

NEW DATA OF HORNED DUNG BEETLE (*COPRIS LUNARIS* (LINNAEUS, 1758), COLEOPTERA: SCARABAEIDAE) - RESULTS OF THE INSECT OF THE YEAR 2020 CAMPAIGN

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Introduction

Genus *Copris* Geoffroy, 1762 includes over 200 described species worldwide (Zidek, 2020). The European fauna includes only 4 species of the genus *Copris* (Lopez-Colon, 2013) and only a single species of the genus, the Horned Dung beetle (*Copris lunaris* L.) occurs in Lithuania (Tamutis *et al.*, 2011). This species is widely distributed in the Palearctic region from Portugal, through UK, central, southern and eastern Europe, Turkey, Syria, Iran, C. Asia, Kazakhstan to western Siberia and western China, introduced to Australia (Löbl *et al.*, 2006; Zidek, 2020).

The first record of *Copris lunaris* in Lithuania was noted by E. Eichwald (1830). Almost a hundred years later it was mentioned as found in the vicinity of Kaltanėnai (Švenčionys district) by Mazurowa and Mazur (1939). The most comprehensive information on *C. lunaris* in Lithuania was published in two comparatively more recent works (Ferenca, 2006; Ferenca *et al.*, 2018).

The Horned Dung Beetle is eurytopic on grassland, with a preference for open habitats on well-drained soils (Lane & Mann, 2016). Agricultural intensification, pasture improvement and cessation or interruption of continual grazing by cattle, the use of endectocides may all have contributed to the probable extinction of this species in UK (Lane & Mann, 2016). *Copris lunaris* is listed as critically endangered in Denmark (Wind & Ejrnæs, 2014), the Czech Republic (Farkac *et al.*, 2005), as vulnerable in Sweden (Artdatabanken, 2020). It was also added to the most recent list of Protected species in Lithuania (Lietuvos Respublikos, 2019), in a way inspiring to name it as the „Insect of the Year 2020“ in order to collect more data on the distribution of this species in the country.

Material and Methods

When the Horned Dung Beetle was announced an insect of the year by the Lithuanian Entomological Society, a brief instruction and a short description of adults, male and female, as well as similar species, were published online at the beginning of the season, in May 2020 (<https://www.entomologai.lt/9-naujienos/73-2020-metu-vabzdys-smailiaragismeslavablis-copris-lunaris>, <https://www.zoomuziejus.lt/Naujiena/n2020-metu-vabzdys-smailiaragis-meslavablis-copris-lunaris/>).

At the end of the season, the newly provided observation data was complemented by searching for the photographs of this species on the website of nature photographers (<https://www.inaturalist.org/>) as well as by compiling the unpublished data on *C. lunaris* examples preserved in the collection of Museum of Zoology of Vilnius University (MZVU) as well as data from card index of prof. Simonas Pileckis. The specimens listed in this paper were collected or observed by Ignas Antanavičius (I.A.), Audrius Grinskis (A.G.), Ričardas Kazlauskas (R.K.), Loreta Lichtarovičienė (L.L.); Giedrius Markevičius (G.M.), Ugnė Noruišienė (U.N.); R. Puprikytė (R.P.), Rimantas Rakauskas (R.R.), Ž. Rudys (Ž.R.), Loreta Tamašauskienė (L.T.), R. Valauskienė (R.V.).

List of localities

Locality	Administrative district	Coordinates (LAT, LONG)
Aliejūnai	Vilnius distr.	54.859481, 24.910128
Dirgėlai	Šilalė distr.	55.598317, 22.462543
Dūkštos	Vilnius distr.	54.820650, 24.973658
Išlestakiai	Jurbarkas distr.	55.149254, 23.470104
Karmėlava	Kaunas distr.	54.973, 24.070
Kleboniškis	Kaunas distr.	54.952, 23.940
Klepočiai	Lazdijai distr.	54.119, 23.610
Netoniai	Kaunas distr.	54.942, 23.722
Petkūnai	Zarasai distr.	55.735, 26.050
Puvočiai	Varėna distr.	54.113, 24.303
Šėta forestry	Kėdainiai distr.	55.28, 24.31
Tolkiškės	Trakai distr.	54.538, 24.637
Trakai	Trakai distr.	54.646, 24.925
Trakų Vokė	Vilnius distr.	54.630, 25.110
Trinkuškiai	Zarasai distr.	55.583, 25.990
Ukmergė	Ukmergė distr.	55.250, 24.766

The Record

Copris lunaris (Linnaeus, 1758)

Aliejūnai, 12 06 2020, 1♂ (L.L.); Dirgėlai, 07 06 2020, 1♂ (U.N.); Dūkštos, 18 05 2008, 1♂ attracted to the light; Išlestakiai, 23 05 2014, 1♂ attracted to the light (all G.M.); Karmėlava, 12 08 1984, 1♂ (R.V.) (MZVU); Kleboniškis, 02 07 2018, 1♀, found dead (I.A.); Klepočiai, 28 05 2017, 3 spec. (G.M.); Netoniai 25 08 2004, 1♀, 05 10 2004, 1♀ (R.K.) (MZVU); Petkūnai, 15 08 1979, 1♂ (R.P.) (MZVU); Puvočiai, 22 06 1999, 1♂ (A.G.) (MZVU); Šėta forestry, September 1960 (1 spec.); Tolkiškės, 02 07 1978, 1♀ (Ž.R.) (MZVU); Trakai, 01 07 1972, 1♀ (R.R.) (MZVU); Trinkuškiai, 24 06 2020, 2♂, attracted to the light (L.T.); Ukmergė, 12 06 1972, 1♂ 2♀ (leg. anonymous) (MZVU).

