



Revision of the subgenus *Neopsacas* (Hexactinellida, Rossellidae, *Crateromorpha*) with the description of new species and subspecies

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Abstract

Discovery of new specimens of *Crateromorpha* (*Neopsacas*), which are attributed to new species, from the Pacific, Antarctic and Indian Oceans and the description of new specimen also from the Atlantic Ocean allow us to review the skeletal characters regarding the dermal-hypodermal-atrial-hypatrial spicule composition in various species of subgenus *C.* (*Neopsacas*). A new diagnosis of this taxon is proposed, and several new species and subspecies described: *Crateromorpha* (*Neopsacas*) *krinovi* *krinovi* sp. nov., ssp. nov., *Crateromorpha* (*Neopsacas*) *krinovi* *discoli* ssp. nov. and *Crateromorpha* (*Neopsacas*) *obi* sp. nov. The status of the subgenus *Neopsacas* within the Rossellidae and its close relation to *Caulophacus* are now well established according to morphological characters. The distribution of this subgenus is wide: Atlantic, Pacific, Indian and Antarctic Oceans. Possible phylogenetic affinities between the genera *Crateromorpha* and *Caulophacus* are discussed.

Key words: Porifera, Hexactinellida, Rossellidae, new species, taxonomic revision, deep-sea sponges

Introduction

According to phylogenetic systematic character evaluation, the present status of the family Rossellidae within the Hexactinellida is ambiguous (Brückner 2006, Mehl 1992). The recent approach to clarify the phylogeny of the Hexactinellida by molecular methods (Dohrmann et al., 2006) confirms the necessity of increased efforts using of morphological taxonomy to establish certain hexactinellid taxa, particularly within the Rossellidae. The genus *Crateromorpha* was divided into 5 sub-genera by Tabachnick (2002): *C.* (*Crateromorpha*), *C.* (*Aulochone*), *C.* (*Caledochone*), *C.* (*Craterochone*) and *C.* (*Neopsacas*), of which the latter are so far known as monospecific and found only in type localities. The findings of known and new species and subspecies of *C.* (*Neopsacas*) from several additional localities enabling the revision of the subgenus resulting in stabilisation of establishment of this taxon and its taxonomic position.

Material & Methods

The sponges described here were collected over a long period of time during various expeditions to four of the World Oceans (Pacific, Atlantic, Indian Ocean and Antarctic). Some of the specimens were fixed in formaldehyde and transferred into alcohol after 4–5 months, whereas others were stored in alcohol with no other fixatives. The sponges were examined and subsamples taken for spicule preparations from defined body areas: