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Riqueza de espécies de poríferos (Porifera, Demospongiae) coletados pelo Programa Antártico Brasileiro – PROANTAR (1983–1991)

Dissertação de Mestrado apresentada ao Programa de Pós-Graduação em Biologia Animal, Instituto de Biociências da Universidade Federal do Rio Grande do Sul, como requisito à obtenção do Título de Mestre em Biologia Animal.

Área de Concentração: Biodiversidade
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Universidade Federal do Rio Grande do Sul
Porto Alegre
2007

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Aprovada em ________/_________/________

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AGRADECIMENTOS

Aos meus pais, por terem estimulado, apoiado e acreditado em meu trabalho desde o início, em especial ao meu pai por ter, com sua paixão pela Agronomia, inspirado meu caminho através da Biologia. À minha família por ter compreendido as ausências e valorizado os momentos de folga, com carinho e constante suporte. À minha namorada Mariane Leonardo dos Santos, por dividir o fascínio pela Biologia e talvez por essa razão compreender o que uma pesquisa demanda. Aos meus amigos pelo incentivo diário.

À Dra. Beatriz Mothes por ter sido a incansável orientadora, mas principalmente agradeço por ter sido muito mais que isso: a amiga de todas as horas, a professora paciente, a incentivadora vigorosa, a colega entusiasta e a mestra inesquecível.

À Dra. Inga Ludmila Veitenheimer Mendes pela gentil acolhida e pela honra de ter aceitado orientar-me; sinto-me eternamente grato pela amizade, carinho, apoio e pelos ensinamentos que levarei para a vida toda.

Aos meus queridos colegas do Setor de Poríferos Marinhos do MCN/FZB; dedico parte dos meus esforços para todos aqueles com quem divido até hoje o prazer de fazer parte do mesmo grupo de pesquisa; o auxílio de todos vocês foi imprescindível em todas as etapas deste trabalho: à Dra. Cléa Beatriz Lerner, por todo o incentivo e também pela sua sabedoria a qual sempre utilizei como referência; ao mestrando João Luís Carraro, pelo longo de tempo em que trabalhamos juntos sempre com seu companheirismo e dedicação; ao biólogo Rafael Antônio Eckert e ao estagiário Gustavo Leite Kasper, também pelo tempo em que dividimos o mesmo setor; aos bolsistas Alexandre Bondan Dias, Gabriel Souza, Elenara Véras dos Santos e Maurício Correia Martins, pelo apoio e colaboração, e também a antigos bolsistas e estagiários que colaboraram em alguma etapa deste trabalho:

Julyana Beheregaray dos Santos, Rachel de Miranda Furtado Gomes e André Luís Ferraz de Souza.

Aos colegas do Programa de Pós-Graduação em Biologia Animal da UFRGS, pelo carinho, incentivo e amizade; tive a felicidade de compartilhar o curso com pessoas de grande capacidade e que certamente enriqueceram meu conhecimento. Agradeço por todos os momentos compartilhados durante as disciplinas do curso.

Aos professores do Programa de Pós-Graduação em Biologia Animal da UFRGS pela generosidade em propagar seus conhecimentos em nome do saber.

Aos colegas do Laboratório de Malacologia, Departamento de Zoologia da UFRGS, pela acolhida e companheirismo durante a realização do curso; em especial à bióloga M. Sc. Helena Nussbaum de Jongh, ao doutorando Fábio Wiggers e à mestranda Aline Leite da Silva, pela convivência durante diversas etapas do trabalho.

A todos os funcionários do Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul; presto aqui meus sinceros agradecimentos pelo carinho, companheirismo e amizade.

Ao Sr. Cleodir Mansan pela metalização dos ‘stubs’ para Microscopia Eletrônica.

À Ruth Desqueyroux-Faúndez, do Muséum d'Histoire Naturelle de Genebra, Suíça e Dr. Eduardo Hajdu, do Museu Nacional da Universidade Federal do Rio de Janeiro, pelo envio de material bibliográfico.

Às bibliotecárias Maria de Jesus Pureza, do Instituto Oceanográfico da USP, e Cláudia Melo, do Museu de Zoologia da USP, pelo excelente serviço prestado a partir da pesquisa, cópia e envio de obras raras.

Ao Programa de Pós-Graduação em Biologia Animal, pelo auxilio financeiro às sessões de Microscopia Eletrônica de Varredura e pelo aporte por ocasião de minha participação em um evento internacional.

À amiga Annie Schmaltz Hsiou, por ter me indicado para integrar a equipe de Poríferos Marinhos do MCN/FZB; a sinceridade de sua amizade e a certeza de sua confiança certamente me permite estar realizado com minha escolha em estudar e compreender o mundo dos poríferos.

À Clare Valentine, do British Museum of Natural History, Inglaterra, ao Dr. Carsten Lüter, do Museum für Naturkunde, Humboldt-Universität zu Berlin, Alemanha, e à Dra. Barbara Calcinai, da Universitá di Ancona, Itália, pelo empréstimo de material para estudo comparativo.

Ao Dr. Edmundo Ferraz Nonnato, pela doação e envio de todo o material de Porífera coletado pelo PROANTAR para a Coleção de Porifera do MCN/FZB.

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RESUMO

Estudos com o Filo Porifera na Antártica apresentam uma grande quantidade de registros, a partir das diversas expedições já realizadas. Neste continente, onde as esponjas ocorrem em abundância significativa, existem algumas áreas ainda não completamente estudadas, como as Ilhas Shetland do Sul e áreas vizinhas, onde se concentra a área pesquisada, objeto do presente trabalho. O Brasil, país atuante em pesquisas antárticas, possibilita através de seu Programa Antártico Brasileiro (PROANTAR) o desenvolvimento de diversos tipos de pesquisas. O presente estudo tem por objetivo o estudo taxonômico das amostras coletadas pelo PROANTAR, bem como ampliar a diagnose das espécies identificadas com ilustrações completas e fotomicrografias ao MEV. As Demospongiae foram coletadas nas Ilhas Shetland do Sul (Ilha Low, Ilha Livingston, Ilha Rei George e Ilha Elephant), Ilha Joinville e Estreito de Bransfield, entre as latitudes de 61°02'-63°44' S e as longitudes de 54°16'-62°31' W, em profundidades de 20 a 460 metros, por meio de dragas e mergulho autônomo. O material estudado encontra-se depositado na Coleção de Porifera do Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul, e o estudo taxonômico foi realizado com base na morfologia externa, arquitetura do esqueleto e forma e tamanho das escleras, estas últimas fotografadas ao Microscópio Eletrônico de Varredura. Os 86 espécimes estudados correspondem a 17 famílias, 26 gêneros e 40 espécies. Constituem-se em novos registros para: as Ilhas Shetland do Sul – Ancorinidae Schmidt, 1870, Iotrochotidae Dendy, 1922, *Tethyopsis* Stewart, 1870, *Acanthorhabdus* Burton, 1929, *Iotroata* Ridley, 1884, *Tethyopsis longispinum* (Lendenfeld, 1907), *Suberites montiniger* Carter, 1880 *sensu* Topsent, 1915, *Acanthorhabdus fragilis* Burton, 1929, *Iophon* *terranovae* Calcinai & Pansini, 2000, *Iotroata somovi* (Koltun, 1964), *Myxilla (Ectyomyxilla) mariana* Ridley & Dendy, 1886, *Tedania (Tedaniopsis) vanhoeffeni* Hentschel, 1914 e *Latrunculia (Latrunculia) brevis* (Ridley & Dendy, 1886); para a Antártica – *Hymedesmia (Hymedesmia) laevis* Thiele, 1905, *Halichondria (Eumastia) attenuata* (Topsent, 1915) e *Haliclona (Soestella) chilensis* (Thiele, 1905). Em relação à distribuição batimétrica, 10 espécies (25%) apresentam novos limites a partir dos dados registrados. São comentados os padrões de distribuição detectados. É adicionada uma listagem das espécies de Demospongiae conhecidas até o presente para o Complexo Antártico Faunístico.

ABSTRACT

Studies with Phyllum Porifera in Antarctica present a great amount of records, from the several until then carried through expeditions. In this continent, where the sponges occur in significant abundance, there are some not yet completely studied areas, like the South Shetland Islands and neighboring areas, where is concentrated the researched area, object of the present work. Brazil, operating country in Antarctic research, makes possible through its Brazilian Antarctic Program (PROANTAR) the development of several kinds of research. The aim of the present work is the taxonomic study of the samples collected by PROANTAR, as well as to extend the diagnosis of the identified species with complete illustrations and SEM photomicrographs. The Demospongiae were collected at South Shetland Islands (Low Island, Livingston I., King George I. e Elephant I.), Joinville Island and Bransfield Strait, between latitudes of 61°02'-63°44' S and longitudes of 54°16'-62°31' W, in depths from 20 to 460 meters, by means of dredges and scuba diving. The studied material is deposited in Porifera Collection of Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, and the taxonomic study was carried out based on the external morphology, skeletal architecture and size and shape of the spicules, which were undertaken by Scanning Electronic Microscope. The 86 studied specimens are represented by 17 families, 26 genera and 40 species. New records: South Shetland Islands – Ancorinidae Schmidt, 1870, Iotrochotidae Dendy, 1922, *Tethyopsis* Stewart, 1870, *Acanthorhabdus* Burton, 1929, *Iotroata* Ridley, 1884, *Tethyopsis longispinum* (Lendenfeld, 1907), *Suberites montiniger* Carter, 1880 *sensu* Topsent, 1915, *Acanthorhabdus fragilis* Burton, 1929, *Iophon terranovae* Calcinai & Pansini, 2000, *Iotroata somovi* (Koltun, 1964), *Myxilla*

(Ectyomyxilla) mariana Ridley & Dendy, 1886, *Tedania (Tedaniopsis) vanhoeffeni* Hentschel, 1914 and *Latrunculia (Latrunculia) brevis* (Ridley & Dendy, 1886); for Antarctica – *Hymedesmia (Hymedesmia) laevis* Thiele, 1905, *Halichondria (Eumastia) attenuata* (Topsent, 1915) and *Haliclona (Soestella) chilensis* (Thiele, 1905). In regard to bathymetric distribution, 10 species (25%) present new limits from the registered data. The detected distribution patterns are commented. A list of the Demospongiae species known until the present for the Antarctic Faunistic Complex is added.

Capítulo 1

Introdução

Histórico - Filo Porifera

Esponjas (Filo Porifera) são organismos dominantes tanto em biodiversidade como em biomassa nas comunidades bentônicas dos ecossistemas marinhos de todos os oceanos. Apresentam considerável variedade de tipos taxonômicos, morfológicos, reprodutivos e ecológicos, de acordo com sua excepcional qualidade adaptativa. São metazoários sésseis e filtradores que possuem um eficiente sistema aqüífero para bombear correntes de água por todo seu corpo (Bergquist 1978). Os eventos geológicos do Pré-Cambriano foram importantes na evolução dos poríferos, e no Cambriano inferior-médio todos os grupos atuais já eram representados e bem distribuídos (Finks 1970). Algumas espécies de esponjas possuem relativa importância na produção primária, em recifes de coral a partir de simbioses com cianobactérias e dinoflagelados (Rützler 1990), e ainda conhecidas como principais agentes da bioerosão dos substratos calcários e como bioindicadores de qualidade ambiental (Muricy *et al*. 1991).

As esponjas possuem como elementos esqueletais espículas de sílica ou carbonato de cálcio, bem como fibras de espongina que, em conjunto, constituem importantes ferramentas taxonômicas. Encontram-se poríferos em praticamente todo o tipo de substrato, desde rochas até solos finamente arenosos, com especializações para sua fixação. Atualmente, o filo divide-se em três classes: Hexactinellida, conhecida como “esponja-de-vidro", é encontrada principalmente em águas frias e profundas; Calcarea, a única que apresenta espículas calcárias, é restrita a águas mais rasas; e Demospongiae que é a mais representativa, englobando acima de 85% das espécies conhecidas para a ciência (HOOPER & VAN SOEST 2002). Quanto às relações filogenéticas, vários estudos têm sido feitos com base na biologia molecular; sugerindo que o filo Porifera é parafilético, indicando inclusive que as três classes poderiam ser tratadas como filos em separado (BORCHIELLINI *et al.* 2004).

Sua condição filtradora corresponde a uma dieta com a captura de partículas inferiores a 50 µm, filtrando uma grande quantidade de água e retendo as partículas de forma muito eficiente. O hábito carnívoro também já foi descrito, embora em uma família apenas, sendo esta estratégia possivelmente empregada com alguma freqüência em ambientes profundos com pouco alimento (VACELET & BOURY-ESNAULT 1995). A organização celular de uma esponja é de certa forma simples, sem a formação de órgãos ou tecidos; porém, a totipotência de suas células e a eficiência de um tipo especializado de células flageladas (coanócitos) que geram o fluxo de água permite a realização dessas funções mais complexas, o que se comprova pela adaptabilidade dos poríferos em relação às mudanças ambientais.

Os poríferos, como vários outros organismos marinhos, constituem importante fonte alternativa de produtos naturais bioativos (KELECOM 1991). Pesquisas com metabólitos extraídos de esponjas têm respondido favoravelmente na obtenção de substâncias antivirais, antitumorais, citotóxicas, antiinflamatórias e vasodilatadoras (MONKS *et al.* 2002). O alto potencial encontrado em poríferos, como fornecedores de substâncias de uso farmacológico, tem sido muito explorado atualmente, e acredita-se que em breve as pesquisas que ainda estão em andamento resultarão em importantes conquistas para a medicina (BERLINCK *et al*. 2004).

O Continente Antártico e o Projeto PROANTAR

A Antártica constitui-se como o continente mais isolado, frio, ventoso, elevado e seco do planeta, situado na região polar austral, formado por uma massa continental localizada quase que inteiramente no círculo polar antártico. É circundado pelo Oceano Antártico, formado, com limites imprecisos, pelo encontro das águas dos Oceanos Atlântico, Pacífico e Índico, a chamada confluência antártica.

O continente corresponde em torno de 10% da área continental do planeta; cerca de 98% do seu território está coberto de gelo e neve durante o ano todo, e no inverno, devido ao congelamento dos Oceanos à sua volta, sua área aumenta consideravelmente. Quanto às condições climáticas, observam-se na Antártica freqüentes e rápidas alterações no tempo, podendo inclusive oscilar entre extremos em poucas horas.

O estudo de rochas e fósseis de vegetais e animais evidencia uma similaridade entre a Antártica e outras áreas, como África, América do Sul, Austrália e Ásia (Índia), as quais já estiveram justapostas formando um "supercontinente" conhecido como Gondwana, até o início do processo de movimentação das placas litosféricas que levou à dispersão global dos continentes há 150-180 milhões de anos. Mais precisamente se tratando da Península Antártica, a mesma é geologicamente uma continuação direta da cordilheira dos Andes da América do Sul. Nesta região a maior parte das terras são depósitos vulcânicos da Era

Mesozóica, do fim do Período Cretáceo e início do Período Jurássico, há praticamente 180 milhões de anos atrás. (HANSON & GORDON 1998).

Em 1957 foi estabelecido o Ano Geofísico Internacional, responsável pela realização de um programa científico em larga escala, com a participação de pesquisadores de diversos países, possibilitando a assinatura, em 1959, do Tratado da Antártica, em vigor desde 1961. Este Tratado foi definido para que essa região fosse utilizada somente para fins pacíficos, com liberdade de pesquisa científica, com a proibição de qualquer atividade militar, explosões nucleares, deposição de resíduos radioativos e reivindicações territoriais, prevalecendo a preservação do ecossistema antártico.

Em 1975 o Brasil aderiu ao Tratado, e com o objetivo de alcançar a condição de membro pleno com direito a voto, elaborou em 1982 o seu programa antártico (PROANTAR), iniciando no mesmo ano suas atividades científicas. Em 1983, com a instalação da Estação Brasileira Comandante Ferraz, o Brasil finalmente integrou o grupo de países da Parte Consultiva do Tratado da Antártica.

As pesquisas brasileiras relativas aos organismos bentônicos na Península Antártica tiveram início durante a 1ª expedição em 1983, e a partir da 4ª expedição teve inicio o subprojeto "Bionomia da Fauna Bentônica Antártica". Até a 6ª expedição o material coletado a bordo do "Navio Oceanográfico Prof. Wladimir Besnard" permitiu estudos de taxonomia e zoogeografia de vários grupos de animais bentônicos. Ainda na 6ª expedição foram incorporadas ao projeto atividades de mergulho autônomo, com o objetivo de ampliar o conhecimento das comunidades bentônicas de águas rasas (até 30 m de profundidade).

Desde a primeira operação científica do Brasil no continente Antártico até os dias de hoje, os projetos de pesquisa desenvolvidos na região mantém-se funcionando de forma ininterrupta, com o PROANTAR obtendo o reconhecimento da comunidade científica internacional (SCHUCH 1998).

Pesquisas com o Filo Porifera no Continente Antártico

Esponjas constituem-se em um importante elemento da biota antártica, por sua significativa diversidade específica e pela presença de comunidades predominantemente constituídas por esponjas em várias áreas do continente antártico. Poríferos são um dos grupos mais característicos da fauna bentônica presente no continente antártico, juntamente com Bryozoa e Echinodermata, sendo provavelmente este o único local onde as esponjas podem ser encontradas em uma abundância constante dentro de uma área muito extensa (KOLTUN 1969).

Nos ambientes bênticos, em profundidades em torno de 100 m, as esponjas podem alcançar valores de biomassa comparáveis aos maiores níveis observados em áreas tropicais (SARÀ *et al.* 1992). KOLTUN (1970) afirma que a abundância em áreas antárticas, juntamente com a ampla distribuição das espécies, se deve à fatores tróficos e físicos favoráveis, à presença de substratos ideais para a fixação e desenvolvimento dos indivíduos e também pela ausência, na Antártica, da descarga de águas continentais, com águas oceânicas banhando regularmente as faixas litorâneas. O fato de existir um ambiente estável e uniforme possibilita tal sucesso na adaptação destes organismos nesta região; o ambiente mostra-se tão constante que praticamente não há como observar uma distinção na distribuição vertical de muitas espécies, em grande parte da plataforma continental e na porção superior do talude, em profundidades entre 100 e 900 m.

Outra particularidade desta fauna é a quase completa ausência de esponjas "keratosas" (demospongias desprovidas de escleras), e também a reduzida ocorrência de famílias como Geodiidae e Tethyidae (KOLTUN 1969). Ao contrário da rara ocorrência dos grupos supracitados, esponjas da Classe Hexactinellida são bastante abundantes nos ambientes antárticos, destacando-se por suas grandes dimensões, indicando a existência de um ambiente muito apropriado para seu desenvolvimento.

Uma tentativa de traçar padrões biogeográficos para a fauna de esponjas da Antártica foi realizada por BURTON (1932), o qual encontrou um alto grau de afinidade entre a fauna antártica e de outras localidades próximas ao continente, entre as quais a América do Sul. Do ponto de vista ecológico, certas espécies podem ter requerimentos muito específicos em relação à qualidade do substrato, tamanho e densidade das partículas alimentares e intensidade de luz e corrente, e diferentes espécies de esponjas antárticas são utilizadas por outros organismos como abrigo e alimento (BARTHEL & GUTT 1992).

KOLTUN (1970) realizou um estudo mais aprofundado nesta área, investigando dados de cerca de 300 amostras e, dessa forma, concluiu que nesta região há um alto nível de endemismo específico aliado a uma insignificante taxa de endemismo genérico; além disso, registrou que muitas esponjas apresentam uma distribuição circumpolar, com poucas espécies de distribuição restrita, e comentou também que há uma relação faunística muito mais próxima entre a Antártica e a América do Sul e as Ilhas Malvinas do que com a Austrália e a Nova Zelândia.

SARÀ *et al.* (1992), ao analisarem a relação de ausência e presença do elenco de espécies registradas para a Antártica e áreas circumantárticas (ou subantárticas), registraram a existência do “Complexo Antártico Faunístico”, o qual compreende a Antártica continental, grande parte das ilhas antárticas e circumantárticas e a região do Estreito de Magalhães, no extremo sul do continente americano. Investigações de padrões biogeográficos indicaram que o continente apresenta uma fauna bastante homogênea, com relações muito próximas às localidades que compõe o Arco de Scotia (ilhas Geórgia do Sul, Sandwich do Sul e Órcades do Sul).

Desde o século XIX espécimes de poríferos da Antártica vêm sendo coligidos por numerosas expedições, entre as quais se destacam: “Belgica” (1897–1899); “Gauss” (1901–1903); “Antarctique” (1901–1903); “Discovery” (1901–1903; 1925–1927); “Français” (1903–1905); “Terra Nova” (1910) e “Aurora” (1911–1914). Ao longo do século XX, outras expedições fizeram intensos estudos, como as realizadas pela Rússia (1955–1958); Chile (1965; 1969–1970); Itália (1987–1998) e Espanha (1994). O Brasil também vem participando com pesquisas no continente, através do Programa Antártico Brasileiro – PROANTAR, o qual coletou amostras de bentos no período de 1983–1991.

Os resultados taxonômicos das expedições supracitadas, bem como outras produções bibliográficas pertinentes ao estudo de poríferos no continente antártico, encontram-se em: TOPSENT (1901, 1907, 1908, 1913, 1915, 1916, 1917), HENTSCHEL (1914), LENDENFELD (1907), BURTON (1929, 1932, 1934, 1938), KIRKPATRICK (1907, 1908), KOLTUN (1964, 1976), VACELET & ARNAUD (1972), DESQUEYROUX (1972; 1975), DESQUEYROUX-FAÚNDEZ (1989), BARTHEL *et al*. (1990, 1997), SARÀ *et al*. (1992), PANSINI *et al*. (1994), MOTHES & LERNER (1995), GUTT & KOLTUN (1995), CATTANEO-VIETTI *et al*. (1999), CALCINAI & PANSINI (2000) e RÍOS *et al*. (2004).

Em regiões subantárticas, diversas obras forneceram também importantes registros para o estudo da fauna ocorrente neste complexo faunístico, as quais foram possibilitadas por expedições e/ou coletas pontuais principalmente na porção mais ao sul da América do Sul, tanto no Oceano Atlântico como no Pacífico, e também em ilhas do Oceano Índico, sem desconsiderar registros de outras localidades que reportaram a ocorrência de espécies pertencentes ao complexo supracitado; tais registros são encontrados principalmente em RIDLEY (1881), RIDLEY & DENDY (1887), SOLLAS (1888), THIELE (1905), BURTON (1940), LÉVI (1956, 1964) SARÀ (1978), BOURY-ESNAULT & VAN BEVEREN (1982), DESQUEYROUX & MOYANO (1987), CUARTAS (1994) e PANSINI & SARÀ (1999).

Conforme CALCINAI & PANSINI (2000), esponjas antárticas são relativamente bem conhecidas, porém o continente é tão extenso que qualquer novo estudo, mesmo em áreas pequenas, virá a colaborar enormemente com suas informações. Por outro lado, mesmo o fato de inúmeras expedições científicas terem sido realizadas desde o século XIX, existem áreas que ainda têm sua fauna espongológica pouco conhecida, como é o caso das Ilhas Shetland do Sul e proximidades (RÍOS *et al*. 2004).

Objetiva-se na presente dissertação proporcionar uma primeira contribuição taxonômica abrangente com relação aos poríferos coletados na faixa oceânica explorada pelo Programa Antártico Brasileiro e incluídos na Coleção de Porifera do Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul.

Área estudada

A área de estudo abrange as seguintes localidades: Ilha Rei George, Ilha Livingston e Ilha Elephant (as quais compõem as Ilhas Shetland do Sul), Ilha Joinville e também ao longo do Estreito de Bransfield.

A amostragem biológica, incluindo coletas de fundo, foi realizada inicialmente ao largo da I. Elephant e na região entre as Is. Shetland do Sul e a Península Antártica, concentrando-se posteriormente na I. Rei George, mais precisamente na Baía do Almirantado, onde está instalada a Estação Brasileira Comandante Ferraz.

Com relação às condições climáticas da área de estudo e do próprio continente da Antártica, as seguintes informações são fornecidas por BRIGGS (1974):

As condições climáticas da área de estudo são bastante peculiares, com o fundo do mar apresentando depressões abruptas e profundidades acima de 1000 m ao largo da I. Elephant. A temperatura da água de superfície não supera 2° C no verão, mantendo-se raramente ao redor de 0,5° C na água de fundo; massas de gelo flutuante (icebergs) oriundas das geleiras das ilhas e da Península são freqüentes, mesmo nos meses de verão, quando são realizadas as expedições brasileiras. O clima é instável, com variações intensas e extremamente rápidas.

Na região antártica, as águas são conduzidas por uma corrente circumpolar, em sentido horário ("West Wind Drift"); há também uma contracorrente chamada "East Wind Drift", porém relativamente fraca e irregular, esta não considerada circumpolar. A região subantártica é afetada pela "West Wind Drift", a qual atua como importante agente de dispersão dos organismos.

A ponta extrema da América do Sul alcança a faixa que engloba a região circumantártica, e dessa forma grande parte da sua costa oeste está exposta à corrente "West Wind Drift", a qual é responsável pela presença de águas frias temperadas na costa do Chile. Outra porção da "West Wind Drift" flui pelo Estreito de Drake entre a América do Sul e a Antártica; e a outra porção, chamada de Corrente das Malvinas, flui em direção ao norte entre a Terra do Fogo e as Is. Malvinas. A Corrente das Malvinas flui paralelamente à costa da Argentina, até a desembocadura do Rio da Prata; tal Corrente tem um significante desvio em direção ao leste, e novamente encontrando a extensa "West Wind Drift".

Os ventos, o relevo e as correntes submarinas, bem como as diferenças de temperatura da água produzem circulações verticais da água do mar. Essa movimentação faz com que as águas superficiais (0 a 150 m) sejam continuamente removidas e substituídas por águas ricas em nutrientes, os quais são provenientes das profundezas oceânicas. Próximo ao limite norte da Corrente Antártica Circumpolar, as águas antárticas (-1 a 3,5° C no verão; -1,8 a 0,5° C no inverno) encontram as águas quentes do sul dos Oceanos Atlântico, Índico e Pacífico e nelas mergulham, dando origem à chamada Convergência Antártica (também conhecida como "Polar Front"), onde a água sofre um acréscimo de 2 a 3° C. Ao sul desta Convergência, abrangendo 10% dos mares do planeta, está localizada a corrente marítima mais nutritiva da Terra, onde prolifera o krill, um crustáceo de grande importância econômica o qual é considerado a base da cadeia alimentar da Antártica.

OBJETIVOS

Objetivo Geral

Realizar estudo taxonômico de poríferos coletados pelo PROANTAR (1983–1991), depositados na Coleção de Poríferos Marinhos do Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul, ampliando o conhecimento da riqueza de espécies da Antártica, bem como sua distribuição geográfica e batimétrica.

Objetivos Específicos

- Identificar, registrar, caracterizar e ilustrar as espécies de esponjas coletadas nas Ilhas Shetland do Sul, I. Joinville e Estreito de Bransfield (61º02'–63º44' S / 54º16'–62º31' W);

- Complementar as descrições de espécies já conhecidas com o auxílio de Microscopia Eletrônica de Varredura.

SÍNTESE DOS RESULTADOS

A identificação das amostras resultou em 40 espécies, possibilitando a produção de quatro artigos científicos, os quais já foram encaminhados para publicação: o primeiro artigo contempla as espécies que foram coletadas na Ilha Joinville e o segundo destaca três espécies que correspondem a registros de nova ocorrência para o continente antártico; o terceiro artigo reúne espécies das Ordens Astrophorida, Spirophorida, Hadromerida e Haplosclerida; e o quarto artigo contempla espécies da Ordem Poecilosclerida.

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Capítulo 2

Material e Métodos

Material estudado

As amostras foram coletadas no continente antártico (Fig. 1) pelo Navio Oceanográfico "Professor Besnard", proveniente das seguintes expedições: PROANTAR I (1983); III (1985); IV (1986); V (1987); VI (1988); VIII (1989–1990) e IX (1991). Os locais de coleta encontram-se entre as coordenadas 61º02'–63º44' S / 54º16'–62º31' W (Fig. 2; Tab. I); profundidades variaram desde 20 até 460 metros. Metodologia de coleta amplamente descrita por Nonnato *et al*. (1992a, 1992b).

No total 86 amostras foram estudadas; as mesmas encontram-se depositadas na Coleção de Porifera do Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul, conservadas em álcool etílico 96º GL, acondicionadas em frascos de vidro e devidamente etiquetadas.

Métodos laboratoriais

As descrições das amostras estudadas concentraram-se nas seguintes características: forma, tamanho da esponja (ou fragmentos da mesma), consistência, coloração, ornamentação da superfície, arquitetura do esqueleto, forma e tamanho das escleras.

Sempre que houve mais de uma amostra de uma mesma espécie, a descrição referiu-se à de maior dimensão ou que se encontrava em melhor estado de preservação.

Nos anexos deste trabalho se oferece um glossário, contendo os termos específicos utilizados para descrever as espécies.

A taxonomia foi realizada com base no estudo das escleras silicosas e da arquitetura esqueletal (arranjo e disposição dos elementos esqueletais) presentes em cada amostra.

Metodologia empregada para o estudo das escleras (adaptado de MOTHES *et al*. 2004)

Dissociação espicular em tubo de ensaio

Retirou-se um pequeno fragmento da esponja, o qual foi colocado em um tubo de ensaio com algumas gotas de ácido nítrico (65%) e fervido sobre lamparina a álcool, até a completa dissociação da matéria orgânica. Na etapa seguinte, o material foi lavado quatro vezes com água destilada e quatro vezes com álcool 96° GL, centrifugando-se a preparação, entre uma e outra lavagem. Ao concluir-se este processo, o material foi pipetado e colocado sobre lâminas, as quais foram mantidas sobre uma chapa de aquecimento para evaporação do álcool. Após a secagem completa, foi adicionado Entellan® em cada lâmina e cobertas por lamínula.

Dissociação espicular em lâmina

Retirou-se um fragmento da esponja, depositando-o sobre uma lâmina e deixando-o até a completa evaporação do álcool. A seguir foram adicionadas algumas gotas de ácido nítrico, e a lâmina foi flambada até a completa dissociação da matéria orgânica. Após, pingou-se quatro vezes algumas gotas de água destilada sobre a preparação, deixando-a secar sobre uma chapa de aquecimento. Repetiu-se este processo com álcool 96°. A seguir, a preparação foi coberta com Entellan® e lamínula. Esta técnica foi empregada para a observação de grandes escleras, as quais se quebram facilmente no processo de centrifugação.

Cortes perpendiculares e tangenciais do esqueleto

Retirou-se um fragmento perpendicular ou tangencial à superfície da esponja, deixando-o uma hora em xilol para diafanizar. Após, incluiu-se o fragmento em parafina líquida purificada com ponto de fusão de 56ºC a 58ºC, em estufa com temperatura em torno de 60ºC, por aproximadamente 48 horas. Para a confecção de blocos cilíndricos, foi derramada a parafina líquida sobre o recipiente do Micrótomo de Ranvier. Após a solidificação, os blocos foram cortados com bisturi, visando à obtenção de cortes com a menor espessura possível, sendo colocados sobre lâmina de vidro para microscopia. A seguir, a lâmina com os cortes foi mergulhada em xilol dentro de placa de Petri visando a desparafinização. Nesta etapa foi trocado o xilol a cada 24 horas, durante aproximadamente três dias. Quando os cortes mostraram-se bem clarificados a lâmina foi retirada do xilol e coberta com Entellan® e lamínula.

Preparação de suportes para microscopia eletrônica de varredura

Retirou-se um fragmento da esponja, procedendo-se à dissociação espicular em tubo como descrito em “Dissociação espicular em tubo de ensaio”, sendo que para a lavagem das escleras foi utilizada somente água destilada. Sobre o suporte, fixou-se uma lamínula com esmalte incolor, sobre a qual se adicionou uma ou duas gotas da dissociação espicular, deixando secar em temperatura ambiente. Após a secagem, a preparação foi metalizada com ouro-paládio pelo método de “sputtering”, no Setor de Microscopia Eletrônica do Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul.

Técnicas com microscópio

Observação do conjunto espicular

Lâminas de dissociação espicular foram observadas ao microscópio óptico Zeiss Axiovision®, objetivando a identificação do conjunto espicular de cada amostra.

Observação da arquitetura esqueletal

Lâminas da arquitetura esqueletal foram observadas ao microscópio óptico, objetivando a identificação do ectossoma e do coanossoma e a observação dos seus respectivos detalhes.

Observação da superfície

Os caracteres microscópicos da superfície das amostras foram observados através do microscópio estereoscópico IMPAC®, objetivando visualizar a morfologia e características da superfície e presença de poros e ósculos; estes últimos não foram citados nas descrições quando não observados.

Mensurações micrométricas

Ao microscópio óptico, dotado de micrômetro ocular, realizaram-se medidas de comprimento e largura de cada categoria de esclera. Mensurações referem-se ao comprimento mínimo, *média*, máxima, expressas em µm, largura citada após a barra (/); N=50, exceto quando indicado. As escleras de mesmo nome, separadas em diferentes categorias, foram consideradas como tipo I e II de acordo com as suas dimensões, sendo as escleras do tipo I as maiores.

Foram também obtidas mensurações da arquitetura esqueletal; quando possível (ou pertinente), espessura do córtex e das fibras e abertura de malhas forma mensuradas, bem como o número de escleras presentes nas fibras.

Fotografias

Fotografias das amostras

Foram obtidas fotografias das amostras, por meio de câmara fotográfica digital Sony® DSC-P73 4.1 megapixels.

Fotomicrografias das arquiteturas esqueletais

A disposição do esqueleto de cada espécie foi fotomicrografada a partir de máquina fotográfica digital acoplada ao microscópio óptico.

Fotomicrografias das escleras ao Microscópio Óptico

As megascleras de amostras pertencentes às Ordens Spirophorida e Astrophorida foram fotomicrografadas a partir de máquina fotográfica digital acoplada ao microscópio óptico, devido às grandes dimensões das mesmas.

Fotomicrografias das escleras ao Microscópio Eletrônico de Varredura

O conjunto espicular de cada espécie foi fotografado em microscopia eletrônica de varredura, através do Microscópio Eletrônico de Varredura modelo JEOL - JSM 6060, no Centro de Microscopia Eletrônica da Universidade Federal do Rio Grande do Sul.

Siglas utilizadas no texto

BMNH, British Museum of Natural History, Londres, Inglaterra.

FZB, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, Brasil.

MCN, Museu de Ciências Naturais, FZB, Porto Alegre, Brasil.

MCNPOR, Coleção de Porifera do MCN.

ME, Microscópio Estereoscópico.

MEV, Microscópio Eletrônico de Varredura.

MSNG, Museo Civico di Storia Naturale 'Giacomo Doria', Genova, Itália.

MO, Microscópio Óptico.

ZMB, Zoologische Museum für Naturkunde an der Universität Humboldt zu Berlin, Berlim, Alemanha.

