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Some Dermestidae (Coleoptera) of Mallorca (Balearic Islands, Spain)

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Abstract: A list of 15 species of Dermestidae (Coleoptera) found on Mallorca (Balearic Islands, Spain) is presented. Images of all 15 species are provided to help workers identify them under field (or laboratory) conditions as an aid to extending the species list. Two species, *Anthrenus amandae* Holloway, 2019 and *Globicornis peckhamae* Holloway & Cañada Luna, 2023, are discussed in more depth. Neither has yet been recorded beyond Mallorca, so the possibility that one or both are endemic to the island is considered.

Key words: Coleoptera, Dermestidae, Megatominae, Dermestinae, Attageninae, *Anthrenus*, *Dermestes*, *Attagenus*, *Globicornis*, endemic, island community, Mallorca, Balearic Islands, Spain.

Resumen: Algunos Dermestidae (Coleoptera) de Mallorca (Islas Baleares, España). Se presenta una lista de 15 especies de dermestidae (Coleoptera) encontrados en Mallorca (Islas Baleares, España). Se incluyen imágenes de las 15 especies a fin de ayudar a otros interesados a identificarlas en el campo (o en el laboratorio) y poder ampliar la lista de especies. Dos especies, *Anthrenus amandae* Holloway, 2019 and *Globicornis peckhamae* Holloway & Cañada Luna, 2023, son comentadas con mayor profundidad. Ninguna ha sido todavía citada de fuera de Mallorca, por lo que se considera la posibilidad de que una o ambas sean endémicas.

Palabras clave: Coleoptera, Dermestidae, Megatominae, Dermestinae, Attageninae, *Anthrenus*, *Dermestes*, *Attagenus*, *Globicornis*, endemismo, comunidad insular, Mallorca, Islas Baleares, España.

Recibido: 1 de abril de 2024

Aceptado: 5 de abril de 2024

Publicado on-line: 11 de abril de 2024

Introduction

The Dermestidae are a speciose family of beetles numbering about 1900 known species (HÁVA, 2024). HOLLOWAY et al. (2019) concluded that 102 species of Dermestidae belong on the Spanish list, although they also pointed out that several of these records were not associated with published literature and required further authentication. Spain includes several islands within its geopolitical boundaries, including the Balearic Islands in the Mediterranean and the Canary Islands in the Atlantic. The Canaries cover a much smaller area than the Spanish mainland and, not surprisingly, contain fewer Dermestidae species (MACHADO, 2024). The 36 species listed by MACHADO (2024) show limited overlap with the list produced by HOLLOWAY et al. (2019), since the latter only produced a checklist of species for the Spanish mainland and the Balearic Islands. This demonstrates the point that islands will often hold a different suite of species and need to be considered separately from the mainland given that their main association is geopolitical, not geological.

Mallorca is closer to the Spanish mainland (about 200 km) than the Canary Islands but has been separated from the mainland for at least 5 million years following the Zanclean Flood (GARCIA-CASTELLANOS *et al.*, 2009). This period may be sufficient to allow Mallorca to have developed an island community of Dermestidae that differs from the mainland which we believe warrants the creation of a separate list.

The current paper is not intended to be a comprehensive list of Dermestidae on Mallorca, rather a list from our own observations and a collection to encourage workers to develop the list over time. In addition, images of several species are provided to facilitate study of Mallorcan Dermestidae.

Materials and methods

Data from annual field observations by GJH, ICL and AC from 2018 to 2023 are compiled. In addition, records from Andreas Herrmann's entomological collection (AHEC) are also included (HERRMANN, 2024). Only species likely to exist in established breeding populations are considered (DUFF, 2018; HOLLOWAY, 2020, 2023). All species discovered by the authors were imaged using a Brunel BMSL zoom stereo LED microscope and fed through Helicon Focus Pro version 8.2.2 focus-stacking software.

