Mites (Acari: Prostigmata: Erythraeidae, Trombidiidae) new to the fauna of Norway, Finland, Russia, Latvia and Lithuania, with a description of *Podothrombium roari* n. sp.

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Haitlinger, R. 2000: Mites (Acari: Prostigmata: Erythraeidae, Trombidiidae) new to the fauna of Norway, Finland, Russia, Latvia and Lithuania, with a description of *Podothrombium roari* n. sp. — Entomol. Fennica 11: 187–193.

Podothrombium roari n. sp. is described from Middle Norway and Lithuania. *Erythraeus gertrudae*, *Leptus mariae*, *L. beroni*, *Abrolophus brevicollis* and *Hauptmannia wratislaviensis* are new to the fauna of Norway; *Erythraeus monikae*, *Charletonia cardinalis* and *A. brevicollis* are new to the fauna of Finland; *Podothrombium kordulae* and *H. wratislaviensis* are new to the fauna of Russia; *Trombidium holosericeum* and *Leptus echinopus* are new to the fauna of Latvia, *T. holosericeum*, *A. brevicollis* and *H. wratislaviensis* are new to the fauna of Lithuania. A key to *Podothrombium* larvae is provided.

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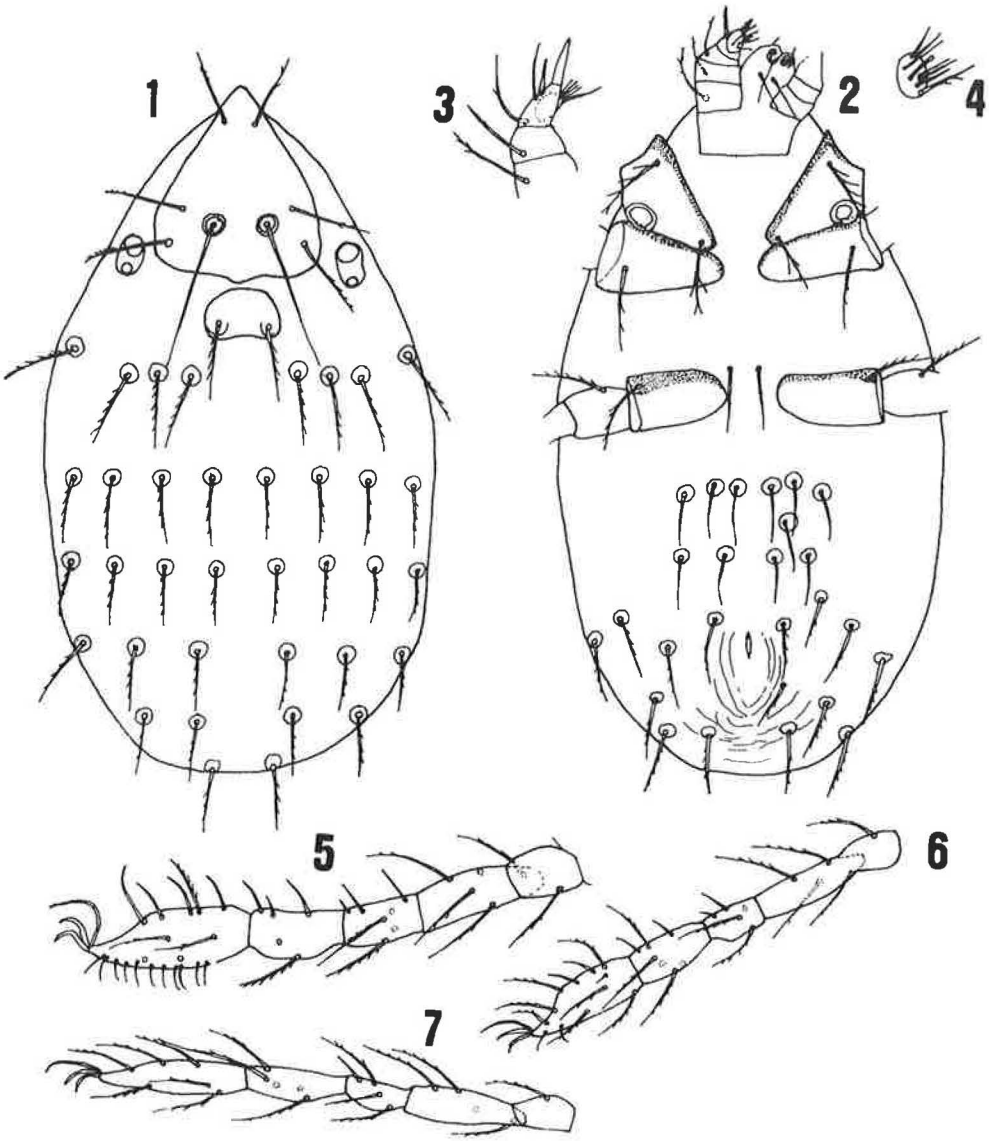
In North Europe and some countries of Central Europe, Erythraeidae and Trombidiidae are poorly known. Erythraeid species, based on larvae, were recorded in Sweden and Iceland. Southcott (1992) described *Leptus laplandicus* from Swedish Lappland. *L. beroni* Fain (syn. *L. holmiae* Southcott) described from Belgium (Fain 1991), is known in North Europe from Iceland and Sweden and *L. ignotus* (Oudemans) was stated in Sweden. *Hauptmannia wratislaviensis* Haitlinger was recorded in Iceland as *Balaustioides tuxeni* Southcott (Southcott 1989). In this region of Europe also are known species belonging to the genera *Trombidium* Fabricius, *Allothrombium* Berlese and *Podothrombium* Berlese, but all based on adults. For example, in Norway were stated four species of *Podothrombium* and in Finland *Allothrombium fuliginosum* (Hermann) (Makol, 1998a). Unidentified *Podothrombium* larvae have been reported from Iceland by Sellnick (1940).

