NEW MOSSMITES FROM THE NETHERLANDS (ACARI: ORIBATIDA)

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Mossmites are small micro-arthropods which live in the soil. In a number of ongoing Alterra-projects and checks of the Plant Disease Control Unit nine mossmite species have been recorded which were not yet included in the recently published Dutch checklist, nor in the supplements. The total number of mossmite species in the Netherlands is now 336. More species are to be expected in underexplored areas and habitats, some of which are to be investigated in the near future.

INTRODUCTION

In ongoing projects of Alterra and regular checks of the Plant Disease Control Unit in the Netherlands nine new mossmite species (Acari, Oribatida) have been discovered. These species were not included in the Dutch checklist (Siepel et al. 2009), nor in the supplement (Siepel & Dimmers 2010). Four new species have been found during a project on restoration of Dutch nutrient-poor grassland slopes (containing a gradient from acid to calcareous grasslands) (Smits 2010, Smits et al. 2010a, b, Van Noordwijk et al. 2012). Two others were discovered when reexamining the older data on the comparison of old forest locations with hedgerows (Siepel in prep.). One species has been found in Dutch public greens (data Vierbergen) and at a heathland (military training site); at the latter site together with the eighth new species. Finally, at two grassland locations on a sea clay soil we found the ninth new species, which must have been overlooked before because it was not included in the identification keys used in the Netherlands. The total number of species for the Dutch fauna is now 336 (318 in the original checklist and 18 in the later supplements, including this one).

NEW SPECIES

Adelphacarus sellnicki

Sampled from twigs with leaves in the province of Zuid-Holland by Wietse den Hartog for a nvwa-project focusing on Phytoseiidae. Adelphacarus

Figure 1. Rhinoppia epilata, found at the Schiepersberg (Bemelerberg-complex, Limburg), length 300 µm. Photo Wim Dimmers.
Figuur 1. Rhinoppia epilata, gevonden op de Schiepersberg (Bemelerberg-complex, Limburg), lengte 300 µm. Foto Wim Dimmers.
Microzetorchestes emeryi

Both species and genus are new for the Netherlands. Microzetorchestes belongs to the family Zetorchestidae with one other representative in the Netherlands (Zetorchestes flabarius Grandjean, 1951). The species in this family are easy recognisable by their jump legs. Microzetorchestes emeryi has been collected in two samples and three specimens at Cadier en Keer, province of Limburg, site: Schiepersberg boven-3, (2 specimens), 50°49'54,64"N 05°46'42,40"E and site: Schiepersberg boven-4, (1 specimen), 50°49'53,82"N 05°46'43,62"E. Both samples come from the topsoil of an acid grassland (both pH H2O 4.7) and were collected on 2.vi.2010.

Carabodes tenuis

Two specimens have been collected from two different samples at the same locality Leusderheide, military training site, Leusden, province of Utrecht, on 4.xi.2010. One specimen has been collected from a butt (52°07'10,95"N 05°21'08,88"E) and the other one from the topsoil just in front of a butt (52°07'09,37"N 05°21'16,76"E). The vegetation of the butt consisted of mosses and heather Calluna vulgaris, the strip was covered with mosses, heather and purple moor grass Molinia caerulea.
**Berniniella conjuncta**
This species was found during a re-examination of older samples from Dutch hedgerows (especially those from a camp landscape, i.e. a situation where the hedgerows are left-over woodland and the soil may have not been disturbed ever). One specimen of *B. conjuncta* has been found in a sample from site Stroe-2, province of Gelderland, 52°10′56″N 05°41′42″E. The sample was taken from the topsoil, moss and litter on 25.x1.1997. The hedgerow is flanked by non-permanent grassland and arable land with maize, both intensively used and heavily fertilized.

**Ramusella elliptica**
Due to the absence of this species in earlier identification keys it has probably been overlooked before. In a sampling in the national monitoring scheme for soil quality we found this species in 2010 at two localities: Britsverd, municipality of Friesland, 53°06′20″N 05°40′14″E on 19. iv.2010 (5 specimens) and Beemster, province of Noord-Holland, 52°31′53″N 04°55′27″E on 22. iv.2010 (9 specimens). Both samples were taken from the topsoil of a grassland on sea clay soil. Both grasslands had an organic cultivation. As *R. elliptica* is mentioned in Weigmann (2006), but not included in the key, prof. Weigmann kindly confirmed the identity of our specimens.

