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A contribution to knowledge of Dermestidae (Coleoptera) from Yucatan Peninsula, Mexico

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Abstract. The species *Dermestes (Dermestinus) caninus* (Germar, 1824) and *Dermestes (Dermestinus) carnivorus* (Fabricius, 1775) are firstly recorded from the Yucatan Peninsula, Mexico. A taxonomic key to the species found in the present study is included.

INTRODUCTION

The Dermestinae (Coleoptera: Dermestidae) is a group distributed worldwide. This subfamily was established by Latreille with *Dermestes* Linnaeus, 1758 as a typical genus (Háva 2015). At present, there are 94 species of the *Dermestes* genus worldwide (Háva, 2015) (Zahradník & Háva 2014), with eight species recorded in Mexico: *Dermestes (Dermestes) ater* (DeGeer, 1774), *Dermestes (Dermestinus) caninus* (Germar, 1824), *Dermestes (Dermestinus) carnivorus* (Fabricius, 1775), *Dermestes (Dermestinus) frischii* (Kugelann, 1792), *Dermestes (Dermestes) lardarius* (Linnaeus, 1758), *Dermestes (Dermestinus) maculatus* (DeGeer, 1774), *Dermestes (Dermestinus) marmoratus* (Say, 1823) and *Dermestes (Dermestes) peruvianus* (Laporte, 1840) (Moroni 1975, Muñiz 2001, Háva 2015).

Beetles of the *Dermestes* genus have an economic importance due to their scavenger habits; which can cause damages to dried beef, fish, hair, furs, leather and other similar products (Santos 2014, Zanetti et al. 2015). In their larval stage, they can damage cables

and wood while they bury to build their cocoon chambers (Beal 2003). Dermestids are also important in the forensic field, since their larvae and adults can be found feeding of corpses in advanced decay (Almeida & Mise 2009, Charabidze et al. 2013, Santos 2014, Andrade-Herrera & Háva 2018); therefore, they can be used to determine the time of death (Post Mortem Interval) (Sharma et al. 2015). For this reason it is imperative to count with a correct taxonomic identification.

MATERIAL AND METHODS

Individuals were collected during the decomposition of a *Boa constrictor* (Linnaeus, 1758) corps, during the month of March, 2019 in the Biological Science and Husbandry Campus of the Autonomous University of Yucatan, Mexico (20°52'2.345''N; 89°37'12.41''E), (AUYM). The study area is characterized by having a low deciduous forest vegetation and lime soils with rocky outcrops (Flores-Guido & Espejel 1994). The average temperature of the site was of 26.41°C with a relative humidity (RH) of 67.47%.

RESULTS

Dermestes (Dermestinus) caninus (Germar, 1824)

(Figs. 1-2)

Material examined: Mexico, Yucatan, Biological Science and Husbandry Campus of the Autonomous University of Yucatan (20°52'2.345''N; 89°37'12.41''E), March 2019, (21 ♂♂, 8 ♀♀), (AUYM).

Dermestes (Dermestinus) carnivorus (Fabricius, 1775)

(Figs. 3-4)

Material examined: Mexico, Yucatan, Biological Science and Husbandry Campus of the Autonomous University of Yucatan (20°52'2.345''N; 89°37'12.41''E), March 2019, (1 ♂), (AUYM).

Remarks. Adult individuals of *Dermestes (Dermestinus) caninus* (Germar, 1824), *Dermestes (Dermestinus) carnivorus* (Fabricius, 1775) and *Dermestes (Dermestinus) maculatus* (DeGeer, 1774) (4 ♂♂, 2 ♀♀), (Figs. 5-6) were collected, which were determined using the keys by Peacock (1993), Háva (2004), Háva & Kadej (2006) and Almeida & Mise (2009). The individuals were obtained during the late active decomposition and dry debris of the corpse. The collecting and identification was done by Andrade, Nuñez and Estrella. The identification was revised by Háva. All the collected individuals were identified at species level and deposited in the Zoological Collection from the Biological Science and Husbandry Campus of the Autonomous University of Yucatan.

The presence of *D. (D.) caninus* (Germar, 1824) and *D. (D.) carnivorus* (Fabricius, 1775), represent the first records for Yucatan. The genus *Dermestes* has been previously reported by Morales et al. (1998) using baited traps in Veracruz; *D. (D.) caninus* (Germar, 1824) by Stephano-Vera et al. (2009) from swine corpses in Nuevo Leon. Háva & Herrmann (2017)

also mention that *D. (D.) caninus* (Germar, 1824) is distributed in Canada, Hawaii, Mexico, U.S.A, Dominican Republic, Cuba and Jamaica; and that both *D. (D.) carnivorus* (Fabricius, 1775) and *D. (D.) maculatus* (De Geer, 1774) are cosmopolitan species (Háva 2015).



Figs. 1-6. *Dermestes (Dermestinus) caninus* (Germar, 1824): 1- habitus, dorsal aspect; 2- habitus, ventral aspect; *Dermestes (Dermestinus) carnivorus* (Fabricius, 1775): 3- habitus, dorsal aspect; 4- habitus, ventral aspect; *Dermestes (Dermestinus) maculatus* (De Geer, 1774): 5- habitus, dorsal aspect; 6- habitus, ventral aspect.

KEY TO SPECIES OF *DERMESTES* FROM YUCATAN (MEXICO)

- 1 Apical margin of elytra with small teeth, apex produced into a large tooth at suture. Cuticle usually black, sometimes red-brown, dorsal setae varying from all light whitish-grey to all black, usually with whitish setae at sides of pronotum forming a band but sometimes this extends across disc. Elytral setae usually black with scattered white setae. Length 5.5 - 10.0 mm *Dermestes maculatus*
- Apical margin of elytra smooth or with very minute teeth, but apex not produced into a large tooth at suture ... 2
- 2 Pronotum covered by brown pubescence with small patches of white pubescence; elytra marmorate with cinereous and black setation and with certain parts of the surface uniformly clothed with pale setation. Length 5.5 - 10.0 mm *Dermestes caninus*
- Apical abdominal sternite with white pubescence at apex. All sternites with short lateral impressed lines. Lateral band on pronotum remaining broad throughout and without a dark spot posteriorly. Elytral pubescence dark anteriorly with a prebasal band of golden setae; remainder dark with occasional patches of white setae. Elytral cuticle usually lighter in anterior half. Head with whitish setae like those at sides of pronotum. Apices of elytra with minute teeth, obtusely angled at suture so that elytra are separately rounded. Length 6.5 - 8.5 mm
..... *Dermestes carnivorus*

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RESUMEN

Se documenta el primer registro de *Dermestes caninus* (Germar, 1824) y *Dermestes carnivorus* (Fabricius, 1775) en la Península de Yucatán. Se incluye una clave taxonómica para las especies encontradas en este estudio.

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