

Sponges from African inland waters: The genus *Eunapius* (Haplosclerida, Spongillina, Spongillidae)

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With 9 figures

Abstract: Biodiversity was assessed and a synthesis on sponges belonging to the genus *Eunapius* from African inland waters was performed, with detailed descriptions, geographic distribution, ecological notes and a diagnostic key. The gemmular trait “network of spongin fibers in the inner portion of the gemmular theca” discovered by the SEM analysis is here reported for the first time in four species of the genus. A comparative analysis was made, based on a critical revision of original descriptions, recent investigations on materials from historical collections, and recent samplings. Eight taxa are here reported, namely the widespread *Eunapius carteri* and *E. fragilis*, and the African endemics *E. aetheriae*, *E. ambiguus*, *E. carteri saharensis*, *E. michaelsoni*, *E. nitens* and *Eunapius* sp. The genus *Eunapius* is, among Spongillidae, the most common and widespread in Africa in North Africa, Sahara and Sub-Saharan up to South Africa and Namibia. Habitats range from extremely isolated waters in deserts to swamps, perennial rivers and lakes in highlands and coastal areas.

Key words: Africa, freshwater, Porifera, *Eunapius*, new morpho-trait, taxonomy, biogeography.

Introduction

Fourteen species of the family Spongillidae are presently ascribed to the genus *Eunapius* Gray, 1867 (Penney & Racek 1968; Manconi & Pronzato 2002, 2008, in press), namely *E. calcuttanus* (Annandale, 1911) (India, Myanmar), *E. carteri* (Bowerbank, 1863) (Asia, W-Europe, Africa), *E. conifer* (Annandale, 1916) (China), *E. crassissimus* (Annandale, 1907) (India, tropical SE-Asia, Australia), *E. fragilis* (Leidy, 1851) (cosmopolitan), *E. geminus* (Annandale, 1911) (India), *E. geei* (Annandale, 1918) (China), *E. michaelsoni* (Annandale, 1914) (Central Africa), *E. nitens* (Carter, 1881) (Africa), *E. potamolepis* (Annandale, 1918) (Thailand), *E. ryuensis* (Sasaki, 1970) (Japan), *E. sinensis* (Annandale, 1910) (China, Manchuria, ex USSR, Australia), *E. subterraneus* (Sket &

Velikonja, 1984) (Croatian caves), and *E. tinei* (Gee, 1932) (Philippines).

The discovery of the genus *Eunapius* Gray, 1867, in African freshwaters dates back to 1881, when Carter described *Spongilla nitens*. African sponges of the genus *Eunapius* are widespread, although the published records are scattered throughout the literature (see Banareescu 1995, Manconi et al. 1999) and some findings have not yet been published.

The present work is a contribution to the assessment of African biodiversity in freshwaters (Manconi & Pronzato 2008, in press) and aims to update and synthesize available data on spongillids of the genus *Eunapius*. Here we add to the African sponge fauna, recognition of two previously ignored species, *E. aetheriae* (Annandale, 1913) and *E. ambiguus* (Annandale, 1909), and two additional forms with species potential.

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