

# Taxonomy of *Hyalonema* (Porifera, Hexactinellida, Amphidiscosida) from Campos Basin (off Rio de Janeiro, Brazil)

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## INTRODUCTION

Sponges are filter-feeding animals distributed across a wide range of habitats and depths. They are classified into four classes: Calcarea, Demospongiae, Homoscleromorpha, and Hexactinellida, the latter being restricted to cold, deep-water environments. In Brazil, only 19 documented records belong to the class Hexactinellida. These little-known organisms, commonly referred to as glass-sponges, remain understudied, largely due to the high financial and logistical costs associated with deep-sea exploration. The present study aims to conduct a taxonomic assessment of hexactinellid specimens from the family Hyalonematidae collected in the Southwestern Atlantic (Campos Basin), deposited in the Porifera Collection of the National Museum (MNRJ/UFRJ).

## MATERIAL & METHODS

Forty-five samples (22 of them hexactinellids) were collected by a Remotely Operated Vehicle (ROV) in the Campos Basin (2021) and are deposited in the National Museum (MNRJ/UFRJ), Rio de Janeiro, Brazil. All samples were fixed in 96% ethanol and stored in properly labeled containers. From that, three specimens were identified in the family Hyalonematidae, which are the focus of the present study.

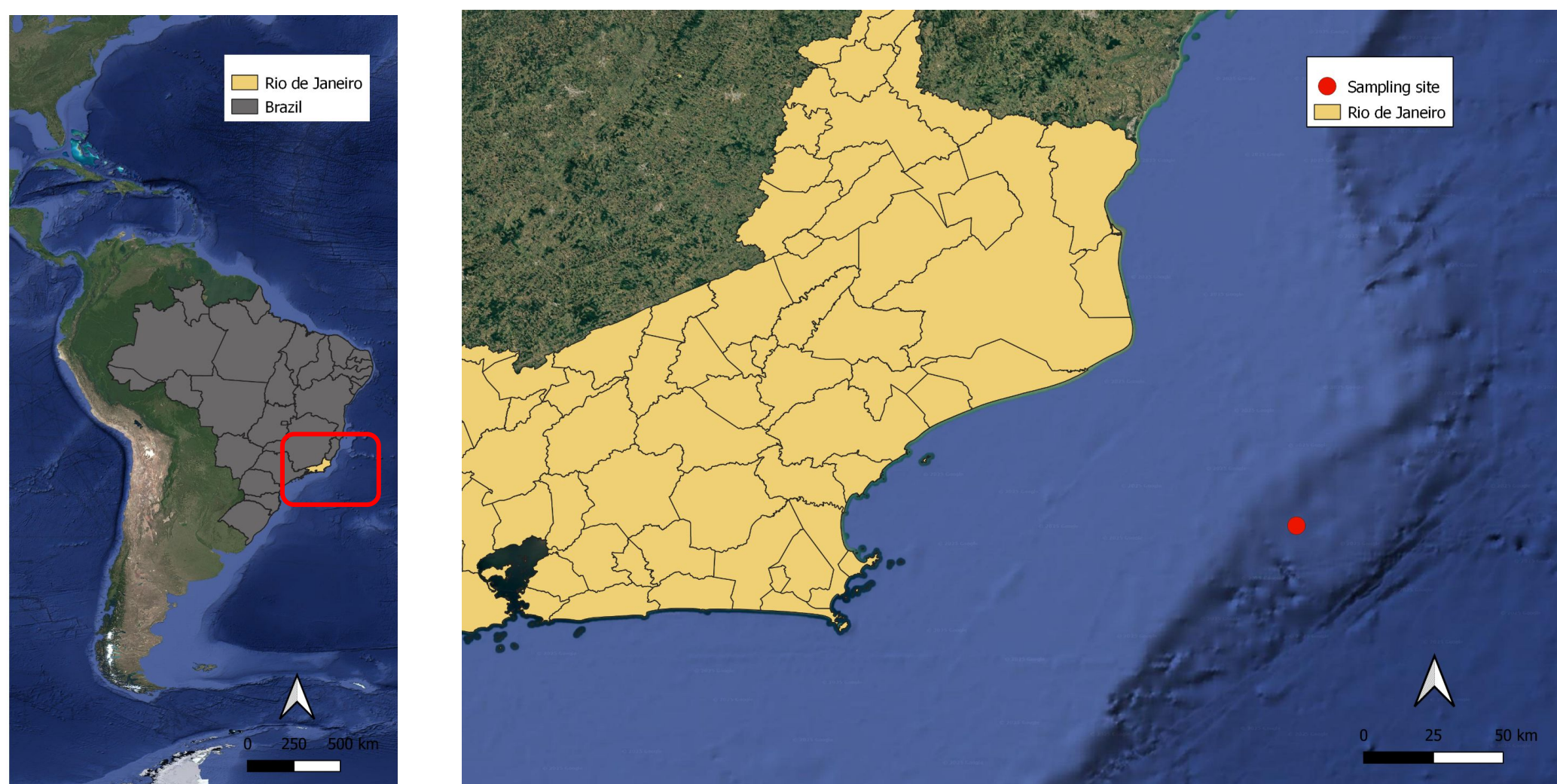


Figure 1. Map of the sampling site of the Campus Basin

For taxonomic study, histological slides of the sponge body skeleton structure were made following well-established procedures to analyse under compound, and scanning electron microscope (Reiswig & Araya, 2014).

