

РОССИЙСКАЯ АКАДЕМИЯ НАУК  
Институт аридных зон ЮНЦ

RUSSIAN ACADEMY OF SCIENCES  
Institute of Arid Zones SSC

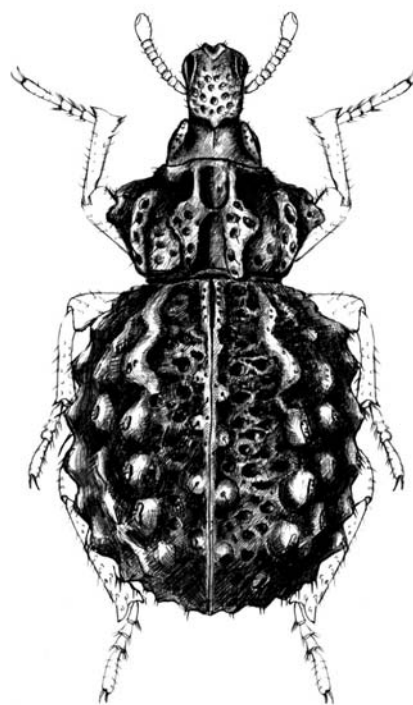


# Кавказский Энтомологический Бюллетень

CAUCASIAN ENTOMOLOGICAL BULLETIN

Том 8. Вып. 1

Vol. 8. No. 1



Ростов-на-Дону

2012

## Area of lily leaf beetle *Lilioceris lili* Scopoli, 1763 (Coleoptera: Chrysomelidae: Criocerinae)

## Ареал трещалки лилейной *Lilioceris lili* Scopoli, 1763 (Coleoptera: Chrysomelidae: Criocerinae)

**М.Я. Орлова-Bienkowskaja**  
**М.Я. Орлова-Беньковская**

A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, Leninsky pr., 33, Moscow 119071 Russia. E-mail: marinaorlben@yandex.ru

Учреждение Российской академии наук Институт проблем экологии и эволюции им. А.Н. Северцова РАН, Ленинский пр., 33, Москва 119071 Россия

**Key words:** Criocerinae, Chrysomelidae, *Lilioceris lili*, *Lilium*, lily leaf beetle, area, map, pest, invasive species.

**Ключевые слова:** Criocerinae, Chrysomelidae, *Lilioceris lili*, лилии, трещалка лилейная, ареал, карта, вредитель, инвазионный вид.

**Abstract.** A distribution map is provided for *Lilioceris lili* (Scopoli, 1763) (Coleoptera: Chrysomelidae). 343 localities in the Nearctic and Palaearctic, including 146 localities in Russia, are shown. Examination of old collections of Zoological Institute (St. Petersburg), Zoological Museum of Moscow State University and analysis of literature revealed, that this species did not occur in northern and central regions of European Russia before 1898, but inhabited European countries, south regions of European Russia (as far north as Voronezh), Siberia and Far East. Now it is a common pest in northern and central regions. *L. lili* occurs in following regions of Russia: Altai Prov.\*, Altai Republic\*, Amur Region, Bashkortostan\*, Bryansk Region\*, Buryatia\*, Chelyabinsk Region, Chuvashia, Irkutsk Region, Ivanovo Region\*, Jewish Autonomous Region, Kaliningrad Region, Kaluga Region\*, Kemerovo Region\*, Khabarovsk Prov.\*, Khakassiya, Khanty-Mansi Autonomous Area\*, Kirov Region, Kostroma Region\*, Krasnodar Prov.\*, Krasnoyarsk Prov., Kurgan Region, Kursk Region, Leningrad Region, Lipetsk Region, Moscow Region, Nizhny Novgorod Region\*, North Ossetia\*, Novosibirsk Region\*, Omsk Region\*, Orel Region\*, Orenburg Region, Penza Region\*, Primorski Prov.\*, Pskov Region, Samara Region, Saratov Region\*, Sverdlovsk Region\*, Tatarstan, Tomsk Region\*, Transbaikalia Prov.\*, Tula Region\*, Tyumen Region\*, Udmurtia, Ulyanovsk Region, Vladimir Region\*, Volgograd Region\*, Voronezh Region\*, Yakutia, Yaroslavl Region (first records are indicated with an asterisk\*).

**Резюме.** Составлена карта ареала *Lilioceris lili* (Scopoli, 1763) (Coleoptera: Chrysomelidae). На ней показано 343 местонахождения вида вNearктике и Палеарктике, в том числе 146 точек в России. Анализ старых коллекций Зоологического института РАН и Зоологического музея Московского государственного университета, а также литературных данных выявил, что этот вид не встречался в северных и центральных районах европейской части России до 1898 года, хотя обитал в странах Европы, южных регионах европейской части России (южнее Воронежа), в Сибири и на Дальнем Востоке. Сейчас это обычный вредитель в северных и центральных областях. *L. lili*

встречается в следующих регионах России: Алтайский кр.\*, Амурская обл., Башкортостан\*, Брянская обл.\*, Бурятия\*, Владимирская обл.\*, Волгоградская обл.\*, Воронежская обл.\*, Еврейская Автономная обл., Забайкальский кр.\*, Ивановская обл.\*, Иркутская обл., Калининградская обл., Калужская обл.\*, Кемеровская обл.\*, Кировская обл., Костромская обл.\*, Краснодарский кр.\*, Красноярский кр., Курганская обл., Курская обл., Ленинградская обл., Липетская обл., Московская обл., Нижегородская обл.\*, Новосибирская обл.\*, Омская обл.\*, Оренбургская обл., Орловская обл.\*, Пензенская обл.\*, Приморский кр.\*, Псковская обл., Республика Алтай\*, Самарская обл., Саратовская обл.\*, Свердловская обл.\*, Северная Осетия\*, Татарстан, Томская обл., Тульская обл., Тюменская обл.\*, Удмуртия, Ульяновская обл., Хабаровский кр.\*, Хакасия, Ханты-Мансийский Автономный округ\*, Челябинская обл., Чувашия, Якутия, Ярославская обл. (первые указания отмечены звездочкой\*).

### Introduction

Lily beetle *Lilioceris lili* (Scopoli, 1763) is a serious pest of garden lilies (*Lilium*) and fritillaries (*Fritillaria*). This species is invasive in North America [Majka, LeSage, 2008], United Kingdom [Salisbury, 2003], and Norway [NOBANIS, 2009]. So it is important to describe its natural range in detail to reveal ecological factors determining its distribution. These data are necessary for ecological modeling of its potential range. Besides that, the knowledge of natural range could give a possibility to find specific predators or parasites for biological control of the pest.

The range of *L. lili* was previously described in words [Schmitt, 2010] and figured in general by homogeneous blackening of certain areas of the maps [Warchałowski, 1985; Distribution Maps of Plant Pests, 2010]. But a map with precise points has been compiled only for North America [Majka, Kirby, 2011]. Herewith the map of the whole range is presented. 343 localities in the Nearctic and Palaearctic, including 146 localities in Russia are shown. This article continues the series of works on geographical distribution of leaf-beetles [Bienkowski, Orlova-Bienkowskaja, 2010].

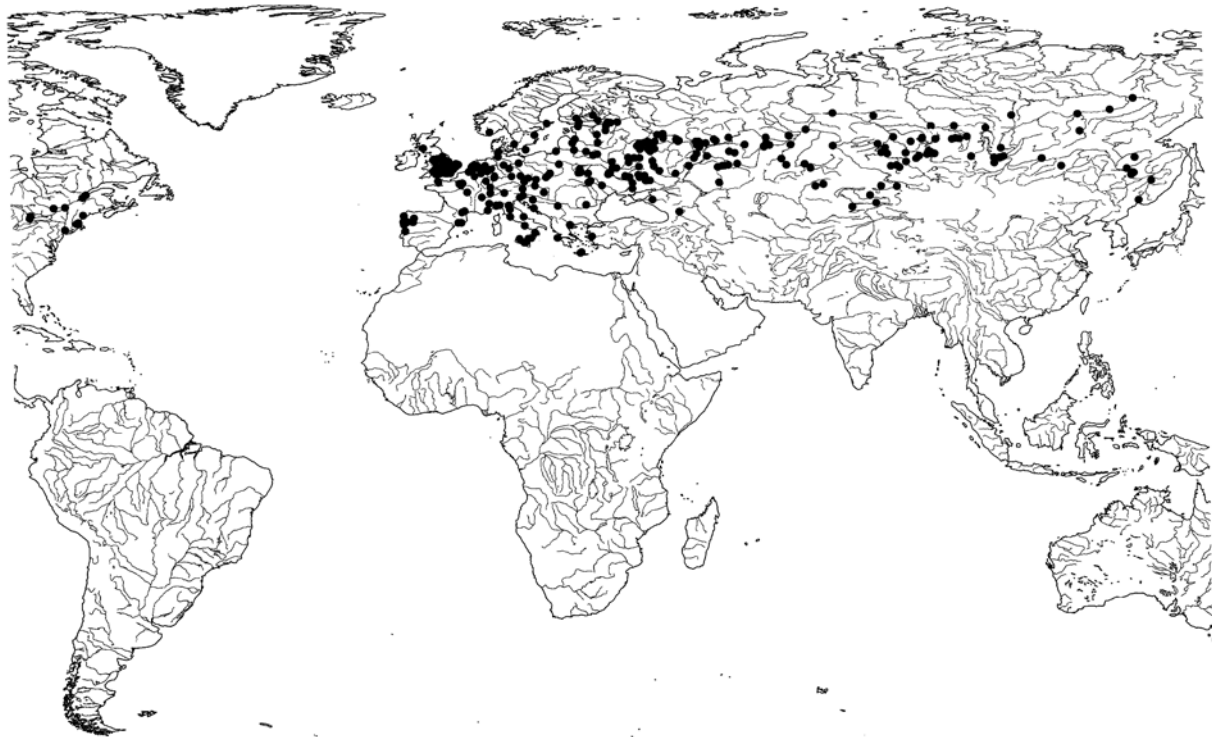


Fig. 1. Area of *Liliocercis lili* (Scopoli, 1763).  
Рис. 1. Ареал *Liliocercis lili* (Scopoli, 1763).

## Material and methods

Specimens examined are deposited in the following collections: Zoological Museum of Moscow State University (ZMMU), Moscow; Zoological Institute of Russian Academy of Sciences (ZIN), St. Petersburg; All-Russian Plant Quarantine Center (VNIKR), Bykovo, Moscow Region; Zapovednik Galichya Gora (ZGG), Lipetsk Region; collections of S.K. Alekseev, A.O. Bienkowski, L.N. Medvedev and I.G. Pronina.

This species can be reliably identified by photo. So the photos presented in Internet were also used as a material. Abbreviation for Internet-sites: commons.wikimedia – <http://commons.wikimedia.org>; ftp.funet.fi – <http://www.ftp.funet.fi>; gallery.insect.cz – <http://gallery.insect.cz>; flickr – <http://www.flickr.com/photos>; fotki.yandex – <http://fotki.yandex.ru>; fugleognatur – <http://www.fugleognatur.dk>; insect.cz – <http://www.insect.cz>; macroclub – <http://macroclub.ru>; macroid – <http://macroid.ru>; nature.baikal – <http://nature.baikal.ru>; nature.doublea – <http://nature.doublea.ru>; plantarium – <http://www.plantarium.ru>; public.fotki – <http://public.fotki.com>; zin.ru – <http://www.zin.ru>/Animalia/Coleoptera. Some photos were not signed with real names of photographers. In such cases their Internet nicknames are given.

**Material.** CANADA (flickr): Ontario: Guelph, 19.05.2007, photo by G. Watson; Toronto, spring 2010; Ottawa, 23.05.2011, photo by Ch. Leung; Ottawa, 20.06.2011, photo by A. Boone. Quebec: Bas-Saint-Laurent, 06.2006, photo by G. Gonthier; St.-Roch-des-Aulnaies, 1.07.2011, photo by E. Jubinville; Montreal, 9.07.2011, photo by Jee whiz.

USA (flickr): New York: Cross River, 26.05.2011, photo by C. Holmes. Massachusetts: Framingham, Nobscot, 20.06.2006, photo by J. Forman Orth; Quincy, 19.07.2006, photo by J. Forman Orth; Medford, 27.07.2007, photo by P. Cristofono; Lynnfield, 16.06.2008, photo by R. Goodwin;

Boston, 24.04.2011, photo by M. Bono. Maine: Durham, South West Bend, 24.07.2010, photo by M. Purwar.

PORTUGAL (flickr): Lamas (de Podence), Macedo de Cavaleiros, 5.05.2006, photo by P. Estevão; Ponte de Lima, Estorãos, 15.03.2009, photo by A. Silva; Guimarães, Brito, 28.03.2010, photo by E.J. Castro; Porto, Parque da Cidade, 6.04.2010, photo by dragoms; Leiria, Ansião, 25.04.2010, photo by J. Coelho; Viana do Castelo, 27.05.2010, photo by R. Sousa; Terras de Bouro, Gerês, 05.2010, photo by Xanirish.

SPAIN (flickr): Galicia: Sorribas, 9.07.2009, photo by I.M.G. a Barros A Estrada-Pontevedra. Catalonia: Barcelona, 14.06.2009, photo by A. Ramon; Barcelona, 27.03.2010, photo by M<sup>a</sup> Africa; Torrelles de Foix, 2011, photo by M<sup>a</sup> Africa.

