

## NEW AND INSUFFICIENTLY KNOWN LEAF-BEETLE SPECIES (COLEOPTERA: CHRYSOMELIDAE) OF THE LITHUANIAN FAUNA

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**Abstract.** The current article presents faunistic data on 18 leaf-beetle (Chrysomelidae) species in Lithuania. Three species of them, *Chrysolina herbacea* (Duftschmid, 1825), *Gonioctena intermedia* (Helliesen, 1913) and *Phyllotreta dilatata* Thomson, 1866, are mentioned for the local fauna for the first time. The reviewed material is deposited in collections of Kaunas Tadas Ivanauskas Zoological Museum. A short review of the history of leaf-beetle research in Lithuania is given.

**Key words:** Coleoptera, Chrysomelidae, Lithuania, fauna, biodiversity, new records

### INTRODUCTION

Leaf-beetles, represented by 30000–50000 species, are one of the largest groups of the order Coleoptera worldwide (Bieńkowski 2004; Brovdij 1985; Jolivet 1988). They are phytophagous: imagos mostly occur on leaves and flowers; larvae mostly feed on leaves and roots. Some species of leaf beetles are considered to be dangerous pests of agricultural plants, but at the same time they also reduce harmfulness of some weeds (Kryzhanovskij 1974; Lopatin & Nesterova 2005). The recently observed rapid decline in natural grassland areas and the diversity of herb species has also affected the species diversity of leaf-beetles, and some species are presently facing a real danger of extinction. One species *Cassida margaritacea* (Schaller, 1783) has even been included in the Red Data Book of Lithuania (Rašomavičius 2007). Despite the great abundance, wide distribution in ecosystems and economical importance of Chrysomelidae, many species of their local fauna are still very scarcely studied. Furthermore, many species are rare or insufficiently known in Lithuania. Just a few studies of this particular group of beetles, mostly focusing on Halticini, have been conducted in Lithuania. Kamiński (1936) investigated this leaf-beetles group in Vilnius environs at the beginning of the previous century, later the Latvian scientist Pūtele (1972) published some data on the distribution of flea beetles in Lithuania. Other entomologists collected leaf-beetles accidentally; therefore the information on their fauna in Lithuania is scattered in various publications. A more comprehensive review of faunal records of leaf-beetles in Lithuania was provided by authors of

subsequent volumes of the Lithuanian fauna. The beetles' (Pileckis & Monsevičius 1997). The monograph contains information on 278 species of leaf-beetles and 130 of them are attributed to the rare and very rare beetle category. Over the past two decades, the information on the fauna of leaf-beetles was updated (Audisio 2011; Barševskis 2001; Bukejs & Barševskis 2008; Bukejs & Ferenc 2010; Ferenc 2003; Ferenc *et al.* 2002, 2006, 2007; Gaidienė 1993; Ivinskis *et al.* 1999, 2009; Monsevičius 1998; Šablevičius & Ferenc 1995; Silfverberg 1992, 2004; Tamutis 1999, 2003; Tamutis & Ferenc 2006). According to Tamutis *et al.* (2011), 313 species of Chrysomelidae are known in Lithuania. However, based on the faunal data of neighbouring countries (Alekseev 2003; Burakowski *et al.* 1991; Lopatin & Nesterova 2005; Silfverberg 2004; Telnov 2004), more than 60 chrysomelid species could be expected in the Lithuanian fauna (Tamutis *et al.* 2011).

In this paper we present data on new and insufficiently known in Lithuania leaf-beetle species. The aim of the current work is to improve our knowledge of the fauna and bionomy of Chrysomelidae in Lithuania.

### MATERIAL AND METHODS

Our study was based on the identification of the material deposited in collections of Kaunas Tadas Ivanauskas Zoological Museum (KZM, Kaunas, Lithuania). The following keys were used for the identification of specimens: Anton (1994); Bieńkowski (2004, 2007); Čížek and Doguet (2008); Kangas and Rutanen (1993); Lopatin and Nesterova (2002, 2005) and

Warchałowski (2003). Taxa higher than genus are listed according to Bouchard *et al.* (2011), genera and species are listed according to Silfverberg (2004).

## RESULTS

During the study of the Baltic leaf-beetle fauna, the material of Chrysomelidae in the collection of Kaunas Tadas Ivanauskas Zoological Museum was reviewed. Faunistic data on 18 leaf-beetle species are presented. Three species of them, *Chrysolina herbacea* (Duftschmid, 1825), *Gonioctena intermedia* (Helliesen, 1913) and *Phyllotreta dilatata* Thomson, 1866, were recorded for Lithuania for the first time. The list of Chrysomelidae of the Lithuanian fauna has been replenished.

### List of species

#### Bruchinae Latreille, 1802

*Spermophagus calystegiae* (Lukjanovitch et Terminassian, 1957)

**Material examined:** Kaunas district, Braziūkai environs, 20 May 2007 (1, dry meadow, leg. V. Tamutis).

**Note:** for Lithuania, the species is mentioned only in the interactive 'Fauna Europaea' database (Audisio 2011). No actual faunal data on this species have been reported from Lithuania until now.

#### Criocerinae Latreille, 1804

*Oulema septentrionis* Weise, 1880

**Material examined:** Kaunas district, Kaunas environs, June 1950 (1, leg. S. Pileckis).

**Note:** the information on the record of this species in Lithuania was published by Pileckis (1960), but later it was considered as a synonym of *O. erichsoni* (Suffrian, 1841) (Pileckis 1976; Pileckis & Monsevičius 1997). The true specimen of *O. septentrionis* was re-identified after the examination of its male genitalia. Differences between these sibling species are well described by Wanntorp (2009) and Bukejs (2010).

*Oulema duftschmidi* (Redtenbacher, 1874)

**Material examined:** Kaunas district, Kamša Botanical-zoological Reserve, 23 March 1983 (1, forest edge, on the wild *Poaceae*, leg. V. Tamutis).

**Note:** this species has been recently discovered in Lithuania (Bukejs & Ferenca 2010).

#### Chrysomelinae Latreille, 1802

*Chrysolina herbacea* (Duftschmid, 1825)

= *menthastri* (Suffrian, 1851)

**Material examined:** Kaunas district, Kaunas, slope

of the Nemunas River, 54°51'32.1"N 23°55'59.9"E, 14 September 2009 (1, leg. R. Ferenca).

**Note:** The earlier report of *Ch. herbacea* from Lithuania (Tamutis 2003) was based on misidentification and was related to *Ch. varians* (Schaller, 1783). Consequently, it was excluded from the list of Lithuanian Coleoptera (Tamutis *et al.* 2011). Therefore, it is the first true record of this species in Lithuania.

*Chrysolina aurichalcea* (Gebler, 1825) (Fig. 1)



Figure 1. *Chrysolina aurichalcea*: habitus, dorsal view.

**Material examined:** Kaunas district, Braziūkai environs, 4 September 2004 (4, dry meadow, pitfall trap, leg. V. Tamutis), 3 October 2004 (2, dry meadow, on a plant close to *Artemisia campestris* L., leg. V. Tamutis); Šilutė district, Medžioklės pelkė (bog), 55°15'21.7"N 21°27'20.5"E, 18 September 2002 (1, meadow, leg. R. Ferenca).

**Note:** the data on this species in Lithuania were published only by Gaidienė (1993) and they were not included in the monograph 'Lithuanian fauna. Beetles' (Pileckis & Monsevičius 1997). Generally, the species is distributed in Belarus (Lopatin & Nesterova 2005), Latvia (Bukejs & Telnov 2010), the Ukraine, the European part of Russia (north, central and south), Kazakhstan, Kyrgyzstan, Mongolia, Siberia, the Russian Far East, Japan, China, Korea, Taiwan, Laos, Vietnam (Bieńkowski 2007). Thus, the record of the species in Lithuania extends its distribution range to the west.

*Chrysolina oricalcia* (O. F. Müller, 1776)

**Material examined:** Kaunas district, Jiesia Landscape Reserve, 54°51'12.8"N 23°56'21.2"E, 10 October 2005 (1, leg. R. Ferenca); Šakiai district, Juškinė forest, 55°01'26.3"N 23°26'54.0"E, 17 July 2009 (2, leg. R. Ferenca).

**Note:** only one finding was earlier known from Kaunas environs (Gaidienė & Ferenca 1988).

*Chrysolina hyperici* (Forster, 1771)

**Material examined:** the Curonian Spit, Grobštas Reserve, 55°17'16.9"N 20°58'37.2"E, 20 June 2002 (3, dry, sandy meadow, leg. R. Ferenca); the Curonian Spit, Nida environs, Grobštas Reserve, 55°17'15.5"N 20°58'48.1"E, 25 May 2005 (1, dry, sandy meadow, leg. R. Ferenca).

**Note:** the earlier reports of *Ch. hyperici* from Lithuania (Pileckis 1968, 1976; Pileckis & Monsevičius 1997) were based on misidentifications and were related to *Ch. geminata* (Paykull, 1799). The confirmation of the record of this species in another bibliographical source (Monsevičius 1997) was impossible, because the specimen was lost. The information on this species published by Gliaudys (2001) should be revised. Therefore, it is a single proven record of this species in Lithuania.

