Dermestes (Coleoptera: Dermestidae) on a human corpse: a case study from Lower Silesia, Poland

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Introduction

Dermestes sp., which are secondary necrophages, are typically found on corpses during the later stages of decomposition[1]. Although forensic entomology in Poland is continuously developing, more information is needed regarding the presence of *Dermestes* on human cadavers. The data on distribution of *Dermestes* (s. str.) *haemorrhoidalis* in Poland is currently incomplete, with only few reported locations according to published faunistic and forensic data[2].

This poster presents observations of *Dermestes* sp. and other insects coexisting with them on a human corpse discovered in an open garden shed in Wroclaw, the capital of the Lower Silesian Voivodeship.

Fig. 1. Photograph of the place where the remains were found

Fig. 2. Moult of *Dermestes* sp.

Location

The remains were found in a garden shed in the Wroclaw area. The male body had undergone post-mortem transformation and extensive soft tissue loss, resulting in mummification. The cause of death could not be determined. A large number of insects and a nest of mice were also found in the remains.

Fig. 3. *Dermestes* sp. which have been collected from the remains
The photographs were taken by Lech Borowiec. Downloaded from https://baza.biomap.pl/

Insects

The tables present the results of the identification of the insect species collected from the remains. In some cases, it was not possible to identify the species, in which case the family or order is given. In addition to the specimens listed in the tables, 20 pupae and 633 puparia of Diptera were secured but not identified. Ant and Lepidoptera were most likely found by chance on the corpses due to the location of the arbor (allotment gardens).

	Family	Genus / Species	Quantity
Coleoptera	Dermestidae	*Dermestes* (s. str.) *haemorrhoidalis*	2 imago
	Dermestidae	*Dermestes* (s. str.) *lardarius*	10 imago 10 moults
	Dermestidae	*Dermestes* (D.) *undulatus*	6 imago
	Staphylinidae	*Philonthus* sp.	1 imago
	Staphylinidae	*Aleochara* sp.	5 imago
	Silphidae	*Necrodes littoralis*	7 moults
	Nitidulidae	*Omosita discoidea*	4 imago
	Cleridae	*Necrobia violacea*	79 imago
	Cleridae	*Necrobia rufipes*	10 imago
	Cleridae	*Necrobia ruficollis*	20 imago
	Cleridae	*Necrobia* sp.	17 larvae 8 moults
	Mycetophagidae	*Mycetophagus (Parilendus) quadriguttatus*	5 imago

	Family/Order	Genus / Species	Quantity
Diptera	Fanniidae	*Fannia scalaris*	4 larvae 1 pupa 25 puparia
	Calliphoridae	*Calliphora vicina*	4 imago
	Heleomyzidae	Unidentified	20 puparia
	Muscidae	Unidentified	1 larva
Other	Formicidae	*Formica rufibarbis*	1 imago
	Lepismatidae	*Lepisma saccharina*	2 imago
	Tineidae	*Niditinea fuscella*	2 larave 1 moult
	Lepidoptera	Unidentified	5 larvae

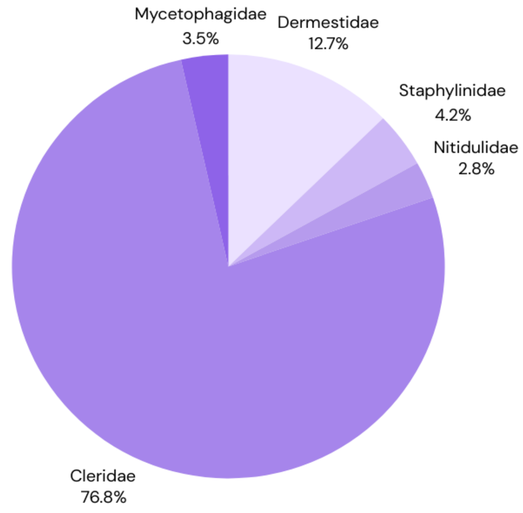

Fig. 4. Comparison of the number of imago from listed beetle families

Fig. 5. Maps demonstrating the distribution of *Dermestes* species in Poland

Conclusions

This is one of over a dozen cases presenting the entomofauna of cadavers from Wroclaw and the surrounding area, focusing on the diversity of *Dermestes* sp., yet to be published. The data collected from these cases indicate that *Dermestes* (s. str.) *haemorrhoidalis* is the common species found on dried and mummified cadavers in this region of Poland and is often the sole or dominant species of *Dermestes*. Due to this fact, it would be advisable to update our knowledge regarding the developmental biology of this species under indoor conditions, so that based on this data, we can potentially estimate the post-mortem interval (PMI) in the future.

References:
1. Charabidze, D.; Colard, T.; Vincent, B.; Pasquerault, T.; Hedouin, V. Involvement of larder beetles (Coleoptera: Dermestidae) on human cadavers: a review of 81 forensic cases. *Int J Legal Med*. 2014, 128(6):1021-30.
2. Kadej, M.; Szleszkowski, Ł.; Thannhäuser, A.; Jurek, T. *Dermestes* (s. str.) *haemorrhoidalis* (Coleoptera: Dermestidae) - The Most Frequent Species on Mummified Human Corpses in Indoor Conditions? Three Cases from Southwestern Poland. *Insects*. 2022, 25;14(1):23.