Baltic J. Coleopterol. 9(2) 2009
ISSN 1407 - 8619

Two new leaf-beetles species (Coleoptera: Chrysomelidae) for the Latvian fauna

Andris Bukejs

Bukejs A. 2009. Two new leaf-beetles species (Coleoptera: Chrysomelidae) for the Latvian fauna. *Baltic J. Coleopterol., 9(2): 155 – 160.*

The first records of the leaf-beetles, *Cryptocephalus solivagus* Leonardi & Sassi, 2001 and *Chrysolina coerulans coerulans* (Scriba, 1791) in the Latvian fauna are presented. General information on their distribution and ecology is given. The figures of the habitus and the sclerites of the endophallus of *Cryptocephalus solivagus* Leonardi & Sassi, 2001 are presented.

Key words: Coleoptera, Chrysomelidae, Latvia, fauna.

Andris Bukejs. Institute of Systematic Biology, Daugavpils University, Vienîbas 13, Daugavpils, LV-5401, Latvia. E-mail: carabidae@inbox.lv

INTRODUCTION

Worldwide, the leaf-beetles are one of the largest groups of the order Coleoptera, represented by 30000–50000 species (Bieńkowski 2004; Brovdij 1985; Jolivet 1988; Mohr 1966). This family is abundant and rich in species also in the fauna of Latvia and the Baltic States. The history of investigation of leaf-beetles in Latvia is more than 220 years old (Bukejs 2008).

In the present paper faunistic data on two leaf-beetles species, *Cryptocephalus solivagus* Leonardi & Sassi, 2001 and *Chrysolina coerulans coerulans* (Scriba, 1791), are presented. These species are reported from Latvia for the first time.

The genus *Cryptocephalus* Geoffroy, 1762 is a cosmopolitan taxon with more than 1000 species. There are 398 species known in the Palearctic region (Lopatin, Dovgailo 2002). At present, 83 species are reported in Eastern Europe (Bieńkowski 2004). In Latvia, 35 species are known (Bukejs et al. 2007; Bukejs 2008).

The genus *Chrysolina* Motschulsky, 1860 contains 469 species and 251 subspecies (Bieńkowski 2007). Most species are distributed in Europe, Asia and Africa. A small number of species inhabits North America (including introduced European ones). Some species were introduced into Australia (Bieńkowski 2001). There are 49 species known from Eastern Europe (Bieńkowski 2004). Of them, 22 species are mentioned for Latvian fauna (Telnov 2004).

MATERIAL AND METHODS

The examined material is stored in the collection of Daugavpils University, Institute of Systematic Biology (DUBC).

The following identification guides were used for determination of specimens: Bieńkowski (2004), Lopatin & Nesterova (2005) and Warchałowski (2003).

Host plants are listed citing the monograph of Lopatin & Nesterova (2005). The general distribution of the species is given according to Warchałowski (2003), Bieńkowski (2004), Lopatin & Nesterova (2005).

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

RESULTS AND DISCUSSION

During the study of the leaf-beetle fauna, the two species *Cryptocephalus solivagus* Leonardi & Sassi, 2001 and *Chrysolina coerulans coerulans* (Scriba, 1791) were recorded for the first time for Latvia. The localities of collection of the species are presented in Fig. 1. The list of leaf beetles of the Latvian fauna was replenished.

Chrysomelidae Latreille, 1802
Cryptocephalinae Gyllenhal, 1813
***Cryptocephalus solivagus* Leonardi & Sassi, 2001**

Examined material (Fig. 1): 2 exx: Madona district, 15 km W Madona, Gaiziņkalns (hills), 01.VII.1997 (1, leg. R.Cibuļskis); Rēzekne district, Sprukti, 08.VII.2008 (1, leg. M.Balalaikins).

In *C. solivagus* Leonardi & Sassi upper side green, bluish-green or bronze-green, always with metallic reflection (Fig. 2). Lateral border of pronotum straight or almost so in lateral view. 5-th abdominal (anal) sternite of male with shallow mid-impression and without denticles. Body length is 4.0–5.6 mm. Aedeagus usually distinctly narrowed at sides of apical opening, with apex sinuous in lateral view, ventral surface convex and without sharp ridge.

