

FAUNISTIC RECORDS OF THE BEETLES (HEXAPODA: COLEOPTERA) IN LATVIA. 2.

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The article contains new information about distribution data of 230 species of the beetles (Hexapoda: Coleoptera) in Latvia. 2 species - *Harpalus modestus* Dejean (CARABIDAE) & *Platycis cosnardi* (Chevrolat) (LYCIDAE) are new for the fauna of Latvia, from which 19 are very rare species with few known localities in Latvia, 9 species are protected in Latvia, but 18 species are included in the list of special & indicator species of woodland key habitats.

Key words: Beetles, Coleoptera, fauna, Latvia, rare, protected, species, woodland key habitats.

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INTRODUCTION

The article continues a series of the publications “Faunistic records of the beetles (Hexapoda: Coleoptera) in Latvia”, devoted to the study of beetles (Hexapoda: Coleoptera) fauna of Republic of Latvia. The first article of this series (Barševskis et al. 2004) contains the information about 252 beetle species, from which 3 species were indicated for the first time in the fauna of Latvia.

There is the information about 230 species of the beetles from 46 families. 2 species - *Harpalus modestus* Dejean (CARABIDAE) & *Platycis*

cosnardi (Chevrolat) (LYCIDAE) are new for the fauna of Latvia (in the species list marked with *). 19 species: *Bembidion obtusum* Audinet-Serville, *B. monticola* Sturm, *Platynus mannerheimii* (Dejean), *Harpalus signaticornis* (Duftschmid), *Cymindis macularis* Mannerheim (CARABIDAE), *Maladera holosericea* Mannerheim (SCARABAEIDAE), *Hylis procerulus* (Mannerheim), *Rhacopus sahlbergi* (Mannerheim) (EUCNEMIDAE), *Denticollis rubens* Piller & Mitterpacher, *Calambus bipustulatus* (Linnaeus), *Dicronychus equisetoides* Lohse (ELATERIDAE), *Aplocnemus impressus* (Marshall), *Charopus graminicola* (Dejean), *Paratinus femoralis* (Erichson) (MELYRIDAE), *Cucujus*

cinnaberinus (Scopoli) (CUCUJIDAE), *Rushia parreyssii* (Mulsant) (MELANDRYIDAE), *Allecula morio* (Fabricius), *Omophlus betulae* (Herbst) (TENEBRIONIDAE), *Tropideres albirostris* (Herbst) (ANTHRIBIDAE) are very rare species with few known localities in Latvia. 9 species are protected in Latvia: *Calosoma inquisitor* (Linnaeus) (CARABIDAE), *Oxyporus mannerheimi* Gyllenhal, *Velleius dilatatus* (Fabricius) (STAPHYLINIDAE), *Dorcus parallelipipedus* (Linnaeus), *Ceruchus chrysomelinus* (Hochenwarth) (LUCANIDAE), *Protaetia marmorata* (Fabricius) (SCARABAEIDAE), *Chalcophora mariana* (Linnaeus) (BUPRESTIDAE), *Denticollis rubens* Piller & Mitterpacher (ELATERIDAE), *Cucujus cinnaberinus* (Scopoli) (CUCUJIDAE). 18 species in Latvia are included in the list of special & indicator species of woodland key habitats: *Velleius dilatatus* (Fabricius) (STAPHYLINIDAE), *Dorcus parallelipipedus* (Linnaeus), *Ceruchus chrysomelinus* (Hochenwarth) (LUCANIDAE), *Protaetia marmorata* (Fabricius), *Gnorimus nobilis* (Linnaeus) (SCARABAEIDAE), *Chalcophora mariana* (Linnaeus), *Poecilontha variolosa* (Paykull) (BUPRESTIDAE), *Harminius undulatus* (De Geer) (ELATERIDAE), *Lymexylon navale* (Linnaeus) (LYMEXYLIDAE), *Peltis grossa* (Linnaeus), *Thymalus limbatus* (Fabricius), *Grynocharis oblonga* (Linnaeus) (TROGOSSITIDAE), *Dendrophagus crenatus* (Paykull) (SILVANIDAE), *Mycetophagus quadripustulatus* (Linnaeus) (MYCETOPHAGIDAE), *Melandrya dubia* (Schaller) (MELANDRYIDAE), *Prionychus ater* (Fabricius), *Pseudocistela ceramboides* (Linnaeus), *Neomida haemorrhoidalis* (Fabricius) (TENEBRIONIDAE).

The material collected in various habitats and different places of Latvia with entomological net, different traps (windows traps, Malaise traps, pitfall traps etc.) and with visual observation of

microhabitats (under different objects, on soil, plants etc.). The material, which are used in this article is stored in the collection of Institute of Systematic Biology Daugavpils University (DUBC) in Daugavpils, Latvia.

The systematics, which is applied in H. Silfverberg's (2004) catalogue, is used as the basis in species list of this article. In the species list after the species name the place and collecting date are indicated., but in the brackets are indicated the number of collected specimens and name of the collector.

The records published in the article will complete the information about the beetles species distribution in Latvia.

FAUNISTICS

CARABIDAE

1. *Leistus terminatus* (Panzer, 1793)

Daugavpils Distr.: Bebrene, 07.X.2006., (2, E.Rudans leg.), Geitvinišķi, Nature Park "Daugavas loki", 13.VIII.- 17.IX.2008., (3, A.Bukejs, A.Pankjāns leg.); **Madona Distr.:** Krustkalni Nature Reserve, 56°46'95"N 26°08'63"E, 07.VII.2006., (14, A.Pankjāns, A.Barševskis, E.Rudāns), 10.VIII.2006., (3, A.Barševskis leg.); **Preiļi Distr.:** Gailiši, 15.VII.2006., (1, A.Pankjāns leg.), Rīga Distr.: Olaine, 19.IX.2006., (3, J.Donis leg.).

2. *Leistus ferrugineus* (Linnaeus, 1758)

Aizkraukle Distr.: Taurkalne, 16.VI.2006., (1, J.Donis leg.); **Daugavpils Distr.:** Rozališķi, Nature Park "Daugavas loki", 13.VIII.-17.IX.2008., (1, A.Bukejs, A.Pankjāns leg.); **Talsi Distr.:** Slītere National Park, 27.VI.2006., (1, A.Barševskis, U.Valainis, A.Pankjāns), 26.X.2006., (1, E.Rudāns leg.).

3. *Leistus piceus* Frölich, 1799

Daugavpils Distr.: Ilgas, Silene Nature Park, 12.VI.1995., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, VI.2002., (5, U.Valainis, A.Barševskis leg.), VII.2002., (1, A.Barševskis leg.), 06.VIII.2002., (1, A.Barševskis leg.).

4. *Nebria brevicollis* (Fabricius, 1792)

Madona Distr.: Lubāna, „Ezernieki”, 21.08.2008., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National Park, 13.IX.2005., (2, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 03.IX.2004., (2, U.Valainis leg.), 10.VI.2005., (1, A.Barševskis leg.), 15.VII.2008., (2, V.Aleksejev., A.Pavlova leg.), IX.2008., (1, A.Barševskis leg.), Ugāle, VI.2002., (2, A.Barševskis leg.).

5. *Calosoma inquisitor* (Linnaeus, 1758)

Krāslava Distr.: Krāslava (1, A.Uzula leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VI.2003., (1, U.Valainis leg.), 25.VI.2004., (10), 14.V.2004., (2, A.Barševskis leg.), 10.VI.2005., (1, A.Barševskis leg.), 11.VII.2005., (1, U.Valainis leg.), 29.VI.2006., (8, A.Barševskis leg.), VII.2007., (1, A.Barševskis leg.). Protected species in Latvia. Rare.

6. *Carabus convexus* Fabricius, 1775

Daugavpils Distr.: Ilgas, Silene Nature Park, IV.2002., (6, A.Barševskis leg.), VI.2002., (2, A.Barševskis leg.), 15.IV.2003., (1, U.Valainis leg.), Geitvinišķi, Nature Park “Daugavas loki”, 13.VIII.-17.IX.2008., (3, A.Bukejs, A.Pankjāns leg.), Vecsīķeļi, Nature Park “Daugavas loki”, 23.V.-25.VI.2008., (2, R.Cibuļskis, U.Valainis, K.Aksjuta leg.); **Krāslava Distr.:** Šķeltova, “Barševski”, VI.2002., (1, A.Barševskis leg.), Tartaks, Nature Park “Daugavas loki”, 04.VII.2008., (1, A.Soldāns leg.).

7. *Carabus coriaceus* Linnaeus, 1758

Daugavpils Distr.: Elerne, 07.VI.2002., (1, A.Barševskis leg.); 9,7 km N Saliena, Nature Park “Daugavas loki”, 55°54'39"N 26°53'25"E, 13.VIII-17.IX.2008., left bank of the Daugava River, pine forest, (8, A.Bukejs, A.Pankjāns leg.); **Krāslava Distr.:** Šķeltova, “Barševski”, IX.2008., (1, A.Barševskis leg.); **Madona Distr.:** Kalsnava, 27.VIII.2007., (1, J.Donis leg.), Lejasciems, 57°14'16"N 26°37'50"E, 10.VII.2005., (1, J.Laizāns, A.Barševskis leg.); **Rēzekne Distr.:** Rēzekne, Nakotnes Str. 17/19, IX.2007., (1, J.Burovs leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni, V.2006., (1, A.Barševskis leg.); **Valka Distr.:** Launkalne local municipality, Mežole, 30.VIII.2005., (1, J.Donis leg.), 15.X.2005., (4, J.Donis leg.), 17.VI.2007., (1, J.Donis leg.), 16.VII.2007., (1, J.Donis leg.), VII-IX.2007., (4, J.Donis leg.).

8. *Elaphrus aureus* Müller, 1821

Cēsis Distr.: Liepas, Rauguļi, 03.VII.2006., (5, A.Barševskis, U.Valainis, A.Pankjans leg.).

9. *Miscodera arctica* (Paykull, 1790)

Daugavpils Distr.: Ilgas, Silene Nature Park, 16-18.VIII.2002., (4, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 29.XI.2006., (1, A.Barševskis leg.).

10. *Patrobus septentrionis* Dejean, 1828

Daugavpils Distr.: Ilgas, Silene Nature Park, 16-18.VIII.2002., (1, A.Barševskis leg.). Rare species.

11. *Blemus discus* (Fabricius, 1792)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 11.VIII.2006., (1, E.Rudāns leg.).

12. *Bembidion obtusum* Audinet-Serville, 1821

Limbaži Distr.: Dunte, 16.VIII.2008., (6, A.Barševskis leg.); Salacgrīva, Veczemu rock, 17.VIII.2008., (4, A.Barševskis leg.). Very rare species with few known localities.

13. *Bembidion pallidipenne* (Illiger, 1802)

Ventspils Distr.: Jūrkalne, 56°59'13"N 21°21'25"E, 28.VII.2005., (1, A.Barševskis, A.Bukejs, U.Valainis leg.). Rare species.

14. *Bembidion monticola* Sturm, 1825

Limbaži Distr.: Vīķi, 57°51'42"N 24°47'53"E, 22.VIII.2006., (1, A.Pankjāns leg.). In the Latvian fauna very rare species with few known localities.

15. *Bembidion schueppelii* Dejean, 1831

Daugavpils Distr.: Elerne, Muravki, 29.XII.2006., (1, A.Barševskis, K.Barševska leg.); 2,8 km S Naujene, Starozamkovij rov, Nature Park "Daugavas Loki", 55°54'710"N 26°43'515"E, 09.V.2008., (2, U.Valainis leg.); **Liepāja Distr.:** Pape, 21.VI.1996., (1, N.Savenkovs leg.); **Limbaži Distr.:** Staicele, 57°51'69"N 24°41'83"E, 22.VIII.2006., (5, A.Barševskis leg.); Vīķi, 57°51'42"N 24°47'53"E, 22.VIII.2006., (7, A.Barševskis leg.); **Preiļi Distr.:** Jersika, Dimanti, 23.XII.2006., (1, A.Barševskis, K.Barševska leg.); **Rīga Distr.:** Carnikava, 31.V.1995., near Gauja River, (1, N.Savenkovs leg.); **Valmiera Distr.:** Mazsalaca, 57°43'04"N 25°07'75"E, 21.VIII.2006., (11, A.Barševskis, A.Pankjāns leg.).

16. *Bembidion gilvipes* Sturm, 1825

Daugavpils Distr.: Bebrene, 15-17.XII.2006., (1, E.Rudāns leg.), 23-28.I.2007., (1, E.Rudāns leg.); Elerne, Muravki, 29.XII.2006., (1, A.Barševskis, K.Barševska leg.); Naujene, Nature Park "Daugavas Loki", 55°54'44"N 26°49'28"E, 29.IV.2008., valley of the Daugava River, (1, A.Pankjāns, U.Valainis leg.); **Preiļi Distr.:** Jersika, Dimanti, 23.XII.2006., (2, A.Barševskis, K.Barševska leg.).

17. *Bembidion humerale* Sturm, 1825

Talsi Distr.: Stende, 57°07'19"N 22°32'26"E, 19.VII.2007., (1, A.Barševskis, U.Valainis, A.Pankjāns, A.Soldāns leg.).

18. *Platynus mannerheimii* (Dejean, 1828)

Daugavpils Distr.: Ilgas, Silene Nature Park, 09.VI.1997., (1, A.Barševskis leg.). Very rare species with few known localities.

19. *Amara ingenua* (Duftschmid, 1812)

Jēkabpils Distr.: Dunava, 30.IX.2007., (1, A.Barševskis leg.).

20. *Panagaeus cruxmajor* (Linnaeus, 1758)

Daugavpils Distr.: Bebrene, 17.XI.2006., (2, E.Rudāns leg.), 19.XI.2006., (2, E.Rudāns leg.); Daugavpils, Viduspoguļanka, N side of Lake Plotičku, 55°54'943"N 26°29'789"E, 21.IV.2008., (1, A.Pankjāns leg.); Maļinova, 14.IV.2007., (1, M.Murd leg.); Šedere, Straumēni, 05-06.IV.2008., (1, M.Janovska leg.); **Jēkabpils Distr.:** Dunava, 16.IV.2006., (1, A.Barševskis leg.), 27.V.2005., (1, A.Barševskis leg.); **Krāslava Distr.:** Šķeltova, "Barševski", 26.XI.2006., (1, A.Barševskis, K.Barševskis leg.); **Ludza Distr.:** Mērdzene, 2 km E Rūzoni, 21.IX.2007., (1, R.Cibuļskis leg.); **Preiļi Distr.:** Jersika, "Kurpnieki", 17.IV.2005., (1, A.Barševskis leg.), 22.V.2005., (1, A.Barševskis leg.), 07.VI.2006., (1, A.Barševskis, K.Barševska), 22-25.VI.2007., (1, A.Barševskis leg.).

21. *Badister unipustulatus* Bonelli, 1813

Daugavpils Distr.: Šedere, Straumēni, 16.III.2008., (1, M.Janovska leg.).

22. *Harpalus signaticornis* (Duftschmid, 1812)

Daugavpils Distr.: Šedere, Straumēni, 01-03.V.2008., (1, M.Janovska leg.); Stropi, VIII.2001., (1, A.Bukejs leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 14.V.2004., (1, A.Barševskis leg.). Very rare species in Latvia, with five known localities only. North border of main distribution area.

23. *Harpalus servus* (Duftschmid, 1812)

Daugavpils Distr.: Līksna parish, 3 km N Daugavpils, 24.IV.2008., inland dunes, pine forest, (1, A.Bukejs leg.).

24. * *Harpalus modestus* Dejean, 1829

Jēkabpils Distr.: Dunava, 20.VII.2008., (1, A.Barševskis leg.). New species for Latvian fauna. In Fennoscandia and Baltia known also from Lithuania (Silfverberg 2004).

25. *Odacantha melanura* (Linnaeus, 1767)

Krāslava Distr.: 3,6 km NEE Skaista, Grundāni, Lake Drīdzis Nature Park, 15.VII.2008., (1, R.Cibuļskis leg.); **Ventspils Distr.:** Usmā forestry env., 05.V.2008., (1, A.Pankjāns, U.Valainis, A.Soldāns, E.Tamanis leg.).

26. *Lebia cruxminor* (Linnaeus, 1758)

Daugavpils Distr.: Butišķi, 25.VII.2008., valley of the Daugava River, (1, A.Bukejs leg.); Šedere, Straumēni, 01-03.V.2008., (1, M.Janovska leg.); **Jēkabpils Distr.:** Dignāja, 01.VIII.2005., (1, A.Barševskis leg.); **Kuldīga Distr.:** Alsunga, Augšuzava Nature Protection Area, 28.VIII.2005., (1, A.Barševskis, A.Bukejs, U.Valainis leg.); **Talsi Distr.:** Slītere National Park, 26.VI.2002., (1, A.Barševskis leg.).

27. *Demetrias imperialis* (Germar, 1824)

Daugavpils Distr.: Ilgas, Silene Nature Park, 19.-22.VI.2006., (1, E.Rudāns leg.).

28. *Paradromius linearis* (Olivier, 1795)

Liepāja Distr.: Pavilosta, dunes, 13.VIII.2008., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni, 10.VII.2004., (8, A.Barševskis & R.Cibuļskis leg.).

29. *Cimyndis macularis* Mannerheim, 1824

Daugavpils Distr.: Līksna local municipality, Mežciems env., near Rīga-Krāslava beltway, VII.2001., (1, A.Barševskis leg.). Very rare species in Latvia, with five known localities only.

SPHAERITIDAE

30. *Sphaerites glabratus* (Fabricius, 1792)

Rīga Distr.: Olaine, 14.VIII.2006., (1, J.Donis leg.).

HISTERIDAE

31. *Margarinotus bipustulatus* (Schrank, 1781)

Jēkabpils Distr.: Sala, 24.07.2001., (1, K.Uģeļska leg.). Rare species.

32. *Margarinotus purpurascens* (Herbst, 1792)

Daugavpils Distr.: Elerne, Nature Park „Daugavas loki”, 05.2002., (1, A.Barševskis leg.).

33. *Atholus bimaculatus* (Linnaeus, 1758)

Daugavpils Distr.: Bebrene, 09.09.2006., (1, E.Rudāns leg.), Šedere, „Straumēni”, 12.VIII.2007., (1, M.Janovska (Murd) leg.); Preiļi Distr.: Aglonas stacija, 02.08.2008., (1, J.Staskeviča leg.).

34. *Hololepta plana* (Sulzer, 1776)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 23.VIII.2008., (1, A.Barševskis leg.).

PLATYPSYLLINAE

35. *Platypsyllus castoris* Ritsema, 1869

Daugavpils Distr.: Bebrene, 14.IV.2006., (6, E.Rudāns leg.).

SILPHIDAE

36. *Silpha tristis* Illiger, 1798

Daugavpils Distr.: Šedere, „Straumēni”, 19.IV.-02.V.2008., (1, M.Janovska leg.); **Ventspils Distr.:** Moricsala Nature Reserve, IX.2008., (1, A.Barševskis leg.).

37. *Silpha obscura* Linnaeus, 1758

Ventspils Distr.: Usma, near Usmas lake, 22.VIII.2008., (1, A.Barševskis leg.)

STAPHYLINIDAE

38. *Scaphidium quadrimaculatum* Olivier, 1790

Daugavpils Distr.: Ilgas, Silene Nature Park, VI.2002., (1, A.Barševskis leg.), 27.VI.2007., (1, A.Barševskis leg.); **Jekabpils Distr.:** Tadenava, 11.VII.2002., (1, A.Barševskis leg.); **Krāslava Distr.:** Ūdrīši, Zapoļniki, 15.IV.2007., clearing, (1, M.Murd leg.); **Talsi Distr.:** Kolka, Slītere National Park, 10.VI.2005., (1, E.Rudāns leg.); Slītere National Park, Zilie Kalni, VI.2002., (1, U.Valainis, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 14.V.2004., (5, A.Barševskis leg.), 10.VI.2005., (2, A.Barševskis leg.), 04-05.V.2008., (1, A.Pankjans, U.Valainis, E.Tamanis, A.Soldāns leg.).

39. *Oxyporus mannerheimi* Gyllenhal, 1827)

Aizkraukle Distr.: Sērene, Nature Park „Daugavas ieleja”, 06.X.2006., (2, U.Valainis, A.Pankjāns, A.Barševskis, J.Staskeviča leg.); **Daugavpils Distr.:** Ilgas, Silene Nature Park, 02.-10.VII.2004., (1, A.Barševskis leg.); **Gulbene Distr.:** Gulbītis, near Lake Ušūrs, 04.2006., (1, A.Barševskis leg.). Protected species in Latvia.

40. *Emus hirtus* (Linnaeus, 1758)

Daugavpils Distr.: Šedere, Šarlote, 13.V.2007., (1, K.Aksjuta leg.), 08.VII.2007., (1, M.Janovska (Murd) leg.); **Preiļi Distr.:** Rušona, Aglonas stacija, IV.2008., (1, J.Staskeviča leg.).

41. *Creophilus maxillosus* (Linnaeus, 1758)

Aizkraukle Distr.: Taurkalne, 17.VII.2006., (1, J.Donis leg.); **Rīga Distr.:** Olaine, 01.VIII.2006., (1, J.Donis leg.), Salaspils, 01.VIII.2006., (2, J.Donis leg.).

42. *Velleius dilatatus* (Fabricius, 1787)

Aizkraukle Distr.: Ērberģe, 13.VIII.2007., (1, J.Donis leg.), Taurkalne, 30.VII.2007., (3, J.Donis leg.), 13.VIII.2007., (1, J.Donis leg.); **Madona Distr.:** Kalsnava, 13.VIII.2007., (3, J.Donis leg.); **Rīga Distr.:** Olaine, 13.VIII.2007., (1, J.Donis leg.), Salaspils, 30.VII.2007., (1, J.Donis leg.); **Valka Distr.:** Mežole, Mežole Nature Protection Area, 15.VIII.2006., (1, J.Donis leg.), 16.VII.2007., (2, J.Donis), 13.VIII.2007., (4, J.Donis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 18.VII.2007., (1, A.Barševskis, A.Pankjāns, A.Soldāns, U.Valainis leg.). Included in the list of special & indicator species of woodland key habitats. Protected species in Latvia.

LUCANIDAE

43. *Dorcus parallelipipedus* (Linnaeus, 1758)

Talsi Distr.: Slītere National Park, Zilie kalni, 13.IX.2005., (1, A.Barševskis leg.). Included in the list of special & indicator species of woodland key habitats. Protected species in Latvia.

44. *Ceruchus chrysomelinus* (Hochenwarth, 1785)

Talsi Distr.: Slītere, Zilie kalni, Slītere National park, windows trap, 29.VII.2005., (1, U.Valainis leg.); **Ventspils Distr.:** Moricsala Nature Reserve, VI.2002., (1, A.Barševskis leg.), VI.2003., (1, U.Valainis leg.), 11.VII.2005., (1, U.Valainis leg.). Included in the list of special & indicator species of woodland key habitats. Protected species in Latvia.

TROGIDAE

45. *Trox sabulosus* (Linnaeus, 1758)

Daugavpils Distr.: Elerne, Nature Park “Daugavas Loks”, 16.VI.2002., (1, A.Barševskis leg.).

46. *Trox scaber* (Linnaeus, 1767)

Daugavpils Distr.: Ilgas, Silene Nature Park, 17.VI.1997., (1, A.Barševskis leg.); **Rīga Distr.:** Olaine, 30.VI.2006., (4, J.Donis leg.), 17.VII.2006., (1, J.Donis leg.), 01.VIII.2006., (1, J.Donis leg.); **Kuldīga Distr.:** Rudbārži, 10.VI.1998., on light, (1, N.Savenkovs leg.).

GEOTRUPIDAE

47. *Geotrupes spiniger* (Marsham, 1802)

Daugavpils Distr.: Bebrene, 16.IX.2006., (1, E.Rudāns leg.).

48. *Geotrupes stercorarius* (Linnaeus, 1758)

Daugavpils Distr.: Šedere, Šarlote, 13.V.2007., dry meadow, in dung, (3, K.Aksjuta leg.).

49. *Trypocopris vernalis* (Linnaeus, 1758) –

Aizkraukle Distr.: Ērberģe, 14.VIII.2006., (1, J.Donis leg.), 04.IX.2006., (1, J.Donis leg.), Taurkalne, 16.VI.2006., (1, J.Donis leg.), 03.VII.2006., (4, J.Donis leg.), 17.VII.2006., (1, J.Donis leg.), 01.VIII.2006., (2, J.Donis leg.); **Daugavpils Distr.:** Ilgas, Silene Nature Park, 07.IX.2005., (1, A.Barševskis leg.); Mežciems env., near Daugavpils beltway, 22.VII.2008., inland dunes, (1, A.Barševskis leg.); Saliena, Nature Park „Daugavas loki”, pine forest, 13.VIII. – 17.IX.2008., (1, A.Pankjāns, A.Bukejs leg.), Rozališķi, Daugava river valley, Nature Park „Daugavas loki” 23.V.-25.VI.2008., (1, U.Valainis, K.Aksjuta, R.Cibuļskis leg.), 13.VIII.-17.IX.2008., (3, A.Pankjāns, A.Bukejs leg.); **Jēkabpils Distr.:** Dunava, 29.VI.2008., clearing in pine forest, (1, A.Barševskis leg.); **Madona Distr.:** Kalsnava, 14.VIII.2006., (1, J.Donis leg.); **Rīga Distr.:** Salaspils, 01.VIII.2006., (1, J.Donis leg.), 14.VIII.2006., (1, J.Donis leg.), 05.IX.2006., (1, J.Donis leg.); **Talsi Distr.:** Ance, Ances purvi un meži Nature Protection Area, 27.VI.2006., (1, U.Valainis leg.), Dundaga, Pāce, 03.X.2007., (1, E.Pēterhops leg.); **Ventspils Distr.:** Blāzma, pine

forest clearing, 22.VIII.2008., (1, U.Valainis, K.Aksjuta, A.Barševskis leg.).

SCARABAEIDAE

50. *Onthophagus fracticornis* (Preyssler, 1790)

Daugavpils Distr.: Šedere, Šarlote, dry meadow, 13.V.2007., (1, K.Aksjuta leg.).

51. *Maladera holosericea* (Scopoli, 1772)

Daugavpils Distr.: Ilgas, Silene Nature Park, IV.2002., (5, A.Barševskis leg.), VI.2002., (2, U.Valainis leg.). Very rare species in Latvia, with five known localities only.

52. *Hoplia graminicola* (Fabricius, 1792)

Daugavpils Distr.: Bebrene, 01.VII.2006., (1, E.Rudāns leg.); Ilgas, Silene Nature Park, VI.2002., (13, A.Barševskis leg.), 02-10.VII.2004., (1, A.Barševskis leg.), 04.VII.2005., (3, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 20-31.VII.2006., (1, K.Barševska leg.), 10-19.VI.2007., (1, K.Barševska leg.).

53. *Oxythyrea funesta* (Poda, 1761)

Daugavpils Distr.: Līksna env., near Daugavpils beltway, 22.VII.2008., inland dunes, (2, A.Barševskis leg.); Šedere, Šarlote, 19.VII.2008., (1, K.Aksjuta leg.); **Jēkabpils Distr.:** Dunava, 10-19.VI.2007., (2, K.Barševska leg.), 01-09.VIII.2007., (1, K.Barševska leg.), 02.VII.2008., (10, A.Barševskis leg.), 01-14. VIII.2008., (2, K.Barševska leg.), 09-10.VIII.2008., (4, A.Barševskis leg.); **Preiļi Distr.:** Jersika, “Kurpnieki”, 15.V.2007., (1, A.Barševskis leg.), 13.VI.2008., (1, A.Barševskis leg.), 23-24.VI.2008., (1, A.Barševskis leg.), 02.VII.2008., (1, A.Barševskis leg.).

54. *Protaetia marmorata* (Fabricius, 1792)

Daugavpils Distr.: Šedere, Straumēni, 23-24.VI.2007., (1, M.Murd leg.); **Jēkabpils Distr.:** Dunava, 56°12'93"N 26°12'17"E, 11-13.VIII.2006.,

(1, A.Barševskis leg.); **Krāslava Distr.:** Ezernieki, Rāzna National Park, „Piļoru ozoli”, 24.VII.2008., (1, U.Valainis, R.Cibuļskis leg.). Included in the list of special & indicator species of woodland key habitats. Protected species in Latvia.

