

Sponges of the order Poecilosclerida (Porifera) from Burdwood Bank and the Scotia Arc, SW Atlantic Ocean



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INTRODUCTION & AIM

The Burdwood Bank (BB), located in the SW Atlantic Ocean, is part of the Scotia Arc which is considered a natural bridge between South America and Antarctica. Unlike other invertebrate Phyla, the BB's sponge fauna is still little studied. Consequently, the aim of this study is to provide a list of sponge species (Order Poecilosclerida) from BB and to estimate its richness, considering the plateau (until 200m depth), but also the slope. These results are compared with the sponge richness in adjacent regions (Isla de los Estados (ISE), Malvinas/Falklands Islands (MI), Tierra del Fuego (TF)) and other sites of the Scotia Arc (South Georgias (SG) and South Orkney Is. (SOI)) (Figure 1).

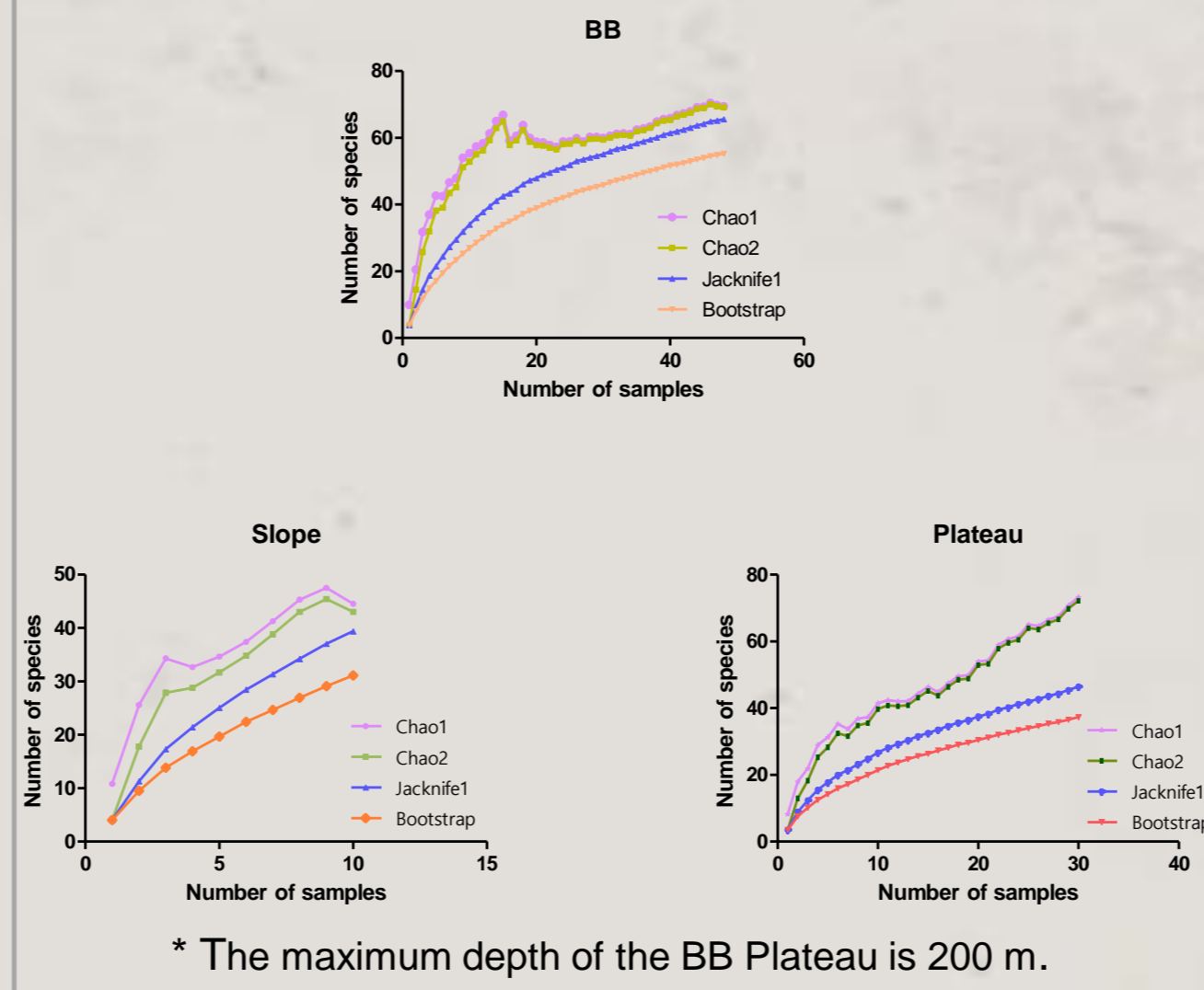
METHOD



Sponges from BB were identified in the Benthos Laboratory (INIDEP), through 350 samples collected during two research cruises in 2016 and 2017, using the classic methodology. Also, data from bibliographic sources was employed (see WPD <https://www.marinespecies.org/porifera/>). We used the packages iNEXT and Vegan from R and Gradpadh for the statistical analysis.

RESULTS & DISCUSSION

Figure 2: Richness estimates for Burdwood Bank.



Fibulia mixyllioides



Isodictya verrucosa

Table 1: Sponge species recorded at Burdwood Bank in this study