*Chrysolina carnifex* (Fabricius, 1792)

**Material examined:** Kaunas district, Braziūkai environs, 1 September 2004 (1, dry meadow, pitfall trap, leg. V. Tamutis).

*Chrysolina analis* (Linnaeus, 1767)

**Material examined:** Jurbarkas district, Viešvilė Reserve, Smaladaržis, 55°07'03.7"N 22°25'14.8"E, 4 September 2008 (2, leg. R. Ferenca); Kaunas district, Braziūkai environs, 15 September 2004 (6, dry meadow, pitfall trap, leg. V. Tamutis), 12 April 2008 (1, dry meadow, under plant debris, leg. V. Tamutis).

*Chrysolina limbata* (Fabricius, 1775)

**Material examined:** Lazdijai district, Gerdašiai environs, 53°56'43.6"N 23°52'50.2"E, 12 July 2000 (3, leg. P. Ivinskis).

*Gonioctena quinquepunctata* (Fabricius, 1787)

**Material examined:** Kaunas district, Kamša Botanical-zoological Reserve, Noreikiškės environs, 30 May 1992 (2, on the leaves of *Padus avium* Mill., leg. V. Tamutis), 10 May 1994 (1, on the leaves of *Padus avium* Mill., leg. V. Tamutis).

**Note:** this species is noted as common and widespread in Lithuania by Pileckis and Monsevičius (1997) but this information as well as data reported by Heyden (1903), Pileckis (1960, 1976), Gaidienė (1993) and Ferenca (2006) are unreliable, because part of the material could be misidentified and is possibly related to the sibling-species *G. intermedia* (Heliessen 1913).

*Gonioctena intermedia* (Heliessen, 1913)

**Material examined:** Akmenė district, Gimbetišké, 17 May 1991 (1, leg. V. Monsevičius), 9 May 1995 (1, leg. V. Monsevičius); Mažeikiai district, Dauginiai, 17 May 1991 (1, leg. V. Monsevičius); Mažeikiai dis-

trict, Židikai SE env., the Gedvydas River, 27 May 1998 (1, leg. V. Monsevičius); Mažeikiai district, Renavas, 1 July 1991 (1, leg. V. Monsevičius).

**Note:** new species for the Lithuanian fauna.

*Galerucinae* Latreille, 1802*Alticini* Newman, 1834*Phyllotreta dilatata* Thomson, 1866

**Material examined:** Akmenė district, Uogiškai, 19 June 1993 (1, leg. V. Monsevičius); Kaunas district, Jiesia Landscape Reserve, 29 August 1982 (4, leg. R. Ferenca), 25 May 1984 (2, leg. R. Ferenca), 8 June 1997 (1, leg. R. Ferenca).

**Note:** new species for the Lithuanian fauna.

*Altica carinthiaca* (Weise, 1888)

**Material examined:** Akmenė district, Kamanos Nature Reserve, 12 May 1993 (1, leg. R. Ferenca); the Curonian Spit, Nagliai Reserve, 55°29'37.3"N 21°6'55.8"E, 7 July 2003 (1, leg. R. Ferenca); Elektrėnai municipality, 28 May 1997 (2, bank of water storage, leg. R. Ferenca); Jurbarkas district, Kalviai, 20 July 1999 (1, leg. R. Ferenca); Jurbarkas district, Viešvilė Nature Reserve, Viešvilė, 20 July 1999 (8, leg. R. Ferenca); Kaunas district, Ežerėlis, 15 June 2000 (1, leg. R. Ferenca); Kaunas district, Dubrava forest, 6 May 1990 (3, leg. R. Ferenca), 9 June 2002 (1, leg. R. Ferenca); Kaunas district, Jiesia Landscape Reserve, 54°51'5.2"N 23°56'25.3"E, 23 April 1998 (2, leg. R. Ferenca), 28 April 1998 (2, leg. R. Ferenca), 2 June 2006 (2, leg. R. Ferenca), 18 May 2007 (4, leg. R. Ferenca); Kaunas district, Kaunas, Pažaislis, 2 May 1990 (3, leg. R. Ferenca); Kaunas district, Kaunas environs, May 2006 (1, leg. student of LUA); Kaunas district, Nevėžis Landscape Reserve, 30 April 1998 (1, leg. D. Lukoševičius), 9 May 1998 (2, leg. D. Lukoševičius), 26 May 1998 (15, leg. D. Lukoševičius); Kaunas district, Noreikiškės, 16 April 1992 (1, forest edge, meadow leg. V. Tamutis), 24 April 1992 (2, leg. V. Tamutis), 25 May 1992 (1, leg. V. Tamutis), 3 March 1995 (1, leg. V. Tamutis), 5 May 1995 (1, leg. V. Tamutis), 7 May 1995 (1, leg. V. Tamutis), 13 August 1995 (1, leg. V. Tamutis), 28 August 1995 (1, leg. V. Tamutis), 14 May 1996 (4, leg. V. Tamutis), 30 June 1996 (1, leg. V. Tamutis); Kaunas district, Pajiesys forest, 14 May 1999 (1, leg. R. Ferenca); Kaunas district, Raudondvaris, 19 May 1998 (1, leg. D. Lukoševičius); Kaunas district, Ringovė Entomological Reserve, 20 May 1998 (6, leg. R. Ferenca); Šakiai district, Juškinė forest, 30 April 2000 (1, leg. R. Ferenca); Šiauliai district, Slydžiai environs, 2 August 2003 (1, leg. V. Tamutis); Vilnius district, Neris Regional Park, Dūkštai oak forest,

