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INTRODUCTION

Sponges are an important and abundant component of Antarctic benthic communities, capable of constituting Vulnerable Marine Ecosystems (VMEs) and harbouring a great diversity of organisms, involving interactions with other invertebrates, fish and microorganisms (McClintock, 2005) (Fig. 1).

The aim of this study was to identify the sponges collected during the Peruvian scientific expeditions to Antarctica carried out in the austral summer of 2018 and 2019 (ANTAR XXV and ANTAR XXVI).



Figure 1. Glass sponges providing habitat for other organisms. Photograph copyright: Thomas Lundalv, Alfred Wegener Institute.

MATERIALS & METHODS

Specimens were collected using a van Veen grab and a small dredge down to 215 m depth at Mackellar Inlet, Maxwell Bay (Collins Bay) and the proximities of the Bransfield Strait, along King George Island (Fig. 2). Collection and identification procedures are detailed in Fig. 3. Species identifications followed Systema Porifera (Hooper & van Soest, 2002) and current systematic indexes.

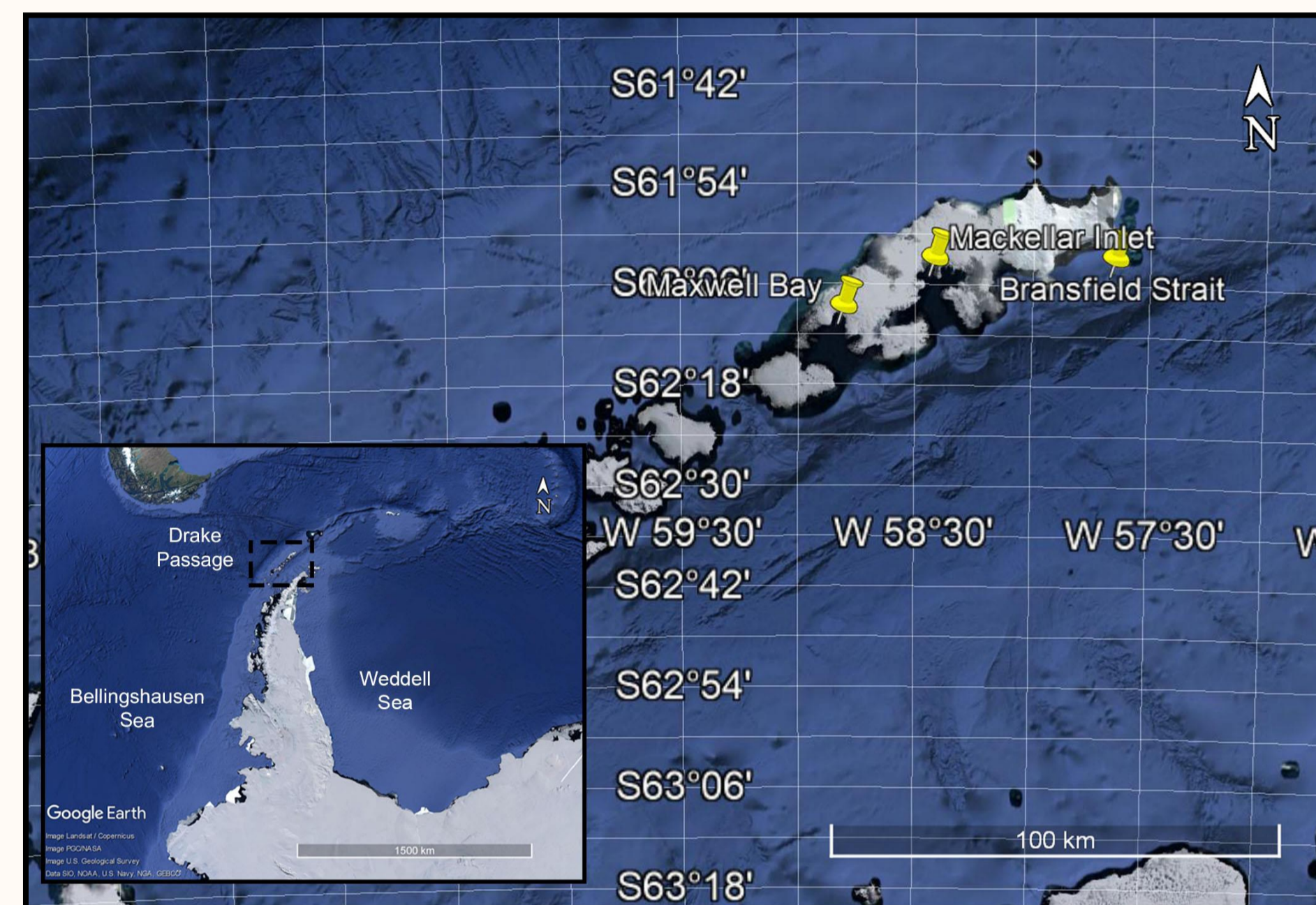


Figure 2. Sample localities in King George Island, Antarctica: Mackellar Inlet, Maxwell Bay and Bransfield Strait. (Source: Google Earth, 2022).