Tabela I: Dados de coleta de Porifera nas Is. Shetland do Sul, I. Joinville e Estreito de Bransfield, na Antártica (conforme NONNATO *et al*. 1992a; 1992b)

Estação	Coordenadas	Prof. (m)	Data	Local	Exp.	Coletor
4381	62º 48' S - 54º 20' W	280	18.I.1983	Estreito de Bransfield	I	beam-trawl
4743	62º 30' S - 54º 16' W	412	28.I.1985	Estreito de Bransfield	III	beam-trawl
4756	62º 58' S - 57º 10' W	70	02.II.1985	Estreito de Bransfield	III	beam-trawl
Ferraz	62º 05' S - 58º 23' W	20	03.II.1985	I. Rei George	III	armadilha
4860	61º 08' S - 55º 52' W	112	31.I.1986	I. Elephant	IV	beam-trawl
4861	61º 02' S - 54º 55' W	362	01.II.1986	I. Elephant	IV	beam-trawl
4862	61º 08' S - 54º 34' W	240	01.II.1986	I. Elephant	IV	beam-trawl
4864	63º 01' S - 54º 49' W	275	02.II.1986	I. Joinville	IV	beam-trawl
4865	62º 55' S - 55º 16' W	82	03.II.1986	I. Joinville	IV	beam-trawl
4866	62º 53' S - 56º 27' W	194	03.II.1986	I. Joinville	IV	beam-trawl
4867	62º 57' S - 56º 50' W	95	03.II.1986	I. Joinville	IV	beam-trawl
4869	63º 33' S - 59º 15' W	240	08.II.1986	Estreito de Bransfield	IV	beam-trawl
4870	63º 26' S - 59º 32' W	135	08.II.1986	Estreito de Bransfield	IV	beam-trawl
4871	63º 16' S - 59º 55' W	264	08.II.1986	Estreito de Bransfield	IV	beam-trawl
4872	63º 28' S - 62º 31' W	168	13.II.1986	Estreito de Bransfield	IV	beam-trawl
4873	63º 25' S - 62º 05' W	66	13.II.1986	Estreito de Bransfield	IV	beam-trawl
4874	63º 25' S - 62º 19' W	135	14.II.1986	Estreito de Bransfield	IV	beam-trawl
4875	63º 17' S - 62º 30' W	157	14.II.1986	Estreito de Bransfield	IV	beam-trawl
5062	61º 12' S - 55º 40' W	98	26.II.1987	I. Elephant	V	otter-trawl
5062	61º 12' S - 55º 40' W	98	26.II.1987	I. Elephant	V	otter-trawl
C	62º 40' S - 59º 33' W	270	08.III.1987	I. Livingston	V	otter-trawl
5254	63º 44' S - 60º 25' W	108	25.I.1988	Estreito de Bransfield	VI	otter-trawl
C	62º 06' S - 58º 22' W	28	06.III.1988	I. Rei George	VI	mergulho
D	62º 05' S - 58º 23' W	25	23.II.1988	I. Rei George	VI	mergulho
D	62º 05' S - 58º 23' W	20	26.II.1988	I. Rei George	VI	mergulho
D	62º 05' S - 58º 23' W	21	08.XII.1989	I. Rei George	VIII	mergulho
D	62º 05' S - 58º 23' W	25	05.I.1990	I. Rei George	VIII	mergulho
D	62º 05' S - 58º 23' W	25	21.I.1991	I. Rei George	IX	mergulho

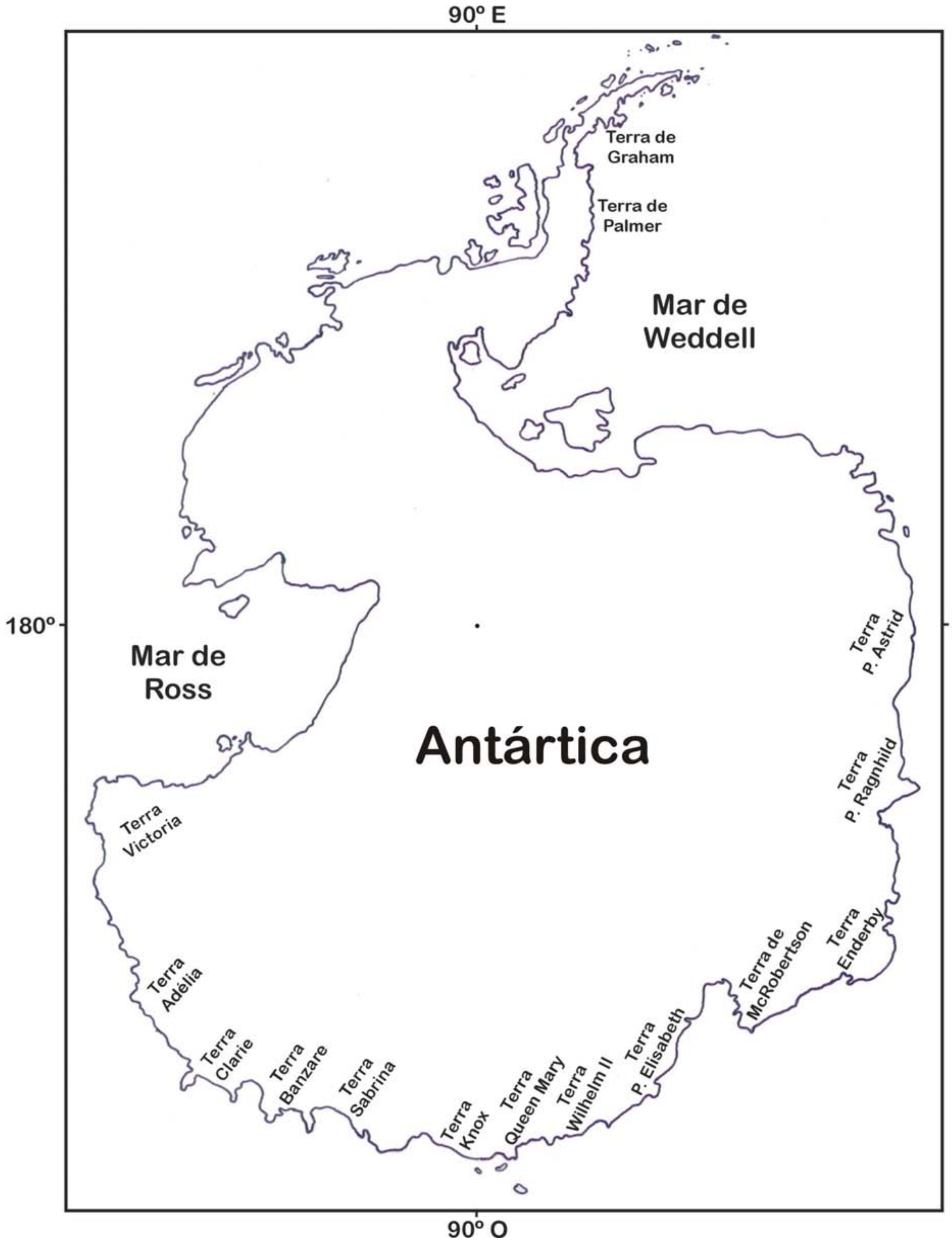

Figura 1: Mapa do continente antártico.

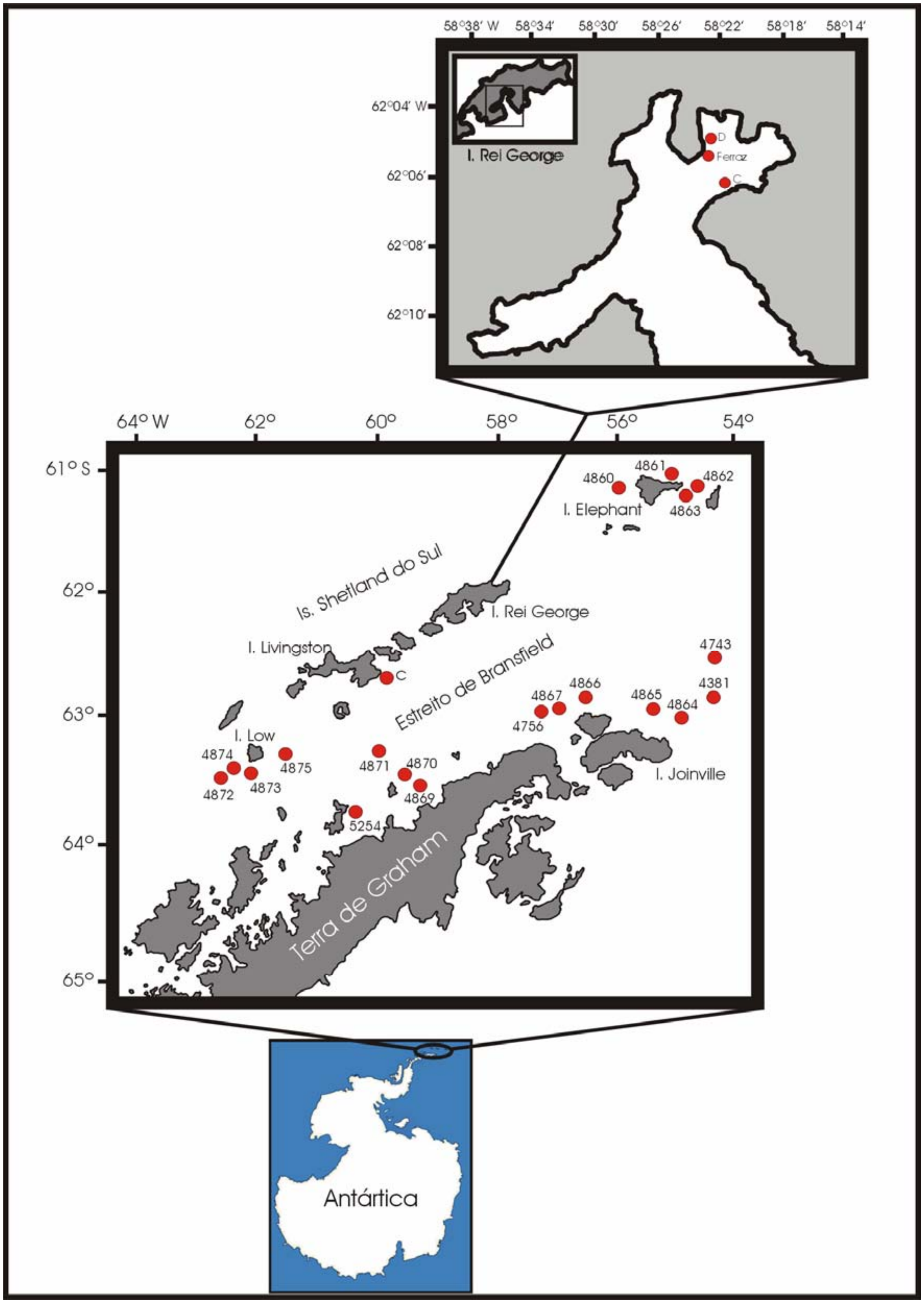

Figura 2: Mapa das Is. Shetland do Sul (I. Rei George em destaque), I. Joinville e Estreito de Bransfield, Antártica, com a indicação das estações de coleta de Porifera (●).

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CAPÍTULO 3

Sponges (Porifera, Demospongiae) of Brazilian Antarctic Program – PROANTAR. Bransfield Strait, off Joinville Island.

ARTIGO ENVIADO PARA PUBLICAÇÃO: PROCEEDINGS OF THE 7th INTERNATIONAL SPONGE CONFERENCE

Original paper

Sponges (Porifera, Demospongiae) of Brazilian Antarctic Program - PROANTAR. Bransfield Strait, off Joinville Island.

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Abstract

The present study offers an increase for the knowledge of sponge fauna from antarctic region and also for its respective occurrence and distribution, based on some material collected by Brazilian antarctic expedition off Joinville I., near to Bransfield Strait. Amongst the identified species, *Iophon terranovae* Calcinai & Pansini, 2000 and *Myxilla (Ectyomyxilla) mariana* (Ridley & Dendy, 1886) are recorded for the first time for this continental region, besides presenting new bathymetric limits; *Haliclona (Rhizoniera)* *dancoi* (Topsent, 1901) also possesses its first record for this region, while that for *Haliclonissa verrucosa* Burton, 1932 and *Microxina phakelloides* (Kirkpatrick, 1907) extend it their bathymetry. For the first time Joinville I. has its sponge fauna widely studied.

Keywords. Antarctica, Demospongiae, Distribution, Taxonomy.

Introduction

Porifera from Antarctica have many records, which were yielded by diverse works carried through with material collected by several expeditions since more than 100 years ago, highlighting the works of Topsent (1901, 1907, 1908, 1913, 1915, 1916, 1917), Lendenfeld (1907), Kirkpatrick (1907, 1908), Hentschel (1914), Burton (1929, 1932, 1934, 1938), Koltun (1964, 1976), Vacelet and Arnaud (1972) and Desqueyroux (1972, 1975). More recently had been supplied some registers by Desqueyroux-Faúndez (1989), Pansini *et al*. (1994), Mothes and Lerner (1995), Gutt and Koltun (1995), Barthel *et al*. (1990; 1997), Calcinai and Pansini, 2000 and Ríos *et al*. (2004). Other important contributions for the study of this fauna originates from works with the fauna of subantartic regions, which composes the Antarctic Faunistic Complex proposed by Sarà *et al*. (1992); such records are found in Ridley (1881), Ridley and Dendy (1887), Sollas (1888), Thiele (1905), Burton (1940), Sarà (1978), Boury-Esnault and Van Beveren (1982) and Desqueyroux and Moyano (1987).

Although so many researches has been carried through, some areas are not yet completely studied, like some islands from south Atlantic Ocean and another places near to Antarctic Peninsula, like South Shetland Is. and neighbor areas (Ríos *et al*. 2004). The achievement of new faunistic surveys in that continent will be greatly important, in order to associate its abundance with the environmental conditions, their annual changes and also to extend geographic and bathymetric records (Desqueyroux-Faúndez 1989), besides describing possible new species.

Materials and methods

It was gathered some sponge samples through "Programa Antártico Brasileiro" (PROANTAR) in the course of 1980's decade, near to Joinville I., which the present study is concentrated. The samples are coming from the IV expedition, collected at 62º53'S-56º27'W / 63º01'S-54º49'W (Fig. 1), between depths from 82 to 274 m, by using "beam-trawl" dredge. The specimens are deposited in Porifera collection of Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Brazil.

[insert figure 1]

Taxonomic identification was made being based on the spicules, through spicule mounts and thick sections from skeletal architecture, both following the techniques described respectively by Mothes-de-Moraes (1978) and Mothes *et al*. (2004); preparations for SEM study according to Silva and Mothes (1996). It was complemented with macroscopical observations of taxonomic features referring to the morphologic external characteristics from each specimen.

Abbreviations used are BMNH (British Museum of Natural History, London, England); MCNPOR (Porifera Collection, Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Brazil); MSNG (Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy); ZMB (Zoologische Museum für Naturkunde an der Universität Humboldt zu Berlin, Berlin, Germany).

Results

Order Poecilosclerida

Suborder Microcionina

Family Acarnidae

***Iophon terranovae* Calcinai & Pansini, 2000**

Figs. 2A-G

MCNPOR 1951, Est. 4865: 62º55' S - 55º16' W, 82 m, 03.II.1986.

Comparative material. MSNG 31 - *Iophon terranovae* Calcinai & Pansini, 2000.

Description. Cylindrical specimen (Fig. 2A); dimensions: 6.7 x 3.4 cm. Preserved material extremely friable consistency, colour dark brown.

Skeleton. (Fig. 2B) Ectosome with styles I, perpendicular to the surface and protruding it. Choanosome a confuse reticulation, styles I and II arranged in multispicular tracts or dispersed between the same ones. Anisoquelas and bipocillas occur all over the skeleton.

Spicules. Megascleres: styles I: 350–*450.6*–550 / 12.5–*18.1*–21.3 µm (Figs. 2C-D); styles II: 330–*409.6*–520 / 2.5–*4.8*–8.8 µm (Fig. 2E); anisochelas: 47.5–*55.3*–62.5 µm (Fig. 2F); bipocillas: 7.5–10–12.5 µm (Fig. 2G).

Remarks. Styles I with slight deformations, occurring in compared material, were not observed in the studied material.

Distribution. Antarctica (Victoria Land, Bransfield Strait, Joinville I.). Bathymetry: 82-135 m.

[insert figure 2]

Family Microcionidae

***Artemisina apollinis* (Ridley & Dendy, 1886)**

(Figs. 3A-I)

MCNPOR 1999, Est. 4866: 62º53' S - 56º27' W, 194 m, 03.II.1986.

Comparative material. BMNH 1908.2.5.166d - *Artemisina apollinis* (Ridley & Dendy, 1886).

Description. Massive specimen (Fig. 3A); dimensions: 7.5 x 4.5 x 3.2 cm; surface hispid to the touch with ramified conules; oscules 0.3–0.4 cm diameter. Preserved material fragile and brittle consistency, colour light brown.

Skeleton. (Fig. 3B) Ectosome without specialization. Choanosome formed by multispicular tracts with no direction at inner body, near to the surface such tracts are perpendicularly organized, producing the superficial hispidation. Isochelas dispersed along the skeleton.

Spicules. Megascleres: styles I: 550–*663.4*–730 / 30–*34.4*–38.8 µm (Figs. 3C-D); styles II: 320–*412.2*–530 / 5.0–*6.3*–8.8 µm (Figs. 3E-F); isochelas: 2.5–*13.6*–16.3 µm (Fig. 3G); toxas I: 340–*520.2*–740 µm (Fig. 3H); toxas II: 117.5–*156.7*–195 µm (Fig. 3I).

Remarks. Measurements are different in regard to the studied material; comparative material has thinner styles I and smaller toxas, not separated in different size classes.

Distribution. Kerguelen I., South Georgia, Antarctica (Wilhelm II Land, Graham Land, Victoria Land, South Shetland Is.; Bransfield Strait; Joinville I.). Bathymetry: 7-380 m.

[insert figure 3]

Suborder Myxillina

Family Hymedesmiidae

***Phorbas areolata* (Thiele, 1905)**

(Figs. 4A-G)

MCNPOR 1971, Est. 4866: 62º53' S - 56º27' W, 194 m, 03.II.1986.

Comparative material. Holotype ZMBPOR 3305 - *Hymedesmia areolata* Thiele, 1905.

Description. Globular specimen (Fig. 4A); dimensions: 7.8 x 5.1 cm; surface areolated (opening <0.1–0.6 cm diameter), some of them are covered by a fine membrane. Preserved material compressible and slightly elastic consistency, colour light grey to light brown.

Skeleton. (Fig. 4B) Composed by multispicular and compact tracts of tornotes, which running to the surface. Acanthostyles were rarely visualized near to the surface, where tornotes are densely arranged in criss-cross. Isochelas and abundant sigmas distributed along all the skeletal arrangement.

Spicules. Megascleres: acanthostyles: 190–*244.7*–370.5 / 11.5–*13.5*–18.4 µm (Figs. 4C-D); tornotes: 437–*511.7*–551 / 10.4–*13.3*–16.1 µm (Figs. 4E-F); isochelas: 19.6–*23*–25.3 µm (Fig. 4G).

Remarks. The holotype has smaller spicules, with the exception of isochelas, and also a different skeletal arrangement. Thiele's original description differs from the others, however Burton (1931) justified that skeleton and external morphology varies in according to the corporal growth in this species.

Distribution. Chile, Argentina, South Georgia, Shag Rocks, Antarctica (Graham Land, Victoria Land, Wilhelm II Land, Adelie Land, Weddell Sea, Joinville I., South Shetland Is.). Bathymetry: 19-970 m.

[insert figure 4]

Family Myxillidae

***Myxilla (Myxilla) mollis* (Ridley & Dendy, 1886)**

(Figs. 5A-I)

MCNPOR 1960, Est. 4867: 62º57' S - 56º50' W, 95 m, 03.II.1986.

Comparative material. BMNH 1935.10.26.248 - *Myxilla mollis* (Ridley & Dendy, 1886).

Description. (Fig. 5A) Erect specimen with digitiform projections; dimension: 14.2 x 10.5 x 3.4; conulous surface, with grooves covered by a fine membrane, which forms the oscules at the top of the digitiform projections; oscules 0.2–0.4 cm diameter. Preserved material compressible consistency, brittle, colour light brown.

Skeleton. (Fig. 5B) Ectosome with tylotes arranged in bouquets. Choanosome with longitudinal multispicular tracts. Between the tracts there are abundant spongin and membranous regions with a great amount of sigmas; some styles are located in varied angles, forming a discrete equination.

Spicules. Megascleres: styles: 220–*374.4*–500 / 15–*19.1*–27.5 µm (Figs. 5C-D); tylotes: 200–*243.6*–300 / 6.3–*8.9*–11.3 µm (Figs. 5E-F); isochelas: 17.5–*20.8*–23.8 µm (Fig. 5G); sigmas I: 45–*51.8*–57.5 µm (Fig. 5H); sigmas II: 16.3–*19.3*–23.8 µm (Fig. 5I).

Remarks. *M*. *mollis* has some variation in the spicules, when analyzing the studied sample, bibliography data and the comparative material, where it observes differences in regard to styles (mainly in relation to the absence of spines in the basal extremity), and the two categories of sigmas with great dimensions, in the same way that the isochelas.

Distribution. Kerguelen I., Argentina, Chile, Falkland Is.; South Georgia, Shag Rocks, Antarctica (Palmer Archipelago, Graham Land, Victoria Land, Wilhelm II Land, Adelie

Land, McRobertson Land, Enderby Land, Weddell Sea, Brabant I., Joinville I., South Shetland Is.). Bathymetry: 7-1098 m.

[insert figure 5]

Myxilla (Ectyomyxilla) mariana **Ridley & Dendy, 1886**

(Figs. 6A-J)

MCNPOR 1962, Est. 4865: 62º55' S - 55°16' W, 82 m, 03.II.1986.

Comparative material. BMNH 1887.5.2.108 - *Myxilla mariana* Ridley & Dendy, 1886.

Description. (Fig. 6A) Fragment; dimensions: 7.7 x 4.5 cm; surface rugous, with discrete ridges and grooves; several oscules scattered through the surface (<0.1–0.2 cm diameter), randomly distributed. Preserved material lightly compressible and fragile consistency, colour light brown.

Skeleton. (Fig. 6B) Ectosome made by megascleres in confusion. Choanosome has some reticulation with multispicular tracts transversed by free spicules, without an evident orientation, sometimes forming triangular meshes.

Spicules. Megascleres: acanthostyles I: 342–*438.5*–494 / 12.7–*16.6*–19.6 µm (Figs. 6C-D); acanthostyles II: 75.9–*104.5*–142.6 / 3.5–*4.7*–5.8 µm (Figs. 6E-F); tylotes: 237.5–*271.3*–304 / 6.9–*9.4*–11.5 µm (Figs. 6G-H); isochelas: 20.7–*25.1*–29.9 µm (Fig. 6I); sigmas: 41.4–*50.1*–71.3 µm (Fig. 6J).

Remarks. In the studied sample occurs tylotes bearing blunted ends, some of them with spines absents. Isochelas are smaller in comparison with measurements supplied by RIDLEY & DENDY (1887) and HENTSCHEL (1914). It was also observed in the present study an insignificant amount of acanthostyles II. Comparative material has spicules that seem to be identical to the material of the present study, presenting little significant differences.

Distribution. Marion I., Chile, Antarctica (Wilhelm II Land, Queen Mary Land, Joinville I.). Bathymetry: 82-385 m

[insert figure 6]

Suborder Mycalina

Family Mycalidae

***Mycale (Oxymycale) acerata* (Kirkpatrick, 1907)**

(Figs. 7A-H)

MCNPOR 1983, Est. 4864: 63º01' S - 54º49' W, 275 m, 02.II.1986.

Comparative material. BMNH 1908.2.5.171b - *Mycale acerata* Kirkpatrick, 1907.

Description. (Fig. 7A) Erect and ramified specimen; dimensions: 9.0 x 7.0 x 9.5 cm; surface partially destroyed. Preserved material hard consistency and little flexible, colour white, some regions with light brown tonalities.

Skeleton. Ectosome a tangential reticulation composed by multispicular tracts, forming triangular meshes (Fig. 7B). Choanosome with thick and compact multispicular tracts, connected by secondary tracts (Fig. 7C). Both types of anisochelas, as well as the raphids, are positioned along the entire tracts.

Spicules. Megascleres: oxeas: 650–*806.4*–890 / 12.5–*17.1*–20 µm (Figs. 7D-E); raphids: 25–*31*–35 µm (Fig. F); anisochelas I: 87.5–*104.6*–117.5 µm (Fig. 7G); anisochelas II: 30–*44.8*–52.5 µm (Fig. 7H).

Remarks. Comparative material only differs by the absence of smaller anisochelas. It corroborates with the affirmations of Burton (1934; 1938) in regarding to the occurrence of these microscleres, which can also vary in size and in their presence.

Distribution. Macquarie I., Kerguelen I., Chile, Argentina, Falkland Is., Shag Rocks, South Georgia, South Orkneys, Antarctica (Victoria Land, Graham Land, Adelie Land, Wilhelm II Land, Banzare Land; McRobertson Land; Princess Ragnhild Land, Enderby Land, Weddell Sea, South Shetland Is., Joinville I.). Bathymetry: 0-731 m.

[insert figure 7]

Family Isodictyidae

***Isodictya erinacea* (Topsent, 1916)**

(Figs. 8A-E)

MCNPOR 1961, Est. 4865: 62º55' S - 55º16' W, 82 m, 02.II.1986.

Description. (Fig. 8A) Ramose fragment; dimensions: 14 x 3.5 x 2.0 cm; spiny surface, ramified from the central axis. Preserved material stiffly consistency, colour light brown.

Skeleton. (Fig. 8B) Ectosome absent. Choanosome constituted by thick longitudinal multispicular tracts (400–820 µm thickness), irregularly connected by megascleres in criss-cross, forming rounded to polygonal meshes (370–810 µm diameter). Isoquelas dispersed along the tracts.

Spicules. Megascleres: oxeas: 600–*718.4*–800 / 18.8–*27.1*–31.3 µm (Figs. 8C-D); isochelas: 42.5–*52.7*–57.5 µm (Fig. 8E).

Remarks. Desqueyroux-Faúndez (1989) shown in the spicules of your samples a second category of smaller isochelas; in the samples of Ríos *et al*. (2004), as well as in the present study, such spicules were observed, however it must be considered as a growth stage.

Distribution. South Georgia, Burdwood Bank, Antarctica (Graham Land, Palmer Archipelago, Victoria, Banzare Land; McRobertson Land, Enderby Land, Adelie Land, Weddell Sea, Joinville I., South Shetland Is., Bransfield Strait. Bathymetry: 20-920 m.

[insert figure 8]

Order Haplosclerida

Suborder Haplosclerina

Family Chalinidae

***Haliclona (Gellius) rudis* (Topsent, 1901)**

(Figs. 9A-G)

MCNPOR 1984, Est. 4866: 62º53' S - 56º27' W, 194 m, 03.II.1986.

Description. (Fig. 9A) Digitiform specimen; dimensions: 8.0 x 5.5 cm; surface hispid to the touch, with ridges and grooves; oscules 0.1–0.2 cm diameter, positioned in coniform elevations; on the surface small pores had been observed (<0.1 cm diameter). Preserved material friable consistency, colour light brown.

Skeleton. (Fig. 9B) Ectosome without specialization. Choanosome formed by a dense arrangement of multispicular tracts, interconnected by isolated megascleres. Part of the skeleton is organized in confused and irregular way, with tracts oriented in several directions. Sigmas are present at the nodes of megascleres.

Spicules. Megascleres: oxeas I: 330–*439.6*–530 / 12.5–*17.4*–20 µm (Figs. 9C-D); oxeas II: 240–*322*–420 / 2.5–*5.5*–8.8 µm (Figs. 9E-F); sigmas: 17.5–*32.5*–55 µm (Fig. 9G).

Remarks. The spicules possesses some variation in comparing to previous records, mainly in regard to measurements related for the oxeas; in the present study it was possible to identify oxeas in two size classes; such distinction was only observed by Boury-Esnault and Van Beveren (1982).

Distribution. Kerguelen I., Antarctica (Bellingshausen Sea, Graham Land, Victoria Land, Weddell Sea, Joinville I., South Shetland Is., Bransfield Strait. Bathymetry: 20-500 m.

[insert figure 9]

***Haliclona (Rhizoniera) dancoi* (Topsent, 1901)**

(Figs. 10A-D)

MCNPOR 1986, Est. 4867: 62°57' S - 56°50' W, 95 m, 03.II.1986.

Description. (Fig. 10A) Partially unbroken specimen, arborescent; dimensions: 5.2 x 1.2 x 1.4 cm; surface hispid to the touch, with protruding spicules; oscules 0.1–0.2 cm diameter. Preserved material friable consistency, colour beige.

Skeleton. (Fig. 10B) Ectosome formed by the ends of primary tracts, arranged or not in discrete bouquets. Choanosomal network composed by multispicular primary tracts (65–140 µm thickness), connected by secondary tracts, uni to paucispicular, forming polygonal to triangular meshes.

Spicules. Megascleres: oxeas: 380–*468.2*–590 / 16.3–*23.6*–30 µm (Figs. 10C-D).

Remarks. Comparing the measurements of spicules from previous records (Topsent 1901b; 1908; Kirkpatrick 1908; Hentschel 1914; Koltun 1964; 1976) with measurements obtained in the present study, it can be observed some variation in dimensions. Such variation presented by the oxeas seems to be constant.

Distribution. South Orkneys Is., Antarctica (Bellingshausen Sea, Graham Land, Victoria Land, Wilhelm II Land, Princess Elisabeth Land, McRobertson Land, Enderby Land, Adelie Land, Sabrina Land, Weddell Sea, Joinville I., South Shetland Is.). Bathymetry: 18-2267 m.

[insert figure 10]

Family Niphatidae

***Haliclonissa verrucosa* Burton, 1932**

(Figs. 11A-F)

MCNPOR 1990, Est. 4866: 62º53' S - 56º27' W, 194 m, 03.II.1986.

Comparative material. BMNH 1928.2.15.723a - *Haliclonissa verrucosa* Burton, 1932.

Description. (Fig. 11A) Cylindrical sponge; dimensions: 5.0 x 1.9 x 1.2 cm; surface verrucose and hispid to the touch. Oscular vents 0.1-0.3 cm diameter. Preserved material very friable consistency, colour beige.

Skeleton. (Fig. 11B) Ectosome formed by the ends of choanosomal tracts, in varied positions. Choanosome composed by longitudinal multispicular tracts, which protrude the surface, irregularly connected by secondary tracts. Both types of oxeas are forming the tracts, although few oxeas II are present in the studied specimen.

Spicules. Megascleres: oxeas I: 351.5–*412.1*–503.5 / 10.4–*12.4*–15 µm (Figs. 11C-D); oxeas II: 256.5–*288.2*–323 / 2.5–*4.3*–6.9 µm (Figs. 11E-F).

Remarks. Desqueyroux-Faúndez and Valentine (2002) added new information concerning the spicular conjunct referring to the species, recording a second category of oxeas, what it was also observed in the present study.

Distribution. Uruguay, Argentina, Antarctica (Palmer Archipelago, Victoria Land, Weddell Sea, Joinville I., South Shetland Is.). Bathymetry: 25-194 m.

[insert figure 11]

***Microxina benedeni* Topsent, 1901**

(Figs. 12A-E)

MCNPOR 1982, Est. 4866: 62º53' S - 56º27' W, 194 m, 03.II.1986.

Description. (Fig. 12A) Cylindrical specimen; dimensions: 7.3 x 2.2 x 2.4 cm; surface densely spiny, due to the presence of stiffly conules; oscules <0.1–0.3 cm diameter. Preserved material very firm and incompressible consistency, colour light brown.

Skeleton. (Fig. 12B) Ectosome without tangential specialization. Choanosome composed by longitudinal multispicular tracts (320–700 µm thickness), forming tufts which characterizes the superficial texture; between the tracts the spicules occurs in an irregular arrangement which can bear discrete meshes.

Spicules. Megascleres: oxeas: 408.5–*804.1*–902.5 / 27.5–*30.3*–55 µm (Figs. 12C-D); sigmas: 20–*30.4*–55 µm (Fig. 12E).

Remarks. The sample of the present study presents only sigmas as microscleres, which occurs with low frequency.

Distribution. Falkland Is., South Georgia, Antarctica (Bellingshausen Sea, Graham Land, Victoria Land, Palmer Archipelago, Banzare Land; Princess Elisabeth Land, McRobertson

Land, Enderby Land, Weddell Sea, Joinville I., South Shetland Is.). Bathymetry: 81-1266 m.

[insert figure 12]

Microxina phakelloides **(Kirkpatrick, 1907)**

(Figs. 13A-F)

MCNPOR 2046, Est. 4865: 62º55' S - 55°16' W, 82 m, 03.II.1986.

Description. (Fig. 13A) Massive and amorphous specimen; dimensions: 7.8 x 6.3 x 1.1 cm; surface conulous; oscules 0.1 cm diameter. Preserved material friable consistency, colour light brown.

Skeleton. (Fig. 13B) Ectosome formed by thick multispicular tracts, perpendicular to the surface, where megascleres are positioned in tufts which characterize the superficial hispidation. Choanosome with uni to paucispicular tracts forming polygonal meshes, diameter 300–380 µm. Sigmas and toxas between the meshes.

Spicules. Megascleres: oxeas: 627–*707*–779 / 25.3–*32.7*–36.8 µm (Figs. 13C-D); sigmas: 52.9–*83.9*–128.8 / 2.5–*3.9*–5.0 µm (Fig. 13E); toxas: 94.3–*130*–184 / 2.5–*3.9*–5.0 µm (Fig. 13F).

Remarks. In comparing to previous records (Kirkpatrick, 1908, Hentschel, 1914 and Koltun, 1964), the sample of the present study presents bigger oxeas.

Distribution. Antarctica (Victoria Land, Knox Land, Banzare Land, Wilhelm II Land, Weddell Sea, South Shetland Is., Joinville I., Bransfield Strait). Bathymetry: 66-550 m.

[insert figure 13]

Concluding remarks

The composition of species detected at Joinville I. had provided an addition of 100 % to the faunistic stock of local sponge fauna known until the present.

With the new occurrences of *Iophon terranovae* Calcinai & Pansini, 2000, *Myxilla (Ectyomyxilla) mariana* (Ridley & Dendy, 1886) and *Haliclona (Rhizoniera) dancoi* (Topsent, 1901) the register of these species for the study area is extended. Are also known in this study new bathymetric records for *I. terranovae, M. (Ectyomyxilla) mariana, Haliclonissa verrucosa* Burton, 1932 and *Microxina phakelloides* (Kirkpatrick, 1907).

This new panorama of the sponges in Antarctica also comes to corroborate Desqueyroux-Faúndez (1989) and Ríos *et al*. (2004), in the sense of still have necessity of the accomplishment of new collections, mainly in the region that encloses the Graham Land and Palmer Archipelago, together with South Shetland Is, South Orkneys, South Sandwich and vicinities, making possible a better understanding of the real geographic and bathymetric distribution of the species belonging to antarctic complex.

Acknowledgements

We thank Clare Valentine (BMNH), Dr. Barbara Calcinai (Dipartimento di Scienze del Mare, Università di Ancona, Ancona, Italy) and Dr. Carsten Lüter (ZMB) for the loan of comparative material; Dr. Eduardo Hajdu (Museu Nacional, Universidade Federal do Rio de Janeiro, Brazil) and Dr. Ruth Desqueyroux-Faúndez (Museum d'Histoire Naturelle de Genève, Geneva, Switzerland) for help in bibliography. We also thank CAPES and CNPq (Brazil) for research grants.

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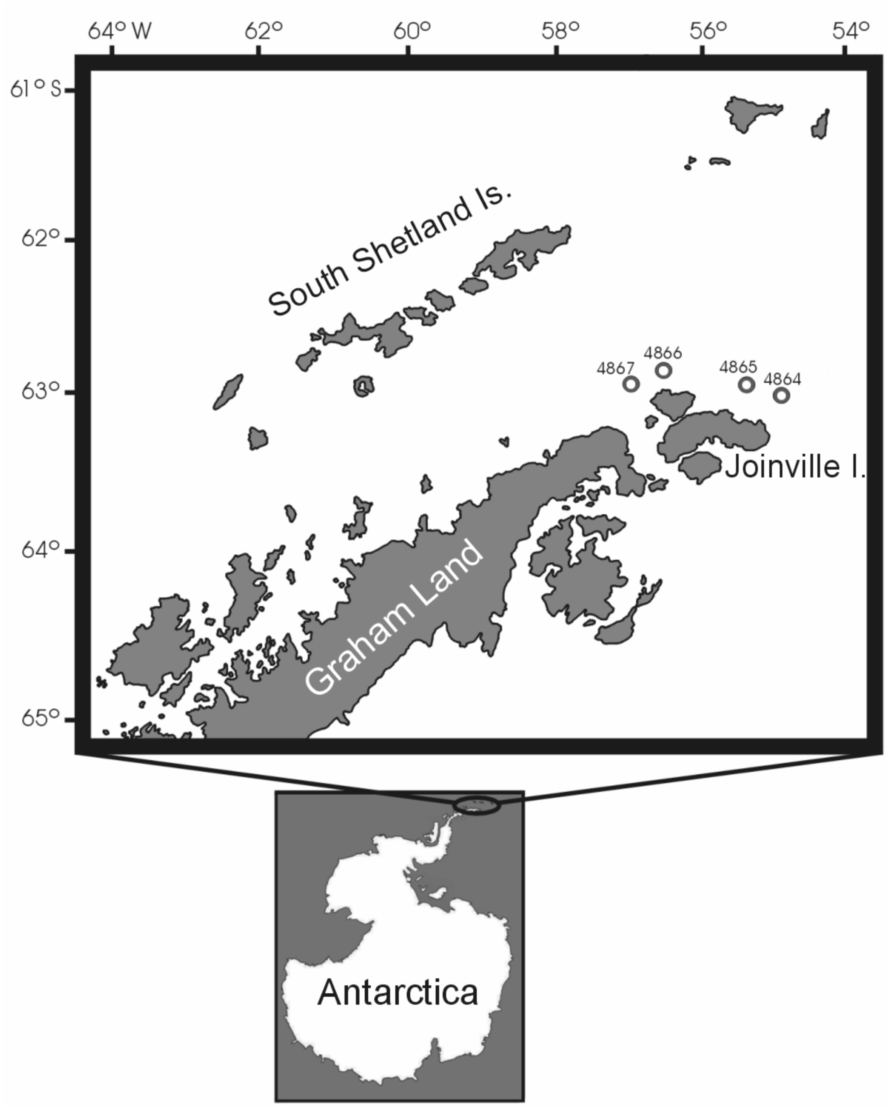
Figure 1. Map showing the studied area; marked points indicates the specific collecting places.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Joinville I.
Graham Land
Antarctica

Figure 2. *Iophon terranovae* Calcinai & Pansini, 2000. A, specimen. B, skeleton. C, styles I. D, extremities of styles I. E, styles II. F, anisochelas. G, bipocillas.