In June and July 1998 several dozen erythraeid and trombidiid larvae were collected in Norway, Finland, northwestern Russia, Latvia and Lithuania. This paper described *Podothrombium roari* n. sp. from Norway and Lithuania. Moreover, five new species for the fauna of Norway, three new for Finland, two new for Russia, one new for Latvia and two new for Lithuania are presented.

The new species is deposited in the Museum of Natural History, Wroclaw University (MNHWU). All measurements are given in micrometers (μm).

Family Trombidiidae Leach, 1815
Subfamily Podothrombiinae Thor, 1935
Genus *Podothrombium* Berlese, 1910



Figs. 1-5. *Podothrombium roari* sp. n.: 1: Idiosoma, dorsal view; 2. Idiosoma, ventral view; 3. Palp, dorsal view; 4. Palptarsus; 5. Leg I, tarsus-trochanter; 6. Leg II, tarsus-trochanter; 7. Leg III, tarsus-trochanter.

***Podothrombium roari* sp. n.** Figs. 1-7.

Type material. Holotype larva - Norway, Trondheim, 6 July 1998. Leg. R. Haitlinger. - Paratypes - 5 LL, Malvik n. Trondheim, 6 July 1998; Lithuania, Trokai, 2 LL, 22 June 1998, Vilnius, 1 L, 22 June 1998; leg. R. Haitlinger. All larvae obtained from herbaceous plants on the brink of forest or scrubs.

Diagnosis. Larva with the following features: fD = 36 (34-36); fV = 26 (26-28); fSol = I 0-2-2-3, II 0-1-2-2, III 0-1-0-0; fk = I 1-0, II 1-0; fε (famulus) 0-1-0; fζ = I 12 (9-12), II 2 (1-2), III 0; TaI 120 (112-124), TaIII 110 (100-114); IP = 1352 (472+412+468).

Description of holotype. Larva. Idiosoma dorsally with a scutum, a scutellum, a pair of ocular sclerites, and 36 dorsal setae. Scutum triangular in shape, with posterior border slightly convex. AL and PL setae with minute barbs; AL little longer than PL (in one paratype are equal); AM setae also slightly barbed, equal in length with AL (in

paratypes are longer or shorter). Setae S smooth, situated between AL and PL setae. Scutellum with anterior border slightly convex and posterior border slightly concave bearing two barbed setae (Fig 1). Dorsal setae all barbed, each arising from a small setal sclerite, arranged as follows: 8-8-8-6-4-2. Ocular sclerite with two eyes, the anterior eye (14 in diameter) larger than the posterior one (8 in diameter).