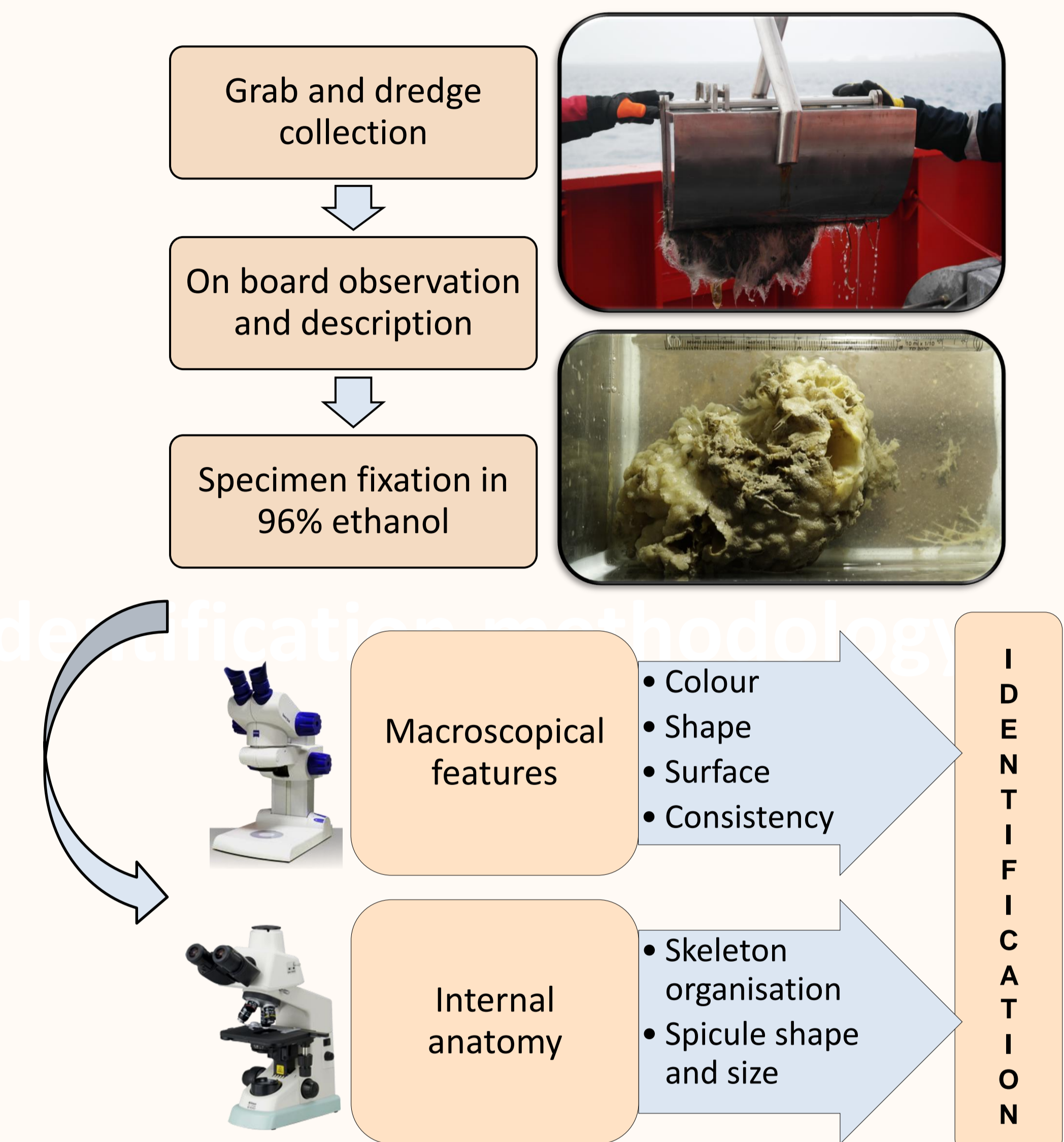


Figure 3. Flowchart of sponge collection and identification procedures.

RESULTS & DISCUSSION

From a total of 14 specimens, 7 species were identified (4 Demospongiae and 3 Hexactinellida). *Phorbas* sp. nov. (Fig. 4) is new to science; *Mycale* (*Oxymycale*) *acerata* Kirkpatrick, 1907 (Fig. 5) and *Phorbas glaberrimus* (Topsent, 1916) (Fig. 6) are new records for Mackellar Inlet (Admiralty Bay); *Haliclona* (*Reniera*) aff. *altera* (Topsent, 1901) (Fig. 7), *Rossella antarctica* Carter, 1872 (Fig. 8) and *Rossella fibulata* Schulze & Kirkpatrick, 1910 (Fig. 9) are firstly reported for Maxwell Bay (Collins Bay) and *Rossella podagrosa* Kirkpatrick, 1907 (Fig. 10) constitutes a new record for Maxwell Bay (Collins Bay) and Bransfield Strait.

