FLIGHTLESS TRAVELLER: FIRST RECORDS OF *OTIORHYNCHUS PSEUDONOTHUS* APFELBECK, 1897 (COLEOPTERA: CURCULIONIDAE) IN LITHUANIA

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Introduction

Otiorhynchus Germar, 1822 (Coleoptera: Curculionidae: Entiminae) is the diverse genus of apterous weevils containing approximately 1400 species in the Palaearctic region (Alonso-Zarazaga *et al.*, 2023), which is considered to be its centre of diversity (Barclay, 2003). All species of the genus are phytophagous: imagoes feed on aerial parts of the plant (leaves, stems, flowers, fruits), while larvae live in the soil gnaw roots (Pileckis & Monsevičius, 1997; Bright & Bouchard, 2008).

Up to now, 15 *Otiorhynchus* species have been discovered and registered in Lithuania (Balalaikins & Bukejs, 2011; Tamutis *et al.*, 2011; Ivinskis *et al.*, 2013; Ferenca *et al.*, 2016). In this paper, the first records of one more species – *O. pseudonothus* Apfelbeck, 1897 – are given; European distribution, trophic relationships, and identification are commented on.

Material and Methods

The colony of *Otiorhynchus pseudonothus* was recorded, and some specimens were collected by V. Būda in a garden of Antežeriai, Vilnius district, Lithuania. The weevil species was identified using keys (Hackston, 2023; UK Beetle Recording, 2024). The identification of *O. pseudonothus* was confirmed by dissection of male genitalia and using DNA barcoding. The 658 bp long partial sequences of the mtDNA CO1 of six specimens have been successfully amplified using the universal primers LCO1490 (5'-ggtcaacaaatcataaagatattgg-3') and HCO2198 (5'-taaacttcagggtgaccaaaaaatca-3') (Folmer *et al.*, 1994). The sequencing was proceeded in BaseClear B. V. (Leiden, The Netherlands). The obtained sequences were compared with the ones from the NCBI GenBank database (Benson *et al.*, 2013).

The collected specimens are preserved in the Nature Research Centre (Vilnius, Lithuania).

List of species

CURCULIONIDAE

***Otiorhynchus pseudonothus* Apfelbeck, 1897** (Figs. 1, 2)

Synonyms – in M. A. Alonso-Zarazaga *et al.* (2023), T.-S. Olariu *et al.* (2024).

Vilnius district, Antežeriai (54.73299, 25.18854), 08 04–02 10 2023, 20 03–13 10 2024, approximately 1000 spec. of both sexes each year, mostly on *Rhododendron* L. (Ericaceae), *Hedera helix* L. (Araliaceae), and *Dahlia* Cav. (Asteraceae), *Ribes nigrum* L., *R. rubrum* L. (Grossulariaceae), *Coleus* Lour. (Lamiaceae) (Fig. 3), *Syringa* L. (Oleaceae), *Physocarpus* (Cambess.) Raf., *Rosa* L. (Rosaceae), *Acer* L. (Sapindaceae) (V. Būda).

1

2

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Figures 1–3. *Otiorhynchus pseudonothus* Apfelbeck, 1897: 1 – female habitus (GenBank accession ID PQ525436) (photo by E. Budrys); 2 – male genitalia (photo by K. Martinaitis); 3 – damage on *Coleus* sp. (Lamiaceae) in Vilnius district, Lithuania (photo by V. Būda).

Discussion

Otiorhynchus pseudonothus originates from the Alpine zone in Europe, including Switzerland, Austria, Italy, and France (Barclay, 2003). It was and is still being introduced unintentionally to other countries through the trade of cultivated plants (Magnano *et al.*, 2008; Fägerström *et al.*, 2010). Consequently, as for European countries, this species is currently known from Austria, Belgium, France, Germany, Italy, The Netherlands, Slovenia, Sweden, Switzerland, the United Kingdom (Alonso-Zarazaga *et al.*, 2023), Denmark (Runge, 2008), Poland (Jarosiewicz & Nejfeld, 2020), and Romania (Olariu *et al.*, 2024). Based on these trends and the current records from Lithuania, it is likely that *O. pseudonothus* can be found in other Baltic states and neighbouring Belarus, too.

