

DIACANTHOUS UNDULATUS (DE GEER, 1774) (COLEOPTERA: ELATERIDAE) IN THE FAUNA OF LATVIA

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The article contains data about occurrence of *Diacanthous undulatus* (De Geer, 1774) (Coleoptera: Elateridae) in Latvia. There are 28 specimens of this species processed, from two biggest beetle collections in Latvia - Institute of Systematic Biology, Daugavpils University (DUBC), and Natural History Museum of Latvia (LDM).

Key words: *Diacanthous undulatus*, Coleoptera, Elateridae, Latvia, fauna, saproxylic beetles

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INTRODUCTION

Diacanthous undulatus (De Geer, 1774) (Coleoptera: Elateridae) is stenotopic click-beetle species, rather rare for Latvia. The distribution, ecology and possible threats to populations are not studied enough. The forest logging is more intensive in last years in Latvia, and that can influence the status of population of species. This species is included in European Red list of saproxylic beetles (Nieto, Alexander 2010).

The goal of this article is to summarize data about distribution of this species in Latvia. There are collection materials used from deposits in two biggest beetle collections in Latvia - Institute of Systematic Biology, Daugavpils University (DUBC), and Natural History Museum of Latvia (LDM).

MATERIAL AND METHODS

There are 28 specimens of *Diacanthous undulatus* (De Geer, 1774) processed during research,

17 from these from collection of Institute of Systematic Biology, Daugavpils University (DUBC), and 11 from Natural History Museum of Latvia (LDM).

The research is done by Nikon SMZ745T digital stereomicroscopes. The pictures of imago are done by colleague R. Cibulskis (Institute of Systematic Biology, Daugavpils University, Latvia) using camera Canon 60d.

RESULTS AND DISCUSSION

Genus *Diacanthous* Reitter, 1905 (Coleoptera: Elateridae) is represented by seven species in Palaearctic region. One of these species *Diacanthous undulatus* (De Geer, 1774) is distributed in Europe and major part of Asia, but other six species (*Diacanthous ainu* Miwa, 1928 known from Japan, *D. amurensis* Platia & Gudenzi, 1999 known from Far East (Russia), *D. antennatus* Kishii, 1957 known from Japan, *D. dshesynensis* Cherepanov, 1957 known from West Siberia (Russia), *D. ontakeanus* Kishii, 1969 known

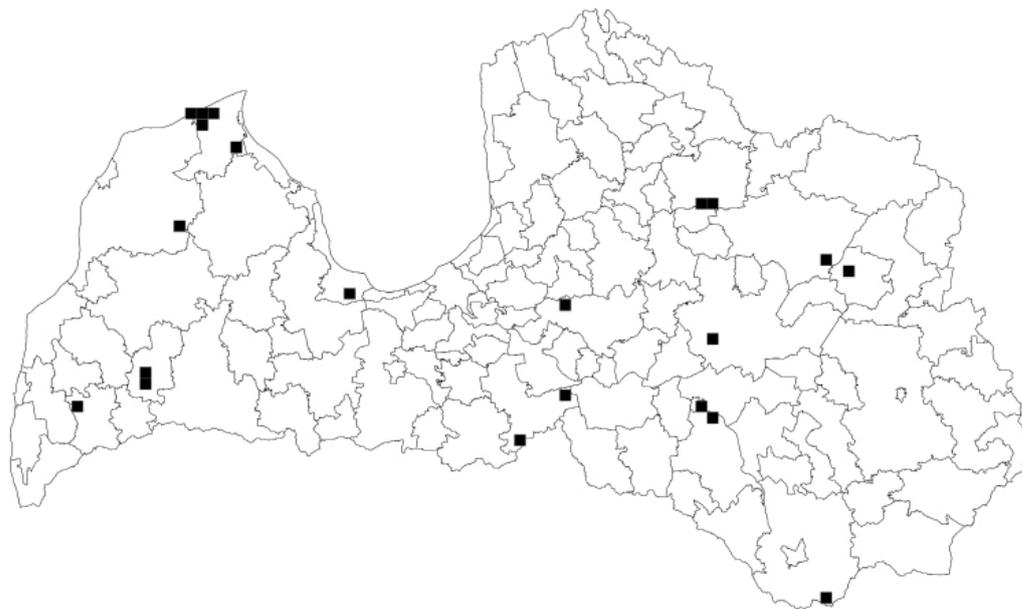


Fig. 1. Distribution of *Diacanthous undulatus* (De Geer, 1774) in Latvia.

from Japan, *D. undosus* Lewis, 1894 known from Far East (Russia), Japan, China: Jilin and Nei Mongol) are distributed in Eastern Asia (Cate 2007). *Diacanthous undulatus* (De Geer, 1774) in Europe are known from Austria, Belarus, Croatia, Russia: (Central European Territory Central European Territory), Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Liechtenstein, Lithuania, Netherlands, Norway, Poland, Romania, Slovakia, Slovenia Spain, Sweden, Switzerland, United Kingdom. *Diacanthous undulatus* (De Geer, 1774) is listed in the European Red list of saproxylic beetles (Nieto & Alexander 2010). This species is known from Asia - Russia: East Siberia, Far East, West Siberia, Mongolia, China Xizang province (Cate 2007, 2010).

