

THE FIRST RECORD OF THE WATERMITE *ARRENURUS BEROLINENSIS* FROM
THE NETHERLANDS, WITH THE FIRST DESCRIPTION OF THE FEMALE
(ACARI: HYDRACHNIDIA)

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The very rare water mite *Arrenurus berolinensis* is reported for the first time for the Netherlands. The species was found in a peat pit in the province of Overijssel in 2006. Previous records originate from Berlin (1896) and Eastern Prussia (1907), nowadays the Russian enclave Kaliningrad. In addition, the first description of the female is provided, which had not been reported before.

INTRODUCTION

Arrenurus berolinensis Protz, 1896 is a very rare water mite, previously known from two localities only. Protz (1896) described the species from Fenn of the Grunewaldsee near Berlin (hence

the name, *Berolinum* = Berlin). Subsequently, Viets (1911) reported it from Perwilten in Eastern Prussia, nowadays in the Russian enclave Kaliningrad, where the species had been collected in September 1907. All other existing references are repetitions of these two records and no finding of a female specimen has been reported.

During a survey of peat pits (Dutch: petgaten) in the northwest of the province of Overijssel, the Netherlands, four males and one female were collected (fig. 1). The first description of the female will be provided in this paper. Although the male is highly characteristic, some additional measurements of the male will be given as well.

MATERIAL AND METHODS

Material examined: 4 males, 1 female, peat pit, de Wieden, province of Overijssel, the Netherlands, N 52° 39' E 6° 4', 20.vi.2006, leg. K. Didderen. Two males and the female are deposited in the Zoological Museum of the University of Amsterdam, and two males are deposited in the collection of Alterra, Wageningen.



Figure 1. Record of *Arrenurus berolinensis* in the Netherlands.
Figuur 1. Vindplaats van *Arrenurus berolinensis* in Nederland.

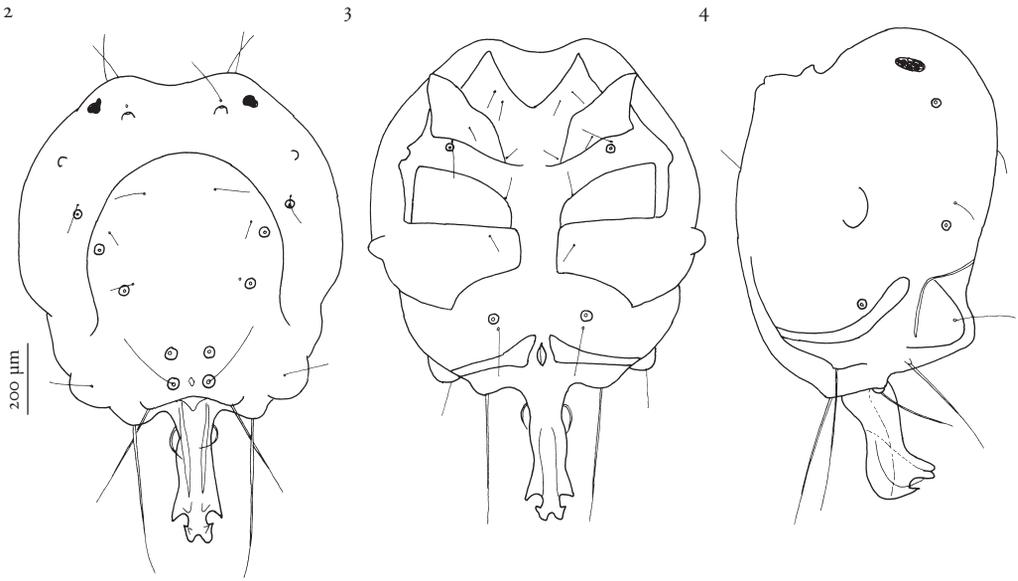


Figure 2-4. *Arrenurus berolinensis*, 2. dorsal view male, 3. ventral view male, 4. lateral view male.
 Figuur 2-4. *Arrenurus berolinensis*, 2. mannetje dorsaal, 3. mannetje ventraal, 4. mannetje lateraal.

Arrenurus berolinensis

Description (fig. 2-8)

The following abbreviations have been used:
 P1 = first palp segment; IV-leg-4 = fourth segment of fourth leg. Measurements in brackets show the range in the other specimens of this study.

Male: Idiosoma 960 (875-899) µm long (without petiole) and 899 (818-826) µm wide, including petiole 1252 (1207-1223) µm long. Petiole itself, measured dorsally, 389 (364-373) µm long. Idiosoma colour greenish-brownish. Anterior idiosoma margin concave. Dorsal furrow incomplete, extending onto lateral sides of idiosoma. Pygal lobes small. Hyaline membrane small, rounded. Genital plates narrow, extending onto lateral sides of idiosoma, slightly widened laterally. Petiole very long, with two triangular extensions near-posteriorly and two curved setae anteriorly. Petiole ending in some hooked extensions, giving it a fish-hook appearance. In lateral

view the petiole has a pair of rounded and a pair of pointed dorsal extensions posteriorly. Lengths of P1-PV: 40, 80, 50, 66, 36 µm. Palp stocky, especially PIV. PII and PIII with very long setae, all but one feathered. Second, third and fourth legs with numerous swimming setae. IV-leg-4 with a spur.

