

## First record of *Pediacus dermestoides* (Fabricius, 1792) (Coleoptera: Cucujidae) for Bulgaria

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**Abstract:** The saproxylic species *Pediacus dermestoides* (Fabricius, 1792) is reported from forest habitats located in five mountains in Bulgaria. The adult beetles were found under the bark of several host tree species or captured with flight interception traps. It seems that *P. dermestoides* might be widespread in the mountain forests in Bulgaria.

**Keywords:** Balkan Peninsula, distribution, forest habitats, saproxylic species

Two genera of the family Cucujidae occur in the Palearctic: *Cucujus* Fabricius, 1775 and *Pediacus* Shuckard, 1839 (Wegrzynowicz, 2007). In Europe, *C. cinnaberinus* Scopoli, 1763 is a threatened species (Cálix et al., 2018). Recently the species was firstly reported or confirmed for a number of Balkan countries, including Bulgaria (e.g. Guéorguiev et al., 2008; Kulijer & Miljević, 2017; Gjorgjievska et al., 2020). The species of the genus *Pediacus* are less intensively studied by researchers and no records have been available for Bulgaria until now. In the present work the species *P. dermestoides* (Fabricius, 1792) is reported for the first time for the country.

### Methods

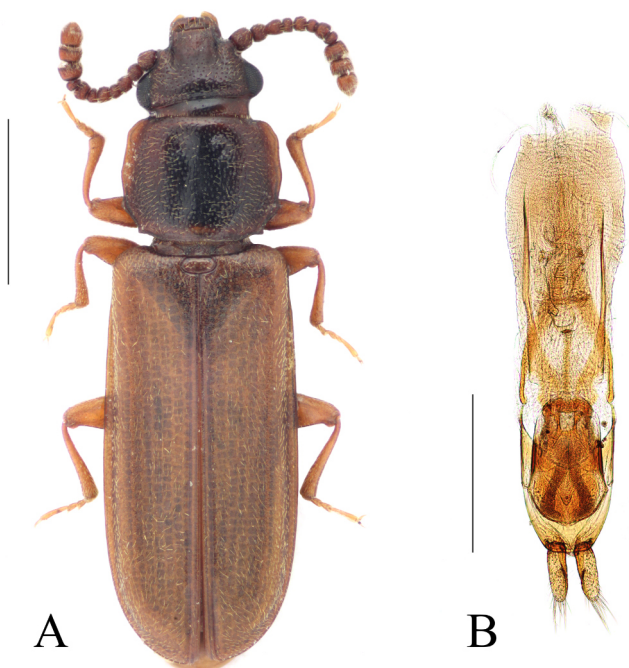
The material for the present study was collected sporadically in the period of 2005–2020 from five mountain regions in Bulgaria: Maleshevska Planina Mts, Osogovska Planina Mts, Lyulin Mts, Western Rhodopes Mts and Stara Planina Mts (Central Balkan

Range). The specimens were obtained by direct examination of suitable microhabitats (under the bark of dead trees), from collected wood samples or using flight interception traps. The abbreviations used in the material description are as follows: ex. – specimen/s; [BFUS] – Zoological Collection of Sofia University “St Kliment Ohridski”, Faculty of Biology, Sofia, Bulgaria; [UF] – Entomological collection of University of Forestry, Sofia, Bulgaria.

### Results and discussion

*Pediacus dermestoides* (Fabricius, 1792) (Fig. 1A, B)

Material: Maleshevska Planina Mts, 1.5 km NE of Razdol Vill., 41°37'37.1"N, 23°01'10.8"E, 1170 m a.s.l., 30.v. – 07.vii.2005, 1 ex., from fallen trunk of *Pinus sylvestris* L., with two adults of *Ips acuminatus* (Gyllenhal, 1827), found dead, D. Doychev leg. [UF]; Osogovska Planina Mts, 6.5 km S of Novo Selo Vill., 42°08'11.9"N, 22°40'31.7"E, 1270 m a.s.l.,



← Fig. 1. *Pediacus dermestoides*, male, Peshtera locality: (A) dorsal view, (B) aedeagus. Scale bars: 1 mm.

08.ix.2016, 1 ex., fallen trunk of *Pseudotsuga menziesii* (Mirb.) Franco, under the bark, D. Doychev leg. [UF]; Lyulin Mts, 700 m N of “Sts Cyril and Methodius” Monastery, 42°39’20.9”N, 23°11’10.3”E, 930 m a.s.l., 23.xi.2017, 2 ex., dead standing trunk of *Sorbus domestica* L. with galleries of *Scolytus mali* (Bechstein, 1805), under the bark, D. Doychev leg. [UF]; Western Rhodopes Mts, SW of Peshtera, near Novomahlenska Reka Riv., 42°00’31.1”N, 24°16’47.3”E, 570 m a.s.l., hornbeam forest, 30.vi.2020 – 26.vii.2020, 1 ♂, 1 ♀, flight interception trap, O. Sivilov & H. Hristova leg. [BFUS] (Fig. 2A); Stara Planina Mts, Central Balkan Range, SW of Chiflik Vill. (Troyan Municipality), near Beli Osam Riv., 42°49’24.4”N, 24°32’27.0”E, 760 m a.s.l., beech forest (*Fagus sylvatica* L.) with solitary trees of *Populus tremula* L., *Abies alba* Mill. and other tree species, 4.vii.2020 –



Fig. 2. Habitats of *Pediacus dermestoides* in Bulgaria: (A) Western Rhodopes Mts, Peshtera locality, (B) Stara Planina Mts, Chiflik locality.



