

## Some New and Little Known Mesostigmata (Acari: Parasitiformes) in the Fauna of Latvia

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**Abstract:** Twelve new Mesostigmata species and findings of 26 rare or restricted to the specific habitats species were recorded. Family Polyaspididae and genus *Polyaspis* with species *P. sansonei* new to the fauna of Latvia was recorded. Short description of localities and habitats is given.

**Key words:** Mesostigmata, soil mites, rotting wood, bark, mosses.

### Introduction

The most detailed overview of Mesostigmata fauna of Latvia and its ecological characterization was given by I. Lapiņa (1988) and I. Salmane (2001). During the last years additions to the species list of Mesostigmata have been published by I. Salmane (2005 a, b), J. Kontschán and I. Salmane (2005, 2008).

### Methods

Mesostigmata material was collected from the soil, litter, mosses, rotting wood, under the tree bark and in hosts' frass. Mesostigmata were identified after the keys of N. Bregetova (1977), M. Davidova (1976), D. Gwiazdowicz (2003), W. Karg (1989, 1993), P. Mašán (1994, 2001), and P. Mašán and P. Fenda (2004). Wood decay stage was identified after J. N. Stokland (2001).

**Abbreviations used in the text:** b – bog, DN – deuteronymph, DP – Nature park, F – female, f – forest, HPS – Hydroelectric Power Station, l – lake, M – male, m. – municipality, NBR – North Vidzeme Biosphere Reserve, NP – National park, r – river, vill. – village, \* – new species of fauna of Latvia. The number and sex of specimens (where it is recorded) is given in brackets.

### List of Mesostigmata Species

#### **Epicriina**

##### **Epicriidae** BERLESE, 1885

###### 1. *Epicrius mollis* (KRAMER, 1876)

Material: Talsi m., Slītere NP, Bažu b.,

*Polytrichum commune*, (9.07.2005) (10 F, 8 M), raised b. near Pēterezers, *Sphagnum* sp., (12.06.2007) (2 F); Ogre m., Kangaru kalni (hills), pine f. near l. Kangaru, *Sphagnum* sp., (26.11.2006) (1 F).

#### **Antennophorina**

##### **Celaenopsidae** BERLESE, 1892

###### 2. *Celaenopsis badius* BERLESE, 1886

Material: Talsi m., Slītere NP, rich deciduous f. near Slītere light house, under bark, in frass of dead, fallen spruce, (13.06.2007) (1 F, 1 M); near old school of Kolka, coastal f., bark, frass of pine, (18.10.2008) (1 F, 1 M); Valmiera m., NBR, Mazsalaca, near Skaņais kalns (hill), pine f., bark, frass of fallen spruce (26.08.2008) (1 F); Liepāja m., Embūte DP, broadleaf f., *Bjerkandera adusta* on fallen deciduous tree bark, (18.07.2009) (1 F, 2 M).

##### **Microgyniidae** TRÄGÅRDH, 1942

###### 3. *Microsejus truncicola* TRÄGÅRDH, 1942

Material: Valmiera m., NBR, Mazsalaca, near Skaņais kalns (hill), pine f., rotting wood (decay stage 4) of pine stump, (26.08.2008) (1 F).

###### 4. *Microgynium rectangulatum* TRÄGÅRDH, 1942

Material: Liepāja m., Embūte DP, broadleaved f. near r. Embūte, *Fomes fomentarius* on deciduous tree, (18.07.2009) (1 F).

#### **Gamasina**

##### **Parasitidae** OUDEMANS, 1901

5. *Pergamasus quisquiliarum* (G.CANESTRINI, R.CANESTRINI, 1881)

Material: Ogre m., Ogre, Grantskalni, mixed f., fallen deciduous tree (decay stage 4), bark, wood, (30.09.2007) (1 F, 1 M, 1 DN).

