group was noted that differed sufficiently from *A. (A.) isabellinus* Küster, 1848 to warrant further investigation. On dissection, it was concluded that the specimen was *A. (A.) chikatunovi* Holloway, 2020. Images of habitus, ventrites, antennae, aedeagus and sternite IX of *A. (A.) chikatunovi* are presented to confirm identification. The record represents the first into Spain away from the Pyrenees, extending the known distribution of the species.
Key words: Coleoptera, Dermestidae, *A. (A.) amandae*, *A. (A.) angustefasciatus*, *A. (A.) corona*, dissection, distribution, identification, *A. (A.) isabellinus*, *A. (A.) munroi*, *A. (A.) pimpinellae*, taxonomy, Spain.

Resumen: *Anthrenus (Anthrenus) chikatunovi* Holloway, 2020 (Coleoptera: Dermestidae: Megatominae) en España central. Durante un estudio de ejemplares no identificados en el Naturalis Biodiversity Centre, Leiden, Países Bajos, se observó un único ejemplar del centro de España perteneciente al grupo paleártico de *Anthrenus (A.) pimpinellae* (Fabricius, 1775) que difería lo suficiente de *A. (A.) isabellinus* Küster, 1848 como para justificar una investigación más profunda. Al diseccionarlo se concluyó que era un ejemplar de *A. (A.) chikatunovi* Holloway, 2020. Se presentan imágenes del habitus, ventritos, antenas, edeago y esternito IX de *A. (A.) chikatunovi* para confirmar la identificación. El registro supone el primero en España aparte de los Pirineos, ampliando la distribución conocida de la especie.
Palabras clave: Coleoptera, Dermestidae, *A. (A.) amandae*, *A. (A.) angustefasciatus*, *A. (A.) corona*, disección, distribución, identificación, *A. (A.) isabellinus*, *A. (A.) munroi*, *A. (A.) pimpinellae*, taxonomía, Spain.

Recibido: *19 de noviembre de 2025*
Aceptado: *29 de noviembre de 2025*
Publicado on-line: *16 de diciembre de 2025*

Introduction

The Dermestidae is a medium sized family of beetles containing about 2000 recorded species globally (Háva, 2025). Within the Dermestidae is the large genus *Anthrenus* Geoffroy, 1762 with over 300 species (Háva, 2025). *Anthrenus* is split in ten subgenera (Peacock, 1993; Háva, 2004) one of which is *Anthrenus* s. str. with over 70 species. Nearly half these species belong to the Palaearctic *Anthrenus (A.) pimpinellae* (Fabricius, 1775) group. At the last count, 30 species belonging to the group were reported (Holloway & Herrmann, 2025a).

During a study of the unidentified *Anthrenus* in the Naturalis Biodiversity Centre, Leiden, The Netherlands (RMNH), a single specimen from central Spain was noted. The specimen was initially expected to be another example of *A. (A.) isabellinus* Küster, 1848, but closer inspection cast doubts in the mind of the author as the habitus shape was marginally more tapering that 'typical' *A. (A.) isabellinus*. Dissection confirmed the suspicion as the specimen was *A. (A.) chikatunovi* Holloway, 2020 rather than *A. (A.) isabellinus*.

Material and methods

The specimen was relaxed in acetic acid for two days prior to dissection. Dissection was carried out under a Brunel BMSL zoom stereo LED microscope and involved detaching the abdomen from the rest of the insect body using two entomological pins. The soft tergites were then peeled away from the harder ventrites to expose the genitalia. Habitus images (dorsal aspect) were captured at ×20 magnification using a Canon EOS 2000D camera mounted on the BMSL microscope. Ventrites were imaged at ×50 magnification, and the head was imaged at × 63 magnification. Images of the aedeagus, antenna, and sternite IX were captured at ×200 magnification using a Canon EOS 1300D camera mounted on a Brunel monocular SP28 microscope. After dissection, all body parts were mounted on a card. All images were fed through Helicon Focus Pro version 8.2.2 focus-stacking software. Habitus measurements were made using a calibrated eyepiece. All other measurements were made using DsCap.Ink software version 3.90. Measurements were taken as follows:

- Body length (BL): distance from anterior margin of pronotum to the apex of the elytra.
- Body width (BW): distance across widest part of abdomen.
- Median lobe length (ML): distance from posterior tip to tip of one anterior stirrup.
- Sternite IX length (SL): distance from the tip of one anterior horn to the tip of the posterior lobe.