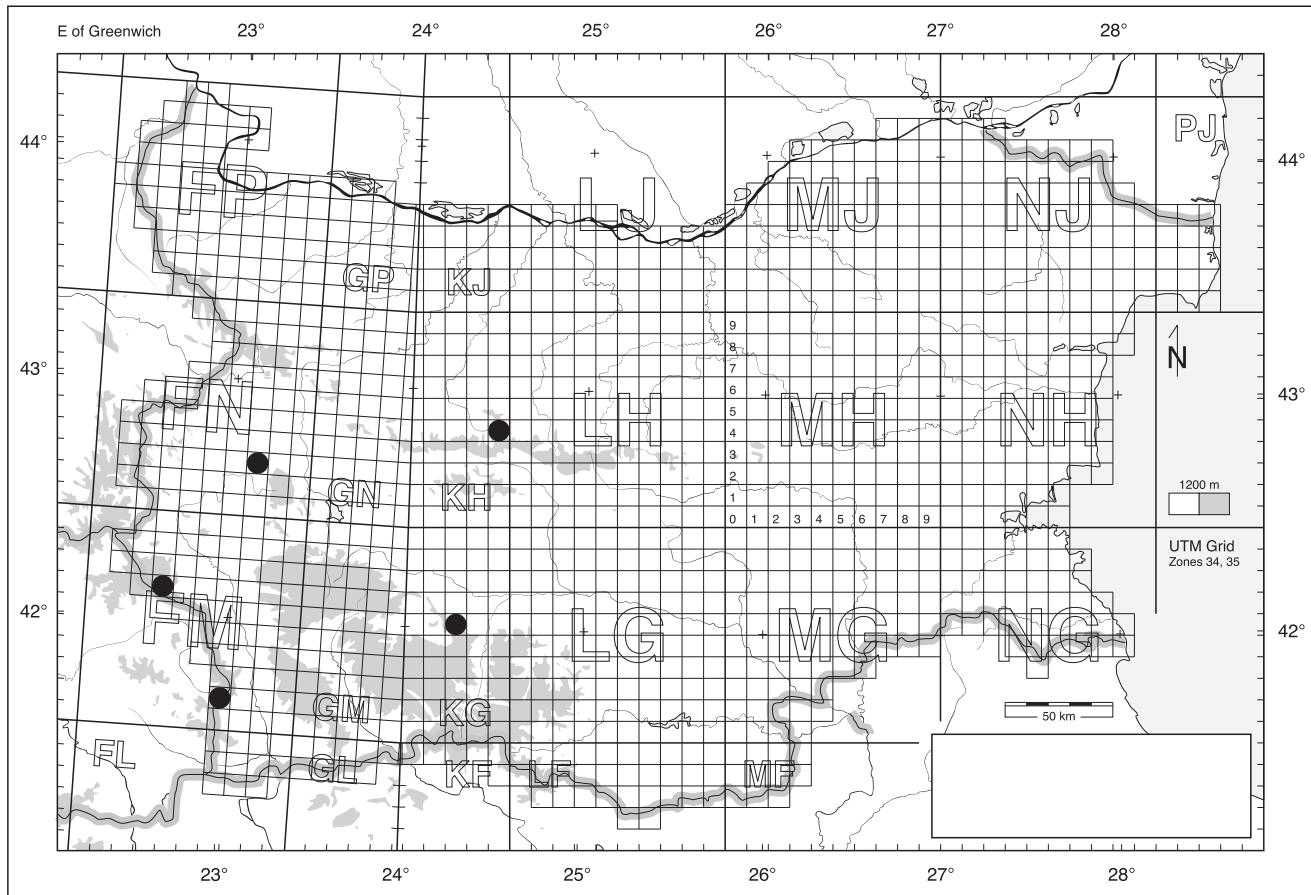


Fig. 3. Localities of *Pediacus dermestoides* in Bulgaria.

30.vii.2020, 1 ♂, flight interception trap, O. Sivilov & H. Hristova leg. [BFUS] (Fig. 2B).

All the specimens examined were collected as adults. The species can be recognised by the shape of the pronotum, shape of the antennomeres and the morphology of the aedeagus (Thomas, 2003). The adults of *Pediacus* can be distinguished from those of *Cucujus* by a number of characters, listed by Guéorguiev et al. (2008).

In Mainland Europe, the genus *Pediacus* is represented by the species *P. depressus* (Herbst, 1797), *P. dermestoides* (Fabricius, 1792) and *P. fuscus* Erichson, 1845 (Wegrzynowicz, 2007; Marris & Ślipiński, 2014). The diagnostic morphological characters of the three species are summarised and illustrated by Thomas (2003). All three species have a relatively wide distributional range (Wegrzynowicz, 2007) but only *P. dermestoides* (Fabricius, 1792) has been recently reported from SE Europe (a single finding from North Macedonia) (Guéorguiev et al., 2010). The present record of

the species is the first one for Bulgaria and the second for the Balkan Peninsula.

Biology of the genus *Pediacus* is insufficiently studied (Marris & Ślipiński, 2014). Species of the genus are found under the bark of dead coniferous and deciduous trees (Thomas, 2003; Marris & Ślipiński, 2014). The species *P. dermestoides* is classified as “Data Deficient” in the European Red List of Saproxyllic Beetles (Nieto & Alexander, 2010; Cáliz et al., 2018). In North Macedonia, the species was collected under the bark of *Platanus orientalis* L. (Guéorguiev et al., 2010). In the present paper, we report the association of *P. dermestoides* with the tree species *Pinus sylvestris*, *Pseudotsuga menziesii* and *Sorbus domestica*. A number of studies have shown that the flight interception traps are effective for monitoring of *C. cinnaberinus* populations (e.g. Schlaghamerský et al., 2008; Vrezec et al., 2012). We demonstrate that they are also suitable for collecting representatives of the genus *Pediacus* as well.

In two of the reported in the present study five localities, Peshtera and Chiflik Vill. (Fig. 2A, B) another species of the family, *C. cinnaberinus*, was found in previous studies (Bekchiev et al., 2018). Probably *P. dermestoides* is a widespread in the mountain forest habitats with dead wood retention in the country. Its populations appear to exist in low numbers in Bulgaria and it has been overlooked in previous studies. The distributional map, based on reported localities of the species in Bulgaria, is presented in Fig. 3.

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