

Eight new and little-known leaf-beetles species (Coleoptera: Megalopodidae & Chrysomelidae) for the Kaliningrad region

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This paper contains faunistic data on 7 little-known species of Chrysomelidae and 1 species of Megalopodidae, collected between 1998 and 2008 on the territory of the Kaliningrad region, western Russia. Three species, *Oulema duftschmidi* (Redtenbacher, 1874), *Cryptocephalus quadripustulatus* Gyllenhal, 1813 and *Phyllotreta dilatata* Thomson, 1866 are reported for the first time from the region. The figures of the aedeagus with flagellum of *Oulema melanopus* (Linnaeus, 1758) and *O. duftschmidi* (Redtenbacher, 1874) are presented.

Key words: Coleoptera, Megalopodidae, Chrysomelidae, Kaliningrad region, rare species, supplement to fauna.

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INTRODUCTION

Worldwide, the leaf-beetles are one of the largest groups of the order Coleoptera, representing by 30000–50000 species (Bieńkowski 2004; Brovdij 1985; Jolivet 1988; Mohr 1966). Also in the fauna of Kaliningrad region (western Russia) and the Baltic States this family is abundant, rich in species and plays a very important part in ecosystems.

The question of their systematic state is not fairly clear. In some recent works (Lawrence, Newton 1995) superfamily Chrysomeloidea consist of 4

families: Cerambycidae Latreille, 1802, Megalopodidae Latreille, 1802, Orsodacnidae Thomson, 1859, Chrysomelidae Latreille, 1802 (including seed beetles as subfamily Bruchinae Latreille, 1802). Several authors separate also two independent families Hispididae and Cassididae (Harde, Severa 1988).

The leaf-beetle Chrysomelidae sensu lato of the recent fauna of the Kaliningrad region contains no less as 252 species: Megalopodidae – 3 species, Orsodacnidae – 1 species and Chrysomelidae – 248 species (including Bruchinae – 8 species) (Alekseev 2003). The first

information on the leaf-beetles for the territory of the former northern part of East Prussia and, accordingly, the contemporaneous Kaliningrad region, can be found in the first beetle checklist of Prussia (Illiger 1798). All the earlier gathered by the German collectors beetles material for the area of former East Prussia before 1945 was summarized by Bercio and Folwaczny (1979). According to this faunistic catalog leaf beetles in a number of 230 species were registered in the present-day Kaliningrad region (Bercio, Folwaczny 1979). After 1945 only one sufficiently complete paper dealing with the Kaliningrad fauna of leaf-beetles family (Alekseev 2003) was published, but by this work the dissections of the genitalia were not made and determination of the beetles was carried out with use of external morphology only.

The leaf-beetles are phytophagous: imago occur mostly on leaves and flowers; larvae mostly feed on leaves and roots. Among these beetles there is a numerous group of anthropophilous species, associated with agricultural plants and ruderal sites. Chrysomelids have an impact on humans through being serious plants pests and play a important part in the natural and by human transformed communities.

There are faunistic data on 8 little-known species of leaf-beetles presented in a paper. Three species from them, *Oulema duftschmidi* (Redtenbacher, 1874), *Cryptocephalus quadripustulatus* Gyllenhal, 1813 and *Phyllotreta dilatata* Thomson, 1866 are reported from Kaliningrad region for the first time and are added in the general beetles check-list of this territory.

MATERIAL AND METHODS

The material was collected during the 1997–2008 period in western, central and south-eastern parts of the Kaliningrad region (western Russia), including the territory of the southern part of the Curonian Spit. The beetles were collected using standard entomological methods: sweeping, beating, visual searching, sampling in places of occasional accumulation on the Baltic seafoast.

Various habitats were investigated: mixed forests, meadows, parks, bogs, shores of Baltic Sea, banks of the ponds and other.

The examined material is deposited in the collection of Daugavpils University, Institute of Systematic Biology (DUBC) and in the private collection of Vitaly I. Alekseev (Chernyakhovsk).

The following identification guides have been used for determination of specimens: Bienkowski (2004), Lopatin & Nesterova (2005), Mohr (1966), Warchałowski (2003). We follow the systematics suggested by Silfverberg (2004) and the nomenclature suggested by Warchałowski (2003).