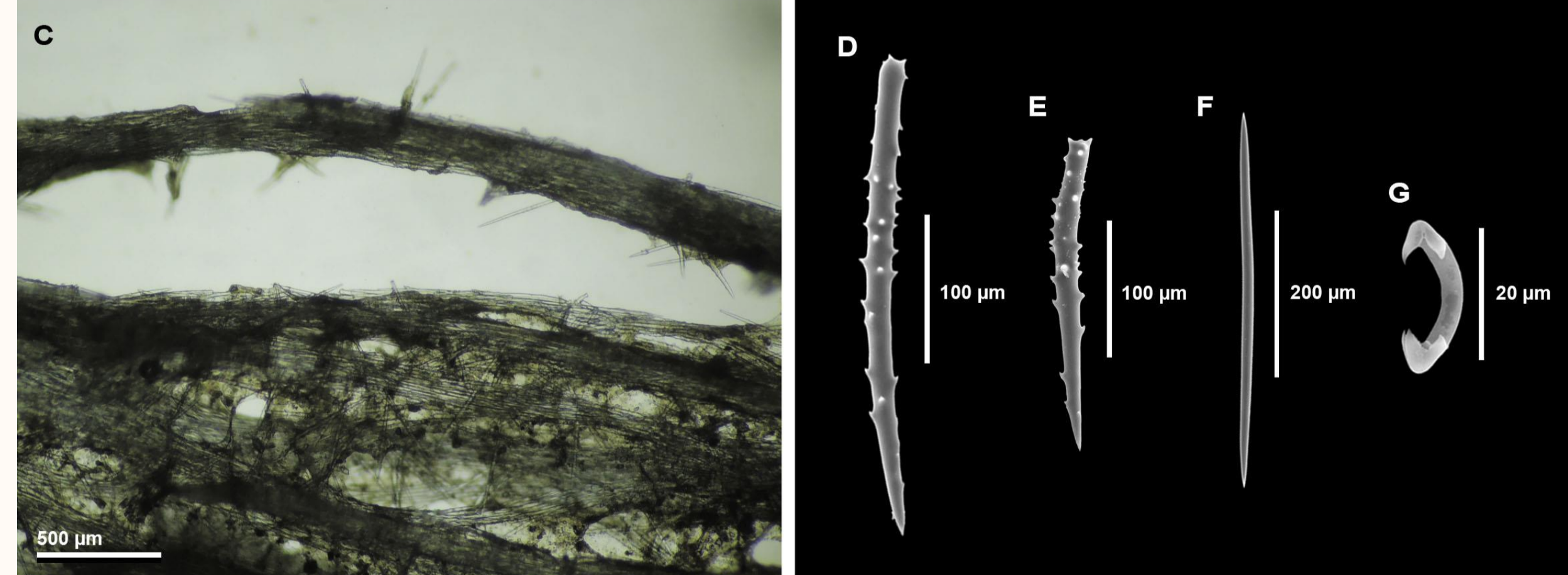
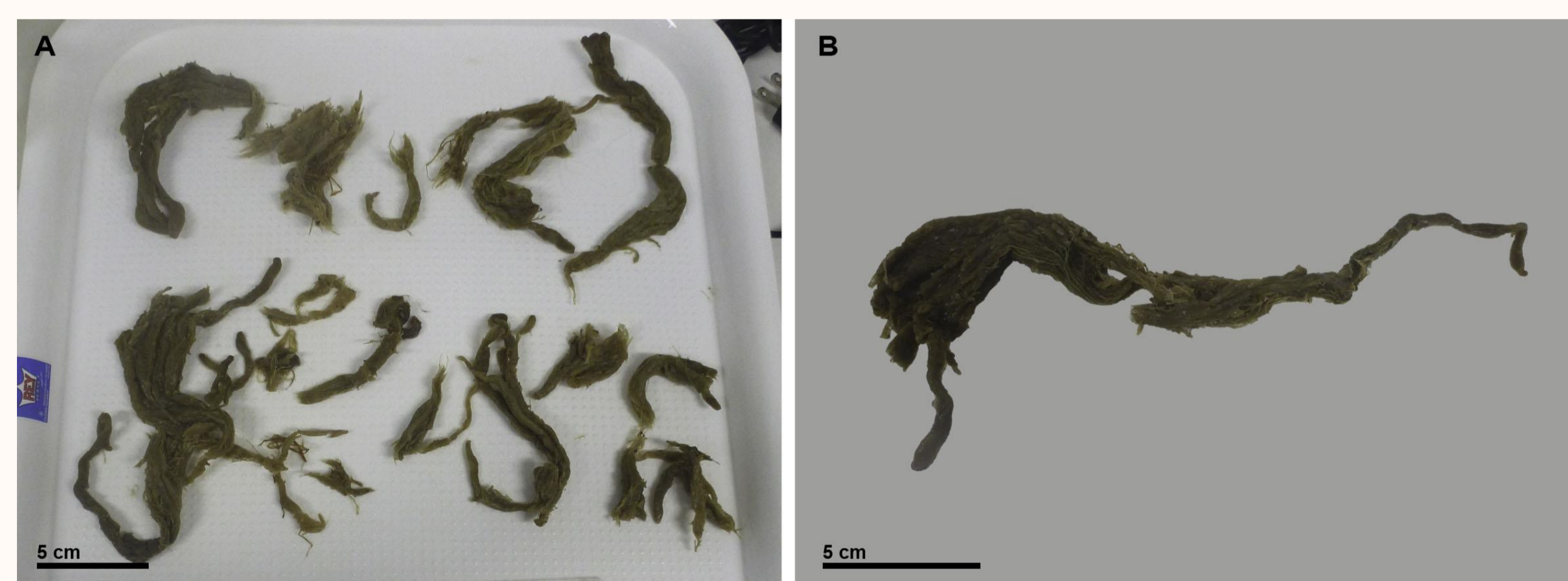


Figure 4. *Phorbas* sp. nov. A, Specimen recently collected. B, Specimen after fixation. C, Skeleton architecture. D, Acanthostyle I. E, Acanthostyle II. F, Oxea. G, Arcuate isochelae.