UNITED KINGDOM (flickr): Scotland: West Kilbride, 17.04.2011, photo by G. Crawford. England: Ashmead Green, 23.04.2006, photo by R. Giddings; Rochdale, Marland, 28.04.2007, photo by J. Mills; Cambridge, 28.04.2007, photo by W. George; Saint Albans, 22.09.2007, photo by Rithrogena22; Lincoln, 2.04.2008, photo by stcesni; Rushmere St. Andrew, Suffolk, 2.05.2008, photo by J. Higgott; Kesgrave, 3.05.2008, photo by J. Higgott; West Ealing, London, 22.04.2008, photo by J. Oliver; Polegate, 6.05.2008, photo by Ph. Clements; Somerset, Bath, 15.05.2008, photo by Radio Ga Ga; Tongham, 29.05.2008, photo by J. Rutter; Rookery Lane, Lincoln, 2009, photo by M.E. Talbot; Fullers Slade, 23.05.2009, photo by D. Phillips; Chantry, Ipswich, 18.04.2010, photo by B. Lindsay; Cradley, 28.04.2010, photo by gailhampshire; Eaton, Norwich, 3.06.2010, photo by J. Brown; Blythe Hill, London, 7.06.2009, photo by R. Fisher; Burnham on Sea, 9.06.2010, photo by Hester; Chichester, 9.06.2010, photo by L. Enking; North Somerset, Portishead, 29.07.2010, photo by P. Newport; Worthing, Goring by Sea, 13.08.2010, photo by Friends of Groyne No.4; Weymouth, 03.2011, photo by R. Beech; Lewisham, 04.2011, photo by kwll\_and\_rhynn; Christchurch, 17.04.2011, photo by G. Smith; Nottingham, 17.04.2011, photo by Adrian; Cricklade, 20.04.2011, photo by R. Comont; Gateford, 22.04.2011, photo by CrabbyEm; Northants, Kettering, 23.04.2011, photo by Frank P.; Liverpool, 25.04.2011, photo by M. Phillips; South Kyme, 23.04.2011, photo by Amy Lewis; North Moulsecoomb, Brighton, 28.04.2011, photo by L. Henwood; Chelsea, London, 1.05.2011, photo by Lori P.; West Sussex, Horsham Distr., Leechpool Wood, 6.05.2011, photo by S. Reed; Farnborough, 21.05.2011, photo by Mike; Manchester, 7.06.2011, photo by white swani; South Yorkshire, 9.06.2011, photo by Stumpy1956; Highbridge, 4.07.2011, photo by J. Russel; North Yorkshire, Linton on Ouse, 12.06.2011, photo by Lindsey; Rochford, 9.07.2011, photo by P. Scott; Norwich, 21.07.2011, photo by P. Scott; Lowestoft, 29.07.2011, photo by kllghwkh; Longthorp, Peterborough,



Fig. 2. Localities, where *Lilioceris lili* (Scopoli, 1763) was found before 1898.  
Рис. 2. Местонахождения *Lilioceris lili* (Scopoli, 1763) до 1898 года.

24.10.2011, photo by Matt. JERSEY (flickr): Saint Mary, 3.05.2009, photo by Ch. Morgan, St. Helier, Fern Valley, 23.04.2011, photo by S. Robson.

FRANCE: Nice, 1873 (ZIN), [Gall. Mer.] (South France), late 19<sup>th</sup> century (ZMMU); Paris, early 20<sup>th</sup> century (ZIN, ZMMU); Île-de-France, Essonne, 6.04.2004, photo by Ombrosoparacloucycle (flickr); Île-de-France, Yvelines, 24.06.2009, photo by Ph. Macquet (flickr); Paris, 29.03.2011, photo by Stephanie (flickr); Fraisse-sur-Agout, Languedoc-Roussillon, 2011, photo by Alain C. (flickr); Prémery, Burgundy, 7.05.2011, photo by Ch. Shaw, (flickr).

BELGIUM: Ghent, 06.2009, photo by H. van Zeldenrust (flickr).

THE NETHERLANDS (flickr): Leerdam, 14.05.2007, photo by J. Zwaaneveld; Zijlwatering, Wassenaar, 8.07.2007, photo by R. Hoogenbos; Oss, 23.05.2009, photo by P. Mulder; Twente, 2.06.2010, photo by dnya17; Rozenburg, 23.06.2010, photo by E. Tilman; Wageningen, Gelderland, 23.04.2011, photo by H. de Vries; Made, North Brabant, 6.05.2011, photo by C-79, Aalten; Gelderland, 24.05.2011, photo by J. Jansen; Oostzaan, North Holland, 25.06.2011, photo by Anders Sandberg.

GERMANY: Eisleben, 7.05.1904, leg. K.E. Fischer (ZIN); Hückeswagen, 9.06.1930, leg. P. Eigen (coll. L.N. Medvedev); Berlin, 9.04.1974 (ZIN); Bayern, Oberfranken, Wunsiedel, 1989, leg. G.Rößler, photo by U. Schmidt (flickr); Soest, North Rhine-Westphalia, 11.05.2008, photo by leslieundbernd (flickr); Nordrhein-Westfalen, Krefeld-Uerdingen, 30.04.2009, photo by naturgucker.de (flickr); Frankfurt, Hesse, 21.05.2009, photo by Achim (flickr); Dudweiler, Saarland, 22.05.2009, photo by Ronald (flickr); Schleswig-Holstein, Glückstadt, 2.03.2010, photo by Martin (flickr); Freiburg, Hochdorf, 11.04.2010, photo by naturgucker.de (flickr); Schleswig-Holstein, Großsolt, Niemark, 22.05.2010, photo by Andreas (flickr); Aachen, 03.2011 (flickr), photo by red-sequoia; Braunschweig, Leiferde, 18.05.2011, photo by P. Vogel (flickr); Eberstadt, Darmstadt, 25.05.2011, photo by ka.hi (flickr).

SWITZERLAND: [Helvet.], early 20<sup>th</sup> century (ZIN); Geneva after 2000, photo by M. Shlemov (zin.ru).

NORWAY: Evje, 15.05.2008, photo by T.S. Gimre (public.fotki).

ITALY: Reggello, Vallombrosa, 19<sup>th</sup> century, leg. O. Schneider (ZMMU); Palermo, early 20<sup>th</sup> century, leg. G. Jacobson (ZIN); Liguria, Savignone, Vittoria, 13.07.1933, leg. G. Mantero (ZIN); Bologna, Emilia Romagna, 6.06.1993, leg. I. Zappi (coll. A. Bienkowski); Bologna, Emilia Romagna, 5.06.2008, photo by E. Rizzo (flickr); Bedonia, Nociveglia, 16.05.2009, photo by Cristina (flickr); Abruzzo, Bucchianico, 2010, photo by R. Angelini (flickr); Patti, Mongiove, 10.04.2010, photo by L. Caldara (flickr); Montalto di Castro, Lazio, 26.08.2011, photo by Coluberphoto bys (flickr); Sicilia, Barrafranca, 30.03.2011, photo by S. Capici (flickr).