Host plants are quoted from the monograph of Lopatin & Nesterova (2005). The general distribution of species is given according to Gruev & Döberl (1997), Warchałowski (2003), Bienkowski (2004), Lopatin & Nesterova (2005).

The photographs were taken using *Zeiss Stereo Discovery V12* stereomicroscope and *AxioCam* digital camera.

RESULTS AND DISCUSSION

During the study of the leaf-beetle fauna, the 8 insufficiently known and sporadically distributed in the Baltic States species were recorded from the territory of the Kaliningrad region. Three species, *Oulema duftschmidi* (Redtenbacher, 1874), *Cryptocephalus quadripustulatus* Gyllenhal, 1813 and *Phyllotreta dilatata* Thomson, 1866 are reported for the first time (absent in the earlier published papers or reports). This new species for the fauna of Kaliningrad region are marked in the list with one asterisk (*). For the five rare in the region chrysomelid species the new information about localities, ecology and host plants are given. The places of collection of all leaf-beetles species are presented on the map (Fig. 1).

The list of leaf beetles of the Kaliningrad region was completed. After these records, the fauna of

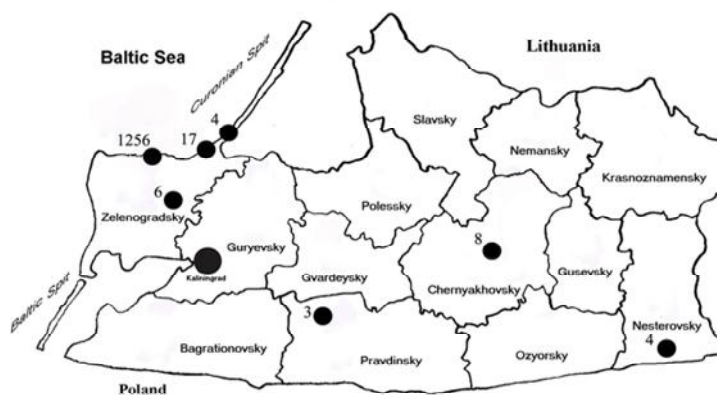


Fig. 1. The finding localities of the new and little-known for the fauna of the Kaliningrad region leaf beetles species (according to the administrative structure of the region): 1 - *Zeugophora turneri* Power, 1863; 2 - *Oulema duftschmidi* (Redtenbacher, 1874); 3 - *Cryptocephalus quadripustulatus* Gyllenhal, 1813; 4 - *Cryptocephalus coryli* (Linnaeus, 1758); 5 - *Colaphus sophiae* (Schaller, 1783); 6 - *Prasocuris junci* (Brahm, 1790); 7 - *Phyllotreta dilatata* Thomson, 1866; 8 - *Hermaeophaga mercurialis* (Fabricius, 1792).

Chrysomelidae sensu lato comprises a total of 255 species: Megalopodidae – 3 species, Orsodacnidae – 1 species and Chrysomelidae – 251 species (including Bruchinae – 8 species).

MEGALOPODIDAE LATREILLE, 1802
ZEUGOPHORINAE BÖVING, CRAIGHEAD, 1931
Zeugophora turneri Power, 1863

Material: On the territory of the former East Prussia it was registered in Heiligenbeil [Mamonovo] (Bercio & Folwaczny 1979), but at present the species was found on the northern seaside of the Sambian peninsula only: Svetlogorsk environs, 54°56'26.2"N 20°8'27.1'E, 14.V.1997 (1 ex., leg. V. Alekseev) and Zelenogradsk environs, 54°57'41.6"N, 20°30'16"E, 13.V.1997 (1 ex., leg. V. Alekseev).

Comment: The species feeds on *Populus*, in the Kaliningrad region it is associated with European aspen (*Populus tremula*) only. *Z. turneri* is distributed in Europe, Siberia, Altay and Mongolia. It is recorded in all Baltic and Fennoscandian countries except Karelia

(Silfverberg 2004) and also from Belarus (Lopatin, Nesterova 2005).