Idiosoma ventrally with two nude setae at coxae III and 26 setae beyond coxae III arranged as follows: 6-1-4-8-3-4. Most of setae arranged in the first row nude; setae situated in two first rows shorter and thinner than setae placed in posterior rows; all barbed. Anal opening present. Coxa I with two barbed setae, coxa II with one slightly barbed seta, coxa III with one barbed seta. Ventral setae each with a small setal sclerite (Fig. 2).

Gnathosoma with pair of subcapitular nude setae present. Palpal setal formula fPp = 0-1-1-B,N,N-ω,1B,6N. Palpfemorala slightly barbed, 38 long, palpgenuala slightly barbed, 26 long (Fig. 3). Palptarsus as in Fig. 4.

Standard measurements. IL (idiosoma length) 546 (527-743), IW (idiosoma width) 298 (330-514), L 156 (140-160), W 124 (114-130), AW 84 (80-86), PW 106 (98-112), AA 24 (24-30), AP 24 (26-30), MA 72 (70-78), LN 32 (28-38), ASB 114 (98-122), PSB 42 (34-44), AM 60 (?50-72), AL 60 (56-68), PL 64 (66-72), S 120 (102-128), SB 42 (40-46), DS 46-60 (48-68), Oc (ocular plate) 36 (36-44), GL (length of gnathosoma measured between base and tip of rostrum) 84 (84-96), LSS 56 (48-56), HS 42 (32-36), SL 56 (56-62, SS 42 (36-42), TaI 120 (112-124), TiI 70 (70-74), GeI 52 (52-56), FeI 94 (92-112), TrI 50 (50-54), CxI 86 (82-92), TaII 92 (90-104), TiII 64 (60-68), GeII 42 (40-46), FeII 82 (76-90), TrII 42 (44-50), CxII 90 (86-94), TaIII 110 (100-114), GeIII 48 (46-50), FeIII 94 (92-104), TrIII 54 (52-56), CxIII 86 (84-92). Index TiIII/AW 0.90 (0.86-0.97)

Leg I. The setae formula: TaI 3ω, 12ζ (9-12), 23B (23-33 paratypes); Ti 2φ, 1κ, 5B; Ge 2δ, 1κ, 4B; Fe 5B, Tr 1B (Fig. 5).

Leg II. TaI 2ω, 1ε, 2ζ (1-2), 17B (18-21), TiI 2φ, 5B, GeI 1δ, 1κ, 3B, Fe 4B, Tr 1B (Fig. 6).

Leg III. TaI ~18B (18-20), Ti 5B, Ge 1δ, 3B, Fe 4B, Tr 1B (Fig. 7). Ip=472+412+468=1352.

Etymology. The name of the species has been derived from the name Roar.

Remarks. The new species is similar to *P. paucisetarum* Zhang & Xin and *P. proti* Haitlinger. It differs from all *Podothrombium* species by the presence of three solenidia on tarsus I and furthermore from *P. proti* by shorter TiI (70-74 to 76-82), TiII (60-68 to 66-76), TiIII 74-80 to 82-86) and lower index TiIII/AW (0.86-0.97 to 0.97-1.13); from *P. paucisetarum* by Ip (1352 to 1459).

Podothrombium kordulae Haitlinger 1995

Material. Russia: Peterhof n. Sankt Petersburg, 10 LL, 28 June 1998, Sankt Petersburg-Olgino, 18 LL, 27 June 1998; all specimens from plants on wet meadows; leg. R. Haitlinger.

P. kordulae is known only from Lower Silesia in Poland and from one locality in East Germany (n. Görlitz) (Haitlinger 1995, M'kol 1998b). Species probably associated with wet meadows in non-wooded areas. New to fauna of Russia.