For first time in Latvia *Diacanthous undulatus* (De Geer, 1774) is mentioned in work of J. H. Kawall (1858) „Die Eucnemiden und Elateriden in Kurland und Livland, mit Bezugnahme auf einen wenig bekannten Artikel von Eschscholtz“, altogether this species is mentioned in 23 literature sources (Kawall 1858, Seidlitz 1872, 1891, Rathlef 1905, Stiprais 1976, Silfverberg 1979, 1992, Spuris 1981, Lundberg 1995, Barševskis 1996, 2001, 2005, Princovs 2000,

Barševskis et al. 2002, 2004, 2005, Jansson 2002, Telnov 2001, Telnov 2004, Silfverberg 2004, Barševskis, Valainis, Cibulskis 2005, Telnov et al. 2010, Telnov et al. 2011).

Diacanthous undulatus (De Geer, 1774) is stenotopic species, found in old-growth deciduous and coniferous forests. The cycle of development is 3 to 4 years long. The larvae stage is developing under the tree bark in decaying wood. The imago and larvae are predators, feeding on other insects and their larvae. *Diacanthous undulatus* (De Geer, 1774) is hibernating only in larvae stage (Leseigneur 1972, Dolin 1982). The imago of *Diacanthous undulatus* (De Geer, 1774) can be found from May to July, and it is active at morning or at afternoon mainly (Lohse 1979). The species *Diacanthous undulatus* (De Geer, 1774) is included in list of indicator species for forest key habitats of Latvia (Ek, Suško, Auziņš 2002), and is considered as rare species, distributed mainly in Nord-West and central part of Latvia (Fig. 1).

Diacanthous undulatus (De Geer, 1774) morphological characteristics (Fig. 2): body length 12-18 mm; pronotum black with yellowish thin seta, and with keel-like posterior angles, rounded and curved to outer edge; pronotum with umbilicate



Fig. 2. *Diacanthous undulatus* (De Geer, 1774) (Photo R.Cibuļskis).

punctures, separated only by narrow wrinkles; second through fourth tarsomeres with lamellae, fourth tarsomere shorter than third; elytra black or dark brown with paler spots; elytra with light yellow seta in several transverse belts; antennae black and from third segment toothed, second segment of antennae 2.5 times shorter than third (Tscherepanov 1957, Laibner 2000).

Diacanthous undulatus (De Geer, 1774) occurrence in Latvia: Daugavpils county, Skrudaliena parish, Silenes Nat., Park, Ilgas, VIII.2002, 1 ex., A. Barševskis leg. (DUBC); Engure county, Smārde parish, Ķemeru National park, Kūdra, 06.2004, 1 ex., A. Titovs leg. (LDM), 12.VI.2009, 1 ex., N. Savenkovs leg. (LDM), 18.VIII.2009, 2 ex., N. Savenkovs leg. (LDM), 20.VI.2010, 2 ex., N. Savenkovs leg. (LDM); Dundaga county, Dundaga parish, Nature reserve „Kaļķupes ieleja”, Windows trap, 1 ex., U. Valainis, A. Barševskis leg. (DUBC); Slītere National park, 10.-21.VI.1939, 1 ex., N. Savenkovs leg. (LDM), Šlītere, 57°38'07"N, 22°19'01"E. 12.VII.2005., 1 ex., J. Laizāns leg. (DUBC), Zilie kalni, 16.07.2008, 3 ex., A. Bukejs, U. Valainis leg. (DUBC), windows trap, 2 ex., 07.2011, DU SBI exp. leg., (DUBC), Kolka parish, 25.km from Kolkas, 27.VII.1980, 1 ex., N. Savenkovs leg. (LDM); Priekule county, Virga parish, Virga, 11-20.VI.1996, 1 ex., N. Savenkovs leg. (LDM); Skruna county, Rudbāržu parish, Rudbārži, 02.-09.VII.1996. 1 ex., N. Savenkovs leg. (LDM); 10.VI.1998, light trap, 1 ex., N. Savenkovs leg. (LDM), Smiltene county, Launkalne parish, Nature reserve „Mežole”, 15.VII.2005., 1 ex., J. Donis leg. (DUBC), 26.VI.2006, 1 ex., J. Donis

leg. (DUBC); Vecumnieku county, Valle parish, Taurkalne, 11.VII.2005, 1 ex., U. Valainis leg. (DUBC); Skaistkalne parish, Skaistkalne, 09.VI.2009., 1 ex., A. Barševskis, R. Orlovskis leg. (DUBC); Ventspils county, Usma parish, Moricsala nature reserve, VI.2003, 3 ex., U. Valainis leg. (DUBC); 57° 11' 31" N., 022° 08' 03", 11.VII.2005., 1 ex., U. Valainis leg. (DUBC), 06.2011., 1 ex., DU SBI exp. leg. (DUBC).

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