CHRYSOMELIDAE LATREILLE, 1802
CRIOCERINAE LATREILLE, 1807
Oulema duftschmidi (Redtenbacher, 1874)*

Material: At present it is known only from one locality in the Kaliningrad region: Svetlogorsk environs, 54°56'26.2"N 20°8'27.1'E, 02.VI.2003 (1 ex., the Baltic Sea shore, leg. V. Alekseev).

Comment: externally, *Oulema duftschmidi* (Redtenbacher, 1874) is very similar to *O. melanopus* (Linnaeus, 1758). They are sibling species. These two species authentically differ only by the shape of the flagellum (Fig. 2). The species feeds on cereals (*Gramineae*) and is distributed in Europe, north Africa (Marocco), north Caucasus, Turkey, Armenia, Kazakhstan, Central Asia, north-west China. In the Baltic States and Fennoscandia it is known from Denmark, Sweden (Silfverberg 2004) and Latvia (Bukejs 2009) and also from Belarus (Lopatin, Nesterova 2005). The precise distribution of this

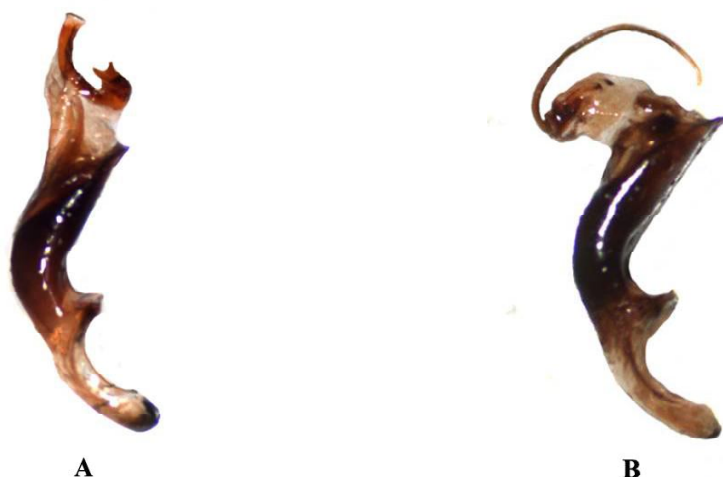


Fig. 2. Aedeagus with flagellum, lateral view: A – *Oulema melanopus* (Linnaeus, 1758), B – *O. duftschmidi* (Redtenbacher, 1874).

species must be defined more exactly because of the former confusion with the closely related species *O. melanopus* (Linnaeus, 1758).

CRYPTOCEPHALINAE GYLLENHAL, 1813

Cryptocephalus quadripustulatus* Gyllenhal, 1813

Material: At present it is known only from one finding locality in the Kaliningrad region: Pravdinsky district, 4 km N of the settlement Grushevka, at the margin of the bog Zehlau, 54°31'19.1"N 20°54'28.9"E, 31.V.1998 (3 exx, on *Pinus*, leg. V. Alekseev) and 21.V.2007 (1 ex., leg. V. Alekseev & A. Pavlova).

Comment: The species occurs on *Pinus sylvestris* (Lopatin, Nesterova 2005) and also *Abies*, *Picea*, *Larix* (Bieńkowski 2004). It is distributed in north and central Europe and Caucasus. In catalogue of Sifverberg (2004) this species is mentioned for all Baltic territories (except Latvia and Denmark). In Lopatin & Dovgailo (2002) *C. quadripustulatus* Gyllenhal, 1813 is reported also for Latvian fauna. For the first time on the territory of Latvia this species was mentioned by Seidlitz (1872-1875), but the validation of this faunistic data till now is absent and therefore it was deleted from the list of

Latvian Coleoptera (Telnov 2004). It is known also from Belarus (Lopatin, Nesterova 2005).

***Cryptocephalus coryli* (Linnaeus, 1758)**

Material: On the territory of the former East Prussia it was registered in Königsberg [Kaliningrad] and in Rominten [Krasnolesye] (Bercio & Folwaczny 1979), after 1945 the species was found twice: 4 km NNE Zelenogradsk, on the Curonian Spit, 54°58'34.4"N 20°31'35.8"E, 04.VI.2007 (3 exx, on young *Betula pendula*, leg. V. Alekseev) and in Nesterovsky district, 3 km N Krasnolesye, 54°24'8.9"N 22°24'19.8"E, 08.VI.2008 (1 ex., on young *Quercus robur*, leg. V. Alekseev & A. Pavlova).