SWEDEN (flickr): Hoganas, Skane, 27.05.2007, photo by J. Klintberg; Grisslehamn, 11.05.2008, photo by K. Holmén.

SLOVENIA: Brda, Barbana, early 20<sup>th</sup> century (ZIN); Bled, 28.05.1903

Grot (ZIN).

CZECH REPUBLIC: Tomice, 15.06.1999, photo by J. Dvorak (insect.cz); Blansko 18.05.2004, photo by M. Koupy (insect.cz); Rakovnik, Prirodni park Džban, 25.07.2004, I. Antusek (insect.cz); Albrechtice, 28.05.2005, photo by M. Ustv (gallery.insect.cz); České Budějovice, 20.05.2007, photo by P. Kouba (insect.cz); Ekebo, Julita, 1.07.2005, photo by L. Wahlberg (ftp.funet.fi).

DENMARK: Bornholm, Rønne, 2.03.2007, photo by A. T. Geertinger (fugleognatur).

CROATIA: [Croatia] late 19<sup>th</sup> century, coll. Rybakow (ZIN).

AUSTRIA: Vienna, leg. Reitter, Leder late 19<sup>th</sup> century (ZIN).

HUNGARY: Siofok, 20.03.2010, photo by Valeria Nagy (fotki.yandex).

POLAND: Silesian Voivodeship, 1899 (ZIN); Warsaw early 20<sup>th</sup> century (ZIN); Katowice, Podlesie, 13.05.2011 (flickr).

SERBIA: Topola, 2010, photo by L. Jovanovic (fotki.yandex.ru).

FINLAND: Anttola, 13.07.2008, photo by Sue (flickr); Hämeenlinna, 23.08.2008, photo by Jouni (flickr); Torpparinmäki, Helsinki, 14.08.2011, photo by T. Kujala (flickr).

GREECE: Crete, Fodhele, 3.03.2007 (flickr).

RUMANIA: Bucharest, 21.06.2006 (flickr).

LITHUANIA: Joniškis, early 20<sup>th</sup> century (ZIN); Kaunas, 2011, photo by Vidas.P (macroclub).

LATVIA: Riga, 2.03.2011, photo by viktor sl (macroid).

ESTONIA: Tallin, 07.2004, photo by D.I. Gomom (zin.ru).

UKRAINE: Volyn' Region: [Volynskaya g.], 1875, coll. Artobolevsky (ZIN); Lokachi Distr., Markovichi, 06.1904, leg. Olsufew (ZIN); Lutsk Distr., 20.05.1907, leg. Olsufew (ZIN). Rovno Region: Ostrozhsk Distr., Chernyakhov, 07.1900, leg. Neklyudov (ZIN). Khmel'nitsky Region: Yarmolinty Distr., Proskurovka, 1.07.1896, leg. Zubovsky (ZIN); Kamenets-Podolsky, 28.04.1908, leg. Yakubovsky (ZIN). Odessa Region: Kodyma, early 20<sup>th</sup> century, leg. Bazhenov (ZIN). Kiev Region: Kiev, early 20<sup>th</sup> century, leg. E. Konig (ZIN); early 20<sup>th</sup> century, leg. Lgocki (ZIN); late 19<sup>th</sup> century, coll. Rybakov (ZIN); middle 19<sup>th</sup> century, Kiev, leg. E. Konig (ZIN); 2.05.1912, leg. B. Iljinsky (ZIN); 10.04.2008, photo by Sergey (Medv'ezhonok) (fotki.yandex); Brovary Distr., Skibin, 16.05.2009, photo by N.A. Vinogradov (zin.ru). Chernigov Region: Akinovo, 06.1900, leg. A. Kurupnovyj (ZIN); Chernigov, before 1926, coll. Jacobson (ZIN). Poltava Region: Poltava, 26.03.1912, leg. Ogloblin; Poltava Region, 04.2011, photo by May (macroid). Zaporozhye Region: Vasylievka Distr., Dneprorudnoye, 3.06.2011, photo by Valeria (fotki.yandex). Dnepropetrovsk Region: Dnepropetrovsk, 14.07.2010, photo by PrepsuPatha (macroclub). Kharkov Region: Kupyansk Distr., Kurochkin, 23.06.1886, coll. Yaroshevsky (ZIN); 05.1901 [Kharkovsk. g.] coll. Barovsky (ZIN); Zmiev Distr., Bishkin, 6.07.1919, leg. K.V. Arnoldi (ZIN); Kharkov Region, after 2000, Moskaev (macroid). Donetsk Region: Slavyansk, 1896,

Table 1. Records of *L. lilii* from regions of Russia. First records are indicated with asterisks \*.  
 Таблица 1. Регионы России, в которых обнаружен *L. lilii*. Новые указания отмечены звездочками \*.

	Examined specimens or photos Изучены экземпляры или фотографии	Previous records Указания в литературе
Altai Prov.* / Алтайский кр.*	+	
Altai Republic* / Республика Алтай*	+	
Amur Region / Амурская обл.	+	[Medvedev, Ammosov, 1978]
Bashkortostan* / Башкортостан*	+	
Bryansk Region* / Брянская обл.*	+	
Buryatia* / Бурятия*	+	
Chelyabinsk Region / Челябинская обл.	+	[Gus'kova, 2002]
Chuvashia / Чувашия	–	[Egorov, 2008]
Irkutsk Region / Иркутская обл.	+	[Berti, Rapilly, 1976]
Ivanovo Region* / Ивановская обл.*	+	
Jewish Autonomous Region / Еврейская Автономная обл.	–	[Medvedev, Skomorokhov, 2009]
Kaliningrad Region / Калининградская обл.	+	[Alekseev, 2003]
Kaluga Region* / Калужская обл.*	+	
Kemerovo Region* / Кемеровская обл.*	+	
Khabarovsk Prov.* / Хабаровский кр.*	+	
Khakassiya / Хакасия	+	[Jacobson, 1901]
Khanty-Mansi Autonomous Area* / Ханты-Мансийский А.О.*	+	
Kirov Region / Кировская обл.	–	[Shernin, 1974]
Kostroma Region* / Костромская обл.*	+	
Krasnodar Prov.* / Краснодарский кр.*	+	
Krasnoyarsk Prov. / Красноярский кр.	+	[Jacobson, 1901]
Kurgan Region / Курганская обл.	–	[Pavlov, 1998]
Kursk Region / Курская обл.	+	[Bienkowski, 1999]
Leningrad Region / Ленинградская обл.	+	[Romantsov, 2007]
Lipetsk Region / Липецкая обл.	+	[Tsurikov, 2009]
Moscow Region / Московская обл.	+	[Bienkowski, 1999]
Nizhny Novgorod Region* / Нижегородская обл.*	+	
North Ossetia* / Северная Осетия*	+	
Novosibirsk Region* / Новосибирская обл.*	+	
Omsk Region* / Омская обл.*	+	
Orel Region* / Орловская обл.*	+	
Orenburg Region / Оренбургская обл.	+	[Vorontsovsky, 1922]
Penza Region* / Пензенская обл.*	+	
Primorski Prov.* / Приморский кр.*	+	
Pskov Region / Псковская обл.	+	[Antipova, Bajkova, 2002]
Samara Region / Самарская обл.	–	[Dmitriev, 1935]
Saratov Region* / Саратовская обл.*	+	
Sverdlovsk Region* / Свердловская обл.*	+	
Tatarstan / Татарстан	+	[Isaev et al., 2004]
Tomsk Region* / Томская обл.*	+	
Transbaikal Prov.* / Забайкальский кр.*	+	
Tula Region* / Тульская обл.*	+	
Tyumen Region* / Тюменская обл.*	+	
Udmurtia / Удмуртия	–	[Dedukhin, 2010]
Ulyanovsk Region / Ульяновская обл.	–	[Isaev et al., 2004]

