

TO THE KNOWLEDGE OF COLEOPTEROFAUNA OF ZALVE RURAL MUNICIPALITY, NERETA DISTRICT, LATVIA

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This article contains faunistic data for 80 species of 16 families of beetles (Insecta: Coleoptera) in Zalve rural municipality, Nereta District, Latvia. Two species, *Liocola lugubris* (Hbst.) and *Peltis grossa* (L.), are included to the list of indicator species of natural forest habitats; *Aromia moschata moschata* (L.), *Liocola lugubris* (Hbst.) and *Meloe violaceus* Marsh. are protected species in Latvia.

Key words: Coleoptera, fauna, protected species, natural forest habitats, Zalve, Nereta district.

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INTRODUCTION

The beetle fauna of Latvia has been studied since 18th century, when Fischer (1778) published the first work on the nature of Livland. In the following years, all regions of Latvia have been studied with various intensity. The largest amount fauna studies were carried out in the vicinity of Riga, in some parts of Curland and Livland, but much less intensively in Eastern Latvia. Only at the end of last century, the study of the Latvian fauna of beetles began more productively. Barševskis (1993) published the book “Beetles of Eastern Latvia” with faunistic records of, 1872 species of Coleoptera for the Eastern part of Latvia, 320 species of which were recorded for the fauna of Latvia for the first time. Since the 1990s, many articles about the beetle fauna of Latvia have been published, as example Barševskis (2001), Barševskis et al.

(2008, 2012), Barševskis & Savenkov (2013), Lazdāns & Barševskis (2010), Ružička et al. (2010), Shavrin et al. (2015) etc.

In total, Telnov (2004) provided for the fauna of Latvia 105 families and 3434 species of Coleoptera. Telnov points out, that “... this is not final number, and we would predict the occurrence of ~4000 species of Coleoptera in Latvia. To compare: there are ~3000 species recorded from Estonia, ~2800 from Lithuania, ~3650 from Finland and ~4450 from Sweden”. Despite the fact that the Latvian beetle fauna has been relatively well studied, many places in Latvia are still poorly explored.

The purpose of this article is to provide the first data on beetles collected during field trip in 2018 in Zalve rural municipality. Before results provided in this article, the beetles fauna of this

area was incompletely studied. As the result, 80 species of 16 families of Coleoptera has been registered for the studied territory.

The study of beetle's fauna increases the information on the distribution of species and local biodiversity. This is important to ensure the protection of endangered species. Particularly relevant is the study of local fauna due to climate change and increasing of anthropogenic factor in natural habitats. Therefore, we consider it important to publish also fragmentary studies in small territories, such as Zalve rural municipality.

MATERIAL AND METHODS

During the research, 371 specimens of Coleoptera were collected during field trips from April to November 2018. The most part of collected materials is deposited in the collection of the first author. Some specimens deposited in DUBC – Daugavpils University Beetles Collection (Coleopterological Research Center, Daugavpils University, Ilgas, Skrudaliena local municipality, Daugavpils Distr., Latvia).

The following methods were used for collecting the material:

PT – pitfall traps.

EN – entomological net.

VV – visual viewing of habitats, plants, logs etc.

The laboratory research has been made by Nikon AZ100, Nikon SMZ745T and Zeiss Stereo Lumar V12 digital stereomicroscopes, NIS-Elements 6D software, and Canon 60D and Canon 1 Ds Mark II cameras.

Map of research localities of Zalve rural municipality presented in Fig. 1.

RESULTS

Faunistics

Carabidae

1. *Amara aenea* Degeer, 1774 – Sproģi, 29.04.2018 (1, home yard, PT, L.Roze leg.).