**Rhinoppia epilata**
One specimen (fig. 1) has been sampled from soil meant for restorative inoculation of calcareous grasslands. The sample was taken from a well-developed calcareous grassland topsoil at Cadier en Keer, Schiepersberg, province of Limburg, 50°49′53″N 05°46′14″E, on 22.xi.2011.

**Scutovertex alpinus**
Several specimens have been collected from three well-developed calcareous grassland sites all in the province of Limburg on 2.vi.2010: Bemelen, Bemelerberg (pH H₂O 8.1), 50°51′02″N 05°46′07″E (3 specimens), Bemelen, Het Hoefijzer (pH H₂O 8.6) 50°50′57″N - 05°46′28″E (5 specimens) and Cadier en Keer, Schiepersberg, (pH H₂O 8.4), 50°49′51″N 05°46′43″E (2 specimens).

**Ceratozetes minimus**
Re-examination of older data of the old forest locations project revealed one specimen of *C. minimus*, sampled at Ugchelen, province of Gelderland, 52°09′51″N 05°53′53″E on 3.v.1994. Analysis of this soil fauna has been published before (Siepel 1996), wherein the old forest locations appeared to have a rather diverse fauna, comprising a complete set of life-history tactics and feeding guilds among the microarthropods, contrary to most sites where specific life-history tactics or feeding guilds are filtered out due to environmental conditions. The site is a beech forest with some oaks, having a rather thick litter layer of fragmented and humic substances (ca. 8 cm.) and hardly any herb layer.

**ADDITIONS TO DUTCH ORIBATIDA CHECKLIST**

**ADELPHACARIDAE**

*Adelphacarus* Grandjean, 1932

2a *sellnicki* Grandjean, 1952

**NOTHRIDAE**

*Nothrus* Koch 1836

77a *borusicus* Sellnick, 1928

biciliatus; Trägårdh 1904 [misidentification]

silvestris; Jørgensen 1934 [misidentification]

**ZETORCHESTIDAE**

*Microzetorchestes* Balogh, 1943

132a *emeryi* (Coggi, 1898)

Zetorchestes consanguineus Oudemans, 1902

**CARABODIDAE**

*Carabodes* Koch, 1835

156a *enuis* Forsslund, 1953

**OPPIDAE**

*Berniniella* Balogh, 1983
substrate, but some species may have been overlooked due to the imperfection of keys at the time. The other five species must have been overlooked due to under sampling, and many more are to be expected in the near future (Siepel 2010).

REFERENCES


**DISCUSSION**

Given the sample sites *A. sellnicki* must be rather drought resistant and it feeds probably on lichens, which were abundantly present on all sampled trees. In the United Kingdom, in a public herbarium *A. sellnicki* was observed to damage dry specimens of lichens (Orange 2006). It is the first representative of its family (Adelphacaridae) in the Netherlands.

Species such as *Microzetorchestes emeryi*, *Scutovertex alpinus* and *Rhinoppia epilata* have a more southern distribution in Europe. Therefore it is not surprising to find these species in the warm chalk grasslands in Limburg in the south of our country. *Ramussella elliptica* may be a species bound to the west of the Netherlands, as both locations were on a sea clay soil. It has not been included in earlier identification keys from Germany (Willmann 1931, Sellnick 1928, 1960) and even in the newest (Weigmann 2006) it is not included in the key, but mentioned as a note in the species description of a congeneric species. An Atlantic (and Mediterranean) distribution may be the case here. Polderman (1974, 1977) and Polderman & De Vries (1978) did some extensive sampling during earlier decades on this substrate, but some species may have been overlooked due to the imperfection of keys at the time. The other five species must have been overlooked due to under sampling, and many more are to be expected in the near future (Siepel 2010).
Nieuwe mosmijten uit Nederland (Acari: Oribatida)

Bemonsteringen van Zuid-Limburgse kalkgraslanden, zeekleigraslanden, openbaar groen en heidevelden leverden negen nieuwe soorten mosmijten op voor de Nederlandse fauna. De totaalstand voor Nederland uit de checklist en eerdere aanvullingen bedraagt nu 336 soorten.

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