55. *Gnorimus nobilis* (Linnaeus, 1758)

Talsi Distr.: Slītere National Park, Zilie Kalni (hills) and Dāvida Pļavas (meadows), 29.VII.2005., (9, A.Barševskis, A.Bukejs, U.Valainis leg.), 13.IX.2005., (5, A.Barševskis leg.), 16.VII.2008., (10, A.Barševskis leg.). Included in the list of special & indicator species of woodland key habitats. Protected species. In Latvia known only from Slītere National Park.

SCIRTIDAE

56. *Scirtes hemisphaericus* (Linnaeus, 1758)

Madona Distr.: Mārciena, near the Arona River, 07.VII.2006., (1, A.Pankjāns, A.Barševskis leg.).

LIMNICHIDAE

57. *Limnichus pygmaeus* (Sturm, 1807)

Daugavpils Distr.: Ilgas, Silene Nature Park, 30.VI.2007., (1, A.Pankjāns leg.).

DASCILLIDAE

58. *Dascillus cervinus* (Linnaeus, 1758)

Daugavpils Distr.: Naujene, Nature Park “Daugavas Loki”, 55°54'15"N 26°48'54"E, 25.VI.2008., (3, K.Aksjuta leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VI.2003., (1, U.Valainis leg.), 09.VII.2004., (1, A.Barševskis leg.).

BUPRESTIDAE

59. *Chalcophora mariana* (Linnaeus, 1758)

Aizkraukle Distr.: Taurkalne, 03.VII.2006., (1, J.Donis leg.); **Daugavpils Distr.:** Līksna local

municipality, inland dunes between Ļubesti and Križi, 08.VI.2008., (4, A.Barševskis leg.). This species is included on the list of indicator species of natural forest habitats. Protected species in Latvia.

60. *Buprestis haemorrhoidalis* Herbst, 1780

Daugavpils Distr.: Dviete, forest between Dviete – Tadenava, clearing, 20.VII.2008., (2, A.Barševskis leg.), 10.VIII.2008., (1, A.Barševskis leg.).

61. *Poecilonota variolosa* (Paykull, 1799)

Daugavpils Distr.: Ilgas, Silene Nature Park, 14.-20.VI.2002., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Tadenava, forest clearing, 01.VI.2002., (3, A.Barševskis leg.), 13.06.2002., (2, A.Barševskis leg.), 01.06.2006., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 09.VII.2004., (1, A.Barševskis leg.). Included in the list of special & indicator species of woodland key habitats.

62. *Chrysobothris chrysostigma* (Linnaeus, 1758)

Jēkabpils Distr.: Tadenava, forest clearing, 01.VI.2002., (2, A.Barševskis leg.).

63. *Chrysobothris affinis* (Fabricius, 1794)

Daugavpils Distr.: Dviete, forest between Dviete – Tadenava, clearing, 22.VI.2008., (1, A.Barševskis leg.), 25.VI.2008., (1, A.Barševskis leg.), Ilgas, Silene Nature Park, VI.2005., (1, A.Barševskis leg.); Kurcums, 06.VI.2008., (2, A.Barševskis leg.); **Ventspils Distr.:** Blāzma, pine forest clearing, 22.VII.2008., (1, A.Barševskis, U.Valainis, K.Aksjuta leg.).

BYRRHIDAE

64. *Morychus aeneus* (Fabricius, 1775)

Daugavpils Distr.: Ilgas, Silene Nature Park, 09.V.1996., (1, A.Barševskis leg.), VI.2002., (10,

U.Valainis leg.); Mežciems env., forest near Rīga-Krāslava beltway, 01-31.VII.2001., (2, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, V.2002., (4, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 03.VIII.2004., (1, A.Barševskis leg.).

65. *Lamprobyrrhylus nitidus* (Schaller, 1783)

Daugavpils Distr.: Butiški, 26.V.2008., valley of the Daugava River, (1, A.Bukejs leg.); Nature Park "Daugavas Loks", V.2002., valley of the Daugava River, (4, A.Barševskis leg.); Elerne, V.2002., valley of the Daugava River, (33, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, IV.2002., dry meadow, (2, A.Barševskis leg.), V.2002., (4, A.Barševskis leg.), 14.V.2005., (15, A.Barševskis leg.); **Krāslava Distr.:** Izvalta, VI.2002., (1, A.Barševskis leg.).

66. *Cytilus sericeus* (Forster, 1771)

Aizkraukle Distr.: Taurkalne, 16.VI.2006., (1, J.Donis); **Daugavpils Distr.:** Elerne, VII.2002., valley of the Daugava River, (1, A.Barševskis leg.), VI.2004., (1, A.Barševskis leg.); Ilgas, 09.V.1996., (2, A.Barševskis leg.), IV.2002., (1, A.Barševskis leg.), V.2002., (1, A.Barševskis leg.), VIII.2002., (1, A.Barševskis leg.), 15.IV.2003., (1, U.Valainis leg.); Šedere, Šarlote, 11.V.2008., (1, K.Aksjuta leg.); **Gulbene Distr.:** Lejasciems, V-VI.2003., (1, burning, I.Kampāne, A.Barševskis leg.); Ušurs, 08.VI.2005., (3, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, V.2002., (3, A.Barševskis leg.); Rubene, 28.V.1999., (1, I.Leiskina leg.), 04.IX.1999., (1, I.Leiskina leg.); **Krāslava Distr.:** Izvalta, VI.2002., (1, A.Barševskis leg.); Šķeltova, "Barševski", V.2002., (2, A.Barševskis leg.); Liepāja Distr.: Pape, 06.V.1996., (3, N.Savenkovs leg.); **Rēzekne Distr.:** Rēzekne, Nākotnes Str. 17/19, 18.V.2008., (2, J.Burovs).

67. *Byrrhus fasciatus* Forster, 1771

Aizkraukle Distr.: Taurkalne, 16.VI.2006., (1, J.Donis leg.), 17.VII.2006., (1, J.Donis leg.), 01.VIII.2006., (2, J.Donis leg.); **Daugavpils Distr.:** Daugavpils, 17.IX.1998., (1, I.Leiskina leg.); Elerne, V.2002., (2, A.Barševskis leg.), VI.2004., (1, A.Barševskis leg.); Ilgas, Silene Nature Park, 09-12.IX.1996., (2, A.Barševskis leg.), VI.2002., (1, A.Barševskis leg.), 05-10.VI.2006., (1, L.Jakubāne leg.); Križi, 24.IX.2006., pine forest, (1, A.Barševskis leg.); Mežciems env., forest near Rīga-Krāslava beltway, 01-31.VI.2001., (1, A.Barševskis leg.), 18.III.2007., (4, A.Barševskis, K.Barševska leg.), 22.III.2007., (1, A.Barševskis, U.Valainis, A.Soldāns leg.); Šedere, Straumēni, 22.IV.2007., (1, M.Murd leg.); **Gulbene Distr.:** Škieneri, 14.VI.2006., (1, A.Ilzēna-Rozentāle leg.); **Jēkabpils Distr.:** Dunava, 21.VII.1996., (2, A.Barševskis leg.), 21.X.2006., (2, A.Barševskis leg.); **Krāslava Distr.:** Piedruja, 11.V.1996., (5, N.Savenkovs leg.).

68. *Byrrhus pustulatus* Forster, 1771

Daugavpils Distr.: Elerne, V.2002., (1, A.Barševskis leg.), VII.2002., valley of the Daugava River, (1, A.Barševskis leg.); Ilgas, Silene Nature Park, VIII.2002., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Rubene, 06.VI.1999., (1, I.Leiskina leg.).

69. *Byrrhus pilula* (Linnaeus, 1758)

Daugavpils Distr.: Ilgas, Silene Nature Park, 09.V.1996., (1, A.Barševskis leg.), V.2002., (1, A.Barševskis leg.), VI.2002., (1, A.Barševskis leg.), 06-15.VI.2004., (1, A.Barševskis leg.); Šedere, Straumēni, 01-03.V.2008., (1, M.Janovska leg.), 13.V.2008., (1, M.Janovska leg.); **Gulbene Distr.:** Ušurs, 08.VI.2005., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Asare, 22.VII.1998., (1, I.Leiskina leg.); Dunava, 25-29.VI.2006., (1, K.Barševska leg.); Rubeņi, 18.V.1997., (1, I.Leiskina leg.), 29.V.1997., (1, I.Leiskina leg.); Vandāni, 16.VIII.2008., bank of the Daugava river, (1,

M.Balalaikins leg.); **Krāslava distr.:** Šķeltova, “Barševski”, VI.2002., (2, A.Barševskis leg.); Ūdrīši, Zapolņiki, Nature Park “Daugavas Loks”, 28.IV.2007., (6, M.Murd leg.), 12.VI.2007., (1, M.Murd leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 11.VII.2005., (1, U.Valainis leg.), 26.VI.2006., (2, A.Barševskis leg.).

EUCNEMIDAE

70. *Xylophilus corticalis* (Paykull, 1800)

Talsi Distr.: Slītere, Zilie kalni, Slītere National park, 12.VII.2005., (2, U.Valainis, A.Barševskis, A.Bukejs leg.), 20.VII.2005., (1, U.Valainis leg.), VII.2002., (1, A.Barševskis leg.), 31.VIII.2006., (1), 17.VII.2007., (5, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VII.2003., (1, U.Valainis leg.), 10.VII.2004., (1, A.Barševskis leg.), 11.VII.2006., (1, U.Valainis leg.), 18.VII.2007., (1, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis leg.). Rare species, with five known localities only.

71. *Hylis procerulus* (Mannerheim, 1823)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 30.VII.2005., (1, U.Valainis leg.). Very rare species in Latvia, with five known localities only.

72. *Hylis foveicollis* (Thomson, 1874)

Daugavpils Distr.: Ilgas, Silene Nature Park, VI.2005., (2, A.Barševskis leg.), VII.2005., near oak, (2, A.Barševskis leg.); **Madona Distr.:** Kalsnava, 19.VII.2002., (1, M.Bičevskis leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National park, 17.VII.2007., (2, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 18.VII.2007., (2, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis leg.). Rare species.

73. *Microrhagus lepidus* Rosenhauer, 1847

Talsi Distr.: Slītere, Zilie kalni, Slītere National park, 17.IX.2007., (2, A.Pankjāns, G.Jurševska, K.Aksjuta leg.).

74. *Microrhagus pygmaeus* (Fabricius, 1793)

Daugavpils Distr.: Ilgas, Silene Nature Park, VI.2005., (1, A.Barševskis leg.); **Rīga Distr.:** Jūrmala, Kūdra, 09.VII.2006., (1, A.Titov leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National park, 17.VII.2007., (2, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis leg.), 17.IX.2007., (2, A.Pankjāns, G.Jurševska, K.Aksjuta leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 15.07.2008., (1, V.Aleksejev, A.Pavlova leg.).

75. *Rhacopus sahlbergi* (Mannerheim, 1823)

Dobele Distr.: Jaunbērze, „Mežinieki”, 12.08.2008., (1, A.Barševskis leg.). Very rare species in Latvia, with five known localities only.

76. *Eucnemis capucina* Ahrens, 1812

Daugavpils Distr.: Ilgas, Silene Nature Park, 02.-10.VII.2004., (1, A.Barševskis leg.), VI.2005., (2, A.Barševskis leg.), VII.2005., (1, A.Barševskis leg.), 06.IX.2005., (1, U.Valainis leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National park, 17.VII.2007., (1, A.Barševskis leg.).

ELATERIDAE

77. *Drapetes mordelloides* (Host, 1789)

Daugavpils Distr.: Dviete, forest between Dviete – Tadenava, clearing, 20.VII.2008., (1, A.Barševskis leg.). Rare species.

78. *Lacon fasciatus* (Linnaeus, 1758)

Daugavpils Distr.: Dviete, forest between Dviete – Tadenava, clearing, 22.VI.2008., (4, A.Barševskis leg.), 25.VI.2005., (2, A.Barševskis leg.). Rare species.

79. *Athous vittatus* (Fabricius, 1792)

Daugavpils Distr.: Ilgas, Silene Nature Park, VIII.2005., (1, A.Barševskis leg.), Šedere, Nature park „Raudas meži”, 11.V.2008., (2, K.Aksjuta leg.); **Jēkabpils Distr.:** Tadenava, forest clearing, 16.VI.2006., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 26.VI.2004., (1, A.Barševskis leg.), VI.2005., (1, A.Barševskis leg.), 04.-29.VI.2006., (4, A.Barševskis leg.).

80. *Athous haemorrhoidalis* (Fabricius, 1801)

Daugavpils Distr.: Vecsaliena, Mārkalne river, „Lejaszemnieki”, 21.V.2008., (1, A.Pankjāns leg.); **Jelgava Distr.:** Jelgava, near Riga – Šiauliai road, 15.VI.2008., (1, A.Barševskis, R.Orlovskis leg.).

81. *Harminius undulatus* (De Geer, 1774)

Aizkraukle Distr.: Taurkalne, 11.07.2005., (1, U.Valainis leg.); **Daugavpils Distr.:** Ilgas, Silene Nature Park, VIII.2002., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National park, 12.VII.2005., (1, A.Barševskis leg.); **Valka Distr.:** Mežole, Mežole Nature Protection Area, 15.VII.2005., (1, J.Donis leg.), 26.VI.2006., (1, J.Donis leg.); **Ventspils Distr.:** Moricsala Nature Reserve, 11.VII.2005., (1, U.Valainis leg.). Included in the list of special & indicator species of woodland key habitats.

82. *Denticollis rubens* Piller & Mitterpacher, 1783

Ventspils Distr.: Moricsala Nature Reserve, 04.-14.VI.2003., (3, A.Barševskis leg.), VI.2005., (3, A.Barševskis leg.), 11.VII.2005., (1, U.Valainis leg.). Very rare, protected species in Latvia, with five known localities only.

83. *Hypnoidus riparius* (Fabricius, 1792) –

Jēkabpils Distr.: Dunava, 1.-15.IV.2002., (9, A.Barševskis leg.), 18.-22.VI.2006., (2, K.Barševska leg.), 13.V.2007., (1, K.Barševska, A.Barševskis leg.); **Krāslava Distr.:** Šķeltova,

„Barševski”, V.2002., (1, A.Barševskis leg.); **Madona Distr.:** Meirāni, 05.-10.VI.2006., (2, A.Barševskis leg.); **Preiļi Distr.:** 14.IV.2006., (1, A.Barševskis leg.).

84. *Anostirus castaneus* (Linnaeus, 1758)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 29.VI.2006., 1, A.Barševskis leg.).

85. *Selatosomus impressus* (Fabricius, 1792)

Aizkraukle Distr.: Taurkalne, 18.VII.2005., (1, J.Donis leg.), 02.VIII.2005., (1, J.Donis leg.), 16.VI.2006., (1, J.Donis leg.), 05.VII.2006., (4, J.Donis leg.), 17.VII.2006., (6, J.Donis leg.); **Daugavpils Distr.:** Elerne, Nature Park „Daugavas loki”, V.2002., (1, A.Barševskis leg.), Ilgas, Silene Nature Park, VI.2002., (1, A.Barševskis leg.), 26.VII.-13.VIII.2008., (1, A.Bukejs, U.Valainis, K.Aksjuta leg.), Līksna local municipality, inland dunes between Ļubesti and Križi, 06.VI.2004., (1, A.Barševskis leg.), 02.VI.2007., (1, A.Barševskis leg.), Vecsīķeļi, Nature Park „Daugavas loki”, 23.V.25.VI.2008., (2, R.Cibuļskis, U.Valainis, K.Aksjuta leg.); **Gulbene Distr.:** Gulbītis, near Lake Ušūrs, V.2005., (1, A.Barševskis, J.Laizāns leg.), VI.2006., (2, A.Barševskis leg.), Lejasciems, pine forest burning, VI.2004., (2, A.Barševskis leg.), V.2005., (1, A.Barševskis leg.); **Preiļi Distr.:** Jersika, „Kurpnieki”, 23.-24.VI.2006., (1, A.Barševskis, K.Barševska leg.); **Valka Distr.:** Mežole, Mežole Nature Protection Area, 10.VI.2006., (4, J.Donis leg.), 26.VI.2006., (2, J.Donis leg.), 18.VII.2006., (2, J.Donis leg.).

86. *Selatosomus cruciatus* (Linnaeus, 1758)

Aizkraukle Distr.: Rīteri, 14.06.2007., (1, A.Barševskis leg.); Bauska Distr., Iecava, 2002., Ž.Avdeviča, A.Avota, I.Jansone leg.); **Daugavpils Distr.:** Bebrene, Nature Park „Dvietes palienes”, 22.04.2006., (1, E.Rudāns leg.), 13.V.2006., (3, E.Rudāns leg.), 23.VI.2006., (1, E.Rudāns leg.), Daugavpils Distr.: Līksna local municipality, inland dunes between Ļubesti and Križi,

11.V.2008., (1, A.Barševskis leg.), Elerne, Daugava river valley, Nature Park „Daugavas loki”, V.2002., (3, A.Barševskis leg.), Naujene, Nature Park „Daugavas loki”, 23.05.2008., (1, A.Pankjāns leg.), Pilskalne, Nature Park „Pilskalnes Siguldiņa”, 05.V.2008., (1, A.Barševskis, K.Barševska leg.), Slutišķi, Daugava river & Putānu strauts river valley, Nature Park „Daugavas loki”, 09.V.2008., (1, U.Valainis leg.), Šedere, „Straumēni”, 12.-13.V.2007., (1, M.Janovska (Murd) leg.), 10.-11.V.2008., (1, M.Janovska leg.); **Jelgava Distr.:** Nature park „Vilce”, 03.V.2008., (1, A.Soldāns, U.Valainis, A.Pankjāns, E.Tamanis leg.); **Krāslava Distr.:** Borovka, „Zapoļniki”, 08.IV.2007., (7, M.Janovska (Murd) leg.), 06.V.2007., (1, M.Janovska (Murd) leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National park, VI.2002., (1, U.Valainis, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 09.VII.2004., (1, A.Barševskis leg.), 03.IX.2004., (1, A.Barševskis leg.), 10.VI.2005., (3, A.Barševskis leg.), 30.05.2006., (1, A.Barševskis, E.Rudāns leg.).

87. *Calambus bipustulatus* (Linnaeus, 1767)

Ventspils Distr.: Moricsala Island, Moricsala Nature reserve, 10.VI.2005., (2, A.Barševskis leg.). Very rare species in Latvia, with five known localities only.

88. *Oedostethus quadripustulatus* (Fabricius, 1792)

Daugavpils Distr.: Bebrene, 01.VII.2006., (1, E.Rudāns leg.), 18.07.2006., (1, E.Rudāns leg.); **Gulbene Distr.:** Gulbītis, near Lake Ušūrs, 20.VIII.2004., (1, A.Barševskis, U.Valainis leg.); **Ventspils Distr.:** Ziras vill., Venta river bank, 28.VII.2005., (1, A.Barševskis, U.Valainis, A.Bukejs leg.).

89. *Oedostethus tenuicornis* (Germar, 1824)

Madona Distr.: Ošupe, bank of river Aiviekste, 2,5 km. NE of Lake Lubāns, 06.VII.2008., (2, A.Bukejs, M.Balalaikins leg.).

90. *Sericus brunneus* (Linnaeus, 1758)

Aizkraukle Distr.: Taurkalne, 11.VII.2005., (1, U.Valainis leg.), 03.VII.2006., (2, J.Donis leg.); **Daugavpils Distr.:** Dviete, forests between Dviete & Tadenava, 20.VII.2008., (1, A.Barševskis leg.), Līksna local municipality, inland dunes between Ļubesti and Križi, 17.V.2007., (1, A.Barševskis, K.Barševska leg.), Līksna local municipality, ~2 km N Daugavpils, edge of pine forest, 17.V.2008., (1, A.Bukejs leg.); **Gulbene Distr.:** Lejasciems, pine forest burning, V.2005., (1, A.Barševskis leg.), VI.2005., (7, A.Barševskis, J.Laizāns leg.), Gulbītis, near lake Ušūrs, 08.VI.2005., (2, A.Barševskis leg.);

91. *Ectinus aterrimus* (Linnaeus, 1761)

Aizkraukle Distr.: Taurkalne, 11.VI.2005., (1, A.Barševskis leg.), 03.VII.2006., (2, J.Donis leg.), 16.VI.2006., (5, J.Donis leg.), 17.VII.2006., (1, J.Donis leg.); **Jēkabpils Distr.:** Dunava, 06.-09.VI.2007., (1, K.Barševska leg.); **Ogre Distr.:** Birzgale, env. Robežnieki, 30.05.2006., (3, A.Barševskis, E.Rudāns leg.); **Rīga Distr.:** Olaine, 30.VI.2006., (1, J.Donis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 26.VI.2004., (1, A.Barševskis leg.), 25.V.2005., (3, A.Barševskis leg.), 10.VI.2005., (5, A.Barševskis leg.), 11.VI.2005., (1, U.Valainis leg.), 29.05.2006., (1, A.Barševskis, E.Rudāns leg.), 29.06.2006., (5, A.Barševskis leg.), VII.2007., (1, A.Barševskis leg.), 04.-05.V.2008., (1, A.Pankjāns, U.Valainis, E.Tamanis, A.Soldāns leg.).

92. *Synaptus filiformis* (Fabricius, 1781)

Aizkraukle Distr.: Skrīveri, Daugava river valley near „Klidziņa”, 21.06.2006., (2, A.Barševskis leg.).

93. *Dicronychus equisetoides* Lohse, 1976

Daugavpils Distr.: Līksna local municipality, inland dunes between Ļubesti and Križi, 24.IV.2004., (1, A.Barševskis). Very rare species in Latvia, with five known localities only.

94. *Cardiophorus ruficollis* (Linnaeus, 1758)

Aizkraukle Distr.: Alstiķe, 11.VII.2006., (1, A.Barševskis leg.), **Daugavpils Distr.:** Dviete, forests between Dviete & Tadenava, near Kinkauskū mīre, 25.VI.2008., (2, A.Barševskis leg.), 20.VII.2008., (4, A.Barševskis leg.), 22.VII.2008., (2, A.Barševskis leg.), 23.VII.2008., (1, A.Barševskis leg.), Elerne, Daugava river valley, Nature Park „Daugavas loki”, V.2002., (1, A.Barševskis leg.), Līksna local municipality, inland dunes between Ļubesti and Križi, 02.VII.2007., (1, A.Barševskis), Līksna local municipality, ~2 km N Daugavpils, edge of pine forest, 17.V.2008., (1, A.Bukejs leg.), Līksna local municipality, near Mežciems, 15.VI.2006., (1, A.Barševskis leg.); **Krāslava Distr.:** Borovka, „Zapoļņiki”, 08.IV.2007., (7, M.Janovska (Murd) leg.), 15.IV.2007., (3, M.Janovska (Murd) leg.).

LYCIDAE

95. *Dictyoptera aurora* (Herbst, 1784)

Aizkraukle Distr.: Skrīveri, 21.VI.2006., (1, A.Barševskis leg.); **Daugavpils Distr.:** Ilgas, Silene Nature Park, 05-10.VI.2006., (1, M.Verdenfelde leg.); Naujene, Nature Park „Daugavas Loki”, 21.V.2008., (1, A.Bukejs, M.Nitcis leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni, VI.2002., (1, U.Valainis, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 05.VIII.2002., (1, U.Valainis leg.), 03-14.VI.2003., (1, A.Barševskis leg.), 29.V.2006., (1, E.Rudāns leg.), 29.VI.2006., (3, A.Barševskis leg.), 29.IX.2005., (6, E.Rudāns, A.Barševskis leg.).

96. *Pyropterus nigroruber* (De Geer, 1774)

Madona Distr.: Krustkalni Nature Reserve, 17.VII.2007., (1, A.Pankjāns, A.Barševskis, A.Soldāns, U.Valainis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 09.VII.2004., (1, A.Barševskis leg.), 16-25.VII.2004., (1, A.Barševskis leg.).

97. *Platycis minutus* (Fabricius, 1787)

Daugavpils Distr.: Ilgas, Silene Nature Park, 06.IX.2005., (1, A.Barševskis leg.), 15.XI.2005., (1, U.Valainis, A.Bukejs leg.); Maļinova, 05.VIII.2007., (1, M.Murd leg.); **Jēkabpils Distr.:** Dunava, 29.VIII.2006., (1, A.Barševskis leg.); Jēkabpils, 16-17.VIII.2008., (1, M.Balalaikins leg.); **Limbaži Distr.:** Dunte, 16.VIII.2008., (1, A.Barševskis leg.); **Madona Distr.:** Krustkalni Nature Reserve, 11.VIII.2005., (1, A.Bukejs, A.Barševskis, J.Laizāns leg.); **Preiļi Distr.:** Preiļi, 30.VII.2007., (1, A.Barševskis leg.); **Rīga Distr.:** Krimulda, 57°10'18"N 24°49'85"E, 26.VIII.2006., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni, 28.VII.2001., (1, A.Barševskis leg.), 17.IX.2007., (1, A.Pankjāns, G.Jurševska, K.Aksjuta leg.), 22.VIII.2008., (1, A.Barševskis leg.); **Tukums Distr.:** Tukums, IX.2007., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 17-28.VI.2002., (1, A.Barševskis leg.), VII.2003., (1, U.Valainis leg.), VIII.2003., (2, U.Valainis leg.), 02.IX.2004., (1, A.Barševskis leg.), 14.IX.2005., (1, A.Barševskis leg.), 18.IX.2007., (1, A.Pankjāns, G.Jurševska, K.Aksjuta leg.).

98* *Platycis cosnardi* (Chevrolat, 1829)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, VI.2003., (4, U.Valainis leg.), 29.VI.2006 (1, A.Barševskis leg.). New species for the fauna of Latvia. In Fennoscandia known from Sweden (Silfverberg 2004).

99. *Lygistopterus sanguineus* (Linnaeus, 1758)

Daugavpils Distr.: Dviete env., forest between Dviete and Tadenava, 20.VII.2008., (3, clearing,

A.Barševskis leg.); Ilgas, Silene Nature Park, VII.2005., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 02.VII.2008., (1, A.Barševskis leg.); Tadenava, 01.VI.2002., (1, A.Barševskis leg.); **Jelgava Distr.:** Jelgava, near Rīga-Šiauliai road, 15.VI.2008., (2, R.Orlovskis, A.Barševskis leg.); **Madona Distr.:** Krustkalni Nature Reserve, 56°47'08"N 26°08'34"E, VI.2005., (1, A.Barševskis leg.), 11.VIII.2005., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni, 10.VII.2004., (3, A.Barševskis leg.), 12.VI.2005., (2, A.Barševskis leg.), 29.VII.2006., (4, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 26.VI.2004., (2, A.Barševskis leg.), 09.VII.2004., (2, A.Barševskis leg.); Muižnieki, 57°28'20"N 21°43'19"E, 29.VII.2005., (1, A.Barševskis, A.Bukejs, U.Valainis leg.); Ovīši, 17.VII.2005., (9, A.Barševskis leg.).

LAMPYRIDAE

100. Lampyris noctiluca (Linnaeus, 1758)

Aizkraukle Distr.: Taurkalne, 03.VII.2006., (1, J.Donis leg.); **Daugavpils Distr.:** Ilgas, Silene Nature Park, 01-05.VII.2006., (14, A.Barševskis leg.); **Rīga Distr.:** Salaspils, 30.VI.2006., (2, J.Donis leg.); **Valka Distr.:** Mežole, 26.VI.2006., (1, J.Donis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 29.VI.2006., windows traps, (3, A.Barševskis leg.).

101. Phosphaenus hemipterus (Goeze, 1777)

Rīga Distr.: Bajāri, 28.VI.2008., clearing, (1, A.Barševskis leg.); **Kuldīga Distr.:** Rudbārži, 10.VI.1998., on light, (1, N.Savenkovs leg.). Rare species.

CANTHARIDAE

102. Cantharis quadripunctata (Mueller, 1776)

Talsi Distr.: Slītere, Slītere National Park, 26.06.2002., (2, A.Barševskis leg.). Rare species.