Vladimir Region* / Владимирская обл.*	–	personal communication of M.E. Smirnov
Volgograd Region* / Волгоградская обл.*	+	
Voronezh Region* / Воронежская обл.*	+	
Yakutia / Якутия	+	[Medvedev, Ammosov, 1978]
Yaroslavl Region / Ярославская обл.	+	[Vlasov, 2008]

leg. Sokolov (ZIN). Lugansk Region: Lisichansk, 11.05.2009, photo by SokoloFF (fotki.yandex).

BELARUS: Grodno Region: Ostrovtsy Distr., Knistushki, 7.09. 2008, photo by Darius B. (macroclub.ru). Minsk Region: Zhodino, 28.05.2011, photo by Mouse (macroclub).

RUSSIA: Kaliningrad Region: Kaliningrad, 17.06.1992, leg. Manukyan (ZIN); Kaliningrad, 13.05.2009, photo by V.I. Alekseev (zin.ru). Pskov Region: Pskov, coll. G. Jacobson, early 20<sup>th</sup> century (ZIN); Sebez, 07.2009, leg. M. and A. Bienkowski (coll. A. Bienkowski). Leningrad Region: Luga Distr., Cheremnetskoe lake, 1920–1930, leg. Rimsky-Korsakov (ZIN); Gatchina Distr., Pribytkovo, 4.07.1998, leg. A.F. Emelyanov (ZIN); St. Petersburg, 6.07.2005, photo by K.G. Tkachenko (zin.ru); Vsevolozhsk Distr., Toksovo, 06.2008, photo by Dima DD (macroclub); St. Petersburg, 07.2008, photo by SIA (macroclub); Vsevolozhsk Distr., Borisova Griva, 15.07.2008, photo by M.V. Marina (macroclub); Vysotsky Island, 30.09.2008, photo by edhel (macroclub); Volkhov Distr., Novaya Ladoga, 07.2010, leg. M. and A. Bienkowski (coll. A. Bienkowski). Bryansk Region: Bryansk, 19.08.1917, leg. G. Kostylev (ZMMU); Suzemka Distr., Selechnya, 07.2010, leg. M. and A. Bienkowski (coll. A. Bienkowski). Tula Region: Zaoksky Distr., Shulgino, after 2000, photo by kuservik (macroclub). Orel Region: Mtsensk Distr., 30.08.2009, photo by Anele (fotki.yandex); Khotynets Distr., Ilijnskoye, 06.2010, leg. M. and A. Bienkowski (coll. A. Bienkowski). Moscow Region: Mozhajsk Distr., Mozhajsk, 14.06.2011, photo by sm-lydmila (fotki.yandex.ru); Odintsovo Distr., Polushkino, 5.07.2008, photo by A. Zarodov (nature.doublea); Petelino, 26.07.2009, photo by bials (macroclub); Istra Distr., 56°00'N / 36°25'E, 28.06.2009, photo by D. Smirnov (ftp.funet.fi); Solnechnogorsk Distr., Krasnaya Polyana, 27–28.05.2000, leg. V. Semenov (ZMMU); Dmitrov Distr., Iksha, 11.06.2011, photo by natalia (fotki.yandex); Moscow, Kolomenskoye, 18.06.2011, photo by Alanechka (fotki.yandex); Ramenskoye Distr., Khripan', 14.06.2008, photo by V. Gumenyuk (macroclub); Ilijnskiy, 23.05.2010, photo by Kataiv (macroclub); Bykovo, 06.2010, leg. S.A. Kurbatov (VNIIRK); Pushkino Distr., Krasnoarmejsk, 2008, photo by NakaRB (fotki.yandex.ru); Sergiev Posad Distr., Sergiev Posad, 19.06.2011, photo by RaVeN (macroclub); Kashira Distr., Kashira, 3.05.2008, photo by AlexZu (macroclub); Noginsk Distr., 23.05.2011, photo by prididiya (fotki.yandex); Voskresensk Distr., Faustovo, 21.06.2009, photo by Glass (macroclub); Serebryanye Prudy Distr., Boksha, 6.2009; Kolonna Distr., Kolonna, 06.2011, leg. L.V. Ermoshkina (personal communication by L.V. Egorov); Egor'evsk Distr., vicinity of Voskresensk, 2008–2009, photo by 4es (macroclub); Orekhovo-Zuevo Distr., Topolinyj, photo by sskorpio (fotki.yandex); Lukhovitsy Distr., Beloomut, 04.2008, leg. D.A. Demidov (coll. D.A. Demidov). Kursk Region: Kursk Distr., Kazatskiy, 12.06.1958, leg. K.V. Arnoldi (coll. A. Bienkowski). Kaluga Region: Maloyaroslavets Distr., Porechye, 13.06.2010, photo by sergdok (fotki.yandex); Balabanovo, Mityaev, 05.2010, photo by sergdok (fotki.yandex). Krasnodar Region: Dinskaya Distr., Novoveliokovskaya, 28.05.2011, photo by A. Zhuravlev (macroclub). Lipetsk Region: Zadonsk Distr., Galichya Gora Reserve, 06.2000, leg. M.N. Tsurikov (ZGG). Voronezh Region: [Waronesch Schubert coll. REO (Eleny Pavl.)], Voronezh, before 1873 (ZIN); Pavlovsk Distr., Shipov Les, 5.05.1895, leg. Silant'ev (ZIN). Vladimir Region: Kol'chugino Distr., Litvinovo, 07.1997, leg. M.E. Smirnov (personal communication by M.E. Smirnov). Yaroslavl Region: Yaroslavl, 29.07.2011, M. and A. Bienkowski (coll. A. Bienkowski). Kostroma Region: Kostroma, 8.06.2010, photo by melkoscop (macroclub); Kostroma, 8.06.2011, leg. M. and A. Bienkowski (coll. A. Bienkowski). Ivanovo Region: Ivanovo, 14.05.2003, leg. M.E. Smirnov (personal communication by M.E. Smirnov); Ivanovo, 2011, photo by sandro (macroclub). Volgograd Region: Mikhajlovka Distr., flood of Medveditsa river, 8.05.2005, photo by evk (macroclub). Nizhny Novgorod Region: Gorodets, 05.2010, photo by nechet5 (fotki.yandex); Nizhny Novgorod, Strigino, 24.05.2009, photo by Leon F (macroclub). North Ossetia: Tsey ravine, 19.06.1981, leg. S.K. Alekseev (coll. S.K. Alekseev). Saratov Region: Saratov Distr., 20.05.1928, leg. Richter (ZIN). Penza Region: Kuznetsk Distr., Sosnovka, 11.06.2008, leg. I.G. Pronina (coll. I.G. Pronina). Chuvashia: Cheboksary Distr., Lapsary, 30.07.2011, leg. V.P. Losmanov (personal communication of L.V. Egorov). Tatarstan: Kazan, 22.05.2010, photo by Sergei Neklyudov (fotki.yandex). Orenburg Region: Tashla Distr., Irterk, 13.07.1950, leg. Romadina (ZIN); Ilek Distr., Mukhranovo, 10.07.1950, leg. Vyrzhikovskaya (ZIN); Orenburg, before 1918, leg. Faust (ZIN); Orenburg, before 1918, leg. Skorniyakov (ZIN, ZMMU). Bashkortostan: Ermekeev

