



Cumacea (Crustacea, Peracarida) in the deep Mediterranean, with the description of one new species*

UTE MÜHLENHARDT-SIEGEL

Biozentrum Grindel, Martin-Luther-King-Platz 3, D-20146 Hamburg; muehsie@zoologie.uni-hamburg.de

* In: Brökeland, W. & George, K.H. (eds) (2009) Deep-sea taxonomy — a contribution to our knowledge of biodiversity. *Zootaxa*, 2096, 1–488.

Abstract

Cumacean specimens were analysed from the expeditions of RV *Meteor* to the eastern Mediterranean in 1993 (Me 25/1) and 1998 (Me 40). Sampling depth ranged from 45 to 4391 m for the Me 25/1 expedition and from 1129 to 1876 m for the Me 40 expedition. In total, 29 species were identified of which one, *Campylaspis aegypta* sp. nov., is new to science. The horizontal and vertical distribution, the faunal overlap with the Atlantic and endemism of Cumacea in the Mediterranean are discussed. The age of the fauna is considered to be relatively young because of the faunal overlap with the eastern Atlantic and the paucity of endemic higher taxa.

Key words: *Campylaspis aegypta* sp. nov., deep sea, distribution, faunal overlap

Introduction

The European Mediterranean Sea is one of four intercontinental seas of the world oceans. It is divided roughly into two basins, the Western and the Eastern Mediterranean Basin. The western barrier dividing the Mediterranean and the Atlantic Ocean is the sill of Gibraltar (320 m). The maximum depth of the Western Mediterranean is 3700 m, the deep water temperature is relatively constant and close to 13°C, and the water is well oxygenated (Margalef 1985). The sill between Sicily and Tunis, which is close to 400 m deep, acts partly as a barrier between the western and eastern parts of the Mediterranean. The maximum depth of the eastern Mediterranean is more than 4000 m (Hofrichter *et al.* 2002). The water temperature in this deep-sea basin regularly exceeds 14.5°C (Klein & Roether 2002).

The Mediterranean has a long geological history and is known to be a relict of the tropical Tethys Sea. Due mainly to tectonic events during the Tertiary, the Mediterranean suffered several evaporations (Pérès 1985, Maldonado 1985, Tichy *et al.* 2002), the so called “Messinian Salinity Crisis”. The sea level dropped, after the closure of the Gibraltar sill, which prevented water influx from the Atlantic Ocean. Consequently, due to the arid climate in this region the Mediterranean basins almost dried out. The Mediterranean was reduced to several patches that were either brackish or highly salty, marking the so called “Lago-Mare-Phase” (Schmidt *et al.* 2002).

Due to plate tectonics, climatic changes and increased sea level of the world oceans, the basins were filled up again during the late Tertiary with Atlantic water. It is doubtful whether “old” benthic organisms survived the Messinian Salinity Crisis. As there are no endemic genera or families of higher taxa in the deep-sea benthos of the Mediterranean, the fauna is most probably a “young” one (Schmidt *et al.* 2002).

After the “Gibraltar waterfall” approximately 5.3 million years ago, Atlantic taxa had the chance to invade the Mediterranean (Schmidt *et al.* 2002). For deep-sea species, however, the Gibraltar sill might have