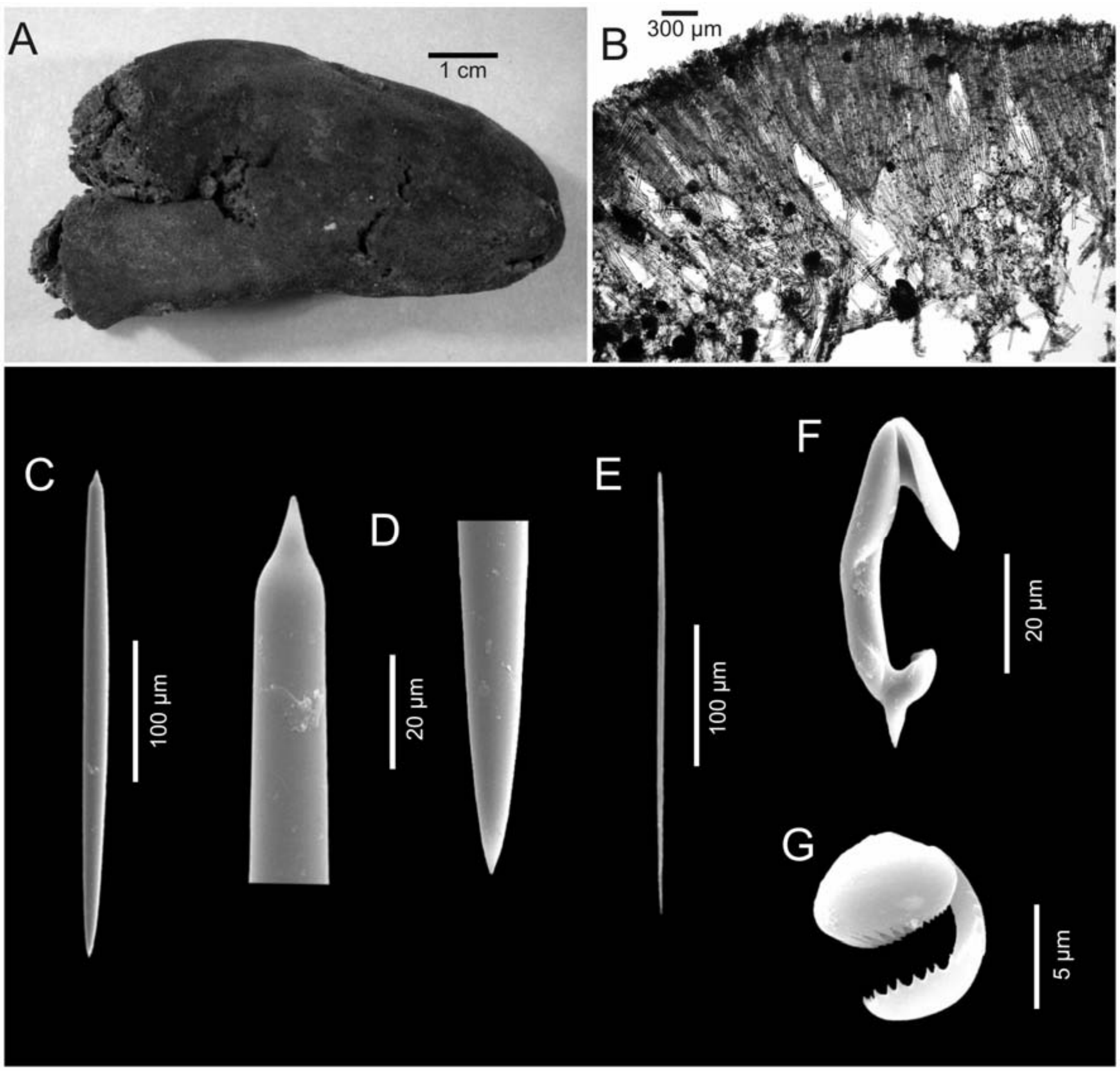
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Figure 3. *Artemisina apollinis* (Ridley & Dendy, 1886). A, specimen. B, skeleton. C, styles I. D, extremities of styles I. E, styles II. F, extremities of styles II. G, isochelas. H, toxas I. I, detail of extremity of toxas I. J, toxas II.

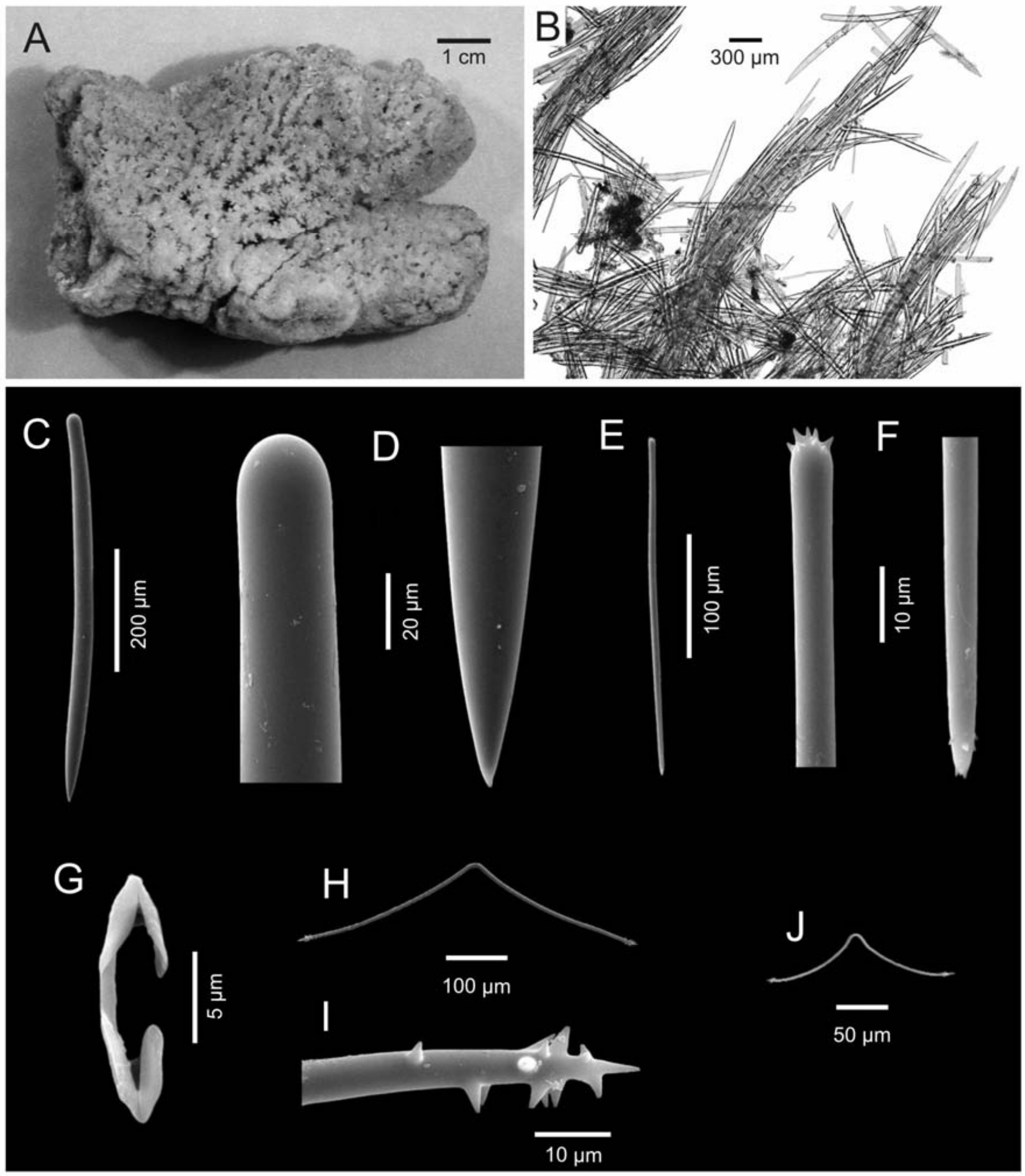
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Figure 4. *Phorbas areolata* (Thiele, 1905). A, specimen. B, skeleton. C, acanthostyles. D, extremities of acanthostyles. E, tornotes. F, extremities of tornotes. G, isochelas.

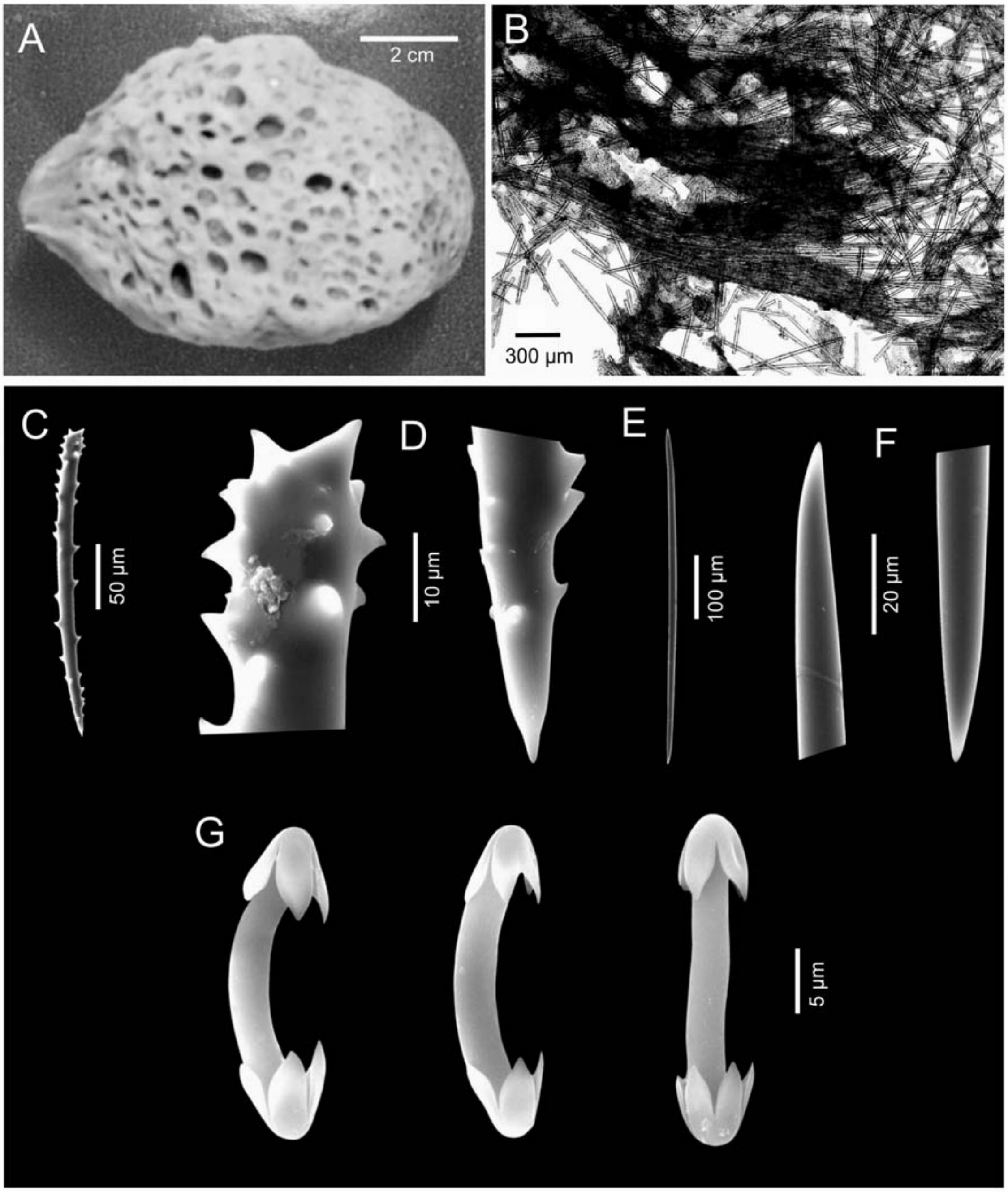
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Figure 5. *Myxilla (Myxilla) mollis* (Ridley & Dendy, 1886). A, specimen. B, skeleton. C, styles. D, extremities of styles. E, tylotes. F, extremities of tylotes. G, isochelas. H, sigmas I. I, sigmas II.

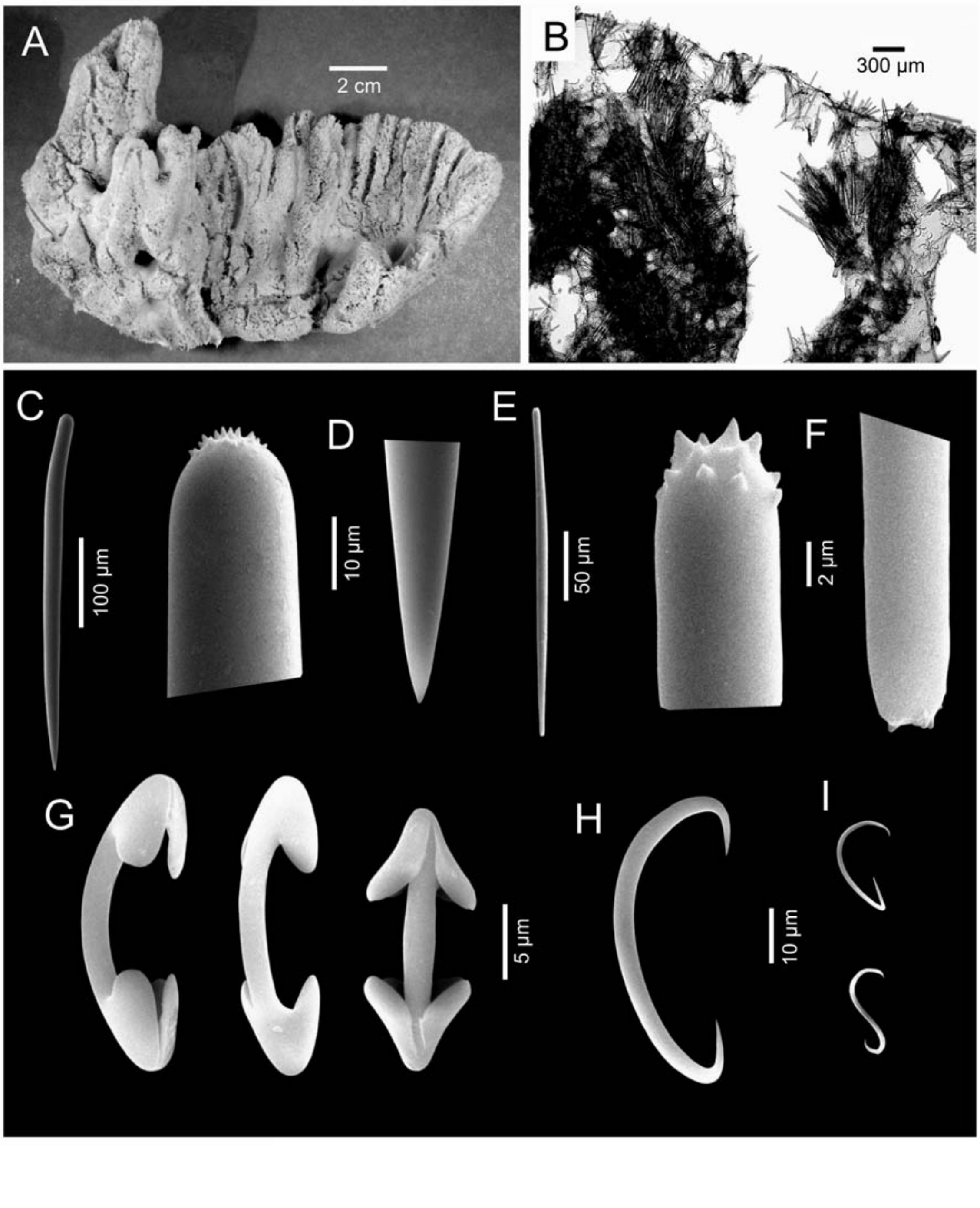
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Figure 6. *Myxilla (Ectyomyxilla) mariana* Ridley & Dendy, 1886. A, specimen. B, skeleton. C, acanthostyles I. D, extremities of acanthostyles I. E, acanthostyles II. F; extremities of acanthostyles II. G, tylotes. H, extremities of tylotes. I, isochelas. J, sigmas.

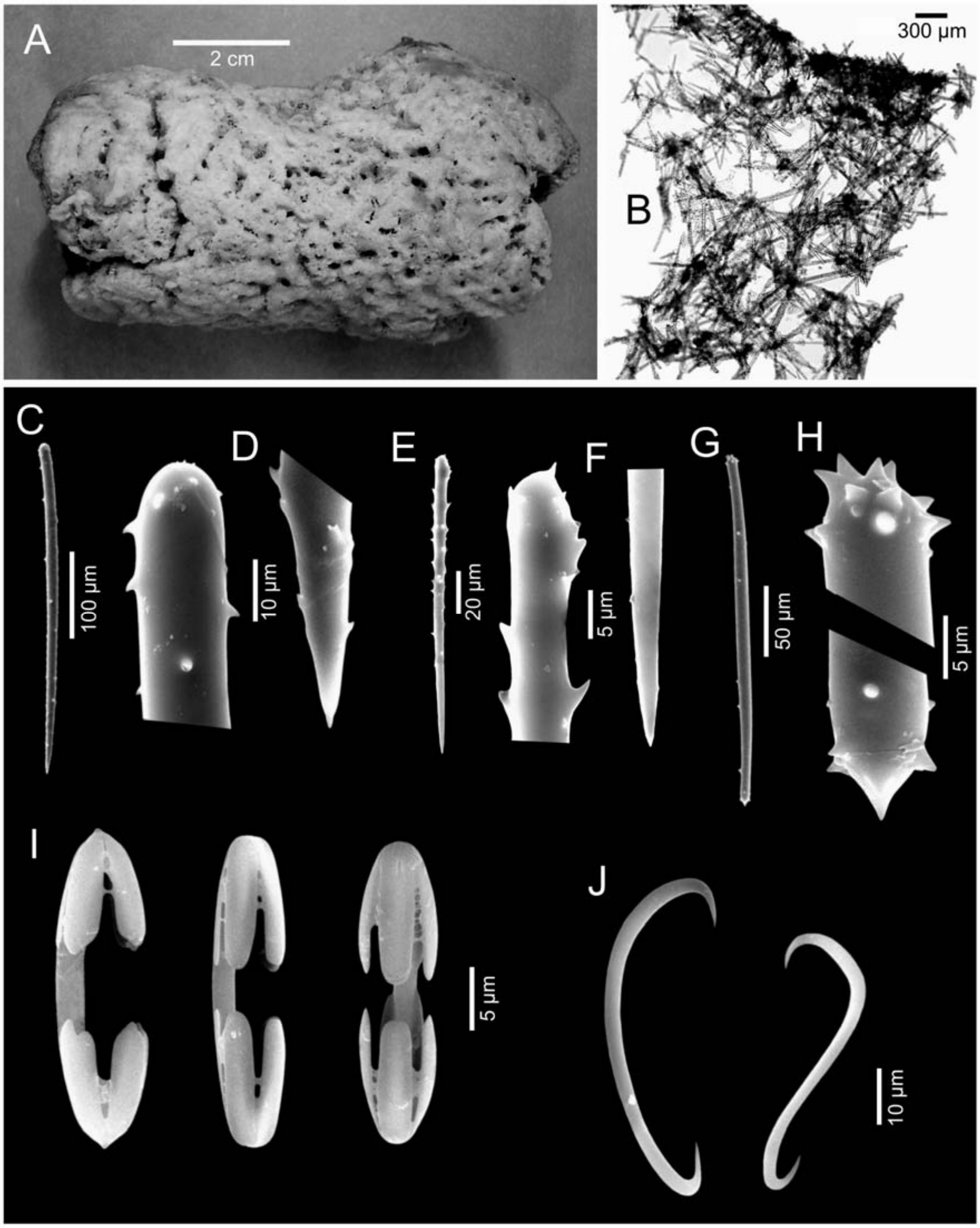
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Figure 7. *Mycale (Oxymycale) acerata* (Kirkpatrick, 1907). A, specimen. B, ectosome. C, choanosome. D, oxeas. E, extremities of oxeas. F, raphids. G, anisochelas I. H, anisochelas II.

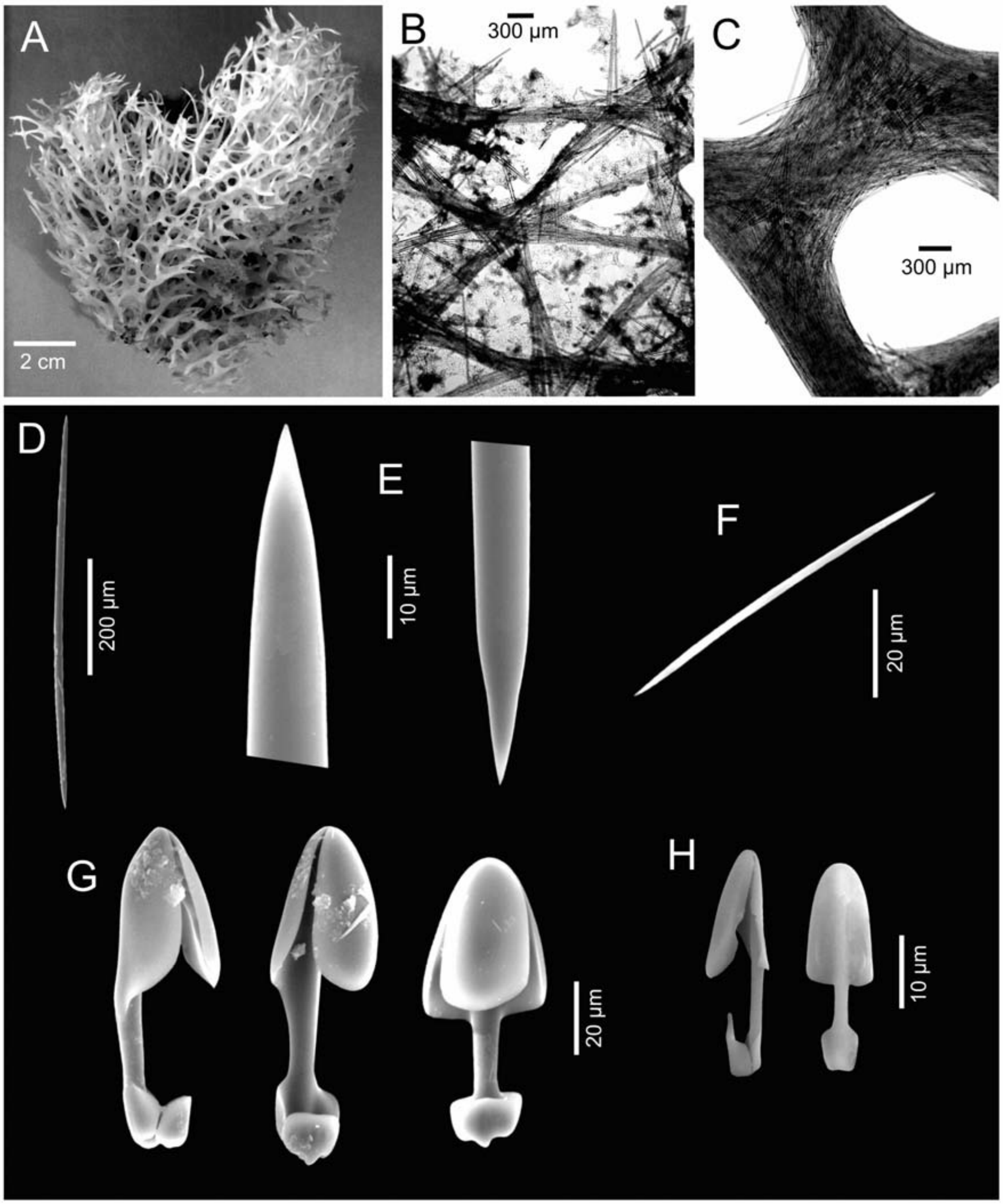
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Figure 8. *Isodictya erinacea* (Topsent, 1916). A, specimen. B, skeleton. C, oxeas. D, extremities of oxeas. E, isochelas.

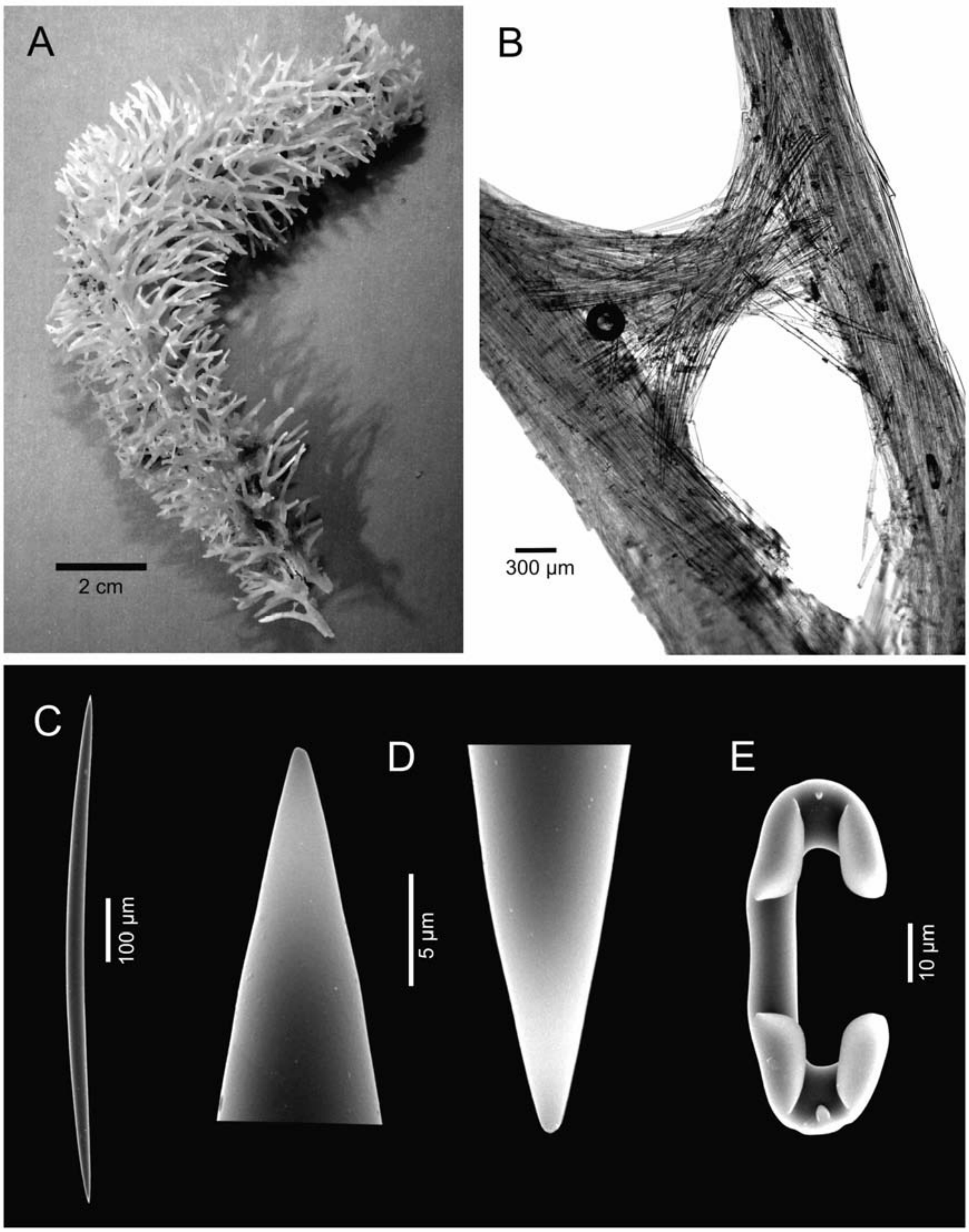

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Figure 9. *Haliclona (Gellius) rudis* (Topsent, 1901). A, specimen. B, skeleton. C, oxeas I. D, extremities of oxeas I. E, oxeas II. F, extremities of oxeas II. G, sigmas.

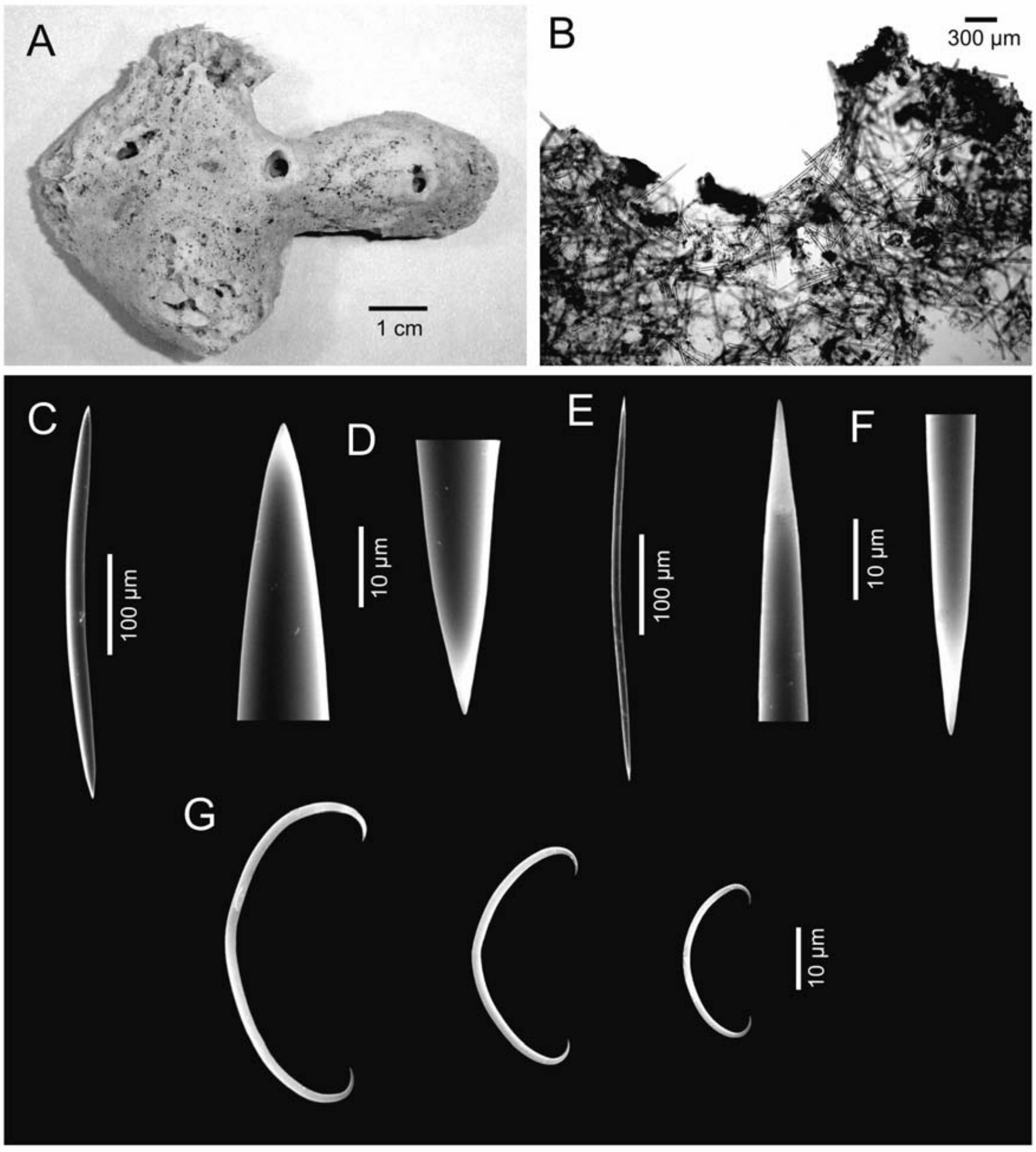
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Figure 10. *Haliclona (Rhizoniera) dancoi* (Topsent, 1901).). A, specimen. B, skeleton. C, oxeas. D, extremities of oxeas.

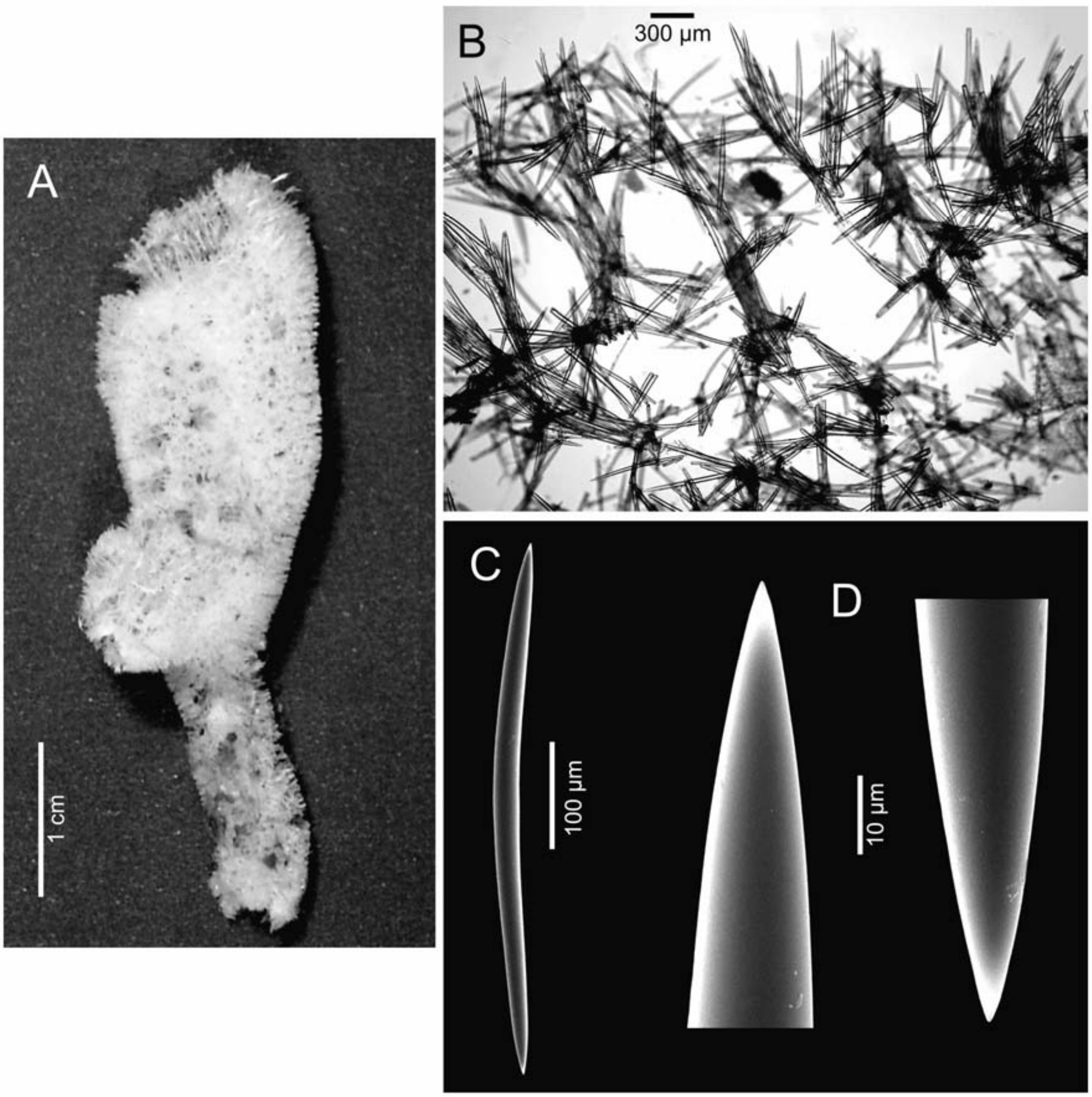

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Figure 11. *Haliclonissa verrucosa* Burton, 1932. A, specimen. B, skeleton. C, oxeas I. D, extremities of oxeas I. E, oxeas II. F, extremities of oxeas II.

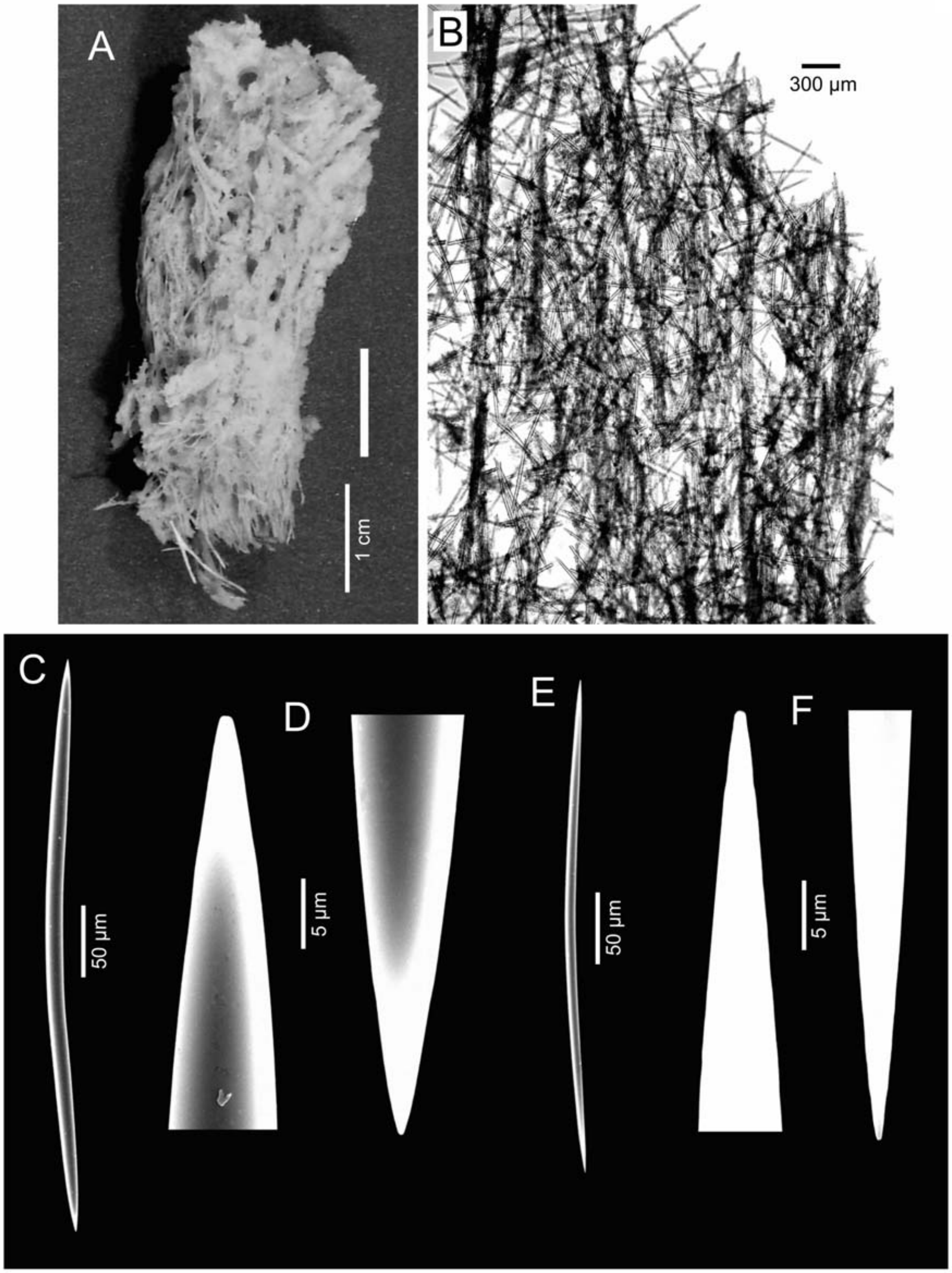
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Figure 12. *Microxina benedeni* Topsent, 1901. A, specimen. B, skeleton. C, oxeas. D, extremities of oxeas. E, sigmas.