DERMESTIDAE

103. Dermestes murinus Linnaeus, 1758

Aizkraukle Distr.: Ērgberģe, 14.VIII.2006., (9, J.Donis leg.), 04.IX.2006., (10, J.Donis leg.); Taurkalne, 14.VIII.2006., (1, J.Donis leg.); **Daugavpils Distr.:** Dviete, 01-15.IV.2002., edge of marsh, (1, A.Barševskis leg.), 20.VII.2008., (1, A.Barševskis leg.); Ilgas, Silene Nature Park, 30.V.1996., (2, A.Barševskis leg.); **Madona Distr.:** Kalsnava, 14.VIII.2006., (5, J.Donis leg.); Krustkalni Nature Reserve, VI.2005., (1, A.Barševskis, J.Laizāns leg.), 11.VIII.2005., (1, A.Bukejs, A.Barševskis, J.Laizāns leg.); **Rīga Distr.:** Olaine, 14.VIII.2006., (2, J.Donis leg.), 05.IX.2006., (11, J.Donis leg.), 02.X.2006., (7, J.Donis leg.), 19.IX.2006., (2, J.Donis leg.); Salaspils, 05.IX.2006., (10, J.Donis leg.), 18.IX.2006., (4, J.Donis leg.).

104. Dermestes lardarius Linnaeus, 1758

Daugavpils Distr.: Bebrene, 30.IV.2006., (1, E.Rudāns leg.); Šedere, Straumēni 18-20.V.2007., (1, M.Murd leg.), 19-20.IV.2008., (1, M.Janovska leg.); Svente, 01.IV.2008., (1, K.Aksjuta leg.); Svente env., near bridge, 16.IV.2007., (1, A.Soldāns leg.); Ūdrīši, Zapolņiki, 27.IV.2007., (1, M.Murd leg.), 28.IV.2007., (1, M.Murd leg.), 09.VI.2007., (1, M.Murd leg.); **Preiļi Distr.:** Pelēči, 06.VIII.1997., (1, I.Jurkjāne leg.); **Rēzekne Distr.:** Dricāni, Pūpoli, 01.VI.2008., (1, K.Igaune leg.).

105. Attagenus schaeferi (Herbst, 1792)

Daugavpils Distr.: Daugavpils, Mežciems, Parka Str., 19.VII.2007., (1, K.Aksjuta, M.Murd leg.); Ilgas, Silene Nature park, 27-28.VI.2005., (1, A.Barševskis leg.); Mežciems env., clearing near Rīga-Kraslava beltway, 11.V.2008., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 06-

09.VI.2007., (2, K.Barševska leg.), 01-14.VIII.2008., (1, K.Barševska leg.); **Preiļi Distr.:** Jersika, "Kurpnieki", 05.VI.2007., (1, A.Barševskis leg.), 23-24.VI.2008., (5, A.Barševskis leg.), 01.VIII.2008., (1, A.Barševskis leg.).

106. *Attagenus unicolor* (Brahm, 1791)

Daugavpils Distr.: Daugavpils, Daugavpils University, 09.X.2007., in room, (1, D.Veigule leg.).

107. *Attagenus smirnovi* Zhantiev, 1973

Daugavpils Distr.: Bebrene, 13.I.2007., in room, (1, E.Rudāns leg.); Daugavpils, 28.XI.2006., in room, (2, A.Barševskis leg.), Cietokšņa Str. 66, 05.I.2007., in room, (1, A.Barševskis leg.), 06.VI.2007., in room, (7, A.Barševskis leg.), 28.VII.2007., in room, (4, A.Barševskis leg.), Piekraštes Str., 16.IV.2008., in room, (1, A.Bukejs leg.), A.Pumpura Str. 55, 01.V.2007., in room, (1, M.Murd leg.), Vienības Str. 13, 07.V.2007., in room, (2, A.Barševskis, R.Cibuļskis leg.), 28.V.2008., in room, (1, U.Valainis leg.). For the time being this species have not recorded outside premises in Latvia.

108. *Attagenus pellio* (Linnaeus, 1758)

Daugavpils Distr.: Daugavpils, A.Pumpura Str. 55, 26.V.2007., (1, M.Murd leg.), City centre, 09.VI.2005., (4, M.Skutele leg.), Cietokšņa Str. 66, 06.VI.2007., (1, A.Barševskis leg.), Cietokšnis, 06.VI.2005., (1, M.Skutele leg.), Vienības Str. 42, 04.IX.2008., (1, K.Aksjuta leg.); Ilgas, Silene Nature Park, 29.IV-10.VII.2000., (1, L.Bogdane leg.); Šedere, Straumēni house, 18-20.V.2007., (1, M.Murd leg.), 22.VII.2007., (2, M.Murd leg.); Šedere, Ciemati, 08.IV.2007., (1, K.Aksjuta leg.); **Krāslava Distr.:** Šķeltova, "Barševski", 25.V.2007., (8, A.Barševskis, K.Barševska leg.); **Preiļi Distr.:** Rušona, Aglona train station, 16.VII.2007., (1, J.Staskeviča leg.); **Rēzekne Distr.:** Dricāni, Pūpoli, 01.V.2008., (1, K.Igaune leg.).

109. *Trogoderma angustum* (Solier, 1849)

Daugavpils Distr.: Daugavpils, Vienības Str., in room, 13.07.2007., (2, A.Barševskis, R.Cibuļskis leg.), 01.VIII.2007., (23, M.Murd leg.). For the time being this species have not recorded outside premises in Latvia.

110. *Trogoderma glabrum* (Herbst, 1783)

Preiļi Distr.: Jersika, "Kurpnieki", 22-25.VI.2007., (1, A.Barševskis leg.).

111. *Megatoma undata* (Linnaeus, 1758)

Daugavpils Distr.: Daugavpils, Vienības 13, 24.V.2007., in room, (1, A.Barševskis leg.); Šedere, Straumēni, 19.IV-02.V.2008., (2, M.Janovska leg.); **Preiļi Distr.:** Jersika, "Kurpnieki", 22-25.VI.2007., (1, A.Barševskis leg.); Sutri, "Znotiņi", 26.V.2007., (1, A.Soldāns leg.); **Talsi Distr.:** Slītere National Park, 11.VI.2005., (1, A.Barševskis leg.).

112. *Ctesias serra* Fabricius, 1792

Ventspils distr.: Moricsala Island, Moricsala Nature Reserve, 17-28.VI.2002., (1, A.Barševskis leg.), 25.VI.2004., (1, A.Barševskis, U.Valainis leg.), 11.VII.2005., (1, U.Valainis leg.).

113. *Anthrenus scrophulariae* (Linnaeus, 1758)

Daugavpils Distr.: Daugavpils, Cietokšņa Str. 66, 13.V.2007., (5, A.Barševskis, K.Barševska leg.), 24.V.2008., (9, A.Barševskis leg.), Vienības Str. 13, 23.III.2007., in room, (1, A.Barševskis leg.), 09.I.2008., in room, (1, U.Suško leg.); Ilgas, Silene Nature Park, 28.V.1998., on spiraea, (1, A.Barševskis leg.); Šedere, Straumēni house, 22.VII.2007., (6, M.Murd leg.), 10-11.V.2008., (6, M.Janovska leg.); Šedere, Ciemati, 09.IV.2007., (1, K.Aksjuta leg.); **Jēkabpils Distr.:** Dunava, 13.V.2007., (1, K.Barševska, A.Barševskis leg.), 06-09.VI.2007., (1, K.Barševska leg.), 02.VII.2008., (1, A.Barševskis leg.); **Krāslava Distr.:** Šķeltova, "Barševski", 25.V.2007., (5, A.Barševskis, K.Barševska leg.); Ūdrīši, Zapolniki, 27.IV.2007.,

(1, M.Murd leg.); **Preiļi Distr.:** Jersika, "Kurpnieki", 13.VI.2008., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni, 10.VII.2004., (1, A.Barševskis leg.).

114. *Anthrenus museorum* (Linnaeus, 1761)

Cēsis Distr.: Cēsis, park, 28.VII.2007., (1, A.Barševskis leg.); **Daugavpils Distr.:** Daugavpils, Cietokšņa Str. 66, 06.VI.2007., (1, A.Barševskis leg.), Vienības place, 21.VII.2007., (1, M.Murd leg.); Dviete, 20.VII.2008., (1, A.Barševskis leg.); Ilgas, Silene Nature Park, 29.IV-10.VII.2000., (1, L.Bogdāne leg.), VII.2005., (2, A.Barševskis leg.), 27.VI-03.VII.2007., (1, A.Čukļina, J.Daņilova leg.), 29.VI-04.VII.2007., (2, A.Barševskis leg.); Šedere, Straumēni, 09-10.VI.2007., (9, M.Murd leg.), 22.VII.2007., (7, M.Murd leg.); Šedere, Šarlote, 29.VI.2008., (5, K.Aksjuta leg.); **Gulbene Distr.:** Lejasciems, VI.2004., (1, A.Barševskis leg.), VIII.2004., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 15.VI.2002., (3, A.Barševskis leg.), 20-31.VII.2006., (1, A.Barševskis leg.), 10-19.VI.2007., (5, K.Barševska leg.), 16-21.VI.2007., (2, K.Barševska leg.), 11-17.VII.2007., (1, A.Barševskis leg.); Zasa, 10.VIII.2008., (3, M.Balalaikins leg.); **Krāslava Distr.:** Krāslava, 21.VII.2008., (1, dry meadow, A.Barševskis leg.); Šķeltova, Barševski house, 17.VII.2008., (1, A.Barševskis leg.); **Madona Distr.:** Jumurda, 19.VII.2008., (1, A.Barševskis leg.); **Preiļi Distr.:** Jersika, Kurpnieki house, 11.VIII.2005., (3, A.Barševskis leg.), 22-25.VI.2007., (1, A.Barševskis leg.), 10.VII.2007., (9, A.Barševskis, K.Barševska leg.), 14.VII.2007., (3, A.Barševskis leg.), 21.VII.2007., (7, A.Barševskis leg.), 24.VII.2007., (2, A.Barševskis leg.), 28.VII.2007., (1, A.Barševskis leg.), 04-05.VIII.2007., (1, A.Barševskis leg.), 02.VI.2008., (1, A.Barševskis leg.), 23-24.VI.2008., (3, A.Barševskis leg.), 01.VIII.2008., (2, A.Barševskis leg.); Pelēči, 19.VII.1997., (1, I.Jurkjāne leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni,

10.VII.2004., (2, A.Barševskis leg.); **Tukums Distr.:** Lielašciems, Ķemeru National Park, 16.VII.2008., (2, V.Aleksejev & A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 57°11'39"N 22°08'06"E, 17-28.VI.2002., (2, A.Barševskis leg.), 11.VII.2005., (1, A.Barševskis leg.).

115. *Anthrenus fuscus* Olivier, 1789

Daugavpils Distr.: Daugavpils, centre, 09.VI.2005., (1, M.Skutele leg.), 01.VI.2007., (1, A.Barševskis leg.), Vienības Str. 13, 04.III.2008., in room, (1, A.Bukejs leg.); Ilgas, Silene Nature Park, 55°41'29"N 26°47'00"E, VII.2005., clearing, (1, A.Barševskis leg.).

116. *Anthrenus polonicus* Mroczkowski, 1951

Daugavpils Distr.: Ilgas, Silene Nature Park, 55°41'29"N 26°47'00"E, VII.2005., (2, A.Barševskis leg.), 29.VI-04.VII.2007., clearing, (2, A.Barševskis leg.).

LYMEXYLIDAE

117. *Hylecoetus dermestoides* (Linnaeus, 1761)

Daugavpils Distr.: Ilgas, Silene Nature Park, 09.V.1996., (1, A.Barševskis leg.), 28.V.1999., (1, A.Barševskis leg.), 29-30.IV.2000., (1, A.Barševskis leg.), 01-05.V.2000., (1, A.Barševskis leg.), 18.V.2005., (1, A.Barševskis leg.), VI.2005., (1, A.Barševskis leg.); Mežciems env., clearing near Rīga-Krāslava beltway, 11.V.2008., (2, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 07.V.2005., (1, A.Barševskis leg.), 13.V.2007., (2, K.Barševska, A.Barševskis leg.), 05.V.2008., (1, A.Barševskis leg.); Rubene, 28.IV.1999., (1, I.Leiskina leg.); Tadenava, 14.V.2005., (2, A.Barševskis leg.); **Krāslava Distr.:** Šķeltova, 01.V.1997., (8, A.Barševskis leg.); **Preiļi Distr.:** Jersika, "Kurpnieki", 22.V.2005., (1, A.Barševskis leg.), 27.IV.2007., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere, Vaide, 17-28.V.1999., (1,

N.Savenkovs leg.); Slītere National Park, Zilie Kalni, 11.VI.2005., (3, A.Barševskis leg.), 12.VII.2005., (3, R.Cibuļskis, A.Barševskis, A.Bukejs leg.), V.2006., (1, A.Barševskis leg.); **Valka Distr.:** Mežole, 10.VI.2006., (5, J.Donis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, V.2003., (1, U.Valainis leg.), 14.V.2004., (1, A.Barševskis, U.Valainis leg.), 25.VI.2004., (1, A.Barševskis, U.Valainis leg.), 30.V.2006., (1, A.Barševskis, E.Rudāns leg.), 29.VI.2006., (15, A.Barševskis leg.).

118. *Hylecoetus flabellicornis* (Schneider, 1791)

Talsis Distr.: Slītere National Park, Zilie Kalni, V.2006., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 29.IX.2006., (1, E.Rudāns, A.Barševskis leg.).

119. *Lymexylon navale* (Linnaeus, 1758)

Talsi Distr.: Ances purvi un meži Nature Protection Area, 27.VI.2006., (1, U.Valainis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 09.VII.2004 (1, U.Valainis, A.Barševskis leg.), 30.VII.2005., (1, U.Valainis leg.), 18.VII.2007., (2, A.Barševskis, A.Pankjāns, A.Soldāns, U.Valainis leg.). Included in the list of special & indicator species of woodland key habitats.

TROGOSSITIDAE

120. *Peltis grossa* (Linnaeus, 1758)

Aizkraukle Distr.: Aizkraukles purvs bog Nature Protected Area, ~6 km N Aizkraukle, 04.V.1995., (5, A.Barševskis leg.); **Daugavpils Distr.:** Daugavsargu loks, Nature Park "Daugavas loki", 17.V.2007., (1, A.Pankjāns leg.); Dviete, 56°12'503"N 26°26'162"E, 22.VI.2008., forest, (1, A.Barševskis leg.), 25.VI.2008., (1, A.Barševskis leg.); Ilgas, Silene Nature Park, 30.V.1996., (2, A.Barševskis leg.), 31.V.1996., (2, A.Barševskis leg.), 14-20.VI.2002., (8, A.Barševskis leg.), 06-

15.VI.2004., (2, A.Barševskis leg.), 08.VII.2005., (1, A.Barševskis leg.), 05.VII.2006., (1, A.Barševskis leg.), 11.VI.2007., (1, A.Barševskis leg.), 28-29.VI.2007., (1, A.Barševskis leg.), 09.VI.2008., (2, A.Barševskis, A.Soldāns leg.); Šedere, Šarlote, 09.XI.2008., (1, K.Aksjuta leg.); **Gulbene Distr.:** Lejasciems, VI.2004., (2, A.Barševskis leg.), VI.2005., (1, A.Barševskis, J.Laizāns leg.); **Jēkabpils Distr.:** Dunava, 07.I.2007., (1, A.Barševskis leg.), 08.IV.2007., (2, A.Barševskis leg.); Rubene, 25.III.2000., (1, I.Leiskina leg.), 16.IV.2000., (1, I.Leiskina leg.); Tadenava, 01.VI.2002., (1, A.Barševskis leg.); **Madona Distr.:** Krustkalni Nature Reserve, 07.VII.2006., (1, A.Pankjāns, A.Barševskis, E.Rudāns leg.); **Talsis Distr.:** Slītere National Park, Zilie Kalni, 17.VII.2007., (1, A.Pankjāns leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 25.VI.2004., (1, A.Barševskis, U.Valainis leg.), 10.VI.2005., (1, A.Barševskis leg.), 23.VIII.2008., (1, A.Barševskis leg.). Included in the list of special & indicator species of woodland key habitats.

121. *Ostoma ferruginea* (Linnaeus, 1758)

Aizkraukle Distr.: Aizkraukles purvs bog Nature Protected Area, ~6 km N Aizkraukle, 04.V.1995., (4, A.Barševskis leg.); **Daugavpils Distr.:** Elerne, Muravki, 13.IX.2007., (1, A.Barševskis leg.); Ilgas, Silene Nature Park, VII.2005., clearing, (1, A.Barševskis leg.); Oborūni, 19.V.2001., (1, G.Lociks leg.); Šedere, Straumēni, 01-03.V.2008., (1, M.Janovska leg.), 18.V.2008., (1, M.Janovska leg.); **Gulbene Distr.:** Lejasciems, 11.VII.2004., (1, A.Barševskis leg.), V.2005., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 08.IV.2007., (1, A.Barševskis leg.); Rubene, 23.IV.2000., (1, I.Leiskina leg.); **Preiļi Distr.:** Pelēči, 24.VII.1997., (1, I.Jurkjāne leg.); **Rēzekne Distr.:** Andzeļi, Lake Ežezers, Lielā Lāču Island, 24.VII.2008., (6, R.Cibuļskis, U.Valainis leg.); **Talsi Distr.:** Ance, Ances purvi un meži Nature Protected Area,

27.VI.2006., (1, A.Barševskis leg.); Slītere National Park, Zilie Kalni, 30.V.2006., (1, A.Barševskis leg.); **Tukums Distr.:** Kesteriems, 10.VIII.2004., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 14.V.2004., (1, A.Barševskis leg.), 26.VI.2004., (2, A.Barševskis leg.), 09.VII.2004., (1, A.Barševskis leg.), 02.VI.2006., (1, U.Valainis leg.), 04-05.V.2008., (5, A.Pankjāns, U.Valainis, E.Tamanis, A.Soldāns leg.).

122. *Thymalus limbatus* (Fabricius, 1787)

Talsi Distr.: Ance, Ances purvi un meži Nature Protection Area, 27.VI.2006., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VI.2002., (1, A.Barševskis leg.), VII.2003., (1, U.Valainis leg.), 09.VII.2004., (1, A.Barševskis leg.), 10.VII.2004., (2, A.Barševskis leg.). Included in the list of special & indicator species of woodland key habitats. Rare species.

123. *Grynocharis oblonga* (Linnaeus, 1758)

Daugavpils Distr.: Ilgas, Silene Nature Park, 10.VI.1999., (1, A.Barševskis leg.), 25.VI.1999., (1, A.Barševskis leg.), 19-22.VI.2006., (1, A.Barševskis leg.), 09.VI.2008., (1, A.Barševskis leg.); **Preiļi Distr.:** Jersika, "Kurpnieki", 26.VI.2005., (1, A.Barševskis leg.); Rīga Distr.: Vangaži, 28.VII.1953., (1, M.Stiprais leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 01.V.2003., (1, U.Valainis leg.), 14.V.2004., (1, A.Barševskis leg.). Included in the list of special & indicator species of woodland key habitats.

CLERIDAE

124. *Tillus elongatus* (Linnaeus, 1758)

Daugavpils Distr.: Daugavpils, Grīva, 16.VI.2005., (1, M.Skutele leg.); **Talsi Distr.:** Slītere, Slītere National Park, 09.IX.1998., (1, N.Savenkovs leg.);

Zilie Kalni, Slītere National Park, 57°38'05"N 22°19'03"E, 12.VII.2005., (1, R.Cibuļskis, A.Barševskis, A.Bukejs leg.).

125. *Thanasimus femoralis* (Zetterstedt, 1828)

Aizkraukle Distr.: Taurkalne, 03.VII.2006., (1, J.Donis leg.); **Daugavpils Distr.:** Bebrene, 11.XI.2005., (1, E.Rudāns leg.), 13.XI.2005., (1, E.Rudāns leg.), 19.XI.2005., (3, E.Rudāns leg.), 15-17.XII.2005., (1, E.Rudāns leg.), 25-26.XII.2005., (1, E.Rudāns leg.), 25.II.2006., (1, E.Rudāns leg.); Dviete, 20.VII.2008., clearing, (1, A.Barševskis leg.); Elerne, 16.VI.2002., (1, A.Barševskis leg.); Mežciems env., near Rīga-Krāslava beltway, 11.V.2008., clearing, (1, A.Barševskis leg.); **Gulbene Distr.:** Lejasciems, 03.IX.2004., (2, U.Valainis, A.Barševskis leg.), 02.V.2005., (3, A.Barševskis leg.); **Jēkabpils Distr.:** Tadenava, 11.VII.2002., (1, A.Barševskis leg.); **Valka Distr.:** Launkalne local municipality, Mežole, 30.VIII.2005., (1, J.Donis leg.).

126. *Korynetes caeruleus* (De Geer, 1775)

Daugavpils Distr.: Daugavpils, Grīva, 16.VI.2005., (2, M.Skutele leg.), Ruģeļi, VII.2006., (1, V.Kokina leg.); Šedere, Straumēni, 01-03.V.2008., (1, M.Janovska leg.), 10-11.V.2008., (1, M.Janovska leg.); Šedere, Šarlote, 05.IV.2008., (1, K.Aksjuta leg.), 18.V.2008., (1, K.Aksjuta leg.), 01.VI.2008., (1, K.Aksjuta leg.); **Jēkabpils Distr.:** Dunava, 18.VI.2001., (3, A.Barševskis leg.), VI.2002., (4, A.Barševskis leg.), 15.VI.2002., (4, A.Barševskis leg.), 02-05.VI.2007., (2, K.Barševska leg.), 06-09.VI.2008., (1, K.Barševska leg.), 23-30.VI.2007., (2, K.Barševska leg.); Rubene, 24.VI.1997., (1, I.Leiskina leg.), 03.VIII.2000., (1, I.Leiskina leg.); **Preiļi Distr.:** Aglona train station, 9 km NW Aglona, 02.VII.2008., (1, J.Staskeviča leg.); Jersika, 30.IV.2005., (1, I.Gurčonoks leg.), 27.VII.2005., (1, I.Gurčonoks leg.); Sutri, 03.VI.2007., (1, A.Soldāns leg.).

127. *Necrobia violacea* (Linnaeus, 1758)

Daugavpils Distr.: Ilgas, Silene Nature Park, 30.V.1996., (3, A.Barševskis leg.); **Jēkabpils Distr.:** Rubene, 07.III.1997., (1, leg. I.Leiskina), 25.IV.1999., (1, I.Leiskina leg.); **Liepāja Distr.:** Pape, 21.VI.1996., (4, N.Savenkovs leg.); **Rīga Distr.:** Kangarnieki, Mazie Kangari Nature Protected Area, 29.IV.2006., (1, M.Kalniņš leg.).

MELYRIDAE**128. *Aplocnemus impressus* (Marsham, 1802)**

Daugavpils Distr.: Ilgas, Silene Nature Park, 13.VI.1996., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Tadenava, 14.V.2005., (1, A.Barševskis leg.); **Rīga Distr.:** Olaine, 30.VI.2006., (1, J.Donis leg.).

Very rare, recently discovered species in Latvia; known only 3 localities.

129. *Dasytes cyaneus* (Fabricius, 1775)

Talsi Distr.: Mazirbe, Slītere National Park, 17.VII.2005., (1, A.Barševskis leg.); Slītere, Slītere National Park, VI.2002., (2, A.Barševskis leg.); Slītere National Park, Zilie Kalni, 06.VI.2002., (2, A.Barševskis leg.), 11.VI.2005., (1, A.Barševskis leg.).

130. *Charopus graminicola* (Dejean, 1833)

Jūrmala: Kūdra, 22.VI.1998., (1, A.Titovs leg.); **Rīga Distr.:** Carnikava, 13.VI.1990., (1, N.Savenkovs).

Very rare species with few known localities.

131. *Ebaeus pedicularius pedicularius* (Linnaeus, 1758)

Jēkabpils Distr.: Dunava, 02.VII.2008., (1, A.Barševskis leg.); **Krāslava Distr.:** Šķeltova, 28.VI.1996., (1, A.Barševskis leg.), 23.VII.1996., (1, A.Barševskis leg.). After A. Major (2007) this species is distributed in Europe (Austria, Belgium, Bulgaria, Belarus, Czech Republic, Denmar,

Finland, France, Greece, Hungary, Italy, the Hetherlands, Poland, Romania, European part of Russia, Slovakia, Spain, Sweden, Switzerland, Serbia and Montenegro) and Central Asia (Turkmenistan).

132. *Clanoptilus marginellus* (Olivier, 1790)

Daugavpils Distr.: Ilgas, Silene Nature Park, 13.VI.1995., (3, A.Barševskis leg.), 16.VI.1995., (4, A.Barševskis leg.), 06-15.VI.2004., (1, A.Barševskis leg.); Svente env., 21.VII.2003., (1, N.Strode leg.); Lake Sasaļu, 4 km NW Svente, 20.VII.2003., (1, N.Strode leg.); **Jēkabpils Distr.:** Dunava, 18.VII.1995., (2, A.Barševskis leg.), 01.VI.2002., (1, A.Barševskis leg.), 15.VI.2002., (6, A.Barševskis leg.), 18-22.VI.2006., (1, K.Barševska leg.), 25-29.VI.2006., (1, K.Barševska leg.); Rubene, 10.VI.1999., (1, I.Leiskina leg.), 04.VI.2001., (1, I.Leiskina leg.).

133. *Anthocomus rufus* (Herbst, 1784)

Daugavpils Distr.: Bebrene, 02.IX.2006., (1, E.Rudāns leg.), 23.IX.2006., (1, E.Rudāns leg.); Ilgas, Silene Nature Park, 02.IX.2002., (1, A.Barševskis leg.); Svente S env., Jaunsventes Park, 19.VIII.2003., (1, N.Strode leg.), 21.IX.2003., (1, N.Strode leg.); **Jēkabpils Distr.:** Dunava, 14.IX.1997., (1, I.Leiskina leg.), 14-18.VIII.2006., (2, A.Barševskis, K.Barševska leg.), 29.VIII.2006., (7, A.Barševskis leg.), 29-31.VIII.2006., (75, A.Barševskis leg.), VIII.2008., (1, K.Barševskis leg.); Rubene, 20.VIII.2001., (1, I.Leiskina leg.); **Liepāja Distr.:** Pape, 22-24.VIII.1995., (2, N.Savenkovs leg.), Pāvilosta, Baltic sea dunes, 13.VIII.2008., (1, A.Barševskis leg.); **Limbaži Distr.:** Salacgrīva, Veczemju rock, 17.VIII.2008., (1, A.Barševskis leg.); **Preiļi Distr.:** Jersika, "Kurpnieki", 01.X.2006., (1, A.Barševskis leg.); Pelēči, 23.VIII.1997., (1, I.Jurkjāne leg.); **Rīga Distr.:** Augšciems, 9 kn SW Ropaži, 15.VIII.1997., (1, A.Titovs leg.); Krimulda, 57°10'18"N 24°49'85"E, 26.VIII.2006., (2, A.Barševskis leg.);

Valmiera Distr.: Mazsalaca env., 57°34'58"N 25°20'15"E, 21.VIII.2006., (2, A.Barševskis leg.); Sprosti, 57°34'58"N 25°20'15"E, 21.VIII.2006., (1, A.Pankjāns leg.).

134. *Anthocomus fasciatus* (Linnaeus, 1758)

Daugavpils Distr.: Ilgas, Silene Nature Park, 13.VI.1996., (1, A.Barševskis leg.), 26.VI.1997., (1, A.Barševskis leg.), 04.VII.2005., (1, A.Barševskis leg.); Svente env., 29.VI.2003., (1, N.Strode leg.); **Jēkabpils Distr.:** Dunava, 15.VI.2002., (13, A.Barševskis leg.), VI.2002., (10, A.Barševskis leg.), 02-05.VI.2007., (1, K.Barševska leg.); Rubene, 14.VI.1997., (1, I.Leiskina leg.); **Preiļi Distr.:** Aglona local municipality, Šnepsti, Šnepsti castle mound, 14.VIII.2008., (1, A.Barševskis leg.), Aglona train station, 9 km NW Aglona, 02.VII.2008., (1, leg. J.Staskeviča); **Talsi Distr.:** Mazirbe, 05.VI.2002., (1, A.Barševskis leg.); Slītere National Park, Zilie Kalni, 10.VII.2004., (4, R.Cibuļskis), 10.VII.2004., (4, A.Barševskis leg.); **Tukums Distr.:** Jaunmoku castle, 4 km NW Tukums, 16.VII.2008., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 09.VII.2004., (1, A.Barševskis leg.).