Female: Idiosoma 1166 long and 1085 µm wide. Idiosoma brownish. Anterior idiosoma margin slightly concave. Dorsal furrow incomplete. Posterolateral corners of idiosoma absent. First coxal plates extending to anterior idiosoma margin. Medial margin of fourth coxal plates larger than medial margin of third coxal plates. Medial distance of fourth coxal plates large, a little bit smaller than width of gonopore. Genital plates three times as long as wide. Gonopore with extensive, triangular chitinized patches. Lengths of P1-PV: 38, 76, 58, 70, 32 µm; PII with two setae on medial side, palp otherwise as in male. Second, third and fourth legs with numerous swimming setae.

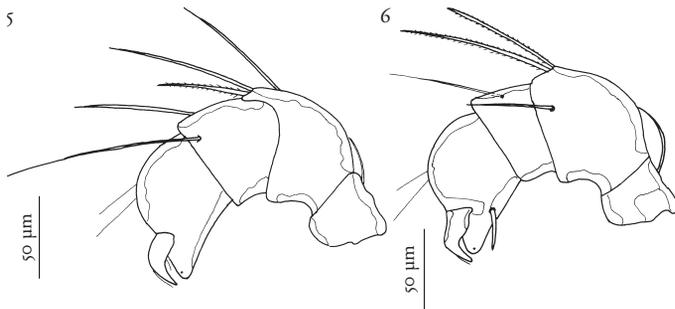


Figure 5-6. *Arrenurus berolinensis*, 5. left palp male, 6. *Arrenurus berolinensis*, right palp male.

Figuur 5-6. *Arrenurus berolinensis*, 5. linker palp mannetje, 6. rechter palp mannetje.

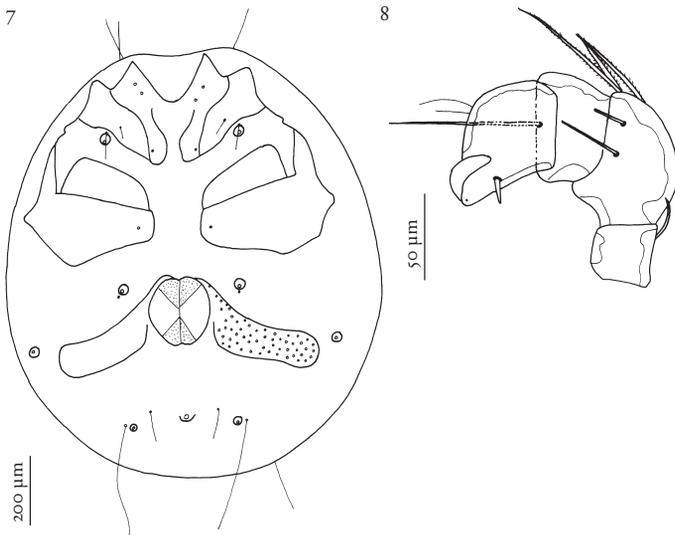


Figure 7-8. *Arrenurus berolinensis*, 7. ventral view female, 8. right palp female.

Figuur 7-8. *Arrenurus berolinensis*, 7. vrouwtje ventraal, 8. *Arrenurus berolinensis*, rechter palp vrouwtje.

REMARKS

Males of this extraordinary species are relatively easy to identify, in contrast to the females. Most characteristic for the female of *A. berolinensis* is the palp, with its stocky PIV and very long setae. However, *A. boruzkii* Ssujetov, 1931, another rare species, has a similar palp, also lacks posterolateral corners and has the medial distance of the fourth coxal plates as wide as the width of the gonopore. In the original description of *A. boruzkii*, who described the species based on the female only, the genital plates are twice as long as wide. However, in the collection of Lundblad some females are present with much longer genital

plates (Smit 1999). From one location (nr. 1133, Flisby) one of the two female specimens of *A. boruzkii* reported by Lundblad (1962) also has long genital plates, which was illustrated by Smit (1999). It may therefore be possible that *A. berolinensis* also occurs in Sweden, but that Lundblad (1962) identified it as *A. boruzkii*. For the time being we consider *A. boruzkii* characterized by relatively short and broad genital plates, and *A. berolinensis* by relatively long and more narrow genital plates. More material is needed to clarify the differences between the females of these two species.

HABITAT

Although there are very few records of *A. berlinensis*, it appears to have a preference for fen areas. The first record of the species has been reported from Fenn of the Grunewaldsee, and also the new record from the Netherlands is from a fen area. The Dutch specimens were collected in an isolated peat pit that is pH neutral, low in nutrients and minerals, with an abundant growth of submerged filamentous algae and emergent water soldier *Stratiotes aloides*. The apparent low abundance and sparse distribution of *A. berlinensis* may be explained by the fact that fen areas are relatively rare.

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SAMENVATTING

De watermijt *Arrenurus berlinensis* in Nederland, met de eerste beschrijving van het vrouwtje (Acari: Hydrachnidia)

De zeer zeldzame watermijt *Arrenurus berlinensis* is in 2006 voor het eerst in Nederland gevonden, in een petgat in de Wieden (Overijssel). Tot nu toe was deze soort slechts twee keer eerder aangetroffen, namelijk in Berlijn in 1896 en in Oost-Pruisen, het tegenwoordige Kaliningrad, in 1907. In dit artikel wordt verder de eerste beschrijving van het vrouwtje gegeven.

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