<i>Antho (Plocamia) bremeae</i>	<i>Lissodendoryx</i> sp.1
<i>Asbestopluma (Asbestopluma) magnifica</i>	<i>Lissodendoryx (Ectydoryx) nobilis</i>
<i>Abyssocladia</i> sp.	<i>Lissodendoryx (Ectydoryx) diegoramirezensis</i>
<i>Amphilectus fimbriatus</i>	<i>Lissodendoryx (Ectydoryx) sp.3</i>
<i>Amphilectus rugosus</i>	<i>Lissodendoryx (Ectydoryx) patagonica</i>
<i>Amphilectus</i> sp.2	<i>Lissodendoryx (Lissodendoryx) sp.1</i>
<i>Amphilectus</i> sp.1	<i>Lissodendoryx (Ectydoryx) cf. antarctica</i>
<i>Antho (Plocamia) bremeae</i>	<i>Mycale (Aegogropila) magellanica</i>
<i>Clathria (Axosuberites) nidificata</i>	<i>Mycale (Carmia) gaussiana</i>
<i>Clathria (Clathria) microxa</i>	<i>Myxilla (Myxilla) mollis</i>
<i>Clathria (Microciona) antarctica</i>	<i>Myxilla (Burtonanchora) hastata</i>
<i>Clathria</i> sp.	<i>Myxilla</i> sp.
<i>Crella</i> sp.	<i>Pyloderma latruncooides</i>
<i>Fibulia mixyllioides</i>	<i>Steloderix argentineae</i>
<i>Guitarra cf. sigmatifera</i>	<i>Tedania (Tedaniopsis) massa</i>
<i>Hamigera</i> sp.	<i>Tedania (Tedaniopsis) mucosa</i>
<i>Inflatella belli</i>	<i>Tedania (Tedaniopsis) tantula</i>
<i>lophon cf. gaussi</i>	<i>Tedania cf. oxata</i>
<i>lophon proximum</i>	<i>Tedania (Tedaniopsis) tenuicapitata</i>
<i>lophon</i> sp.2	<i>Tedania</i> sp.
<i>lophon</i> sp.1	<i>Tedania</i> sp.1
<i>Isodictya verrucosa</i>	<i>Tedania</i> sp.2
<i>Isodictya setifera</i>	<i>Tedania</i> sp.3
<i>Latrunclia (Latrunclia) brevis</i>	<i>Tedania</i> sp.4