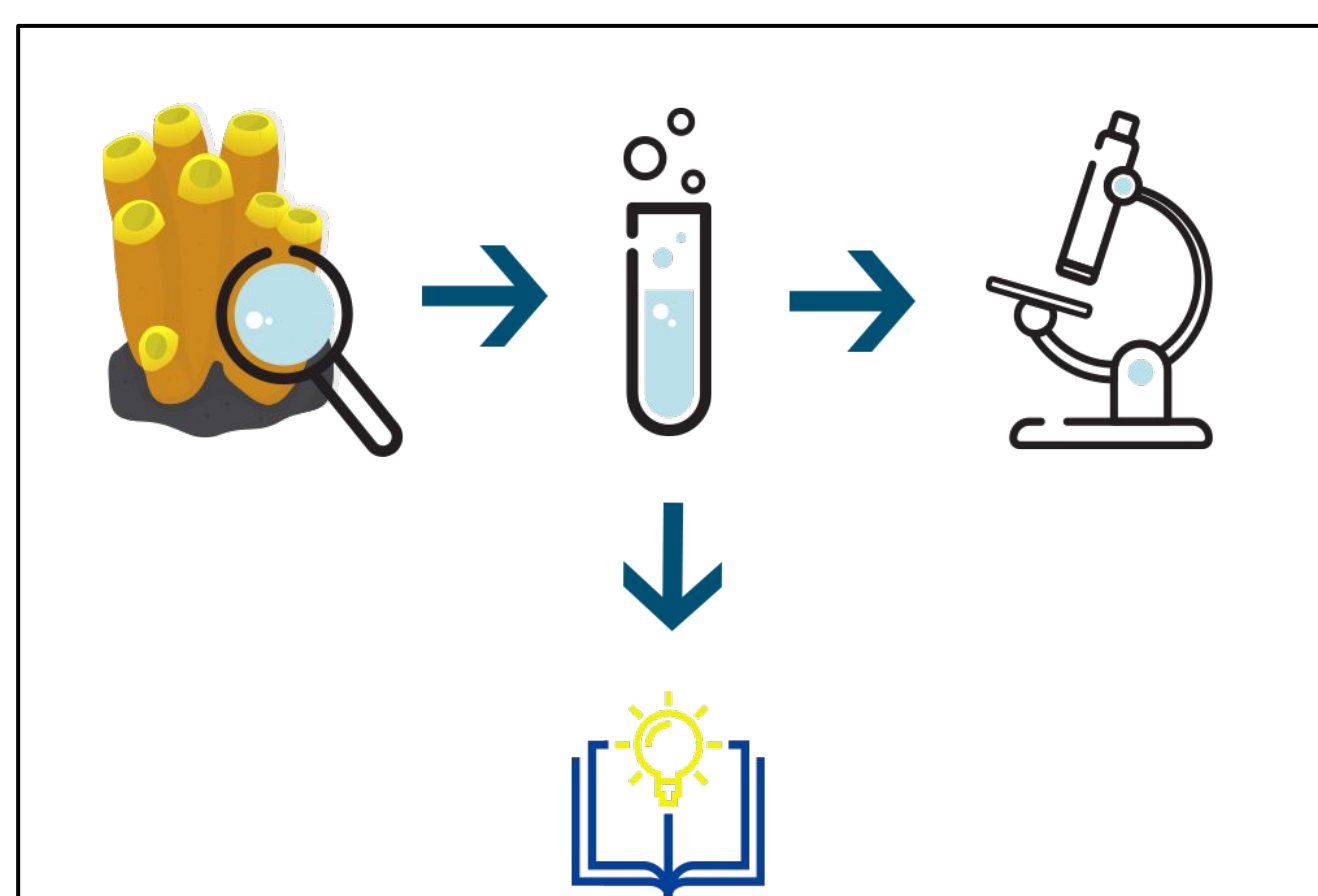


Figure 2. Simplified diagram of a taxonomic study.

## RESULTS & DISCUSSION

All three samples belongs to the genus *Hyalonema* (Hyalonematidae, Amphidiscosida, Hexactinellida). Two of them are conspecific and assigned to the subgenus *Hyalonema* (*Cyliconema*), whereas the other