6. *Pergamasus mirabilis* WILLMANN, 1951

Material: Liepāja m., Embūte DP, near mill pond, spruce f., soil, leave/needle litter, (18.07.2009) (1 M, 3 DN).

7. *Pergamasus parinteger* ATHIAS-HENRIOT, 1967

Material studies: Liepāja m., Embūte DP, broadleaved f. near r. Embūte, fallen old oak tree decaying wood (decay stage 3), (18.07.2009) (5 F, 5 M).

**Ameroseiidae** (BERLESE, 1919) EVANS, 1961

\*8. *Ameroseius plumigerus* (OUDEMANS, 1902)

Material: Ogre m., Ogre, Pagasta iela 8, in the terrarium with *Gromphadorhina portentosa*, obviously, brought there by the pine bark or mosses of mixed f. in Pārogre surroundings, (12.03.2008) (1 F).

9. *Ameroseius imparsetosus* WESTERBOER, 1963

Material: Liepāja m., Embūte DP, broadleaved f., *Bjerkandera adusta* on fallen deciduous tree bark, (18.07.2009) (6 F, 1 DN).

**Aceosejidae** BAKER, WHARTON, 1952 (sensu EVANS, 1958)

\*10. *Lasioseius thermophilus* (WILLMANN, 1953)

Material: Ogre m., Ogre, Lašupes surroundings, mixed f. with spruce dominance, wet bark of fallen spruce, (2.03.2008) (2 F).

11. *Proctolaelaps scolyti* EVANS 1958

Material: Talsi m., Slītere NP, rich deciduous f. near Slītere light house, under bark, in frass of dead, fallen spruce, (13.06.2007) (4 F).

12. *Melichares ecoptogasteris* (VITZTHUM, 1923)

Material: Ogre m., Ogre, near Ogre HPS, spruce f. near r. Ogre, bark of fallen poplar, (27.07.2008) (3 F, 3 M).

\*13. *Iphidozercon poststigmatus* GWIAZDOWICZ, 2003

Material: Ogre m., Ogre, Lašupes surroundings, mixed f., (6.08.2008), wet depression (usually filled by water), alder, hazel tree leaves, spruce needles, humus, (47 F); the same date and near the same depression standing dry alder, rotting wood (decay stage 4), (6 F); Riga m., Salaspils, territory of Institute of Biology, wet soil and litter near ditch, (9.08.2008) (1 F), wet litter, mosses near ditch, (10.10.2008) (5 F).

14. *Panteniphis mirandus* WILLMANN, 1949

Material: Ogre m., Ogre, near Ogre HPS, wet clay soil, mosses, vegetation near r., (27.07.2008) (1 DN); Lašupes surroundings, mixed f., wet depression (usually filled by water), alder, hazel tree leaves, spruce needles, humus, (6.08.2008) (20 F, 5 M, 28 DN).

\*15. *Platyseius subglaber* (OUDEMANS 1902)

Material: Riga m., Salaspils, territory of Institute of Biology, wet litter, mosses near ditch, (10.10.2008) (3 F).

\*16. *Leioseius magnanalis* (EVANS, 1958)

Material: Liepāja m., Embūte DP, near mill pond, spruce f., soil, leave/needle litter, (18.07.2009) (3 F).

17. *Cheiroseius viduus* C.L. KOCH, 1839

Material: Liepāja m., Embūte DP, broadleaf f., sandy clay soil, maple, oak leave litter, (18.07.2009) (1 F).

\*18. *Cheiroseius dungeri* KARG, 1971

Material: Tukums m., b. Apšuciema, wet soil and mosses, (23.09.2009) (20 F).

\*19. *Cheiroseius bryophilus* KARG, 1969

Material: Tukums m., b. Apšuciema, wet soil and mosses, (23.09.2009) (20 F).

20. *Halodarcia incideta* KARG, 1969

Material: Liepāja m., Embūte DP, near mill pond, wet soil, rhizosphere, (18.07.2009) (3 F).