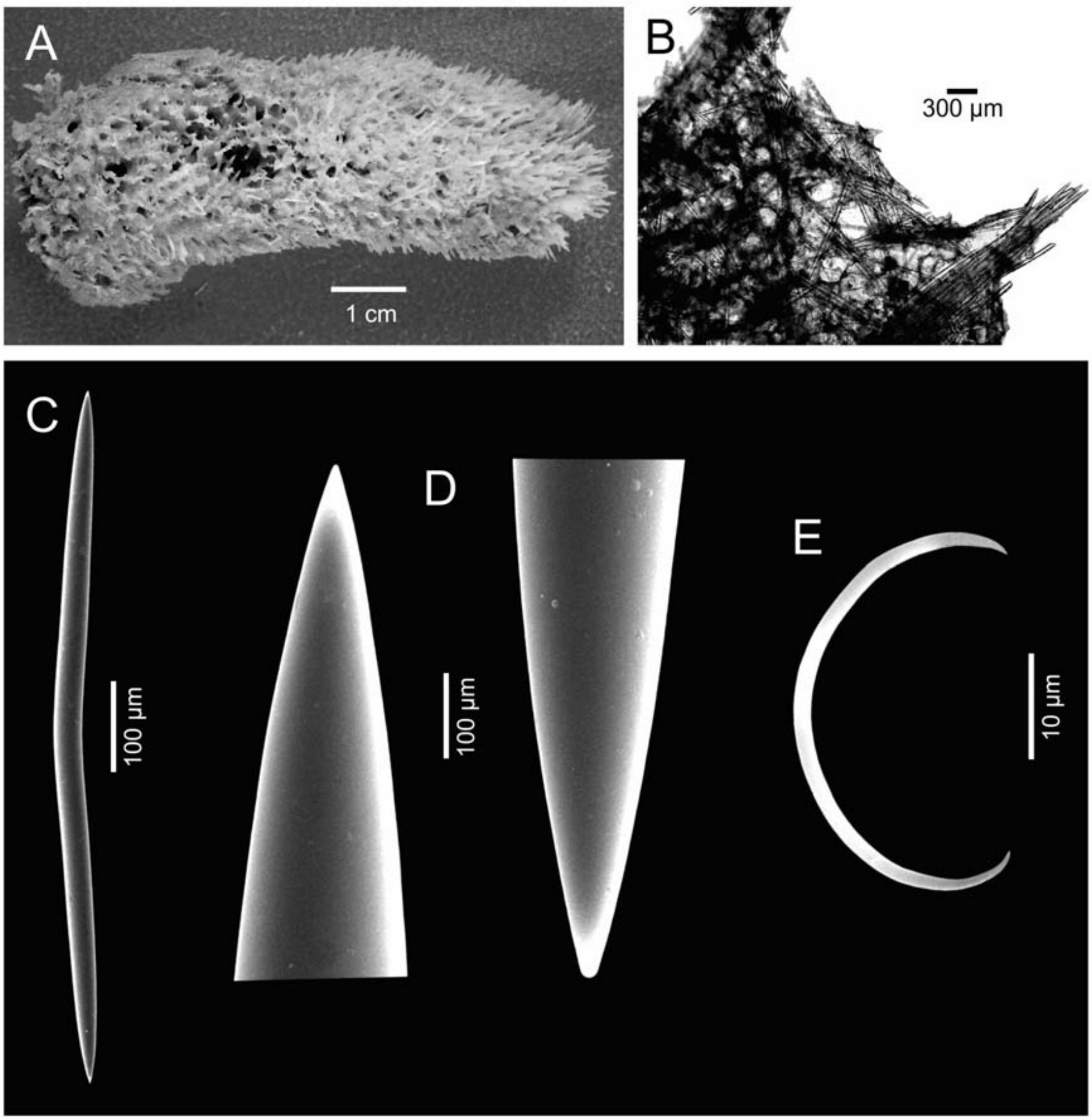
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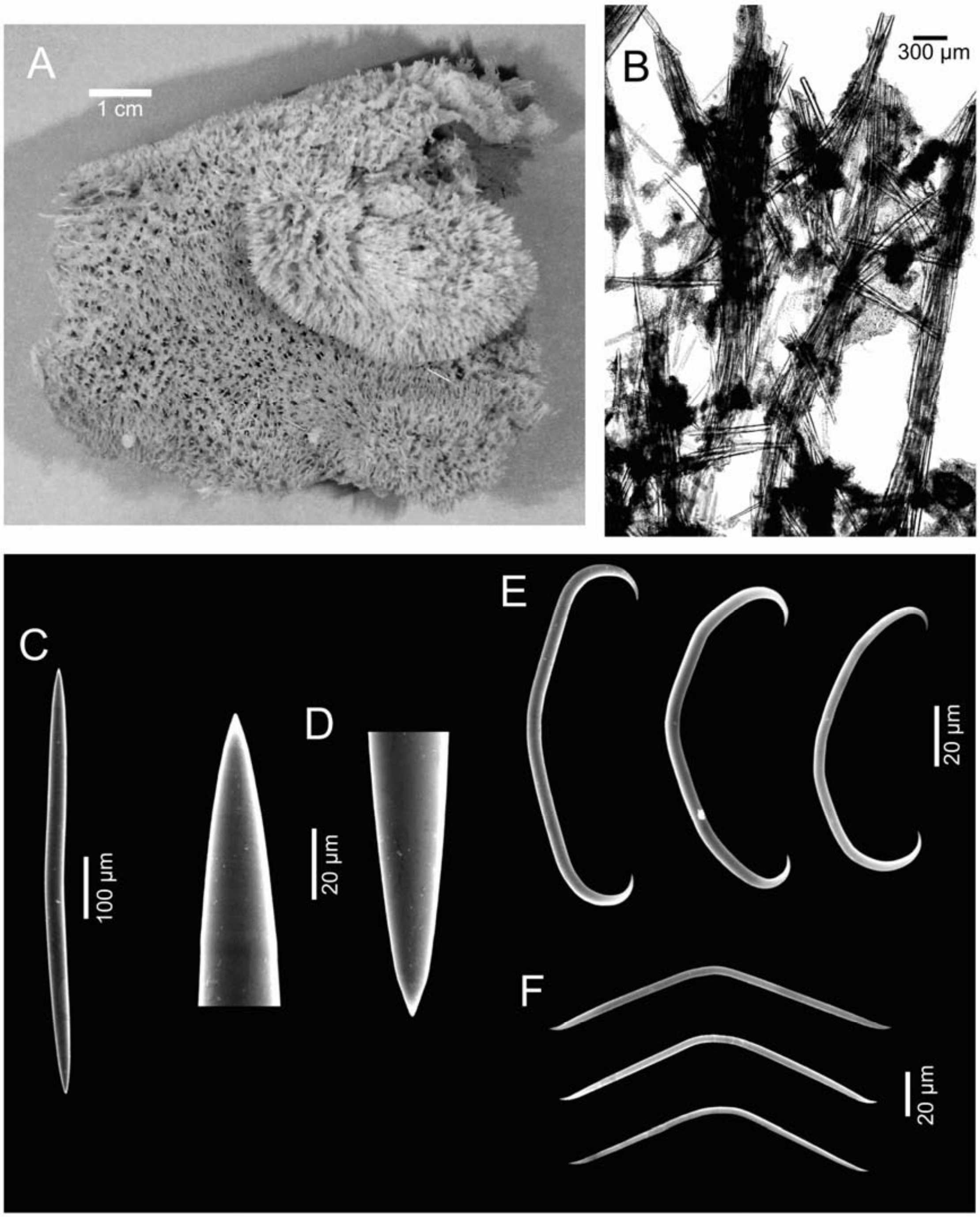
Figure 13. *Microxina phakelloides* (Kirkpatrick, 1907). A, specimen. B, skeleton. C, oxeas. D, extremities of oxeas. E, sigmas. F, toxas.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CAPÍTULO 4

First report for Antarctica of three sponge species collected by the Brazilian Antarctic Program – PROANTAR (Demospongiae, Poecilosclerida, Halichondrida, Haplosclerida)

ARTIGO ENVIADO PARA PUBLICAÇÃO: REVISTA BRASILEIRA DE ZOOLOGIA, PROTOCOLO Nº 207/2006

First report for Antarctica of three sponge species collected by the Brazilian Antarctic Program - PROANTAR (Demospongiae, Poecilosclerida, Halichondrida, Haplosclerida)

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ABSTRACT. Three species of Demospongiae are recorded for the first time for the Antarctic continent: *Hymedesmia (Hymedesmia) laevis* (Thiele, 1905), *Halichondria (Eumastia) attenuata* (Topsent, 1915) and *Haliclona (Soestella) chilensis* (Thiele, 1905), the two first ones also presenting a new bathymetric limit. Previously, these species presented restricted distribution to the localities in the southernmost South America.

KEY WORDS: Porifera, Demospongiae, taxonomy, distribution, PROANTAR.

RESUMO. Primeiro registro para a Antártica de três espécies de esponjas coletadas pelo Programa Antártico Brasileiro - PROANTAR (Demospongiae, Poecilosclerida, Halichondrida, Haplosclerida). Três espécies de Demospongiae são registradas pela primeira vez para o continente Antártico: *Hymedesmia (Hymedesmia) laevis* (Thiele, 1905), *Halichondria (Eumastia) attenuata* (Topsent, 1915) and *Haliclona (Soestella)*

***chilensis* (Thiele, 1905), as duas primeiras também apresentando um novo limite batimétrico. Anteriormente estas espécies apresentavam distribuição restrita a localidades na porção mais ao sul da América do Sul.**

PALAVRAS-CHAVE: Porifera, Demospongiae, taxonomia, distribuição, PROANTAR.

The Antarctic sponge fauna is well known, mainly between Victoria to Enderby Land, and also at areas near to Graham Land and Weddell Sea. In the panorama about the specific knowledge of demosponges from Antarctic and subantarctic regions provided by SARÀ *et al*. (1992) such reality can be observed, where one evidences that at South Georgia, South Sandwich, South Orkneys and South Shetland Is. this fauna still presents few records. Such situation in regard to the supracited insular region was also pointed out by RÍOS *et al*. (2004).

The aim of this work is to increase the knowledge of species richness of demosponges from South Shetland Is., based on samples collected in 1986 and 1988 through Brazilian Antarctic Program (PROANTAR), IV and VI expeditions, respectively.

MATERIAL AND METHODS

The samples were collected in areas near to South Shetland Is., at Bransfield Strait and King George Is. (Fig. 1), by means of "beam-trawl" dredge and scuba diving. They are preserved in 96° GL alcohol and deposited in the Porifera Collection of Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, RS, Brazil.

The methodology employed for taxonomic study was made based on the spicules, through dissociated spicule slides and thick sections from the skeleton, following techniques described respectively by MOTHES-DE-MORAES (1978) and MOTHES *et al*.

(2004). Preparations for SEM study according to Silva & Mothes (1996). Spicule measurements comprised minimum, *mean*, and maximum sizes, width after the bar (/), N=50.

Abbreviations used in the text are: MCNPOR (Porifera Collection, Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, RS, Brazil), PROANTAR (Programa Antártico Brasileiro), SEM (Scanning Eletronic Microscope) and ZMBPOR (Porifera Collection, Zoologische Museum für Naturkunde an der Universität Humboldt zu Berlin, Berlin, Germany).

RESULTS

Class Demospongiae Sollas, 1888

Order Poecilosclerida Topsent, 1928

Suborder Myxillina Hajdu, Van Soest & Hooper, 1994

Family Hymedesmiidae Topsent, 1928

Genus *Hymedesmia* Bowerbank, 1864

Subgenus *Hymedesmia* Bowerbank, 1864

***Hymedesmia (Hymedesmia) laevis* (Thiele, 1905)**

(Figs. 2-11)

Hymedesmia laevis Thiele, 1905: 453, pl. 31, figs. 69a-f (type-locality: Calbuco, Chile); Burton, 1932: 326; Desqueyroux & Moyano, 1987: 50.

Material. MCNPOR 1998, St. 4874, Bransfield Strait, near to Low I.: 63º25' S - 62º19' W, 135 m, 14.II.1986, PROANTAR IV, “beam-trawl” coll.

Comparative material. *Hymedesmia (Hymedesmia) laevis* Thiele, 1905. Place of collection: Calbuco, Chile. Collector: no records. Slide ZMBPOR 3306 (holotype).

Description. (Fig. 2) Thinly encrusting fragment, overgrowing on coralline material; dimensions: 0.7 x 0.9 cm, 0.1 cm width; on magnified glass it was observed a conulose surface, with some protruding spicules. Preserved material apparently friable consistency, colour beige.

Skeleton. (Fig. 3) Ectosome not specialized. Basal specialization not observed, due to the degree of fragmentation of the sample. Choanosome formed by thick tracts, composed by tornotes which are crossed by acanthostyles I and II. Between the tracts there are megascleres in confusion. Microscleres dispersed in the choanosome.

Spicules. Megascleres: acanthostyles I - microspines more concentrated on basal portion (08–12), distributed in irregular and random way along the shaft, where are always curved in direction to the base (Fig. 4), apical extremity slightly blunted (Fig. 5), measurements: 197.5–*234.7*–282.5 / 10–*11.7*–13.8 µm; acanthostyles II - morphology very similar to acanthostyles I, with the exception of a major concentration of microspines on apical portion (12–16), well developed (Figs. 6, 7), measurements: 97.5–*116.9*–140 / 5.0–*7.1*–8.8 µm; tornotes - smooth (Fig. 8), both extremities slightly swelled, conical ends, slightly mucronate (Fig. 9), measurements: 147.5–*167.8*–197.5 / 2.5–*3.3*–5.0 µm. Microscleres: isochelas - with three fused alae in each basal portion (Fig. 10), measurements: 13.8–*20.8*–32.5 µm; sigmas - slightly unequal extremities, as in regard to the expansion as in its morphology (Fig. 11), measurements: 17.5–*19.9*–25 µm.

Remarks. A new bathymetric limit is recorded for the species, previously only known from <25 m (DESQUEYROUX & MOYANO 1987). Illustrations of spicules are here improved, which were initially undertaken by SEM and subsequently illustrating details of the microspines of the acanthostyles and the morphology of isochelas.

Tornotes resemble observations made by BURTON (1932), which cited such spicule with mucronated ends; THIELE (1905) has described tornotes with rounded ends ("amphityle"). Acanthostyles I from holotype bears well developed microspines, whereas in the material here studied such spicules bear discrete microspines. However these variations are here considered as intraspecific differences.

Spicules from the holotype have been remeasured, extending their reported size range and mean dimensions (measurements in µm): acanthostyles I 163.3–*197.1*–223.1 / 11.5–*13.4*–16.1; acanthostyles II 75.9–*87.7*–105.8 / 5.8–*7.7*–9.2; tornotes 135.7–*149*–158.7 / 2.3–*2.6*–3.5; isochelas 9.2–*20.2*–36.8; sigmas 18.4–*25.2*–33.4. Verified values are close to those obtained in the studied material.

Distribution. South America: Chile (THIELE 1905; DESQUEYROUX & MOYANO 1987); Falkland Is. (BURTON 1932). Antarctica: Antarctica: Bransfield Strait (present study). Bathymetry: 1 m (BURTON 1932) to 135 m (present study).

Order Halichondrida Gray, 1867

Family Halichondriidae Gray, 1867

Genus *Halichondria* Fleming, 1828

Subgenus *Eumastia* Schmidt, 1870

***Halichondria (Eumastia) attenuata* (Topsent, 1915)**

(Figs. 12-15)

Eumastia attenuata Topsent, 1915: 35-37, figs. 1, 2a-b (type-locality: Port Stanley, Falkland Is.); Burton, 1932: 335; 1934: 44.

Material. MCNPOR 5484, St. 4874, Bransfield Strait, near to Low I.: 63º25' S - 62º19' W, 135 m, 14.II.1986, PROANTAR IV, "beam-trawl" coll.

Description. (Fig. 12) Irregular fragment; dimensions: 2.0 x 1.6 cm, 0.9 cm thick; slightly rugose surface, due to the presence of several ridges, some of them are bigger forming discrete papillae, not exceeding 0.1 cm height. The sample bears a very conspicuous cortex, detachable, slightly translucent, <0.1 cm width; openings can be seen at the top of bigger conules (<0.1 cm diameter). Preserved material lightly compressible consistency, colour grayish white (cortical region), light brown internally.

Skeleton. (Fig. 13) Ectosome formed by a cortical region, constituted by a palisade of spicules, which protrude the surface, 530–870 µm width. Below the cortex subectosomal openings or canals were observed, disposed in regular way. In the choanosome spicules are positioned perpendicularly to the surface in some regions; in direction to the inner body spicules are more concentrated and arranged in confusion.

Spicules. Megascleres: oxeas - straight, smooth (Fig. 14), extremities varying from acerate to conical, with predominance of latter form (Fig. 15), measurements: 350–*429.2*–480 / 12.5–*15.6*–17.5 µm.

Remarks. Bathymetric record of this species is increased in the present study from intertidal to 13 m depths. Skeletal architecture and spicules are well illustrated for the first time (the latter using SEM analysis), better details for specific identification.

TOPSENT (1915) recorded the presence of well developed papillae over the sponge surface, however in the present study the papillae are reduced in size, probably representing a young specimen. Measurements of the oxeas are very similar to those related by TOPSENT (*op*. *cit*.), differing only by the presence of thicker spicules.

Distribution. South America: Falkland Is. (TOPSENT, 1915; BURTON 1932; 1934); South Georgia (BURTON 1934). Antarctica: Bransfield Strait (present study). Bathymetry: 0–2 m (BURTON 1932) to 135 m (present study).

Order Haplosclerida Topsent, 1928

Suborder Haplosclerina Topsent, 1928

Family Chalinidae Gray, 1867

Genus *Haliclona* Grant, 1836

Subgenus *Soestella* de Weerdt, 2000

***Haliclona (Soestella) chilensis* (Thiele, 1905)**

(Figs. 16-20)

Reniera chilensis Thiele, 1905: 467, pl. 27, fig. 5, pl. 32, fig. 84 (type-locality: Calbuco, Chile).

Haliclona chilensis; Burton, 1932: 265; 1934: 11; Desqueyroux & Moyano, 1987: 50.

Material. MCNPOR 3139, St. 'C', King George I.: 62º06' S - 58º22' W, 28 m, 06.III.1988, PROANTAR VI, scuba diving coll.

Description. (Fig. 16) Partially entire sample, composed unequal tubular projections bonded by the same base; dimensions (in a whole): 5.2 x 3.6 cm, 4.0 cm height since the base; tubes ranging from 2.0–3.0 cm height, 1.2–1.8 cm width; optically smooth surface, slightly hispid to the touch; oscular openings at the apex of each tubular projection, 0.25–0.4 cm diameter. Preserved material with slightly compressible consistency, colour brown.

Skeleton. Ectosome formed by a tangential reticulation (Fig. 17), where it has round meshes, 100–420 µm diameter. Choanosome (Fig. 18) composed by a network of primary ascending tracts, paucispicular (02–05 spicules diameter), 10–50 µm width, connected by secondary tracts, uni-paucispicular, 8.0–20 µm width; network bearing irregular meshes, rounded to triangular and/or polygonal, 80–180 µm diameter. Along the skeletal arrangement diverse rounded openings are observed. Scarce spongin, more visible at the nodes of the spicules.

Spicules. Megascleres: oxeas - smooth, with a slight central bent, rarely fusiform (Fig. 19), extremities often acerate (Fig. 20), but rounded, conical and hastate forms may occur, measurements: 137.5–*163.9*–180 / 2.5–*8.9*–12.5 µm.

Remarks. The present sample is quite similar to original description of THIELE (1905), with tubular projections bearing an oscular opening at the apex of the framework. Together with such characteristics, the inclusion of this species in *Soestella* is corroborated by the presence of a tangential ectosome composed by rounded apertures, in addition to possession of a choanosome with subanisotropic network of paucispicular primary lines, irregularly connected by secondary ones, and spongin at the nodes of the spicules.

Dimensions of oxeas are very similar to those described by THIELE (*op. cit.*); conversely, BURTON (1932) recorded smaller oxeas. THIELE (*op. cit.*) observed oxeas with blunted ends, but in the present study extremities are more often pointed. These particularities are all interpreted-as intraespecific variations.

Confirmation of the presence of a tangential ectosome with rounded meshes supports the allocation of this species to the subgenus *Soestella*.

Distribution. South America: Chile (THIELE 1905; DESQUEYROUX & MOYANO 1987); Falkland Is. (BURTON 1932; 1934). Antarctica: South Shetland Is., King George I. (present study). Bathymetry: 15 m (BURTON 1934) to 75 m (BURTON 1932).

ACKNOWLEDGEMENTS

We thank Dr. Carsten Lüter (ZMB) for the loan of comparative material; Dr. Eduardo Hajdu (Museu Nacional, Universidade Federal do Rio de Janeiro, Brazil) and Dr. Ruth Desqueyroux-Faúndez (Museum d'Histoire Naturelle de Genève, Geneva, Switzerland) for help in bibliography and loan material. We also thank CAPES and CNPq (Brazil) for research grants.

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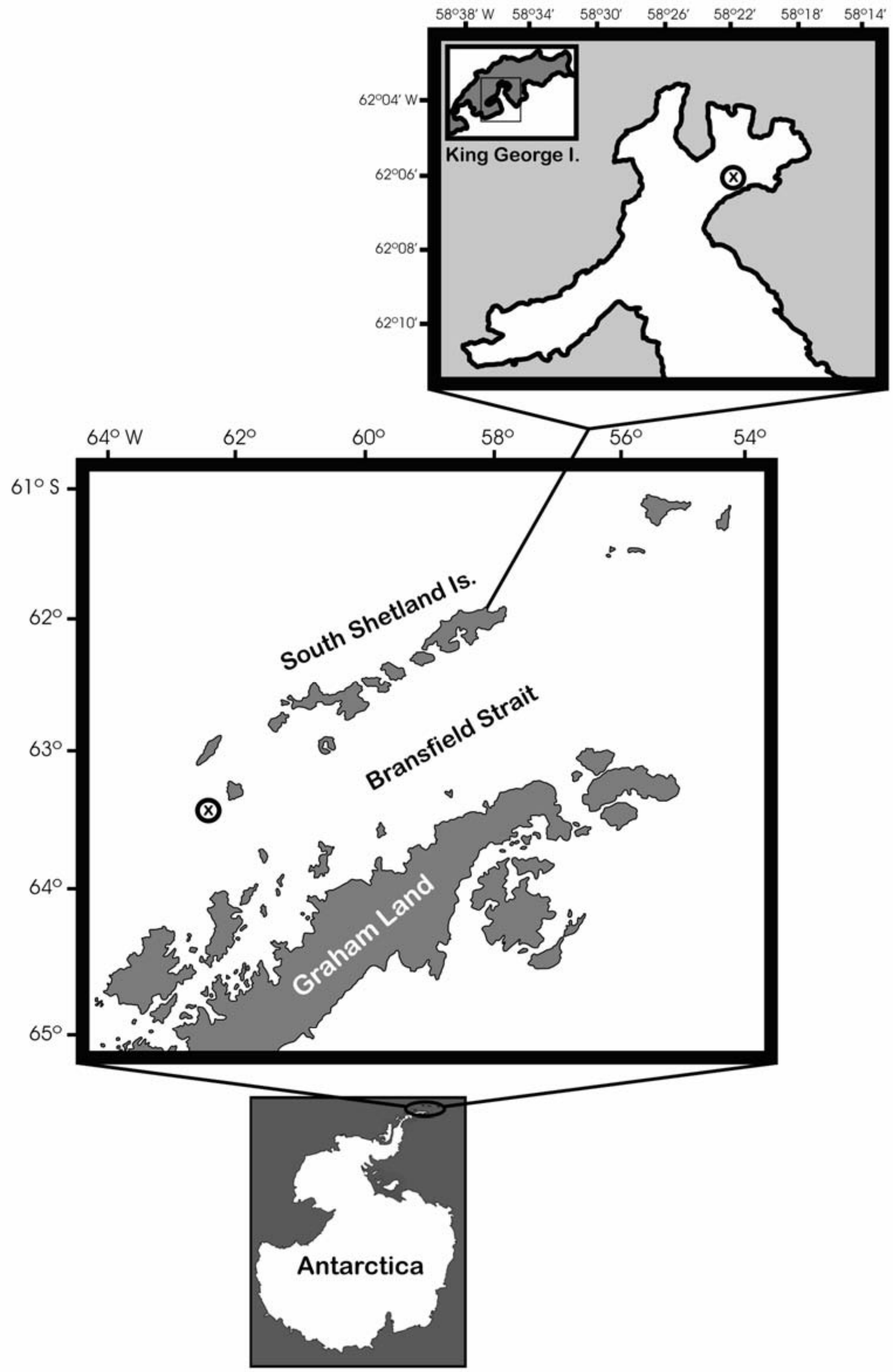
Figure 1. Map showing the collecting area; marked points indicate the specific place of collection.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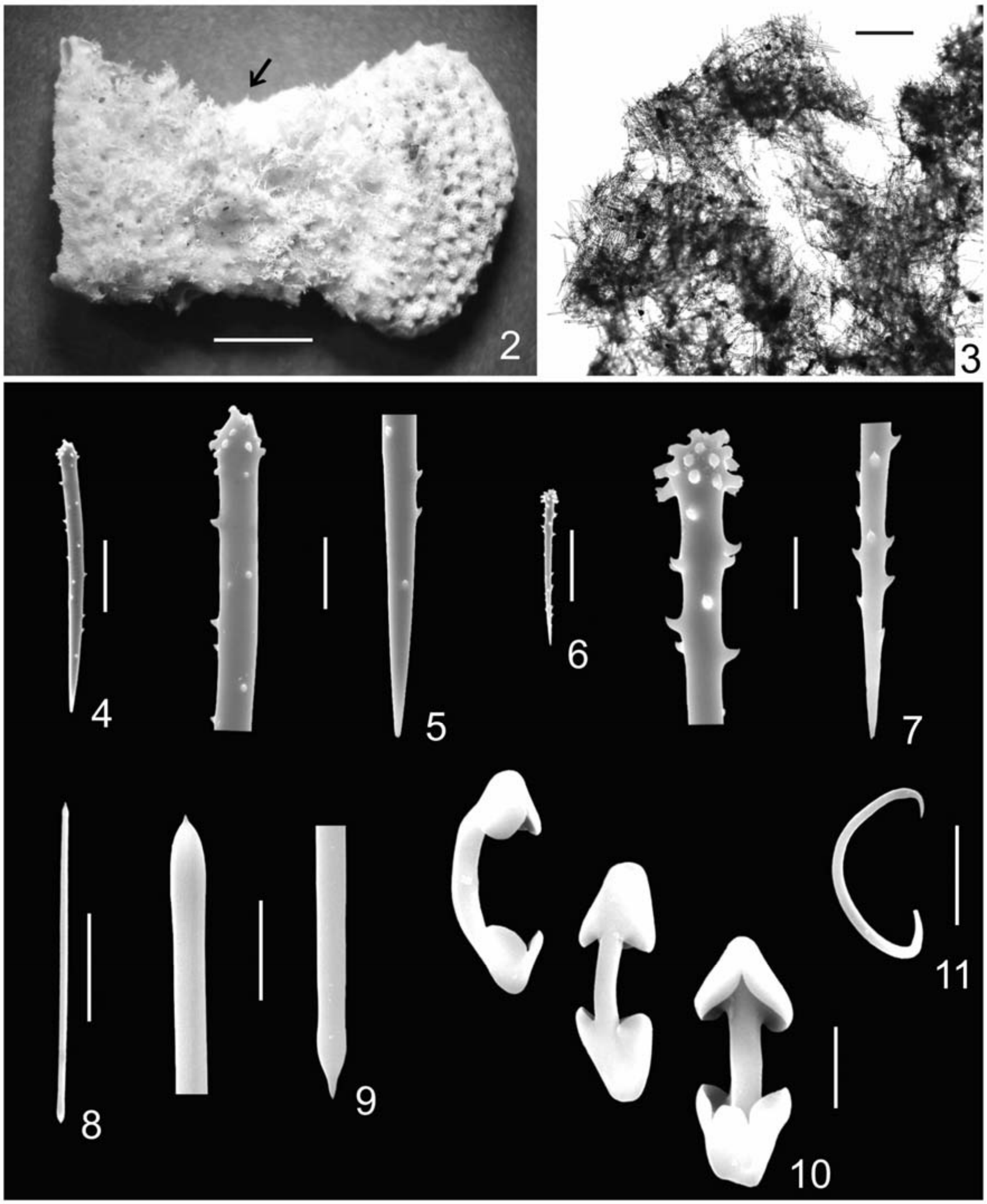
63°
64°
65°
South Shetland Is.
Bransfield Strait
Graham Land
Antarctica

Figures 2-11. *Hymedesmia (Hymedesmia) laevis* (Thiele, 1905). (2) preserved specimen, indicated by the arrow; (3) skeletal arrangement; (4) acanthostyle I; (5) detail of acanthostyle I extremities; (6) acanthostyle II; (7) detail of acanthostyle II extremities; (8) tornotes; (9) detail of tornotes extremities; (10) isochelas; (11) sigma. Scale bars: (2) 0.3 cm; (3) 500 µm; (4) 50 µm; (5) 20 µm; (6) 50 µm; (7) 10 µm; (8) 50 µm; (9) 10 µm; (10) 5 µm; (11) 10 µm.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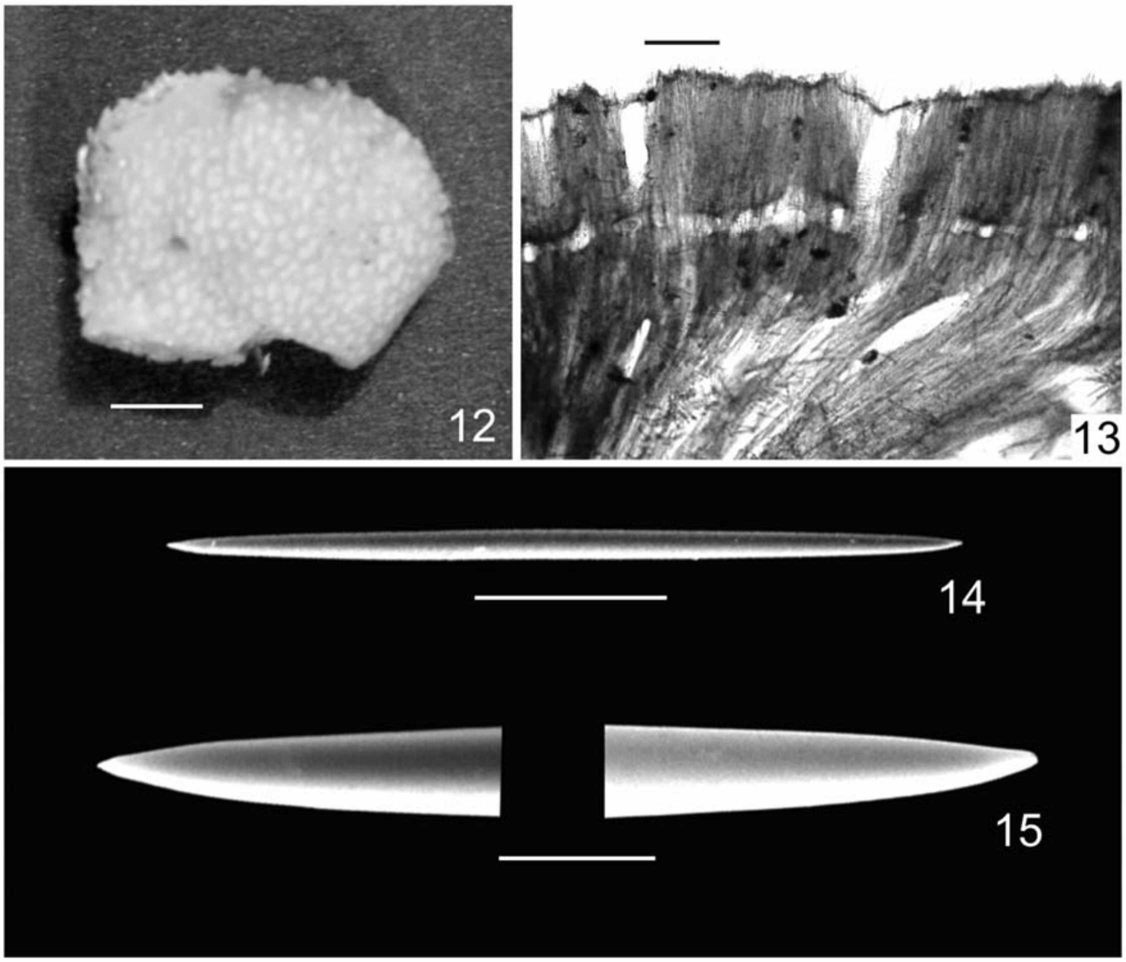
Figures 12-15. *Halichondria (Eumastia) attenuata* (Topsent, 1915). (12) preserved specimen; (13) skeletal arrangement; (14) oxea; (15) detail of oxea extremities. Scale bars: (12) 0.5 cm; (13) 600 µm; (14) 10 µm; (15) 20 µm.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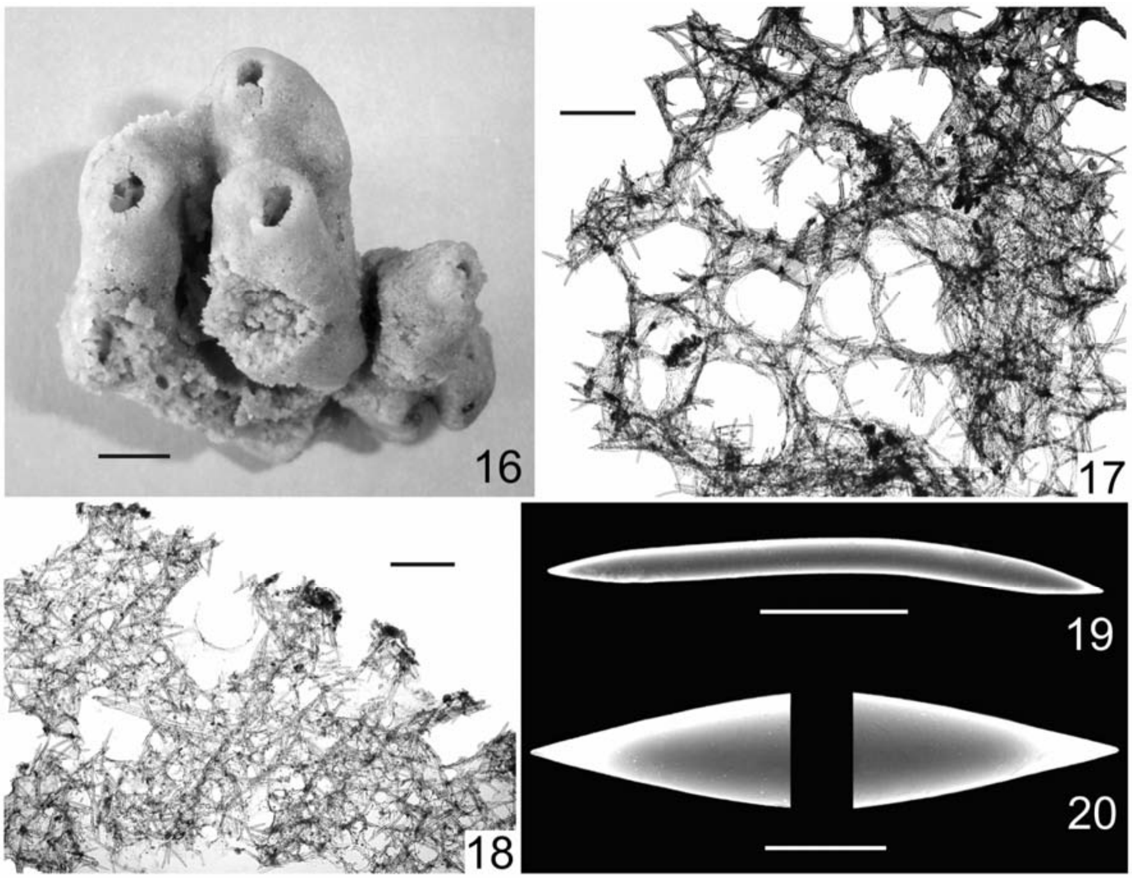
Figures 16-20. *Haliclona (Soestella) chilensis* (Thiele, 1905). (16) preserved specimen; (17) tangential view of ectosome; (18) perpendicular section of choanosome; (19) oxea; (20) detail of oxea extremities. Scale bars: (16) 1 cm; (17), (18) 500 µm; (19) 50 µm; (20) 10 µm.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CAPÍTULO 5

Contribution to the knowledge of Antarctic sponges (Porifera, Demospongiae). Part I. Spirophorida, Astrophorida, Hadromerida and Haplosclerida.