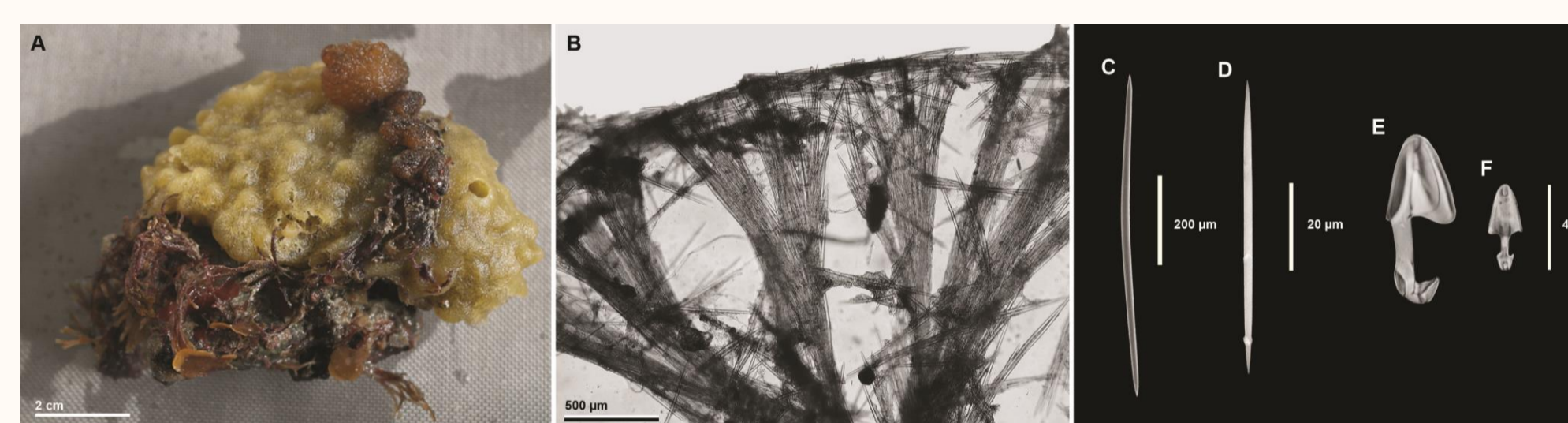


Figure 5. *Mycale* (*Oxymycale*) *acerata*. A, Specimen recently collected. B, Skeleton architecture. C, Oxea. D, Microoxea. E, Anisochelae I. F, Anisochelae II.