Results

Fifteen species of Dermestidae recorded from Mallorca by the authors are presented in Table 1 and shown in Figs. 1-4 to aid identification. For *Dermestes* Linnaeus, 1758 the ventral sternite patterns often vary considerably among species, so both the dorsal and ventral surfaces of each *Dermestes* species are provided in Fig. 1. For the species shown in Figs. 2-4, the ventral pattern of scales or hairs is less informative, so only dorsal images are provided.

Discussion

The list provided in Table 1 is not exhaustive and there are very likely more species to be discovered. The authors are only aware of two recent studies including the Coleoptera of Mallorca: WHITEHEAD (1993), who listed no Dermestidae, and ALCOVER *et al.* (1993), working on Cabrera just off the southern coast of Mallorca. ALCOVER *et al.* (1993) listed five species of Dermestidae from Cabrera: *Dermestes (Dermestinus) frischii* Kugelann, 1792, *Dermestes (Dermestinus) maculatus* DeGeer, 1774, *Attagenus pellio* (Linnaeus, 1758), *Anthrenus pimpinellae* (Fabricius, 1775), and *Anthrenus verbasci* (Linnaeus, 1767). It is very likely that *Att. pellio* also occurs on Mallorca, but without concrete evidence we have not included the species in Table 1.

Two species are worthy of note: *Anthrenus amandae* Holloway, 2019 and *Globicornis peckhamae* Holloway & Cañada Luna, 2023. Both species were discovered new to science from Mallorca (HOLLOWAY, 2019; HOLLOWAY & CAÑADA LUNA, 2023). To date, *A. amandae* has only been recorded from Mallorca, so it is possible it is an endemic species. *Globicornis peckhamae* is externally very similar to *Globicornis bifasciata* (Perris, 1866). Differentiation is only possible through examination of male genitalia and females cannot yet be speciated (HÁVA & HERRMANN, 2024). *G. bifasciata* has been claimed from France, Mallorca, Monaco, Sardinia, Sicilia, and Spain (HÁVA, 2024), but this was before *G. peckhamae* was discovered. HOLLOWAY & CAÑADA LUNA (2023) examined the holotype of *G. bifasciata* (collected in southern France) so this species is known with certainty from southern France and Mallorca only. The recently described *G. peckhamae* may have a wider distribution, although it could also be endemic to Mallorca. Specimens from the range quoted by HÁVA (2024) need to be revisited and dissected to disentangle the distributions of *G. bifasciata* and *G. peckhamae*.

It was thought that *A. pimpinellae* was very widely distributed across the world (HÁVA, 2024), including Spain (HOLLOWAY *et al.*, 2019). More recent research has shown this is most likely incorrect (HOLLOWAY *et al.*, 2023). There is no evidence that the species is cosmopolitan, nor is there any evidence that it occurs on Mallorca. ALCOVER *et al.* (1993) listed *A. pimpinellae* as a species found on Cabrera off the coast of Mallorca. *Anthrenus amandae* was only discovered in 2019 and resembles *A. pimpinellae* closely, so it is possible that ALCOVER *et al.* (1993) found *A. amandae* rather than *A. pimpinellae*. *Anthrenus isabellinus* Küster, 1848 had been confused with *A. pimpinellae* for over 150 years until HOLLOWAY *et al.* (2020) unravelled the taxonomy of the two species, so another possibility is that ALCOVER *et al.* (1993) found *A. isabellinus* rather than *A. pimpinellae*.

Acknowledgements

The authors are very grateful to Andreas Herrmann for generously allowing us to use his images. We are also grateful to the editors for reviewing the text so carefully.

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Table 1. - Species of Dermestidae recorded from Mallorca by the authors, apart from those indicated in AHEC (see text).