Distr., Starye Sulli, 1898 (ZIN); Nuriman Distr., Pavlovka, 13.06.1907 (ZIN); Al'shei Distr., Aksenovo, 11.06.1908, leg. A. Grigor'ev (ZIN). Chelyabinsk Region: Chelyabinsk, Kashtak, 10.05.1913 and 12.06.1936, leg. S. Rodionoff (ZIN), Miass, Ilmen State Reserve, 1.06.1984, leg. L.V. Lagunov (coll. A. Bienkowski); Ozersk, 4.06.2011, photo by Vella751 (fotki.yandex). Sverdlovsk Region: Yekaterinburg, Uktus, 20.06.1910, leg. G. Jakobson (ZIN); [Sibir], mid-19<sup>th</sup> century, coll. Motschulsky (ZMMU). Tyumen Region: Tobolsk Distr., Tobolsk, 5.06.1929, leg. I. Telishev (ZMMU); Tyumen Distr., Uspenka, 10.06.1958 and 3.06.1959, leg. L.N. Medvedev (ZIN and coll. L.N. Medvedev); Tyumen Distr., Guzhevoe, 17.06.1959, leg. L.N. Medvedev (coll. L.N. Medvedev). Omsk Region: Omsk, 20.05.1868, leg. Middendorf (ZIN). Khanty-Mansi Autonomous Area: Surgut, after 2000, photo by Mariluna (commons.wikimedia). Novosibirsk Region: Kochenevo Distr., Novomikhajlovka, 9.07.1987, leg. V. Grachev (coll. A. Bienkowski); Iskitim Distr., Linyovo, 3.06.2011, photo by Yu. Panov (plantarium). Altai Prov.: Meret', 21.06.1893 (ZIN); Barnaul, 24.05. 1901, leg. Z. Goretovski (ZIN); Barnaul, 29.05.1905, leg. V. Khvorov (ZIN). Sayanogorsk, Oznachennoye, 1900, leg. J. Sahlberg (ZIN); Tashtyp Distr., Tashtyp, 23.05.1912, leg. Redikortsev (ZIN). Krasnoyarsk Prov.: Yenisei valley, 31.05.1897, leg. Tropichev; Nazarovo Distr.: Nazarovo, 28.06.1987, leg. E.V. Samoderzhnikov (coll. L.N. Medvedev); Achinsk Distr., Achinsk, early 20<sup>th</sup> century (ZIN); Minusinsk Distr.: Minusinsk, 17.05.1916, leg. Kozhanchikov (ZIN); Minusinsk, 5.06.1921, leg. Gerasimova, Tsygankov (ZIN); 35 km SE from Minusinsk, 1923, leg. A. Zhelochovtsev (ZMMU); Shushenskoye Distr., Kaptyrevo, 1916, leg. Starodubtsev (ZIN); Yermakovskoye Distr., Grigor'evka, leg. Tomashinsky (ZIN); Krasnoyarsk, 20.05.1976, leg. S. Konovalov (ZIN); Krasnoyarsk Distr.: Krasnoyarsk, 1893, coll. Jacobson (ZIN); Krasnoyarsk, Bazaikha, 1895, leg. Ulrich (ZIN); Ilansky Distr., Troitskaya, leg. 17.06.1912 (ZIN); Nizhny Ingash Distr., Tiny, 15.06.1912, leg. Solov'eva (ZIN). Irkutsk Region: Taishtet Distr., Yurty, 5.06.1912, leg. Mashin Berkhov (ZIN); Chunsky Distr., Bunbuj, 4–8.06.1915, leg. Varakinsky (ZIN); Ust'-Ilimsk Distr., Ust'-Ilimsk, 07.1902, leg. Ulrich (ZIN); Slyudyanka Distr., Khamar-Daban ridge, Malaya Bystraya river, 30.06.1956 (coll. L.N. Medvedev); Irkutsk Distr.: Irkutsk, early 20<sup>th</sup> century, leg. V. Yakovlev (ZIN); Irkutsk, 6.06.1937, leg. S. Rodionoff (ZIN); Irkutsk, Maloye Goloustnoye, 21.07.1965 (coll. L.N. Medvedev); Irkutsk, 20.05.2007, photo by O. Berlov (nature.baikal); Kachug Distr., Verkholsk, 26.05.1914, leg. Rodionoff (ZIN); Ol'khonskiy Distr., Kuyada, 14.07.1911, leg. Karnakova (ZIN); Katanga Distr., 9.06.1873, leg. A. Czekanowski (ZIN). Transbaikal Prov.: Tsagan-Oluj, 06.1857, leg. Radde (ZIN), Menzshcha river, 12.06.1958, leg. A. Ponomarenko (ZMMU). Buryatia: Okin Distr., Khara-Daban pass, 2.06.1915, leg. S. Rodionoff (ZIN). Yakutia: Olyokminsk, Malaya Cherepanikha river, 19–29.05.1997, leg. Kharitonov (ZIN). Amur Region: Bureya Distr., Bureya, 1858, leg. Radde (ZIN); Arkhara Distr., Kundur, 15.06.1970, leg. Yu. Zaitsev (coll. L.N. Medvedev); Selezmdzha Distr., Ulanga river, 29.05.1910, leg. M. Mishin (ZIN). Primorskiy Prov.: Ussurijskiy, 06.1929 (ZMMU). Khabarovsk Prov.: Vyazemsky Distr., Vinogradovka, 27.05.1929, leg. Kiritchenko (ZIN).