135. *Anthocomus equestris* (Fabricius, 1781)

Daugavpils Distr.: Daugavpils, Cietokšņa Str. 66, 01.VI.2008., (1, A.Barševskis leg.), A.Pumpura Str. 55, 22.VI.2007., (1, M.Murd leg.); Ilgas, Silene Nature Park, 09.V.1996., (1, A.Barševskis leg.), 04.VII.2001., (1, G.Lociks leg.); **Jēkabpils Distr.:** Dunava, 10-18.VI.2006., (1, K.Barševska leg.); **Krāslava Distr.:** Šķeltova, "Barševski", (1, A.Barševskis leg.); **Preiļi Distr.:** Līvāni, 04.V.2006., (1, A.Barševskis leg.).

136. *Paratinus femoralis* (Erichson, 1840)

Liepāja Distr.: Pape, 15.VII.1991., (1, N.Savenkovs leg.), 23-25.VI.1994., (1,

N.Savenkovs leg.). Very rare species with few known localities.

NITIDULIDAE

137. *Cyllodes ater* (Herbst, 1792)

Daugavpils Distr.: Ilgas, Silene Nature Park, VII 2005., (1, A.Barševskis leg.), 09.VI.2008., (1, A.Barševskis leg.), Pilskalne, Nature Park „Pilskalnes Siguldiņa”, 05.V.2008., (1, A.Barševskis, K.Barševska leg.); **Krāslava Distr.:** Skaista, Grundāni, Nature Park „Dridža ezers”, 15.VII.2008., (1, R.Cibuļskis leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National park, 05.VII.2006., (1, A.Barševskis leg.), 17.VII.2007., (1, A.Pankjāns, A.Barševskis, A.Soldāns leg.); **Ventspils Distr.:** Moricsala, Moricsala Nature Reserve, 26.6.2004., (3, A.Barševskis leg.), 09.VII.2004., (1, A.Barševskis leg.), 03.IX.2004., (1, A.Barševskis leg.), V.2005., (1, U.Valainis leg.), 25.05.2005., (1, A.Barševskis leg.), 15.VII.2008., (2, V.Aleksejev leg.).

138. *Cryptarcha strigata* (Fabricius, 1787)

Ogre Distr.: Birzgale, env. Robežnieki, 30.05.2006., (1, A.Barševskis leg.). Rare species.

139. *Ipidia binotata* (Reitter, 1875)

Gulbene Distr.: Lejasciems, pine forest burning, VI.2004., (1, A.Barševskis leg.), 05.VIII.2004., (1, A.Barševskis leg.), VI.2005., (1, J.Laizāns, A.Barševskis leg.); **Kuldīga Distr.:** Rudbārži, 09.VIII.2004., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VI.2003., (2, U.Valainis leg.), 15.07.2008., (4, V.Aleksejev, A.Pavlova leg.).

SILVANIDAE

140. *Uleiota planata* (Linnaeus, 1761)

Daugavpils Distr.: Daugavpils, Viduspoguļanka, 11.VI.2006., (1, A.Pankjāns leg.), Jaunā Forštate,

30.III.2008., pine forest, (2, U.Valainis leg.); Mežciems env., near Rīga-Krāslava beltway, 18.III.2007., (8, A.Barševskis, K.Barševska leg.); **Gulbene Distr.:** Lejasciems, VI.2005., (1, window trap, A.Barševskis, J.Laizāns leg.); **Talsi Distr.:** Slītere National Park, VII.2004., (1, A.Barševskis leg.).

141. *Dendrophagus crenatus* (Paykull, 1799)

Daugavpils Distr.: Mežciems env., near Daugavpils beltway, 18.III.2007., (10, A.Barševskis, K.Barševskis leg.), 08.III.2008., (6, K.Barševska, A.Barševskis leg.), 29.V.2008., (1, M.Janovska leg.); **Gulbene Distr.:** Lejasciems, 03.XI.2004., (18, A.Barševskis, U.Valainis leg.), 02.V.2005., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 01-08.IV.2007., (1, K.Barševska leg.), 08.IV.2007., (2, A.Barševskis leg.); Dviete env., 26.V.2008., (6, A.Barševskis leg.); **Krāslava Distr.:** Ūdrīši, Zapolņiki, Nature Park "Daugavas loki", 06-07.XI.2004., (2, M.Murd leg.). Included in the list of special & indicator species of woodland key habitats.

CUCUJIDAE

142. *Cucujus cinnaberinus* (Scopoli, 1763)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 30.V.2006., (2, A.Barševskis, E.Rudāns leg.). Very rare, protected species in Latvia, with five known localities only.

CRYPTOPHAGIDAE

143. *Antherophagus nigricornis* (Fabricius, 1787)

Aizkraukle Distr.: Taurkalne, 01.VIII.2006., (2, J.Donis leg.), 14.VIII.2006., (4, J.Donis leg.); **Daugavpils Distr.:** Ilgas, Silene Nature Park, forest clearing near birch, VII 2005., (1, A.Barševskis leg.); **Gulbene Distr.:** Lejasciems, pine forest burning, 05.VIII.2004., (1, A.Barševskis leg.);

Ogre Distr.: Kēgums, left bank of Daugava river, 13.VII.2006., (1, A.Barševskis, K.Barševska leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National park, 17.VII.2007., (1, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis leg.), 17.IX.2007., (1, A.Pankjāns, G.Jurševska, K.Aksjuta leg.); **Valka Distr.:** Mežole, Mežole Nature Protection area, 15.VIII.2008., (1, J.Donis leg.).

EROTYLIDAE

144. *Dacne bipustulata* (Thunberg, 1781)

Gulbene Distr.: Lejasciems, pine forest burning, V.2005., (1, A.Barševskis leg.).

145. *Tritoma bipustulata* Fabricius, 1775

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 14.V.2004., (1, A.Barševskis leg.), 29.VI.2006., (1, window trap, A.Barševskis leg.).

146. *Tritoma subbasalis* (Reitter, 1896)

Daugavpils Distr.: Ilgas, Silene Nature Park, VII 2005., (1, A.Barševskis leg.); **Preiļi Distr.:** Kastire, 30.VII.2007., (10, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, IX.2006., (1, A.Barševskis, U.Valainis, A.Pankjāns, J.Staskeviča leg.).

147. *Triplax aenea* (Schaller, 1783)

Daugavpils Distr.: Ilgas, Silene Nature Park, 55°41'34"N 26°47'06"E, VII.2005., (2, A.Barševskis leg.); **Rīga Distr.:** Olaine, 14.VIII.2006., (1, J.Donis leg.); **Talsi Distr.:** Slītere National Park, 17.VII.2007., (2, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VI.2003., (1, U.Valainis leg.), X.2003., (1, U.Valainis leg.), 14.V.2004., (1, A.Barševskis, U.Valainis leg.), 25.VI.2004., (2, A.Barševskis, U.Valainis leg.), 09.VII.2004., (1, A.Barševskis, U.Valainis leg.), 03-04.VIII.2004., (2,

A.Barševskis leg.), 15.VII.2008., (1, V.Aleksejev leg.).

148. *Triplax russica* (Linnaeus, 1758)

Aizkraukle Distr.: Valle parish, Taurkalne, 02.VIII.2005., (1, J.Donis leg.); **Daugavpils Distr.:** Dviete, 23.VII.2008., clearing, (1, A.Barševskis leg.); Ilgas, Silene Nature Park, VII 2005., (2, A.Barševskis leg.), Ļubesti env., Rīga beltway, near Mežciems, 25.VII.2007., (4, A.Barševskis leg.); Naujene, Nature Park “Daugavas loki”, 55°54'15"N 26°48'54"E, 21.V.2008., (2, A.Bukejs, M.Nitcis leg.); Slutiški, Daugavas Loki Nature Park, 04.V.2008., (2, A.Barševskis, K.Barševska leg.); **Gulbene Distr.:** Lejasciems, V-VI.2003., (1, I.Kampāne, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, VI.2002., (2, A.Barševskis leg.); **Jelgava Distr.:** Jelgava, 28.VIII.2002., (1, M.Bičevskis leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni (hills), 17.IX.2007., (1, A.Pankjāns, G.Jurševska, K.Aksjuta leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VI.2003., (1, U.Valainis leg.), 09.VII.2004 (2, A.Barševskis, U.Valainis leg.).

149. *Triplax scutellaris* Charpentier, 1825

Gulbene Distr.: Lejasciems, VI.2004., burning, (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 56°12'93"N 26°12'17"E, 14-18.VIII.2006., (1, A.Barševskis, K.Barševska leg.).

150. *Triplax rufipes* (Fabricius, 1781)

Daugavpils Distr.: Ilgas, Silene Nature Park, 10.-12.IX.2002., (13, A.Barševskis leg.), 28.-29.VI.2007., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 10-19.VI.2007., (1, K.Barševska leg.); **Rēzekne Distr.:** Andzeļi, Lake Ežezers, Lielā lāču Island, 24.VII.2008., (1, R.Cibuļskis, U.Valainis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VII.2003., (1, U.Valainis leg.), 03-04.VIII.2004., (3, A.Barševskis leg.), 18.VII.2007.,

(1, A.Pankjāns, A.Soldāns, A.Barševskis, U.Valainis leg.).

ENDOMYCHIDAE

151. *Endomychus coccineus* (Linnaeus, 1758)

Aizkraukle Distr.: Ērgberģe, 14.VIII.2006., (2, J.Donis leg.); **Daugavpils Distr.:** Bebrene, 23.IX.2006., (1, E.Rudāns leg.), 28.X.2006., (5, E.Rudāns leg.); Dviete env., 56°12'503"N 26°26'162"E, 25.VI.2008., forest, (1, A.Barševskis leg.); Ilgas, Silene Nature Park, VI.2002., (1, A.Barševskis leg.), VII.2005., (2, A.Barševskis leg.); Stropi, 09.X.2005., (2, A.Bukejs leg.); **Gulbene Distr.:** Lejasciems, VII.2005., (1, A.Barševskis, A.Bukejs, R.Cibuļskis leg.); **Jēkabpils Distr.:** Dunava, 10-18.VI.2006., (1, K.Barševska leg.); **Preiļi Distr.:** Jersika, “Kurpnieki”, 08.VIII.2007., (2, A.Barševskis leg.); **Rīga Distr.:** Olaine, 19.IX.2006., (1, J.Donis leg.), Salaspils, 14.VIII.2006., (1, J.Donis leg.); **Talsi Distr.:** Sabile, “Abavas Rumba”, 56°55'27"N 22°31'37"E, 19.VII.2007., (1, A.Pankjāns, A.Soldāns, U.Valainis, A.Barševskis); Slītere National Park, Zilie Kalni, 29.VII.2005., (1, U.Valainis leg.), 17.VII.2007., (1, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis), 17.IX.2007., (4, A.Pankjāns, G.Jurševska, K.Aksjuta leg.), 04.X.2007., (1, A.Pankjāns leg.).

152. *Mycetina cruciata* (Schaller, 1783)

Jēkabpils Distr.: Dunava, Dviete forest, 18.V.2008., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, Zilie kalni, 06.VIII.2002., (1, A.Barševskis leg.). Rare species.

COCCINELLIDAE

153. *Scymnus frontalis* (Fabricius, 1787)

Aizkraukle Distr.: Rīteri, 20.VI.2006., (1, A.Barševskis leg.); **Daugavpils Distr.:** Bebrene,

28.X.2006., (1, E.Rudāns leg.); Slutiški, Nature Park “Daugavas loki”, bank of the Putānu River, 55°55'01"N 26°53'19"E, 29.IV.2008., (1, A.Pankjans, U.Valainis leg.).

154. *Scymnus suturalis* Thunberg, 1795

Rīga Distr.: Kalngale, 23.II.2007., (2, E.Rudāns leg.).

155. *Hyperaspis campestri* (Herbst, 1783)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 14.V.2004., (3, A.Barševskis leg.), 09.VII.2004., (1, A.Barševskis leg.).

156. *Chilocorus bipustulatus* (Linnaeus, 1758)

Daugavpils Distr.: Bebrene, 21.X.2006., (1, E.Rudāns leg.), 28.X.2006., (1, E.Rudāns leg.), 28-29.XI.2006., (1, E.Rudāns leg.), 08-10.XII.2006., (4, E.Rudāns leg.), 23-28.I.2007., (1, E.Rudāns leg.);

157. *Chilocorus renipustulatus* (Scriba, 1790)

Daugavpils Distr.: Bebrene, Priežu krogs, 13.VII.2006., (1, E.Rudāns leg.); Daugavpils, Vienības plaza, 24.III.2007., (1, A.Barševskis leg.); Dviete, 20.VIII.2006., (1, A.Barševskis leg.); Medumi, bank of Lake Ilgas, 02.VIII.2007., (1, M.Murd leg.), Silene, 12.VI.2007., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 23.VII.2008., (1, A.Barševskis leg.); **Kuldīga Distr.:** Skrunda, 05.IX.2008., (1, R.Orlovskis, A.Barševskis leg.); **Preiļi Distr.:** Jersika, Kurpnieki, 05-06.V.2007., (1, K.Barševska, A.Barševskis), 20.V.2007., (2, A.Barševskis leg.); **Rīga Distr.:** Spuņciems, 10.VIII.2006., (2, E.Rudāns, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 14.V.2004., (1, A.Barševskis leg.).

158. *Exochomus quadripustulatus* (Linnaeus, 1758)

Daugavpils Distr.: Daugavpils, Viduspoguļanka, N side of Lake Plotišķu, 55°54'943"N 26°29'789"E,

21.IV.2008., (1, U.Valainis leg.); Ļubesti env., near Svente's bridge, 16.IV.2007., (1, A.Soldāns leg.); Mežciems env., Rīga-Kraslava beltway, 22.III.2007., forest, (2, A.Barševskis, U.Valainis, A.Soldāns leg.), 02.VI.2007., (1, A.Barševskis leg.); Svente, 31.III.2007., clearing, (1, A.Barševskis leg.); **Krāslava Distr.:** Ūdrīši, Zapoļņiki, Nature Park “Daugavas loki”, 16.IV.2005., (1, M.Murd leg.), 15.IV.2007., (4, M.Murd leg.), 28.IV.2007., (13, M.Murd leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni, 05.IX.2002., (1, A.Barševskis leg.).

159. *Sospita vigintiguttata* (Linnaeus, 1758)

Daugavpils Distr.: Ilgas, Silene Nature Park, 14-20.VI.2002., (1, A.Barševskis leg.); **Rīga Distr.:** Ķemeri, 2002., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, Zilie kalni, 06.VI.2002., (1, A.Barševskis leg.), 02.V.2006., (1, A.Barševskis leg.).

160. *Myzia oblongoguttata* (Linnaeus, 1758)

Daugavpils Distr.: Mežciems env., near Rīga-Krāslava beltway, 18.III.2007., (2, forest, A.Barševskis, K.Barševska); **Krāslava Distr.:** Ūdrīši, Zapoļņiki, 28.IV.2007., (1, M.Murd leg.); **Madona Distr.:** Krustkalni Nature Reserve, 11.X.2007., (1, A.Pankjāns leg.); **Rēzekne Distr.:** Puša, 26.VI.2002., (1, A.Barševskis leg.); **Rīga Distr.:** Olaine, 14.VIII.2006., (1, J.Donis leg.).

161. *Calvia decemguttata* (Linnaeus, 1767)

Talsi Distr.: Mazirbe, 04.IX.2002., (1, A.Barševskis leg.), 24.VII.2004., (1, A.Barševskis leg.).

162. *Anatis ocellata* (Linnaeus, 1758)

Aizkraukle Distr.: 6 km N Aizkraukle, Aizkraukles purvs bog Nature Protected Area, 06.VIII.2008., (1, A.Bukejs leg.); **Daugavpils Distr.:** Naujene, Nature Park “Daugavas Loks”, 21.V.2008., (1, A.Bukejs, M.Nitcis leg.); **Gulbene Distr.:** Ušūrs,

08.VI.2005., (1, A.Barševskis leg.); **Preiļi Distr.:** Gailīši, 15.VII.2006., (1, A.Pankjāns leg.); Jersika, “Kurpnieki”, 06.VI.2008., (1, A.Barševskis leg.); **Rīga Distr.:** Olaine, 02.X.2006., (1, J.Donis leg.).

163. *Aphidecta oblitterata* (Linnaeus, 1758)

Cēsis Distr.: Cīrulišu klints, 24.III.2007., (1, E.Rudāns leg.); **Daugavpils Distr.:** Bebrene, 21.X.2006., (5, E.Rudāns leg.), 28.X.2006., (8, E.Rudāns leg.), 19.XI.2006., (4, E.Rudāns leg.), 25.XI.2006., (1, E.Rudāns leg.), 15-17.XII.2006., (1, E.Rudāns leg.), 23-24.XII.2006., (1, E.Rudāns leg.), 25-26.XII.2006., (11, E.Rudāns leg.); Kalupe, 16.XII.2006., (1, E.Rudāns leg.); **Jēkabpils Distr.:** 6 km NW Vandāni, Vimbaru forest, 12.VIII.2008., (1, M.Balalaikins leg.); **Preiļi Distr.:** Aglona, 14.VIII.2006., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, 26.X.2006., (1, E.Rudāns leg.).

164. *Coccinella magnifica* Redtenbacher, 1843

Daugavpils Distr.: 2 km N Daugavpils, 04.V.2008., inland dunes, edge of pine forest, (2, A.Bukejs leg.); Ilgas, Silene Nature Park, 06-15.VI.2004., (1, A.Barševskis leg.), Dviete, forest between Dviete – Tadenava, clearing, 20.VII.2008., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Birži, 08.VIII.2008., (1, A.Barševskis leg.).

165. *Vibidia duodecimguttata* (Poda, 1761)

Daugavpils Distr.: Daugavpils, Mežciems, 19.VII.2007., (1, K.Aksjuta, M.Murd leg.).

166. *Halyzia sedecimguttata* (Linnaeus, 1758)

Talsi Distr.: Mazirbe, 24.VII.2004., (1, A.Barševskis leg.); Slītere National Park, Zilie Kalni hills, 10.VII.2004., (1, A.Barševskis leg.).

MYCETOPHAGIDAE

167. *Mycetophagus quadripustulatus* (Linnaeus, 1761)

Aizkraukle Distr.: Valle, 05.XI.2006., (3, E.Rudāns leg.); **Daugavpils Distr.:** Bebrene, 27.VI.2005., (1, E.Rudāns leg.), 02.I.2006., (1, E.Rudāns leg.), 17.II.2006., (1, E.Rudāns leg.), 30.IV-07.V.2006., (1, E.Rudāns leg.), 21.X.2006., (2, E.Rudāns leg.), 28.X.2006., (2, E.Rudāns leg.), 11.XI.2006., (1, E.Rudāns leg.), 17.XI.2006., (2, E.Rudāns leg.), 26-27.XI.2006., (1, E.Rudāns leg.), 28-29.XI.2006., (3, E.Rudāns leg.), 02-03.XII.2006., (1, E.Rudāns leg.), 08-10.XII.2006., (1, E.Rudāns leg.), 23-24.XII.2006., (3, E.Rudāns leg.), 25-26.XII.2006., (1, E.Rudāns leg.), 30-31.XII.2006., (1, E.Rudāns leg.), 23-28.I.2007., (2, E.Rudāns leg.); Ilgas, Silene Nature Park, VI.2005., clearing, window trap near maple, (2, A.Barševskis leg.), VII.2005., clearing, window traps near oak and maple, (2, A.Barševskis leg.), VIII.2005., near dead birch, (1, A.Barševskis leg.), 04.VIII.2005., (1, A.Barševskis leg.), 19-22.VI.2006., (2, E.Rudāns leg.), 01-05.VII.2006., (7, A.Barševskis leg.), 27.VI.2007., (1, A.Barševskis leg.); Līksna local municipality, 2 km N Daugavpils, 17.V.2008., inland dunes, under bark of dry *Betula*, (2, A.Bukejs leg.); **Jēkabpils Distr.:** Dunava, 14-18.VIII.2006., (2, A.Barševskis, K.Barševska leg.); Rubene, 10.XII.2005., (1, E.Rudāns leg.); **Preiļi Distr.:** Sutri, Znotiņi house, 03.VI.2007., (1, A.Soldāns leg.); **Rīga:** Purvciems, A.Deglava Str. 41a, 11.VII.2008., (4, A.Barševskis leg.); **Rīga Distr.:** Turaida, Gauja National Park, 26.VIII.2006., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, Zilie Kalni hills, VII.2004., (1, A.Barševskis leg.), 11.VI.2005., (2, A.Barševskis leg.), 17.VII.2007., (2, U.Valainis, A.Pankjāns, A.Soldāns, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 17-28.VI.2002., (1, A.Barševskis leg.), 26.VI.2004., (1, A.Barševskis leg.), 09.VII.2004., (1, A.Barševskis leg.), 14.IX.2005., (1, A.Barševskis leg.), 29.V.2006., (1, A.Barševskis, E.Rudāns leg.), 29.VI.2006., (2, A.Barševskis leg.), 15.VII.2008., (1, V.Aleksejev, A.Pavlova leg.). Included in the

list of special & indicator species of woodland key habitats.

168. *Mycetophagus piceus* (Fabricius, 1777)

Cēsis Distr.: Taurene, 57°09'81"N 25°39'86"E, 21.VIII.2006., (1, A.Barševskis leg.); **Daugavpils Distr.:** Šedere, Straumēni, 22.IV.2007., (1, M.Murd); **Gulbene Distr.:** Lejasciems, V.2005., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 29.VIII.2006., (1, A.Barševskis leg.); Dviete env., 56°12'503"N 26°26'162"E, 25.VI.2008., forest, (1, A.Barševskis leg.); **Madona Distr.:** Krustkalni Nature Reserve, 11.VIII.2005., (1, A.Bukejs, A.Barševskis, J.Laizāns leg.); **Ogre Distr.:** Birzgale local municipality, Robežnieki, 30.V.2006., (3, A.Barševskis leg.); **Tukums Distr.:** 56°56'04"N 23°10'50"E, 19.VII.2007., (1, A.Barševskis, A.Soldāns, A.Pankjāns, U.Valainis leg.).

169. *Mycetophagus fulvicollis* Fabricius, 1792

Preiļi Distr.: Jersika, "Kurpnieki", 01.VIII.2008., (1, A.Barševskis leg.).

MELANDRYIDAE

170. *Hallomenus binotatus* (Quensel, 1790)

Daugavpils Distr.: Ilgas, Silene Nature Park, 08.VII.2005., (2, A.Barševskis leg.). Rare species.

171. *Orchesia fasciata* (Illiger, 1798)

Daugavpils Distr.: Ilgas, Silene Nature Park, VII.2005., (1, A.Barševskis leg.). Rare species.

172. *Dircaea quadriguttata* (Paykull, 1798)

Gulbene Distr.: Lejasciems, pine forest burning, 06.2005., (1, A.Barševskis, J.Laizāns leg.). Rare species.

173. *Rushia parreyssii* (Mulsant, 1856)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 14.05.2004., (1, A.Barševskis,

U.Valainis leg.), 13.05.2006., (1, E.Rudāns leg.). Very rare species in Latvia.

174. *Xylita livida* (Sahlberg, 1833)

Talsi Distr.: Slītere, Zilie kalni, Slītere National park, 30.05.2006., (1, A.Barševskis leg.); **Valka Distr.:** Mežole, Mežole Nature Protection Area, 10.VI.2006., (1, J.Donis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 05.2005., (1, U.Valainis leg.), 29.VI.2006. In Latvia - rare unknown species.

175. *Xylita laevigata* (Hellenius, 1786)

Aizkraukle Distr.: Taurkalne, 19.05.2006., (4, J.Donis leg.), 16.VI.2006., (2, J.Donis leg.); **Gulbene Distr.:** Lejasciems, pine forest burning, 04.2004., (2, A.Barševskis leg.), 05.2004., (1, A.Barševskis leg.), 06.2004., (5, A.Barševskis leg.), 08.2004., (1, A.Barševskis leg.), V.2005., (4, A.Barševskis leg.), Gulbītis, near Lake Ušūrs, 05.2005., (1, A.Barševskis leg.), 06.2005. (1, A.Barševskis leg.), 04.2006., (2, A.Barševskis leg.), 06.2006., (3, A.Barševskis leg.); **Valka Distr.:** Mežole, Mežole Nature Protection Area, 10.VI.2006., (2, J.Donis leg.), 26.06.2006., (1, J.Donis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 05.2005., (1, U.Valainis leg.).

176. *Serropalpus barbatus* (Schaller, 1783)

Aizkraukle Distr.: Taurkalne, 02.VIII.2005., (1, J.Donis leg.), 14.VIII.2006., (1, J.Donis leg.); **Gulbene Distr.:** Gulbītis, near Lake Ušūrs, VIII.2003., burning, (1, O.Koškina, A.Barševskis leg.); **Madona Distr.:** Kalsnava, 19.VIII.2002., (1, M.Bičevskis leg.); Krustkalni Nature Reserve, VI.2005., (2, forest, A.Barševskis, J.Laizāns leg.), 11.VIII.2005., (12, A.Bukejs, A.Barševskis, J.Laizāns leg.), VIII-IX.2006., (1, A.Barševskis leg.), 01.IX.2006., (1, A.Barševskis leg.), 18.IX.2007., (3, A.Pankjāns, G.Jurševska, K.Aksjuta leg.); **Talsi Distr.:** Slītere National Park,

Zilie Kalni (hills), VI.2006., (1, A.Barševskis, E.Rudāns leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VIII.2003., (7, U.Valainis leg.), 16.VIII.2004., (2, U.Valainis leg.), 30.VII.2006., (5, A.Barševskis leg.), 18.VII.2007., (1, A.Barševskis, A.Pankjāns, A.Soldāns, U.Valainis leg.).

177. *Hypulus quercinus* (Quensel, 1790)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 05.2003., (1, U.Valainis leg.), 06.2003., (2, U.Valainis leg.). Rare species.

178. *Melandrya dubia* (Schaller, 1783)

Daugavpils Distr.: Ilgas, Silene Nature Park, 06-15.VI.2004., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere National Park, V.2004., (1, U.Valainis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VI.2003., (4, U.Valainis leg.), 25.VI.2004., (2, A.Barševskis, U.Valainis leg.). Included in the list of special & indicator species of woodland key habitats.

ZOPHERIDAE

179. *Orthocerus clavicornis* (Linnaeus, 1758)

Daugavpils Distr.: Elerne, Nature Park "Daugavas Loks", V.2002., valley of the Daugava River, (1, A.Barševskis leg.). Rare species.

TENEBRIONIDAE

180. *Uloma culinaris* (Linnaeus, 1758)

Daugavpils Distr.: Ilgas, Silene Nature Park, 14-20.VI.2002., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 09-10.VIII.2008., (1, A.Barševskis leg.); **Preiļi Distr.:** Jersika, 14.VII.2007., (1, A.Barševskis leg.).

181. *Uloma rufa* (Piller & Mitterpacher, 1783)

Aizkraukle Distr.: Taurkalne, 03.VII.2006., (1, J.Donis leg.); **Daugavpils Distr.:** Mežciems env.,

forest near Rīga-Krāslava beltway, 25.VII.2005., (2, A.Barševskis leg.), 18.III.2007., (23, A.Barševskis, K.Barševska leg.), 08.III.2008., (1, K.Barševska, A.Barševskis leg.); **Krāslava Distr.:** Ūdrīši, Zapolņiki, 08.IV.2007., (21, M.Murd leg.), 15.IV.2007., (20, M.Murd leg.).

182. *Allecula morio* (Fabricius, 1787)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 11.VII.2005., (1, U.Valainis leg.), 30.VII.2005., (1, U.Valainis leg.), 15.VII.2008., (2, V.Aleksejev, A.Pavlova leg.). Very rare species in Latvia.

183. *Prionychus ater* (Fabricius, 1777)

Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 08.2003., (1, U.Valainis leg.), 10.2003., (1, U.Valainis leg.). Rare species. Included in the list of special & indicator species of woodland key habitats.