Externally, *C. solivagus* Leonardi & Sassi is very similar to *C. hypochaeridis* (Linnaeus). They are sibling species. These two species authentically

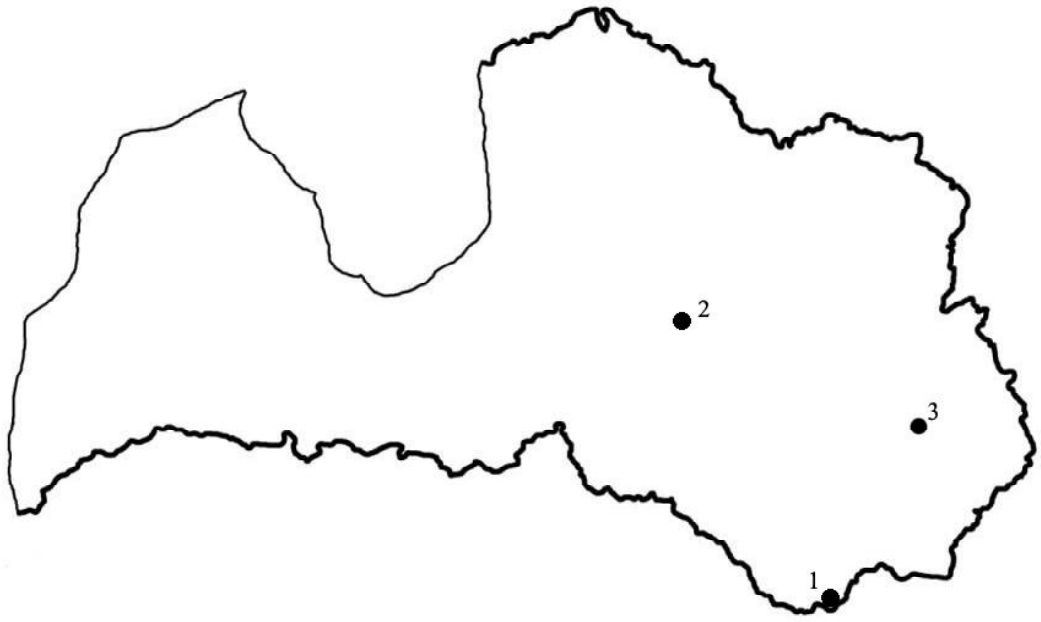

Fig. 1. The localities of the new leaf beetles species for the fauna of Latvia (1 – Ilgas, 2 – Gaiziņkalns, 3 - Sprukti): 1 – *Chrysolina coerulans coerulans* (Scriba); 2 and 3 – *Cryptocephalus solivagus* Leonardi & Sassi.

differ only by the shape of the aedeagus and the sclerites of the endophallus (Fig. 3).

The imagoes of *Cryptocephalus solivagus* Leonardi & Sassi as well as *C. hypochaeridis* (Linnaeus), occur on the flowers of Compositae. The specimens are recorded from May to July (Lopatin, Nesterova 2005).

The precise distribution of this species must be defined more exactly because of the former confusion with the closely related species *C. hypochaeridis* (L.). *Cryptocephalus solivagus* Leonardi & Sassi is distributed in Central, Southeastern and Eastern Europe (Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Hungary, Macedonia, Poland, Romania, European part of Russia, Serbia and Montenegro, Turkey, Ukraine), Asia Minor, Kazakhstan, Uzbekistan, Urals, Western Siberia and Altai (Bieńkowski 2004; Leonardi, Sassi 2001; Lopatin, Nesterova 2005; Romantsov 2007). Recently, it was recorded also in Lithuania (Bukejs, Barševskis 2008). Thus, the record of the species in Latvia extends its distribution range.

Fig. 2. *Cryptocephalus solivagus* Leonardi & Sassi: habitus, dorsal view.

Chrysomelinae Latreille, 1802

***Chrysolina coerulans coerulans* (Scriba, 1791)**

= *oblonga* Duftschmid, 1825; *olivaceonigra* Fleischer, 1892; *starhorni* Reitter, 1912; *violacea* Panzer, 1797 nec Goeze, 1777; ***oblonga* Duftschmidt, 1825;** *vitellina* Schrank, 1781

Examined material (Fig. 1): 1 ex.: Daugavpils district, Ilgas, Silene Nature Park, 1991 (1, leg. A.Barševskis).

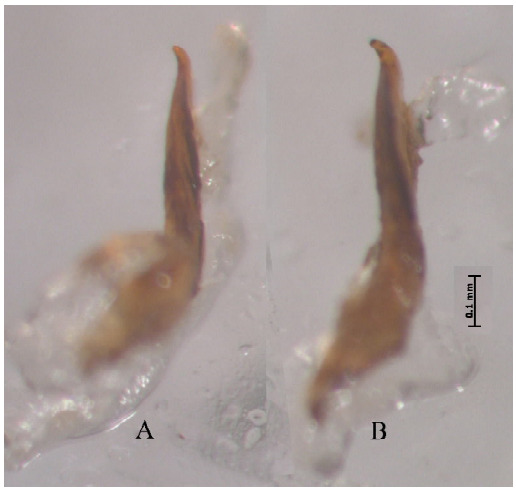

Fig. 3. Sclerites of endophallus, lateral view: A – *Cryptocephalus solivagus* Leonardi & Sassi; B – *C. hypochaeridis* (Linnaeus).

The species belong to subgenus *Synerga* Weise, 1900 (= *Menthastriella* Bechyne, 1950). Formerly, in the monograph "Fauna Baltica" (Seidlitz 1872-1875), this species was mentioned as *Chrysomela violacea* Panz. but without a concrete locality for Latvia. In the second edition of this monograph (Seidlitz 1889-1891), it is mentioned

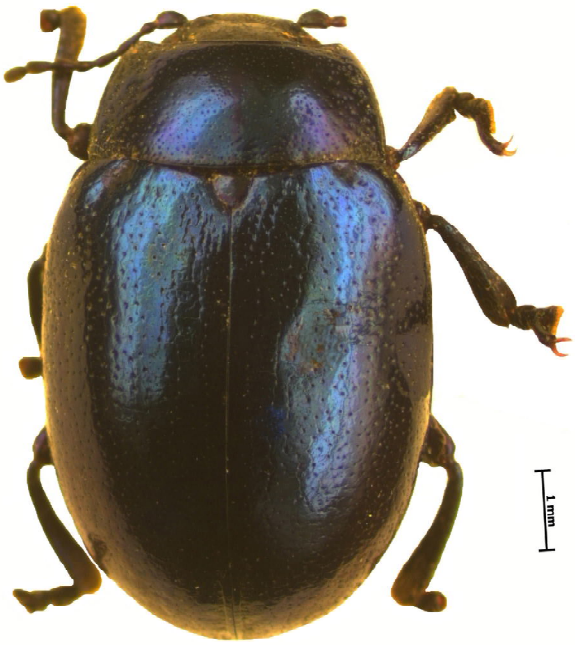

Fig. 4. *Chrysolina coerulans coerulans* (Scriba): habitus, dorsal view.

only as potential species. The species was not included in catalogues of Latvian Coleoptera (Telnov et al. 1997; Telnov 2004).

Body elongate. Pronotum without lateral impression; anterior margin with dense setae. Intercoxal prosternal process with smooth longitudinal groove. Epipleura in posterior half is not visible in lateral view. Aedeagus with narrow, obtuse apical denticle. Nominate subspecies with dorsum entirely blue or with longitudinal blue, green or golden coppery stripes (Fig. 4); body length 7.0–8.5 mm (Bieńkowski 2004).

The species feeds on *Mentha* (Labiatae).

Ch. coerulans (Scriba) is distributed in Central and Eastern Europe, Caucasus, Asia Minor, Near East, Iran, Iraq, Afghanistan, Central Asia, southern Ural, western China, northern and eastern India. There are 8 subspecies known. Nominate subspecies is reported from Europe and Asia Minor (Bieńkowski 2001, 2004). In the Baltic States and Fennoscandia it is known from Estonia (Silfverberg 2004); the species is known also from Belarus (Lopatin, Nesterova 2005).

ACKNOWLEDGEMENTS

The author is grateful to the colleagues Maksisms Balalaikins (Rēzekne, Latvia), Arvīds Barševskis and Raimonds Cibuļskis (Daugavpils University Institute of Systematic Biology, Daugavpils, Latvia) for the provived material.

Special thanks are given to Andrzej O. Bieńkowski (Moscow, Russia) for constructive advice and to Andrzej Warchałowski (Wrocław, Poland) for his valuable comments.

REFERENCES

Bieńkowski A. O. 2001. A study on the genus *Chrysolina* Motschulsky, 1860, with a checklist of all the described subgenera, species, subspecies, and synonyms (Coleoptera: Chrysomelidae: Chrysomelinae). Genus, 12 (2): 105–235.

Bieńkowski A. O. 2004. Leaf-beetles (Coleoptera: Chrysomelidae) of the Eastern Europe. New key to subfamilies, genera and species. Moscow, Mikron-print: 1–278.

Bieńkowski A. O. 2007. A monograph of the genus Chrysolina Motschulsky, 1860 (Coleoptera: Chrysomelidae) of the world. Part 1. Moscow, Techpolygraphcentre Publ.: 1–417.