ARTIGO ENVIADO PARA PUBLICAÇÃO: REVISTA BRASILEIRA DE ZOOLOGIA, PROTOCOLO Nº 206/2006

Contribution to the knowledge of Antarctic sponges (Porifera, Demospongiae). Part I. Spirophorida, Astrophorida, Hadromerida and Haplosclerida.

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ABSTRACT. The present research aims to give continuity to the knowledge of the species richness of sponges collected at Antarctica by the Brazilian Antarctic Program, at South Shetland Is and neighboring areas. The description of 09 species is emended, distributed in the orders Spirophorida, Astrophorida, Hadromerida and Haplosclerida, supplying an ample illustration of all the morphologic characteristics. Three species are recorded for the first time for this sector of the continent: *Tethyopsis longispinum* (Lendenfeld, 1907), *Suberites montiniger* Carter, 1880 *sensu* Topsent, 1915 and *Hemigellius bidens* (Topsent, 1901), with the former extending their bathymetric limit.

KEY WORDS. Porifera, Demospongiae, taxonomy, Antarctica, PROANTAR.

RESUMO. **Contribuição ao conhecimento de esponjas da Antártica (Porifera, Demospongiae). Parte I. Spirophorida, Astrophorida, Hadromerida e Haplosclerida**.

A presente pesquisa visa dar continuidade ao conhecimento da riqueza de espécies de esponjas coletadas na Antártica pelo Programa Antártico Brasileiro, nas Is. Shetland do Sul e áreas próximas. Amplia-se a descrição de 09 espécies, distribuídas nas ordens Spirophorida, Astrophorida, Hadromerida e Haplosclerida, fornecendo ampla ilustração de todas as características morfológicas. Três espécies são pela primeira vez registradas para este setor do continente: *Tethyopsis longispinum* (Lendenfeld, 1907), *Suberites montiniger* Carter, 1880 *sensu* Topsent, 1915 e *Hemigellius bidens* (Topsent, 1901), onde a primeira tem o limite de seu registro batimétrico ampliado.
PALAVRAS CHAVE. Porifera, Demospongiae, taxonomia, Antártica, PROANTAR.

Antarctic sponges possess numerous records, which were yielded by several works carried through with material collected by diverse expeditions, highlighting the works of Topsent (1901a, b, 1907, 1908, 1913, 1915, 1916, 1917), Lendenfeld (1907), Kirkpatrick (1907, 1908), Hentschel (1914), Burton (1929, 1932, 1934, 1938), Koltun (1964, 1976), Vacelet & Arnaud (1972) and Desqueyroux (1972, 1975). More recently some records had been provided by Desqueyroux-Faúndez (1989), Pansini *et al*. (1994), Mothes & Lerner (1995), Gutt & Koltun (1995), Barthel *et al*. (1990; 1997), Cattaneo-Vietti *et al*. (1999), Calcinai & Pansini (2000) and Ríos *et al*. (2004). Other important contributions for the study of this fauna originates from works on the fauna of subantartic regions, which composes the Antarctic Faunistic Complex proposed by Sarà *et al*. (1992); such records can be found in Ridley (1881), Ridley & Dendy (1887), Sollas (1888), Thiele (1905), Burton (1940), Lévi (1956, 1964), Sarà (1978), Boury-Esnault & Van Beveren (1982), Desqueyroux & Moyano (1987) and Pansini & Sarà (1999).

Although so many researches has been carried through, some areas are not yet completely studied, like some islands from south Atlantic Ocean and another places near to Antarctic Peninsula, like South Shetland Is. and neighbor areas (RÍOS *et al*. 2004). The achievement of new faunistic surveys in that continent will be greatly important, in order to associate its abundance with the environmental conditions, their annual changes and also to extend geographic and bathymetric records (DESQUEYROUX-FAÚNDEZ 1989).

MATERIAL AND METHODS

The samples were collected through Brazilian Antarctic Program, at South Shetland Is. and Bransfield Strait (Fig. 1), by means of "beam-trawl" and "otter-trawl" dredges, scuba diving and some kind of traps which had collected sponges indirectly, between depths from 20 to 412 m. They are preserved in 96° GL alcohol and deposited in the Porifera Collection of Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, RS, Brazil.

The methodology employed for taxonomic study was made based on the spicules, through dissociated spicule slides and thick sections from the skeleton, following techniques described respectively by MOTHES-DE-MORAES (1978) and MOTHES *et al*. (2004). Preparations for SEM study according to SILVA & MOTHES (1996). Spicule measurements comprised minimum, *mean*, and maximum sizes, width after the bar (/), N=50.

Abbreviations used in the text are: BMNH (British Museum of Natural History, London, England) and MCNPOR (Porifera Collection, Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, RS, Brazil).

RESULTS

Class Demospongiae Sollas, 1885

Order Spirophorida Bergquist & Hogg, 1969

Family Tetillidae Sollas, 1886

Genus *Cinachyra* Sollas, 1886

***Cinachyra antarctica* (Carter, 1872)**

(Figs. 2-11; Tab. I)

Tethya antarctica CARTER 1872: 412, pl. XX, figs. 1–10.

Cinachyra antarctica; BURTON 1932: 264; 1938: 5; KOLTUN 1976: 167; DESQUEYROUX 1975: 55, pl. I, figs. 10–12; DESQUEYROUX-FAÚNDEZ 1989: 104, pl. 1, figs. 3a-c, pl. 6, figs. 33–34; BARTHEL *et al*. 1990: 122; 1997: 47; GUTT & KOLTUN 1995: 230.

Further synonym see DESQUEYROUX (1975).

Studied material. MCNPOR 1959, St. 4873, Bransfield Strait: 63º25' S - 62º05' W, 66 m, 13.II.1986, PROANTAR IV, "beam-trawl" coll.; MCNPOR 1978, 1980, Est. 4874, Bransfield Strait: 63º25' S - 62º19' W, 135 m, 14.II.1986, PROANTAR IV, "beam-trawl" coll.

Examined material for comparison. *Cinachyra antarctica* (Carter, 1872), collected by Mawson Antarctic Expedition, no records from the place of collection, slide BMNH 1935.10.26.53.

Description. (MCNPOR 1959) (Fig. 2) Oval specimen; dimensions, in cm: 4.8 diameter, 7.0 height; surface with protruding spicules in long bundles; oscules not observed; abundant pores (<0.1 cm in diameter), mainly in the lateral portion. Preserved material firm consistency, colour beige.

Skeleton. Ectosome constituted by oxeas II densely disposed, perpendicular to the surface (Fig. 3). Choanosome formed by thick radial tracts of protriaenes I, anatriaenes e oxeas I (420–810 µm thickness), which protrude at the surface (Fig. 4); between the tracts it can be observed oxeas I, II, protriaenes II and spinispiras randomly arranged.

Spicules. Megascleres: protriaenes I - cladome with clads of varied length, rhabdome long, straight and sinuous, filiform at terminal portion (Fig. 5); protriaenes II - cladome and rhabdome with the same above-mentioned characteristics (Fig. 6); anatriaenes - cladome with uniform clads, cladome with a slight apical salience at their medium portion (Fig. 7), rhabdome identical to the one of the protriaenes I; oxeas I - straight, acerate extremities, some of them slightly blunt (Fig. 8); oxeas II - straight (Fig. 9), acerate extremities (Fig. 10). Microscleres: spinispiras (Fig. 11) - often in "C", a few in "S" form. Measurements (Tab. I).

Remarks. *C. antarctica* is a circumantarctic distribution species, besides presenting a great vertical distribution; its external morphologic aspect becomes it easily recognizable, due to their long spicule bundles which protrude the surface.

BURTON (1929) inserted definitively the species in the genus *Cinachyra*, considering *Cinachyra vertex* Lendenfeld, 1907 as synonym of *C. antarctica*, alleging that the absence of spinispiras (cited as "sigmatas") described by CARTER (1872) for the holotype would not be true. KOLTUN (1964) includes in the synonymy the variety *monticularis*, which had been proposed by KIRKPATRICK (1908) basing on observations in different patterns of pores and oscules, which presented monticular elevations, but later they had not been considered enough to establish itself as a distinct species.

The examined material for comparison is identical to studied material; all the spicular elements bear the same features in both the material, like the general pattern of triaenes (cladome and terminal portion of rhabdome), oxeas I and II (mainly the dimensions of this latter) and spinispiras.

Distribution. Indic Ocean: Kerguelen I. (CARTER 1879). South America: South Georgia (BURTON 1932). Antarctica: Ross Sea (CARTER 1872; SOLLAS 1888); Victoria Land (KIRKPATRICK 1908; BROENDSTED 1926; BURTON 1929; KOLTUN 1964); Adelie Land (BURTON 1938; VACELET & ARNAUD 1972); Wilhelm II Land (LENDENFELD 1907); McRobertson Land (KOLTUN 1964); Enderby Land (KOLTUN 1976); Graham Land (TOPSENT 1917; DESQUEYROUX 1972); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN, 1995); South Shetland Is.: Low I. (DESQUEYROUX 1975); Bransfield Strait (DESQUEYROUX-FAÚNDEZ 1989; present study). Bathymetry: 18 m (KIRKPATRICK 1908) to 830 m (GUTT & KOLTUN 1995).

***Cinachyra barbata* Sollas, 1886**

(Figs. 12-20; Tab. II)

Cinachyra barbata SOLLAS 1886: 183; BURTON 1932: 265; 1940: 98; KOLTUN 1976: 167; DESQUEYROUX 1975: 55, pl. I, figs. 10–12; DESQUEYROUX-FAÚNDEZ 1989: 103, pl. 1, figs. 2a-e, pl. 6, figs. 32; BARTHEL *et al*. 1990: 122; 1997: 47; SARÀ *et al*. 1990: 252; PANSINI *et al*. 1994: 68, fig. 4, pl. I, figs. 3a-d; GUTT & KOLTUN 1995: 230; CATTANEO-VIETTI *et al*. 1999: 540.

Further synonym see DESQUEYROUX (1975; 1989).

Studied material. MCNPOR 1979, 2017, St. 4874, Bransfield Strait: 63º25' S - 62º19' W, 135 m, 14.II.1986, PROANTAR IV, "beam-trawl" coll.

Examined material for comparison. *Cinachyra barbata* Sollas, 1886, collected by Antarctic Discovery Expedition, no records from the place of collection, slide BMNH 1908.2.5.52g-x.

Description. (MCNPOR 1979) (Fig. 12) Globular specimen; dimensions, in cm: 2.5 height, 3.5 width, 3.2 thickness; hispid surface, due to their protruding long spicules; oscules regularly distributed (0.1–0.25 cm in diameter), surrounded by brushes that reach 0.2 cm height, which are formed by concentrated spicules; pores not observed. Preserved material slightly compressible consistency, colour grey with some cleared areas in beige.

Skeleton. (Fig. 13) Thick cortex, formed by oxeas II in palisade, perpendicular to the surface. Choanosome constituted by spicular radial tracts formed by protriaenes, anatriaenes and oxeas I (120–500 µm thickness), since the basal portion until the surface, crossing the cortex and protruding the surface. Spinispiras and protriaenes II dispersed by all over the skeleton.

Spicules. Megascleres: protriaenes I - cladome with clads of varied length (Fig. 14), rhabdome long and straight; protriaenes II - cladome very similar to the one of protriaenes I (Fig. 15), rhabdome generally filiform and sinuous since from the medium portion; anatriaenes - cladome with clads lightly curved toward the rhabdome (Fig. 16), extremity sinuous and filiform; oxeas I - slightly curved, acerate points, a few blunted (Fig. 17); oxeas II - slightly curved (Fig. 18), acerate points (Fig. 19). Microscleres: spinispiras (Fig. 20) – morphology varying from "C" form or similar forms. Measurements (Tab. II).

Remarks. SOLLAS (1888) presented an ample and detailed description of practically all the morphologic characteristics and KIRKPATRICK (1905) still reinforced the knowledge of the oscular aspects and related structures observed in this species.

C. *barbata* has a geographic and bathymetric distribution very similar in comparing to *C*. *antarctica*; coincidently these two are the only valid species described until the present for the genus. This latter observation does not corroborates with the diagnosis of the genus proposed by VAN SOEST & RÜTZLER (2002), where only one species (in such case *C*. *barbata*) is considered as valid. In the present study this affirmation is not corroborated; the existence of samples from both the species in the material here studied made possible to observe clearly the distinction of two groups, on the basis of the morphologic characters: *C*. *antarctica* bears some great protruding spicules arranged in long brushes at the surface, besides possessing bigger and thinner oxeas II, whereas *C*. *barbata* bears a slight spicule protraction at the surface, together with smaller and thicker oxeas II.

Basing on the comparative material, the above-mentioned affirmation about the existence of two species inside that genus is confirmed, with general morphology of the spicules showing some differences which are enough to separate distinct groups. The presence of oxeas II, identical to that ones observed in our material, is clearly distinguible from the same spicules present in *C*. *antarctica*.

Distribution. Indic Ocean: Kerguelen I. (SOLLAS 1886; 1888; LENDENFELD 1907; BOURY-ESNAULT & VAN BEVEREN 1982). South America: South Georgia (BURTON 1932; 1940). Antarctica: Victoria Land (KIRKPATRICK 1908; BURTON 1929; SARÀ *et al*. 1990; PANSINI *et al*. 1994; CATTANEO-VIETTI *et al*. 1999); Wilhelm II Land (KOLTUN 1964); McRobertson Land; Enderby Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN, 1995); South Shetland Is.: Robert I.; King George I.

(DESQUEYROUX-FAÚNDEZ 1989); Bransfield Strait (present study); Deception I. (DESQUEYROUX 1975). Bathymetry: 2 m (KOLTUN 1976) to 830 m (GUTT & KOLTUN, 1995).

Genus *Craniella* Schmidt, 1870

***Craniella leptoderma* (Sollas, 1886)**

(Figs. 21-29; Tab. III)

Tetilla leptoderma SOLLAS 1886: 179; BURTON 1929: 418; KOLTUN 1976: 166; DESQUEYROUX & MOYANO 1987: 47; DESQUEYROUX-FAÚNDEZ 1989: 102, pl. I, figs. 1a-d, pl. V, figs. 26–28; SARÀ *et al*. 1990: 252; BARTHEL *et al*. 1990: 122; 1997: 47; GUTT & KOLTUN 1995: 230; CATTANEO-VIETTI *et al*. 1999: 540.

Further synonym see BURTON (1929) and DESQUEYROUX-FAÚNDEZ (1989).

Studied material. MCNPOR 2000, St. 4861, Elephant I.: 61º02' S - 54º55' W, 362 m, 01.II.1986, PROANTAR IV, “beam-trawl” coll.; MCNPOR 3143, St. 4860, Elephant I.: 61º08' S - 55º52' W, 112 m, 31.I.1986, PROANTAR IV, “beam-trawl” coll.

Description. (MCNPOR 3143) (Fig. 21) Fragment; dimensions, in cm: 2.8 height, 2.2 width, 0.65 thickness; hispid surface, due to the spicule protraction; pores and oscules not observed. Preserved material hard consistency, colour brown.

Skeleton. (Fig. 22) Cortical region composed by oxeas II in parchment; it was also observed a little amount of foreign material. Choanosome made by thick longitudinal multispicular tracts of oxeas I and anatriaenes (250–530 µm thickness), radially disposed, originating from the basal portion until the surface, where it protrudes considerably. Microscleres and protriaenes II dispersed along the choanosome, mainly between the tracts.

Spicules. Megascleres: protriaenes I - cladome often with unequal clads (Fig. 23), rhabdome long, straight, extremity sharp-pointed and sinuous; protriaenes II - cladome similar to protriaene I (Fig. 24), rhabdome thin and sinuous; anatriaenes - cladome with uniform clads (Fig. 25), rhabdome identical to the ones of the protriaenes; oxeas I - straight, conical and/or acerate extremities, but can be slightly curved and thus being finely hastate (Fig. 26); oxeas II - straight or slightly curved (Fig. 27), acerate extremities (Fig. 28). Microscleres: spinispiras (Fig. 29) - in "C" form, rare in "S". Measurements (Tab. III).

Remarks. This species presents a very extended distribution in the southern hemisphere, according to their occurrence in Antarctica, subantarctic islands from Indic Ocean (BOURY-ESNAULT & VAN BEVEREN 1982; SOLLAS 1888) and also in South America, at Atlantic coast, since off the mouth of the Rio de la Plata, Argentina (SOLLAS 1888) until Falkland Is. (BURTON 1932), and at Pacific coast, Chile (DESQUEYROUX & MOYANO 1987). Their vertical distribution is very extended, since shallow waters until great depths (more than 2000 m) (KOLTUN 1976).

According to BURTON (1929), the following species *Tetilla grandis* Sollas, 1886, *Tetilla grandis* var. *alba* Sollas, 1888, *Tethya sagitta* Lendenfeld, 1907, *Tethya stylifera* Lendenfeld, 1907, *Craniella sagitta* var. *microsigma* and *Craniella sagitta* var. *pachyrrabdus*, the last two ones described by KIRKPATRICK (1908), only differs in their spicular measurements, and such difference would not be significant. However BURTON (*op. cit.*) cited that there are between them some kind of variation in the external characteristics which would not have to be ignored. DESQUEYROUX (1975) still added that in the species *C. leptoderma* it can be observed a great variation in the habit, with spherical individuals, villose surface without radicular brushes and other groups lacking these characteristics.

Distribution. Indic Ocean: Kerguelen I. (BOURY-ESNAULT & VAN BEVEREN 1982); Heard I.; Christmas I. (SOLLAS 1886; 1888). South America: Argentina (SOLLAS 1886; 1888); Chile (DESQUEYROUX & MOYANO 1987); Falkland Is.; South Georgia (BURTON 1932). Antarctica: Victoria Land (KIRKPATRICK 1908; BROENDSTED 1926; BURTON 1929; SARÀ *et al*. 1990; CATTANEO-VIETTI *et al*. 1999); Wilhelm II Land (LENDENFELD 1907); Adelie Land (BURTON 1938); McRobertson Land; Princess Elisabeth Land; Banzare Land; Clarie Land (KOLTUN 1964); Enderby Land; Sabrina Land (KOLTUN 1976); Graham Land (DESQUEYROUX-FAÚNDEZ 1989); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN, 1995); South Shetland Is.: Greenwich I. (DESQUEYROUX 1975); King George I. (KOLTUN 1964); Clarence I. (BURTON 1932); Elephant I. (present study). Bathymetry: 4 to 2267 m (KOLTUN 1976).

Order Astrophorida Sollas, 1888

Family Ancorinidae Schmidt, 1870

Genus *Tethyopsis* Stewart, 1870

***Tethyopsis longispinum* (Lendenfeld, 1907)**

(Figs. 30-37; Tab. IV)

Tribrachion longispinum LENDENFELD 1907: 322, pl. XXIV, figs, 1–13

Monosyringa longispinna; KOLTUN 1976: 166; BARTHEL *et al* 1990: 122; 1997: 47; GUTT & KOLTUN 1995: 230.

Further synonym see KOLTUN (1976).

Studied material. MCNPOR 3164, St. Ferraz, King George I.: 62º05' S - 58º23' W, 20 m, 03.II.1985, PROANTAR III, "trap" coll.; MCNPOR 3123, St. 4743, Bransfield Strait: 62º30' S - 54º16' W, 412 m, 28.I.1985, PROANTAR III, "beam-trawl" coll.; MCNPOR 3121, Est. 4756, Estreito de Bransfield: 62º58' S - 57º10' W, 70 m, 02.II.1985, PROANTAR III, "beam-trawl" coll.

Description. (MCNPOR 3123) (Fig. 30) Massive, amorphous fragment; dimensions, in cm: 6.8 x 3.4, 1.7 thickness; hispid surface, due to their spicule protraction; it was also observed the formation of small tubular cylindrical projections (0.2–0.8 cm height), constituted in its interior by oscular openings (0.1 cm in diameter). Preserved material firm consistency, colour pinkish with greyish regions.

Skeleton. (Fig. 31) Cortex composed by microscleres and cladomes of some ortotriaenes, together with a great amount of exogenous material and little spongin. Choanosome radial arrangement, with megascleres arranged in multispicular tracts, perpendicular to the sponge surface (230–500 µm thickness). Cladomes of some ortotriaenes were observed at cortical region. Between the megascleres there are abundant microsclers and spongin. Oscular projections are formed exclusively by an arrangement of ortodiaenes regularly overlapped (Fig. 32), involved in a fine membrane in which microscleres are present.

Spicules. Megascleres: ortotriaenes - cladome with often sinuous clads (Fig. 33), rhabdome with rounded apical extremity; ortodiaenes - cladome with varied opening angle, straight to sinuous clads (Fig. 34), rhabdome straight or slightly curved; oxeas - straight, slight to sharply curved; extremities varying from hastate to acerate (Fig. 35). Microscleres: oxyasters (Fig. 36) - 05–10 rays, slightly microspined, concentrated at apical portion;

strongylasters (Fig. 37) - 04–07 rays, bearing microspines at the apical portion of the rays. Measurements (Tab. IV).

Remarks. According to KOLTUN (1964), the species *Monosyringa broendstedi* Burton, 1929 only differs in having some bifurcation in regard to the clads of triaenes and diaenes; such characteristic does not have any taxonomic value, being this species only a modified form of *Tethyopsis longispinum*.

T. longispinum has a tendency to live beneath the surface, totally embedded in the substrate with only the papillae protruding, and between the same ones the sponge material is covered by a great amount of sediment (BARTHEL *et al*. 1991). This species possess an important ecological role, providing a special environment for sea stars, which sometimes are concentrated over and between the papillae.

In the present study a better detailing of the illustrations is provided: for the first time the microscleres were photographed in SEM, where it was possible to observe the microspine pattern and the disposal of observed rays. The geographic distribution was extended, being the species cited for the first time for the studied area and its adjacencies; the bathymetry was also extended, with the present record in 20 m depth.

Distribution. Antarctica: Wilhelm II Land (LENDENFELD 1907); Victoria Land (BURTON 1929); McRobertson Land; Knox Land; Banzare Land (KOLTUN 1964); Enderby Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN 1995); Bransfield Strait (present study); South Shetland Is.: King George I. (present study). Bathymetry**:** 20 m (present study) to 1340 m (KOLTUN 1964).

Order Hadromerida Topsent, 1894

Family Polymastiidae Gray, 1867

Genus *Polymastia* Bowerbank, 1864

***Polymastia invaginata* Kirkpatrick, 1907**

(Figs. 38-44)

Polymastia invaginata KIRKPATRICK 1907: 271; BURTON 1929: 446; 1932: 338; 1938: 19; KOLTUN 1976: 168; VACELET & ARNAUD 1972: 14; DESQUEYROUX 1976: 95; DESQUEYROUX & MOYANO 1987: 47; DESQUEYROUX-FAÚNDEZ 1989: 106, pl. II, figs. 5a-d, pl. VI, figs. 36–37; BARTHEl *et al*. 1990: 122; 1997: 47; GUTT & KOLTUN 1995: 230; PANSINI & SARÀ 1999: 205.

Further synonym see DESQUEYROUX-FAÚNDEZ (1989).

Studied material. MCNPOR 1976, St. 4874, Bransfield Strait: 63º25' S - 62º19' W, 135 m, 14.II.1986, PROANTAR IV, "beam-trawl" coll.

Examined material for comparison. *Polymastia invaginata* Kirkpatrick, 1907, collected by Antarctic Discovery Expedition, no records from the place of collection, slide BMNH 1908.2.5.76.

Description. (Fig. 38) Massive specimen; dimensions, in cm: 3.9 x 2.0, 1.7 thickness; hispid surface, bearing papillae (0.1–0.25 cm height); at the apex of the papillae it was observed some oscular openings (0.1 cm in diameter). Preserved material firm and little compressible consistency, colour beige in the cortex, darker internally.

Skeleton. (Fig. 39) Upper portion formed by the cortex, which is not easily detachable, 580–980 µm thickness, composed by ectosomal tylostyles in palisade, often with the apical extremity protruding the surface. Choanosome formed by a radial arrangement of multispicular tracts, composed exclusively by choanosomal tylostyles; tracts 270–360 µm thickness; between them it was observed a great amount of spongin and free spicules. The spicular arrangement present in the papillae is composed by choanosomal tylostyles, which are positioned perpendicularly to the surface (Fig. 40); basal extremities of those spicules are projected to the outside of the sponge.

Spicules. Megascleres: ectosomal tylostyles - straight or slightly curved, lightly swollen along the shaft (Fig. 41); head (tyle) well defined (Fig. 42). Measurements: 120–*369.2*–660 / 3.8–*13.1*–25 µm, tyle width 5.0–*9.4*–12.5 µm; choanosomal tylostyles - straight (Fig. 43), tyle poorly defined (Fig. 44); shaft little more swollen below the tyle. Measurements: 880–*1400*–1860 / 12.5–*21.3*–27.5 µm, tyle width 10–*13.4*–16.3 µm.

Remarks. The species *P. invaginata* has an extended geographic and bathymetric distribution at southern hemisphere, reaching greater latitudes in the Chilean coast (DESQUEYROUX & MOYANO 1987), also present in oceanic islands of Indic Ocean (BOURY-ESNAULT & VAN BEVEREN 1982) and diverse Antarctic localities (see geographic distribution).

In regard to their spicular measurements, it was observed that both the ectosomal and choanosomal tylostyles are smaller in comparison to previous records (KIRKPATRICK 1908; KOLTUN 1964; DESQUEYROUX 1976; BOURY-ESNAULT & VAN BEVEREN 1982 and DESQUEYROUX-FAÚNDEZ 1989). Only the measurements provided by HENTSCHEL (1914), where the same proposed a new variety of the species (var. *gaussi*), is similar to the measurements obtained in our sample. However BURTON (1929) considered that it should be an intraspecific variation, being unnecessary the creation of a new variety.

About the papillae, KOLTUN (1976) observed that they can vary in respect to their form and size, indeed being reduced in an almost even surface. Although with little differences in regard to the size of the spicules, the comparative material is very similar to the observed in the present study. Both the ectosomal and choanosomal tylostyles shows the same detailing, together with the arrangement of the same ones in the skeleton.

Distribution. Indic Ocean: Kerguelen I.; Heard I. (BOURY-ESNAULT & VAN BEVEREN 1982). South America: Chile (DESQUEYROUX 1976; DESQUEYROUX & MOYANO 1987); Magellan Strait (PANSINI & SARÀ 1999); South Georgia; South Orkney Is. (BURTON 1932; 1934). Antarctica: Graham Land (DESQUEYROUX-FAÚNDEZ 1989); Victoria Land (KIRKPATRICK 1907; 1908; BURTON 1929); Adelie Land (BURTON 1938; VACELET & ARNAUD 1972); Wilhelm II Land (HENTSCHEL 1914); Knox Land (BURTON 1938); Princess Ragnhild Land (KOLTUN 1964); Enderby Land; McRobertson Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN 1995); Bransfield Strait (BURTON 1932; present study). Bathymetry: 18 m (KIRKPATRICK 1907) to 1592 m (BURTON 1938).

Family Suberitidae Schmidt, 1870

Genus *Homaxinella* Topsent, 1916

***Homaxinella balfourensis* (Ridley & Dendy, 1886)**

(Figs. 45-49; Tab. V)

Axinella balfourensis RIDLEY & DENDY 1886: 480.

Homaxinella balfourensis; LÉVI 1964: 150, fig. 4, pl. I, fig. 4; KOLTUN 1964: 84, pl. XIII, figs. 11–12; 1976: 190; VACELET & ARNAUD 1972: 15; BOURY-ESNAULT & VAN BEVEREN 1982: 46, pl. VII, fig. 25, text-fig. 12a-b; DESQUEYROUX-FAÚNDEZ 1989: 110, pl. II, fig. 8, pl. VII, fig. 41–42; PANSINI *et al*. 1994: 70; BARTHEL *et al*. 1997: 48; CATTANEO-VIETTI *et al*. 1999: 540.

Further synonym see KOLTUN (1964).

Studied material. MCNPOR 3132, St. 5062, Elephant I.: 61º12' S - 55º40' W, 98 m, 26.II.1987, PROANTAR V, "otter-trawl" coll.; MCNPOR 3130, St. `D`, King George I.: 62º05' S - 58º23' W, 20 m, 26.II.1988, PROANTAR VI, "scuba diving" coll.; MCNPOR 3369, St. `D`, King George I.: 62º05' S - 58º23' W, 25 m, 21.I.1991, PROANTAR IX, "scuba diving" coll.; MCNPOR 3111, St. `C`, King George I.: 62º06' S - 58º22' W, 28 m, 06.III.1988, PROANTAR VI, "scuba diving" coll.

Examined material for comparison. *Homaxinella balfourensis* (Ridley & Dendy, 1886), colleted by Swedish Antarctic Expedition, place of collection: off Seymour Island, Antarctic Peninsula, slide BMNH 1933.3.17.104.

Description. (MCNPOR 3132) (Fig. 45) Arborescent specimen, with several ramifications; dimensions, in cm: 22.4 height, 16.8 in expansion, branches ranging from 0.2–0.45 in diameter; microhispid surface, with slight spicule protraction; oscules not visualized. Preserved material lightly elastic but firm consistency, colour greyish beige.

Skeleton. In transversal section the ectosome is made by discrete bouquets, composed by smaller spicules, characterizing the superficial hispidation (Fig. 46). Choanosome in longitudinal section with a dense internal axial arrangement formed by multispicular tracts, a great amount of sponging and free spicules (Fig. 47).

Spicules. Megascleres: styles - straight to slightly curved (Fig. 48), extremities varying from acerate to hastate (Fig. 49). Measurements (Tab. V).

Remarks. *H*. *balfourensis* is a very conspicuous species in the Antarctic continent, evidenced for its characteristic external form, with diverse cylindrical and microhispid branches, often fixed to the substratum by means of a radicular system (detailed description in VAN SOEST 2002).

BURTON (1934) affirmed that the original description of the species made by RIDLEY & DENDY (1887) was not complete, lacking some important aspects of the specimen on the illustrations for the holotype of *A*. *balfourensis*; for this reason the records of this taxon were always cited as *H*. *supratumescens*, described by TOPSENT (1907) and later assigned as type species of the genus by the same author in 1916. After to observe other samples from both the species from Antarctica, BURTON (*op*. *cit*.) considered the similarity and consequently synonymized the species, establishing for priority *H*. *balfourensis* as type species of the genus.

H. *balfourensis* presents interesting chemical and ecological studies; SELDES *et al*. (1986) analyzed the sterols composition in studies samples, detecting the existence of seven specific chemical composites; WILKINS *et al*. (2002) had isolated an antifreeze peptide, a very important substance for the adaptation of some organisms to low temperatures. In the ecological field, DAYTON (1989) observed, basing on comparisons from data of different decades, that such species oscillates significantly in regard to its population size, due to the diverse environmental changes which can occur; CERRANO *et al*. (2000) highlighted the feeding activity of sea stars over individuals from the species, probably due to *H*. *balfourensis* being a very abundant sponge and bearing a great amount of sponging, ally to the fact of their predator presents a non selective diet (MCCLINTOCK 1987).

Skeletal and spicular features observed in the studied material are in accordance with comparative material. The axial arrangement of the choanosome and general features of ectosomal region is identical in both the material, in the same way that the spicules (remeasured: styles 247–*423.9*–598.5 / 3.5–*7.2*–13.8 µm).

Distribution. Indic Ocean: Kerguelen I. (RIDLEY & DENDY 1886; 1887; LÉVI 1964; BOURY-ESNAULT & VAN BEVEREN 1982). South America: South Georgia (BURTON 1932; 1934). Antarctica: Graham Land (TOPSENT 1907; 1908; 1917); Victoria Land (KIRKPATRICK 1908; BURTON 1929; PANSINI *et al*. 1994; CATTANEO-VIETTI *et al*. 1999); Adelie Land (VACELET & ARNAUD 1972); Wilhelm II Land (HENTSCHEL 1914); Queen Mary Land; Knox Land; Banzare Land; Princess Elisabeth Land (KOLTUN 1964); Enderby Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1997); South Shetland Is.: Deception I. (TOPSENT 1917); Elephant I. (DESQUEYROUX-FAÚNDEZ 1989; present study); King George I. (present study). Bathymetry: 0 m (DESQUEYROUX-FAÚNDEZ 1989) to 550 m (KOLTUN 1964).

Genus *Suberites* Nardo, 1833

***Suberites montiniger* Carter, 1880 *sensu* Topsent, 1915**

(Figs. 50-53)

Suberites montiniger CARTER 1880: 256; KOLTUN 1964: 25; 1976: 169; GUTT & KOLTUN, 1995: 231; BARTHEL *et al*. 1997: 47; CATTANEO-VIETTI *et al*. 1999: 540.

Further synonym see KOLTUN (1964).

Studied material. MCNPOR 1988, St. 4872, Bransfield Strait: 63º28' S - 62º31' W, 168 m, 13.II.1986, PROANTAR IV, "beam-trawl" coll.

Description. (Fig. 50) Globular specimen, fixed to a rock fragment; dimensions, in cm: 2.5 cm height, 2.2 cm in diameter; slightly hispid surface, with slightly protruded spicules; only one oscule present (0.2 cm in diameter), at the apex of sponge body. Preserved material hard consistency, colour brown.

Skeleton. (Fig. 51) Ectosome not specialized. Choanosome with spicules in confusion, densely arranged and positioned at diverse angles, mixed with abundant spongin. Several openings and canals could be observed along the choanosome.

Spicules. Megascleres: tylostyles - straights, slightly curved, sinuous or twisted somewhat (Fig. 52). Head (tyle) ovalate, poorly developed, apical extremity varying from conical to acerate (Fig. 53). Measurements: 330–*364*–410 / 7.5–*8.8*–10 µm, tyle width 7.5–*9.0*–10 µm.

Remarks. *S. montiniger* presents some taxonomic problem which needs to be corrected, in order to infer on its real occurrence and distribution; it was originally described by CARTER (1880) for Barents Sea, Glacial Arctic Ocean, and TOPSENT (1915) registered their occurrence for Antarctica.

The possibility of a sponge species have a disjunct distribution does not exists, due to geographic (distance), hydrodynamics (current patterns) and biological factors (larva survival, environmental conditions, etc.), besides the speciation events which could be occur along some great displacement. KOLTUN (1970) alleged the hypothesis of bipolarity, affirming that some species has a tendency to move itself in deep waters, or at least to support more easily some great depth variations; however the occurrence of this species in both polar regions is not here corroborated. VAN SOEST (2002) also pointed out that the samples of the Arctic and Antarctica could be distinct species.

BURTON (1929), when describing *Suberella topsenti* for Antarctic waters, suggested the same one as senior synonym of *S. montiniger sensu* Topsent, 1915, alleging that the species described by CARTER (1880) presented some differences in the skeleton; BURTON (1932) compared the sample with the one described by CARTER (*op. cit.*), considering both as identical samples, as well as KOLTUN (1964) also shared such hypothesis. Probably the lack of distinctive morphologic characters in that species has generated such conclusions, once that their external morphology, skeletal architecture and spicules do not present significant variations. To make use of molecular data is highly recommendable in this case, in order to conclude definitively on the existence of two distinct populations.

The species is registered for the first time for the studied area.

Distribution. South America: Falkland Is. (BURTON 1932); Burdwood Bank (TOPSENT 1915). Antarctica: Victoria Land (BURTON 1929; KOLTUN 1964; CATTANEO-VIETTI *et al.* 1999); McRobertson Land (KOLTUN 1976); Weddell Sea (GUTT & KOLTUN 1995; BARTHEL *et al.* 1997); Bransfield Strait (present study). Bathymetry: 91 m (BURTON 1929) to 424 m (GUTT & KOLTUN 1995).

Order Haplosclerida Topsent, 1928

Suborder Haplosclerina Topsent, 1928

Family Niphatidae Van Soest, 1980

Genus *Hemigellius* Burton, 1932

***Hemigellius bidens* (Topsent, 1901)**

(Figs. 54-59)

Gellius bidens TOPSENT 1901a: VII; 1908: 21, pl. I, fig. 1; 1917: 77; VACELET & ARNAUD 1972: 19; BARTHEL *et al*. 1990: 123; 1997: 49.

Haliclona bidens; KOLTUN 1964: 100.

Further synonym see KOLTUN (1964).

Studied material. MCNPOR 1981, 1989, St. 4869, Bransfield Strait: 63º33' S - 59º15' W, 240 m, 08.II.1986, PROANTAR IV, "beam-trawl" coll.

Description. (MCNPOR 1989) (Fig. 54) Erect specimen; dimensions, in cm: 4.2 x 1.2, 0.3 thickness. Lightly rugose surface, hispid to the touch, due to protruding spicule tracts. Pores and oscules not visualized. Preserved material friable consistency, colour light brown with regions of clearer tonality.

Skeleton. (Fig. 55) Ectosome without specialization, with megascleres in confusion. Choanosome a reticulation composed by paucispicular tracts (02–03 spicules, 38–54 µm thickness), interconnected by 01–02 spicules, forming some isodictyal meshes (180–520 µm in diameter). Nodal spongin present, microscleres irregular or randomly occurring between the tracts.