1–15 June 2003 (1, leg. S. Morkūnas), 26 June 2003 (2, leg. R. Ferenca).

**Note:** for Lithuania, the species is mentioned only in the interactive 'Fauna Europaea' database by Audisio (2011). Till now actual faunal data on this species from Lithuania have been absent. Male aedeagi and female styles, ventral spiculae and spermathecae were used for species identification (Bukejs 2011; Čížek & Doguet 2008; Kangas & Rutanen 1993).

*Psylliodes marcidus* (Illiger, 1807)

**Material examined:** the Curonian Spit, Juodkrantė, 9 September 2010 (6, beach, on *Cakile baltica* Jord., leg. V. Tamutis).

**Note:** only one finding of this species was earlier known from Lithuania from the Baltic Sea coast (Łomnicki 1913).

*Cryptocephalinae* Gyllenhal, 1813

*Cryptocephalus androgyne* Marseul, 1875

= *coerulescens* Sahlberg, 1839

**Material examined:** Klaipėda district, Nemirseta, 8 June 2004 (1, leg. P. Ivinskis), 9 June 2004 (1, leg. P. Ivinskis).

*Cryptocephalus solivagus* Leonardi & Sassi, 2001

**Material examined:** Kaunas district, Dubrava forest, 12 July 1989 (1, leg. R. Ferenca); Kaunas district, Girionys, 25 June 1972 (1, leg. E. Gaidienė); Kaunas district, Kaišiadorys environs, forest edge, 15 June 1995 (1, leg. V. Tamutis); Kaunas district, Kaunas environs, 24 June – 15 July 1973 (7, leg. E. Gaidienė); Kaunas district, Ringovė Entomological reserve, 7 June 1990 (1, leg. R. Ferenca), 4 July 1996 (1, leg. R. Ferenca); Kazlų Rūda municipality, Višakio Rūda environs, forest edge, 10 June 1994 (1, leg. V. Tamutis); Radviliškis district, Šniūraičiai, 12 June 2004 (1, leg. P. Ivinskis); Šiauliai district, Rėkčiai, 17 July 1998 (1, leg. R. Ferenca); Utena district, Antalgė, 4 July 1977 (1, leg. A. Kaulinis), 6 July 1977 (1, leg. A. Kaulinis); Varėna, 27 June 1969 (1, leg. E. Gaidienė).

**Note:** a recently discovered species in Lithuania (Bukejs & Barševskis 2008).

*Cryptocephalus flavipes* Fabricius, 1781

**Material examined:** Kaunas district, Raudondvaris, 28 May 1926 (3, leg. A. Palionis).

**Note:** the first actual faunistic data on this species from Lithuania. After the subdivision of *C. flavipes* s. l. into two separate species and description of the new sibling-species *C. bameuli* Duhaldorbe, 1999, all the earlier published faunistic data on this taxon need to be reviewed or confirmed.

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#### NAUJOS IR MENKAI IŠTIRTOS SPRAGIŲ RŪŠYS (COLEOPTERA: CHRYSOMELIDAE) LIETUVOS FAUNOJE

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#### SANTRAUKA

Pateikiami faunistiniai duomenys apie 18 spragių (Chrysomelidae) rūšių Lietuvoje. Trys iš jų: *Chrysolina herbacea* (Duftschmid, 1825), *Gonioctena intermedia* (Helliesen, 1913) ir *Phyllotreta dilatata* Thomson, 1866 vietos faunoje paminėtos pirmą kartą. Peržiūrėta tyrimo medžiaga yra saugoma Tado Ivanausko Zoologijos muziejaus kolekcijose Kaune. Pateikiama trumpa spragių tyrimų Lietuvoje apžvalga.

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