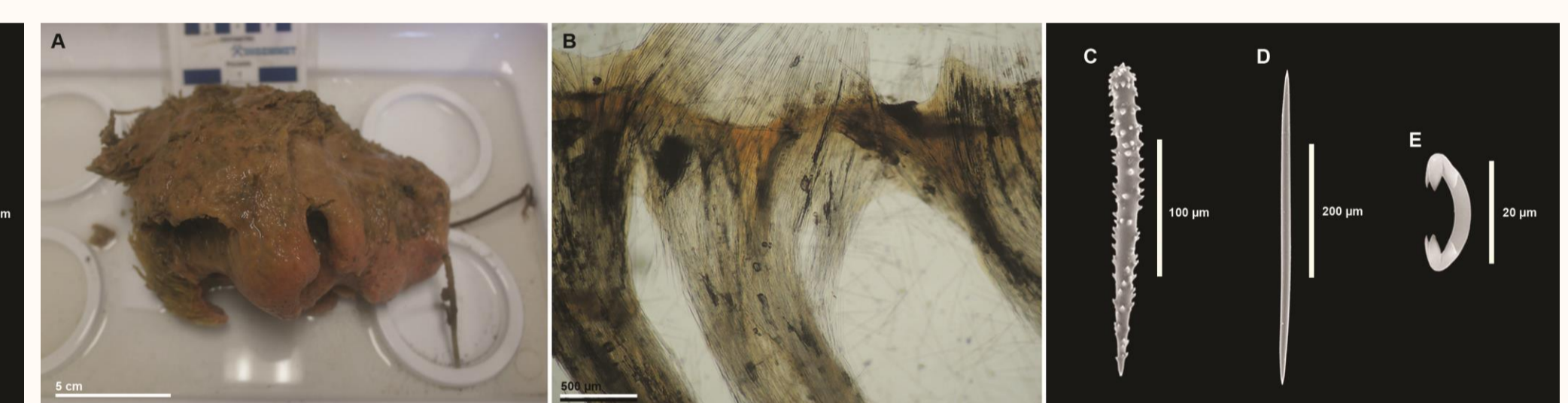


Figure 6. *Phorbas glaberrimus*. A, Specimen recently collected. B, Skeleton architecture. C, Acanthostyle. D, Oxea. E, Isochelae.

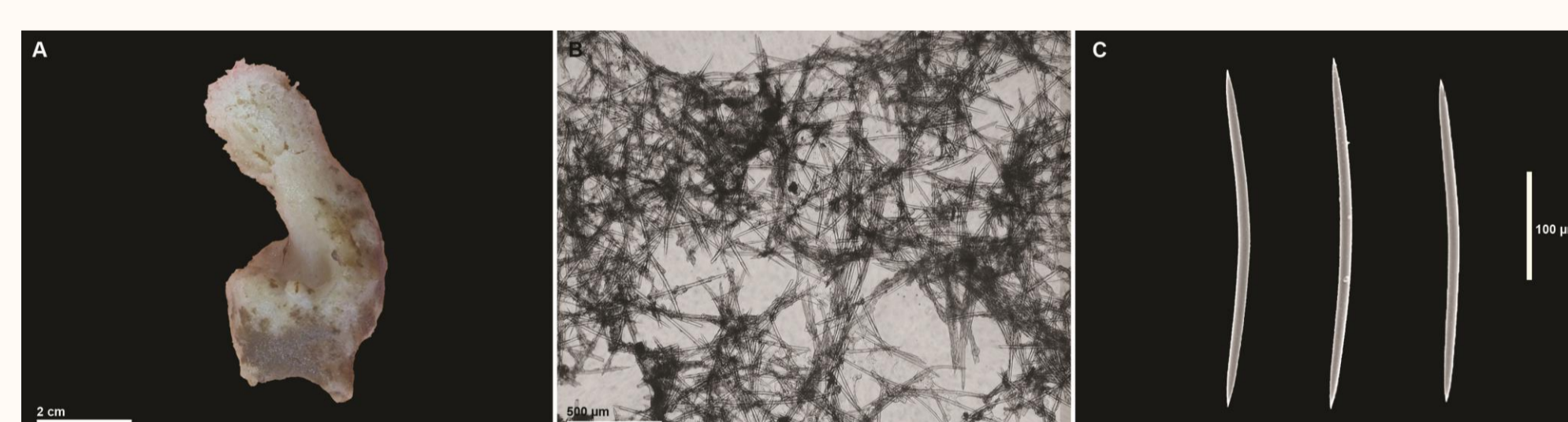


Figure 7. *Haliclona* (*Reniera*) aff. *altera*. A, Specimen recently collected. B, Skeleton architecture. C, Oxeas.