Results and discussion

The 2020 campaign was not as productive as it was expected. Reports containing 4 recent facts about *C. lunaris* were sent only by two observers, Giedrius Markevičius

(observations in Dūkštos, Išverstakiai, Klepočiai) and Loreta Lichtarovičienė (observation in Aliejūnai).

Based on literature sources, as well as the results of the 2020 campaign there are currently 39 cases of detection of *C. lunaris* in Lithuania and most of the findings were established before 2000 (Fig. 1). The data shows that *C. lunaris* is widespread mostly in the southern or central parts of Lithuania and only several observations in other regions are known. This distribution reflects the preference of the species noted for other countries as well - to live in dry, well-drained unimproved pastures primarily on sand (Lane & Mann, 2016).

The loss of permanent pasture has been linked to the decline of a number of dung beetles which are sensitive to disturbance (Lane & Mann, 2016). Gradual abandonment of the traditional agriculture on less productive lands in eastern and southern parts of Lithuania can be blamed for the diminishing amount of suitable habitats and might be one of the reasons the Horned Dung Beetle was recently included into the List of Protected species in Lithuania. On the bright side, understanding of the positive effects of traditional extensive farming is fighting its way to the upper levels of policy making in Lithuania and farmers are offered some incentives to sustain the farming that is beneficial to biological diversity.

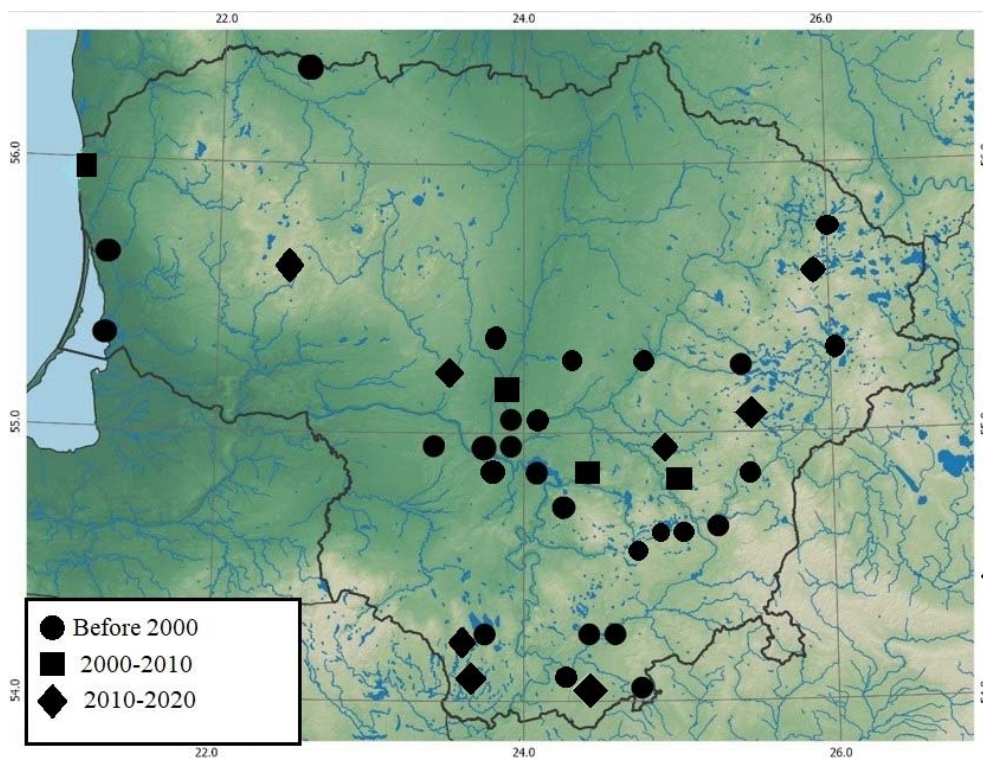


Fig. 1. Known records of *Copris lunaris* in Lithuania

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Nauji duomenys apie smailiaragi mėšlavabalį (*Copris lunaris* (Linnaeus, 1758), Coleoptera: Scarabaeidae) - 2020 metų vabzdžio akcijos rezultatai

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Santrauka

Straipsnyje apibendrinami akcijos “2020 metų vabzdys smailiaragis mėšlavabalis (*Copris lunaris*)” rezultatai, taip pat pateikiami iki šiol nepublikuoti duomenys apie smailiaragio mėšlavabalio radavietes Lietuvoje.

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