Brovdij V. M. 1985. The main trends and stages of evolution of trophic links of the leaf-beetles (Coleoptera, Chrysomelidae) of the USSR. *Entomological Review*, 64 (2): 285–294. [in Russian, English summary]

Bukejs A., Barševskis A., Valainis U. 2007. Review of the leaf-beetles subfamily Cryptocephalinae Gyllenhal, 1813 (Coleoptera: Chrysomelidae) of the fauna of Latvia. *Cross - Border Cooperation in Researches of Biological Diversity (Barševskis A. & Šaulienė I. ed.), Acta Biologica Universitatis Daugavpiliensis, Suppl. 1:* 81–106.

Bukejs A. 2008. Lapgraužu apakšdzimtas Cryptocephalinae Gyllenhal, 1813 (Coleoptera: Chrysomelidae) Latvijas faunas apskats un bioģeogrāfiskās īpatnības. Latvijas Universitātes 66. Zinātniskās konferences referātu tēzes: Ģeogrāfija, ģeoloģija, vides zinātne. Rīga, LU: 35–37. [in Latvian]

Bukejs A. 2008. The history of investigations of *Chrysomelidae* sensu lato (Coleoptera) in Latvian fauna. *Acta Biologica Universitatis Daugavpiliensis*, 8 (2): 259–272.

Bukejs A., Barševskis A. 2008. New leaf-beetle species, *Cryptocephalus solivagus* Leonardi & Sassi, 2001 (Coleoptera: Chrysomelidae) in the Lithuanian fauna. *Acta Zoologica Lituanica,* 18 (4): 267–269.

Jolivet P. 1988. Food habits and food selection of Chrysomelidae. Bionomic and Evolutionary Perspectives. In: Jolivet P., Petitpierre E., Hsiao T. H. *Biology of Chrysomelidae*. Kluwer Academic Publishers: 1–24.

Leonardi C., Sassi D. 2001. Studio critico sulle specie di *Cryptocephalus* del gruppo *hypochaeridis* (Linné, 1758) e sulle forme ad esse attribuite (Coleoptera Chrysomelidae). *Atti della Societą Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano*, 142 (1): 3–96.

Lopatin I. K., Dovgailo K. E. 2002. The genus *Cryptocephalus* (Chrysomelidae) of Palearctic region. CD key and database on the basis of software "Lysandra". Minsk.

Lopatin I. K., Nesterova O. L. 2005. *Insecta of Byelarus: Leaf-Beetles (Coleoptera, Chrysomelidae)*. Minsk, Tehnoprint: 1–293. [in Russian, English abstract]

Mohr K. H. 1966. Chrysomelidae. In: Freude H., Harde K., Lohse G. *Die Käfer Mitteleuropas. Band 9, Cerambycidae, Chrysomelidae*. Goecke&Evers, Krefeld: 1-299.

Romantsov P. V. 2007. A review of leaf beetles (Coleoptera, Chrysomelidae) of St. Petersburg and Leningrad province. *Entomological Reviews*, 86 (2): 306–336.

Seidlitz G. 1872-1875. *Fauna Baltica. Die Käfer (Coleoptera) der Ostseeprovinzen Russlands*. Dorpat, H. Laakmann: 4 + XLII + 142 + 560.

Seidlitz G. 1887-1891. *Fauna Baltica. Die Käfer (Coleoptera) der deutschen Ostseeprovinzen Russlands. 2 Auflage*. Königsberg: 12 + LVI + 192 + 818.

Silfverberg H. 2004. Enumeratio nova Coleopterorum Fennoscandiae, Daniae et Baltiae. *Sahlbergia*, 9: 1–111.

Schöller M. 2002. Taxonomy of *Cryptocephalus* Geoffroy: what do we know? (Coleoptera: Chrysomelidae: Cryptocephalinae). *Mitteilungen des Internationalen Entomologischen Vereins*, 27: 59–76.

Telnov D. 2004. Check-List of Latvian Beetles (Insecta: Coleoptera). In: Telnov D. (ed.) *Compendium of Latvian Coleoptera, vol. 1*. Rīga, Pertovskis & Co: 1–114.

Telnov D., Barševskis A., Savich F., Kovalevsky F., Berdnikov S., Doronin M., Cibuļskis R., Ratniece D. 1997. Check-List of Latvian Beetles (Insecta: Coleoptera). *Mitteilungen des Internationalen Entomologischen Vereins*, Supplement V: 1–140.

Warchałowski A. 2003. *The leaf-beetles (Chrysomelidae) of Europe and the Mediterranean region*. Warszawa, Natura optima dux Foundation: 1–600.

Received: 12.10.2009.
Accepted: 01.12.2009.