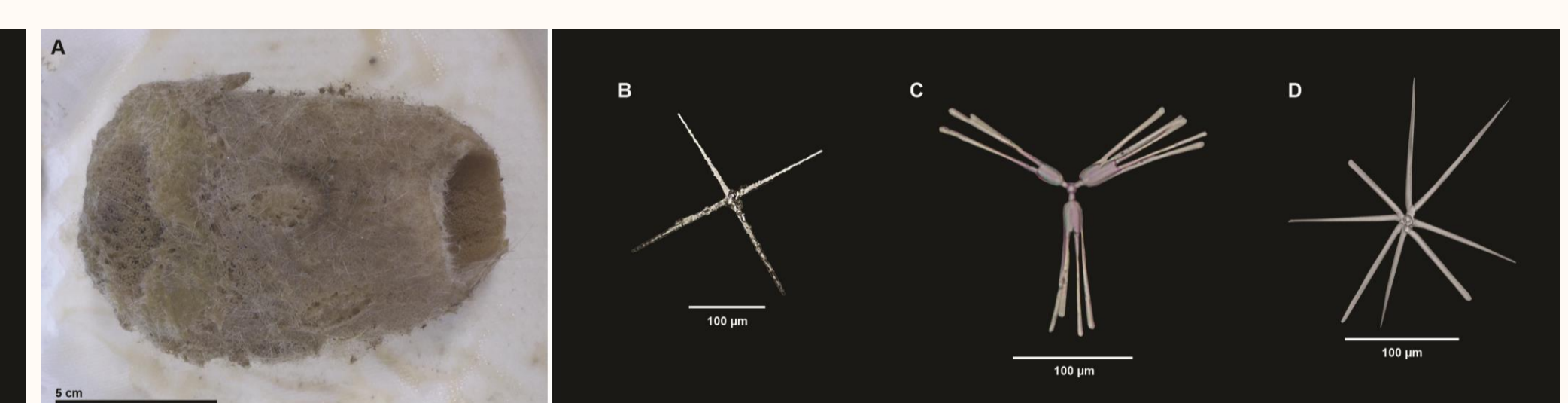


Figure 8. *Rossella antarctica*. A, Specimen recently collected. B, Rough pentactin. C, Entire calycocone. D, Oxyhexaster.