Spicules. Megascleres: oxeas - smooth, straight or slightly curved (Fig. 56), acerate extremities (Fig. 57), measurements: 440–*554.4*–660 / 12.5–*16.3*–18.8 µm (MCNPOR 1981); 480–*610.4*–680 / 13.8–*20.4*–23.8 µm (MCNPOR 1989). Microscleres: sigmas - smooth (Fig. 58), bearing bifid extremities (Fig. 59), measurements: 32.5–*36.8*–40 µm (MCNPOR 1981); 30–*35.1*–40 µm (MCNPOR 1989).

Remarks. *H. bidens* presents until the moment restricted distribution to the Antarctic continent, being the present record a new occurrence for the studied area.

Originally described for the genus *Gellius*, this species is now belonging to *Hemigellius*, since from the combination of features of the oxeas and superficial skeleton, and also by the presence of a peculiar sigma, which differs from the other species of *Haliclona* (*Gellius*) (DESQUEYROUX-FAÚNDEZ & VALENTINE 2002). Such species had been previously considered as type species of *Plumocolumetta* (DE LAUBENFELS *loc. cit.*), however such genus is nowadays a junior synonym of *Hemigellius* (DESQUEYROUX-FAÚNDEZ & VALENTINE *op. cit.*).

In comparing to the measurements provided by TOPSENT (1901) and KOLTUN (1964), the samples here studied have thicker spicules. For the first time the spicules were photographed by SEM, mainly detailing the extremity of the sigmas, which characterizes the species.

KOLTUN (1976) considered *Plumocolumella bidens* as a new combination to *H. bidens*, including in their synonym *Desmacidon meandrina* Kirkpatrick, 1907, affirming that the diverse studied specimens were different forms from the same species. The referred author observed the existence of two groups, "*meandrina*" and "*bidens*", with the former bearing 2–5 teeth sigmas, and the latter with 2–3 teeth sigmas, besides to observe discrete variations on the oxeas and external morphology. The synonym proposed by KOLTUN (*op. cit.*) is not here considered, until being carried through a complete revision, comparing the greatest possible quantity of samples from both the taxa (*H. bidens e D. meandrina*). Possibly the morphology of the sigmas shall be the preponderant factor in the taxonomic decision, also considering the skeletal features once that the two putative species are inserted in distinct Orders.

Distribution. Antarctica: Bellinghausen Sea (TOPSENT 1901a; 1901b); Graham Land (TOPSENT 1908; 1917); Victoria Land (BURTON 1929; 1938); Wilhelm II Land

(HENTSCHEL 1914); Adelie Land (VACELET & ARNAUD 1972); Weddell Sea (BARTHEL *et al*. 1990; 1997); Bransfield Strait (present study). Bathymetry: 30 m (TOPSENT 1908) to 550 m (TOPSENT 1901b).

Suborder Petrosina Boury-Esnault & Van Beveren, 1982

Family Phloeodictyidae Carter, 1882

Genus *Calyx* Vosmaer, 1885

***Calyx arcuarius* (Topsent, 1913)**

(Figs. 60-65)

Gellius arcuarius TOPSENT 1913: 638, pl. VI, fig. 11.

Calyx arcuarius; BURTON 1938: 9; KOLTUN 1976: 196; DESQUEYROUX 1975: 71, pl. IV, figs. 53–54; BARTHEL *et al*. 1990: 123; 1997: 49; SARÀ *et al*. 1990: 254; GUTT & KOLTUN 1995: 231; CATTANEO-VIETTI *et al*. 1999: 540.

Further synonym see DESQUEYROUX (1975).

Studied material. MCNPOR 3135, St. “C”, Livingston I.: 62º40' S - 59º33' W, 270 m, 08.III.1987, PROANTAR V, “otter-trawl” coll.; MCNPOR 1964, St. 4871, Bransfield Strait: 63º16' S - 59º55' W, 264 m, 08.II.1986, PROANTAR IV, “beam-trawl” coll.; MCNPOR 1954, St. 4875, Bransfield Strait: 63º17' S - 62º30' W, 157 m, 14.II.1986, PROANTAR IV, “beam-trawl” coll.

Description. (MCNPOR 1954) (Fig. 60) Flabellate sponge; dimensions, in cm: 27.5 height, 17.8 width, 0.5 thickness; optically smooth surface, on magnifying glass small spicule tract projections were observed; oscules present in both sides of the sponge, however more concentrated in basal region, in discrete stiffly volcanic projections, never exceeding 0.1 cm in diameter. Preserved material elastic and compressible consistency, colour beige with greyish regions.

Skeleton. Ectosome a dense tangential reticulation, which are forming triangular to polygonal meshes (Fig. 61), 80–170 µm in diameter, unispicular tracts with nodal spongin. Choanosome formed by longitudinal multispicular tracts (Fig. 62), 75–140 µm thickness, which are interconnected by unispicular tracts bearing the same ectosomal features, only differing in having a more dense reticulation; toxas occurring around the tracts.

Spicules. Megascleres: oxeas - smooth, slightly curved and swollen (Fig. 63); acerate extremities (Fig. 64), measurements: 190–*216.2*–237.5 / 16.1–*19.4*–23 µm (MCNPOR 1954); 209–*250*–294.5 / 11.5–*17.2*–19.6 µm (MCNPOR 1964); 190–*225*–256.5 / 11.5–*18.4*–20.7 µm (MCNPOR 3135). Microscleres: toxas (Fig. 65) - smooth, of varied opening angles, with sharp-pointed extremities, measurements: 78.2–*115.2*–147.2 / 1.2–*4.0*–6.9 µm (MCNPOR 1954); 69–*119.1*–181.7 / 1.2–*3.2*–4.6 µm (MCNPOR 1964); 80.5–*129.8*–174.8 / 1.2–*3.7*–5.8 µm (MCNPOR 3135).

Remarks. It is another conspicuous sponge in Antarctic waters, with several bibliographic citations which reported a flabellate growth form (BURTON 1932; 1938; DESQUEYROUX 1975; KOLTUN 1976), what it could be confirmed in the sample here studied.

Synonym includes *C. stipitatus* Topsent, 1916, which does not bear toxas; BURTON (1932) pointed out that such absence does not have taxonomic value, and in comparing samples from both groups it was observed that some features presented a subtle variation, in regard to spicules, external morphology and skeleton, however it was confirmed that *C. arcuarius* and *C. stipitatus* are coespecific.

Distribution. South America: South Georgia; Shag Rocks (BURTON 1932; 1934). Antarctica: South Orkneys Is. (TOPSENT 1913); Graham Land (TOPSENT 1916; 1917); Victoria Land (BURTON 1929; SARÀ *et al*. 1990; CATTANEO-VIETTI *et al*. 1999); Queen Mary Land (BURTON 1938); Knox Land; Banzare Land; Wilhelm II Land; McRobertson Land; Adelie Land (KOLTUN 1964); Enderby Land; Princess Elisabeth Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN 1995); South Shetland Is.: Deception I. (DESQUEYROUX 1975); Livingston I. (present study); King George I. (KOLTUN 1964); Bransfield Strait (present study). Bathymetry: 18 m (BURTON 1929) to 900 m (KOLTUN 1964).

ACKNOWLEDGEMENTS

We thanks a lot to Prof. Dr. Edmundo Nonnato (Instituto Oceanográfico da Universidade de São Paulo - IOUSP), for making possible the donation and direction of all Porifera specimens collected by PROANTAR for inclusion in MCNPOR. We thank Clare Valentine (BMNH) for the loan of comparative material; Dr. Eduardo Hajdu (Museu Nacional, Universidade Federal do Rio de Janeiro, Brazil) and Dr. Ruth Desqueyroux-Faúndez (Museum d'Histoire Naturelle de Genève, Geneva, Switzerland) for help in bibliography. We also thank CAPES and CNPq (Brazil) for research grants.

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Table I. *Cinachyra antarctica* (Carter, 1872): spicules measurements, in µm:

MCNPOR	Protriaene I			Protriaene II	Anatriaene			Oxea I	Oxea II	Spinispira
	cladome	clad	rhabdome		cladome	clad	rhabdome			
1959	50–*70*–94	161–215–274 / 11.5–14–16	5773–9228–13984 / 16–20–24	722–870–988 / 2.5	159–198–237	145–185–221 / 21–28–35	7820–11526–19757 / 28–35–38	4600–6665–7958 / 41–62–77	560–696–902 / 16–20–23	14–16–18.5 / < 1.0
1978	53–68–92	145–183–244 / 11.5–13–15	5383–8835–13225 / 15–18–21	741–827–931 / 2.5	80.5–97–120	87–124–145 / 15–19–23	7774–9871–12926 / 23–26–31	3197–3969–4761 / 32–39–47	655–771–874 / 17–20–24	13–15–17 / < 1.0
1980	46–68–99	136–171–207 / 13–14.5–18	5980–9054–13110 / 16–18–22	655–850–1026 / 2.5	108–138–198	128–157–220 / 20–26–32	8700–11237–15575 / 30–32–35	4675–7414–9125 / 44–55–66	630–772–910 / 16–19–22	13–15–17 / < 1.0

Table II. *Cinachyra barbata* Sollas, 1886: spicules measurements, in µm:

MCNPOR	Protriaene I			Protriaene II	Anatriaene			Oxea I	Oxea II	Spinispira
	cladome	clad	rhabdome		cladome	clad	rhabdome			
1979	42–68–92	110–134–182 / 10–15–20	4060–4820–5360 / 14–19–25	693–1079–1463 / 2.5	100–123–152	137–166–207 / 22–28–37	4800–7457–11220 / 26–32–36	3160–5551–7160 / 30–57–72	370–602–900 / 29–53–65	9.0–11.5–14 / < 1.0
2017	37–53–67	99–133–156 / 8.0–11–18	2507–3323–4324 / 14–15–16	750–980–1216 / 2.5	145–168–184	142–163–191 / 21–25–32	2392–3304–4209 / 29–31–32	2001–2432–3059 / 25–30–37	295–448–617 / 25–33–43	9.0–13–16 < 1.0

Table III. *Craniella leptoderma* (Sollas, 1886): spicules measurements, in µm:

MCNPOR	Protriaene I			Protriaene II	Anatriaene			Oxea I	Oxea II	Spinispira
	cladome	clad	rhabdome		cladome	clad	rhabdome			
2000	35–59–80	103–150–198 / 4.5–10–15	5497–7187–8602 / 9.0–14–20	741–936–1254 / 2.5	76–120–198	115–150–232 / 12–17–23	7084–10557–13662 / 20–22–25	3726–6770–9384 / 32–57–90	483–1090–1728 / 12–21–33	10–13–16 / < 1.0
3143	48–70–110	120–161–200 / 6.0–10–15	4692–6311–7912 / 10–14–18	790–916–1010 / 2.5	110–141–190	115–163–192 / 18–24–30	5440–9607–13440 / 20–21–23	5865–7786–9223 / 55–73–99	460–859–1725 / 14–18–24	9.0–13–16 / < 1.0

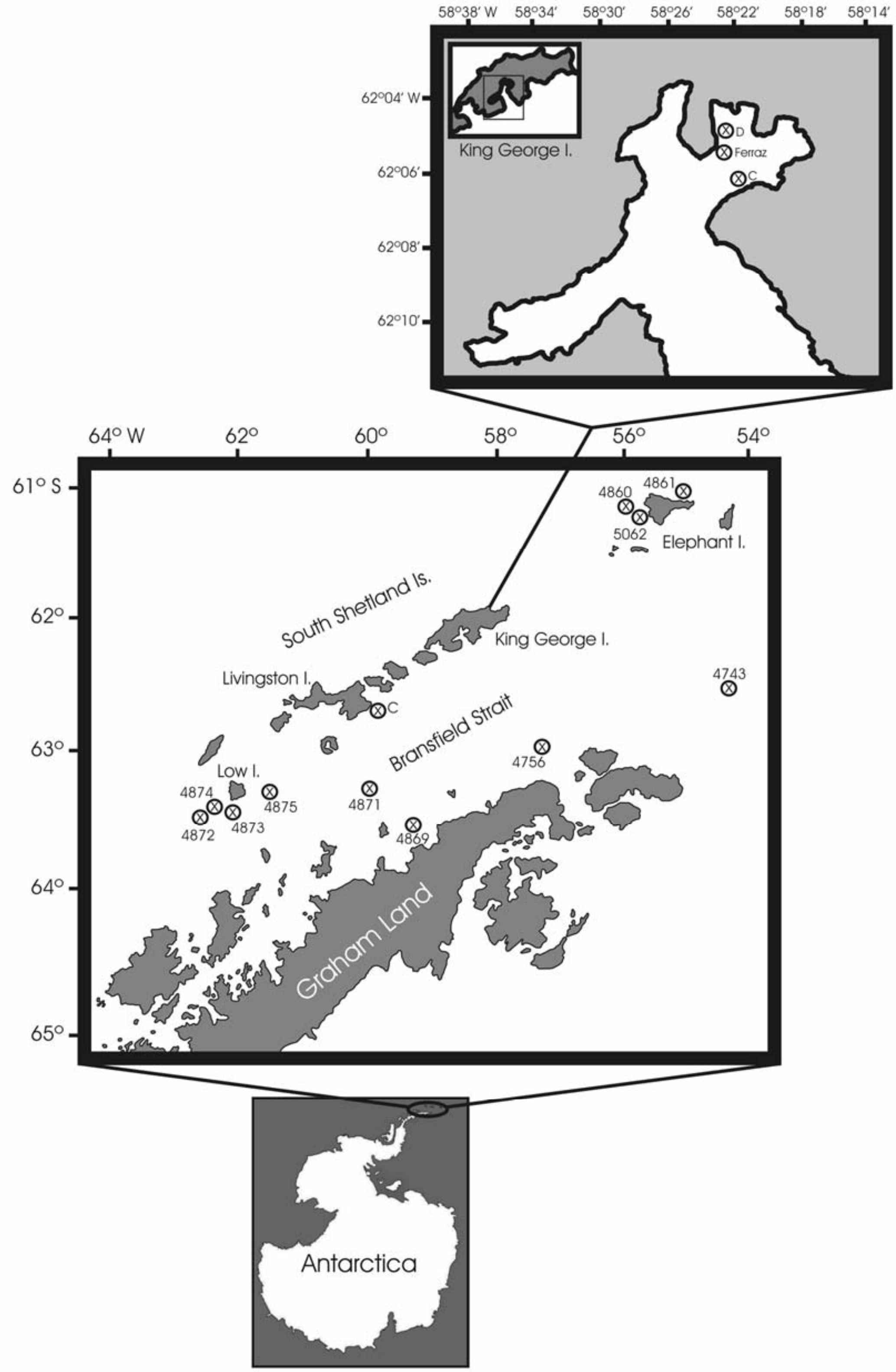
Table IV. *Tethyopsis longispinum* (Lendenfeld, 1907): spicules measurements, in µm:

MCNPOR	Ortotriaene			Ortodiaene			Oxea	Oxyaster	Strongylaster
	cladome	clad	rhabdome	cladome	clad	rhabdome			
3121	1080–1217–1360	490–600–700 / 62–83–100	3680–4291–4620 / 70–87–100	360–1214–1800	130–589–1020 / 16–37–51	860–2400–4700 / 18–34–52	1320–2240–3920 / 14–26–45	25–34–45	10–12–15
3123	1220–1342–1520	570–674–810 / 78–88–97	2860–4092–4780 / 75–87–100	540–1195–1700	240–595–910 / 24–40–54	1420–3230–4700 / 23–38–52	1100–2106–3420 / 17–23–31	25.3–35–44	10–13–16
3164	820–956–1160	310–465–560 / 70–82–95	2400–3798–4620 / 60–81–101	300–1144–1560	160–564–750 / 19–37–47	1500–3271–4160 / 29–40–45	1240–1936–3080 / 15–24–32	25–36–45	10–13–16

Table V. *Homaxinella balfourensis* (Ridley & Dendy, 1886): spicules measurements, in µm:

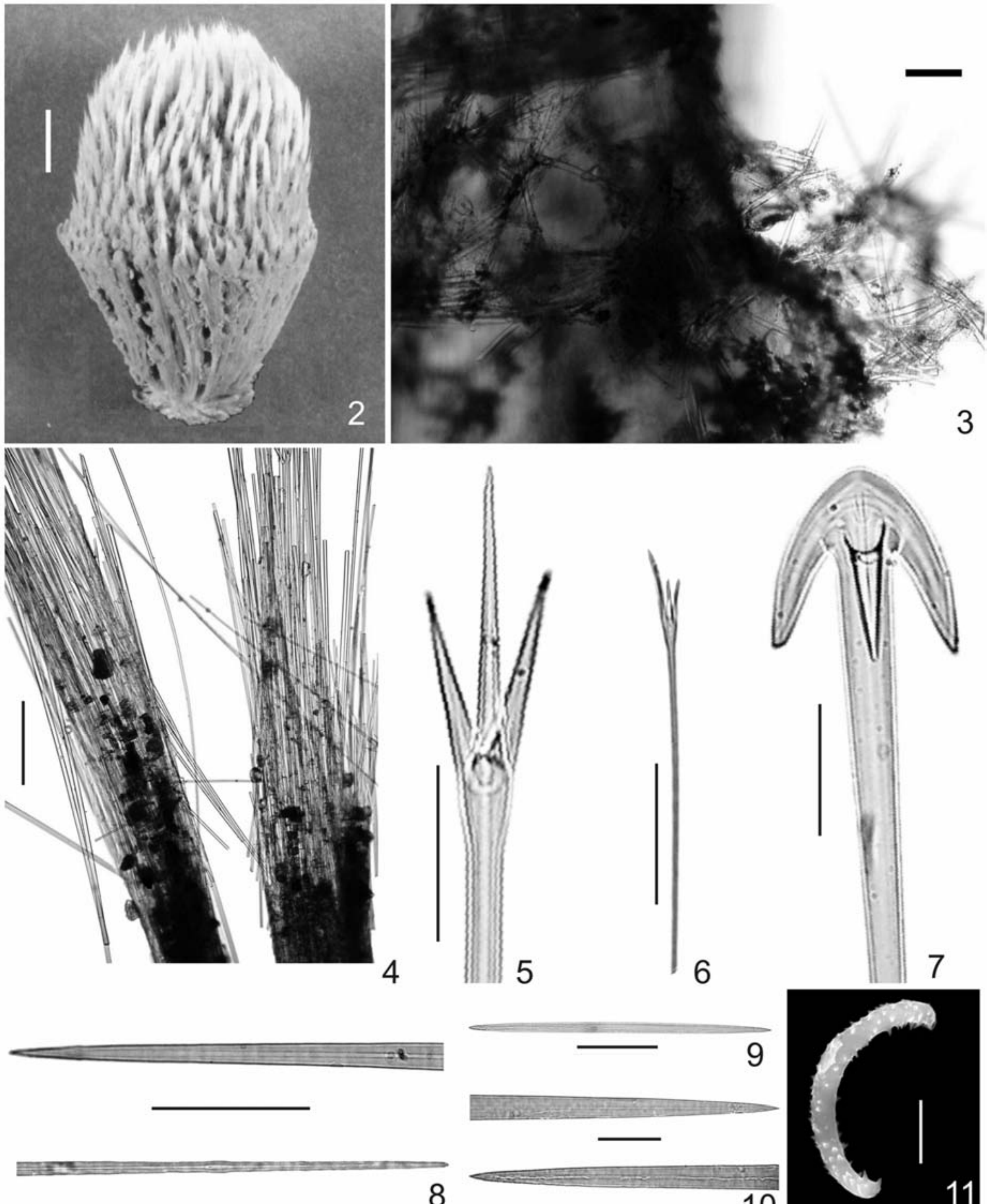
MCNPOR	Styles
3111	152–326.7–550 / 2.5–6.4–10.4
3130	171–382.6–608 / 2.5–6.6–11.5
3132	114–324.7–522.5 / 2.5–7.0–11.5
3369	133–323.9–560.5 / 2.5–7.1–10.4

Figure 1. Map showing the collecting area.



58°38′ W
58°34′
58°30′
58°26′
58°22′
58°18′
58°14′
62°04′ W
62°06′
62°08′
62°10′
King George I.
D
Ferraz
C
64° W
62°
60°
58°
56°
54°
61° S
62°
63°
64°
65°
4861
4860
5062
Elephant I.
South Shetland Is.
King George I.
Livingston I.
C
4743
Bransfield Strait
4756
Low I.
4874
4875
4871
4872
4873
4869
Graham Land
Antarctica

Figures 2-11. *Cinachyra antarctica* (Carter, 1872). (2) preserved specimen; (3) ectosomal arrangement of the skeleton; (4) choanosomal tracts; (5) protriaene I; (6) protriaene II; (7) anatriaene; (8) oxea I; (9) oxea II; (10) detail of oxea II extremities; (11) spinispira. Scale bars: (2) 1 cm; (3) 300 µm; (4) 750 µm; (5), (6), (7) 100 µm; (8), (9) 200 µm; (10) 50 µm; (11) 5 µm.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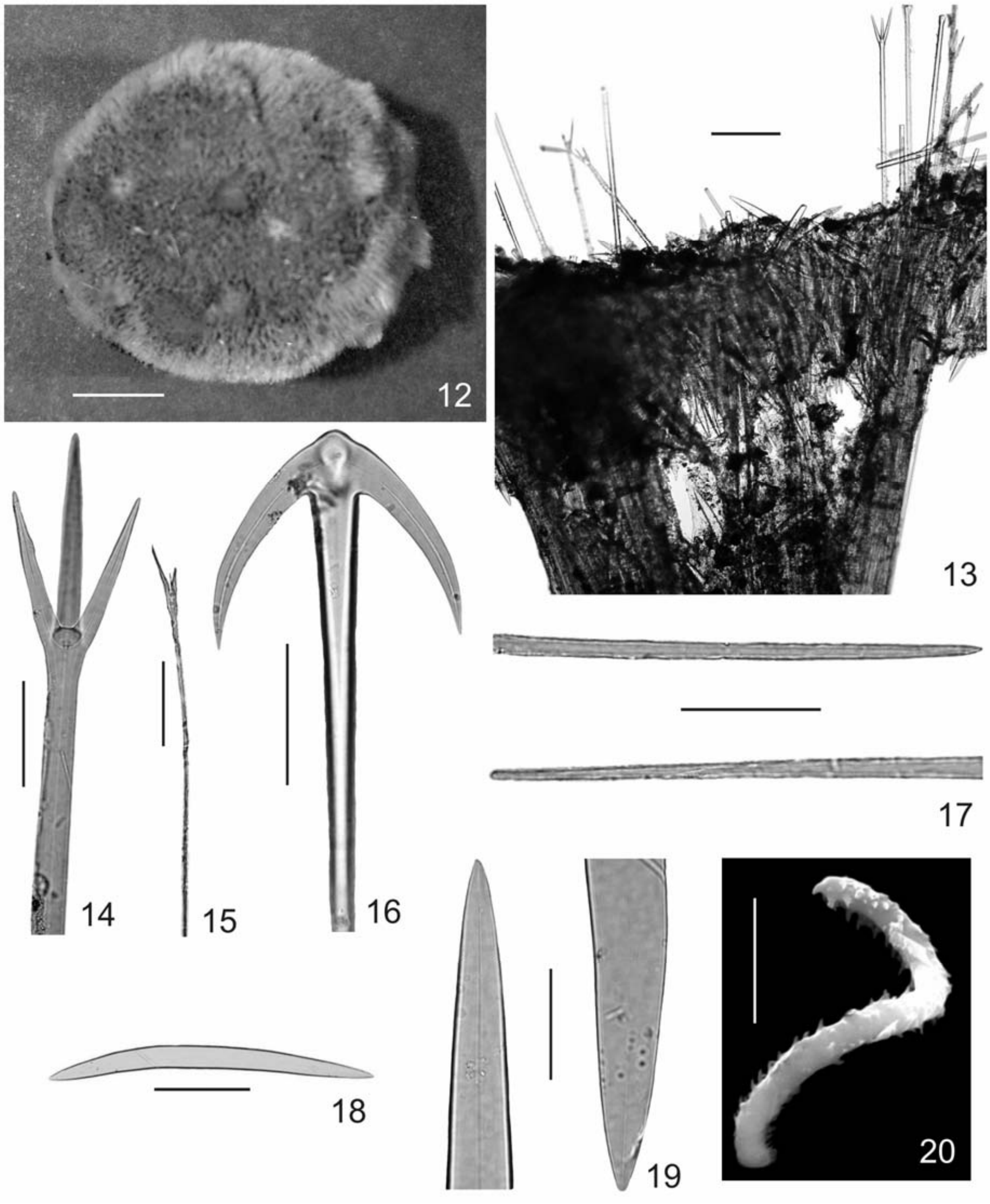
Figures 12-20. *Cinachyra barbata* Sollas, 1886. (12) preserved specimen; (13) skeleton; (14) protriaene I; (15) protriaene II; (16) anatriaene; (17) oxea I; (18) oxea II; (19) detail of oxea II extremities; (20) spinispira. Scale bars: (12) 1 cm; (13) 500 µm; (14) 150 µm; (15) 75 µm; (16) 150 µm; (17) 100 µm; (18) 300 µm; (19) 100 µm; (20) 5 µm.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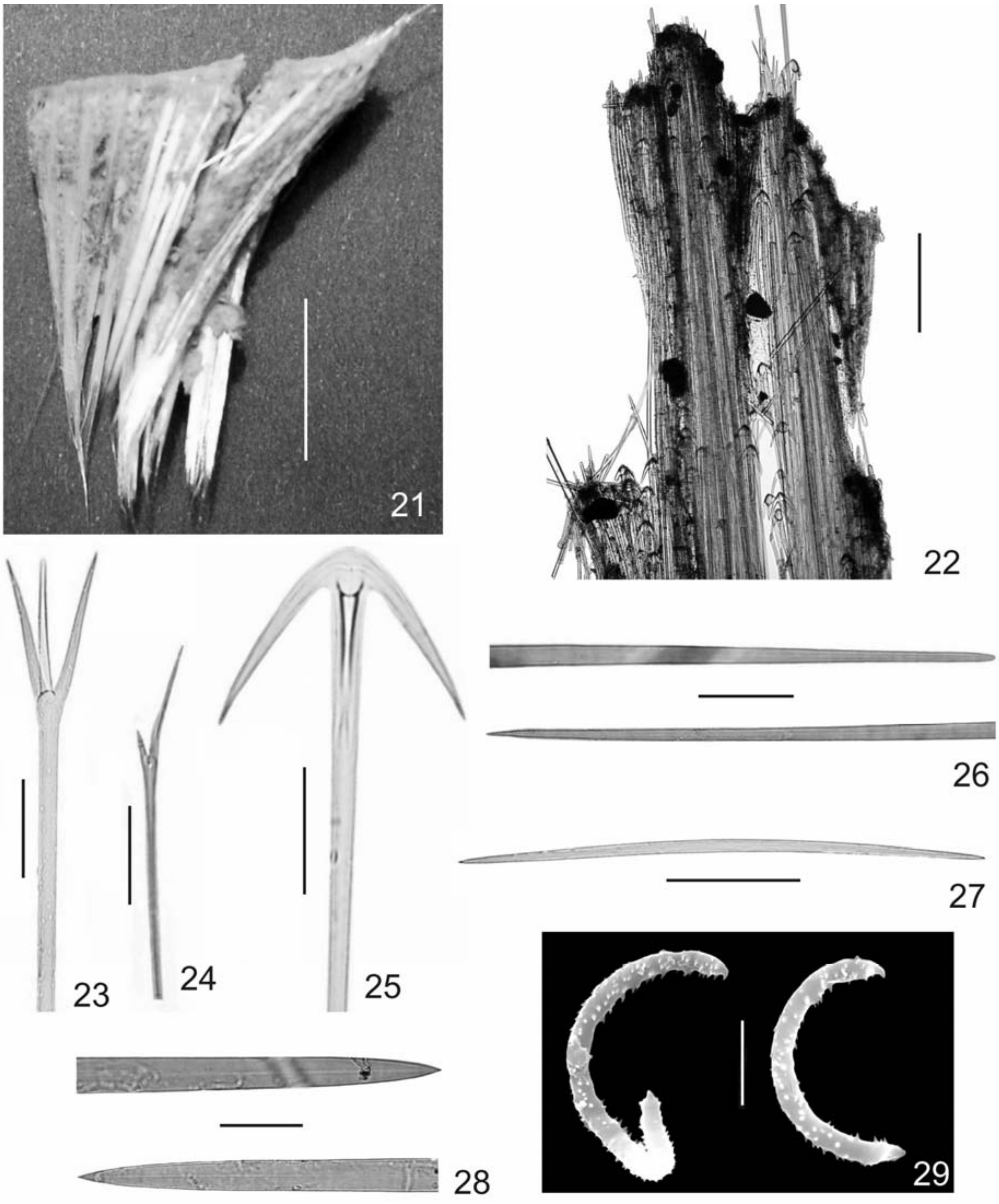
Figures 21-29. *Craniella leptoderma* (Sollas, 1886). (21) preserved specimen; (22) skeleton; (23) protriaene I; (24) protriaene II; (25) anatriaene; (26) oxea I; (27) oxea II; (28) detail of oxea II extremities; (29) spinispira. Scale bars: (21) 1 cm; (22) 750 µm; (23) 200 µm; (24) 50 µm; (25) 150 µm; (26), (27), (28) 300 µm; (29) 5 µm.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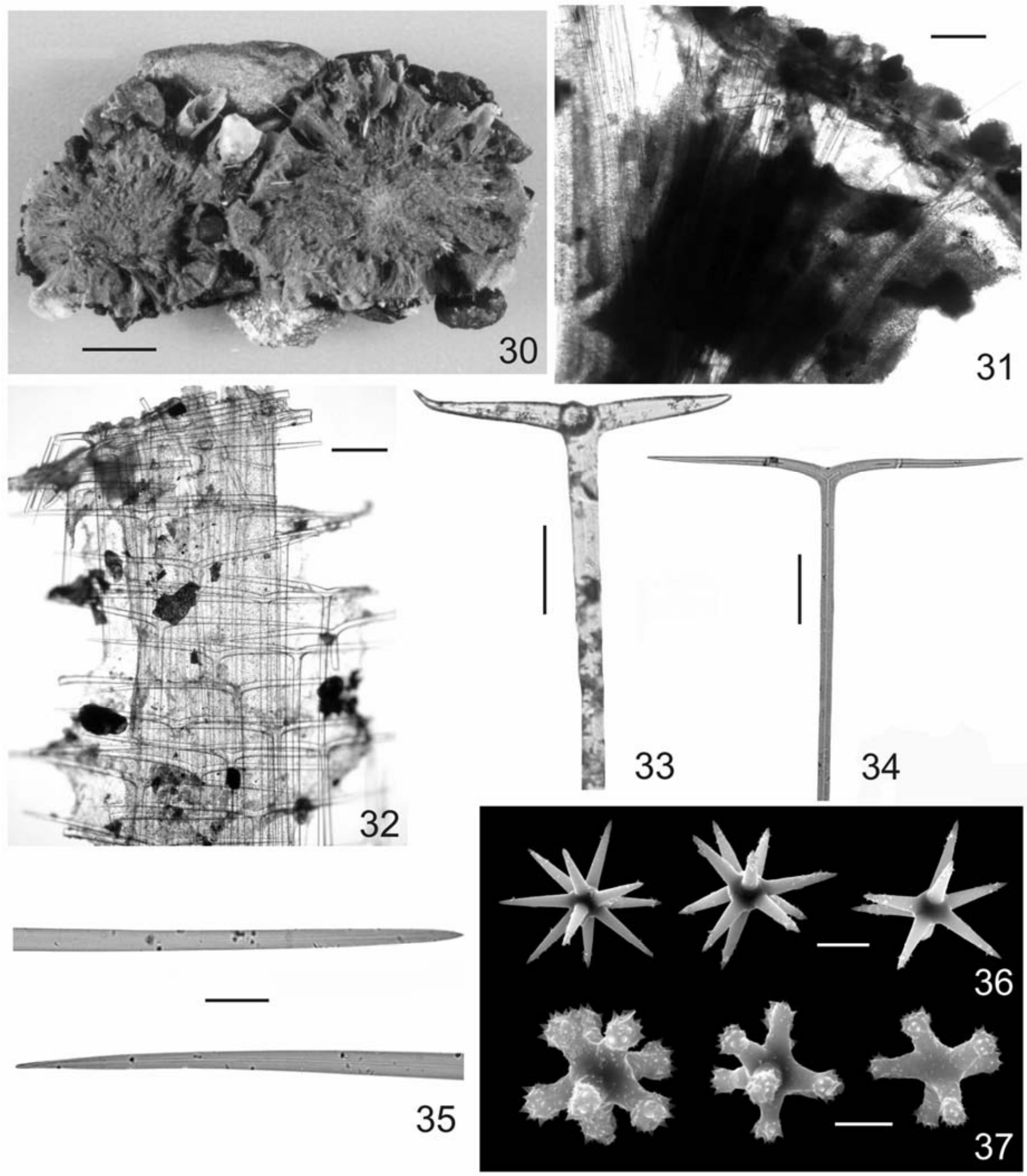
Figures 30-37. *Tethyopsis longispinum* (Lendenfeld, 1907). (30) preserved specimen; (31) skeleton; (32) spicular arrangement of tubular projections; (33) ortotriaene; (34) ortodiaene; (35) oxea; (36) oxyasters; (37) strongylasters. Scale bars: (30) 1 cm; (31), (32), (33) 500 µm; (34), (35) 300 µm; (36) 10 µm; (37) 5 µm.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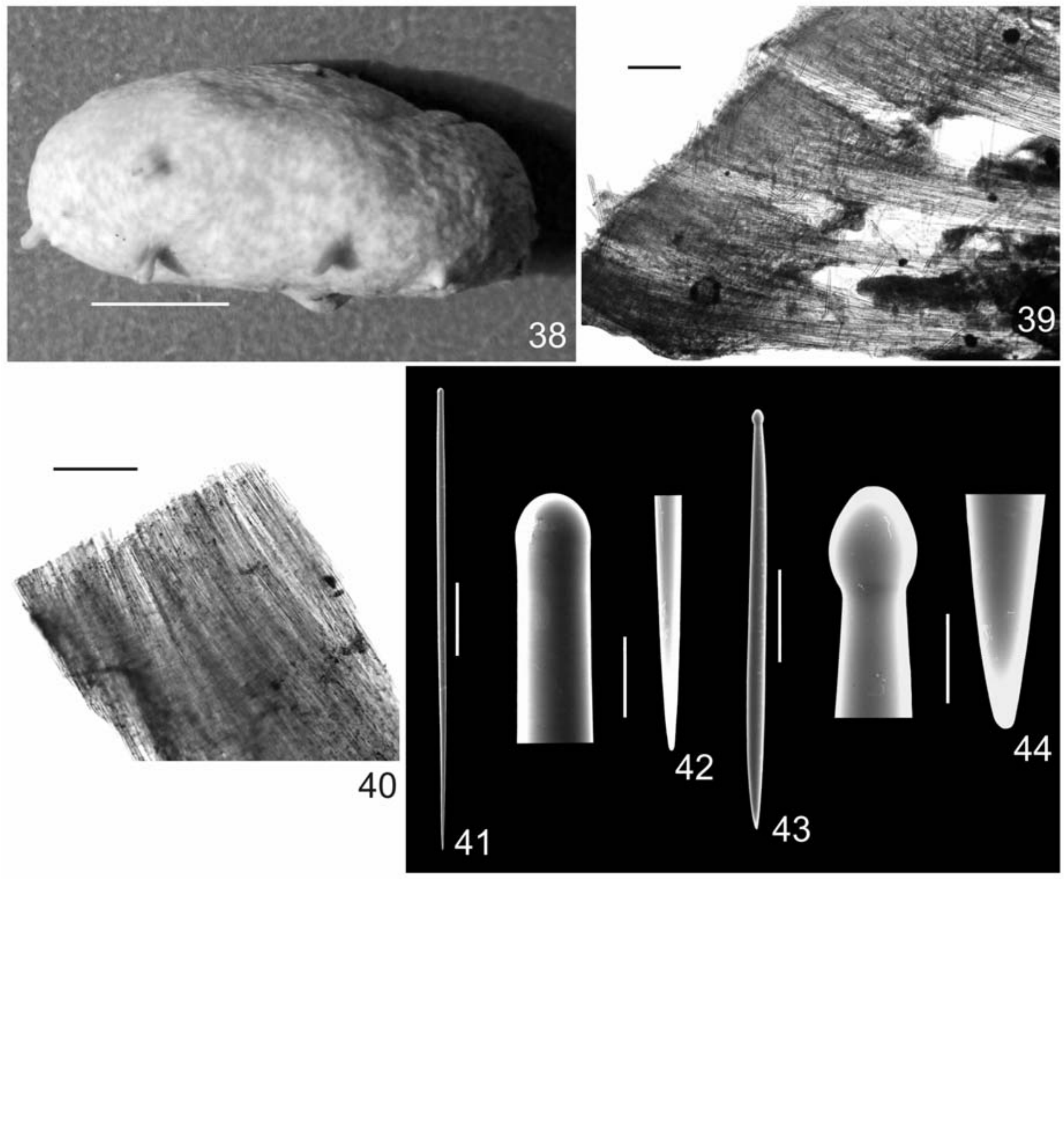
Figures 38-44. *Polymastia invaginata* Kirkpatrick, 1907. (38) preserved specimen; (39) skeleton; (40) spicules arrangement of papillae; (41) ectosomal tylostyles; (42) detail of ectosomal tylostyles extremities; (43) choanosomal tylostyles; (44) detail of choanosomal tylostyles extremities. Scale bars: (38) 1 cm; (39), (40) 500 µm; (41) 200 µm; (42) 20 µm; (43) 75 µm; (44) 10 µm.