184. *Pseudocistela ceramboides* (Linnaeus, 1758)

Aizkraukle Distr.: Taurkalne, 02.07.2005., (1, J.Donis leg.); **Daugavpils Distr.:** Ilgas, Silene Nature Park, 14.-20.06.2002., (1, A.Barševskis leg.), 06.2002., (1, U.Valainis leg.); **Gulbene Distr.:** Lejasciems, pine forest burning, 06.2004., (1, A.Barševskis leg.), 06.2005. (1, A.Barševskis leg.); **Talsi Distr.:** Mazirbe, Slītere National park, Baltic sea dunes, 26.VI.2006., (1, A.Barševskis, U.Valainis, A.Pankjāns leg.), Slītere, Zilie kalni, Slītere National park, 10.VII.2004., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 07.2003., (1, U.Valainis leg.), 25.06.2004., (2, A.Barševskis, U.Valainis leg.), 09.07.2004., (1, A.Barševskis, U.Valainis leg.), 11.07.2005., (2, U.Valainis leg.). Included in the list of special & indicator species of woodland key habitats.

185. *Isomira murina* (Linnaeus, 1758)

Aizkraukle Distr.: Rīteri, 20. - 21.06.2006., (2, A.Barševskis leg.); **Talsi Distr.:** Ance, Nature Protection Area „Ances meži un purvi”, 27.VI.2006., 91, U.Valainis leg.).

186. *Mycetochara flavipes* (Fabricius, 1793)

Daugavpils Distr.: Ilgas, Silene Nature Park, 14.-20.06.2002., (2, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 10.-18. VI 2006., (1, K.Barševska leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 25.06.2004., (1, A.Barševskis, U.Valainis leg.), 11.VII.2005., (1, U.Valainis leg.).

187. *Mycetochara axilaris* (Paykull, 1799)

Daugavpils Distr.: Ilgas, Silene Nature Park, VI.2005., (2, A.Barševskis leg.).

188. *Omophlus betulae* (Herbst, 1783)

Daugavpils Distr.: Līksna local municipality, inland dunes between Ļubesti and Križi, 06.06.2004., (8, A.Barševskis leg.), 17.05.2007., (1, A.Barševskis, K.Barševska leg.). Very rare species in Latvia, with five known localities only.

189. *Neomida haemorrhoidalis* (Fabricius, 1787)

Daugavpils Distr.: Ilgas, Silene Nature Park, 09.VI.2008., (4, A.Barševskis, A.Soldāns leg.). Rare species. Included in the list of special & indicator species of woodland key habitats.

MELOIDAE

190. *Meloe proscarabaeus* Linnaeus, 1758

Daugavpils Distr.: Daugavpils City, Ruģeļi, 16.05.2006., (1, V.Kokina leg.), Nature Park „Daugavas loki”, Naujene, 06.06.2005., (1 E.Rudāns leg.), Nature Park „Daugavas loki”, Daugavsargi, 17.05.2007., (1, A.Pankjāns leg.), Nature Park „Daugavas loki”, Slutišķi, 29.04.2008, A.Pankjāns, U.Valainis leg.); **Krāslava Distr.:**

Nature Park „Daugavas loki”, Borovka, „Zapoļniki”, 06.07.09.2004., (1, M.Janovska (Murd)); **Rīga Distr.:** Stopiņi local municipality, „Upeslejas”, 01.05.2008., (1, V.Krone leg.).

191. *Meloe brevicollis* Panzer, 1793

Daugavpils Distr.: Līksna local municipality, Rīga – Krāslava beltway, 17.05.2007., (1, A.Barševskis & K.Barševska leg.), Šedere, „Straumēni”, 01. - 03.05.2008., (3, M.Janovska leg.), 18.05.2008., (1, M.Janovska leg.), **Preiļi Distr.:** Jersika, 30.IV.2005., (2, I.Gurčonoks).

PYTHIDAE

192. *Pytho depressus* (Linnaeus, 1767)

Daugavpils Distr.: Ilgas, Silene Nature Park, 13-14.X.2006., (4, A.Barševskis leg.); Mežciems env., near Daugavpils beltway, 08.III.2008., (1, K.Barševska, A.Barševskis leg.); **Gulbene Distr.:** Lejasciems, 03.XI.2004., (7, A.Barševskis, U.Valainis leg.); **Jēkabpils Distr.:** Dunava, 08.IV.2007., pine forest, (1, A.Barševskis leg.); **Krāslava Distr.:** Zapoļniki, Nature Park “Daugavas loki”, 06-07.XI.2007., (8, M.Murd leg.).

PYROCHROIDAE

193. *Pyrchora coccinea* (Linnaeus, 1761)

Daugavpils Distr.: Elerne, 07.VI.2002., (1, A.Barševskis); Ilgas, Silene Nature Park, 02-10.VII.2004., (1, A.Barševskis leg.); Līksna local municipality, between Ļubesti and Križi, 06.VI.2004., inland dunes, (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 10-18.VI.2006., (2, K.Barševska leg.), 02-05.VI.2007., (1, K.Barševska leg.), 06-09.VI.2007., (1, K.Barševska leg.); 10-19.VI.2007., (2, K.Barševska leg.); Tadenava, 01.VI.2002., clearing, (1, A.Barševskis leg.), 11.VII.2002., (1, A.Barševskis leg.); **Talsi Distr.:**

Slītere National Park, Zilie Kalni, 26.VI.2002., (1, A.Barševskis leg.).

194. *Schizotus pectinicornis* (Linnaeus, 1758)

Daugavpils Distr.: Ilgas, Silene Nature Park, 06-15.VI.2004., (1, A.Barševskis leg.); Līksna parish, 2 km N Daugavpils, 17.V.2008., edge of pine forest, (1, A.Bukejs leg.); **Jēkabpils Distr.:** Dunava, Dviete forest, 18.V.2008., (3, A.Barševskis leg.); Tadenava, 01.VI.2002., clearing, (1, A.Barševskis leg.); **Rēzekne Distr.:** Puša, 25.V.2002., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 14.V.2004., (1, A.Barševskis leg.), 29.V.2006., (1, E.Rudāns leg.), 30.V.2006., (1, E.Rudāns leg.).

SALPINGIDAE

195. *Salpingus ruficollis* (Linnaeus, 1761)

Daugavpils Distr.: Ilgas, Silene Nature Park, V.2005, (1, A.Barševskis leg.), VII.2005., (1, A.Barševskis leg.); **Talsi Distr.:** Slītere, Zilie kalni, Slītere National park, VII.2006., (1, A.Barševskis, E.Rudāns leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 18.VII.2007., (1, A.Pankjāns, A.Soldāns, A.Barševskis, U.Valainis leg.).

ANTHICIDAE

196. *Omonadus floralis* (Linnaeus, 1758)

Jēkabpils Distr.: Dunava, 20 VII 2008., (5, A.Barševskis leg.); **Krāslava Distr.:** Skaista, 18.IX.2006., (11, S.Ungurs leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, VIII.2003., (2, U.Valainis leg.), 28.VII.2005., (1, A.Barševskis, A.Bukejs, U.Valainis leg.).

197. *Anthicus flavipes* (Panzer, 1797)

Daugavpils Distr.: Ilgas, Silene Nature Park, 28-30.IV.2004., (1, A.Barševskis leg.)

198. *Anthicus axillaris* Schmidt, 1842

Liepāja Distr.: Liepāja, 11.-13.VII.2006., Baltic sea coast and dunes, (64, A.Barševskis leg.).

199. *Anthicus ater* (Panzer, 1796)

Daugavpils Distr.: Bebrene, 13.V.2006., (1, E.Rudāns leg.); **Ventspils Distr.:** Blāzma, pine forest clearing, 22.VII.2008., (1, A.Barševskis, U.Valainis leg.).

200. *Anthicus antherinus* (Linnaeus, 1761)

Daugavpils Distr.: Ilgas, Silene Nature Park, 10.-12.IX.2002., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 20.VII.2008., (1, A.Barševskis leg.).

ADERIDAE

201. *Aderus populneus* (Creutzer, 1796)

Jēkabpils Distr.: Dunava, 09.-10.VIII.2008., (1, A.Barševskis leg.).

CHYSOMELIDAE

202. *Labidostomis tridentata* (Linnaeus, 1758)

Daugavpils Distr.: Butišķi, Nature Park “Daugavas Loki”, 26.V.2008., valley of the Daugava River, xeric meadow, (1, A.Bukejs leg.). Rare species.

203. *Labidostomis longimana* (Linnaeus, 1761)

Daugavpils Distr.: Butišķi, Daugavas Loki Nature Park, 25.VII.2008., (4, valley of the Daugava River, xeric meadow, A.Bukejs leg.); **Krāslava Distr.:** Ezernieki, Garaudži house, Lake Razne National Park, 24.VII.2008., (1, R.Cibuļskis, U.Valainis leg.).

204. *Clytra quadripunctata* (Linnaeus, 1758)

Rīga Distr.: Garupe, 2,5 km SW Carnikava, 13.VI.1976., (1, J.Dmitriev leg.).

205. *Smaragdina salicina* (Scopoli, 1763)

Daugavpils Distr.: Šedere, Šarlote house, 12.VII.2008., (2, K.Aksjuta leg.); **Preiļi Distr.:** Jersika, Kurpnieki house, 23-24.VI.2008., (1, A.Barševskis leg.).

206. *Smaragdina flavicollis* (Charpentier, 1825)

Daugavpils Distr.: Butišķi, Nature Park "Daugavas Loki", 25.VII.2008., valley of the Daugava River, xeric meadow, (1, A.Bukejs leg.); **Rēzekne Distr.:** Andzeļi, Lake Ežezers, Lielā Laču Island, 24.VII.2008., (2, R.Cibuļskis, U.Valainis leg.).

207. *Coptocephala unifasciata* (Scopoli, 1763)

Daugavpils Distr.: Butišķi, Nature Park "Daugavas Loki", 25.VII.2008., valley of the Daugava River, xeric meadow, (1, A.Bukejs leg.); Mežciems env., near Daugavpils beltway, 22.VII.2008., inland dunes, (6, A.Barševskis leg.); **Krāslava Distr.:** Ezernieki, Garaudži, Lake Razne National Park, 24.VII.2008., (1, R.Cibuļskis, U.Valainis leg.); Krāslava, 21.VII.2008., dry meadow, (12, A.Barševskis leg.).

208. *Pachybrachis hieroglyphicus* (Laicharting, 1781)

Daugavpils Distr.: Butišķi, Daugavas Loki Nature Park, 25.VII.2008., valley of the Daugava River, xeric meadow, (2, A.Bukejs leg.).

209. *Cryptocephalus octopunctatus* (Scopoli, 1763)

Aizkraukle Distr.: Aizkraukles purvs bog Nature Protected Area, 6 km N Aizkraukle, 01.VII.2008., (1, A.Pankjans leg.); **Daugavpils Distr.:** Demene, ~2 km from Kurcums, 06.VI.2008., (1, A.Barševskis leg.); **Jēkabpils Distr.:** Dunava, 18.V.2008., (1, A.Barševskis leg.); **Preiļi Distr.:** Jersika, "Kurpnieki", 29.VI.2008., (1, A.Barševskis leg.).

210. *Cryptocephalus biguttatus* (Scopoli, 1763)

Daugavpils Distr.: Ilgas, Silene Nature Park, 09.VI.2008., (2, A.Barševskis, A.Soldāns leg.); **Liepāja Distr.:** Vērgale, 12.VIII.2008., (1, A.Barševskis leg.).

211. *Cryptocephalus aureolus* Suffrian, 1847

Daugavpils Distr.: Ilgas, Silene Nature Park, 09.VI.2008., (1, A.Barševskis, A.Soldāns leg.); Vasarģelišķi, Nature Park "Daugavas Loki", 11.VII.2008., valley of the Daugava River, (1, A.Barševskis, V.Aleksejev leg.); **Krāslava Distr.:** Krāslava, 21.VII.2008., dry meadow, (1, A.Barševskis leg.); **Liepāja Distr.:** Vērgale, 12.VIII.2008., (1, A.Barševskis leg.); **Madona Distr.:** Krustkalni Nature Reserve, 56°47'12"N 26°08'51"E, VII.2006., (1, E.Rudāns, A.Barševskis leg.).

212. *Cryptocephalus sericeus* (Linnaeus, 1758)

Daugavpils Distr.: Butišķi, 25.VII.2008., valley of the Daugava River, (1, A.Bukejs leg.); Ilgas, Silene Nature Park, 01-04.VII.2008., (1, R.Cibuļskis leg.); Mežciems env., near Daugavpils beltway, 22.VII.2008., inland dunes, (4, A.Barševskis leg.); **Limbaži Distr.:** Salacgrīva, 16.VIII.2008., (1, A.Barševskis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 15.VII.2008., (1, A.Bukejs leg.).

213. *Cryptocephalus hypochoeridis* (Linnaeus, 1758)

Krāslava Distr.: Ezernieki, Garaudži houses, Lake Rāzna National Park, 24.VII.2008., (2, R.Cibuļskis leg.).

214. *Cryptocephalus parvulus* Müller, 1776

Daugavpils Distr.: Oborūni, 16.VIII.2001., (1, G.Lociks leg.); **Dobele Distr.:** Jaunbērze, Mežinieki house, 12.VIII.2008., (1, A.Barševskis leg.).

215. *Cryptocephalus decemmaculatus* (Linnaeus, 1758)

Aizkraukle Distr.: Aizkraukles purvs bog Nature Protected Area, 6 km N Aizkraukle, 01.VII.2008., on *Salix*, (6, A.Bukejs leg.); **Jēkabpils Distr.:** Birži, 08.VIII.2008., (1, A.Barševskis leg.); **Krāslava Distr.:** Ezernieki, Lake Rāzna National Park, 24.VII.2008., (1, U.Valainis, R.Cibuļskis leg.); **Rēzekne Distr.:** Mākoņkalns, Krepši, 24.VII.2008., (3, R.Cibuļskis leg.).

216. *Cryptocephalus moraei* (Linnaeus, 1758)

Daugavpils Distr.: Naujene, Nature Park “Daugavas Loki”, 55°54'15"N 26°48'54"E, 25.VI.2008., clearing, (2, K.Aksjuta leg.); Šedere, Šarlote house, 12.VII.2008., (1, K.Aksjuta leg.); Vasarģēlišķi, Daugavas Loki Nature Park, 11.VIII.2008., (1, A.Barševskis, V.Aleksejev leg.); **Jēkabpils Distr.:** Vandāni, 16.VIII.2008., bank of the Daugava River, (1, M.Balalaikins leg.); **Krāslava Distr.:** Krāslava, 21.VII.2008., dry meadow, (2, A.Barševskis leg.); **Rēzekne Distr.:** Andzeļi, Lake Ežezers, Lielā Laču Island, 24.VII.2008., (1, R.Cibuļskis, U.Valainis leg.); **Rīga Distr.:** Mālpils, 16.VIII.2008., (1, A.Barševskis leg.); Olaine, 01.VIII.2006., (1, J.Donis leg.); **Ventspils Distr.:** Moricsala Island, Moricsala Nature Reserve, 15.VII.2008., (1, V.Aleksejev, A.Pavlova leg.), 15.VII.2008., (3, A.Barševskis & A.Bukejs leg.).

217. *Cryptocephalus bilineatus* (Linnaeus, 1767)

Daugavpils Distr.: Butišķi, Daugavas Loki Nature Park, 25.VII.2008., valley of the Daugava River, xeric meadow, (3, A.Bukejs leg.); Šedere, Šarlote, 12.VII.2008., (6, K.Aksjuta leg.); **Preiļi Distr.:** Aglona local municipality, Šņepsti, Šņepsti castle mound, 14.VIII.2008., (1, A.Barševskis leg.).

218. *Cryptocephalus ocellatus* Drapiez, 1819

Aizkraukle Distr.: Aizkraukle purvs bog Nature Protected Area, 6 km N Aizkraukle, 01.VII.2008., on *Salix*, (4, A.Bukejs leg.), 06.VIII.2008., (1, A.Bukejs, M.Balalaikins leg.); Mežezers, 18.VII.2008., (1, A.Barševskis leg.); Nereta env., 08.VIII.2008., (5, A.Barševskis leg.); Valle, 12.VIII.2008., (2, A.Barševskis leg.); **Daugavpils Distr.:** Daugavpils, near Cietoksnis, 07.VIII.2008., bank of the Daugava River, (1, A.Bukejs, M.Balalaikins leg.); **Jēkabpils Distr.:** Birži, 08.VIII.2008., (2, A.Barševskis leg.); Dunava, 01-05.VIII.1997., (1, A.Barševskis leg.), 03.VI.2007., (1, A.Barševskis leg.); **Jūrmala:** Kauguri, 30.VI.1998., dunes, on *Salix*, (12, A.Barševskis leg.); **Liepāja Distr.:** Pāvilosta, 13.VIII.2008., dunes, (9, A.Barševskis leg.); **Preiļi Distr.:** Jersika, “Kurpnieki”, 23-24.VI.2008., (1, A.Barševskis leg.), 02.VII.2008., (1, A.Barševskis leg.).

219. *Cryptocephalus labiatus* (Linnaeus, 1761)

Krāslava Distr.: Lake Velnezers Nature Reserve, 11.VII.2008., (1, A.Barševskis, V.Aleksejev leg.); **Tukums Distr.:** Lielaisciems, Ķemeri National Park, 16.VII.2008., (5, V.Aleksejev leg.); **Ventspils Distr.:** Blāzma, 57°21'12"N 22°04'47"E, 22.VIII.2008., clearing, (1, A.Barševskis, U.Valainis leg.).

220. *Cryptocephalus exiguus* Schneider, 1792

Madona Distr.: Ošupe, 2,5 km NE Lake Lubāns, 56°50'03"N 26°56'05"E, 06.VII.2008., wet meadow and bank of the Aiviekste River, (2, A.Bukejs, M.Balalaikins leg.); **Rīga Distr.:** Carnikava, 19.VI.1990., (1, N.Savenkovs leg.).

221. *Cryptocephalus fulvus* Goeze, 1777

Aizkraukle Distr.: Nereta env., 08.VIII.2008., (1, A.Barševskis leg.); **Dobeles Distr.:** Jaunbērze, Mežinieki, 12.VIII.2008., (1, A.Barševskis leg.); **Daugavpils Distr.:** Butišķi, Nature Park “Daugavas Loki”, 25.VII.2008., valley of the

Daugava River, xeric meadow, (1, A.Bukejs leg.); Eglaine, 20.VIII.2008., (3, A.Barševskis leg.); Mežciems env., near Daugavpils beltway, 22.VII.2008., inland dunes, (8, A.Barševskis leg.); Šedere, Šarlote, 12.VII.2008., (2, K.Aksjuta leg.); **Jēkabpils Distr.:** Dunava, 01-05.VIII.1997., (8, A.Barševskis leg.); Vandāni, 16.VIII.2008., bank of the Daugava River, (2, M.Balalaikins leg.); **Krāslava Distr.:** Ezernieki, "Garaudži", Lake Rāzna National Park, 24.VII.2008., (1, U.Valainis, R.Cibuļskis leg.); **Liepāja Distr.:** Pāvilosta, 13.VIII.2008., dunes, (4, A.Barševskis leg.); **Limbaži Distr.:** Salacgrīva, 16.VIII.2008., (3, A.Barševskis leg.); **Ogre Distr.:** Lēdmane, 17.VIII.2008., (1, A.Barševskis leg.); **Tukums Distr.:** near Jaunmoku castle, 4 km NW Tukums, 16.VII.2008., (1, A.Barševskis leg.).

222. *Cryptocephalus pusillus* Fabricius, 1777
Daugavpils Distr.: Dviete env., 22.VII.2008., clearing, (1, A.Barševskis leg.); **Krāslava Distr.:** Šķeltova, "Barševski", 17.VII.2008., (1, A.Barševskis leg.); **Liepāja Distr.:** Pāvilosta, 13.VIII.2008., dunes, (1, A.Barševskis leg.); **Rīga Distr.:** Mālpils, 16.VII.2008., (2, A.Barševskis leg.); **Talsis Distr.:** Slītere National Park, Zilie Kalni hills, 22.VIII.2008., (2, A.Barševskis leg.).

223. *Calomicrus pinicola* (Duftschmid, 1825)
Tukums Distr.: Lielaisciems, Kemeru National Park, 26.VI.2006., (1, A.Pankjāns leg.). Insufficiently known species in Latvia.

ANTHRIBIDAE

224. *Tropideres albirostris* (Herbst, 1783)
Preiļi Distr.: Jersika, „Kurpnieki”, on *Alnus*, 13.VI.2008. (2, A.Barševskis leg.), 23.-24.VI.2008., (1, A.Barševskis leg.), 01.VIII.2008., (2, A.Barševskis leg.). Very rare species in Latvia, with five known localities only.

225. *Platystomos albinus* (Linnaeus, 1758)
Aizkraukle Distr.: Mazzalve, VIII.2007., (1, A.Grenciņa-Grencione leg.); **Krāslava Distr.:** Andzeļi, lake Ežezers, Lielā lāču Island, 24.07.2008., (1, R.Cibuļskis leg.); **Preiļi Distr.:** Jersika, „Kurpnieki”, on *Alnus*, 06.06.2008., (1, A.Barševskis leg.), 23.-24.VI.2008. (2, A.Barševskis leg.), 29.06.2008., (1, A.Barševskis leg.).

ATTELABIDAE

226. *Apoderus erythropterus* (Gmelin, 1790)
Daugavpils Distr.: Šedere, „Straumēni”, 01. - 03.V.2008., (2, M.Janovska leg.).

CURCULIONIDAE

227. *Otiorhynchus ligustici* (Linnaeus, 1758)
Jēkabpils Distr.: Birži, 08.VIII.2008., (1, A.Barševskis leg.).

228. *Bothrynoderes affinis* (Schrank, 1781) (= *Chromoderus affinis* Schrank)
Daugavpils Distr.: Līksna local municipality, Rīga – Krāslava beltway, inland dunes between Ļubesti and Križi, pine forest edge, 04.V.2007., (1, A.Bukejs leg.), Šedere, Šarlote, 11.V.2008., (1, K.Aksjuta leg.).

229. *Hylobius piceus* (De Geer, 1775)
Ventspils Distr.: Moricsala Island, Moricsala Nature Reserve, 03.VIII.2004., (1, U.Valainis leg.).

230. *Dendroctonus micans* (Kugelann, 1794)
Aizkraukle Distr.: Taurkalne, 11.VII.2005., (1, U.Valainis leg.).

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THE HISTORY OF INVESTIGATIONS OF *CHRYSOMELIDAE* SENSU LATO (COLEOPTERA) IN LATVIAN FAUNA

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Bukejs A. 2008. The history of investigations of *Chrysomelidae* sensu lato (Coleoptera) in Latvian fauna. *Acta Biol. Univ. Daugavp.*, 8 (2): 259 - 272.

The history of investigations of leaf-beetles in Latvian fauna is presented in this article. We see the leaf-beetles in a wide sense (*Chrysomelidae* sensu lato), i.e. the families Megalopodidae Latreille, 1802, Orsodacnidae Thomson, 1859 and *Chrysomelidae* Latreille, 1802 (incl. Bruchinae Latreille, 1802). The history of investigation of leaf-beetles in Latvia is more than 220 years old. The first information about leaf-beetles in Latvia can find in the articles of J. B. Fischer (1778, 1784, 1791). The bibliographical list of more than 120 sources is composed.

Key words: Coleoptera, Megalopodidae, Orsodacnidae, *Chrysomelidae*, Bruchinae, Latvia, investigations, history.

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The leaf-beetles are one of the biggest beetle family in the world fauna (30000 – 50000 species are known) (Bieńkowski 2004; Brovdij 1985; Jolivet 1988; Mohr 1966) and also in the Latvian fauna. However, the special investigation of the history of leaf-beetles in Latvia was not made till now. The analogous works were made about Scolytidae (Šmits 1960), Elateridae (Spuris 1974, 1981), Cantharidae (Melecis 1975), Carabidae (Spuris 1983; Barševskis 2003), Cerambycidae (Spuris 1984), Coccinellidae (Spuris 1990), Scarabaeidae (Spuris 1991) and Dytisciformia (Spuris 1991a; Barševskis, Kalniņš, Cibuļskis 2005).

In this article we consider the leaf-beetles in a wide sense (*Chrysomelidae* sensu lato) according to the taxonomy of J. F. Lawrence and A. F. Newton (1995), i.e. the families Megalopodidae Latreille, 1802, Orsodacnidae Thomson, 1859 and

Chrysomelidae Latreille, 1802 (incl. Bruchinae Latreille, 1802).

The aim of our work is to summarize and to analyse the bibliographical data about the leaf-beetles of Latvian fauna, to give the short essay about the history of investigation of leaf-beetles and to make up the bibliographical list.

The first information about the leaf-beetles (*Chrysomelidae* sensu lato) of Latvian fauna was found in the scientific literature in the second half of the 18th century in the articles of J. B. Fischer (1778, 1784, 1791). In the first edition of his monograph (Fischer 1778) about the nature of Livland three species of the leaf-beetles are mentioned. After some additions (Fischer 1784), in the second edition of the monograph (Fischer 1791) 18 species are already mentioned. The

author treats as the leaf-beetles one species – *Chrysomela boleti* L., that in the modern taxonomy is the darkling beetle *Diaperis boleti* L. (Tenebrionidae) and we don't count this species. To Z. Spuris (1981, 1983) mind, J. B. Fischer has made his investigations in the Riga district.

Johan Groschke, the professor of Jelgava Gymnasium, has started some coleopterological articles in the 19th century. In the review of the Kurzeme (*Curland*) fauna he has made a list of the pested beetles, to his mind, where he has mentioned 8 species of leaf-beetles (Groschke 1805).

In 1818 the first wide catalogue of the beetles of Latvian fauna has been published. There are 725 species mentioned, that were found in the environs of Rīga and Rīga district (in that time it was a large territory including the Rūjiene environs). The author of this catalogue was not mentioned when the catalogue was published, but from other sources (Kawall 1868) is clear that it was the citizen of Rīga K. H. Precht (1818). According to the J. Fabricius system there are 10 genera and 90 species of the leaf-beetles and 1 species of the seed beetles – *Bruchus granarius* (this is the first time that the seed beetles were mentioned in Latvian fauna) Three species (*Crioceris flavipes*, *Clythra quadrimaculata* and *Chrysomela violacea*) in the catalogue are not to determine for certain, but 6 species were mentioned twice with different names (in the modern taxonomy they are synonyms). The material that was in the K. Precht's collection is not remained.

In 1829 the citizen of Jelgava J. G. Fleischer has published a list of beetles of the local fauna (Fleischer 1829). In this list the author has mentioned 640 species, which to his mind were not ascertained in the fauna of the East Baltic. The leaf-beetles are there 55 species, two of them are not determined (*Chrysomela centaurei* F. and *Chrysomela ornata* Ahr.).

In the same year a catalogue of the Livland beetles was published (Gimmerthal 1829), where

can find about 800 species of Coleoptera. As B. Gimmerthal lived in Rīga, can suppose, that his observations were made in Rīga district (Spuris 1981, 1983, 1984). Some names of the species are repeated or are difficult to determine. At the Zoological museum of Latvia University the B. Gimmerthal's collection is remained, that gives a possibility to prove and to clarify this information.

In the publications of fenological observations in Kurzeme (*Curland*) J. H. Kawall (1866, 1866a) has mentioned 10 and 9 species of the leaf-beetles.

At the end of the 19th century the G. Seidlitz's monograph about the fauna of Baltic beetles was published. It's important to know that Baltic States in that time were Estonia and Latvia (without Latgale). This monograph was published in two editions (Seidlitz 1872-1875, 1887-1891). In the monograph we can find keys for determination of families, genera and all species (including also potential species). Unfortunately the localities for species are rarely mentioned there. Sometimes there are directions to Kurzeme (*Curland*), Livland and Rīga or it is mentioned, that in Europe the species is distributed till Kurzeme or Estonia. That's why it is not possible to define the number of species for Latvia and Estonia exactly. For majority of species there is evaluation of occurrence. In the second edition of the monograph (Seidlitz 1887-1891) 206 species of the leaf-beetles are described, but there are concrete localities (Curland, Rīga and other) only for 22 species in Latvia. Z. Spuris (1973) argue away the importance of the G. Seidlitz monograph as the basic work for the fauna of Latvian beetles.

