



A re-description of *Discoconchoecia elegans* (Sars, 1865) (Ostracoda: Halocyprididae) from high latitudes in the North Atlantic

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Abstract

Discoconchoecia elegans (Sars, 1865) is one of the most frequently recorded species of halocyprid ostracods and specimens are collected in abundance from various latitudes throughout the world oceans. This species is often dominant or subdominant member of the mesopelagic assemblages. However, its body size varies substantially with latitude, posing the question as to whether *D. elegans* is either a single, highly variable species, or a complex of cryptic and sibling species. Evaluation of the hypothesis that *D. elegans* is a complex of species requires comparison between the type material and specimens collected from different latitudes. The inadequacy of the original description from the type locality, off the Lofoten Islands (NW Norway), combined with a lack of the type material is preventing critical rating.

In this paper *Discoconchoecia elegans* is redescribed from specimens collected from an area close to Svalbard, using detailed drawings, morphometric measurements of all limbs, and SEM photographs, and it is compared with specimens collected from an area close to the species type locality. The individuals from those two localities show no significant differences, probably because the hydrographic conditions are similar between the two sites.

Key words: Lofoten Islands, Svalbard, halocyprids, *Discoconchoecia elegans*

Introduction

Discoconchoecia elegans was originally described by Sars (1865) from the North Atlantic, off the Lofoten Islands (ca. 68°N, NW Norway). Since then it has been one of the most frequently recorded of all halocyprid ostracod species (there are over 1343 published records, Angel *et al.* 2008). Specimens have been collected from most latitudes throughout the global ocean (see Figure 1). However, there is a high variability in the carapace length, ranging from 1.1 mm on the equator to 2.3 mm in the high Arctic, depending on the latitude from where they were collected. Its cosmopolitan distribution and these substantial differences in body size pose the question as to whether *Discoconchoecia elegans* is truly a single, ubiquitous species or a complex of cryptic species. However, this question cannot be easily resolved because the original description is inadequate by modern standards and because type material is not available.

The study presented here takes the initial step in resolving this issue by fully describing the Svalbard population, providing a complete description of all limbs and a full set of the meristic measurements/proportions that have become standard in modern halocyprid taxonomy. The Svalbard material was compared with a few specimens collected from an area very close to the type locality, off the Lofotens, and no differences were observed.

The *Discoconchoecia elegans* was originally assigned to the genus *Conchoecia* Dana, 1849 and its description was limited to sketchy information about its carapace, first and second antennae, the frontal organ of both females and males, and the male copulatory appendage (Sars 1865). Sars recorded females with a body length of 2 mm, described the carapace as being translucent with a reticulate sculpture, with the right valve bearing two spines at posterior dorsal corner. He also pointed out that the length of the frontal organ is little longer than the first antenna in females, and that its tip is almost smooth. He described the shape of copulatory organ as narrow, elongated and curved distally.