21. *Neojordensia sinuata* ATHIAS-HENRIOT, 1973

Material: Liepāja m., Embūte DP, near mill pond, wet soil, rhizosphere, (18.07.2009) (1 F).

22. *Zerconopsis remiger* (KRÄMER, 1876)

Material: Liepāja m., Embūte DP, broadleaf f. near r. Embūte, *Ganoderma applanatum* on fallen deciduous tree, (18.07.2009) (38 F, 33 M, 28 DN).

23. *Zerconopsis decemremiger* EVANS ET HYATT, 1960

Material: Liepāja m., Embūte DP, broadleaf f. near r. Embūte, *Ganoderma applanatum* on fallen deciduous tree, (18.07.2009) (23 F, 11 M, 15 DN), *Bjerkandera adusta* on fallen deciduous tree bark, (18.07.2009) (2 F, 1 DN).

**Antennoseiidae** KARG, 196524. *Antennoseius borussicus* SELLNICK, 1945

Material: Ogre m., Ogre, Lašupes surroundings, mixed f., *Pleurozium schreberi*, (7.09.2008) (16 F, 5 M).

**Rhodacaridae** OUDEMANS, 190225. *Dendrolaelaps (Longoseiulus) longulus* HIRSCHMANN, 1960

Material: Ogre m., Ogre, Lašupes surroundings, mixed f., dry bark of fallen rotting birch, (12.07.2008) (10 F, 1 M).

26. *Dendrolaelaps longifallax* HIRSCHMANN, 1960

Material: Liepāja m., Embūte DP, broadleaf f. near r. Embūte, fallen old oak tree decaying wood (decay stage 3), (18.07.2009) (9 F, 10 M).

**Pachylaelaptidae** VITZTHUM, 193127. *Olopachys suecicus* SELLNICK, 1950

Material: Ogre m., Ogre, Grantskalni, mixed f., bark, wood of fallen deciduous tree (decay stage 4), (30.09.2007) (10 F); Liepāja m., Embūte DP, near mill pond, spruce f., soil, leave/needle litter, (18.07.2009) (15 F), wet humus soil, oak leave litter, (18.07.2009) (6 F, 6 DN).

\*28. *Pachylaelaps bregatovae* KOROLEVA, 1977

Material: Ogre m., Ogre city surroundings, about 2 km north of "Vecdupāni", wet clay soil near the r. Ogre, (27.07.2008) (4 F).

**Laelaptidae** BERLESE, 1982\*29. *Hypoaspis cuneifer* (MICHAEL, 1891)

Material: Rīga m., f. between Ulbroka and Dzidriņas vill., *Formica* sp. nest, about 30cm

inside nest, (17.04.2008) (1 F, 1 DN), leg. D.Telnov.

30. *Hypoaspis angusticutatus* WILLMANN, 1951

Material: Ogre m., Ogre surrounding, about 7 km north of "Vecdupāni", wet clay soil near the r. Ogre, (27.07.2008) (4 F, 3 M, 1 DN).

\*31. *Hypoaspis giffordi* EVANS ET TILL, 1966

Material: Valmiera m., NBR, Mazsalaca, near Skaņais kalns (hill), pine f., bark, frass of fallen, dry spruce, (9.07.2008) (1 F); Ogre m., Ogre, Lašupes surroundings, spruce f. with addition of deciduous trees, bark of old, standing, dry *Pinus sylvestris*, (12.07.2008) (7 F, 6 M, 2 DN).

**Eviphidae** BERLESE, 191332. *Alliphis halleri* (G.CANESTRINI, 1881)

Species previously referred as *Alliphis siculus* Oudemans, 1905. (Remarks in Discussion chapter).

**Zerconidae** CANESTRINI, 189133. *Zercon curiosus* TRÄGÅRDH, 1910

Material: Talsi m., Slītere NP, rich deciduous f. near Slītere light house, under bark, in frass of dead, fallen spruce, (13.06.2007) (16 F, 3 M).