Fig. 1. Map of research localities of Zalve rural municipality

- 2. *Amara nitida* Sturm, 1825** – Sproģi, 05.05.2018 (1, mixed forest, PT, L.Roze leg.) Sproģi, 15.10.2018 (1, mixed forest edge, VV, A.Barševskis leg.).
- 3. *Amara spreta* Dejean, 1831** – Sproģi, 29.04.2018 (1, home yard, PT, L.Roze leg.).
- 4. *Anisodactylus binotatus* Fabricius, 1787** – Sproģi, 05.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 5. *Carabus arcensis arcensis* Herbst, 1784** – Sproģi, 05.07.2018-12.07.2018 (6, mixed forest, PT, L.Roze leg.), 15.06.2018-21.06.2018 (1, mixed forest, PT, L.Roze leg.), 12.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 6. *Carabus cancellatus cancellatus* Illiger, 1798** – Sproģi, 05.07.2018-12.07.2018 (4, mixed forest, PT, L.Roze leg.), 15.06.2018-21.06.2018 (4, mixed forest, PT, L.Roze leg.).
- 7. *Carabus glabratus glabratus* Paykull, 1790** – Sproģi, 05.07.2018-12.07.2018 (5, mixed forest, PT, L.Roze leg.), 15.06.2018-21.06.2018 (2, mixed forest, PT, L.Roze leg.).
- 8. *Carabus granulatus granulatus* Linnaeus, 1758** – Sproģi, 05.07.2018-12.07.2018 (8, mixed forest, PT, L.Roze leg.).
- 9. *Carabus hortensis hortensis* Linnaeus, 1758** – Sproģi, 05.07.2018-12.07.2018 (18, mixed forest, PT, L.Roze leg.), 15.06.2018-21.06.2018 (18, mixed forest, PT, L.Roze leg.), 30.06.2018 (2, wet meadow, PT, L.Roze leg.).
- 10. *Carabus nemoralis nemoralis* O.F Muller, 1764** – Sproģi, 05.07.2018-12.07.2018 (4, mixed forest, PT, L.Roze leg.), 12.05.2018 (2, mixed forest, PT, L.Roze leg.), 15.06.2018-21.06.2018 (3, mixed forest, PT, L.Roze leg.), 01.05.2018 (3, home yard, PT, L.Roze leg.), 05.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 11. *Cychrus caraboides* Linnaeus, 1758** – Sproģi, 12.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 12. *Dromius agilis* (Fabricius, 1787)** – Sproģi, 15.10.2018 (4, mixed forest edge, VV, A.Barševskis leg.).
- 13. *Dromius quadrimaculatus* (Linnaeus, 1758)** – Sproģi, 15.10.2018 (4, mixed forest edge, VV, A.Barševskis leg.).
- 14. *Nebria brevicollis* Fabricius, 1792** – Sproģi, 05.07.2018-12.007.2018 (1, mixed forest, PT, L.Roze leg.).
- 15. *Oodes helopioides* Fabricius, 1792** – Sproģi, 29.04.2018 (1, home yard, PT, L.Roze leg.).
- 16. *Ophonus rufibarbis* Fabricius, 1792** – Sproģi, 05.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 17. *Panagaeus cruxmajor* Linnaeus, 1758** – Sproģi, 29.04.2018 (1, home yard, PT, L.Roze leg.).
- 18. *Poecilus cupreus* Linnaeus, 1758** – Sproģi, 29.02.2018 (1, home yard, PT, L.Roze leg.).
- 19. *Poecilus versicolor* Sturm, 1824** – Sproģi, 15.06-20.06 (5, set-aside meadow, PT, L.Roze leg.), 01.05.2018 (1, set-aside meadow, PT, L.Roze leg.), 05.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 20. *Pterostichus aethiops* Panzer, 1796** – Sproģi, 05.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 21. *Pterostichus melanarius melanarius* Illiger, 1798** – Sproģi, 05.07.2018-12.05.2018 (3, mixed forest, PT, L.Roze leg.).
- 22. *Pterostichus niger niger* Schaller, 1783** – Sproģi, 05.07.2018-12.07.2018 (3, mixed forest, PT, L.Roze leg.), 15.06.2018-21.06.2018 (1, mixed forest, PT, L.Roze leg.), 12.05.2018 (1, mixed forest, PT, L.Roze leg.), 29.04.2018 (3, home yard, PT, L.Roze leg.).
- 23. *Pterostichus nigrita* Paykull, 1790** – Sproģi, 05.07.2018-12.07.2018 (4, mixed forest, PT, L.Roze leg.), 15.06.2018-21.06.2018 (1, mixed forest, PT, L.Roze leg.).

24. *Pterostichus oblongopunctatus oblongopunctatus* Fabricius, 1787 – Sproģi, 15.06.2018-20.06.2018, (1, set-aside meadow, PT, L.Roze leg.), 20.06.2018 (1, set-aside meadow, PT, L.Roze leg.), 05.05.2018 (9, mixed forest, PT, L.Roze leg.), 12.05.2018 (9, mixed forest, PT, L.Roze leg.), 05.07.2018-12.07.2018 (8, mixed forest, PT, L.Roze leg.), 29.04.2018 (1, home yard, PT, L.Roze leg.), 17.11.2018 (2, home yard, VV, L.Roze leg.).

25. *Pterostichus rhaeticus* Heer, 1837 – Sproģi, 05.07.2018-12.07.2018 (3, mixed forest, PT, L.Roze leg.).

26. *Pterostichus strenuus* Panzer, 1797 – Sproģi, 15.06.2018-20.06.2018 (1, set-aside meadow, PT, L.Roze leg.).

Hydrophilidae

27. *Hydrochara caraboides* Linnaeus, 1758 – Sproģi, 01.05.2018 (1, home yard, PT, L.Roze leg.).

Histeridae

28. *Atholus duodecimstriatus* Schrank, 1781 – Sproģi, 15.06.2018-20.06.2018 (1, set-aside meadow, PT, L.Roze leg.).

Silphidae

29. *Nicrophorus humator* Gleditsch, 1767 – Sproģi, 05.07.2018- 12.07.2018 (1, mixed forest, PT, L.Roze leg.).

30. *Nicrophorus vespilloides* Herbst, 1783 – Sproģi, 05.07.2018-12.07.2018 (4, mixed forest, PT, L.Roze leg.).

31. *Nicrophorus vespillo* Linnaeus, 1758 – Sproģi, 05.07.2018-12.07.2018 (3, mixed forest, PT, L.Roze leg.).

32. *Oiceoptoma thoracica* Linne, 1758 – Sproģi, 05.07.2018-12.07.2018 (6, mixed forest, PT, L.Roze leg.), 01.05.2018 (2, home yard, PT, L.Roze leg.).

33. *Phosphuga atrata* Linnaeus, 1758 – Sproģi, 05.07.2018-12.07.2018 (4, mixed forest, PT, L.Roze leg.), 15.06.2018-20.06.2018 (2, set-aside meadow, PT, L.Roze leg.), 12.05.2018 (2, mixed forest, PT, L.Roze leg.), 05.05.2018 (1, mixed forest, PT, L.Roze leg.), 17.11.2018 (2, home yard, VV, L.Roze leg.).

34. *Silpha tristis* Illiger, 1798 – Sproģi, 05.07.2018-12.07.2018 (1, mixed forest, PT, L.Roze leg.), 15.06.2018-20.06.2018 (24, set-aside meadow, PT, L.Roze leg.).

35. *Thanatophilus rugosus* Linnaeus, 1758 – Sproģi, 01.05.2018 (1, home yard, PT, L.Roze leg.).

36. *Thanatophilus sinuatus* Fabricius, 1775 – Sproģi, 12.05.2018 (4, mixed forest, PT, L.Roze leg.).

Staphylinidae

37. *Staphylinus erythropterus* Lannaenus, 1758 – Sproģi, 05.07.2018-12.07.2018 (1, mixed forest, PT, L.Roze leg.).

Geotrupidae

38. *Anoplotrupes stercorosus* Scriba, 1791 – Sproģi, 05.05.2018 (2, mixed forest, PT, L.Roze leg.), 12.05.2018 (1, mixed forest, PT, L.Roze leg.), 15.06.2018-20.06.2018 (1, mixed forest, PT, L.Roze leg.), 15.06.2018-21.06.2018 (5, mixed forest, PT, L.Roze leg.), 05.07.2018-12.07.2018 (15, mixed forest, PT, L.Roze leg.).

Scarabaeidae

39. *Anomala dubia* (Scopoli, 1763) – Kalnamuiža, 05.08.2018 (1, on forest edge, VV, A.Barševskis leg.).

40. *Liocola lugubris* (Herbst, 1786) – Sproģi, 08.07.2018 (1, on the asphalt road, damaged, VV, A.Barševskis leg.). Officially protected species in Latvia; included on the list of indicator species of natural forest habitats. Species included also in Latvian Red Data Book (2nd category).

41. *Phyllopertha horticola* Linnaeus, 1758 – Sproģi, 01.05.2018 (1, home yard, PT, L.Roze leg.).

Elateridae

42. *Adrastus pallens* (Fabricius, 1792) – Sproģi, 05.07.2018-12.07.2018 (1, wet meadow, PT, L.Roze leg.).

43. *Agriotes sputator* (Linnaeus, 1758) – Sproģi, 29.04.2018 (1, set-aside meadow, PT, L.Roze leg.).

