

NEW RECORD AND ADDITIONAL DATA OF TERRESTRIAL ISOPODS IN KAUNAS REGION, LITHUANIA

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Introduction

Among the edaphic organisms, terrestrial isopods are fundamental representatives of the soil fauna, playing an important role in decomposition of leaf litter and in mineralizing organic matter (Sutton, 1980). Despite the fact that terrestrial isopods are quite common in Lithuania; their research began only in 2012. Five species were reported for Vilnius city by Kuznetsova and Gongalsky (2012). In the same year, seven isopod species were presented from the west part of Lithuania: along the Curonian Spit and in various woodlands (Vilisics *et al.*, 2012). More recently four new species were reported for Lithuania by I. Tuf and co-author's (Tuf *et al.*, 2014).

Till now, 12 species of woodlice were recorded in fauna of Lithuania, but we could suppose that this list is incomplete. As the neighbouring country of Lithuania, Latvia, has 20 terrestrial isopod species (Spungis, 2008) known, it is likely that diversity of isopods is greater in Lithuania as well.

The aim of this study is to provide data on the species composition of terrestrial isopods in a mixed deciduous forest in the central part of Lithuania - Kaunas district.

Material and Methods

Study site. Forest is located in Domeikava, Kaunas district (54.960537, 23.921865), and is surrounded by settlements, gardens, and a road. The forest grows in a former riverbed. Deciduous trees *Coryllus avellanus*, *Fraxinus sp.*, *Quercus robur*, *Tilia cordata* dominate here and are important in formation of the leaf litter. The ground flora is dominated by *Anemone nemorosa*, *Hepatica nobilis*, *Mercurialis perennis*. *Heracleum sosnowskyi* flourish at the edges of the forest.

Collecting of isopods. Survey of isopods was random, but continuous throughout several years (between 2015 and 2017), except the winter season. Number of sites examined in the forest ranged from 10 to 15 each time of observation. Isopods were photographed and sampled by hands, in natural and artificial shelters - wastes (fragments of polyethylene film, pressed chipboards, bricks) of human activities. Taxonomical treatment follows Schmalfuss (2003).

Results

In total 10 species of terrestrial isopods were identified. About 10 species of diplopods, including a rare European diplopod species *Trachysphaera lobata* (Ribaut, 1954) were found together with terrestrial isopods in the same forest.

List of identified terrestrial isopods is given here. Species new for the Lithuanian fauna are marked with an asterisk (*).

ARMADILLIDIIDAE

***Armadillidium vulgare* (Latreille, 1804)**

10 04 2015, 5 spec.

***Armadillidium pulchellum* (Zenker, 1799)**

17 04 2015, 20 spec.

LIGIIDAE

***Ligidium hypnorum* (Cuvier, 1792)**

20 04 2017, 1 spec.

ONISCIDAE

***Oniscus asellus* Linnaeus, 1758**

17 04 2015, 2 spec.; 20 09 2015, 20 spec.; 30 03 2016, 11 spec.; 20 04 2017, 11 spec.

PORCELLIONIDAE

***Porcellio scaber* Latreille, 1804**

04 06 2015, 5 spec.; 30 03 2016, 1 spec.

TRACHELIPODIDAE

***Trachelipus rathkii* (Brandt, 1833)**

10 - 25 04 2015, 20 spec.; 04 06 2015, 10 spec.; 04 16 2016, 1 spec.; 20 04 2017, 2 spec.; 30 03 2016, 1 spec.; 05 04 2016, 14 spec.

TRICHONISCIDAE

***Haplophthalmus danicus* Budde-Lund, 1880**

13 04 2016, 5 spec.

***Hyloniscus riparius* (Koch, 1838)**

12 10 2016, 1 spec.

***Trichoniscus pusillus* Brandt, 1833**

10 04 2015; 7 spec.; 10 05 2015, 1 spec.; 15 03 2015, 7 spec.

PLATYARTHRIDAE

****Platyarthus hoffmannsegii* Brandt, 1833**

15 04 2016, 5 spec.

Discussion

Isopods *Oniscus asellus*, *Ligidium hypnorum*, *Trachelipus rathkii* were common at the study area. All species coexisted in the same forest, but they occupied slightly different microhabitats. *T. rathkii* and *O. asellus* were mostly found under the fallen barks, in old rotten stumps, meanwhile *A. vulgare* was found under the dry bark of standing trees. The investigated forest was moderately contaminated by human wastes (fragments of polyethylene film, press chipboards, bricks). Wastes were useful as artificial shelters for some species of isopods and microsnails, slugs, myriapods, insects and mites. Majority of isopods avoided using the polyethylene film as a shelter, and only specimens of *L. hypnorum* together with myriapods and gastropods were found here. Fallen barks and soaked pressed-chipboards were the most suitable habitat type for isopods (6 species and 7 species respectively were found here) and myriapods. Underground species like *P. hoffmannsegii* and *H. danicus* were found under stones and in rotten stumps. *T. lobata* was found in the same microhabitat.

Almost all species (except *Porcelio spinicornis* and *P. conspersum*) of Lithuanian

isopods were included in the checklist by Tuf and coauthors (Tuf *et al.*, 2014) and one additional species (*P. hoffmannsegii*) was found by us only in one forest. The reasons of a relatively high diversity of isopods in the researched area could be as follows: forest is located in the former riverbed and has steep slopes, creating slightly different conditions here. The soils of the forest are quite diverse: sandy soil, clay and fertile black soil. Moisture is always sufficient here, because of the little stream that flows through it. The forest floor is abundantly covered with leaves and debris, which provide food and shelters. Fallen barks, rotten stumps are abundant in the forest. All these conditions create a suitable environment for terrestrial isopods and other soil invertebrates. A large diversity of isopods found in one forest can be expected to result in more species being found elsewhere as well.

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Papildomi ir nauji duomenys apie sausumos lygiakojus vėžiagyvius Kauno rajone

I. ŠATKAUSKIENĖ

Santrauka

Dešimt sausumos lygiakojų vėžiagyvių rūšių buvo rasta mažame lapuočių miške Kauno rajone. *Platyarthus hoffmannsegii* Brandt, 1833 ir dviporiakojis *Trachysphaera lobata* yra naujos Lietuvos faunos rūšys.

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