34. *Zercon romagniolus* SELLNICK, 1944

Material: Ogre m., Ogre, Grantskalni, mixed f., bark, wood of fallen deciduous tree (decay stage 4), (30.09.2007) (4 F).

**Uropodina** KRAMER, 1881**Polyaspinidae** BERLESE, 1917\*35. *Polyaspis sansonei* BERLESE, 1916

Material: Valmiera m., NBR, Mazsalaca, near Skaņais kalns (hill), pine f., bark, frass of fallen, dry spruce, (9.07.2008) (3 M, 1 DN); rotting wood (decay stage 4) of pine stump, (26.08.2008) (4 F, 1 M, 1 DN).

**Trematuridae** BERLESE, 191736. *Trichouropoda ovalis* (C.L. KOCH, 1839)

Material: Ogre m., Ogre, Grantskalni, mixed f., bark, wood of fallen deciduous tree (decay stage 4), (30.09.2007) (3 F, 88 M, 7 DN); Liepāja m., Embūte DP, broadleaf f. near r. Embūte, *Ganoderma applanatum* on fallen deciduous tree, (18.07.2009) (6 F, 17 DN), *Bjerkandera*

*adusta* on fallen deciduous tree bark, (18.07.2009) (3 F, 1 DN).

### **Trachytidae** TRÄGÅRDH, 1938

\*37. *Trachytes pauperior* BERLESE, 1914

Material: Liepāja m., Embūte DP, broadleaf f., sandy clay soil, maple, oak leaf litter, (18.07.2009) (2 F), deciduous f. near mill pond, wet humus soil, rhizosphere, (18.07.2009) (10 F).

### **Urodinychidae** BERLESE, 1917

38. *Urodiaspis tecta* (KRAMER, 1876)

Material: Liepāja m., Embūte DP, deciduous f. near mill pond, wet humus soil, rhizosphere, (18.07.2009) (1 F).

## **Discussion**

*Alliphis siculus* and *Alliphis halleri* are well known names of the cosmopolitan gamasin species from the various habitats all over the world. Until now some acarologists considered those as synonyms, while some scientists regarded as two separate species. After the revision of collection materials of Europe (including authors collection material in the Institute of Biology, University of Latvia) and other parts of the world, made by B.Halliday (2008) (Australia), and redescription of species, these two were admitted as separate species. As a result, *A. siculus* is restricted to Italy only, and *A. halleri* have a worldwide distribution, including Latvia.

New to the fauna of Latvia family Polyaspinidae (Uropodina) with new genus *Polyaspis* and new species *Polyaspis sansonei* was recorded. This species has been found in Europe under pine bark and in rotting wood (Mašán 2001) and in humus and rotting wood (Karg 1989).

*Iphidozercon poststigmatus* was abundantly presented in the substrate of specific forest habitat – small depression usually filled by freshwater. In the same microhabitat was found *Panteniphis mirandus*, which is restricted to wet soil and moss habitats (Bregetova 1977). Freshwater *Sphaerium* sp. (Bivalvia) (D. Telnov, pers. comm.) and water mites also were found there, as most of time this depression is filled by water. As known, *I. poststigmatus*

prefers very moist substrates and habitats (Gwiazdowicz 2003, 2007).

*Leiioseius magnanalis* was found in the wet soil/ and litter; it is typical species for litter and mosses in various forests of West Europe, England and St. Petersburg and Murmansk surroundings in Russia (Bregetova 1977).

*Hypoaspis cuneifer* is a typical inhabitant of ant nests in the territory of former Soviet Union and West Europe (Bregetova 1977).

*Hypoaspis giffordi* previously was found in birch wood in the territory of former Soviet Union and West Europe (Bregetova 1977, Karg 1993).