Comment: The species feeds on *Coryllus*, *Quercus*, *Betula*. It is distributed in Europe, Siberia, Kazakhstan and Far East of Russia.

CHRYSOMELINAE LATREILLE, 1802

***Colaphus sophiae* (Schaller, 1783)**

Material: On the territory of the former East Prussia it was registered in Königsberg [Kaliningrad], Isterburg [Chernyakhovsk], Frische Nehrung [the Baltic Spit]. In research period it was recorded only from one locality on the Baltic

Sea shore near Svetlogorsk, 54°56'26.2''N 20°8'27.1''E, 01.VI.1994 (1 ex., leg. V. Alekseev) and 06.VI.2004 (2 exx, leg. V. Alekseev).

Comment: the species feeds on *Brassica*, *Sinapis*, *Raphanus*, *Sisymbrium* and is distributed in central and south-eastern Europe, Caucasus and Central Asia. According to the catalogue of Silfverberg (2004) it is mentioned for Denmark, Latvia and Lithuania; the species is known also from Belarus (Lopatin, Nesterova 2005).

***Prasocuris junci* (Brahm, 1790)**

Material: On the territory of the former East Prussia it was registered in Königsberg [Kaliningrad], Rauschen [Svetlogorsk] and in Rominten [Krasnolesye] (Bercio & Folwaczny 1979). In research period it was recorded twice: Zelenogradsky district, Pereslavskoe environs, 54°49'32.6''N 20°17'16.4''E, 16.VI.2001 (3 exx, bank of a rivulet, leg. V. Alekseev) and Svetlogorsk environs, 54°56'26.2''N 20°8'27.1''E, 06.VI.2004 (1 ex., the Baltic Sea shore, leg. V. Alekseev).

Comment: the species feeds on *Veronica beccabunga* and distributed in Europe, north Africa, Caucasus, Asia Minor. In the Baltic States and Fennoscandia it is known from Denmark, Latvia and Sweden (Silfverberg 2004) and also from Belarus (Lopatin, Nesterova 2005).

ALTICINAE NEWMAN, 1834

Phyllotreta dilatata* Thomson, 1866

Material: At present the species is known only from one locality in the Kaliningrad region: Zelenogradsk environs, 54°57'41.6''N 20°30'16''E, 09.V.1998 (1 ex., the Baltic Sea shore, leg. V. Alekseev).

Comment: The species feeds on *Cruciferae* and is distributed in western and central Europe, central Siberia (the Krasnoyarsk district). In the Baltic States and Fennoscandia it is known from Latvia (Bukejs 2008b), Denmark and Sweden (Silfverberg 2004) and also from Belarus (Lopatin, Nesterova 2005).

***Hermaeophaga mercurialis* (Fabricius, 1792)**

Material: On the territory of the former East Prussia it was reported from Warnicken [Lesnoe] and Isterburg [Chernyakhovsk] (Bercio & Folwaczny 1979). At present the species repeatedly occurs on the margins of the deciduous forest (Quercetum) in the central part of the Kaliningrad region in environs of the city Chernyakhovsk: 7 km NE of the city, 54°40'1.8''N 21°53'17.9''E, 01.V.1998 (2 exx, leg. V. Alekseev) and 13.V.2007 (3 exx, leg. V. Alekseev). This population is in stable state, its density compounds 3-5 imagos per 100 square metres. The population on the Sambian peninsula or in other parts of the Kaliningrad region is unknown till now, although its presence could be expected in adequate habitats.

Comment: This monophagous beetle is associated with one host plant only - *Mercurialis perennis* and occurs in the light deciduous parks and forests in May and early June. The species is distributed in Europe, Asia Minor and in the Caucasus. According to the catalogue of Silfverberg (2004) it is mentioned for Denmark, Estonia, Lithuania and Sweden. The species is known also from Belarus (Lopatin, Nesterova 2005) and Latvia (Bukejs 2008a).

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