Distribution maps were created using Shorthouse (2010). Scale bars were added using ImageJ 1.53M (Schneider *et al.*, 2012).

Results

Taxonomy
Family Dermestidae Latreille, 1803
Subfamily Megatominae Leach, 1815
Tribe Anthrenini Gistel, 1848
Subtribe Anthrenina Gistel, 1848
Genus *Anthrenus* Geoffroy, 1762
Subgenus *Anthrenus* Geoffroy, 1762

Anthrenus (Anthrenus) chikatunovi (Figs. 1–2)

Study specimen: Spain, Prov. Cáceres, Abadía (40.260, -5.977), 700 m, 5.v.1960, no collector recorded (RMNH, identification number RMNH.INS 1491988).

The appearance of the holotype of *A. chikatunovi* is described by Holloway (2020), but a description of the current specimen from central Spain is also provided here to consolidate the information provided by this author.

Description, external characteristics

Holotype BL = 3.05 mm, BW = 2.1 mm, BW/BL = 0.69. Single reddish ocellus just below level of top of eyes (Fig. 1a), lower inner margin of eyes notched (typical of subgenus *Anthrenus*). Integument of head and pronotum dark brown/black. Vertex covered in dark brown scales, outer edges of vertex above eyes with small yellow scales that spread across head above ocellus as horizontal band. Yellow scales spread down inner margins of eyes and then again across face as horizontal band above clypeus. Brown scales between the two horizontal bands of yellow scales. White and yellow admixed scales onto clypeus. Patches of white scales below antennae attachment points. Labrum brown. Pronotum covered in admixed

white, yellow and orange, overlapping, oval scales larger than scales on face. Exact colour pattern unknown as scales on disk of pronotum rubbed off.

Scutellar shield triangular, the only part visible when elytra closed is the black, shining tip of the scutellar shield. Elytral integument brown (Fig. 1b). Fascia of white scales starting at lateral margin below callus extending down towards halfway, spreading across the elytra as a broad band to beyond halfway, where fascia turns up towards scutellar shield. Sub-lateral marginal spots relatively long way below fascia but strongly attached with a column of white scales. Sub-apical patches of white scales large and inverted 'U' shaped. Sub-lateral patches of white scales and sub-apical patches of white scales joined with thin line of white scales with elongated patch of orange scales. Small patch of white scales on lateral margin above apex. Elytral base with orange and white scales, orange scales lining elytral suture below white fascia down to apices, many orange scales on disk of elytra below white fascia.

Ventrites (Fig. 1c) covered in overlapping white and yellowish white scales. Ventrites 2–5 with large lateral patches of black scales, with scatterings of yellow scales on inner margins of patches. Apex of ventrite 5 with triangular patch of black scales edged with some yellow scales. Patch of black scales on ventrite 1 small, sub-marginal. The equivalent patch of black scales in *A. (A.) pimpinellae* is large and lies along the lateral margin.