Key to species of the genus *Podothrombium* (larvae)

1. NDV > 110, idiosoma dorsally with more than 70 setae .....
— NDV < 105, idiosoma dorsally with less than 70 setae 3
2. Idiosoma ventrally with more than 52 setae beyond coxae III; first row of dorsal setae with 18 setae arranged irregularly; scutum 148 mm long .... *P. piriformis* Robaux; Switzerland
— Idiosoma ventrally with less than 50 setae beyond coxae III; first row of dorsal setae with about 22 setae arranged irregularly; scutum 200 mm long .... *P. svalbardense* Oudemans; Svalbard
3. Tarsus I longer than 190 mm 4
— Tarsus I shorter than 180 mm 5
4. First row of dorsal setae with 8 setae, tarsus I shorter than 220 mm; ratio TaIII/AW < 2.20 (1.80) .... *P. dariae* Haitlinger; Poland
— First row of dorsal setae with 16 setae irregular arranged; tarsus longer than 220 mm; ratio TaIII/AW > 2.40 (2.80)..... *P. shellhammeri* Robaux; USA: California
5. Tarsus I with three solenidia .... *P. roari* n. sp.; Norway, Lithuania
— Tarsus I with one or two solenidia 6
6. Genu I with three solenidia .....

..... *P. rigobertae* Haitlinger; Poland
— Genu I with less than three solenidia 7
7. First row of dorsal setae with 8-10 setae distinctly separated from the second row 8
— First row of dorsal setae with other number of setae or formed in irregularly row, with more than 10 setae 13
8. Tarsus III longer than 148 μm .... *P. tymoni* Haitlinger; Austria, Poland
— Tarsus III shorter than 146 μm 9
9. Tarsi I and III longer than 125 μm 10
— Tarsi I and III shorter than 125 μm..... 11
10. First row of dorsal setae with 10 setae, tarsus I with famulus (ε) placed far from solenidion ..... *P. verae* Haitlinger; Poland
— First row of dorsal setae with 8 setae, tarsus I with famulus (ε) placed on the same level as solenidion .... *P. tersonderi* Haitlinger; Poland
11. Idiosoma dorsally with less than 40 setae, NDV<70 setae, tarsi I,II with two solenidia each ..... *P. proti* Haitlinger; Italy, Poland
— Idiosoma dorsally with more than 40 setae, NDV>70 setae, tarsi I,II with one solenidion each 12
12. Tarsus I with 15 normal setae, tarsus I 108-120 μm long .... *P. paucisetarum* Zhang & Xin; China
— Tarsus I with 32-33 normal setae, tarsus I 126-137 μm long ... *P. sylvicolum* Zhang & Jensen; USA: Oregon
13. First dorsal row with four setae, sometimes badly separated from the second row; then forming irregular row with 16-22 setae; tarsus III>90 μm, ratio TaI/TaIII<1.15 ..... *P. kordulae* Haitlinger; Poland, Germany, Russia
— First dorsal row with 10 setae, badly separated from the second row and then forming irregular row with 16-22 setae; tarsus III<90 μm, ratio TaI/TaIII>1.40 (1.60) μm ..... *P. crassicristatum* Feider; Romania

Subfamily Allothrombiinae Thor 1935
Genus *Allothrombium* Berlese 1903

Allothrombium fuliginosum (Hermann 1804)

Material. Norway: Lillehammer, 1 L, 7 July 1998, from plants on meadow; leg. R. Haitlinger. Adults were mentioned from Norway by Thor (1900) and Mehl (1979).

Subfamily Trombidiinae Leach 1815
Genus *Trombidium* Fabricius 1775

Trombidium holosericeum (Linnaeus 1758)

Material. Norway: Heskestad n. Egersund, 4 LL, 8 July 1998, Eimet, 1 L, 9 July 1998; Russia: Peterhof n. Sankt Petersburg 1 L, 28 June 1998; Lithuania: Vilnius, 9 LL, 22 June 1998, Kaunas 1 L, 24 June 1998; all larvae from plants on meadows; Latvia: Riga, 2 LL, 26 June 1998, from undetermined Lauxaniidae and Anthomyzidae (Diptera); leg. R. Haitlinger, det. Dr. T. Zatwarnicki. New to fauna of Latvia and Lithuania.

T. holosericeum is known (adults) from Europe and Asia. Association between larvae and their host unknown. Probably associated with various Diptera.