In comparison with closely related *Otiorhynchus armadillo* (Rossi, 1792), *O. pseudonothus* is distinguished by longer antennal segments, relatively longer rostrum, shinier and less rugose elytra, parallel striae on the tip of elytra, different male genitalia (Barclay, 2003). However, external morphological characters may be variable, and genitalia dissection is helpful only in male determination. In that way, molecular identification may be useful.

DNA barcoding is an effective tool for species identification based on genetic material (Kress & Erickson, 2008). It has been approved to be practicable in *Otiorhynchus* species, including *O. pseudonothus*, determination during the studies of central European Coleoptera fauna (Hendrich *et al.*, 2015; Rulik *et al.*, 2017) and western Palearctic weevils (Schütte *et al.*, 2023). All analysed specimens from Lithuania appeared to be identical by their mtDNA CO1-5' sequences (GenBank accession ID PQ525436) and the closest to an *O. pseudonothus* specimen from Germany (GenBank accession ID KC784142) with the difference by two nucleotide substitutions. Meanwhile, the smallest distance between Lithuanian specimens and *O. armadillo* (GenBank accession ID KM444511) was 96 substitutions. Consequently, it can be confidently stated that the analysed Lithuanian specimens belong to the *O. pseudonothus* species.

The weevil *Otiorhynchus pseudonothus* is extremely polyphagous (Magnano *et al.*, 2008). It feeds on an incredibly large variety of plant families: Actinidiaceae, Aquifoliaceae, Araliaceae, Asparagaceae, Asteraceae, Betulaceae, Caprifoliaceae, Celastraceae, Cornaceae, Cupressaceae, Ericaceae, Fagaceae, Geraniaceae, Lamiaceae, Lauraceae, Oleaceae, Pinaceae, Rutaceae, Sapindaceae, Saxifragaceae, Taxaceae, Theaceae, Ulmaceae, with the greatest diversity of host plant species from Rosaceae (Heijerman *et al.*, 2003; van Tol *et al.*, 2004; Magnano *et al.*, 2008; Runge, 2008; Fägerström *et al.*, 2010; Hirsch *et al.*, 2012; Schütte *et al.*, 2023; Olariu *et al.*, 2024). The observation of this beetle feeding on *Ribes* sp. (Grossulariaceae) in Lithuania increases the number of host plant families by 25.

The common and widespread weevil species of the genus *Otiorhynchus* are regarded as important pests of different cultivated plants worldwide (Reineke *et al.*, 2011; Hirsch *et al.*, 2012). Among them, *O. pseudonothus* feeding on a large number of ornamental plant species is considered to be one of the most harmful weevils in Italy, its origin country (Heijerman *et al.*, 2003). This beetle is characterised by a long egg-laying period (from May to September in Germany), adaptation to cold (Fägerström *et al.*, 2010), and possible insecticide resistance (Barclay, 2003), what increase its chances to become a significant pest of cultivated plant species in other countries, including the Baltic region, too.

Acknowledgements

We are grateful to E. Budrys (Nature Research Centre, Vilnius, Lithuania) and K. Martinaitis (Kaunas T. Ivanauskas Zoological Museum, Lithuania) for the documentation of *Otiorhynchus pseudonothus*. The study was supported by grant from the the Research Council of Lithuania (grant number P-MIP-23-428) and carried out using the Open Access to research infrastructure of the Nature Research Centre under Lithuanian open access network initiative.

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Besparnis keliautojas: pirmieji pjovėjo *Otiorhynchus pseudonothus* Apfelbeck, 1897 (Coleoptera: Curculionidae) stebėjimai Lietuvoje

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Santrauka

Straipsnyje pristatomi duomenys apie į Lietuvą įvežtą naują pjovėjų rūšį *Otiorhynchus pseudonothus* Apfelbeck, 1897 (Coleoptera: Curculionidae), apžvelgiamas jos paplitimas Europoje, mitybiniai augalai, morfologiniai ir molekuliniai požymiai.

Received: 31 October, 2024