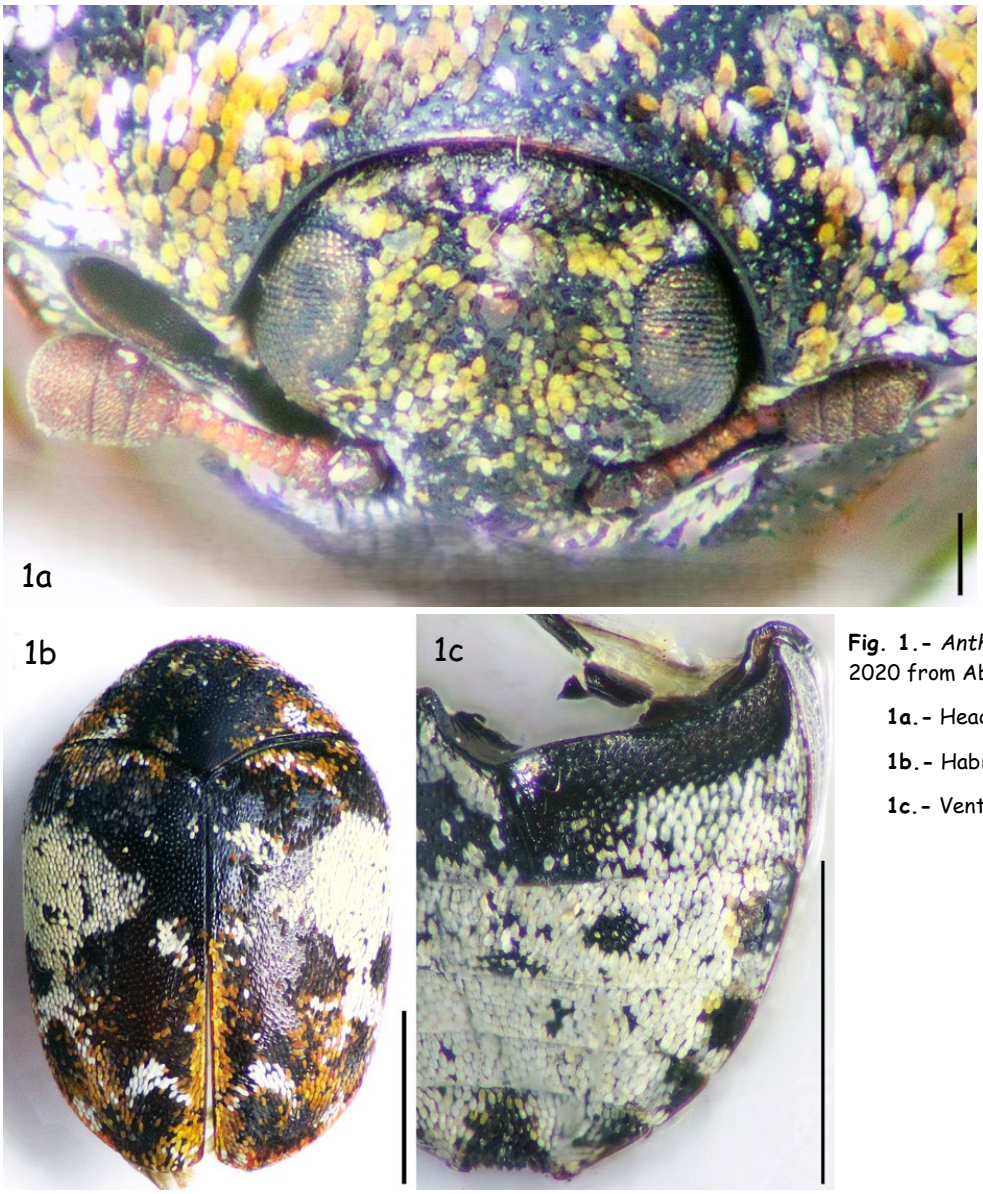

Fig. 1.- *Anthrenus (A.) chikatunovi* Holloway, 2020 from Abadía (Cáceres, Spain).

1a.- Head (scale bar = 100 µm).

1b.- Habitus (scale bar = 1 mm).

1c.- Ventrites (scale bar = 1 mm).

Antenna (Fig. 2a) with 11 red antennomeres, three segmented club darker. Antennomeres 1 and 2 globular, antennomeres 3–8 transverse with brown edging ventrally. Antennal club brown, evenly rounded terminal antennomere slightly longer than lengths of antennomeres 9 and 10 combined. Antennomeres 10 and 11 equally wide, antennomere 9 marginally narrower. Wide sutures between club antennomeres.

Description, internal characteristics

Aedeagus (Figs. 2b, 2c) with broad, elongated, paddle-shaped parameres (PL = 415 µm). Bases and outer edges of parameres pale brown, inner halves of paddles pale yellow, almost white on disk to posterior tip. Outer margins of parameres almost straight (very gently convex) and parallel to each other until halfway along paddle where margins turn smoothly in towards each other ending in rounded, blunt tips. Inner margins sinuate with cluster of setae just below posterior tip; setae longer on dorsal surface (Fig. 2b) than ventral surface (Fig. 2c). Tiny tuft of short setae at tip of paramere on both dorsal and ventral surfaces. Median lobe (ML = 392 µm) long, slim, broader at base, margins gradually converge to parallel sided finger-like tip that falls short of paramere tips. Sternite IX (Fig. 2d, SL = 445 µm) pale brown, with narrow neck midway. From neck posteriad, margins with evenly spaced fine setae, longest and densest at corners of posterior margin where some setae emerge sub-marginally. Convex posterior margin with no setae. Posterior marginal tissue and short way down lateral margins paler. From neck anteriad, margins sweep outwards and then anterior as two straight horns.