Family Erythraeidae Robineau-Desvoidy 1828
Subfamily Leptinae Billberg 1820 (sensu Southcott 1961)
Genus *Leptus* Latreille 1796

Leptus mariae Haitlinger 1987 syn. *L. gabrysi* Southcott 1992

Material. Norway: Heskestad n. Egersund, 2 LL, 8 July 1998, from plants on meadows; leg. R. Haitlinger.

Species known from Poland, Slovenia, Holland, Belgium, Hungary (as *L. gabrysi*) and Italy (Haitlinger 1987a, 1996, 1998, Southcott 1992, Fain *et al.* 1992, Gabrys & Makol 1996). New to fauna of Norway.

Larvae frequently obtainable from plants, but also on various hosts: *Phyllobius urticae* (De Geer) (Coleoptera: Curculionidae) and *Lochmaea caprae* (L.) (Chrysomelidae) both in Poland, *Lagria hirta* L. (Lagriidae) in Slovenia and Belgium, *Dryobius roboris* (L.) (Aphidoidea) in Holland, *Cicadetta montana* Scopoli (Homoptera: Cicadidae) in Belgium and undetermined Tenebrionidae in Italy (Gabrys 1991, Haitlinger 1991, 1998, Southcott 1992, Fain 1992, Fain *et al.* 1992, Fain & Baugnée 1996). *L. mariae* has wide circle of hosts.

Leptus beroni Fain 1991 syn. *L. holmiae* Southcott 1992

Material. Norway: Heskestad n. Egersund, 3 LL, 8 July 1998, from undetermined Opiliones; leg. R. Haitlinger.

Species widely distributed in Europe; known from Bulgaria, Poland, Ireland, United Kingdom, Denmark, Iceland, Hungary, Sweden, Russia (Bashkiria) and Belgium (Beron 1975, Haitlinger 1987a, Fain 1991, Southcott 1992, Gabryœ & M'kol 1996). New to fauna of Norway.

L. beroni is associated especially with various Opiliones; it was obtained on *Phalangium opilio* (L.), *Rilaena* (=*Platybunus*) *triangularis* (Herbst), *Lophopilio* (=*Odiellus*) *palpinalis* (Herbst), *Mitopus morio* (F.), *M. ruzikai* Silh., *Oligolophus tridens* (C.L. Koch); moreover, was collected on *Heamatopota pluvialis* (L.) (Diptera: Tabanidae), *Ematurga amatoria* L. (Lepidoptera), undetermined Aphididae (Homoptera), and twice on *Clethrionomys glareolus* Schreb. (Rodentia) (Haitlinger 1991, Fain 1991, Southcott 1992).

Leptus echinopus Beron 1975

Material. Latvia: Lilaste n. Riga, 1 L, 26 June 1998, from plants on meadows; leg. R. Haitlinger.

Species known only from Bulgaria, Poland, Hungary and Denmark (Beron 1975, Haitlinger 1987a, Gabrys & Makol 1991, Southcott 1992). New to fauna of Latvia.

L. echinopus is associated with various hosts; it was obtained on undetermined Collembola, *Boletophagus reticulatus* (L.) (Tenebrionidae) and adult *Erythraeus* sp. (Erythraeidae) (Beron 1975, Haitlinger 1991, Southcott 1992). *L. echinopus* was twice collected on adults in Poland and Denmark on adult *Erythraeus* sp.; it may suggest that some *Erythraeus* species (adult stage) are non-accidental host for *L. echinopus*.

Subfamily Erythraeinae Robineau-Desvoidy 1828
Genus *Erythraeus* Latreille 1806

Erythraeus monikae Haitlinger 1987

Material. Finland: Oulu, 2 LL, 2 July 1998, from plants in scrubs; leg. R. Haitlinger.

Species known only from Poland (Haitlinger 1987b). New to fauna of Finland.

Erythraeus gertrudae Haitlinger 1987

Material. Norway: Heskestad n. Egersund 7 LL, Sandmark n. Heskestad 1 L, all specimens 8 July 1998, from plants on meadows; leg. R. Haitlinger.

Species known only from Poland (Haitlinger 1987b). New to fauna of Norway.

Subfamily Callidosomatinae Southcott 1957
Genus *Charletonia* Oudemans 1910

Charletonia cardinalis (C.L. Koch 1837) syn. *C. singularis* (Oudemans 1910)

Material. Finland: Pyhäsalmi, 1 L, 2 July 1998, from plants on meadows; leg. R. Haitlinger.

