



Porifera, one new species *Suberea purpureaflava* n. sp. (Demospongiae, Verongida, Aplysinellidae) from northern Red Sea coral reefs, with short descriptions of Red Sea Verongida and known *Suberea* species

JOCHEN GUGEL^{1,4}, MARIT WAGLER² & FRANZ BRÜMMER³

¹University of Stuttgart, Institute for Biology, Department of Zoology, Pfaffenwaldring 57, 70569 Stuttgart, Germany.
E-mail: jochen.gugel@bio.uni-stuttgart.de, jochen.gugel@daad-alumni.de

²University of Leipzig, Faculty for Biosciences, Pharmacy and Psychology, Institute for Biology II, Talstraße 33, 04103 Leipzig, Germany. E-mail: wagnermarit@msn.com

³University of Stuttgart, Institute for Biology, Department of Zoology, Pfaffenwaldring 57, 70569 Stuttgart, Germany.
E-mail: franz.bruegger@bio.uni-stuttgart.de

⁴Corresponding author

Abstract

A new verongid sponge (*Suberea purpureaflava* n. sp.) is described from Dahab, Gulf of Aqaba, in the northern Red Sea. It has a pronounced colour change (a dark red ectosome with whitish pore sieves and a light yellow choanosome in the living specimen changes to a uniform dark violet in the fixed state) and rather rare dendritic fibres with pith and bark and a diameter of about 110–165µm, with the pith occupying 80–90 % of the fibre. Especially the pore sieves were very striking *in situ*. The new species is compared to all verongid sponges so far recorded from the Red Sea and to all known and accepted *Suberea* species worldwide. An identification key to all known *Suberea* species is given. This new species record brings the number of *Suberea* species described to a total of 11.

Key words: Gulf of Aqaba, Red Sea, *Suberea purpureaflava*, new species, key, Porifera

Introduction

Estimating sponge diversity is constrained by determining the number of unique species within a given area as well as whether or not species are widespread or abundant. The last series of taxonomic studies of Red Sea sponges includes Helmy *et al.* (2004), Ilan *et al.* (2004) and Helmy & van Soest (2005), still did not yield a comprehensive overview of sponge biodiversity in the area. This severely undermines our understanding of sponge biodiversity for the Red Sea region and subsequently the discovery of new novel compounds from sponges in the area. This is especially true for species within the Orders Dictyoceratida Minchin (1900), Dendroceratida Minchin (1900) and Verongida Bergquist (1978) which are keratose sponges lacking a mineral skeleton (Bergquist *et al.* 1998). Helmy *et al.* (2004) indicated that the actual biodiversity of dictyoceratid sponges for the Gulf of Aqaba was considerably higher than previously reported.

Only six species of verongids were previously known from the Red Sea, including two *Suberea* species. Recently Pinheiro *et al.* (2007) found 15 *Aplysina* species in Brazilian waters, eight of which new to science. This gives us an idea on the current underestimation of the biodiversity of this order of sponges worldwide.

The current taxonomy of most Verongida is rather straightforward, though there might be minor problems in detail. For example, one major feature to distinguish *Aplysina* and *Suberea* is a reticulated skeleton (*Aplysina*) vs. a dendritic skeleton (*Suberea*). But some stalked or erect *Suberea* species possess in parts a reticulated skeleton (see below *S. clavata*, *S. ianthelliformis*, *S. pedunculata*). Many aspects concerning the phylogeny of this order were confirmed by Erwin & Thacker (2007) with molecular methods. Unfortunately they focused mainly on Caribbean species and excluded *Suberea*. We describe here a new species of *Suberea* from Dahab, Gulf of Aqaba in the northern Red Sea (Fig.1).