Fig. 2.- *Anthrenus (A.) chikatunovi* Holloway, 2020 from Abadía (Cáceres, Spain). **2a.-** Antenna. **2b.-** Aedeagus dorsal aspect. **2c.-** Aedeagus ventral aspect. **2d.-** Sternite IX. All scale bars = 100 µm.

Distribution

Fig. 3 shows the distribution of *A. (A.) chikatunovi* from dissected specimens (holotype and current study) and images on iNaturalist (see here). Fig. 3 indicates relief and there is a suggestion that *A. chikatunovi* is associated with higher ground and distributed to the south of *A. (A.) pimpinellae* (Holloway *et al.*, 2023; Holloway & Herrmann, 2025b).

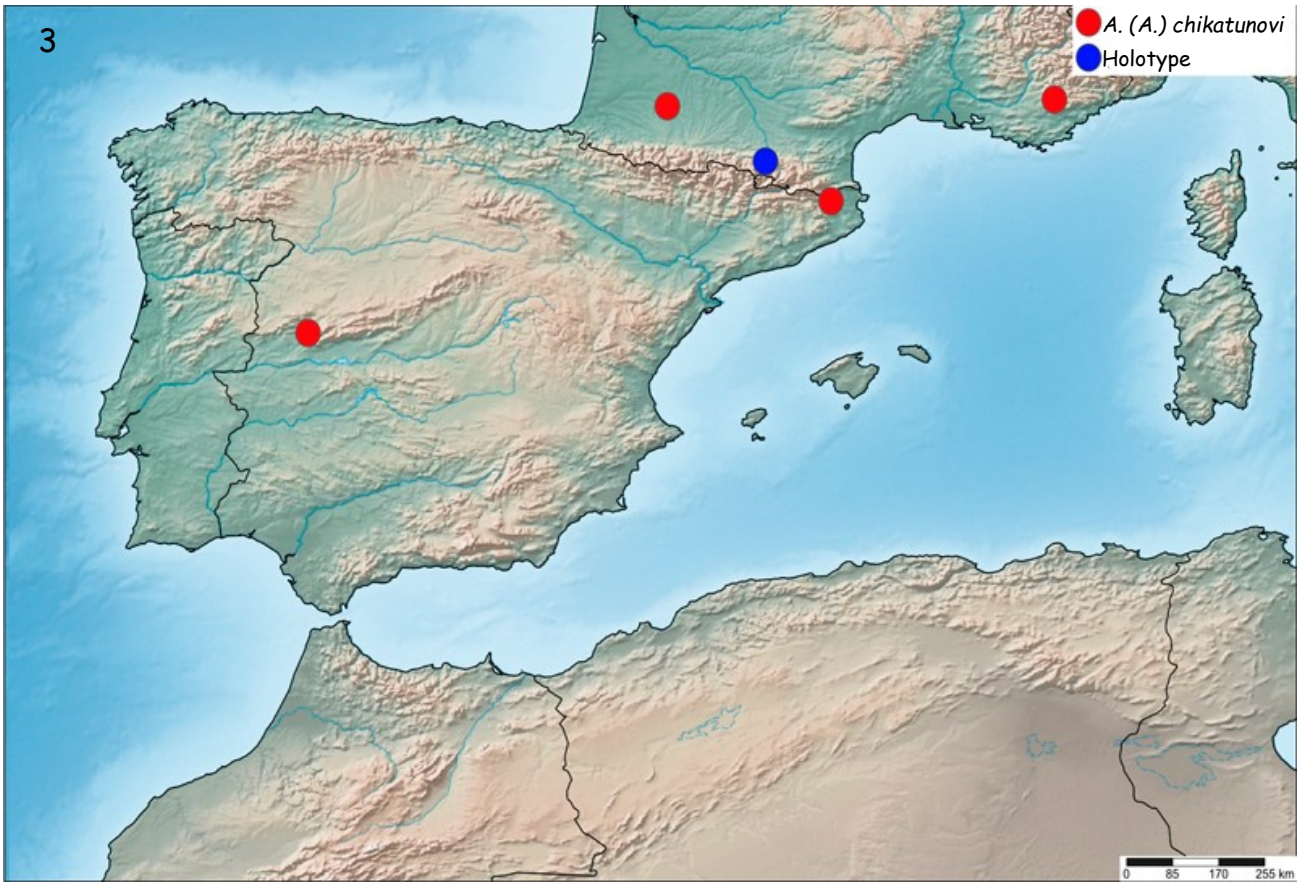

Fig. 3.- Distribution of confirmed *Anthrenus (A.) chikatunovi* Holloway, 2020 (holotype and central Spain record) and identifications from online images.

Discussion

Six *A. (A.) pimpinellae* group species have been reliably reported from Spain: *A. (A.) amandae* Holloway, 2019, from Mallorca (Holloway, 2019; Holloway & Bakaloudis, 2020), *A. (A.) angustefasciatus* Ganglbauer, 1904, with a narrow white fascia which is usually broken (Holloway & Herrmann, 2024), *A. (A.) corona* Holloway, 2021, a 'giant' *Anthrenus* species (Holloway, 2021, 2025; Holloway *et al.*, 2025; Pintilioaie *et al.*, 2025), *A. (A.) isabellinus*, with a tear-drop shaped antennal club and a broad white fascia (Holloway & Cañada Luna, 2022), *A. (A.) munroi* Hinton, 1943, with a large round antennal club (Holloway & Cañada Luna, 2022), and of course, *A. (A.) chikatunovi* (Holloway, 2020, 2024b). *Anthrenus (A.) chikatunovi* was initially compared with *A. (A.) pimpinellae* which was not contested, but it was quickly declared that *A. (A.) chikatunovi* was a synonym of *A. (A.) isabellinus* (Háva, 2025), although no evidence was ever provided to support this claim. It is unquestionably the case that *A. (A.) chikatunovi* is a valid species (Holloway, 2024b), and the current study reinforces that point. Another *A. pimpinellae* species, *A. (A.) valenzuelai* Holloway & Herrmann, 2024, has also been claimed from Spain (Háva, 2024). However, the claim was unsupported, and Holloway (2024a) explained why it was unlikely to be correct.

Data on images from iNaturalist are included in Fig. 3 although it remains the only way to achieve certain identification is through dissection to allow inspection of the genitalia. Nevertheless, there do appear to be external features that facilitate a degree of confidence in identification (Holloway & Cañada Luna, 2022), including the small sub-marginal, lateral spot of black scales on ventrite 1, the amount of orange scales below the white fascia, and the cubic antennal club. The current specimen was further studied on account of the body shape, broadest at the shoulders in line with the

top of the white fascia with the lateral elytral margins below this point fairly straight and tapering down to the elytral apices. The images on iNaturalist all share this feature (and hence are included in Fig. 3). Also, the lateral patch of white scales is some way removed from the base of the white fascia and in some cases connected to the base of the fascia by a long, narrow strip of white scales. Finally, the sub-apical spot in many specimens is a forward pointing chevron. The evidence for the features highlighted here remains sketchy and based on only a few specimens, some dissected, others only images. Given the degree of uncertainty associated with identifying from images alone, the fact that four of the five records in Fig. 3 are from high or mountainous ground is intriguing. It has been suggested that *A. (A.) chikatunovi* is an edge-of-range species that in the past split from *A. (A.) pimpinellae* (Holloway & Herrmann, 2025b). Perhaps *A. (A.) chikatunovi* has evolved into a high-altitude species requiring features differing from *A. (A.) pimpinellae*. More work is required to elucidate the issues raised here.

Acknowledgements

The author is very grateful is very grateful to Oscar Vorst and the team who care for the Coleoptera collection at the Naturalis Biodiversity Centre, Leiden, The Netherlands and for making specimens available for research. Special thanks to Andreas Herrmann for his inciteful comments on how the manuscript could be improved, and to Fernando Prieto Piloña for his excellent editorial efforts.

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