Figure 1: Studied area in the SW Atlantic Ocean

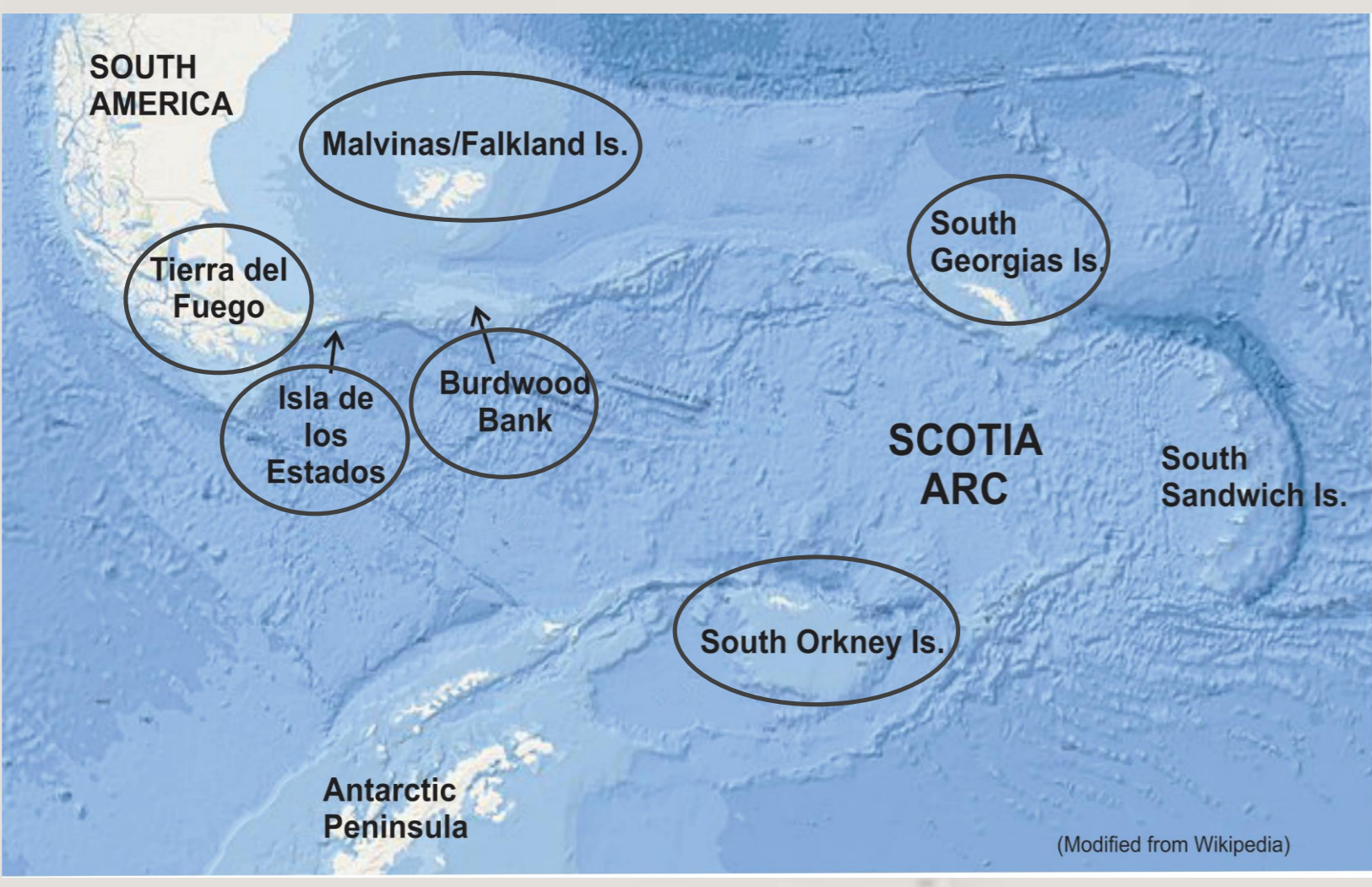


Figure 3: Species accumulation curves

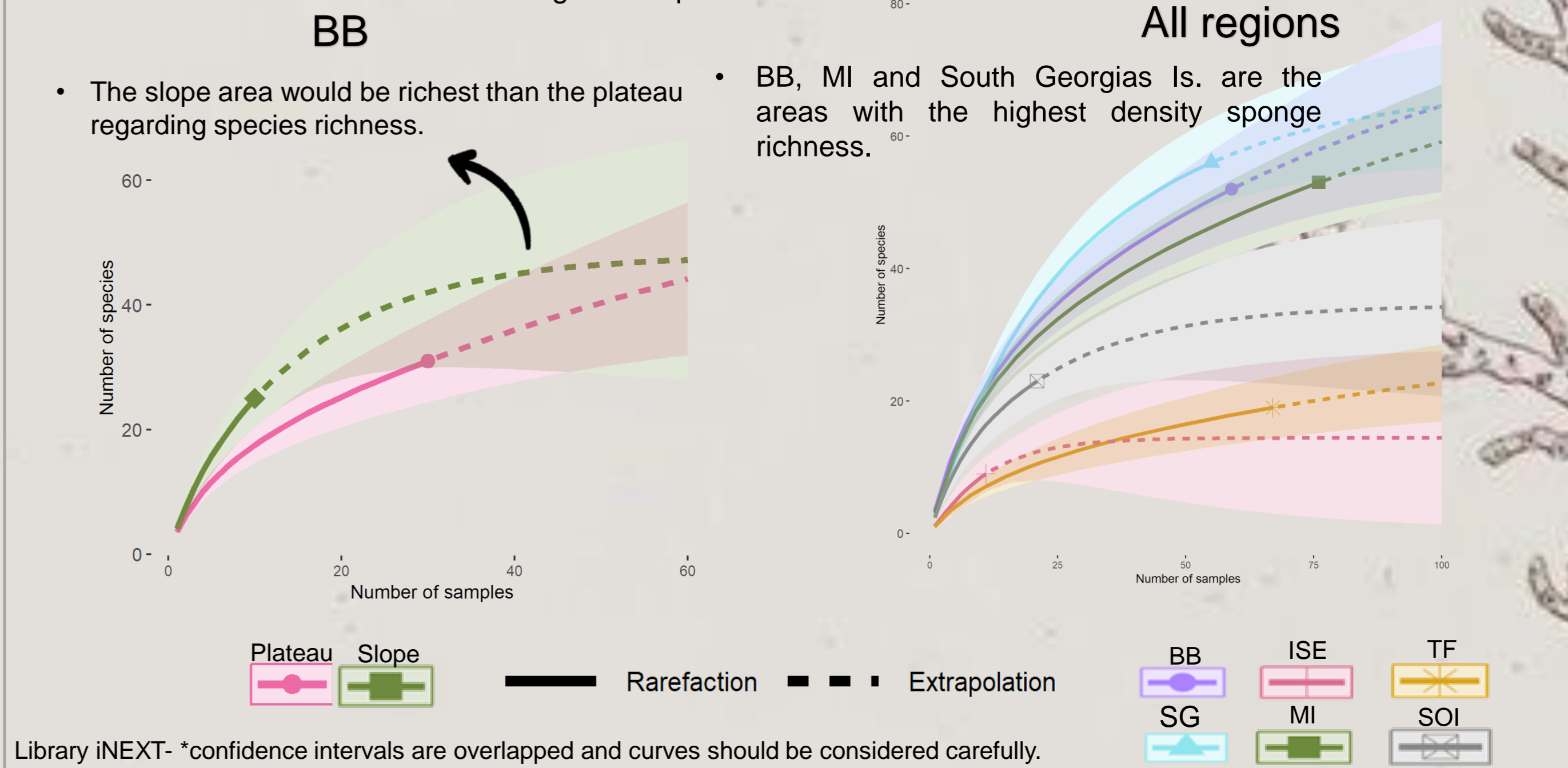


Table 2: Recorded species (OS) and estimated Richness for Burdwood Bank and the other studied regions

Regions	OS	Estimated Richness
BB total (Plateau+Slope)	49	50-70
BB Plateau	35	20-40
BB Slope	25	30-45
SG	56	see Figure 3
MI	53	
ISE	9	
TF	20	
SOI	23	

CONCLUSION

- The recorded sponge richness (Poecilosclerida) at BB has been increased from 18 to 49, and new species are currently being described. However, the total estimated richness would be higher, reaching 50-70 according to these results.
- Only 3% of species are shared among all regions: species composition was different among areas.
- More sampling effort is necessary to properly assess the sponge richness and composition of all the studied regions, considering that the estimation of sponge richness in all the regions is higher than the observed values.

From the 49 recorded species for BB, 30 represented new records and at least 6 are new species for the science (Table 1).

Only 7 species were shared among all the studied regions: *Mycale (Aegogropila) magellanica*, *lophon proximum*, *Isodictya setifera*, *Isodictya verrucosa*, *Myxilla (Myxilla) mollis*, *Tedania (Tedaniopsis) massa*, and *Tedania (Tedaniopsis) mucosa*.