belongs to *Hyalonema* (*Corynonema*)—representing the first record of *H.* (*Corynonema*) to the Atlantic Ocean. All potential new species.



Figure 3. *Hyalonema* specimens: (A, C) *H.* (*Cyliconema*) sp.; (B) *H.* (*Corynonema*) sp.

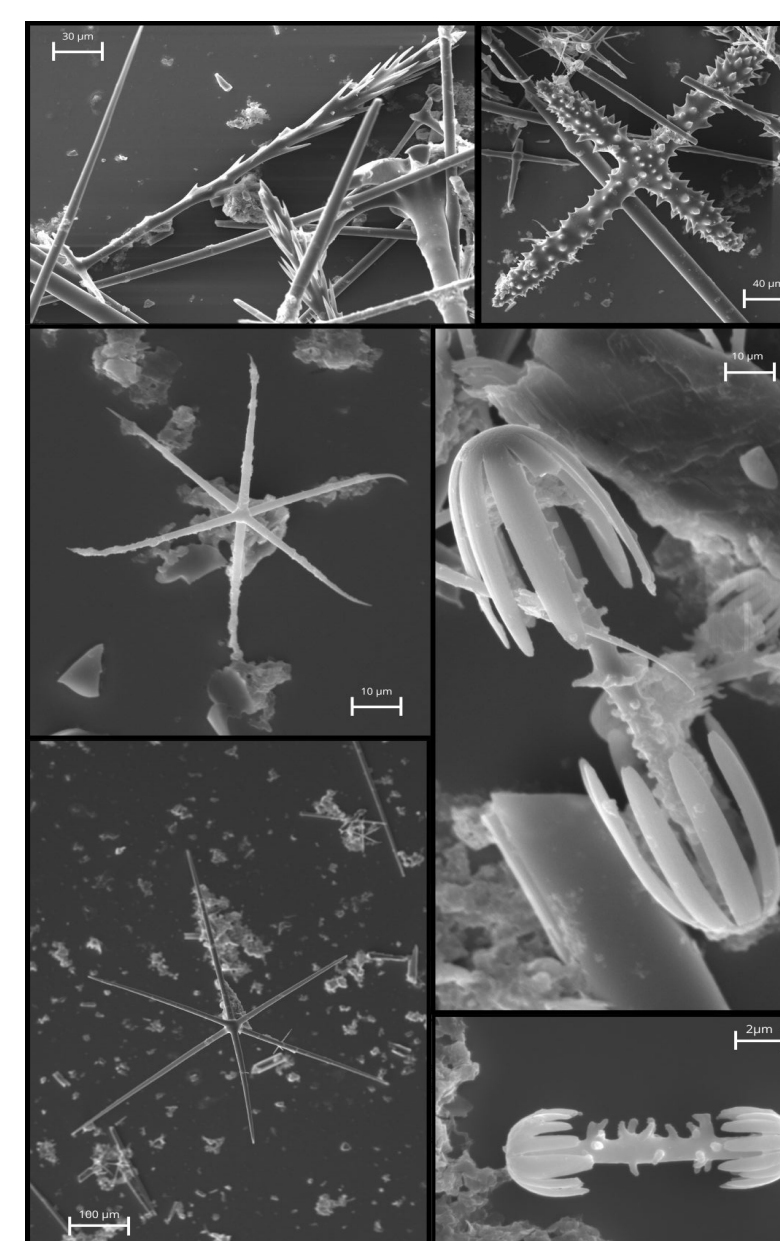


Figure 4. Spicules of *H.* (*Corynonema*) sp.