Dermestes Linnaeus, 1758 (subgenus *Dermestinus* Zhantiev, 1967)

- *Dermestes frischii* Kugelann, 1792 (Fig. 1a)
- *Dermestes maculatus* DeGeer, 1774 (Fig. 1b)
- *Dermestes sardous* Küster, 1846 (Fig. 1c)
- *Dermestes szekessyi* Kalík, 1950 (AHEC) (Fig. 1d)
- *Dermestes undulatus* Brahm, 1790 (Fig. 1e)

Attagenus Latreille, 1802

- *Attagenus maritimus* Gené, 1839 (AHEC) (Fig. 2a)
- *Attagenus unicolor* Brahm, 1790 (AHEC) (Fig. 2b, c)

Anthrenus Geoffroy, 1762

- *Anthrenus amandae* Holloway, 2019 (Fig. 3a)
- *Anthrenus angustefasciatus* Ganglbauer, 1904 (Fig. 3b)
- *Anthrenus isabellinus* Küster, 1848 (Fig. 3c)
- *Anthrenus munroi* Hinton, 1943 (Fig. 3d)
- *Anthrenus verbasci* (Linnaeus, 1767) (Fig. 3e)

Globicornis Latreille in Cuvier, 1829

- *Globicornis bifasciata* (Perris, 1866) (Fig. 4a)
- *Globicornis peckhamae* Holloway & Cañada Luna, 2023 (Fig. 4b)

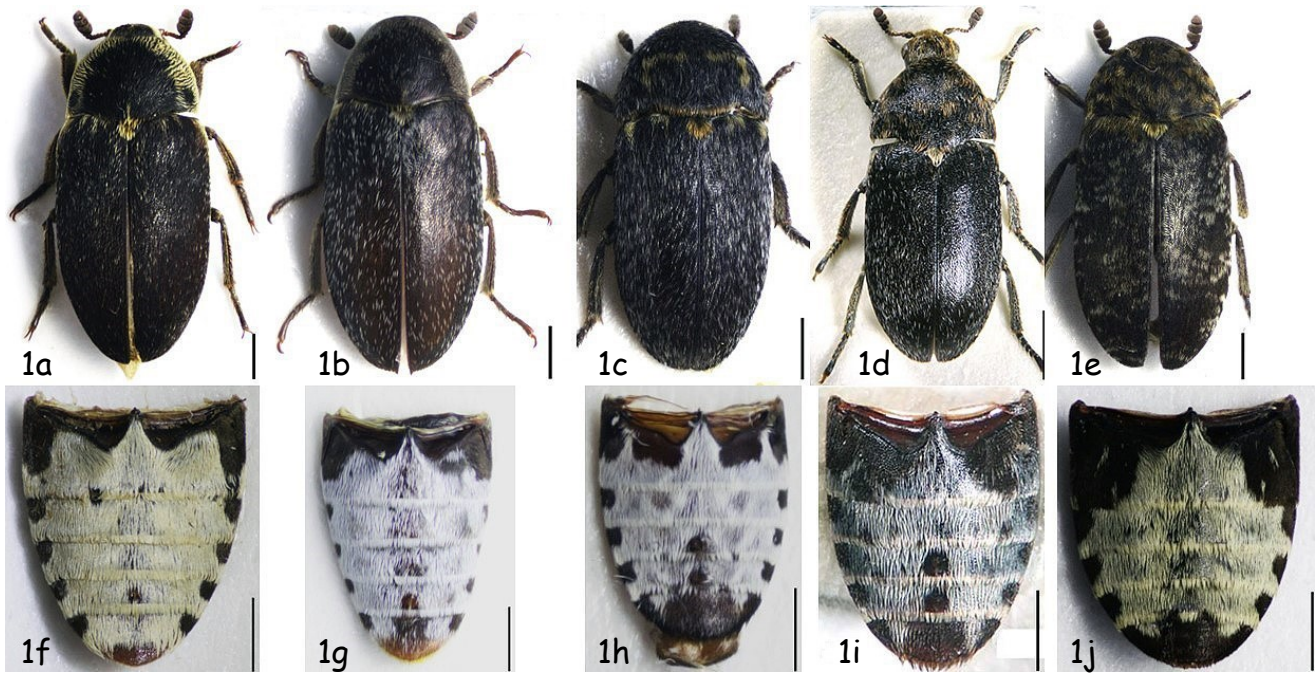


Fig. 1.- *Dermestes*, habitus dorsal aspect: 1a.- *D. frischii*. 1b.- *D. maculatus*. 1c.- *D. sardous*. 1d.- *D. szekessyi*. 1e.- *D. undulatus*. And ventral sternites: 1f.- *D. frischii*. 1g.- *D. maculatus*. 1h.- *D. sardous*. 1i.- *D. szekessyi*. 1j.- *D. undulatus*. Scale bar = 1 mm in all cases.