Species known from Russia, Holland, Poland, Sweden, USA (Southcott 1966, 1991, Haitlinger 1985). New to fauna of Finland.

C. cardinalis is associated with various insects, especially Cercopidae (Hemiptera) and Delphacidae (Homoptera); also was obtained from *Lithina chlorosata* (Scopoli) (Lepidoptera: Geometridae) *Phyllotreta undulata* Kutschera (Chrysomelidae) and *Mustela erminea* L. (Carnivora: Mustelidae) (Haitlinger 1985, 1987a, Southcott 1991).

Genus *Abrolophus* Berlese 1891

Abrolophus brevicollis (Oudemans 1912)

Material. Norway: Sandmark n. Heskestad, 1 L, 8 July 1998; Lillehammer, 2 LL, 7 July 1998, all specimens from plants on meadows; Malvik n. Trondheim, 1 L July 1998, from herbaceous plants on the brink of forest; Finland: Vehkalahti n. Kotka, 2 LL, 30 June 1998, from *Belothrips* sp. (Thysanoptera); Russia: Peterhof n. Sankt Petersburg, 4 LL, 28 June 1998, Sankt Petersburg-Olgino, 23 LL from plants on meadows, 5 LL from *Taeniothrips* sp. (Thysanoptera), (det. Dr. Z. Klukowski), 27 June 1998, Torfianovka n. Vaalimaa, 4 LL, 29 June 1998; Lithuania: Kaunas, 2 LL, 24 June 1998, Kelme n. iauliai, 4 LL all from plants on meadows, 1 L from undetermined larva of Homoptera, 25 June 1998, iauliai, 6 LL, 25 June 1998, from plants on meadows; leg. R. Haitlinger.

Species known from Holland, Poland, Sweden (Sellnick 1958, Haitlinger 1986). New to fauna of Norway, Finland, Russia and Lithuania. It is associated with various Thysanoptera; rarely found on Homoptera.

Genus *Hauptmannia* Oudemans 1910

Hauptmannia wratislaviensis Haitlinger 1986 syn. *Balaustioides tuxeni* Southcott 1989

Material. Norway: Heskestad n. Egersund, 3 LL, 8 July 1998; Russia: Peterhof n. Sankt Petersburg, 2 LL, 28

June 1998, Pu√kino n. Sankt Petersburg, 1 L, 29 June 1998; Lithuania: Kelme n. iauliai, 1 L, 25 June 1998; all specimens from plants on meadows; leg. R. Haitlinger.

Species known from Poland, Iceland (as *B. tuxeni*) and Switzerland (Haitlinger 1986, 1994, Southcott 1989). Hosts unknown. New to fauna of Norway, Russia and Lithuania.

Discussion

Erythraeid and trombidiid larvae parastize various arthropods. Nymphs and adults are predators. Because the distribution, life cycle, hosts and food spectra of most of the species remain unknown it seems advisable to report on any data which refer to these problems. Therefore, is "dual systematics" which exists separately for larvae and adults. Both the larvae and postlarval forms of Erythraeidae and Trombidiidae have good taxonomic character and are described independently.

Species mentioned in this paper belong to the genera known only from larval stages or larval and postlarval forms. Genera *Hauptmannia* and *Charletonia* are based only on larvae. But according to Welbourn & Young (1987) *Hauptmannia* larvae without comb-like setae on the palptibia and a hook-like projection on the palpfemur belongs to the genus *Abrolophus*. Zhang & Goldarazena (1996) accepted it and described *A. neobrevicollis* Zhang & Goldarazena. Therefore, some larvae from Norway, Finland, Russia and Lithuania are includes to *Abrolophus*. Status of the genus *Hauptmannia* is not clear and it needs revision.

Species belonging to genera *Trombidium, Allothrombium, Podothrombium, Abrolophus, Leptus* and *Erythraeus* are known from both stages (separately). Only *Trombidium holosericeum* (Linnaeus) and *A. fuliginosum* are known from all stages. The remaining species mentioned in the paper are known only from larvae. Test of culture of larvae from determined adults is most without result.

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