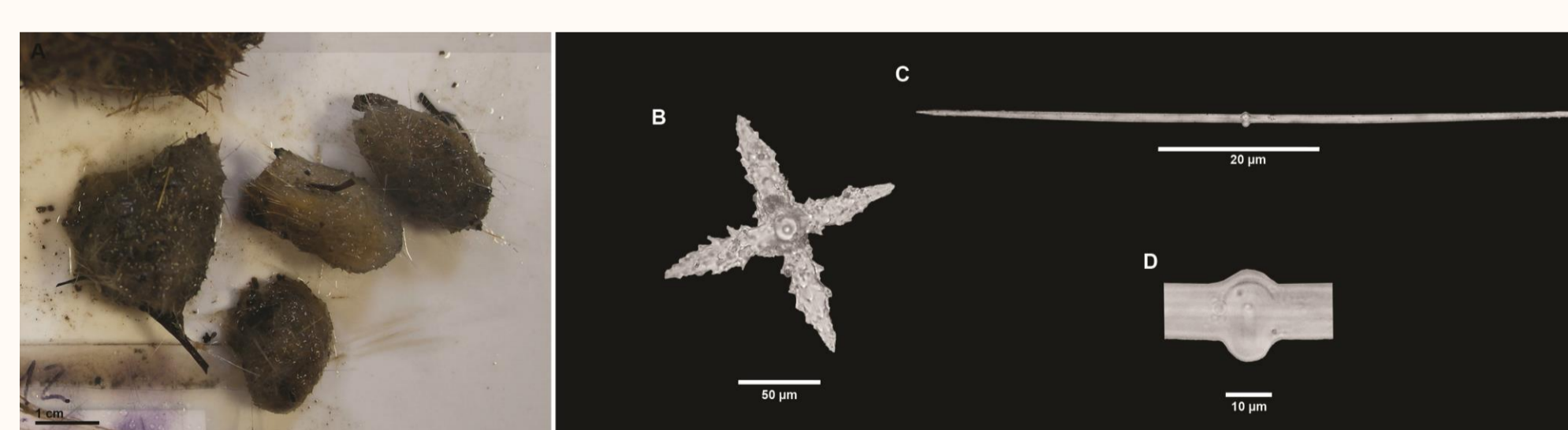


Figure 9. *Rossella fibulata*. A, Specimen recently collected. B, Rough pentactin. C, Heterodiactin. D, Detail of the lateral rays in heterodiactin.

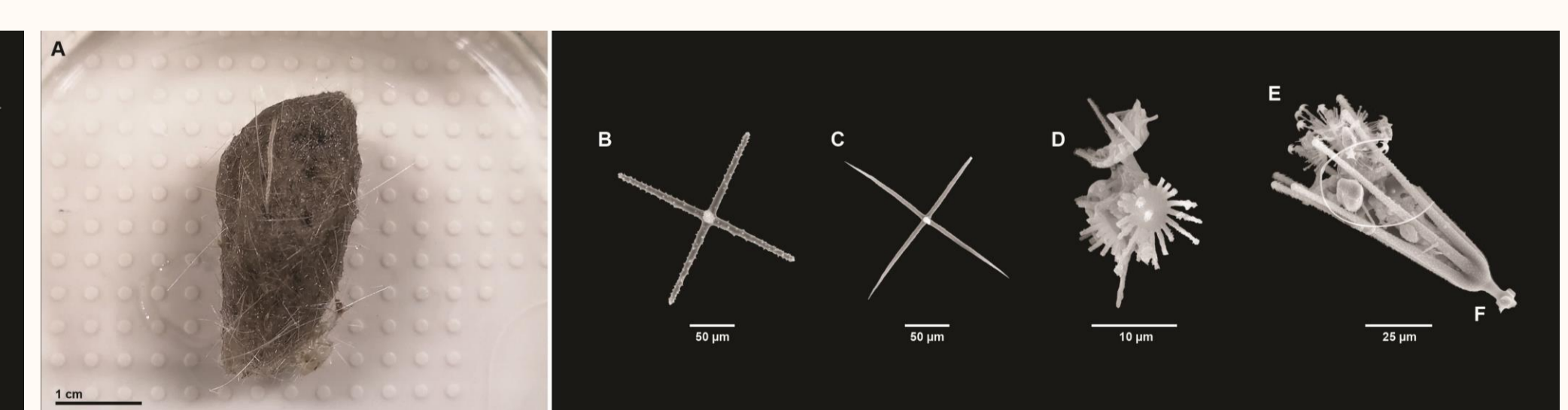


Figure 10. *Rossella podagrosa*. A, Specimen recently collected. B, Rough pentactin. C, Smooth pentactin. D, E, Microdiscohexaster. F, Calycocone.

Among the Antarctic species, *Phorbas* sp. nov. mostly resembles *P. glaberrimus* (Topsent, 1917) in skeleton composition (including the spicule sizes of oxeas, acanthostyles and isochelae), but the external morphology and skeleton organization are different. *Phorbas glaberrimus* is massive and its choanosomal skeleton is composed of multispicular fibres that end in a palisade at the ectosome; while *Phorbas* sp. nov. is ramose and has a plumose choanosomal skeleton composed of spicules running towards a paratangential ectosomal skeleton.

Hajdu *et al.* (2016) described 18 species from King George Island (1 Calcarea, 15 Demospongiae and 2 Hexactinellida), which may not reflect the real sponge biodiversity around this island as certain localities have not yet been explored. **With this study, the number of sponge species recorded from King George Island raises up to 36.**

Acknowledgments

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