KAZAKHSTAN: West-Kazakhstan Region: Uralsk, 2.06.1903, leg. A. Borodin (ZIN); Yanvartsevo, 18.05.1950, leg. Romadina (ZIN). Atyrau Region: Amangeldy, 17.06.1950, leg. Schteinberg (ZIN). Kostanaj Region: Naurzum Distr., Naurzum, 13.07.1939, leg. A. Kamenskiy (ZMMU); Kostanaj Distr., Zhaksylyk, 22.07.1958, leg. Falkovich (ZIN). Akmolinsk Region: Atbasar Distr., Zharkol', 1.06.1958, leg. Burov (ZIN); confluence of Shabdar and Terisakkan rivers, 21.06.1957, leg. Gur'eva (ZIN). Karaganda Region: Zhana-Arka Distr.: Aktau, 7.06.1958, leg. Loginova (ZIN); Zhana-Arka, 28.06.1959, leg. Loginova (ZIN). Almaty Region: Almaty, 1910 (ZIN); Sarkand Distr., Topolyovka, 13.07.1957, leg. Zhelokhovtsev (ZMMU). East-Kazakhstan Region: Dzhasy, 31.04.1907, leg. Dubyanskiy (ZIN); Saur, 10.08.1965 (coll. L.N. Medvedev).

CHINA: Xinjian-Uigur autonomous Distr., Ili-Kazakh autonomous area, Kuldsha, 05–06.1878 and 04.1879 (ZIN).

Sources of information for the map: examined specimens, examined photos, literature records [Jacobson, 1901; Vorontsovsky, 1922; Dmitriev, 1935; Fox Wilson, 1943; Brown, 1946; Shernin, 1974; Rapilly, 1976; Medvedev, Ammosov, 1978; Berti, Lavrova, 1986; Pavlov, 1998; Gus'kova, 2002; Alekseev, 2003; Isaev et al., 2004; Romantsov, 2007; Özdikmen, Turgut, 2008; Egorov, 2008; Medvedev, Skomorokhov, 2009; Tsurikov, 2009; Egorov, Egorova, 2009; Dedukhin, 2010] and personal communications by M.E. Smirnov and L.V. Egorov.

Geographic coordinates of localities were found with a simple Internet technology, described recently [Orlova-Bienkowskaja, 2012].

## Results and discussion

*L. lili* inhabits the whole temperate belt of the Palaearctic: from Portugal in the west to Khabarovsk Prov. (Russia, Far East) in the east (fig. 1). This is a synanthropic species. Almost in all localities it was found on garden lilies or fritillaries. A population can survive even in a city street on a small flowerbed with only several plants.

In Europe it occurs in Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Canary Islands, Corsica, Crete, Croatia, Czech Republic, Denmark, Estonia, European Russia, Finland, France, Georgia, Germany, Greece, Hungary, Italy, Jersey, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Sardinia, Serbia, Sicily, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom. In Asia it occurs in China, Far East, Iran, Kazakhstan, Mongolia, Siberia, and Turkey. Some of these regions are not indicated in the map, because I have no precise geographic data on the localities.

The distribution of *L. lili* in North America has been recently studied and excellent maps have been compiled [Majka, LeSage, 2008; Majka, Kirby, 2011]. It is not necessary to republish this data, so only several North American points revealed by photos of beetles are included in my map.

A subspecies *Lilioceris lili stercoraria* (Linne, 1767) is recorded from North Africa [Berti, Rapilly, 1976]. But now this taxon is regarded as a separate species *L. stercoraria* [Schmitt, 2010]. Therefore, it is unclear if *L. lili* occurs in Africa or not.

The distribution of lily leaf beetle in Russia is summarized in a table 1.

Examination of old collections of Zoological Institute (St. Petersburg), Zoological Museum of Moscow State University and analysis of literature revealed, that this species did not occur in northern and central regions of European Russia before 1898, but inhabited European countries, south regions of European Russia (north to Voronezh), Siberia and Far East (fig. 2).

## Acknowledgements

I express my sincere thanks to S.K. Alekseev, D.A. Demidov, L.N. Medvedev and I.G. Pronina for allowing to study specimens from their collections, to L.V. Egorov and

M.E. Smirnov for information about some localities, to S.V. Andreeva (ZIN), S.A. Kurbatov (VNIKR), N.B. Nikitsky (ZMMU) and M.N. Tsurikov (ZGG) for generously allowing me to borrow material from respective institutional and museum collections. I am grateful to A.O. Bienkowski for identification of beetles. Special thanks are given to O. Abramov, E. Stefanova, M. Phillips, E. Chashina, P. Mulder, C. Sanvito, Valeria Nad, S. Adrianov, R. Goodwin, A. Efremova, V. Khatskevich, P. Newport, S. Neklyudov, W. George, Ch. Shawand, L. Jovanovic, A. Zhuravlev, L. Fedyantsev and many other photographers, who presented their perfect photos of lily leaf beetles in the Internet and kindly informed me, where these photos had been taken.

