

Rapid Communication

The invasive flea beetle *Luperomorpha xanthodera* (Coleoptera: Chrysomelidae: Alticinae), potentially noxious to ornamental plants – first record in Poland

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Abstract: A specimen of a flea beetle collected by plant sweeping from an experimental plot of oregano in Warsaw showed characteristics of the invasive species *Luperomorpha xanthodera*. This beetle, originating from Far East, appeared in Europe at the beginning of this century and seems to extend its range continuously. So far, it has been noted from England, Italy, France, The Netherlands, Germany, Austria and Hungary but not from Poland. Being polyphagous, adult flea beetles of this species may appear in numbers on flowers of various ornamental plants causing considerable damage.

Key words: *Luperomorpha xanthodera*, invasive insect, ornamentals, Chrysomelidae, flower pest

Introduction

The genus *Luperomorpha* Weise, 1887 (more than 25 spp. worldwide) contains small, several mm in length, beetles of appearance and bionomics characteristic for the subfamily of flea beetles (Alticinae). It is distributed in temperate and subtropical climate of Far East, Oriental and Australian regions (Konstantinov and Vandenberg 2001–2010). The species *L. xanthodera* Fairmaire, 1888, was for the first time diagnosed out of its natural range (China, Korea – Beenen and Roques 2010) in England, in 2003, on roses sold in a horticultural commercial centre (Johnson and Booth 2004) and then in Italy (Conti and Raspi 2007; Del Bene and Conti 2009), France (Doguet 2008), The Netherlands (Beenen and Roques 2010), Germany (Döberl and Sprick 2009), Switzerland (Döberl 2010), Hungary (Bodor 2010) and Austria (Geiser and Bernhard 2011).

Del Bene and Conti (2009) give detailed characteristics of the species and Döberl and Sprick (2009) deny that *L. nigripennis* described from Italy (Conti and Raspi 2007) as well as from France (Doguet 2008), belonged a species different from *L. xanthodera*.

Finding circumstances

The voucher specimen (dry, with one antenna and one leg of each pair missing) was submitted to the first author for consultation along with other insect samples dated July 4, 2012, swept from a plot of oregano, *Origanum vulgare* L., growing on an experimental field of The Department of Medical and Vegetable Plants

WULS (SGGW) in Wilanow, Warszawa (Google Maps coordinate: +52°9'38.30", +21°6'3.69"). The plot was in the vicinity of a commercial horticultural centre selling in a wide assortment of various imported plant material from which the beetle could originate.

Despite clear characteristics of Alticinae, it was not possible to assign the specimen to any known genera or species of the native fauna Alticinae using available aids (*i.e.* both the key of Warchałowski, 1978 and Internet gallery "Iconographia Coleopterorum Poloniae" of Lech Borowiec). Consequently, this specimen was photographed and the picture was submitted for consultation on the forum of entomo.pl (thread: <http://www.entomo.pl/forum/viewtopic.php?f=104&and=24095>).

The response of Dariusz Tarnawski in this thread suggested that the specimen was the invasive *L. xanthodera*, what is later confirmed by Lech Borowiec.

Diagnosis

The specimen was 4.22 mm long (Fig. 1.); it has moderately elongated elytra of black colour with light dark-blue lustre. The elytra are densely, irregularly punctured and have distinctive scapulae. They cover the whole abdomen except of a part of apical pleurum. Pronotum is distinctly wide, rounded, 1.05–1.29 mm, matt-smooth, of brick red colour, frontally blackish. The head is some narrower than the pronotum, black. Antennae originating near the proximate outskirts of the eyes, somewhat longer than half of the body length, brown at the base (scapus and

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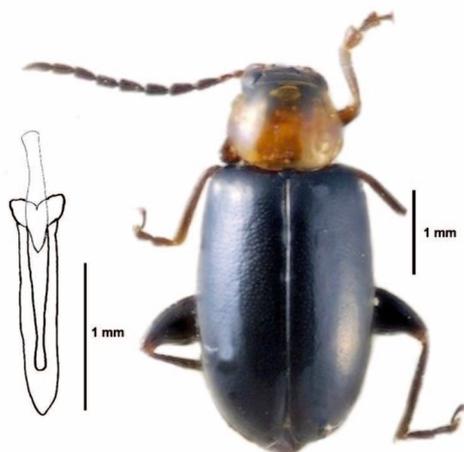


Fig. 1. The voucher specimen of *L. xanthodera*.
Aedeagus on the left

pedicel) with dark flagellum. Front legs of the same colour as the pronotum, middle legs considerably darker throughout the whole length of tibiae with brighter apex. Femora of hind legs extended, black, red brick at apex. Tibia and tarsi are dark.

Edeagus extracted from the specimen was 1.42 mm long, cylindrical, slightly archwise curved, with a medial groove ending with an outlet of endophallus at a distance ca. 1/5 from the apex. The distal part of the aedeagus (ostium) is sharp. The base is extended, with indentation.

The general appearance of the specimen and its aedeagus did not essentially differ from the description given by Del Bene and Conti (2009).

Pest potential

In relation to existing reports of *L. xanthodera* in Europe, it seems that this flea beetle has the potential for a local high abundance and can be destructive to ornamental plants, especially to flowers. Under the conditions of middle-north Italy (Tuscany) it produces two, partially overlapping generations. It overwinters in all developmental stages. Adult beetles appear in spring and are present on plants throughout the whole vegetative season. Larval development takes place in the soil and their rhizophagous activity did not seem to have a definite impact on infested plants (further research needed). More distinct damage can be caused by beetles that feed on plants, especially on flowers and leaves of seedlings (Del Bene and Conti 2009).

Numerous holes chewed by beetles in petals and the destruction of reproductive flower organs may cause sterilisation and deterioration of estetic value of plants. The flea beetle is polyphagous and can cause damage in various plants. During the research of Del Bene and Conti (2009) feeding on as many as 23 genera from 12 plant families were noted. The trade of imported plants can accelerate the expansion of *L. xanthodera*, especially by ornamentals (Johnson and Booth 2004; Beenen and Roques 2010).

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