In 1884 the article about the beetles of Poland Lifland was published (Ulanowsky 1884), Latgale (the eastern part of Latvia) belonged to this territory. Should mention, that these faunal data are very inexact and doubtful (Barshevskis 1993). In the lists of beetles families in Latvia published earlier they didn't take account of this publication (Spuris 1981, 1983, 1984, 1991; Barševskis 2003; Barševskis, Kalniņš, Cibulskis 2005).

In this period two small faunal articles (Müthel 1886, 1889) were published, where can find data about eight species of the leaf-beetles.

At the beginning of the 20th century a list of Baltic beetles was published (Rathlef 1905), that was written according to the G. Seidlitz's monograph and other fauna publications of that time. In this list and the supplement (Rathlef 1921) 235 species of Chrysomelidae sensu lato are mentioned.

In the first half of the 20th century some faunal publications were published, where can find some data about the leaf-beetles. For Lielvārde L. Heyden (1903) mentions 19 species of the leaf-beetles. J. Mikutowicz and T. Lackschewitz in their series of publications (Mikutowicz 1905, 1911; Lackschewitz 1927, 1942; Lackschewitz, Mikutowicz 1939) reported 3, 2, 1, 1 and 6 new and rare species of the leaf-beetles, altogether 11 species. In his work L. Brammanis (1930) mentions 9 species of the leaf-beetles, but H. Lindberg (1932) mentions 21 species.

In the second half of the 20th century a lot of publications about the leaf-beetles appear in Latvia. You should pay special attention to V. Pūtele's work about Latvian flea beetles (Alticinae). She was occupied with studying of fauna and ecological aspects of flea beetles (Pūtele 1958, 1958a, 1959, 1968a, 1968b, 1970, 1970c, 1970d, 1971). She reviewed some genera of Alticinae of Latvian fauna: *Phylloterta* Foudr. (Pūtele 1960), *Longitarsus* Latr. (Pūtele 1965), *Psylliodes* Latr. (Pūtele 1968), *Chaetocnema* Steph. (Pūtele 1970a), *Aphthona* Chevr. (Pūtele 1970b), *Haltica* Foudr. and *Chalcoides* Steph. (Pūtele 1971a). V. Pūtele has mentioned more than 30 species for Latvia for the first time. However the records of some species mentioned for the local fauna are doubtful (*Aphthona nigriceps* Foudr., *Longitarsus symphyti* Heikertinger, *L. aeruginosus* (Foudr.), *L. echii* (Koch), *Ochrosis ventralis* (Ill.), *Chaetocnema tibialis* Ill., *Ch. breviscula* (Fald.), *Ch. tbesa* (Boield.) and other). The revision of V. Pūtele's collection should be done.

V. F. Palij (1958) has made a review of flea beetles of Latvian fauna. In his publication 18 genera and 81 species of Alticinae are mentioned, he also gives host plants and general distribution for every species.

There are the information about largest families of the beetles of Latvian fauna in the books "Latvian animals" ("*Latvijas dzīvnieki*") and "The world of Latvian animals" ("*Latvijas dzīvnieku pasaule*"). You can find also the common information about the leaf-beetles and seed beetles. There are mentioned 257 species of Chrysomelidae and 6 species of Bruchinae (Šmits, Spuris 1966) and about 270 species of Chrysomelidae and 6 species of Bruchinae (Spuris 1974) for the Latvian fauna.

The large number of publications are dedicated to the investigation of the leaf-beetles as pests of cultivated plants. Z. Čudare (1969) has studied the development cycle and has carried out histological investigations of the Colorado beetle *Leptinotarsa decemlineata* Say. There were investigations dedicated to the study how to fight against these dangerous agricultural pests (Pavasaris 1972). A number of monographs and articles were published, where can find some species of the leaf-beetles as pests (Peņģerots-Svešais 1927; Ozols 1948, 1963, 1973; Danka 1950; Eglītis 1954, 1956, 1956a; Smarods, Liepa 1956; Rupais 1959, 1999; Čakstiņa 1962; Priedītis 1971a, 1971b; Dūks 1976; Rupais, Kalniņa 1979; Ozols 1985).

A. Tomson (1939-1940, 1940) has studied the pests of sugar beet and has reported 14 species of the leaf-beetles. V. Pūtele has published data about pested leaf-beetles for tree cultures in the Slītere National Park (Pūtele 1984), about pested flea beetles for cereals (Pūtele 1975) and review of pested leaf-beetles of Latvian fauna (Pūtele 1982). The pests in the genus *Melasoma* Steph. (= *Chrysomela* L.) are described in the publication (Pūtele 1977).

The development cycles and the biology of some species of the leaf-beetles were described in the

special publications: *Galerucella tanacetii* L. (Ozols 1929), *Galerucella viburni* Pk. (Rupais 1962), *Lochmaea caprea* L. (Pūtele 1976), *Melasoma saliceti* Wse. (Pūtele 1976a), *Agelastica alni* L. (Pūtele 1977a).

While studying the leaf-beetles in the agrocenosis of the apple-tree (Priedītis, Pūtele 1976; Priedītis 1979), there were registered 38 species. V. Pūtele (1974) has established 153 species of the leaf-beetles in the environs of Jelgava, but no concrete localities for collecting these species were mentioned.

The special work about the leaf-beetles in Latvia was published by M. Stiprais (1977). There were mentioned new faunal data about 112 species.

The leaf-beetles are also mentioned in the series of publications about the investigation of beetles of different habitats or Latvian territories. While studying the main habitats of lakes, Z. Spuris (1953) has mentioned the leaf-beetles of genera *Macrolea* Sam. (1 species), *Donacia* F. (12 species), *Donaciella* Rtt. (3 species), *Prasocuris* Latr. (1 species) and *Galerucella* Crotch (3 species). There are faunal data about the leaf-beetles of the Slītere National Park in the 4 publications (Pūtele 1980, 1981, 1981a; Rutenberga 1992), more than 120 species are mentioned there in all.

We can find separate data about the leaf-beetles in some publications (Priedītis 1958; Danka, Stiprais 1972; Cinītis 1975; Stiprais, Varzinska 1985; Barševskis, Savenkovs 1991; Barševskis 1992, 1993a, 1997a; Barševskis, Spuriņš, Oga 1992; Petrova, Čudare, Šteinīte 2000; Barševskis *et al.* 2004; Petrova, Čudare, Cibulskis 2006).

A. Barševskis (1988) has mentioned 64 species of the leaf-beetles, while studying the beetles of south-eastern Latvia (Daugavpils, Krāslava and Preiļi districts) in different habitats.

The monograph "The Beetles of Eastern Latvia" (Barševskis 1993) was published at the end of the 20th century. The author refers Latgale,

Augšzeme and eastern part of Vidzeme to eastern Latvia. Besides the large amount of faunal data, there is also a review of history of investigations of beetles in eastern Latvia, detailed description of different collecting methods, the ecological review of habitats is made, there are morphological and systematical notes for some groups of beetles. There are 1836 species of beetles in the monograph in all and for every species the concrete localities and habitats are mentioned. According to the fauna this monograph is a valuable work. A. Barševskis has mentioned for eastern Latvia 4 species of Megalopodidae, 1 species of Orsodacnidae and 200 species of Chrysomelidae (including 5 species of Bruchinae). Three species, *Batophila fallax* Wse., *Crepidodera lamina* (Bedel) and *Dibolia timida* (Ill.), which were mentioned for Latvian fauna for the first time were made by misidentifications. We have deleted these species from the list of Latvian beetles (Bukejs 2008d).

In 1997 the first catalogue of Latvian Coleoptera was published (Telnov *et al.* 1997), where 334 species of the leaf-beetles Chrysomelidae sensu lato: Orsodacnidae – 1 species, Megalopodidae – 4 species and Chrysomelidae – 329 species (7 species from them are seed beetles Bruchinae).

In the second edition of the catalogue (Telnov 2004) the number of species of the leaf-beetles are larger – 338: Orsodacnidae - 1 species, Megalopodidae – 4 species and Chrysomelidae – 333 species (9 species from them are seed beetles Bruchinae).

There are 4 species of Megalopodidae, 1 species of Orsodacnidae and 150 species of Chrysomelidae (5 species from them are seed beetles Bruchinae) in the list of the beetles of the Silene Nature park (Barševskis *et al.* 2002). Additionally to this list 5 species of Chrysomelidae are mentioned (Barševskis *et al.* 2007).

A. Bukejs has established 2 species of seed beetles Bruchinae (Bukejs 2006), 1 species of Megalopodidae and 87 species of Chrysomelidae (Bukejs, Telnov 2007), while studying the fauna of

beetles of Naujene rural municipality (south-eastern Latvia).

In theses of different conferences can find some information about Latvian leaf-beetles (Princovs 2000; Valainis 2007; Bukejs 2008, 2008c).

A lot of authors mention some rare and/or new species of Latvian leaf-beetles and seed beetles in their publications (Šmits 1962; Barševskis, Savenkovs 1992; Barševskis 1996, 1997, 2001; Telnov 1996, 1997, 2001, 2002; Cinītis 1997; Leiskina 1999, 2000; Telnov, Kalniņš 2002; Telnov et al. 2005, 2006, 2007; Bukejs 2008a, 2008b).

Extensive faunal data about some subfamilies of the leaf-beetles are found in 2 recent publications. The faunal data about 19 species of Donaciina Kirby are published in the article (Valainis et al. 2007). In the publication (Bukejs in press) new faunal data about 14 species from subfamilies Criocerinae Latr. and Clytrinae Kirby are presented.

In the last years a number of articles about review of some taxons of the leaf-beetles of Latvian fauna were published: Cryptocephalinae Gyll. (Bukejs, Barševskis, Valainis 2007), *Chaetocnema* Steph. (Bukejs 2008e), *Phyllotreta* Chevr. (Bukejs 2008f).

The author of this publication is studying the fauna, the taxonomy and the biogeography of the Latvian leaf-beetles at the moment.

In Latvian fauna four species of Megalopodidae, one species of Orsodacnidae and 333 species of Chrysomelidae (10 from them are Bruchinae) are known now. We are going to continue our study of the leaf-beetles.

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FAUNISTICAL RECORDS OF THE AQUATIC ADEPHAGOUS BEETLES (COLEOPTERA: DYTISCIFORMIA) IN LATVIA

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Bukejs A., Balalaikins M. 2008. Faunistical records of the aquatic adephagous beetles (Coleoptera: Dytisciformia) in Latvia. *Acta Biol. Univ. Daugavp.*, 8(2): 273 - 281.

In the article the data about adephagous aquatic beetles (Dytisciformia) is presented, that was collected in the eastern part of Latvia (Balvi, Daugavpils, Jēkabpils, Ludza, Preiļi and Rēzekne districts) from 1999 to 2006. Material was collected using hydroentomological net, bottle-type traps and light traps and was collected in place of hibernation. As a result of our research 617 specimens that belong to 62 species and 22 genera of aquatic Adephaga were collected.

Key words: Coleoptera, Adephaga, Gyrinidae, Haliplidae, Noteridae, Dytiscidae, fauna, Latvia.

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INTRODUCTION

In the fauna of Latvia 144 species of aquatic beetle from suborder of Adephaga are known (Barševskis, Kalniņš, Cibuļskis 2005), that belong to four families: Gyrinidae (11 species), Haliplidae (15 species), Noteridae (2 species) and Dytiscidae (116 species).

In this article the data about adephagous aquatic beetles (Dytisciformia) is presented, that was collected in the eastern part of Latvia from 1999 to 2006. In administrative aspect this territory includes Daugavpils, Preiļi, Jēkabpils, Balvi, Rēzekne and Ludza districts. In last two decades the fauna of Coleoptera is learned intensively. Vast fauna data about beetles are published in Barševskis' monograph "The beetles of the

Eastern Latvia" (1993). Specific compound of every administrative district is shown in a summarizing publication about beetles Adephaga in Latgale (Barševskis 1993, 1999). Analyzing the data of these publications, uneven distributing of amount of species in the districts is noticeable. Firstly it is linked with biodiversity of every district. In the Eastern part of Latvia the valley of the river Daugava (from the boarder with Byelorussia till Daugavpils) and arrays of bogs near the Lubāns lake are considered as unique and the most biologically variable. Secondly, evenness of studied of concrete territory influences on the established number of species. In the Eastern part of Latvia Ludza, Balvi and Jēkabpils districts are less studied. To these territories in our research is paid the most attention.

STUDY AREA AND METHODS

The material was collected since 1999 till 2006 in eastern part of Latvia: in Balvi, Daugavpils, Jēkabpils, Ludza, Preiļi and Rēzekne districts (Fig. 1). The various reservoirs were investigated.

Balvi district: Tilžas civil parish (lake Tilžas), Baltinavas civil parish (river Kūkovas, river Rītupe, lake Motrines, lake Obeļovas, Obeļovas water-pit, lake Svātūnes), Rugāju civil parish (river Vārnīene).

Daugavpils district: Skrundalienas civil parish (lake Sītas, lake Bedušu, lake Silas, lake Riču, ditches, small ponds and rivulets), Dvīetes civil parish (small ponds).

Jēkabpils district: Dignājas civil parish (river Daugava, small ponds, ditches and rivulets).

Ludza district: Salnava civil parish (Zatišķu water-pit, Salnava pond, river Rītupe, small ponds and ditches), Kārsava (river Šņitka, school pond and small ponds), Cirsma civil parish (lake Cirsma), Pušmucova civil parish (small ponds), Pureņu civil parish (lake Dukānu), Nukšu civil parish (lake Pildas), Malnavas civil parish (water-pit), Isnaudas civil parish (small ponds).

Preiļi district: Rušonas civil parish (lake Sekstu, lake Feimaņu, river Rušonīca, river Dubna).

Rēzekne district: Kaunata civil parish (lake Rāznas, lake Kaunatas), Gaigalava civil parish (river Aiviekste, river Rēzekne, lake Lubāns, Kvāpānu ponds), Nagļu civil parish (storage lake Nagļu and small ponds), Bērzgales civil parish (lake Micānu, lake Meiranu, lake Kapineits), Verēmu civil parish (lake Adamovas), Pušas civil parish (lake Rušons), Makoņkalna civil parish (lake Solojs), Rēzekne city (lake Kovšu).

Material was collected mainly using hydroentomological net. Other standard entomological methods also were used: bottle-type traps (volume 5 l), collecting flying beetles to light traps and collecting in place of hibernation.

The given data about aquatic adephagous beetles spreading in the eastern part of Latvia were compared with the published earlier data (Barševskis 1999; Barševskis, Kalniņš, Cibuļskis 2005; Barševskis et al. 2002; Cibuļskis 2002; Kalniņš 1999, 2003).

The systematics of adephagous aquatic beetles (Dytisciformia), which applied in monograph



Fig. 1. Location of research area: B – Balvi district, D – Daugavpils district, J – Jēkabpils district, L – Ludza district, P – Preiļi district, R – Rēzekne district.

(Barševskis, Kalniņš, Cibuļskis 2005), is used in this article.

The majority of the investigated material is stored in the collection of Institute of Systematic Biology Daugavpils University (DUBC). Some single specimens are kept in the private collection of Andris Bukejs (Daugavpils, Latvia).

RESULTS

As a result of our research 617 specimens that belong to 62 species (43,1% from all Dytisciformia known in Latvia) and 22 genera (75,9%) of aquatic Adephaga were collected: Gyrinidae – 7 species (63 specimens), Haliplidae – 5 species (17 specimens), Noteridae – 2 species (21 specimens) and Dytiscidae – 48 species (534 specimens).

In the species list after the species name general number of specimens in brackets [], the place where it was found and the collecting date are indicated, in the brackets () are indicated the number of collected specimens, information about habitat and collector's name. When "leg." was not given for the species it means that the species was collected by Maksims Balalaikins.

Further abbreviations used: distr. – district, civ.p. – civil parish, env. – environ.

LIST OF SPECIES

Adephaga Schellenberg, 1806

Gyrinidae Latreille, 1810

1. *Gyrinus opacus* Sahlberg, 1819 – [1 ex.]: Jēkabpils distr., Dignājas civ. p., 12.X.2003 (1, forest, ditch).
2. *Gyrinus aeratus* Stephens, 1835 – [16 exx.]: Preiļi distr., Rušonas civ. p., 14.VIII.2004 (3, river Rušonīca); Ludza distr., Bļāši, 07.VIII.2004 (1, pond), 06.IX.2003 (8, river Rītupe), 06.IX.2003 (1, small pond), 06.IX.2003 (1, ditch); Ludza distr., Zatišķi,

21.IX.2003 (1, water-pit); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, river Kūkovas).

3. *Gyrinus pullatus* Zaitzev, 1908 – [11 exx.]: Ludza distr., Bļāši, 11.XI.1999 (3, ditch), 04.XI.2000 (1, ditch), 06.VII.2001 (5, river Rītupe); Ludza distr., Zatišķi, 21.IX.2003 (1, water-pit); Ludza distr., Pušmucovas civ. p., 22.VII.2004 (1, pond).
4. *Gyrinus marinus* Gyllenhal, 1808 – [2 exx.]: Ludza distr., Bļāši, 15.VII.1999 (1, pond); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Obeļovas).
5. *Gyrinus natator* (Linnaeus, 1758) – [16 exx.]: Ludza distr., Kārsava, 15.III.2000 (2, river Šņitka); Ludza distr., Bļāši, 15.VII.1999 (1, ditch), 15.VIII.1999 (1, pond), 20.V.2000 (1, ditch), 04.XI.2000 (1, ditch), 06.VII.2001 (1, river Rītupe), 06.IX.2003 (1, ditch), 27.IX.2003 (1, ditch); Ludza distr., Pušmucovas civ. p., 21.VII.2004 (1, pond); Balvi distr., Rugāju civ. p., 05.IX.2002 (1, river Vārnīene); Rēzekne distr., Kaunatas civ. p., 29.VIII.2001 (1, lake Rāznas); Jēkabpils distr., Dignājas civ. p., 22.VI.2000 (1, forest, pool), 12.X.2003 (1, forest, ditch); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (2, pond).
6. *Gyrinus substriatus* Stephens, 1828 – [10 exx.]: Ludza distr., Kārsava, 15.III.2000 (2, lake Šņitka); Ludza distr., Bļāši, 11.VIII.2001 (3, pool), 06.IX.2003 (1, river Rītupe); Rēzekne distr., Kaunatas civ. p., 29.VIII.2001 (2, lake Rāznas); Jēkabpils distr., Dignāja 22.VI.2000 (1, forest, pool); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (1, pond).
7. *Gyrinus paykulli* Ochs, 1927 – [7 exx.]: Balvi distr., Tilžas civ. p., 05.IX.2003 (1, river Tilžas); Ludza distr., Bļāši, 06.VII.2001 (1, river Rītupe); Rēzekne distr., Kaunatas civ. p., 29.VIII.2001 (1, lake Rāznas); Rēzekne distr., Mākoņkalna civ. p., 10.IX.2004 (2, lake Solojs); Rēzekne distr., Bērzgales civ. p., 10.IX.2003 (1, lake Meirānu); Jēkabpils distr., Dignājas civ. p., 22.VIII.2003 (1, pond).

Haliplidae Aube, 1836

8. *Haliplus fulvus* (Fabricius, 1801) – [8 exx.]: Rēzekne distr., Kaunatas civ. p., 29.VIII.2001 (5, lake Rāznas); Rēzekne distr., Rēzekne city, 13.IX.2003 (1, lake Kovšu); Ludza distr., Zatiški, 29.VIII.2002 (1, water-pit); Ludza distr., Bļāši, 04.X.1999 (1, pond).
9. *Haliplus variegatus* Sturm, 1834 – [1 ex.]: Ludza distr., Bļāši, 04.X.1999 (1, pond).
10. *Haliplus confinis* Stephens, 1829 – [1 ex.]: Daugavpils distr., Silene Nature Park, 16.VII.2006 (1, lake Riču, sandy bank, leg. A. Bukejs & M. Balalaikins).
11. *Haliplus fulvicollis* Erichson, 1837 – [1 ex.]: Ludza distr., Bļāši, 29.X.2000 (1, pond).
12. *Haliplus lineolatus* Mannerheim, 1844 – [6 exx.]: Ludza distr., Bļāši, 15.VII.1999 (3, pond); Ludza distr., Zatiški, 29.VIII.2002 (3, water-pit).

Noteridae Aube, 1836

13. *Noterus clavicornis* (De Geer, 1774) – [1 ex.]: Preiļi distr., Rušonas civ. p., 07.VIII.2004 (1, lake Feimaņu).
14. *Noterus crassicornis* (Müller, 1776) – [20 exx.]: Rēzekne distr., Kaunatas civ. p., 29.VIII.2001 (1, lake Rāznas); Rēzeknes distr., Kaunatas civ. p., 28.VIII.2004 (1, lake Kaunatas); Rēzekne distr., Bērzgales civ. p., 10.IX.2003 (1, lake Micānu), 10.IX.2003 (1, lake Meirānu); Ludza distr., Bļāši, 04.X.1999 (1, pond), 11.VIII.2001 (1, puddle), 07.IX.2003 (1, moist meadow); Ludza distr., Kārsava, 25.VIII.2000 (1, school pond); Daugavpils distr., Dviete, 05.IX.2003 (10, pond); Balvi distr., Baltinavas civ. p., 21.IX.2003 (2, lake Motrīnes).

Dytiscidae Leach, 1815

15. *Copelatus haemorrhoidalis* (Fabricius, 1787) – [1 ex.]: Ludza distr., Bļāši, 06.V.2001 (1, pond).

16. *Laccophilus hyalinus* (De Geer, 1774) – [37 exx.]: Rēzekne distr., Kaunatas civ. p., 29.VIII.2001 (4, lake Rāznas); Ludza distr., Kārsava, 19.VIII.2001 (1, school pond); Ludza distr., Salnavas civ. p., 07.X.2000 (1, forest, pond); Ludza distr., Bļāši, 04.X.1999 (2, pond), 23.IV.2000 (2, light trap), 26.VIII.2000 (1, forest, puddle), 06.IX.2003 (1, river Rītupe), 07.IX.2003 (1, moist meadow); Balvi distr., Tilžas civ. p., 05.IX.2002 (1, river Tilžas), 05.IX.2002 (3, river Raicene); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Motrīnes); Jēkabpils distr., Dignājas civ. p., 06.IX.2003 (10, river Daugava), 11.X.2003 (6, river Daugava); Preiļi distr., Līvāni, 07.IX.2003 (2, river Dubna).
17. *Laccophilus minutus* (Linnaeus, 1758) – [5 exx.]: Balvi distr., Tilžas civ. p., 05.IX.2002 (1, river Raicene); Ludza distr., Bļāši, 15.VII.1999 (2, pond), 07.IX.2003 (1, ditch); Ludza distr., Isnaudas civ. p., 21.VII.2004 (1, pond).
18. *Hydroglyphus geminus* (Fabricius, 1787) = *pusillus* (Fabricius, 1781) – [2 exx.]: Ludza distr., Bļāši, 22.X.2000 (1, ditch), 29.X.2000 (1, pond).
19. *Hygrotus inaequalis* (Fabricius, 1777) – [5 exx.]: Rēzekne distr., Bērzgales civ. p., 10.IX.2003 (1, lake Micānu); Rēzekne distr., Kaunatas civ. p., 28.VIII.2004 (1, lake Kaunatas); Ludza distr., Bļāši, 06.IX.2003 (1, ditch); Ludza distr., Isnaudas civ. p., 21.07.2004 (1, pond); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Motrīnes).
20. *Hygrotus versicolor* (Schaller, 1783) – [2 exx.]: Balvi distr., Tilžas civ. p., 05.IX.2002 (1, river Tilžas); Jēkabpils distr., Dignājas civ. p., 11.X.2003. (1, river Daugava).
21. *Hygrotus impressopunctatus* (Schall, 1783) – [16 exx.]: Ludza distr., Bļāši, 15.VII.1999 (1, pond), 15.VII.2001 (2, puddle in forest), 06.IX.2003 (5, ditch), 07.IX.2003. (4, moist meadow), 07.VIII.2004 (3, pond), 07.IX.2004 (1, river Rītupe).