## References

- Alekseev V.I. 2003. On fauna of leaf-beetles (Coleoptera: Chrysomelidae) and seed beetles (Coleoptera: Bruchidae) of Kaliningrad region (Baltic coast) // *Baltic J. Coleopterol.* 3(1): 63–75.
- Antipova L.F., Bajkova T.V. 2002. Insects of Pskov Region. Pskov: Pskovskij gosudarstvennyj pedagogicheskij institut. 334 p. (in Russian).
- Berti N., Rapilly M. 1976. Faune d'Iran – Liste d'espèces et révision du genre *Lilioceris* Reitter (Col. Chrysomelidae) // *Annales de la Société Entomologique de France.* 12(1): 31–73.
- Bienkowski A.O. 1999. Guide to the identification of leaf beetles (Coleoptera, Chrysomelidae) of Eastern Europe. Moscow: Tekhpoligrafstsentr. 204p. [in Russian]. Available from: [http://www.zin.ru/Animalia/Coleoptera/rus/bien\\_pdf.htm](http://www.zin.ru/Animalia/Coleoptera/rus/bien_pdf.htm).
- Bienkowski A.O., Orlova-Bienkowskaja M.Ja. 2010. Distributional pattern of *Chrysolina limbata* (Fabricius, 1775) (Coleoptera: Chrysomelidae: Chrysomelinae) // *Russian Entomological Journal.* 19(1): 9–12.
- Brown W. J. 1946. Some new Chrysomelidae, with notes on other species (Coleoptera): // *The Canadian Entomologist.* 78: 47–54
- Dedukhin S.V. 2010. Leaf beetles (Coleoptera Chrysomelidae) of Botanical garden of Udmurtia University and its vicinity: fauna, biotopic distribution, trophic relations: // *Vestnik Udmurtskogo universiteta. Nauki o zemle.* 2: 55–63 (in Russian).
- Distribution Maps of Plant Pests. 2010. Available from <http://www.cabi.org/DMPP/>.
- Dmitriev G.V. 1935. Materials on Entomofauna of Zhiguli Mountains // *Entomologicheskoye obozreniye.* 25(3–4): 254–264 (in Russian).
- Egorov L.V. 2008. New and rare species of beetles (Insecta, Coleoptera) of Chuvashia. 6 // *Vestnik Chelyabinskogo pedagogicheskogo universiteta.* 3(59): 74–81 (in Russian).
- Egorov L.V., Egorova M.L. 2009. New and rare beetles of Chuvash fauna (Insecta, Coleoptera). 7 // *Vestnik Chelyabinskogo pedagogicheskogo universiteta.* 3–4(63): 65–73 (in Russian).
- Fox Wilson G. 1943. The lily beetle, *Crioceris lili* Scopoli: Its distribution in Britain (Coleoptera) // *Proceedings of the Royal Entomological Society of London (A).* 18(10–12): 85–86.
- Gus'kova E.V. 2002. Review of fauna and ecology of leaf-beetles (Coleoptera, Chrysomelidae) of the Northern Ural // *Vestnik Chelyabinskogo gosudarstvennogo pedagogicheskogo universiteta. Series 10.* 3: 7–59 (in Russian).
- Isaev A.Yu., Egorov L.V., Egorov K.A. 2004. Beetles (Insecta, Coleoptera) of forest-steppe of middle course Volga basin. Catalogue. Ulyanovsk: Ulyanovsk State University. 72 p. (in Russian).
- Jacobson G. 1901. Symbola ad Cognitionem Chrysomelidarum Rossiae asiatica // *Öfvertryck af Finska Vet.-Soc. Föhandlingar,* 43: 99–147.
- Lavrova N.N. 1986. New materials on fauna of leaf beetles (Coleoptera, Chrysomelidae) of Belarus // *Vestssy akademii navuk BSSR. Seriya bialagichnykh navuk.* 2: 105–107 (in Byelorussian).
- M. Schmitt. 2010. Chrysomelidae: Criocerinae: *Lilioceris*. P. 364–366 // *Catalogue of Palaearctic Coleoptera* (Löbl L., Smetana A. eds.). Vol. 6. Chrysomeloidae. Stenstrup: Apollo books. 924 p.
- Majka Ch.G., Kirby C. 2011. Lily leaf beetle, *Lilioceris lili* (Coleoptera: Chrysomelidae), in Maine and the Maritime Provinces: the continuing dispersal of an invasive species // *J. Acad. Entomol. Soc.* 7: 70–74.
- Majka Ch.G., LeSage L. 2008. Introduced leaf beetles of the Maritime Provinces, 5: The lily leaf beetle *Lilioceris lili* (Scopoli) (Coleoptera: Chrysomelidae) // *Proc. Entomol. Soc. Wash.* 110(1): 186–195.
- Medvedev L.N., Ammosov Yu.N. 1978. Fauna and ecology of insecta of Yakutia // *Ekologo-faunisticheskoye issledovaniye nasekomykh Yakutii:* 113–128 (in Russian).

- Medvedev L.N., Skomorokhov M.O. 2009. Leaf-beetles of (Coleoptera, Chrysomelidae) of Jewish Autonomous Region // Regionalnyye problemy. 12: 41–45 (in Russian).
- NOBANIS European network for Invasive Alien Species. Last updated 20.05.2009. Available from: <http://www.nobanis.org/NationalInfo.asp?countryID=NO&taxalD=14309>.
- Orlova-Bienkowskaja M.Ja. 2012. Crisis of faunistic researches and the way of its overcoming by use of informational technologies: // Ecologo-geograficheskiye problemy regionov Rossii. Materialy 3 Vserossijskoj nauchno-prakticheskoy konferentsii (Povolzhskaya sotsialno-gumanitarnaya akademiya, Samara): 71–73. Available from: <http://www.geopgsga.narod.ru/doc/conf3.pdf> (in Russian).
- Özdikmen H., Turgut S. 2008. The subfamily Criocerinae of Turkey (Coleoptera, Chrysomelidae) with two new records and zoogeographical remarks // Mun. Ent. Zool. 3(1): 239–250.
- Pavlov E.V. 1998. Leaf-beetles (Coleoptera, Chrysomelidae) of Kurgan Region // Bespozvonochnyye zhivotnyye Yuzhnogo Zauralya i sopredel'nykh territorij. Kurgan: Kurgan University: 257–259 (in Russian).
- Romantsov P.V. 2007. Review of leaf-beetles (Coleoptera, Chrysomelidae) of St. Petersburg and Leningrad Region // Entomologicheskoye obozreniye. 86(2): 306–487 (in Russian).
- Salisbury A. 2003. A further note on the continued spread on Britain of the Lily Beetle *Lilioceris lili* (Scopoli) (Chrysomelidae), with notes on its host plant range // The Coleopterist. 12(2): 67–76.
- Shernin A.I. 1974. Leaf beetles (Chrysomelidae) // Zhyvotnyj mir Kirovskoj oblasti. V. 2. Kirov: Kirov Pedagogical Institute: 181–194 (in Russian).
- Tsurikov M.N. 2009. Beetles of Lipetsk Region. Voronezh: Izdatelskopoligraficheskij tsentr Voronezhskogo gosudarstvennogo universiteta. 332 p. (in Russian).
- Vlasov D.V. 2008. Beetles of the territory of Yaroslavl Architectural Historical and Art Museum Preserve as an example of fauna of local area in a big city // Aktualnyye problemy ekologii Yaroslavskoj oblasti: Materialy Chetvertoj nauchno-prakticheskoy konferentsii. V. 2. № 4. Yaroslavl: VVO REA: 16–20 (in Russian).
- Vorontsovsky P.A. 1922. Insects of vicinity of Orenburg // Trudy obshchestva izucheniya Kirgizskogo kraja. 3: 40–49 (in Russian).
- Warchałowski A. 1985. Chrysomelidae. Stonkowate (Insecta: Coleoptera). 1 // Fauna Polski. 10. Warszawa: Państwowe Wydawnictwo Naukowe. 273 p.