

First recent record of the centipede *Strigamia maritima* (Leach, 1817) from Germany (Myriapoda, Chilopoda, Geophilomorpha).

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Abstract

The geophilomorph centipede *Strigamia maritima* is widespread in littoral habitats along the Atlantic coast in Europe. In Germany it has only been recorded from a single locality in Germany, namely the island of Helgoland. However, the records are more than 50 years old, and its current status on a national level is considered unknown. Here we present a recent record of the species from Germany and the first record from the island of Sylt with a brief discussion of its habitat and possible dispersal mechanisms.

Introduction

The geophilomorph centipede *Strigamia maritima* (Leach, 1817) is well established as a model organism for studying arthropod segmentation (e.g. Chipman & Akam 2008) and was the first myriapod to have its genome sequenced (Chipman *et al.* 2014). *S. maritima* is widespread along the Atlantic coastline in Europe with records ranging from France to Norway (Schubart 1929; Kettle & Arthur 2000). The species most commonly occurs in the littoral zone around the high-tide mark, although it has also been found around the mid-tide level in at least a single case (Lewis 1961). It occurs in various habitats, including shingle banks and rock crevices, and is only completely absent from muddy and sandy shores (Lewis 1961).

Despite being so widely distributed, it is surprising that *S. maritima* in Germany has thus far only been recorded from the island of Helgoland. Although the occurrence of the species is mentioned by multiple authors (e.g. Schubart 1929, Caspers 1941, Jeekel 1964), only a few are original records based on actual specimens (Latzel 1894, Hennings 1903, Rüppel 1967). The most recent record by Rüppel was unfortunately overlooked, with *S. maritima* not being listed as present in the recent German faunal lists, but listed as being one of the few centipede species being 'lost' (Decker *et al.* 2016). Despite the lack of official records, the species was recently observed between 1963 and 2000 in the upper-littoral close to the Lange Anna Sandstone stack on Helgoland (O. Larink, personal communication, 20.09.19).

Here, we present the first record of *S. maritima* from the island of Sylt, the first specimen-based record from Germany since 1967.

Methods

Samples were hand collected on the 15th of August 2019 by LP, conserved in 98% ethanol, and deposited as vouchers at the Zoological Research Museum A. Koenig (Bonn, Germany) as well as the Senckenberg Museum für Naturkunde (Görlitz, Germany). Specimens were identified following the key in Barber (2008) under an Olympus SZ51 stereomicroscope.

Results

Numerous *S. maritima* of varying sizes were found under rocks and building rubble in the upper littoral on a pier in the Rantum Harbour on Sylt (54°51'20.6"N 8°18'27.8"E). Two individuals were determined and subsequently deposited as vouchers in the ZFMK collection (ZFMK MYR8795).



Figure 1: The habitat on Sylt on which the *Strigamia maritima* population was discovered

Discussion

Our finding represents the first record of the species from Germany for more than 50 years (Rüppel 1967) and the very first record of the species from Sylt. The absence of *S. maritima* from most parts of the German coastline and islands is likely due to the prevalence of sandy shores, as it is found to be tied closely to more structured habitats (Lewis 1961). Its presence on Sylt is therefore likely attributed to the construction of artificial habitats (Figure 1) and it therefore probably colonized the island more recently, as the rest of the island is devoid of suitable habitats. The origin of *S. maritima* on Sylt, however, remains unknown. Given its wide distribution across the Atlantic coast, including the British Isles (Lewis 1961), a natural dispersal, possibly by passively rafting, is certainly possible. However, a dispersal due to human activity can currently not be excluded.

Similar to Sylt, the shores of other German islands have also been artificially changed with the construction of dams or bridges. It is therefore possible that further investigations might show that the species is more widely distributed in Germany than what is currently known.

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