22. *Hyphydrus ovatus* (Linnaeus, 1761) – [16 exx.]: Ludza distr., Bļāši, 15.VII.1999 (1, pond), 15.VIII.1999 (2), 01.IX.2001 (3, ditch), 06.IX.2003 (2, ditch), 06.IX.2003 (3, river Rītupe); Ludza distr., Zatiški, 21.IX.2003 (1, water-pit); Balvi distr., Lūbenka, 29.VIII.2002 (1, pond); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Motrīnes); Rēzekne distr., Bērzgales civ. p., 10.IX.2003 (1, lake Micānu); Rēzekne city, 13.IX.2003 (1, lake Kovšu).
23. *Hydroporus nigrita* (Fabricius, 1792) – [6 exx.]: Ludzas distr., Bļāši, 26.VIII.2000 (1, puddle in forest), 07.X.2000 (1, pond in forest), 15.VII.2001 (1, puddle on meadow), 07.VIII.2004 (1, pond); Ludza distr., Rogi, 31.VIII.2003 (1, puddle in forest); Ludza distr., Kārsava, 25.VIII.2000 (1, school pond).
24. *Hydroporus planus* (Fabricius, 1781). – [7 exx.]: Ludza distr., Bļāši, 04.X.1999 (1, pond), 26.VIII.2000 (2, puddle in forest), 29.X.2000 (2, pond), 29.IV.2001 (1, moist meadow); Ludza distr., Rogi, 31.VIII.2003 (1, puddle in forest).
25. *Hydroporus obscurus* Sturm, 1835 – [8 exx.]: Ludza distr., Kārsava, 25.VIII.2000 (2, school pond); Ludza distr., Bļāši, 26.VIII.2000 (3, puddle in forest), 07.X.2000 (3, pond in forest).
26. *Hydroporus melanarius* Sturm, 1835 – [6 exx.]: Ludza distr., Bļāši, 04.X.1999 (1, pond), 26.VIII.2000 (3, puddle in forest), 11.VIII.2001 (1, puddle); Jēkabpils distr., Dignāja, 22.VI.2000 (1, puddle in forest).
27. *Hydroporus tristis* (Paykull, 1798) – [1 ex.]: Ludza distr., Bļāši, 06.IX.2003 (1, ditch).
28. *Hydroporus umbrosus* (Gyllenhal, 1808) – [1 ex.]: Ludza distr., Bļāši, 06.IX.2003 (1, ditch).
29. *Hydroporus palustris* (Linnaeus, 1761) – [40 exx.]: Ludza distr., Bļāši, 15.VII.1999 (4, pond), 23.IV.2000 (1, light trap), 20.V.2000 (2, ditch), 26.VIII.2000 (7, puddle in forest), 07.X.2000 (3, pond in forest), 11.VIII.2001 (5, puddle), 29.IV.2001 (1, moist meadow), 01.IX.2001 (1, ditch), 06.IX.2003 (10, ditch), 06.IX.2003 (3, river Rītupe); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (1, pond); Rēzekne distr., Rēzekne city, 13.IX.2003 (1, lake Kovšu).
30. *Porhydrus lineatus* (Fabricius, 1775) – [36 exx.]: Ludza distr., Kārsava, 19.VIII.2001 (2, school pond); Ludza distr., Zatiški, 29.VIII.2002 (4, water-pit); Ludza distr., Bļāši, 15.VII.1999 (1, pond), 04.X.1999 (1, pond), 11.XI.1999 (1, ditch), 20.V.2000 (3, ditch), 26.VIII.2000 (1, puddle in forest), 29.X.2000 (3, pond), 29.IV.2001 (4, moist meadow), 01.IX.2001 (1, ditch), 06.IX.2003 (10, ditch), 06.IX.2003 (3, river Rītupe); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (1, pond); Rēzekne distr., Rēzekne city, 13.IX.2003 (1, lake Kovšu).
31. *Suphrodytes dorsalis* (Fabricius, 1787) – [8 exx.]: Ludza distr., Bļāši, 11.XI.1999 (1, ditch), 20.V.2000 (2, ditch), 15.VII.2001 (3, puddle on meadow), 06.IX.2003 (1, ditch); Jēkabpils distr., Dignājas civ. p., 06.IX.2003 (1, river Daugava).
32. *Scarodytes halensis* (Fabricius, 1787) – [1 ex.]: Ludza distr., Bļāši, 11.VIII.2001 (1, puddle).
33. *Nebrioporus assimilis* (Paykull, 1798) – [1 ex.]: Ludza distr., Bļāši, 15.VII.1999 (1, pond).
34. *Nebrioporus depressus* (Fabricius, 1775) – [1 ex.]: Daugavpils distr., Silene Nature Park, 06.VII.2006 (1, lake Rīču, sandy bank, leg. A. Bukejs & M. Balalaikins).
35. *Platambus maculatus* (Linnaeus, 1758) – [19 exx.]: Ludza distr., Bļāši, 15.VII.1999 (3, pond), 22.X.2000 (1, ditch), 29.X.2000 (1, pond), 25.VII.2001 (2, river Rītupe), 07.VIII.2004 (1, pond); Rēzekne distr.,

- Kaunatas civ. p., 29.VIII.2001 (6, lake Rāznas); Rēzekne distr., Nagļu civ. p., 31.VIII.2004 (3, storage lake Nagļi); Rēzekne distr., Pušas civ. p., Kirkiliški env., 22.VI.2006 (1, lake Rušons, leg. A. Bukejs & M. Balalaikins); Balvi distr., Tilžas civ. p., 05.IX.2002 (1, river Tilžas); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Motrīnes).
36. *Agabus paludosus* (Fabricius, 1801) – [23 exx.]: Ludza distr., Kārsava, 15.III.2000 (3, river Šņitka); Ludza distr., Bļāši, 15.VII.1999 (1, pond), 04.X.1999 (6, pond), 22.X.2000 (4, ditch), 04.XI.2000 (1, ditch), 25.VII.2001 (1, river Rītupe), 06.IX.2003 (1, ditch); Ludzas distr., Salnavas civ. p., 07.X.2000 (1, pond in forest); Jēkabpils distr., Dignāja, 22.VI.2000 (2, puddle in forest); Jēkabpils distr., Dignājas civ. p., 06.IX.2004 (3, pond); Rēzekne distr., Nagļi, 31.VIII.2004 (1, storage lake Nagļi).
 37. *Agabus bipustulatus* (Linnaeus, 1767) – [5 exx.]: Jēkabpils distr., Dignājas civ. p., 12.X.2003 (1, ditch in forest), 06.IX.2004 (1, pond); Ludza distr., Bļāši, 27.IX.2003 (1, ditch), Ludza distr., Isnaudas civ. p., 21.VII.2004 (1, pond); Rēzekne distr., Nagļu civ. p., 31.VIII.2004 (3, storage lake Nagļi).
 38. *Agabus congener* (Thunberg, 1794) – [11 exx.]: Ludza distr., Bļāši, 22.X.2000 (6, ditch), 15.VII.2001 (1, puddle on meadow), 06.IX.2003 (1, ditch); Rēzekne distr., Nagļi, 31.VIII.2004 (1, storage lake Nagļi).
 39. *Agabus undulatus* (Schränk, 1776) – [3 exx.]: Jēkabpils distr., Dignāja, 22.VI.2000 (1, puddle in forest); Ludza distr., Bļāši, 15.VIII.1999 (1, pond); Daugavpils distr., Silene Nature park, Ilgas, 16.VI.1999 (1, pond); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Motrīnes).
 40. *Ilybius subaeneus* Erichson, 1837 – [4 exx.]: Ludza distr., Bļāši, 22.X.2000 (1, ditch), 04.XI.2000 (1, ditch), 29.IV.2001 (1, moist meadow); Rēzekne distr., Kaunatas civ. p., 29.VIII.2001 (1, lake Rāznas).
 41. *Ilybius ater* (De Geer, 1774) – [25 exx.]: Ludza distr., Bļāši, 15.VII.1999 (3, pond), 29.X.2000 (1, pond), 25.VII.2001 (1, river Rītupe), 11.VIII.2001 (1, puddle), 01.IX.2001 (1, ditch), 06.IX.2003 (3, ditch), 07.09.2003 (2, moist meadow), 07.VIII.2004 (3, pond); Ludza distr., Isnaudas civ. p., 21.VII.2004 (2, pond); Ludza distr., Pureņu civ. p., 08.VII.2004 (1, lake Dūkanu); Ludza distr., Nukšu civ. p., 08.VII.2004 (1, lake Pildas); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (2, pond); Daugavpils distr., Dviete, 05.IX.2003 (2, pond); Jēkabpils distr., Dignājas civ. p., 22.VIII.2003 (1, pond); Preiļi distr., Rušonas civ. p., 07.VIII.2004 (1, lake Feimaņu); Rēzekne distr., Verēmu civ. p., 31.VIII.2004 (1, lake Adamovas).
 42. *Ilybius fuliginosus* (Fabricius, 1792) – [32 exx.]: Ludza distr., Bļāši, 15.VII.1999 (7, pond), 04.X.1999 (1, pond), 29.IV.2001 (3, moist meadow), 07.VIII.2004 (1, pond), 07.IX.2004 (2, river Rītupe); Ludza distr., Pureņu civ. p., 08.VII.2004 (1, lake Dūkanu); Rēzekne distr., Pušas civ. p., Kirkiliški env., 22.VI.2006 (1, lake Rušonas, sandy bank, leg. A. Bukejs & M. Balalaikins); Jēkabpils distr., Dignāja, 22.VI.2001 (1, river Daugava), 06.IX.2004 (8, pond); Balvi distr., Tilžas civ. p., 05.IX.2002 (4, river Tilžas), 05.IX.2002 (2, river Raicene); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (2, pond).
 43. *Ilybius fenestratus* (Fabricius, 1781) – [4 exx.]: Ludza distr., Zatišķi, 29.VIII.2002 (1, water-pit); Ludza distr., Pureņu civ. p., 08.VII.2004 (1, lake Dūkanu); Rēzekne distr., Bērzgales civ. p., 10.IX.2003 (1, lake Micānu), 10.IX.2003 (1, lake Meirānu); Rēzekne distr., Verēmu civ. p., 31.VIII.2004 (1, lake Adamovas).
 44. *Rhantus grapii* (Gyllenhal, 1808) – [4 exx.]: Balvi distr., Lūbenka, 29.VIII.2002 (1, pond); Ludza distr., Bļāši, 29.IV.2001 (1, moist meadow), 06.V.2001 (1, pond); Ludza distr., Isnaudas civ. p., 21.07.2004 (1, pond).
 45. *Rhantus frontalis* (Marsham, 1802) – [8 exx.]: Ludza distr., Bļāši, 15.VII.1999 (3, pond),

- 06.VII.2001 (1, river Rītupe), 06.IX.2003 (1, ditch), 07.IX.2003 (3, moist meadow); Ludza distr., Zatišķi, 29.VIII.2002 (2, water-pit).
46. *Rhantus notaticollis* (Aube, 1837) – [7 exx.]: Ludza distr., Bļāši, 29.IV.2001 (1, moist meadow), 01.IX.2001 (2, ditch); Ludza distr., Kārsava, 15.VII.1999 (1, pond), 22.IV.2000 (1, puddle); Jēkabpils distr., Dignājas civ. p., 06.IX.2003 (2, pond).
47. *Rhantus exsoletus* (Forster, 1771) – [14 exx.]: Ludza distr., Bļāši, 15.VII.1999 (1, pond), 20.V.2000 (2, ditch), 06.V.2001 (2, pond), 06.IX.2003 (2, ditch), 07.IX.2003 (1, moist meadow); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (1, pond); Jēkabpils distr., Dignājas civ. p., 06.IX.2003 (3, river Daugava); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Motrīnes).
48. *Rhantus latitans* Scharp, 1882 – [9 exx.]: Ludzas distr., Bļāši, 15.VII.1999 (3, pond), 20.V.2000 (1, ditch), 15.V.2003 (1, pond); Jēkabpils distr., Dignājas civ. p., 06.IX.2003 (3, river Daugava); Rēzekne distr., Bērzgales civ. p., 10.IX.2003 (1, lake Micānu).
49. *Colymbetes fuscus* (Linnaeus, 1758) – [2 exx.]: Ludza distr., Salnava, 29.VIII.2002 (1, pond); Ludza distr., Bļāši, 15.VII.1999 (1, pond); Jēkabpils distr., Dignājas civ. p., 06.IX.2004 (1, pond).
50. *Colymbetes paykulli* Erichson, 1837 – [9 exx.]: Ludza distr., Bļāši, 15.VII.1999 (1, pond), 11.XI.1999 (2, diych), 29.04.2001 (1, moist meadow), 01.IX.2001 (1, ditch), 27.IX.2003 (1, ditch); Ludza distr., Salnavas civ. p., 07.X.2000 (1, pool in forest); Jēkabpils distr., Dignājas civ. p., 20.VII.2003 (1, pond), 06.IX.2004 (1, pond).
51. *Colymbetes striatus* (Linnaeus, 1758) – [10 exx.]: Ludza distr., Kārsava, 25.VIII.2000 (1, school pond); Ludza distr., Bļāši, 15.VIII.1999 (1, pond), 02.IV.2000 (2, pond), 29.X.2000 (2, pond), 27.IX.2003 (2, ditch); Ludza distr., Grebņeva, 29.VIII.2002 (1, water-pit); Balvi distr., Balvi, 05.IX.2002 (1, pond).
52. *Hydaticus seminiger* (De Geer, 1774) – [13 exx.]: Ludza distr., Zatišķi, 29.VIII.2002 (1, water-pit); Ludza distr., Bļāši, 15.VI.1999 (2, pond), 15.VIII.1999 (2, pond), 22.IV.2000 (1, pond), 06.IX.2003 (5, ditch); Jēkabpils distr., Dignājas civ. p., 17.VII.2003 (1, pond), 12.X.2003 (1, pool in forest).
53. *Hydaticus transversalis transversalis* (Pontoppidan, 1763) – [8 exx.]: Ludza distr., Zatišķi, 29.VIII.2002 (2, water-pit); Ludza distr., Bļāši, 06.IX.2003 (5, ditch), 06.IX.2003 (1, river Rītupe).
54. *Hydaticus continentalis* Balfour-Browne, 1944 – [3 exx.]: Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (3, pond); Ludza distr., Bļāši, 07.IX.2003 (1, wet meadow).
55. *Graphoderus zonatus zonatus* (Hoppe, 1795) – [3 exx.]: Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (3, pond); Preiļi distr., Rušonas civ. p., 14.VIII.2004 (1, lake Sekstu).
56. *Acilius sulcatus* (Linnaeus, 1758) – [17 exx.]: Ludza distr., Zatišķi, 29.VIII.2002 (1, water-pit); Ludza distr., Bļāši, 15.VII.1999 (4, pond), 07.IX.2003 (1, pond); Daugavpils distr., Silenes Nature Park, Ilgas, VI.1999 (1, leg. A. Bukejs), 16.VI.1999 (4, pond); Daugavpils distr., Dviete, 05.IX.2003 (1, pond); Jēkabpils distr., Dignājas civ. p., 06.IX.2004 (3, pond); Balvi distr., Baltinavas civ. p., 21.IX.2003 (2, lake Svātūnes).
57. *Acilius canaliculatus* (Nicolai, 1822) – [52 exx.]: Ludza distr., Bļāši, 15.VII.1999 (3, pond), 11.XI.1999 (3, ditch), 11.VIII.2001 (2, puddle), 06.IX.2003 (5, river Rītupe), 06.IX.2003 (4, ditch), 07.IX.2003 (1, ditch); Ludza distr., Rogi, 31.VIII.2003 (5, puddle in forest); Ludza distr., Zatišķi, 29.VIII.2002 (1, water-pit), 21.IX.2003 (1, water-pit); Ludza distr., Kārsava, 22.IV.2000 (4, puddle), 25.VIII.2000 (1, school pond); Ludza distr., Isnaudas civ. p., 21.VII.2004 (1, pond); Balvi distr., Balvi, 05.IX.2002 (1, pond); Balvi distr., Lūbenka, 29.VIII.2002 (2, pond); Balvi distr., Baltinavas

- civ. p., 21.IX.2003 (3, lake Obeļovas), 21.IX.2003 (1, river Kūkovas), 21.IX.2003 (2, lake Motrīnes); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (1, pond); Daugavpils distr., Dviete, 05.IX.2003 (1, pond); Rēzekne distr., Bērzgales civ. p., 10.IX.2003 (2, lake Micānu); Rēzekne distr., Rēzekne, 13.IX.2003 (3, lake Kovšu); Jēkabpils distr., Dignājas civ. p., 22.VIII.2003 (1, pond), 06.IX.2004 (3, pond); Preiļi distr., Rušonas civ. p., 07.VIII.2004 (1, lake Feimaņu).
58. *Dytiscus latissimus* Linnaeus, 1758 – [1 ex.]: Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (1, lake Bedušu). About this record was informed earlier (Barševskis 2001). Protected species in Latvia.
59. *Dytiscus dimidiatus* Bergsträsser, 1778 – [3 exx.]: Ludza distr., Bļāši, 15.VII.1999 (1, pond), 01.IX.2001 (1, ditch); Rēzekne distr., Nagļi, 31.VIII.2004 (1, storage lake Nagļi).
60. *Dytiscus marginalis marginalis* Linnaeus, 1758 – [21 exx.]: Balvi distr., Rugāju civ. p., 05.IX.2002 (1, river Vārniene); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Obeļovas), 21.IX.2003 (1, Obeļovas water-pit); Ludza distr., Kārsava, 25.VIII.2000 (1, school pond); Ludza distr., Bļāši, 15.VII.1999 (7, pond), 29.IV.2001 (1, moist meadow), 06.IX.2003 (1, river Rītupe), 06.IX.2003 (2, ditch), 06.IX.2003 (1, pond); Ludza distr., Zatišķi, 29.VIII.2002 (1, water-pit); Ludza distr., Pureņu civ. p., 08.VII.2004 (1, lake Dūkanu); Ludza distr., Isnaudas civ. p., 21.07.2004 (1, pond); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (1, pond); Jēkabpils distr., Dignājas civ. p., 06.IX.2003 (1, river Daugava).
61. *Dytiscus circumcinctus* Ahrens, 1811 – [16 exx.]: Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (3, pond), 16.VI.2000 (1, pond), VI.1999 (1, leg. A. Bukejs); Ludza distr., Bļāši, 15.VII.1999 (5, pond), 29.IV.2001 (2, moist meadow); Ludza distr., Zatišķi, 29.VIII.2002 (1, water-pit); Ludza distr., Isnaudas civ. p., 21.VII.2004 (1, pond); Jēkabpils distr., Dignāja, 29.IV.2003 (1, in flight); Rēzekne distr., Rēzekne, 15.IV.2005 (1, in flight).
62. *Cybister lateralimarginalis* (De Geer, 1774) – [8 exx.]: Ludza distr., Bļāši, 26.VIII.2000 (1, water-pit), 29.IX.2001 (1, water-pit); Ludza distr., Zatišķi, 19.IX.2002 (1, Zatišķu water-pit); Daugavpils distr., Silene Nature Park, Ilgas, 16.VI.1999 (2, lake Bedušu); Preiļi distr., Rušonas civ. p., 14.VIII.2004 (1, river Rušonīca); Rēzekne distr., Bērzgales civ. p., 10.IX.2003 (1, lake Meirānu); Balvi distr., Baltinavas civ. p., 21.IX.2003 (1, lake Obeļovas), 21.IX.2003 (1, lake Motrīnes). In Silene Nature Park (Daugavpils distr.) species *Haliphus confinis* Stephens, 1829 was indicated firstly.
63. *Hydroporus palustris* (Linnaeus, 1761), *Ilybius ater* (De Geer, 1774), *Ilybius fuliginosus* (Fabricius, 1792) (the species that are typical as for standing water as for flowing water), *Acilius sulcatus* (Linnaeus, 1758) and *Acilius canaliculatus* (Nicolai, 1822) (typical for standing water) are noticed as the most widespread and often occurred species from Dytisciformia in the Eastern Latvia.

The records published in the article will complete the information on Coleoptera species distribution in Latvia.

ACKNOWLEDGEMENTS

We warmly thank Prof. Dr. Arvīds Barševskis for checking the identifications of material.

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***OEDEMERA SUBROBUSTA* (NAKANE, 1954) (COLEOPTERA: OEDEMERIDAE) – NEW SPECIES FOR BALTIC FAUNA**

Arvīds Barševskis

Barševskis A. 2008. *Oedemera subrobusta* (Nakane, 1954) (Coleoptera: Oedemeridae) – new species for Baltic fauna. *Acta Biol. Univ. Daugavp.*, 8 (2): 283 - 286.

In the article information about founding of new Oedemeridae species for the fauna of the Baltic States (Latvia, Lithuania, Estonia) – *Oedemera subrobusta* (Nakane, 1954) has been given. The mentioned species is very similar to *Oe. lurida lurida* (Marsham, 1802), which wide-distributed in the Baltic Region. In the article determination key for both species are given.

Key words. Coleoptera, Oedemeridae, *Oedemera subrobusta*, fauna, Baltic.

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INTRODUCTION

Family Oedemeridae (Hexapoda: Coleoptera) is represented by 15 species in the Baltic States, 12 species have been known from Estonia, 13 species – from Latvia and 14 species – from Lithuania. Just a little bit smaller amount of species has been detected also in the Nordic Countries: in Finland – 9 species, in Russian Karelia – 9 species, in Norway – 11 species, in Denmark – 11 species, but in Sweden the biggest number – 18 species (Silfverberg 2004) have been found. According to data of H. Silfverberg (2004) altogether 21 species represent this family in the Baltic States and Northern Europe.

During determination of Oedemeridae material in the collection of Daugavpils University Institute of Systematic Biology (DUBC) new Oedemeridae species for the Baltic States – *Oedemera subrobusta* (Nakane, 1954) was determined. In this article information about distribution of this species in the Baltic States has been gathered

and the diagnostic features have been given. The mentioned species is very similar to *Oe. lurida lurida* (Marsham, 1802), which is wide-spread in the Baltic Region. In the article determination keys for both species have been given.

MATERIALS AND METHODS

In the result of researches 58 *Oedemera subrobusta* (Nakane) specimens were detected in the Baltic States, they are kept in the collection of Daugavpils University Institute of Systematic Biology (DUBC).

Every beetle's specimen was determined basically according to the peculiarities of genitalia structure. For the determination of the species determination keys included in the monograph of X.A. Vazquez (2002) were used. Motorized stereo microscope Zeiss Stereo Discovery V12 was used for doing researches. For taking and processing of pictures of the

material photo camera Axiocam and AxioVision Rel. 4.4 software were used.

In provision of data about species findings the labels' data were used, they include information about place of collecting, date, collector's name, but in special cases about habitat. Number of collected males (M) and females (F) was detected separately and in the list of findings it has been indicated in brackets () before the surname of the collector. All findings were grouped for each Baltic State according to administrative districts.

Arc Gis9 software was used for elaboration of the map of species' distribution (Fig. 1).

RESULTS AND DISCUSSION

In the result of researches 58 *Oe. subrobusta* (Nakane) specimens were determined, they have been collected in all three Baltic States: Latvia (55 specimens), Lithuania (2 specimens), Estonia (1 specimen). The number of specimens collected in Latvia is bigger, because the major part of DUBC material has been collected in Latvia. Currently there is not enough information if this species is equally distributed in all three Baltic States or is it less frequent in any of them. In Latvia *Oe. subrobusta* (Nakane) can be found much rarely than the very similar *Oe. lurida lurida* (Marsh.) in the determined material in DUBC 366 specimens of both species were detected, 312 of them were *Oe. lurida lurida* (Marsh.), which is very wide-spread in all Baltic States. The author failed in finding disparities in biology and ecology of both species in Baltic. It has been observed that *Oe. subrobusta* (Nakane) can be found in Latvia in wetter habitats than *Oe. lurida lurida* (Marsh.). In several findings in Latvia both species were found together. There are very few data about distribution of the species in Lithuania and Estonia, so it is not sufficient to make conclusions about distribution, and ecology of this species.

In the following researches it is very important to identify precisely both species. *Oe. subrobusta* (Nakane) male is shown in figure 2, but female in

figure 3, however *Oe. lurida lurida* (Marsh) male is shown in figure 4, but female – in picture 5.

The following determination key (Vazquez 2002) is offered for determination of the species:

- 1 (2) Hooks of penis close to rounded apex (fig. 6). Pronotum more transverse (fig. 8). The elytral pubescence shorter 5.5 – 9.5 mm..... *Oe. subrobusta* (Nakane)
- 2 (1) Hooks of penis remote from knob-like apex (fig. 7). Pronotum slightly longer (fig. 9). The elytral pubescence somewhat longer. 5.0 – 8.0 mm..... *Oe. lurida lurida* (Marsh.)

Oe. subrobusta (Nakane, 1954) has been founded in the following findings in the Baltic States:

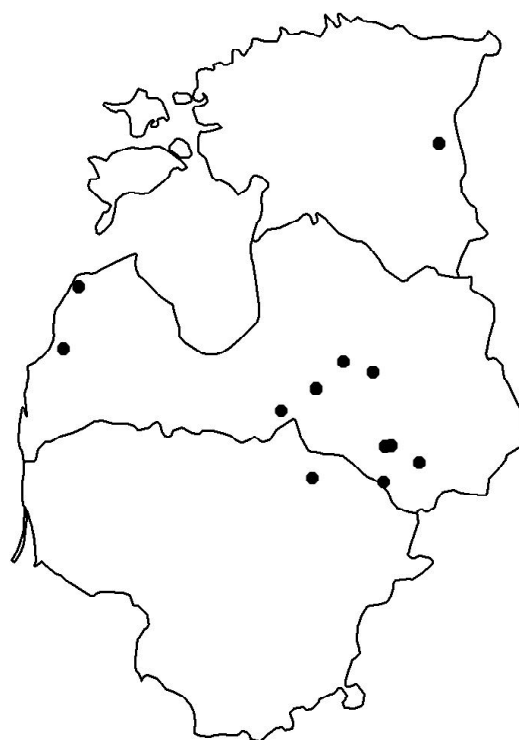


Fig. 1. Distribution map of *Oe. subrobusta* (Nakane) in Baltic States.



Fig. 2. *Oe. subrobusta* (Nakane) male



Fig. 3. *Oe. subrobusta* (Nakane) female

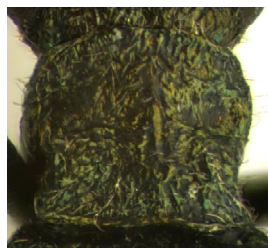


Fig. 8. *Oe. subrobusta* (Nakane) pronotum



Fig. 4. *Oe. lurida lurida* (Marsh) male

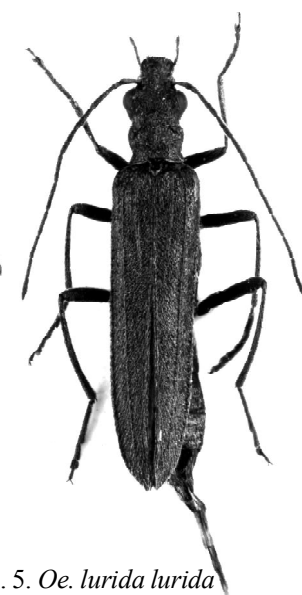


Fig. 5. *Oe. lurida lurida* (Marsh) female



Fig. 9. *Oe. lurida lurida* (Marsh) pronotum



Fig. 6. *Oe. subrobusta* (Nakane) male genitalia (apex of aedeagus & paramera)



Fig. 7. *Oe. lurida lurida* (Marsh), male genitalia (apex of aedeagus & paramera)

LITHUANIA – Rokiškis Distr.: Obeļai, forest edge, 30.07.2008. (2M, A.Barševskis leg.).
LATVIA – Aizkraukle Distr.: Aizkraukle bog, Nature protection area „Aizkraukles purvs”, 01.07.2008., (2M, A.Pankjāns leg.), Valle, 12.08.2008., (2M, 6F, A.Barševskis leg.); Daugavpils Distr.: Dubna, „Lielie Stradiški”, 08.07.2006., (2M, 3F, A.Pankjāns leg.), Šedere, „Straumēni”, 29.07.2007., (4M, 6F, M.Murd leg.); Jēkabpils Distr.: Dunava, 03.06.2007., (1M, A.Barševskis leg.), 10.-19.06.2007., (1M, K.Barševska leg.); Kuldīga Distr.: Alsunga, Augšužava Nature protection area, 28.08.2005., (8M, 6F, A.Barševskis, A.Bukejs, U.Valainis leg.) Madona Distr.: Ērgļi, old forest clearing, 19.07.2008., (4M, 5F, A.Barševskis leg.), Sauleskalns, 07.07.2006., (1M, A.Pankjāns, E.Rudāns, A.Barševskis leg.); Preiļi Distr.: Jersika, „Kurpnieki”, 23.-24.06.2008. (2M, A.Barševskis leg.); Ventspils Distr.: Muižnieki, 29.07.2005., (1M, 1F, A.Barševskis, A.Bukejs, U.Valainis leg.).
ESTONIA – Tartu Distr.: Nina, VIII. 1997., (1M, A.Barševskis leg.)

Oe. subrobusta (Nakane) is widely spread in the Eastern Palaearctic from Japan even till some countries of Western Europe. In Europe it has been found already in Armenia, Georgia, European part of Russia, Poland, Czech Republic, Slovakia, Hungary, Romania, Switzerland, France and Sweden (Löbl, Smetana (eds.) 2008, Höjer 2008). This species was not known in the Baltic States up to now (Silfverberg, 2004).

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THE INFLUENCE OF *DENDROLIMUS PINI* L. OUTBREAK ON THE SURROUNDING STANDS AND FOREST LITTER ENTOMOFAUNA

Artūras Gedminas, Algimantas Žiogas

Gedminas A., Žiogas A. 2008. The influence of *Dendrolimus pini* L. outbreak on the surrounding stands and forest litter entomofauna. *Acta Biol. Univ. Daugavp.*, 8(2): 287 - 296.

Litter arthropods were trapped by pitfall traps in outbreaks of *Dendrolimus pini* L. in 1998-2000 y. Further from the *D. pini* outbreak centre, the state of pine trees is better according to crown defoliation, amount of dry branches, fruiting, age of needles, crown discoloration, general sanitary condition. Beetles were the most abundant in the litter of the stand of outbreak, 62% of all collected Arthropods in 1998, 79% in 1999 and 74% in 2000. The dominating species of beetles was *Carabus arcensis* Hbst., which comprised 81,3% (in 2000) of all collected beetles. Forest litter insects (in 1999) included: entomophagous (91%), phytophagous (4%) and coprophagous (4%). Saprophagous, necrophagous and representatives of other groups did not exceed 1% of all collected Arthropods. Increased indices of insect species diversity (D), species evenness (E) and biocoenose diversity (H) as well as reduced domination indices ($\bar{L}$ and $\bar{d}$) of insect species show, that in the strongly affected zone biocoenose is changing towards regeneration and stability.

Key words: *Dendrolimus pini*, outbreak, tree condition, entomofauna

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INTRODUCTION

Insect are one of the most threa Hreatling agents in the forest of Lithuania. Insect damage was recorded on 83,4% of all damaged forest area in 1996-2000, while game animal damage made 9,3%, abiotic factors and fires – 5,4%, forest diseases – 1,9% (Anonymous 1995, 1996).

Defoliating insects prevail in pine forests, and climate conditions often favors pest outbreaks. Some of recent pests, such as *Panolis flammea* Schiff., *Diprion pini* L., *Lymantria monacha* L.

have been recorded earlier, but *Dendrolimus pini* L. infestations in Lithuania for the first time occurred only in 1993. Therefore life history and ecology of this species in Lithuania is known only generally, and the adverse impacts on forest ecosystem and other insects actually has not been studied. *Dendrolimus pini* L. infested 10800 ha of pine forests in Dzukija National park, Varena and Druskininkai forest enterprises in 1994, outbreak expanded to 28 thou. ha in 1995 and decreased to 3,5 thou. ha in 1996 (Anonymous 1996). Outbreak finally ceased in 1997, after application of chemical and biological pesticides.