44. *Agrypnus murinus* (Linnaeus, 1758) – Zalve, 30.05.2018 (2, set-aside meadow, EN, A.Barševskis leg.).

45. *Melanotus villosus* (Geoffroy, 1785) – Sproģi, 17.11.2018 (1, home yard, VV, L.Roze leg.).

46. *Prosternon tessellatum* (Linnaeus, 1758) – Kalnamuiža, 05.08.2018 (1, set-aside meadow, EN, A.Barševskis leg.).

47. *Selatosomus cruciatus* Linnaeus, 1758 – Sproģi, 29.04.2018 (2, mixed forest, PT, L.Roze leg.).

Trogossitidae

48. *Peltis grossa* (Linnaeus, 1758) – Kalnamuiža, 05.08.2018 (1, mixed forest, EN, A.Barševskis leg.). This species included on the list of indicator species of natural forest habitats.

Cleridae

49. *Trichodes apiarius* (Linnaeus, 1758) – Sproģi, 15.06.2018 (1, home yard, VV, L.Roze leg.).

Coccinellidae

50. *Coccinella quinquepunctata* Linnaeus, 1758 – Kalnamuiža, 05.08.2018 (3, set-aside meadow, EN, A.Barševskis leg.); Zalve, 05.08.2018 (1, set-aside meadow, EN, A.Barševskis leg.).

51. *Coccinella septempunctata* Linnaeus, 1758 – Kalnamuiža, 05.08.2018 (7, set-aside meadow, EN, A.Barševskis leg.); Sproģi, 08.07.2018 (2, Dienvidsusēja river bank, EN, A.Barševskis leg.); Zalve, 05.08.2018 (2, set-aside meadow, EN, A.Barševskis leg.).

52. *Psyllobora vigintiduopunctata* (Linnaeus, 1758) – Sproģi, 05.08.2018 (2, mixed forest edge, EN, A.Barševskis leg.).

53. *Propylea quatuordecimpunctata* (Linnaeus, 1758) – Kalnamuiža, 05.08.2018 (3, set-aside meadow, EN, A.Barševskis leg.); Sproģi, 08.07.2018 (3, set-aside meadow, EN, A.Barševskis leg.); Zalve, 05.08.2018 (5, set-aside meadow, EN, A.Barševskis leg.).

54. *Tytthaspis sedecimpunctata* (Linnaeus, 1761) – Zalve, 05.08.2018 (3, set-aside meadow, EN, A.Barševskis leg.).

Meloidae

55. *Meloe violaceus* Marsham, 1802 – Zalve, 30.05.2018 (1, mixed forest edge, VV, A.Barševskis leg.). Species included in Latvian Red Data Book (2nd category).

Tenebrionidae

56. *Diaperis boleti* Linnaeus, 1758 – Sproģi, 29.04.2018 (2, mixed forest, PT, L.Roze leg.).

Cerambycidae

57. *Anastrangalia reyi* (Heyden, 1889) – Kalnamuiža, 05.08.2018 (5, forest edge, EN, A.Barševskis leg.); Sproģi, 08.07.2018 (1, Dienvidsusēja river bank, on flowers of Umbelliferae, VV, A.Barševskis leg.); 05.08.2018 (3, forest edge, EN, A.Barševskis leg.); Zalve, 05.08.2018 (1, forest edge, EN, A.Barševskis leg.).

58. *Anastrangalia sanguinolenta* (Linnaeus, 1761) – Kalnamuiža, 05.08.2018 (1, forest edge, EN, A.Barševskis leg.).

- 59. *Aromia moschata moschata* (Linnaeus, 1758)** – Sproģi, 05.08.2018 (1, Dienvidsusēja river bank, on flowers of Umbelliferae, VV, A.Barševskis leg.). Species included in Latvian Red Data Book (4th category).
- 60. *Lamia textor* Linnaeus, 1758** – Sproģi, 05.05.2018 (1, mixed forest, PT, L.Roze leg.), 12.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 61. *Leptura quadrifasciata quadrifasciata* Linnaeus, 1758** – Kalnamuiža, 05.08.2018 (1, set-aside meadow, EN, A.Barševskis leg.); Sproģi, 08.07.2018 (2, Dienvidsusēja river bank, EN, A.Barševskis leg.); Zalve 08.07.2018 (1, forest edge, VV, A.Barševskis leg.).
- 62. *Paracorymbia maculicornis maculicornis* (De Geer, 1775)** – Kalnamuiža, 05.08.2018 (11, set-aside meadow, EN, A.Barševskis leg.); Sproģi, 08.07.2018 (1, Dienvidsusēja river bank, EN, A.Barševskis leg.); Zalve 08.07.2018 (2, forest edge, VV, A.Barševskis leg.).
- 63. *Rhagium mordax* De Geer, 1775** – Sproģi, 05.05.2018 (1, mixed forest, PT, L.Roze leg.).
- 64. *Stenurella melanura* (Linnaeus, 1758)** – Kalnamuiža, 05.08.2018 (9, mixed forest edge, EN, A.Barševskis leg.); Sproģi, 08.07.2018 (3, Dienvidsusēja river bank, on flowers of Umbelliferae, VV, A.Barševskis leg.); Zalve 08.07.2018 (7, forest edge, VV, A.Barševskis leg.).
- 65. *Stictoleptura rubra rubra* (Linnaeus, 1758)** – Kalnamuiža, 05.08.2018 (8, set-aside meadow, EN, A.Barševskis leg.); Sproģi, 08.07.2018 (1, Dienvidsusēja river bank, EN, A.Barševskis leg.).
- Chrysomelidae**
- 70. *Chrysomela populi* Linnaeus, 1758** – Sproģi, 29.04.2018 (1, mixed forest, PT, L.Roze leg.), 29.04.2018 (1, home yard, PT, L.Roze leg.).
- 71. *Donacia sparganii* Ahrens, 1810** – Sproģi, 05.08.2018 (3, Dienvidsusēja river, VV, A.Barševskis leg.).
- 72. *Liliocerus lili* (Scopoli, 1763)** – Sproģi, 05.08.2018 (2, home yard, VV, A.Barševskis leg.).
- 73. *Liliocerus merdigera* (Linnaeus, 1758)** – Kalnamuiža, 30.05.2018 (1, mixed forest, EN, A.Barševskis leg.).
- 74. *Phratora vitellinae* (Linnaeus, 1758)** – Sproģi, 17.11.2018 (1, home yard, VV, L.Roze leg.).
- 75. *Phratora vulgatissima* (Linnaeus, 1758)** – Sproģi, 17.11.2018 (1, home yard, VV, L.Roze leg.).
- Curculionidae**
- 76. *Chlorophanus viridis* (Linnaeus, 1758)** – Sproģi, 05.08.2018 (2, Dienvidsusēja river bank, EN, A.Barševskis leg.).
- 77. *Hylobius abietis* (Linnaeus, 1758)** – Sproģi, 05.07.2018-12.07.2018 (3, mixed forest, PT, L.Roze leg.).
- 78. *Hylobius pinastri* Gyllenhal, 1813** – Sproģi, 12.05.2018 (2, mixed forest, PT, L.Roze leg.).
- 79. *Otiiorhynchus tristis* (Scopoli, 1763)** – Sproģi, 08.07.2018 (1, Dienvidsusēja river bank, VV, A.Barševskis leg.).
- 80. *Zacladus geranii* (Paykull, 1800)** – Sproģi, 08.07.2018 (1, Dienvidsusēja river bank, on *Gerania* sp., EN, A.Barševskis leg.).

CONCLUSIONS

The faunistic research of beetles during season 2018 in Zalve rural municipality resulted 80 species of 16 families of Coleoptera. Summarizing the results of the research, the richest families of Coleoptera are Carabidae (26 species), Cerambycidae (9 species), Silphidae (8 species) and Elateridae (7 species).

During the research, 3 protected or threatened species in Latvia were identified: *Aromia moschata moschata* (L.), which was included in the Latvian Red Data Book, *Liocola lugubris* (Hbst.), officially protected species in Latvia, according to Latvian Red Data Book, and *Meloe violaceus* Marsh., which was included in the Latvian Red Data Book. Two species, collected in Zalve rural municipality - *Liocola lugubris* (Hbst.) and *Peltis grossa* (L.) were included to the list of indicator species of natural forest habitats.

One of the very numerous species in pitfall trap was *Silpha tristis* Ill. (Silphidae), which during period from 15 to 20 June 2018 was presented by 24 specimens and which was collected in one pitfall trap in set-aside meadow. This species is not common in Latvia and rarely observed in large numbers of specimens.

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