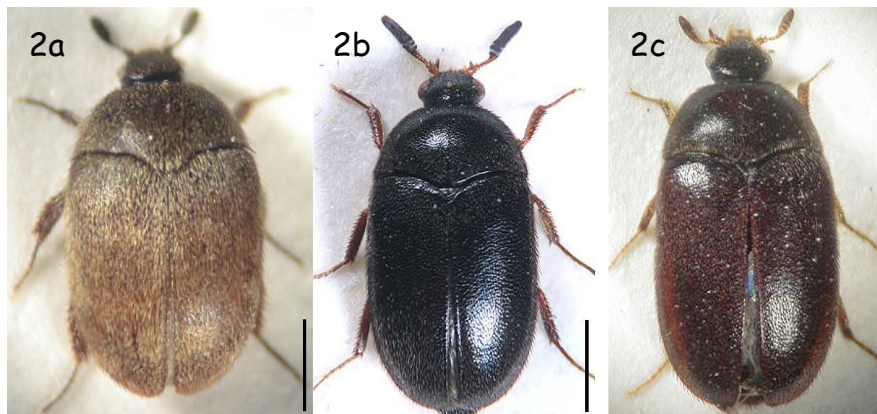


Fig. 2.- *Attagenus*, habitus dorsal aspect: 2a.- *Att. maritimus*. 2b-c.- *Att. unicolor*, male and female, respectively. Scale bar = 1 mm in all cases.

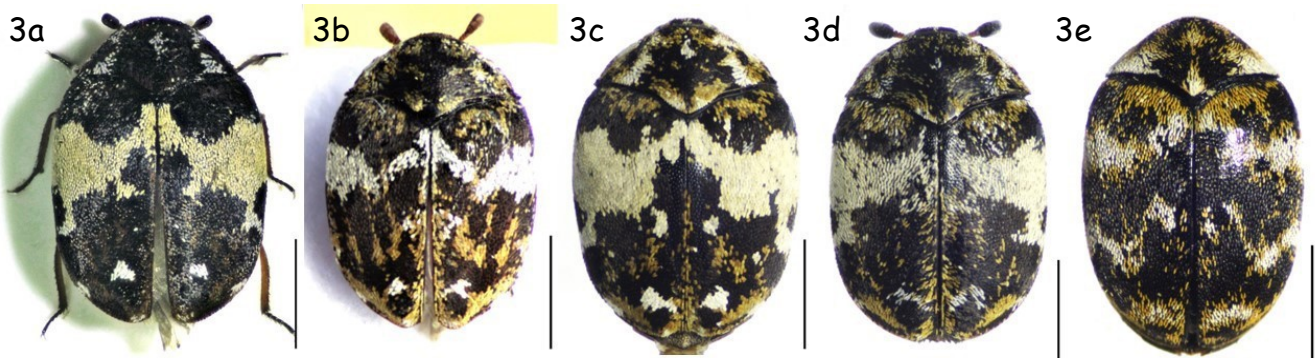


Fig. 3.- *Anthrenus*, habitus dorsal aspect: 3a.- *A. amandae*. 3b.- *A. angustefasciatus*. 3c.- *A. isabellinus*. 3d.- *A. munroi*. 3e.- *A. verbasci*. Scale bar = 1 mm in all cases.



Fig. 4.- Habitus dorsal aspect: **4a.-** *Globicornis bifasciata*. **4b.-** *Globicornis peckhamae*. Scale bar = 1 mm in both cases.