Damage of defoliating insects, including *Dendrolimus pini* L. can hardly be evaluated. Decline of photosynthesis in crowns reduce tree growth. In the case of *D. pini* within 5 years the loss makes about 8m³/ha (Gedminas 2003; Gedminas et al. 2004). Ecological conditions in the forest change, stande-preferring species are substituted by light preferring ones. Sunlight easily gets through a crown (due to the loss of needles), soil and litter worm up more quickly, influencing changes in grass cover. Precipitation, reaching the soil, increases. Needles, consumed by pest fertilizes forest soils. Investigation in the North east Germany of ability of pines to recover after heavy needle loss greater than 80% caused by defoliation leads to heavy pine dieback in the year of the defoliation (Moeller et al 1998). Obviously all changes have impact on the abundance and species composition of forest litter insects.

Our earlier studies have shown that entomophagous insects comprise the greatest part (92%) of pine stand litter entomocomplex (Gedminas, Žiogas 1998). They are the main agents controlling insect (including pests) abundance in forest biocenoses.

The study was aimed to investigate forest litter insect complex (species composition and abundance) changes in the *D. pini* L. outbreak area and in the surrounding stands. Secondary objective was to determine impact of management (clearing the deteriorated stand) to insects in adjacent stands.

MATERIAL AND METHODS

To evaluate forest litter insect changes 12 observation plots were established within *Dendrolimus pini* L. outbreak and area and in nearby stands. In 1997 they were placed at a distance of 30 m from each other, gradually moving away from the area of clear sanitary cuttings (1996) in the centre of the outbreak (fig. 1). Two groups, each consisting of 4 pitfall traps, were inserted into the soil in each plot at the distance of 20 m (fig. 1). Barber's traps are 0,2 l

capacity plastic containers inserted into the soil in the way, that their upper edge is on the same level as the surface of the litter. Total 96 traps were established. One third of each trap was filled with 15% formaline. Insects from the traps were collected each month since the middle of May (5 surveys every year).

In each observation plot model pine trees (24 in each plot, 288 totally) were selected, and all of them were evaluated using forest monitoring methodology (Ozolincius, Stakenas 1997). In 1997-1999 the following tree parameters were evaluated: species, diameter, Craft's class, top condition (0-healthy, 1-broken, 2-dry, 3-damaged), amount of dry branches (0-less than 10%, 1-11-30%, 2-31-50%, 3-more than 50%), age of needles, fruiting (0-absent, 1-small, 2-average, 3-great), crown defoliation and additionally – the category of tree sanitary condition (Voroncov, Mozolevskaja, Sokolova 1991).

Collected insects were identified in the laboratory of Lithuanian Forest Research Institute and Plant Protection Department at Lithuanian University of Agriculture using manuals (Chinery 1986; Iljinskij 1962; Plavilscikov 1957) as well as collections of insects.

Observation plots were established in *Pinetum vaccinosum* forest type, black 207 of Marcinkoniai forest district of Dzukija National Park, where in 1994-1996 occurred the outbreak of pine. The total area – 20,9 ha, in site ¹ 17 – 0,4 ha, in site ¹ 18 – 2,5 ha of stands. In 1996 an area of 2,9 ha was felled by clear sanitary cuttings.

RESULTS

Observations allowed to divide the stands surrounding the outbreak, into 3 zones: strongly affected stand – 60 m distance from the outbreak edge (cutting area), slightly affected (60-150 m) and undamaged control stand (over 150 m). Assessment of trees in the plots according to a series of indices showed, that moving closer to the centre of *Dendrolimus pini* L. outbreak, sanitary condition becomes worse. The main

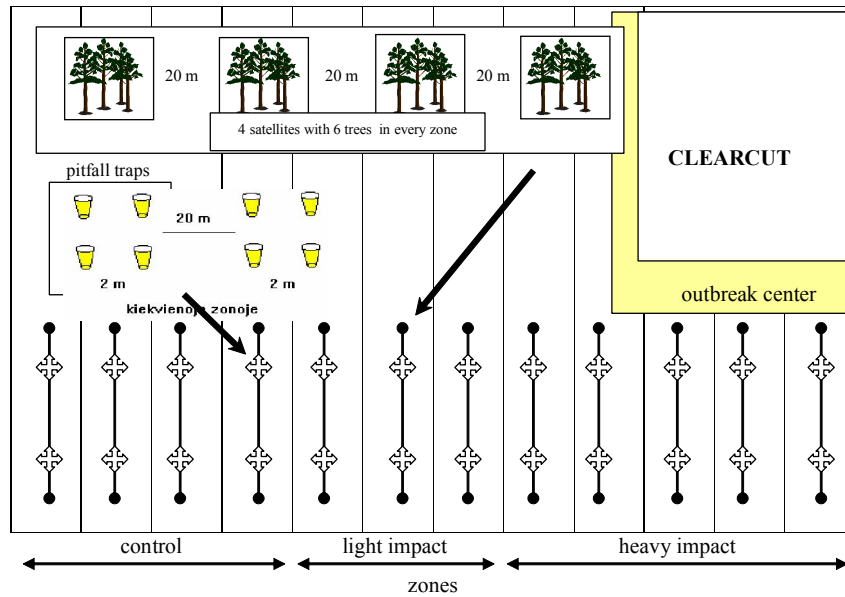


Fig. 1. Experiment plot design

parameters, best reflecting changes in the trees state, were as follows: crown defoliation degree, category of sanitary condition, amount of dry branches. These parameters decline approaching the centre of the outbreak (fig. 2).

Approaching, the outbreak crown defoliation degree in 1997 increased by 22%, the amount of dry branches by 18%, while the category of tree sanitary condition became worse by 0,8 points. Other tree parameters became worse as well.

Moving closer to the outbreak, average age of pine needles and fruiting decreased, while crown discoloration increased. The state of tops and Craft's class remained unchanged.

In 1998 crown defoliation in the outbreak centre increased by 30%, the amount of dry branches increased by 2 categories, the category of sanitary condition worsened by 2,5 points. In 1999 defoliation degree remained the same, while the category of sanitary condition and the amount of dry branches increased by 1 point (table 1).

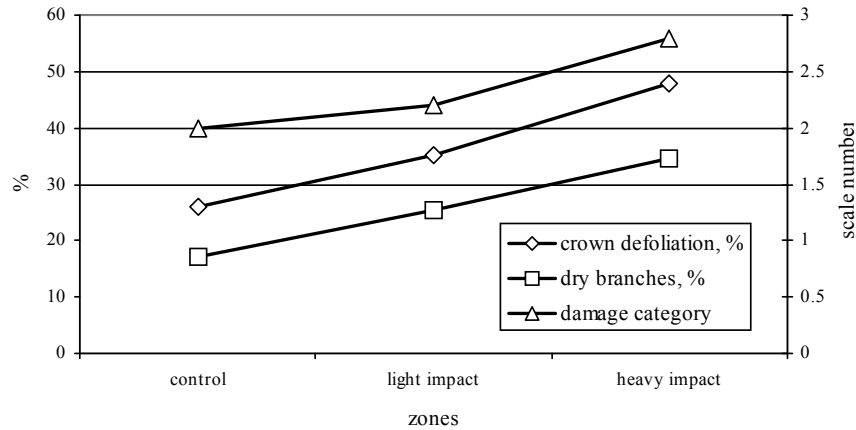


Fig. 2. Pine parameters in different zones (Marcinkonys forestry, 1997)

Table 1. Pine parameters in *Dendrolimus pini* L. outbreak zones 1998-99 (Marcinkonys forestry)

Tree parameters		Impact zones			Significance of difference ^x
		control	light	heavy	
Sanitary state category	1998	1,9±0,07	2,1±0,08	2,4±0,07	***
	1999	1,7±0,08	2,3±0,15	3,0±0,26	
Defoliation of upper crown, %	1998	23,2±1,19	29,2±1,93	38,8±2,05	***
	1999	19,4±0,99	27,7±1,93	41,4±1,96	
Crown defoliation, %	1998	29,2±1,26	33,4±1,71	42,7±2,08	***
	1999	25,9±1,50	35,3±2,1	47,8±2,03	

x – Significance of difference by Student criterion t: *p>0.90, ** p>0.95, *** p>0.99, n – unreliable

Assessment of tree state in 1998-1999 revealed that the state of pine trees in the control stand has even improved. The category of tree sanitary condition decreased by 0,2 points, crown defoliation decreased by 4% (table 1). At that time the condition of slightly affected stands remained stable, while that of strongly affected became worse. The category of tree sanitary condition increased by 0,6 points, defoliation of the whole crown increased by 5%. The decline of the state of pines was influenced by a slow regeneration of trees in the zone of strong defoliation damage.

Composition of forest litter entomofauna in stands surrounding the outbreak

During the surveys in 1998 – 21 thou. in 1999 over 24 thou. and in 2000- 18 thou. of Arthropod, belonging to *Insecta*, *Arachnida* and *Myriapoda* classes were collected and specified. Among the collected Arthropoda were representatives of 9 orders of insects. 157 species of insects were detected in the litter of pine forest. The most abundant was the class of *Insecta*. On average 78,4% of collected Arthropoda (in 1998-71,5%, in

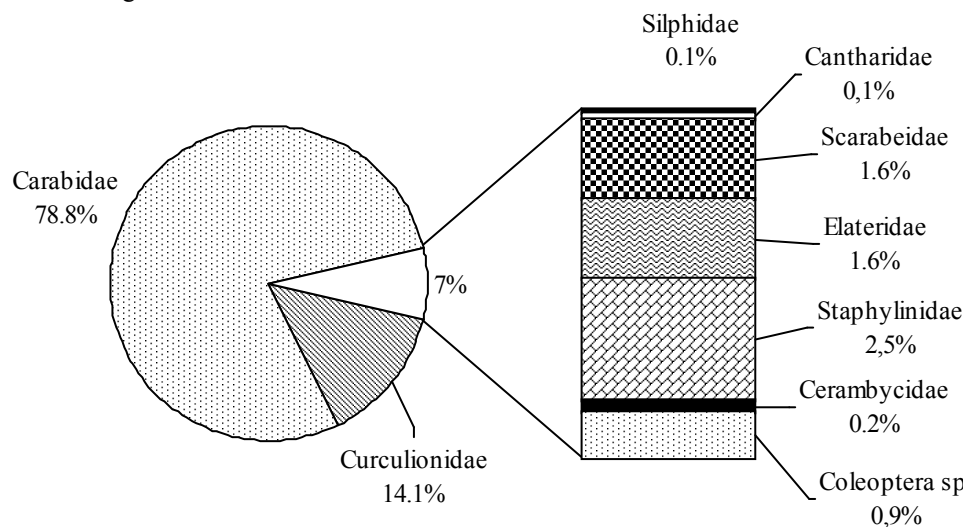


Fig. 3. Distribution of forest litter beetles

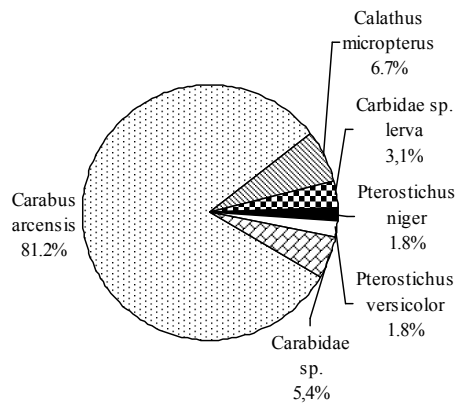


Fig. 4. Dominant species of Carabid beetles

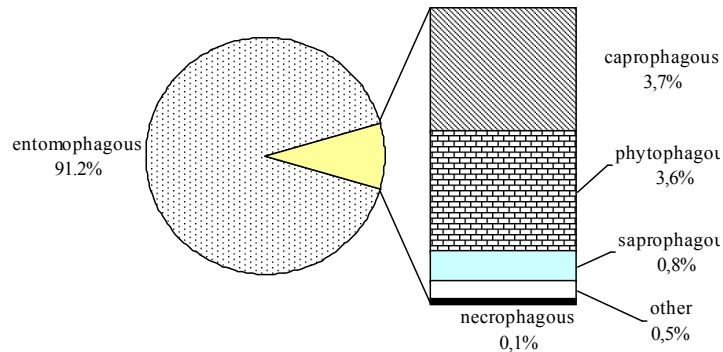


Fig. 5. Trophic dependency of forest litter insects

1999-82,7% and in 2000-81,1%) belong to it. In the second place according to abundance was the spiders order, representatives of which comprised respectively 28%, 16% and 19% of collected Arthropod specimen.

Among insects dominating in the forest litter the most numerous was *Coleoptera* order. They comprised 62-79% of all collected insects. *Carabidae* and *Curculionidae* families were the most numerous (fig. 3). Representatives of species belonging to them comprised about 93% of all collected insects. *Carabus arcensis* Hbst. from *Carabidae* family dominated among the insects. It comprised the greater half (even up to 81,3% in 2000) of beetles collected in the surveys (fig. 4).

The list of dominating beetles includes representatives of 7 other families, representatives of 3 families, *Elateridae*, *Curculionidae* and *Cerambycidae* preferably are phytophagous.

Entomofauna collected in the outbreak of pine was separated according to trophic dependence. Most of the insects were entomophagous (91%), others were phytophagous (4%) and coprophagous (4%). Saprophagous, necrophagous and representatives of other trophic groups made up to 1% of all collected

Arthropoda (fig. 5). This proves once more, that the litter is the host of the great number of entomophagous insects, having a crucial importance on regulatory processes in forest ecosystems.

Approaching the centre of the outbreak, abundance of entomophagous decreased by 8% (1999), and coprophagous by 23%. Most coprophagous insects are shade-preferring species, therefore they are less

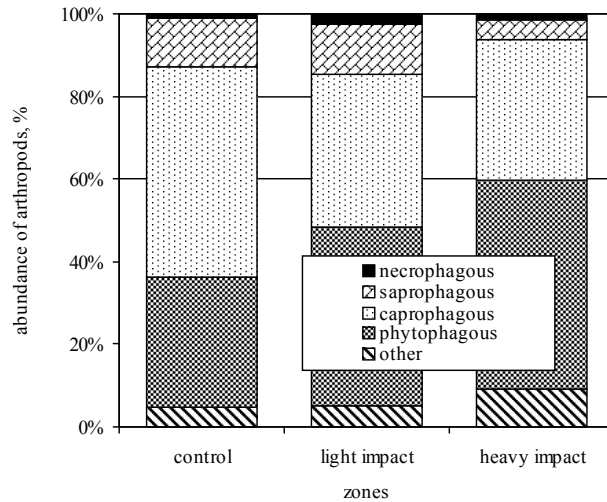


Fig. 6. Distribution of Arthropods by trophic groups in different zones

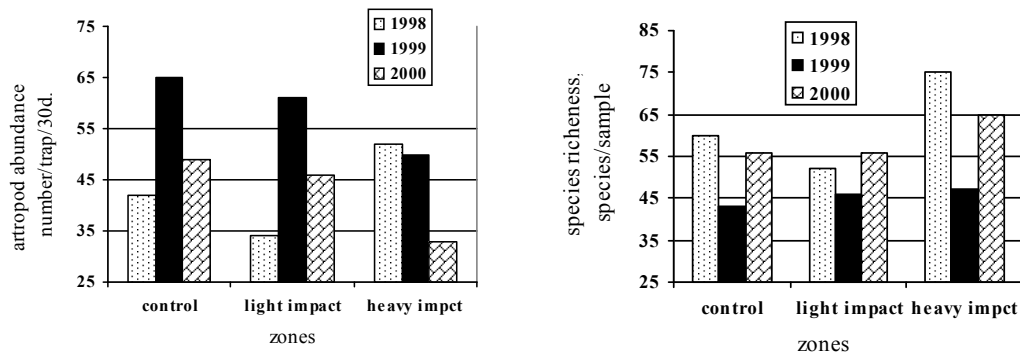


Fig. 7. Dynamics of arthropod abundance and species richness by zones

Table 3. Comparison of forest insect species and ecosystem indexes

Indexis	1998			1999			2000		
	zones			zones			zones		
	control	light impact	heavy impact	control	light impact	heavy impact	control	light impact	heavy impact
	1	2	3	1	2	3	1	2	3
Number of insects	42,4	34,4	52,4	65,3	60,7	50,2	48,8	46,1	33,4
	±4,4	±4,8	±5,8	±9,6	±9,3	±7,7	±5,8	±5,7	±3,6
Significance (1-2, 2-3)	n		***	n		n	n	**	*
Significance (1-3)		n			n				
Number of species in a sample	60	52	75	44	46	47	56	56	65
Dominance index (Λ)	0,2	0,22	0,24	0,32	0,29	0,37	0,35	0,28	0,21
Dominance index (d)	0,36	0,36	0,44	0,53	0,49	0,58	0,55	0,49	0,36
Diversity index (H)	1,04	0,94	0,97	0,86	0,84	0,87	1,06	1,13	1,17
Evenness index (E)	0,52	0,47	0,48	0,43	0,42	0,44	0,53	0,57	0,59
Diversity index (D)	1,81	1,31	2,31	0,68	0,71	0,74	0,87	0,87	1,01

Stjudent criterion t: *p>0.90, ** p>0.95, *** p>0.99, n – unreliable

frequent in thinner stands (table 2). Meanwhile, the amount of phytophagous increases by 8%. The litter under thinner crown received more light (in strongly defoliated zone), which led to a better growth of grass cover. This provided favourable conditions for the existence of phytophagous insects. The amount of saprophagous decreased even by 34% approaching the epicentre of the outbreak (fig. 6).

The abundance of *Hylobius abietis* L., most often observed in coniferous plantations, is increasing approaching the outbreak epicentre. Its abundance in the clearcut area was minimal in 2000, because the areas was 4 years old and not

attracted this species. In the surveys of 1998 the abundance of *Hylobius abietis* L. in the epicentre outbreak was significantly higher – 183 specimens/survey compared to numbers in 1999 (44 specimens survey).

Comparing the abundance of entomophagous, phytophagous and saprophagous insects during the season (1999), it is obvious, that the abundance was far lower in autumn than in spring. This difference for entomophagous comprised 100 individuals, 3 for phytophagous and 1 for saprophagous per trap over 30 days. The abundance of coprophagous species increased in August-September.

Dynamics of entomofauna abundance and diversity in the litter of outbreak and surrounding stands

Most insects from the litter of the outbreak and surrounding stands were collected (1999) in June. On average $100 \pm 2,1$ insects were caught per trap over 30 days. Least number of insects was trapped in September ($20 \pm 2,0$). Seasonal curves of the abundance of insects at a varying distance from the outbreak epicentre are of the same shape. This shows, that seasonal dynamic of insect abundance in the litter in pest damaged stand remain the same as in the control. Insects collected in June (110 species) and July (100 species) of 1999 represented the greatest number of species.

Approaching the outbreak centre abundance of Arthropod was reliably decreasing only in the surveys of 2000. In 1999 differences in the abundance of Arthropod in the zones were not significant, while in 1998 in the strongly affected zone their amount was significantly. This was related to the appearance of a new cleared area (in 1997) and new ecological niches. The number of insect species, contrary to their abundance, increases getting closer to the outbreak epicentre. It was best revealed in 1998 and corresponded to the general increment of the number of Arthropoda in that year (fig. 7).

During the 4 years of study a specific (for the zones) variation in the abundance of Arthropods could be observed in each damage zone. In the

control and slightly affected zones a significant difference in the amount of Arthropods was recorded between 1998 and 1999 (in 1999 the amount of collected Arthropods was almost twice higher). The number of Arthropoda in 1999, on the contrary, proportionally decreased (fig. 8). The abundance of Arthropods in the strongly affected zone (which was the highest in 1998) in the next year (1999) significantly decreased to $33 \pm 3,6$ individuals per trap over 30 days. This proves once again, that a new environment, different from other zones, started forming within a forest devastated by insect pest.

DISCUSSION

Dendrolimus pini is expected to cause significant direct environmental effects, such as extensive ecological disruption or large scale reduction on biodiversity.

Biodiversity now it is studied proceeding from three reasons. In the first, it is fashionable, as diversity is an essential theme of discussion on ecology. Well proved models from the last century which described changes of diversity in time and in space are actual and to this day. In the second, biodiversity frequently it is perceived as parameter of well – being ecosystems. And in the third, among scientific workers there are not common opinion what a plenty of indexes, methods and models it is necessary to use at studying diversity various organisms. In studying entomocomplexes most usage Shanon

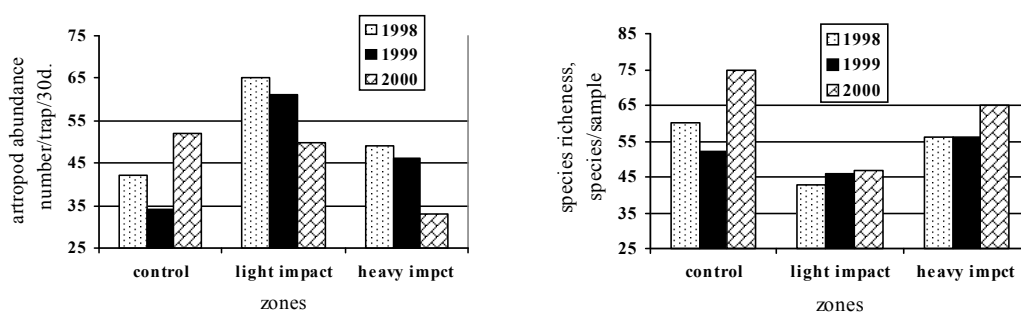


Fig. 8. Dynamics of arthropod abundance and species richness by years

Table 2. Distribution of litter insects by trophic groups (1997-2000)

Dominant species	Abundance of dominants (%)				Abundance of dominants (%), in different zones			
	control	light impact	heavy impact	general	control	light impact	heavy impact	general
Entomophagous								
<i>Carabus arcensis</i>	58,5	54,2	64,9	58,8	36,6	32,1	31,2	100,0
<i>Arachnida</i>	19,0	17,8	17,0	18,0	38,8	34,5	26,7	100,0
<i>Calathus micropterus</i>	8,5	13,2	3,2	8,6	36,2	53,2	10,6	100,0
<i>Pterostichus versicolor</i>	0,2	1,7	8,1	3,0	2,2	20,3	77,5	100,0
<i>Myrmica rubra</i>	2,8	3,5	1,3	2,6	39,2	46,7	14,1	100,0
Other	11,0	9,7	5,4	9,0	45,2	37,7	17,1	100,0
Total	100,0	100,0	100,0	100,0	36,8	34,9	28,3	100,0
Phytophagous								
<i>Strophosomus capitatus</i>	36,2	72,0	70,5	60,4	18,4	37,0	44,6	100,0
<i>Hylobius abietis</i>	39,5	12,6	11,9	20,6	58,9	19,0	22,1	100,0
<i>Serica brunea</i>	11,2	0,0	0,3	3,6	97,1	0,0	2,9	100,0
Other	12,9	15,4	17,3	15,4	25,8	31,1	43,1	100,0
Total	100,0	100,0	100,0	100,0	30,7	31,0	38,3	100,0
Coprophagous								
<i>Geotrupes stercorosus</i>	94,3	75,4	66,6	82,2	54,5	25,6	19,9	100,0
<i>Geotrupes vernalis</i>	5,7	24,6	33,1	17,7	15,2	38,8	46,0	100,0
Other	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Total	100,0	100,0	100,0	100,0	47,5	27,9	24,6	100,0
Necrophagous								
<i>Necrophorus vespillo</i>	17,7	42,6	51,7	37,6	13,5	53,8	32,7	100,0
<i>Necrophorus vespilloides</i>	62,1	35,5	17,2	38,7	45,8	43,6	10,6	100,0
Other	17,7	21,3	25,9	21,4	23,7	47,4	28,8	100,0
Total	100,0	100,0	100,0	100,0	28,5	48,4	23,1	100,0
Saprophagous								
<i>Ectobius sylvestris</i>	95,5	86,1	48,5	85,3	54,0	37,9	8,1	100,0
<i>Forficula tomis</i>	0,0	10,1	40,4	9,6	0,0	39,7	60,3	100,0
Other	3,9	3,4	10,8	4,7	40,4	26,9	32,7	100,0
Total	100,0	100,0	100,0	100,0	48,2	37,5	14,3	100,0
Other trophic groups								
Other					24,0	14,0	62,0	100,0
Subtotal					37,1	34,5	28,4	100,0

– Viener's, Simpson's and Berger – Parker's indexes though earlier they were strongly criticized now are. To choose what indexes a common option are not present, as it depends on the available data and natural conditions. As precisely the index corresponds to concrete conditions most easy to check up having calculated few indexes (not one) and having compared them among themselves (Magurran

1988). Indexes of diversity including parameters of number of species and parameters of species evenness refer to non parametric (Southwood 1978) one of such indexes – Shanon – Viener's index H which range from 0 – small diversity of species up to $l_n(S)$ – big diversity.

The ratio of Shanon's and maximal diversity indexes can be considered as the parameter of

species evenness (E). Him limits from 0 up to 1. When numerous of species are the same $E = 1$. Diversity of Arthropods inhabiting forest litter was assessed in the zones of the stand damaged three years in succession. A series of ecological indices were calculated: H – Shanon-Viener's diversity index, E – Pielou's species evenness index, D – species diversity index (according to Mechin), Simpson's (L) and Berger-Parker's (d) indices of species domination. In differently affected zones the Shenon-Viener's diversity index (H) shows, that, approaching the outbreak epicentre biocoenose is changing in the run of years. In 1998 the index was higher in the control zone than in the zones damaged by pest. In 1999 the index (H) became almost equal in all zones, while in 2000 the index in zones damage by the pest exceeded biocoenose diversity index of the control zone. Similar results were also received with Pielou's species evenness index (E). The higher is the index (E), the more evenly are distributed the species of Arthropoda in different surveys.

By means of an Shanon's index in the Hungary was established that diversity of ground beetles authentically more on a edge of a forest than in a wood. (Magura et al. 2001). In Mexico the index has shown that the diversity of ants in uninjured woods of pine and oak is more than in damaged (Flores – Mallonado et al. 1999). In Brasil distinction of diversity of Scarabaeidae on the forest ($H = 2,44$) and in pasture ($H = 1,75$) was fixe (Medri, Lopes 2001). Howerer, in Spain it is marked that in concrete cases the Shanon's index not quite suitable and by that the critical point of view to this index proves to be true (Gurea et al. 2000).

The higher species diversity index (D), the greater is the stability and resistance of an ecosystem against mass infestations of the pest. The highest D (over all three study years) was in the strongly affected zone, showing that a damaged biocoenose is trying to regenerate as quickly as possible, to avoid a repeated invasion of the pest. Besides, it turned out, that the highest D was in 1998, just after the appearance of a clear cutting area. This proves, that the year was also the onset

of the most extensive immigration of new species into the study areas. Diversity index in the strongly affected zone was 3.1 times higher in 1998 than in 1999 and 2.3 times higher than in 2000 (table 3).

It is underlined that there are difficulty with biological interpretation of Shanon – Viener's index (Magurran 1988). Therefore Simpson's index more informative (May 1975; Peetę 1974; Rout ledge 1979). The Berger-Parker index indipends from number of species but it very much influences quantity of samples. This index is one of most suitable (May 1975).

Species domination indices (L and d) were similar, however, there is a tendency, that with years these indices will be increasing in the control and in slightly affected zones. In the strongly affected zone the index of species domination (d) increased only in 1999, while in the following year it decreased by 1.6 times. Approaching the outbreak centre, species domination index (d) starts decreasing only in 2000, while in 1998 and 1999 it was similar in all studied zones affected by defoliator *Dendrolimus pini* L.

CONCLUSIONS

Further from the pine lappet outbreak centre, the state of pine trees is better according to crown defoliation, amount of dry branches, fruiting, age of needles, crown discoloration, general sanitary condition.

Beetles were the most abundant in the litter of the stand of pine lappet outbreak, 62% of all collected Arthropods in 1998, 79% in 1999 and 74% in 2000.

The dominating species of beetles was *Carabus arcensis* Hbst., which comprised 81,3% (in 2000) of all collected beetles.

Forest litter insects (in 1999) included: entomophagous (91%), phytophagous (4%) and coprophagous (4%). Saprophagous, necrophagous and representatives of other

groups did not exceed 1% of all collected Arthropods.

Increased indices of insect species diversity (D), species evenness (E) and biocoenose diversity (H) as well as reduced domination indices (L and d) of insect species show, that in the strongly affected zone biocoenose is changing towards regeneration and stability.

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