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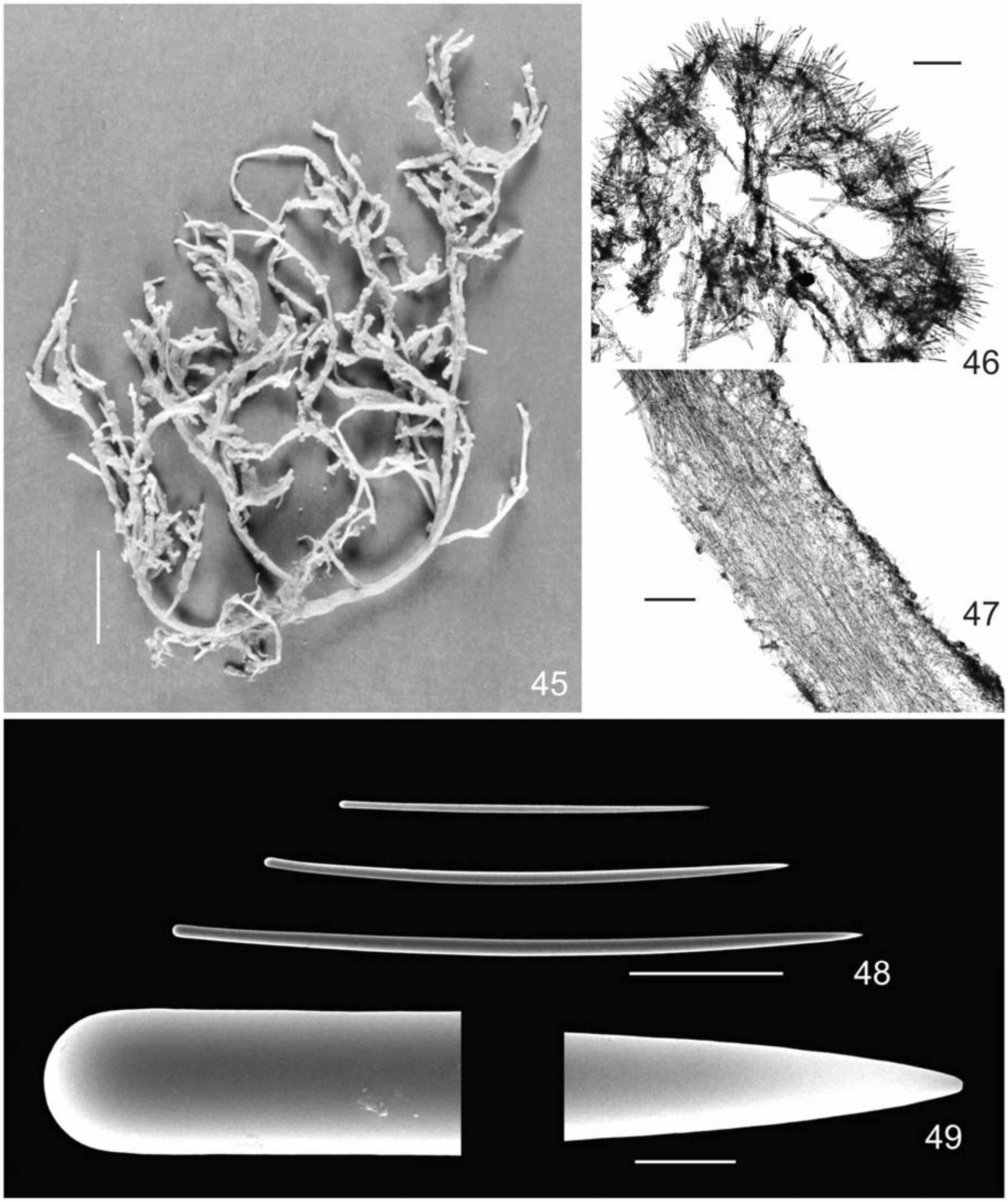
Figures 45-49. *Homaxinella balfourensis* (Ridley & Dendy, 1886). (45) preserved specimen; (46) transversal section of skeleton; (47) longitudinal section of skeleton; (48) styles; (49) detail of style extremities. Scale bars: (45) 3 cm; (46) 300 µm; (47) 500 µm; (48) 100 µm; (49) 5 µm.



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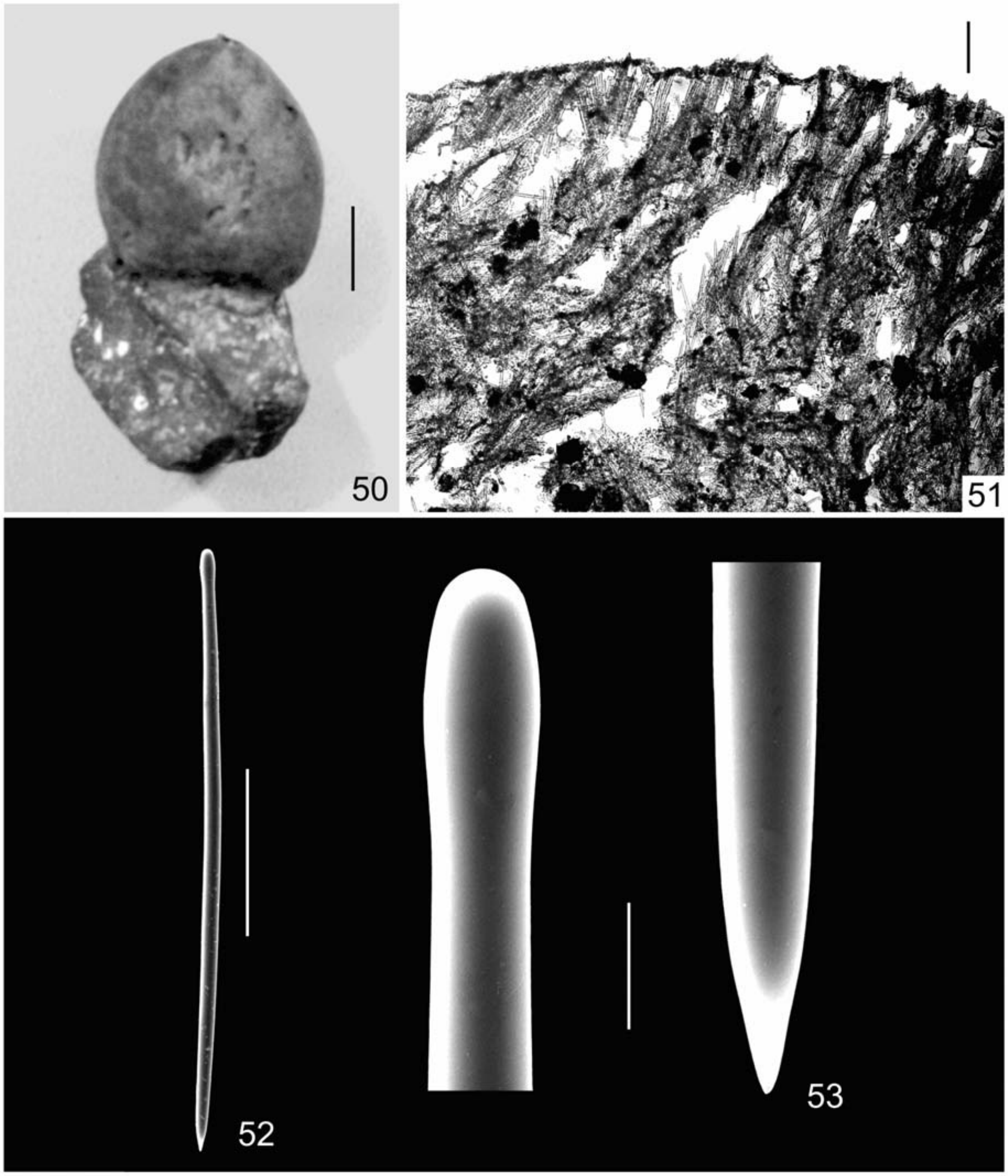
Figures 50-53. *Suberites montiniger* Carter, 1880 *sensu* Topsent, 1915. (50) preserved specimen; (51) skeleton; (52) tylostyle; (53) detail of tylostyle extremities. Scale bars: (50) 1 cm; (51) 300 µm; (52) 100 µm; (53) 10 µm.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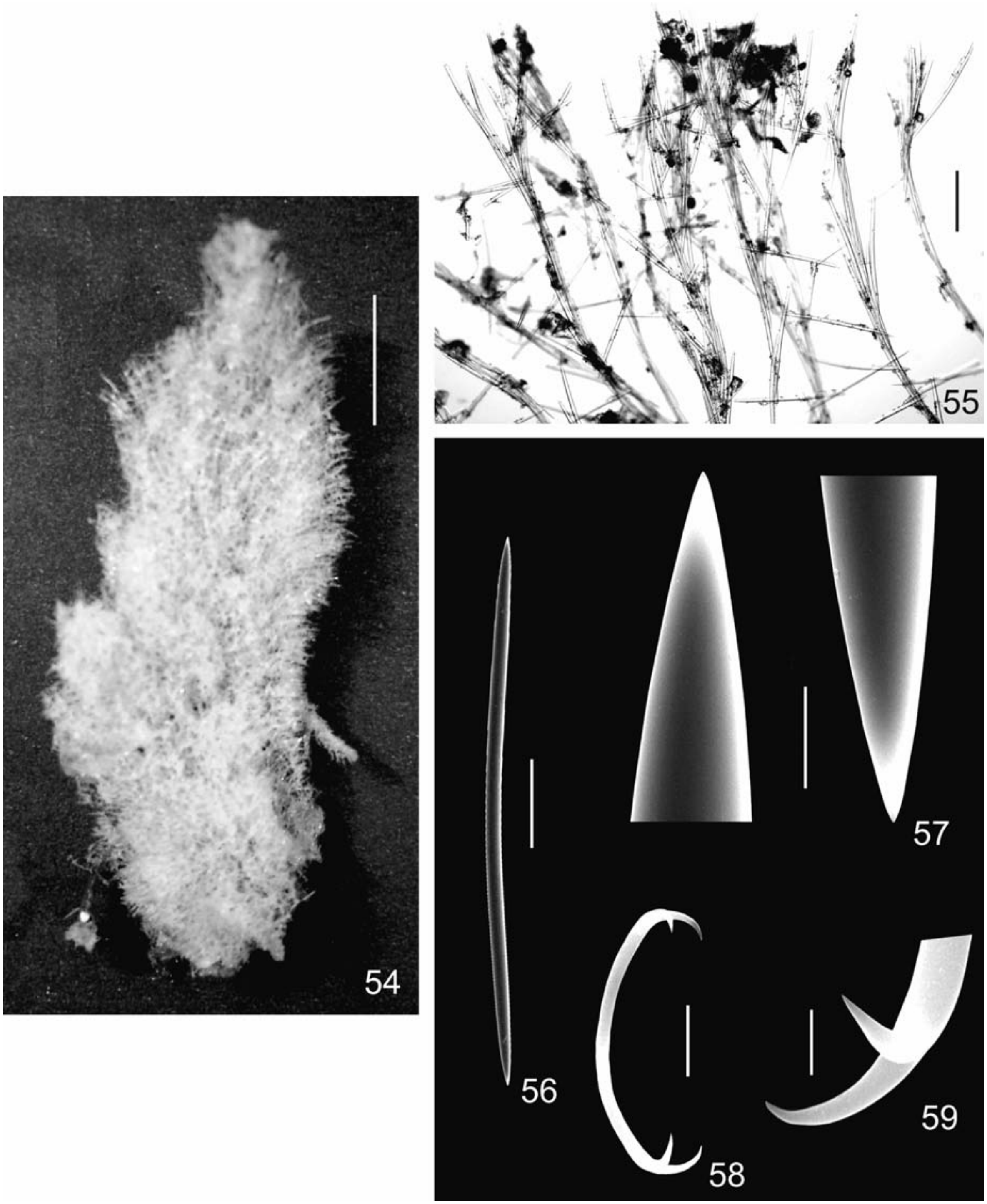
Figures 54-59. *Hemigellius bidens* (Topsent, 1901). (54) preserved specimen; (55) skeleton; (56) oxea; (57) detail of oxea extremities; (58) sigma; (59) detail of sigma extremities. Scale bars: (54) 1 cm; (55) 500 µm; (56) 100 µm; (57), (58) 10 µm; (59) 3 µm.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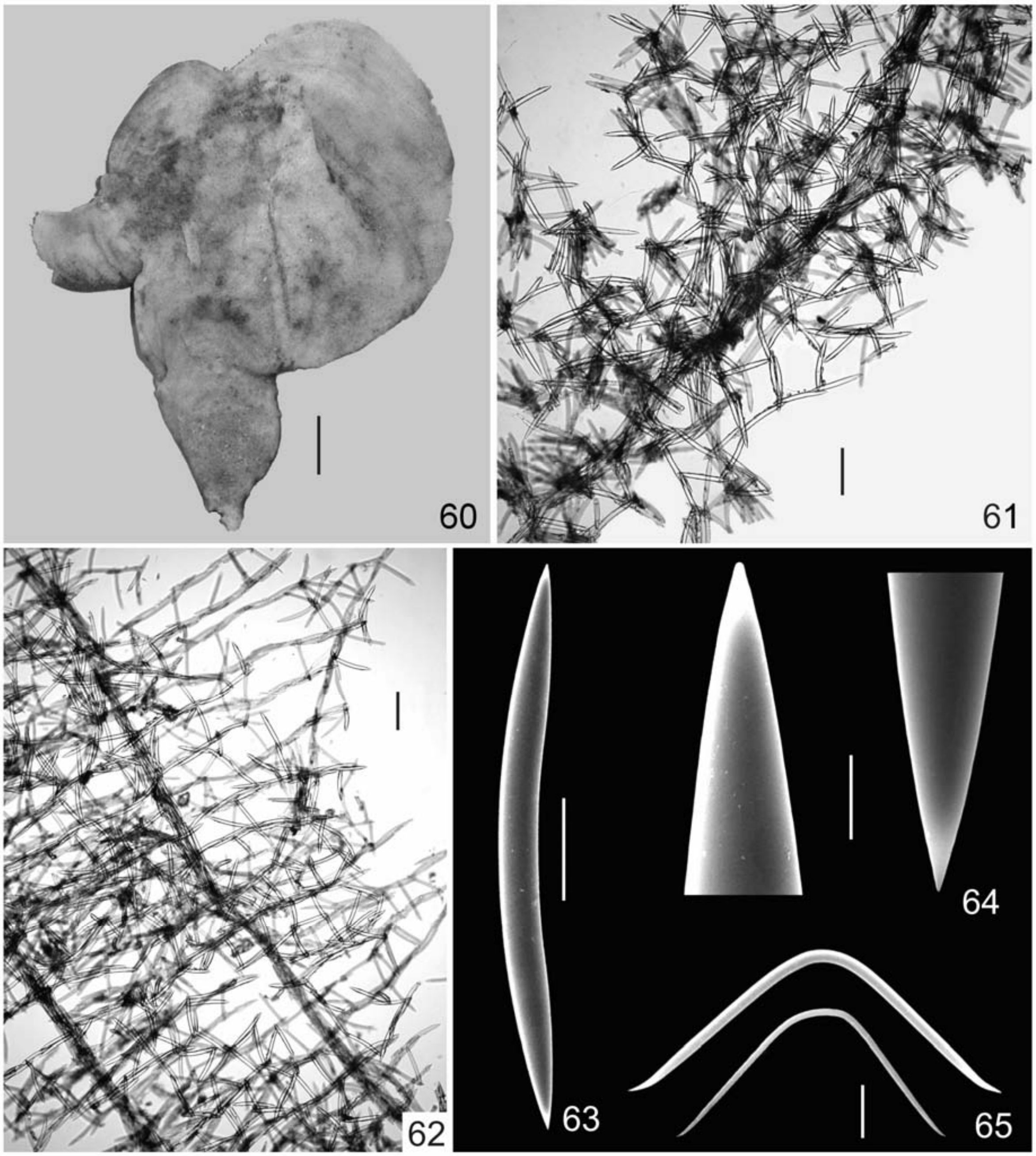
Figures 60-65. *Calyx arcuarius* (Topsent, 1913). (60) preserved specimen; (61) tangential view of ectosome; (62) longitudinal section of choanosome; (63) oxea; (64) detail of oxea extremities; (65) toxas. Scale bars: (60) 3 cm; (61), (62) 300 µm; (63) 50 µm; (64) 10 µm; (65) 20 µm.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CAPÍTULO 6

Contribution to the knowledge of Antarctic sponges (Porifera, Demospongiae). Part II. Poecilosclerida.

ARTIGO ENVIADO PARA PUBLICAÇÃO: REVISTA BRASILEIRA DE ZOOLOGIA, PROTOCOLO Nº 220/2006

Contribution to the knowledge of Antarctic sponges (Porifera, Demospongiae). Part II. Poecilosclerida.

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ABSTRACT. In the present study 16 species are registered; amongst the identified species, 05 present new occurrences for the studied region, 03 extend the register for their bathymetric limit and the others are confirmed for the current studied area.

KEY WORDS. Porifera, Demospongiae, taxonomy, Antarctica, PROANTAR.

RESUMO. **Contribuição ao conhecimento de esponjas da Antártica (Porifera, Demospongiae). Parte II. Poecilosclerida.** No presente estudo são registradas 16 espécies; dentre as espécies identificadas, 05 apresentam nova ocorrência para a região estudada, 03 ampliam o registro para o limite batimétrico e as demais são confirmadas para a presente área de estudo.

PALAVRAS CHAVE. Porifera, Demospongiae, taxonomia, Antártica, PROANTAR.

The Order Poecilosclerida is the most representative amongst the species that until then had been described and registered for antarctic and subantarctic regions. Most of the described species in more recent works in the study region belongs to the above-mentioned Order (MOTHES & LERNER 1995; CALCINAI & PANSINI 2000; RÍOS et al. 2004). In the present study the knowledge of recorded species is extended, providing detailed descriptions and complete illustrations, as well as new records for geographic and bathymetric distribution of each species.

The aims of this work is to know about the species richness, extending the descriptions with illustrations made by Scanning Electron Microscopy (SEM), which rarely were presented in previous records.

MATERIAL AND METHODS

The samples were collected through Brazilian Antarctic Program, at South Shetland Is. and Bransfield Strait (Fig. 1), by means of "beam-trawl" and "otter-trawl" dredges, scuba diving and some kind of traps which had collected sponges indirectly, between depths from 20 to 412 m. They are preserved in 96° GL alcohol and deposited in the Porifera Collection of Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, RS, Brazil.

The methodology employed for taxonomic study was made based on the spicules, through spicule mounts and thick sections from the skeleton, following techniques described respectively by MOTHES-DE-MORAES (1978) and MOTHES *et al*. (2004a). Preparations for SEM study according to SILVA & MOTHES (1996). Spicule measurements comprised minimum, *mean*, and maximum sizes, width after the bar (/), N=50.

Abbreviations used in the text are: BMNH (British Museum of Natural History, London, England), MCNPOR (Porifera Collection, Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, RS, Brazil) and ZMB (Porifera Collection, Zoologische Museum für Naturkunde an der Universität Humboldt zu Berlin, Berlin, Germany).

RESULTS

Order Poecilosclerida Topsent, 1928

Suborder Microcionina Hajdu, Van Soest & Hooper, 1994

Family Acarnidae Dendy, 1922

Genus *Acanthorhabdus* Burton, 1929

***Acanthorhabdus fragilis* Burton, 1929**

(Figs. 2–9)

Acanthorhabdus fragilis BURTON 1929: 432, pl. IV, fig. 2, text-fig. 5; 1932: 294; 1938: 11; KOLTUN 1964: 58, pl. X, fig. 35–37; BARTHEL *et al*. 1990: 122; 1997: 48.

Studied material. MCNPOR 1968, St. 4871, Bransfield Strait: 63°16' S - 59°55' W, 264 m, 08.II.1986, PROANTAR IV, “beam-trawl” coll.

Examined material for comparison. *Acanthorhabdus fragilis* Burton, 1929 (slide BMNH 1928.ii.15.379).

Description. (Fig. 2) Massive, amorphous specimen; dimensions, in cm: 8.6 x 3.4, 2.5 thickness; conulose surface, hispid to the touch; superficial membrane partially broken.

Oscules irregularly scattered over the surface, 0.3–0.5 cm diameter. Preserved material friable consistency, colour dark brown with clearer regions.

Skeleton. Ectosome formed by a dense tangential arrangement of acanthorhabds (Fig. 3), with loose anisochelas. Choanosome composed by thick tracts of anisoxeas, 10–15 spicules, 350–800 µm thickness (Fig. 4). Tracts are interconnected by the secondary ones, 07–10 spicules, 220–400 µm thickness. Acanthorhabds and anisochelas scattered along the choanosome.

Spicules. Megascleres: anisoxeas - smooth, slight curvature (Fig. 5); with acerate and conical/mucronate extremities (Fig. 6), in the latter the apical portion can be bifurcate and/or lightly curved. Measurements: 380–*463.2*–500 / 25–*37.1*–50 µm; acanthorhabds - spines slightly curved towards the center of the spicule (Fig. 7); both the extremities are composed by 03–05 spines (Fig. 8). Measurements: 280–*322.4*–380 / 12.5–*18.2*–25 µm, spines 3.8–*5.2*–7.5 µm height. Microscleres: anisochelas (Fig. 9) - palmate, with a spurred extremity. Measurements: 20–*22.8*–27.5 µm.

Remarks. *A*. *fragilis* is endemic of Antarctic continent. For the area in which the present study is concentrated, this is the first record for the species.

The genus *Acanthorhabdus* is atypical for the family Acarnidae, due to the morphology of acanthorhabds and also for the reticulation formed by such spicules; however the presence of spurred chelas, what is shared with genus *Iophon*, insert the taxon in the above-mentioned family (HOOPER 2002).

Mensurements of the spicules from studied sample is very similar to the ones provided by KOLTUN (1964), only differing on the presence of thicker anisoxeas. Comparative material possesses a little more swollen anisoxeas, but in general spicules confers with the material of the present study.

Distribution. Antarctica: Victoria Land (BURTON 1929; 1932; 1938); Wilhelm II Land (KOLTUN 1964); Weddell Sea (BARTHEL *et al*. 1990; 1997); Bransfield Strait (present study). **Bathymetry**: 72 to 560 m (KOLTUN 1964).

Genus *Iophon* Gray, 1867

***Iophon unicornis* Topsent, 1907**

(Figs. 10-17; Tab. I)

Iophon unicornis TOPSENT 1907: 72; DESQUEYROUX & MOYANO 1987: 49; DESQUEYROUX-FAÚNDEZ 1989: 120, pl. III, fig. 17a-d, pl. XII, figs. 68–70; PANSINI *et al*. 1994: 75; GUTT & KOLTUN 1995: 231; CATTANEO-VIETTI *et al*. 1999: 540.

Iophon spatulatus KIRKPATRICK 1907: 276; KOLTUN 1976: 182; DESQUEYROUX 1975: 64, pl. III, figs. 36–40; SARÀ *et al*. 1990: 254; BARTHEL *et al*. 1997: 48.

Further synonym see DESQUEYROUX (1975) and DESQUEYROUX-FAÚNDEZ (1989).

Studied material. MCNPOR 1974, St. 4860, Elephant I.: 61º08' S - 55º52' W, 112 m, 31.I.1986, PROANTAR IV, “beam-trawl” coll.; MCNPOR 3125, St. \`D\`, King George I.: 62º05' S - 58º23' W, 21 m, 08.XII.1989, PROANTAR VIII, “scuba diving” coll.; MCNPOR 1991, 1994, St. 4871, Bransfield Strait: 63º16' S - 59º55' W, 264 m, 08.II.1986, PROANTAR IV, “beam-trawl” coll.

Description. (MCNPOR 3125) (Fig. 10) Fragment, partially broken; dimensions, in cm: 2.3 length, 1.7 width, 0.8 height; slightly conulose surface, on magnifying glass it was observed the formation of small protruding spicule tracts; at apical portion there is an oscular opening (0.2 x 0.6 cm), in cylindrical form. Preserved material fragile consistency, colour dark brown, with some regions in beige.

Skeleton. (Fig. 11) Ectosome without specialization. Choanosome formed by irregular multispicular tracts; between the same ones megascleres are randomly distributed, with loose microscleres and a little amount of spongin.

Spicules. Megascleres: styles - smooth, slightly curved, some straight (Fig. 12), basal extremity mucronate, apical one acerate (Fig. 13); acanthostrongyles - slightly curved (Fig. 14), one extremity with 07–11 small spines, other with a well developed spine (Fig. 15). Microscleres: anisochelas (Fig. 16) - palmate, spurred at one of their extremity; bipocillas (Fig. 17) - generally in 'C' form, bearing curved spines in both the extremities. Measurements (Tab. I).

Remarks. TOPSENT (1907), in describing *I. unicornis*, found no bipocillas. Such spicule was observed by KIRKPATRICK (1908) for *I. spatulatus*, where their occurrence is rare. Basing on the possibility of both the species would be very similar, TOPSENT (1913) highlighted the hypothesis that they would be very seemed, what is corroborated by DESQUEYROUX-FAÚNDEZ (1989), which considered that both are co-specific, and for priority the name *I. unicornis* is preferential.

Certainly the species has an intraspecific variation; in the present study it was observed the absence of bipocillas in one sample, besides some slight variation in the extremities of the acanthostrongyles. In accordance with these informations, some revision at generic level would be of extreme importance, in order to know the real limits of this putative variation inside the species diagnosis.

Distribution. Indic Ocean: Heard I. (KOLTUN 1976). South America: Chile (DESQUEYROUX & MOYANO 1987); South Orkney Is. (TOPSENT 1913). Antarctica: Graham

Land (TOPSENT 1907; 1908; DESQUEYROUX-FAÚNDEZ 1989); Victoria Land (KIRKPATRICK 1907; 1908; SARÀ *et al*. 1990; PANSINI *et al*. 1994; CATTANEO-VIETTI *et al*. 1999); Wilhelm II Land (HENTSCHEL 1914); Knox Land; Banzare Land; Princess Elisabeth Land; McRobertson Land; Princess Astrid Land (KOLTUN 1964); Enderby Land; Adelie Land (VACELET & ARNAUD 1972; KOLTUN 1976); Weddell Sea (GUTT & KOLTUN, 1995; BARTHEL *et al*. 1997); South Shetland Is.: Deception I. (DESQUEYROUX 1975); King George I. (KOLTUN 1964; present study); Elephant I. (present study); Bransfield Strait (present study). **Bathymetry**: 0 m (DESQUEYROUX & MOYANO 1987) to 623 m (GUTT & KOLTUN, 1995).

Family Microcionidae Carter, 1875

Subfamily Microcioninae Carter, 1875

Genus *Clathria* Schmidt, 1862

Subgenus *Axosuberites* Topsent, 1893

***Clathria (Axosuberites) flabellata* (Topsent, 1916)**

(Figs. 18-25; Tab. II)

Ophlitaspongia flabellata TOPSENT 1916: 167.

Axociella flabellata; KOLTUN 1964: 70, pl. XII, figs. 12–14; BARTHEL *et al*. 1990: 123; 1997: 48; GUTT & KOLTUN 1995: 230.

Clathria (Axosuberites) flabellata; RÍOS *et al*. 2004:103, figs. 4a-j.

Further synonym see KOLTUN (1964).

Studied material. MCNPOR 3118, St. Ferraz, King George I.: 62º05' S - 58º23' W, 20 m, 03.II.1985, PROANTAR III, "trap" coll.; MCNPOR 1972, St. 4870, Bransfield Strait: 63º26' S - 59º32' W, 135 m, 14.II.1986, PROANTAR IV, "beam-trawl" coll.

Description. (MCNPOR 1972) (Fig. 18) Flabellate specimen, partially unbroken, with a longer and fine basal portion; dimensions, in cm: 11.2 height, 4.7 width, 0.4 width at basal portion; surface hispid to the touch, where on magnifying glass it can be observed some protruding spicules; only three oscular openings present (0.1 cm diameter). Preserved material slightly elastic consistency, colour greyish beige.

Skeleton. (Fig. 19) Ectosome formed by a crust of styles II in confusion, crust 560–800 µm thickness. In such region it was also observed toxas and some amount of exogenous material. Choanosome made by styles I, condensed in an axial arrangement, in some places perpendicularly positioned to the surface.

Spicules. Megascleres: styles I - smooth, curved, some sinuous (Fig. 20), apical extremity acerate (Fig. 21); styles II - straight (Fig. 22), basal portion bearing small spines (Fig. 23). Microscleres: toxas - opening angle varies slightly (Fig. 24); spined extremities (Fig. 25). Measurements (Tab. II).

Remarks. Basing on the literature, the toxas presents some differences in regard to their size classes. TOPSENT (1917) e KOLTUN (1964) recorded one only size class; by the other hand RÍOS *et al*. (2004) presented toxas in three categories; in the present study it was not possible to separate the same in such classes, even in a great size variation it does not have a clear distinction of limits for categories. The presence of toxas in a greater size variation in RÍOS *et al*. (2004) perhaps has made possible such differentiation.

Synonymy with *C. nidificata* (Kirkpatrick, 1907), proposed by KOLTUN (1976) and DESQUEYROUX (1975), also including *C. rameus* Koltun, 1964, possibly does not be confirmed with a more detailed analysis of the above-mentioned species. Spicules clearly differ in regard to dimensions of the styles and mainly of the toxas; external morphology of the three species also seems to characterize different groups: *C. flabellata* is flabellate, *C. nidificata* is arborescent with coalescent branches and *C. rameus* is composed by a single branch.

Distribution. South America: South Georgia (BURTON 1932; 1934). Antarctica: Graham Land (TOPSENT 1916; 1917); Ross Sea (BURTON 1929); Clarie Land; McRobertson Land; Victoria Land (KOLTUN 1964); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN 1995); Bransfield Strait (present study); South Shetland Is.: Livingston I. (RÍOS *et al*. 2004); King George I. (present study). **Bathymetry**: 20 m (RÍOS *et al*. 2004; present study) to 700 m (KOLTUN 1964).

***Clathria (Axosuberites) nidificata* (Kirkpatrick, 1907)**

(Figs. 26-35; Tab. III)

Ophlitaspongia nidificata KIRKPATRICK 1907: 274.

Axociella nidificata; BURTON 1940: 116; KOLTUN 1964: 70, pl. XII, figs. 7–11; 1976: 190; DESQUEYROUX 1975: 67; SARÀ *et al*. 1990: 254; BARTHEL *et al*. 1990: 123; 1997: 48; PANSINI & SARÀ 1999: 205; CATTANEO-VIETTI *et al*. 1999: 540.

Clathria (Axociella) nidificata; MOTHES & LERNER 1995: 159, figs. 22–27, 55.

Further synonym see BURTON (1940).

Studied material. MCNPOR 1969, St. 4874, Bransfield Strait: 63º25' S - 62º19' W, 135 m, 14.II.1986, PROANTAR IV, “beam-trawl” coll.; MCNPOR 1993, St. 4872, Bransfield Strait: 63º28' S - 62º31' W, 168 m, 13.II.1986, PROANTAR IV, “beam-trawl” coll.

Examined material for comparison. *Clathria (Axosuberites) nidificata* (Kirkpatrick, 1907), colleted at Joinville I., Antarctica (MCNPOR 1144 - det. B. Mothes & C. B. Lerner).

Description. (MCN 1969) (Fig. 26) Palmate specimen, constituted by three main branches, which two of them are bifurcated and anastomosed in terminal portion; dimensions, in cm: 8.4 height, 6.2 width, branches ranging from 1.2–1.5 diameter; surface hispid to the touch, with fine erect conules regularly distributed; oscules not visualized. Preserved material slightly hard, incompressible consistency, colour beige with greyish regions.

Skeleton. (Fig. 27) Ectosome without specialization, with a discrete agglomeration of toxas I and II. Choanosome an axial condensation, originating from a ‘center’ where megascleres are arranged in confusion; towards the surface it is initiated the formation of multispicular tracts, 140–230 µm thickness. Between the tracts there are free spicules and a little amount of spongin.

Spicules. Megascleres: styles I - smooth, curved (Fig. 28), slightly sharp-pointed at basal portion; apical extremity acerate (Fig. 29); styles II - straight, tornote-like (Fig. 30), with rounded spined extremities (Fig. 31). Microscleres: toxas I - some with a slight deformation, microspined extremities (Figs. 32, 33); toxas II - similar to general morphology of toxas I (Figs. 34, 35). Measurements (Tab. III).

Remarks. In the studied samples it was possible to observe two size classes of toxas, mainly by some remarkable width and the presence of well developed spines at the extremities of toxas I. Measurements of styles I are larger than the ones proposed in previous records of the species (KOLTUN 1964; DESQUEYROUX 1975; MOTHES & LERNER 1995). However is correct to affirm that, considering just one valid taxon and not three (see remarks of *C. flabellata*), some registers can not supply the characteristics that truly belong to the species argued here.

Distribution. South America: Argentina (BURTON 1940); Magellan Strait (PANSINI & SARÀ 1999); South Georgia (BURTON 1932). Antarctica: Victoria Land (KIRKPATRICK 1907; 1908; BURTON 1929; SARÀ *et al*. 1990; CATTANEO-VIETTI *et al*. 1999); Clarie Land, McRobertson Land (KOLTUN 1964); Enderby Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990; 1997); South Shetland Is.: Greenwich I. (DESQUEYROUX 1975); Elephant I. (MOTHES & LERNER 1995), King George I. (KOLTUN 1964); Bransfield Strait (present study); Joinville I. (MOTHES & LERNER 1995). **Bathymetry**: 84 m (BURTON 1940) to 540 m (BURTON 1929).

Suborder Myxillina Hajdu, Van Soest & Hooper, 1994

Family Hymedesmiidae Topsent, 1928

Genus *Kirkpatrickia* Topsent, 1912

***Kirkpatrickia variolosa* (Kirkpatrick, 1907)**

(Figs. 36-41)

Tedania variolosa KIRKPATRICK 1907: 279.

Kirkpatrickia variolosa; KOLTUN 1976: 182; BARTHEL *et al*. 1990: 122; 1997: 48.

Further synonym see KOLTUN (1976).

Studied material. MCNPOR 1947, St. 4870, Bransfield Strait: 63º26' S - 59º32' W, 135 m, 08.II.1986, PROANTAR IV, "beam-trawl" coll.; MCNPOR 3140, St. 5254, Bransfield Strait: 63º44' S - 60º25' W, 108 m, 25.I.1988, PROANTAR VI, "otter-trawl" coll.

Description. (MCNPOR 1947) (Fig. 36) Globular specimen, partially unbroken; dimensions, in cm: 7.5 height, 10.2 length, 7.7 width; conulose surface, due to some skeletal features presented by spicule tracts; oscules occurring between the conules (<0.1–0.5 cm diameter). Preserved material compressible, lightly fragile consistency, colour beige.

Skeleton. (Fig. 37) Ectosome with tornotes arranged in brushes, 12–18 spicules. Choanosome formed by multispicular ascending tracts of styles, 80–220 µm thickness; tracts are irregularly connected, both by spicules (in such case perpendicular to the surface) and by the bifurcation of the tracts.

Spicules. Megascleres: styles - slightly curved, some straight or slightly sinuous (Fig. 38); basal extremity sometimes with small lobular salience, apical extremity varying from acerate to conical (Fig. 39). Measurements: 380–*431.9*–475 / 12.7–*14.8*–18.4 µm (MCNPOR 1947), 323–*397.7*–446.5 / 11.5–*15.7*–18.4 µm (MCNPOR 3140); tornotes - smooth, straight, some slightly curved (Fig. 40), one of the halves can be a little more swelled; blunt extremities (Fig. 41). Measurements: 209–*266.6*–304 / 6.9–*7.7*–9.2 µm (MCNPOR 1947), 199.5–*249.5*–285 / 5.8–*7.2*–8.1 µm (MCNPOR 3140).

Remarks. Spicules of this species nearly do not possess some morphological variation, in comparing the measurements and other features of samples of the present study with data from some authors which provided such informations (KIRKPATRICK 1908; KOLTUN 1964).

K. variolosa has a chemical constitution which has supplied important studies in this field. MCCLINTOCK & GAUTHIER (1992) had demonstrated that an extract of *K. variolosa* inhibited the development of certain bacteria. PERRY *et al*. (1994) had isolated some compound (variolin B), which present some antitumour and antiviral properties; TRIMURTULU *et al*. (1994) had isolated other compounds (variolin A and N(3')-methy tetrahydrovariolin B), this latter presenting antifungal activity and moderate citotoxicity. JAYATILAKE *et al*. (1995) had examined this conspicuous red sponge, isolating and identifying a new stilbene derivative, which showed varied biological and pharmacological activity.

Distribution. South America: South Georgia (BURTON 1932). Antarctica: Victoria Land (KIRKPATRICK 1907; 1908); McRobertson Land (KOLTUN 1964); Adelie Land; Wilhelm II Land; Enderby Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990; 1997); Bransfield Strait (BURTON 1932; present study). **Bathymetry**: 18 m (KIRKPATRICK 1907) to 640 m (KOLTUN 1976).

Genus *Myxodoryx* Burton, 1929

***Myxodoryx hanitschi* (Kirkpatrick, 1907)**

(Figs. 42-49)

Lissomyxilla hanitschi KIRKPATRICK 1907: 336.