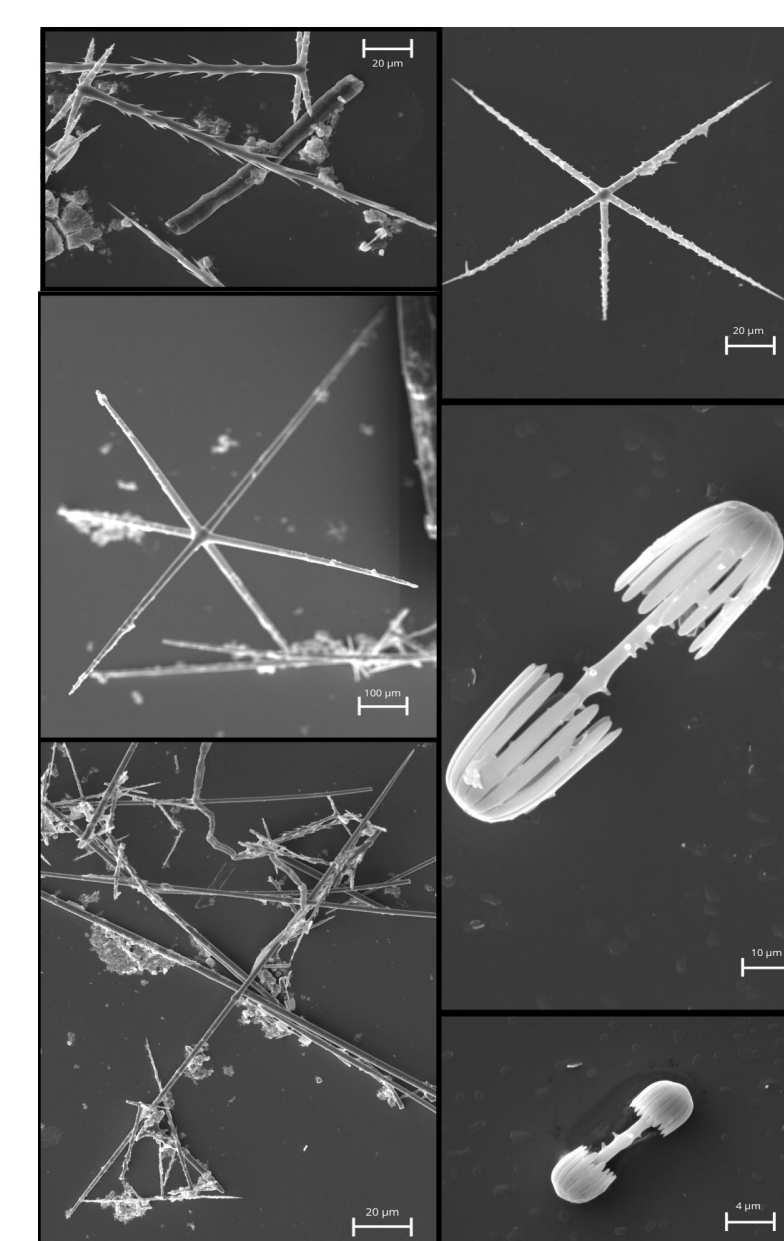


Figure 5. Spicules of *H.* (*Cyliconema*) sp.

*Hyalonema* (*Cyliconema*) sp. is characterized by acanthophorae in its basalia, pinnular pentactins in the dermalia and atrialia, diactins, hexactins, and pentactins in the choanosome, and microscleres amphidiscs. In turn, *H.* (*Corynonema*) sp., presents basalia with acanthophorae, pinnular pentactins and hexactins in its dermalia and atrialia, diactins, pentactins and hexactins in the choanosome, and microscleres microhexactins and amphidisc.

The next step of this research will be: refine the identification, name the new species, and describe them.

## REFERENCES

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