Several little known species like *Celaenopsis badius*, *Microsejus truncicola*, *Microgynium rectangulatum*, *Proctolaelaps scolyti*, *Melichares ecoptogasteris*, *Panteniphis mirandus*, *Cheiroseius viduus*, *Halodarcia incideta* and other are related to the specific habitats and therefore their incidence is dependent on occurrence of respective habitat.

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## **References**

- Bregetova N.G. 1977. [*Identification keys for soil inhabiting mites. Mesostigmata*]. Nauka, Leningrad: 717 pp. (in Russian).
- Davidova M.C. 1976. [*Gamasin mites of the family Parasitidae of West Siberia*]. Nauka, Novosibirsk: 200 pp. (in Russian).
- Halliday R.B. 2008. *Alliphis siculus* (OUDEMANS, 1905) is not a synonym of

- Alliphis halleri* (G.&R.CANESTRINI, 1881) (Acari: Eviphidae). – *Systematic and Applied Acarology* **13**: 51-64.
- Gwiazdowicz D.J. 2003. Description of *Iphidozercon poststigmatus* sp. n. (Acari, Ascidae) with a key to Palaearctic species of the genus *Iphidozercon*. – *Biologia*, **58**, No. 2: 151-154.
- Gwiazdowicz D.J. 2007. *Ascid mites (Acari, Mesostigmata) from selected forest ecosystems and microhabitats in Poland*. Poznan, Wydawnictwo Akademii Rolniczej im. A. Cieszkowskiego: 248 pp.
- Karg W. 1989. *Acari (Acarina), Milben Unterordnung Parasitiformes (Anactinochaeta) Uropodina KRAMER, Schildkrötenmilben*. VEB Gustav Fischer, Leipzig, Jena **67**: 203 pp.
- Karg W. 1993. *Acari (Acarina), Milben Parasitiformes (Anactinochaeta) Cochors Gamasina Leach. Raubmilben. 2. überarbeitete Auflage*, Jena, Stuttgart, New York, Gustav Fischer: 524 pp.
- Kontschán J., Salmane I. 2005. Data about the Uropodina (Acari, Mesostigmata) fauna of Latvia. – *Latvijas Entomologs* **42**: 62-65.
- Kontschán J., Salmane I. 2008. New records of the Uropodina mites of Latvia and description of two new species (Acari: Mesostigmata). – *Genus* **19**, No. 2: 335-341.
- Lapina I. 1988. [*Gamasina mites of Latvia*]. Zinatne, Riga: 198 pp. (in Russian, English summary).
- Mašan P. 1994. The Eviphid mites (Acarina: Mesostigmata: Eviphidae) associated with Scarabaeid and carrion beetles (Coleoptera: Scarabaeidae, Silphidae) in Central Europe. – *Acarologia* **35**, No. 1: 3-19.
- Mašan P. 2001. [Mites of the cohort Uropodina (Acarina, Mesostigmata) in Slovakia]. Roztoče kohorty Uropodina (Acarina, Mesostigmata) Slovenska. – *Annotationes Zoologicae et Botanicae* **223**: 321 pp. (in Slovakian, English summary).
- Mašan P., Fenda P. 2004. *Zerconid mites of Slovakia (Acari, Mesostigmata, Zerconidae)*. Slovak Academy of Sciences, Bratislava: 238 pp.
- Salmane I. 2001. A check-list of Latvian Gamasina mites (Acari, Mesostigmata) with short notes to their ecology. – *Latvijas Entomologs* **38**: 27-39.
- Salmane I. 2005a. Addition to the Latvian Mesostigmata (Acari, Parasitiformes) check-list. – *Latvijas Entomologs* **42**: 58-61.
- Salmane I. 2005b. List of Mesostigmata mites (Acari, Parasitiformes) associated with Aphyllophorales fungi (Basidiomycetes) in Latvia. – *Latvijas Entomologs* **42**: 45-57.
- Stokland J.N. 2001. The coarse woody debris profile: an archive of the recent forest history and an important biodiversity indicator. – *Ecological Bulletins* **49**: 71-83.

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