Myxodoryx hanitschi; KOLTUN 1964: 76; 1976: 182; DESQUEYROUX-FAÚNDEZ 1989: 115, pl. III, figs. 13a-d, pl. X, fig. 57; BARTHEL *et al*. 1990: 123; PANSINI *et al*. 1994: 76, pl. VII, figs. 2a-c; CATTANEO-VIETTI *et al*. 1999: 540.

Further synonym see KOLTUN (1964).

Studied material. MCNPOR 1956, St. 4875, Bransfield Strait: 63º17' S - 62º30' W, 157 m, 14.I.1983, PROANTAR IV, "beam-trawl" coll.

Description. (Fig. 42) Flabellate specimen; dimensions, in cm: 12.6 length, 9.5 width, 2.2 height; smooth surface; rounded oscular openings, 0.1–0.4 cm diameter, randomly distributed along the surface, some of them can be often obstructed by a fine dermal membrane. Preserved material lightly compressible consistency, colour beige.

Skeleton. (Fig. 43) Ectosome without specialization. Choanosome a dense arrangement of longitudinal multispicular tracts, irregularly connected by grouped spicules, together with abundant spongin, forming some rounded openings. Tracts running until the surface, where it causes the superficial hispidation, in the same way that free spicules. Equination of the tracts by the acanthostyles was not observed.

Spicules. Megascleres: styles - slightly curved, some straight or sinuous (Fig. 44), most of them without spination or scarcely spined, varying along the shaft, more concentrated at apical portion; apical extremity acerate (Fig. 45). Measurements: 350–*398.4*–460 / 15–*17.9*–21.3 µm; acanthostyles - straight or slightly curved (Fig. 46), microspination more concentrated towards to both the extremities; some with few spines (Fig. 47). Measurements: 128.8–*182.6*–225.4 / 4.6–*6.9*–9.2 µm; tornotes - straight, some sinuous, central portion slightly swollen (Fig. 48); lightly unequal extremities, being one acerate and the other mucronate (Fig. 49). Measurements: 260–*292*–330 / 7.5–*8.3*–10 µm.

Remarks. Until the present the species is endemic for Antarctica, with their distribution extended in that continent with the present record for the studied area.

Spicules present subtle differences in regard to previous records for the species; the three kinds of spicules have in this study inferior limits with lesser values in comparison with bibliographic data (KIRKPATRICK 1908; HENTSCHEL 1914; TOPSENT 1917; BURTON 1938; KOLTUN 1976; DESQUEYROUX-FAÚNDEZ 1989; PANSINI *et al*. 1994). On the morphology of the spicules it was observed that some styles bear spines, however the most possesses a totally smooth shaft. Some acanthostyles presents spines regularly distributed along the shaft, even if the most is of acanthostyles bearing spines mainly at their extremities; tornotes have slight unequal extremities but the mucronate pattern was also observed. DESQUEYROUX-FAÚNDEZ (1989) observed a discrete spination near to the basal extremity.

The supply in the present study of photographs of the spicules by SEM allows a better observation on the details of the same, helping in the illustration of diagnosis of the species. DESQUEYROUX-FAÚNDEZ (*op. cit.*) made use of the above-mentioned resource, however not in the same way.

Distribution. Antarctica: Victoria Land (KIRKPATRICK 1907; 1908; PANSINI *et al*. 1994); Graham Land (TOPSENT 1917; DESQUEYROUX-FAÚNDEZ 1989); Wilhelm II Land (HENTSCHEL 1914); Queen Mary Land (BURTON 1938); Princess Elisabeth Land (KOLTUN 1976); Bransfield Strait (present study). **Bathymetry**: 20 m (DESQUEYROUX-FAÚNDEZ 1989) to 622 m (BURTON 1938).

Family Iotrochotidae Dendy, 1922

Genus *Iotroata* Ridley, 1884

***Iotroata somovi* (Koltun, 1964)**

(Figs. 50-57)

Iotrochota somovi KOLTUN 1964: 52, text-fig. 12; BARTHEL *et al*, 1990: 122; GUTT & KOLTUN 1995: 231.

Iotaota somovi; KOLTUN 1976: 182.

Studied material. MCNPOR 2018, St. 4861, Elephant I.: 61º02' S - 54º55' W, 362 m, 01.II.1986, PROANTAR IV, "beam-trawl" coll.

Description. (Fig. 50) Fragment, dimensions, in cm: 1.7 length, 1.5 width, 1.0 height; slightly hispid surface, on magnifying glass can be seen some protruding spicules and conules, this latter bonded by sponging fibres; pores and/or oscules distributed by all over the surface, 0.1-0.3 cm diameter. Preserved material firm consistency, colour beige.

Skeleton. (Fig. 51) Ectosomal features were not observed. Choanosome with coarse longitudinal multispicular tracts, 7–11 spicules, 250–370 µm thickness. The same ones are interconnected by irregularly disposed spicules, only one or sometimes by compact spicules, forming openings at diverse angles. Spongin present mainly between the tracts; microscleres dispersed by the choanosome.

Spicules. Megascleres: styles - smooth, slightly curved, some straight or sinuous (Fig. 52); apical extremity conical, some rounded (Fig. 53). Measurements: 610–*662.6*–730 / 30–*36.7*–45 µm; tylotes - smooth, straight (Fig. 54), lightly swollen extremities, presenting 05–08 small spines at their ends (Fig. 55). Measurements: 240–*307*–340 / 8.8–*10.2*–12.5 µm. Microscleres: isochelas (Fig. 56) - anchorate, well developed free alae. Measurements: 65–*79.1*–95 µm; birotulas (Fig. 57) - extremities bearing spines (05–07), curved and acerate ends. Measurements: 22.5–*29.9*–40 µm.

Remarks. Until the moment the species is endemic of the Antarctic continent. *I. somovi* does not present an ample geographic distribution, being this record the first one for the area that encloses the present study; bathymetry has a great variation (details see distribution below).

Illustrations by MEV make possible for the first time to observe a better detail of the spicules, in special on the microscleres.

Citations of spicule measurements were only reported by KOLTUN (1964). The sample of the present study has greater dimensions for the styles, birotulas and isochelas, consequently extending the registers for the spicules.

Distribution. Antarctica: Banzare Land (KOLTUN 1964); Enderby Land; Sabrina Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990; GUTT & KOLTUN 1995); South Shetland Is.: Elephant I. (present study). **Bathymetry**: 208 m (GUTT & KOLTUN 1995) to 2267 m (KOLTUN 1976).

Family Tedaniidae Ridley & Dendy, 1886

Genus *Tedania* Gray, 1867

Subgenus *Tedaniopsis* Dendy, 1924

***Tedania (Tedaniopsis) charcoti* (Topsent, 1907)**

(Figs. 58-68)

Tedania charcoti TOPSENT 1907: 69; BURTON 1940: 106; LÉVI 1964: 149, text-fig. 1, pl. I, fig. 1; KOLTUN 1964: 60, pl. X, figs. 31–34; 1976: 184; DESQUEYROUX 1976: 103; SARÀ 1978: 49; 1991: 233; CUARTAS 1986: 46; 1992: 79: DESQUEYROUX & MOYANO 1987: 49; DESQUEYROUX-FAÚNDEZ 1989: 121, pl. III, figs. 18a-c, pl. XII, figs. 71; BARTHEL *et al*. 1990: 122; PANSINI *et al*. 1994: 76; GUTT & KOLTUN 1995: 230;

DESQUEYROUX-FAÚNDEZ & VAN SOEST 1996: 55, figs. 105–110; CATTANEO-VIETTI *et al*. 1999; RÍOS *et al*. 2004: 107, text-figs. 7A-J.

Tedania armata SARÀ 1978: 51, text-figs. 30–31; PANSINI & SARÀ 1999: 205.

Further synonym see KOLTUN (1964) and DESQUEYROUX-FAÚNDEZ (1989).

Studied material. MCNPOR 3134, St. 5062, Elephant I.: 61º12' S - 55º40' W, 98 m, 26.II.1987, PROANTAR V, "otter-trawl" coll.

Examined material for comparison. *Tedania (Tedaniopsis) charcoti* (Topsent, 1907), colleted at Joinville I., Antarctica (MCNPOR 1136 - det. B. Mothes & C. B. Lerner).

Description. (Fig. 58) Massive, amorphous specimen, partially unbroken; dimensions, in cm: 8.2 length, 4.9 width, 3.8 height; smooth surface, characterized by a fine membrane, which are absent in some regions, but some ridges and grooves occurs over the surface; only one oscule observed (0.15 cm diameter). Preserved material compressible consistency, colour beige.

Skeleton. Ectosome formed by a palisade of tornotes, sometimes forming discrete bouquets (Fig. 59). Choanosome bearing a confuse reticulation, with irregular tracts made by styles, connected by isolated spicules at diverse angles (Fig. 60); spongin abundant. Onychaetes dispersed along the choanosome.

Spicules. Megascleres: styles - of varied curvature and/or sinuous (Fig. 61); apical extremity acerate or slightly mucronate (Fig. 62). Measurements: 380–*457.2*–520 / 10–*12.8*–15 µm; tornotes - straight or lightly curved (Fig. 63); conical to acerate extremities, lightly swollen at terminal portion (Fig. 64). Measurements: 300–*348.4*–390 / 6.3–*7.6*–8.8 µm. Microscleras: onychaetes I - poorly developed spines (Fig. 65), sharp-pointed extremities (Fig. 66). Measurements: 200–*228.6*–310 / 1.0-*1.8*-2.5 µm; onychaetes II - well developed spines, thicker towards to basal extremity (Fig. 67); asymmetrical ends (Fig. 68). Measurements: 75–*90.1*–115 / <1.0 µm.

Remarks. Spicules measurements of the studied material are very alike to what it was previously related for the species, with the exception of DESQUEYROUX-FAÚNDEZ (1989) and SARÀ (1978), which reported smaller styles. Another important citation in regard to the spicules is concentrated on the onychaetes; DESQUEYROUX-FAÚNDEZ (*op. cit.*) and SARÀ (*op. cit.*) had cited only one category of such spicule, instead of two ones as described in the present study.

GAINO *et al*. (1994) had supplied an important ecological information, when observing a constant association of samples of the species with diatoms, supporting the notion that diatoms could be responsible for the presence of chlorophyll pigments and thus suggesting the existence of a different trophic strategy linked to the Antarctic environment. CAPON *et al*. (1993) had observed the occurrence of a high natural concentration of cadmium and zinc, with their extract being able to modulate some protein phosphorylation and to inhibit the growth of several bacteria.

Distribution. Indic Ocean: Kerguelen I. (LÉVI 1964; BOURY-ESNAULT & VAN BEVEREN 1982). South America: Chile (DESQUEYROUX 1976; DESQUEYROUX & MOYANO 1987; DESQUEYROUX-FAÚNDEZ & VAN SOEST 1996); Argentina (CUARTAS 1992); Magellan Strait (SARÀ 1991; PANSINI & SARÀ 1999); Tierra del Fuego (SARÀ 1978); Falkland Is. (CUARTAS 1986); South Georgia; Shag Rocks (BURTON 1932); Burdwood Bank (TOPSENT 1913; BURTON 1934). Antarctica: South Orkney Is. (BURTON 1940); Graham Land (TOPSENT 1907; 1908); Queen Mary Land; Adelie Land (BURTON 1938); Wilhelm II Land (KOLTUN 1964); Enderby Land; McRobertson Land (KOLTUN 1976); Victoria Land (PANSINI *et al*. 1994; CATTANEO-VIETTI *et al*. 1999); Weddell Sea (BARTHEL *et al*. 1990; GUTT & KOLTUN 1995); South Shetland Is.: Greenwich I. (DESQUEYROUX 1975); Livingston I. (RÍOS *et al*. 2004); Elephant I. (DESQUEYROUX-FAÚNDEZ 1989; present study). **Bathymetry**: 0 m (DESQUEYROUX-FAÚNDEZ 1989) to 728 m (BURTON 1932).

***Tedania (Tedaniopsis) vanhoffeni* (Hentschel, 1914)**

(Figs. 69-78; Tab. IV)

Tedania vanhoffeni HENTSCHEL 1914: 90, pl. VI, fig. 13; KOLTUN 1964: 60; BOURY-ESNAULT & VAN BEVEREN 1982: 96, pl. XVI, fig. 62, text-figs. 27a-f; BARTHEL *et al*. 1990: 122; 1997: 48.

Studied material. MCNPOR 3108, St. 4871, Bransfield Strait: 63°16' S - 59°55' W, 264 m, 08.II.1986, PROANTAR IV, "beam-trawl" coll.

Examined material for comparison. *Tedania (Tedaniopsis) vanhoffeni* Hentschel 1914, collected at Gauss Station, Wilhelm II Land, Antarctica (slide ZMB 4844 (holotype)). Additional material: *T. vanhoffeni*, collected off Rio Grande do Sul State coast, Brazil (slide MCNPOR 3694).

Description. (Fig. 69) Fragment; dimensions, in cm: 0.9 length, 0.7 width, 0.3 height; hispid surface, with protruding spicules; oscules and/or pores not observed. Preserved material (?) stiff consistency, colour beige.

Skeleton. (Fig. 70) Ectosome absent (broken). Choanosome constituted by multispicular tracts, reinforced by certain amount of spongin and also a great number of free spicules. Other detailings of the skeletal architecture was not possible of being analyzed, due to fragment degree of the sample.

Spicules. Megascleres: styles - straight, slightly curved or sinuous (Fig. 71); apical extremity blunt, some conical or stepped (Fig. 72); tornotes - straight (Fig. 73), unequal extremities (acerate and mucronate) (Fig. 74). Microscleres: onychaetes I - asymmetrical extremities; one of them acerate and microspined, other a little more swelled with a well developed terminal spine (Figs. 75, 76); onychaetes II (Figs. 77-78) - similar in morphology to onychaetes I, one extremity blunt with terminal spines and the other acerate with a larger spine. Measurements (Tab. IV).

Remarks. This is a species with few records; present study provides a new occurrence of *T. vanhoffeni*. Illustration of spicules is improved by using SEM analysis, mainly providing a detailed visualization of the general morphology of onychaetes.

Comparison with holotype confirmed the identification of the sample (remeasured: Tab. IV). Subtle differences had been noticed in the holotype: thinner styles and onychaetes I besides tornotes of swollen extremities with a slight microspination; by the other hand it was observed that both the material shares some characteristics, as the sinuosity present in some styles and mainly for the detailing on the extremities of the two categories of onychaetes.

BARTHEL (1995) affirmed that this species presents soft-bodied individuals of large dimensions, which exude copious quantities of slime when disturbed. In addition, BARTHEL & GUTT (1992) pointed out *T. vanhoffeni* as a very soft species, which is easily damaged in the trawls.

Distribution. Indic Ocean: Kerguelen I. (BOURY-ESNAULT & VAN BEVEREN 1982). South America: off Rio Grande do Sul State coast, Brazil (MOTHES *et al*. 2004b). Antarctica: Wilhelm II Land (HENTSCHEL 1914; KOLTUN 1964); Weddell Sea (BARTHEL *et* *al*. 1990; 1997); Bransfield Strait (present study). **Bathymetry**: 46 m (HENTSCHEL 1914) to 499 m (KOLTUN 1964).

Tedania (Tedaniopsis) oxeata **(Topsent, 1916)**

(Figs. 79-88; Tab. V)

Tedania oxeata TOPSENT 1916: 169; BURTON 1938: 15; VACELET & ARNAUD 1972: 18; DESQUEYROUX 1975: 65; BARTHEL *et al*. 1990: 122; 1997: 48; GUTT & KOLTUN 1995: 230; MOTHES & LERNER 1995: 161, figs. 33–41, 57.

Further synonym see DESQUEYROUX (1975).

Studied material. MCNPOR 1566, St. 4381, Bransfield Strait: 62º48' S - 54º20' W, 280 m, 18.I.1983, PROANTAR I, "beam-trawl" coll.; MCNPOR 2008, St. 4873, Bransfield Strait: 63º25' S - 62º05' W, 66 m, 13.II.1986, PROANTAR IV, "beam-trawl" coll.

Examined material for comparison. *Tedania (Tedaniopsis) oxeata* (Topsent, 1916), colleted at Joinville I., Antarctica (MCNPOR 1134 - det. B. Mothes & C. B. Lerner).

Description. MCNPOR 1566 (Fig. 79) Fragment, infested with briozoan and small coralline plates; dimensions, in cm: 1.7 length, 1.2 width, 0.7 height; due to their conservation state, it was not possible to characterize surface, consistency and presence of oscules. Preserved material fragile consistency, colour beige.

Skeleton. (Fig. 80) Ectosome absent, due to the fragment state of the sample. Choanosome with a dense and confuse reticulation, where it was observed some multispicular tracts; spongin present. In the remain of the skeleton the spicules are dispersed, sometimes grouped in little amount.

Spicules. Megascleres: oxeas - straight or slightly curved (Fig. 81), some sinuous or twisted, rares style-like; extremities varying from conical to acerate, or lightly mucronate (Fig. 82); tornotes - straight or slightly curved (Fig. 83); extremities vary between conical, hastate, acerate or mucronate forms (Fig. 84). Microscleres: onychaetes I - with reduced but well distributed spines along the shaft (Fig. 85); acerate extremities, one of them bearing larger spines (Fig. 86); onychaetes II - well developed spines (Fig. 87); extremities differ significantly, one acerate and other blunt with terminal spines (Fig. 88). Measurements (Tab. V).

Remarks. *T*. *oxeata* is very conspicuous in subgenus *Tedaniopsis*, because it is until the present the only species of the above-mentioned group that presents oxeas, and not styles, in its spicules. In regard to this one, measurements provided by TOPSENT (1917) and KOLTUN (1964) presented larger and thicker styles and tornotes. The material here studied has spicules with similar dimensions to those cited by MOTHES & LERNER (1995).

Our samples are very fragmented, being impossible to compare it in respect to external features. BARTHEL (1995) adds that *T*. *oxeata* have a hard, almost brittle consistency, in accordance with TOPSENT (1917), which described a sample of firm but fragile consistency.

In the present study is provided a new limit for bathymetric distribution.

Distribution. Antarctica: Graham Land (TOPSENT 1916; 1917); Victoria Land (BURTON 1929); Queen Mary Land; Knox Land; Clarie Land; McRobertson Land; Banzare Land (KOLTUN 1964); Adelie Land (VACELET & ARNAUD 1972); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN 1995); Joinville I. (MOTHES & LERNER 1995); Bransfield Strait (present study); South Shetland Is.: Greenwich I. (DESQUEYROUX 1975); Clarence I. (BURTON 1932). **Bathymetry**: 66 m (present study) to 920 m (KOLTUN 1964).

Suborder Mycalina Hajdu, Van Soest & Hooper, 1994

Family Isodictyidae Dendy, 1924

Genus *Isodictya* Bowerbank, 1864

***Isodictya kerguelenensis* (Ridley & Dendy, 1886)**

(Figs. 89-93)

Homoeodictya kerguelenensis RIDLEY & DENDY 1886: 346.

Isodictya kerguelenensis; LÉVI 1956: 27, text-fig. 2–3; KOLTUN 1976: 175; VACELET & ARNAUD 1972: 16; DESQUEYROUX-FAÚNDEZ 1989: 113, pl. III, figs. 11a-b, pl. IX, fig. 52; BARTHEL *et al*. 1990: 122; CUARTAS 1992: 75, text-figs. 5, 6, 62; RÍOS *et al*. 2004: 114, figs. 14a-d.

Isodictya antarctica; KOLTUN 1964: 42, pl. VIII, figs. 17–18; 1976: 175; DESQUEYROUX 1972: 51; VACELET & ARNAUD 1972: 16, figs. 3–4; BARTHEL *et al*. 1990: 122.

Further synonym see KOLTUN (1964) and DESQUEYROUX-FAÚNDEZ (1989).

Studied material. MCNPOR 1952, St. 4862, Elephant I.: 61º08' S - 54º34' W, 240 m, 01.II.1986, PROANTAR IV, “beam-trawl” coll.; MCNPOR 3122, St. 4874, Bransfield Strait: 63º25' S - 62º19' W, 135 m, 14.II.1986, PROANTAR IV, “beam-trawl” coll.

Examined material for comparison. *Isodictya kerguelenensis* (Ridley & Dendy, 1886) (slide BMNH 1887.5.2.166a). Additional material: *Isodictya antarctica* (Kirkpatrick, 1908) (slide BMNH 1928.ii.15.348a).

Description. (MCNPOR 1952) (Fig. 89) Massive, amorphous specimen; dimensions, in cm: 11.8 length, 8.2 width, 1.8 height; conulose surface; oscules randomly scattered, at one side of the surface, in general at the apex of the conules, 0.1–0.4 cm diameter. Preserved material fragile but incompressible consistency, colour beige.

Skeleton. (Fig. 90) Ectosome without specialization. Choanosome formed by a dense and confuse reticulation, where it observes multispicular tracts of oxeas and a great amount of spongin (05–08 spicules, 100–150 µm thickness), transversed by free spicules (including microscleres). Such tracts tend to be finer towards the surface.

Spicules. Megascleres: oxeas - straight to slightly curved (Fig. 91); acerate extremities (Fig. 92). Measurements: 400–*479.4*–560 / 22.5–*27.4*–32.5 µm (MCNPOR 1952); 550–*658.2*–770 / 15–*21.6*–30 µm (MCNPOR 3122). Megascleres: isochelas (Fig. 93) - palmate, lateral alae well developed. Measurements: 20–*23.8*–25 µm (MCNPOR 1952); 16.3–*19.9*–22.5 µm (MCNPOR 3122).

Remarks. BOURY-ESNAULT & VAN BEVEREN (1982) and RÍOS *et al*. (2004) consider *I. antarctica* as a junior synonym of *I. kerguelenensis*, what had been previously observed by KOLTUN (1976). In the synonymy of *I. antarctica* are inserted two variations of *I. kerguelenensis* (*simillima* e *cactoides*), both proposed by HENTSCHEL (1914).

DESQUEYROUX-FAÚNDEZ (1989) affirmed that *I. kerguelenensis* is a polymorphic species, in regard to their external morphology and spicules. A great morphological difference can be observed in the form of the isochelas, mainly in the alae contour; RÍOS *et al*. (2004) had observed some different growth stages in such spicule. In the samples of the present study certain variation in the dimensions of the oxeas was noticed, while the isochelas are identical. Comparative material corroborates with such information, being possible to observe the variations related to the species.

Distribution. Indic Ocean: Kerguelen I. (RIDLEY & DENDY 1886; 1887; LÉVI 1956; KOLTUN 1964; BOURY-ESNAULT & VAN BEVEREN 1982); Heard I. (KOLTUN 1976; BOURY-

ESNAULT & VAN BEVEREN 1982). South America: Argentina (CUARTAS 1992); Falkland Is.; South Georgia (BURTON 1932). Antarctica: Graham Land (TOPSENT 1908; 1917); Victoria Land (KIRKPATRICK 1908; BURTON 1929; 1938); Queen Mary Land (BURTON 1938); Wilhelm II Land (HENTSCHEL 1914); Adelie Land (BURTON 1938; VACELET & ARNAUD 1972); Queen Mary Land; Knox Land; Princess Elisabeth Land (KOLTUN 1964); Enderby Land; McRobertson Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990); South Shetland Is.: Deception I. (DESQUEYROUX 1975); Livingston I. (RÍOS *et al*. 2004); Greenwich I. (DESQUEYROUX 1972); Elephant I. (DESQUEYROUX-FAÚNDEZ 1989; present study); Bransfield Strait (DESQUEYROUX-FAÚNDEZ 1989; present study). **Bathymetry**: 2 m (TOPSENT 1908) to 1266 m (KOLTUN 1976).

***Isodictya lankesteri* (Kirkpatrick, 1907)**

(Figs. 94-98; Tab. VI)

Cercidochela lankesteri KIRKPATRICK 1907: 284; BURTON 1932: 287; 1934: 21; DESQUEYROUX 1975: 61, pl. II, figs. 21–22; BARTHEL *et al*. 1990: 122; 1997: 48; GUTT & KOLTUN 1995: 231.

Further synonym see DESQUEYROUX (1975).

Studied material. MCNPOR 3161, St. Ferraz, King George I.: 62º05' S - 58º23' W, 20 m, 03.II.1985, PROANTAR III, “scuba diving” coll.; MCNPOR 3133, 3137, 3142, St. 4743, Bransfield Strait: 62º30' S - 54º16' W, 412 m, 28.I.1985, PROANTAR III, “beam-trawl” coll.

Examined material for comparison. *Isodictya lankesteri* (Kirkpatrick, 1907), (slide BMNH 1926.10.26.151a).

Description. (MCNPOR 3142) (Fig. 94) Massive, amorphous specimen; dimensions, in cm: 12.5 length, 5.0 width, 2.0 height; smooth surface, hispid to the touch; oscules in both the surfaces (larger 0.7 cm diameter), slightly elliptical. On magnifying glass it was observed at the surface the ends of spicule tracts, between the same ones occurs several rounded pores, 0.1-0.2 cm diameter, randomly distributed along the surface. Preserved material extremely friable consistency, colour white with marooned regions.

Skeleton. (Fig. 95) Ectosome without specialization. Choanosome with longitudinal multispicular tracts of oxeas, 170–300 μm thickness, which running towards the surface and are responsible for the superficial hispidation. Between the tracts also occurs free oxeas and little spongin. Microscleres abundant along the choanosome.

Spicules. Megascleres: oxeas - slightly curved, some straight (Fig. 96), acerate extremities (Fig. 97). Microscleres: canonochelas (Fig. 98) - some with swollen central salience, alae can be lightly twisted, overlapped or even fused. Measurements (Tab. VI).

Remarks. The presence of a very conspicuous spicule (canonochela) allows to *I. lankesteri* to be well differentiated among the species of *Isodictya* from studied area.

In the present study the referring description to the openings of the surface is also extended, because BURTON (1929; 1934) only cited the presence of openings in one of the sides of the sponge. Details from spicules and skeletal architecture are identical to the material examined for comparison. Bathymetric limit of the species is here extended.

Distribution. South America: Shag Rocks (BURTON 1934). Antarctica: Victoria Land (KIRKPATRICK 1907; 1908; BURTON 1929); Palmer Archipelago (BURTON 1932); Wilhelm II Land (HENTSCHEL 1914); Knox Land (KOLTUN 1964); Enderby Land;

McRobertson Land (KOLTUN 1976); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN 1995); Graham Land (DESQUEYROUX 1972); South Shetland Is.: Greenwich I. (DESQUEYROUX 1975); King George I. (present study); Bransfield Strait (present study). **Bathymetry**: 20 m (present study) to 840 m (KOLTUN 1964).

***Isodictya toxophila* Burton, 1932**

(Figs. 99-104)

Isodictya toxophila BURTON 1932: 286, pl. LII, figs. 2–3, pl. LIII, figs. 1–2, text-fig. 18; KOLTUN 1964: 43, pl. VIII, figs. 19–22; BARTHEL *et al*. 1990: 122; 1997: 48; GUTT & KOLTUN 1995: 231.

Studied material. MCNPOR 2016, St. 4874, Bransfield Strait: 63º25' S - 62º19' W, 135 m, 14.II.1986, PROANTAR IV, "beam-trawl" coll.

Examined material for comparison. *Isodictya toxophila* Burton, 1932, collected at South Georgia (slide BMNH 1936.1.13.23a).

Description. (Fig. 99) Conical erect specimen, fixed to a rock fragment; dimensions, in cm: 4.2 height, 1.9 width, 1.3 thickness; surface hispid to the touch, on magnifying glass it was observed the formation of conules with spicules protraction; abundant oscules, <0.1–0.4 cm diameter. Preserved material firm consistency, colour greyish beige.

Skeleton. (Fig. 100) Ectosome apparently without a distinct spicule arrangement, with abundant spongin and exogenous material. Choanosome composed by coarse multispicular tracts, 180–400 µm thickness. Between the tracts spicules are irregularly distributed, in varied angles and positions without an evident orientation.

Spicules. Megascleres: oxeas - slightly curved, rarely straight (Fig. 101), extremities varying from acerate to conical (Fig. 102). Measurements: 530–*599.2*–660 / 18.8–*27.9*–35 µm. Microscleres: isochelas (Fig. 103) - palmate, alae with remarkably curved contour, overlapping the axis. Measurements: 60–*67.1*–75 µm; toxas (Fig. 104) - reduced angle of opening, some almost straight. Measurements: 170–*207.3*–237.5 µm.

Remarks. Until the present *I. toxophila* has a restricted geographic distribution, at South Georgia, South Shetland Is. and in some places at Weddell Sea, reaching an area with geographic continuity.

In the original diagnosis of the species, BURTON (1932) supplied only the spicules dimensions, illustrating the same ones in a simple form; in this way the present record provides better information in regard to the spicules and consequently to diagnosis of the species, from the accomplishment of photographs by MEV.

The description of the studied sample is similar with the one cited by BURTON (1932), as well as the skeletal architecture. Spicules are also very alike in comparing with descriptions and measurements proposed by BURTON (1932) and KOLTUN (1964). Occurrence of toxas did not reveal constant; BURTON (1932) registered that the presence of the same ones can vary, even though to be rare or absent. The specimen from present study is identical to compared material.

Distribution. South America: South Georgia (BURTON 1932). Antarctica: Palmer Archipelago (BURTON 1932); Weddell Sea (BARTHEL *et al*. 1990; 1997; GUTT & KOLTUN 1995); South Shetland Is.: King George I. (KOLTUN 1964); Bransfield Strait (BURTON

1932; present study). **Bathymetry**: 93 m (BURTON 1932) to 661 m (GUTT & KOLTUN 1995).

Isodictya bentarti **Ríos, Cristobo & Urgorri, 2004**

(Figs. 105-109; Tab. VII)

Isodictya bentarti RÍOS et al 2004: 111.

Studied material. MCNPOR 1942, 1945, 1953, St. 4873, Bransfield Strait: 63º25' S - 62º05' W, 66 m, 13.II.1986, PROANTAR IV, "beam-trawl" coll.

Description. (MCNPOR 1945) (Fig. 105) Flabellate specimen, partially unbroken; dimensions, in cm: 15 length, 10 width, 1.8 thickness; surface hispid to the touch; oscules aligned on the edges (0.1–0.6 cm diameter, equidistant 0.3–0.6 cm), elliptical contour. Dermis is broken in some areas; in one of the sides small elevations can be observed. Preserved material very compressible consistency, colour beige, darker internally.

Skeleton. (Fig. 106) Ectosome formed by terminal portion of the tracts, organized in discrete brushes which causes the superficial hispidation. Choanosome formed by a dense reticulation, composed by longitudinal multispicular tracts. Between the tracts oxeas and isochelas are present, together with certain amount of spongin, in an arrangement without a clear orientation.

Spicules. Megascleres: oxeas - slightly curved, some straight (Fig. 107), acerate extremities (Fig. 108). Microscleres: isochelas (Fig. 109) - palmate, lateral alae well developed; at terminal portion of each alae there is a rounded protuberance. Measurements (Tab. VII).

Remarks. The species is endemic for South Shetland Is.; originally described for Livingston I., and by now has its confirmation for Bransfield Strait, in a place near to Low I., which belongs to South Shetland Is. In the present the bathymetric distribution of the species is extended.

Both the characteristics of the external morphology as the details of the spicules registered in the original description (RÍOS *et al*. 2004) are here corroborated.

According to RÍOS *et al*. (2004), another sympatric species of *Isodictya* which presents similar characteristics to *I. bentarti* would be *I. grandis* (Ridley & Dendy, 1886), however this latter bears a different oscular pattern, besides differing in regard to the morphology of oxeas and isochelas.

Distribution. Antarctica: South Shetland Is.: Livingston I. (RÍOS *et al*. 2004); Bransfield Strait (present study). **Bathymetry**: 24 m (RÍOS *et al*. 2004) to 66 m (present study).

Suborder Latrunculina Kelly & Samaai, 2002

Family Latrunculiidae Topsent, 1922

Genus *Latrunculia* Du Bocage, 1869

Subgenus *Latrunculia* Du Bocage, 1869

***Latrunculia (Latrunculia) brevis* Ridley & Dendy, 1886**

(Figs. 110-115)

Latrunculia brevis RIDLEY & DENDY 1886: 492; TOPSENT 1915: 40, text-fig. 5

Further synonym see SAMAAI *et al*. (2006).

Studied material. MCNPOR 1985, St. 4861, Elephant I.: 61º02' S - 54º55' W, 362 m, 01.II.1986, PROANTAR IV, "beam-trawl" coll.

Examined material for comparison. *Latrunculia (Latrunculia) brevis* Ridley & Dendy, 1886, collected off Rio de la Plata, Argentina (slide BMNH 1887.5.2.269 (holotype)).

Description. (Fig. 110) Massive, amorphous specimen, partially unbroken, dimensions, in cm: 6.9 x 3.5, 1.3 thickness; surface densely areolated, with its circular areas measuring 0.2–0.8 cm diameter; in some areas the surface smooth, with a slight spicule protraction. Some oscular openings are visible (0.1–0.2 cm in diameter), inside the circular areas. Preserved material extremely fragile consistency, colour dark brown.

Skeleton. (Fig. 111) Ectosome formed by a palisade of microscleres, with certain amount of spongin between them. Subectosomal region composed by a compact layer of megascleres in confusion. Choanosome bearing a dense arrangement of megascleres, disposed in irregular multispicular tracts, forming irregular meshes. Free spicules was also observed.

Spicules. Megascleres: anisostyles - smooth, straight to sinuous (Fig. 112); apical extremity varying from conical to acerate (Fig. 113). Measurements: 427.5–*475*–503.5 / 6.9–*10.3*–11.5 µm. Microscleres: anisodiscorhabds (Fig. 114) - between manubrium and median whorl the shaft is slightly swollen. Such spicules in growth stage also occurs (Fig. 115). Measurements: total length: 50.6–*60*–64.4 µm; manubrium: 13.8–*18.7*–23 µm diameter; shaft: 16.1–*18*–20.7 / 4.6–*5.7*–6.9 µm diameter; median whorl: 27.6–*32.7*–36.8 µm diameter; subsidiary whorl: 24.2–*29*–32.2 µm diameter; apical whorl: 16.1–*21.2*–23 µm diameter.

Remarks. SAMAAI *et al*. (2006) carried out a complete revision of the genus *Latrunculia*, designating what are the correct identifications for *L. brevis* and its respective synonymy, informing the geographic and bathymetric distribution for the species.

The description of some features, such as external morphology, details of the skeleton and microscleres, presented for the above-mentioned author, confer with the material here studied, which is quite similar to the holotype.

Distribution. South America: Uruguay (BURTON 1940); Argentina (RIDLEY & DENDY 1886; 1887); Falkland Is. (BURTON 1932); Burdwood Bank (TOPSENT 1915). Antarctica: SAMAAI *et al*. (2006) (unknown locality); South Shetland Is.: Elephant I. (present study). **Bathymetry**: 46 m to 1500 m (SAMAAI *et al*. 2006).

Latrunculia (Latrunculia) biformis **(Kirkpatrick, 1908)**

(Figs. 116-121)

Latrunculia apicalis var. *biformis* KIRKPATRICK 1908: 14, pl. XV, figs. 1–7

Latrunculia biformis; PANSINI *et al*. 1994: 69; CATTANEO-VIETTI *et al*. 1999: 540; RÍOS *et al*. 2004: 117, text-fig. 15A-J.

Further synonym see SAMAAI *et al*. (2006).

Studied material. MCNPOR 3128, St. 'D', King George I.: 62º05' S - 58º23' W, 25 m, 05.I.1990, PROANTAR VIII, "scuba diving" coll.

Examined material for comparison. *Latrunculia (Latrunculia) biformis* (Kirkpatrick, 1908) (slide BMNH 1910.26.154a).

Description. (Fig. 116) Small fragment dimensions, in cm: 0.9 x 0.6, 0.4 thickness; smooth surface, oscules not observed. Preserved material compressible but fragile consistency, colour light brown at the surface, being darker internally.

Skeleton. (Fig. 117) Characteristics of ectosome, choanosome and subectosomal region identical to ones described for another *Latrunculia* species present in this work (*L. brevis).*

Spicules. Megascleres: anisostyles - smooth, straight to sinuous (Fig. 118); apical extremity conical/acerate (Fig. 119). Measurements: 484.5–*541.9*–579.5 / 10.4–*12.3*–13.8 µm. Microscleres: anisodiscorhabds (Fig. 120) - presenting the same characteristics observed in *L. brevis*. Measurements: total length: 62.1–*67.1*–78.2 µm; manubrium: 16.1–*18.8*–23 µm diameter; shaft: 15–*17.8*–21.9 / 6.9–*7.3*–8.1 µm diameter; median whorl: 35.7–*40.9*–46 µm diameter; subsidiary whorl: 29.9–*33.9*–39.1 µm diameter; apical whorl: 16.1–*19.4*–23 µm diameter. Aciculodiscorhabds (Fig. 121) - in general very similar to anisodiscorhabds, only differs in having a well developed spined apical projection. Measurement: total length: 105.8–*120*–133.4 µm; manubrium: 17.3–*21*–25.3 µm diameter; shaft: 20.7–*23.4*–26.5 / 6.9–*7.4*–9.2 µm diameter; median whorl: 36.8–*41.6*–46 µm diameter; subsidiary whorl: 29.9–*35.8*–39.1 µm diameter; apical whorl: 18.4–*22.4*–25.3 µm diameter; spined apical projection: 39.1–*51.2*–64.4 / 5.8–*6.8*–8.1 µm (width at the base).

Remarks. SAMAAI *et al*. (2006) had carried through a complete revision of the genus, becoming unnecessary to make some comments about the synonymy of the species and the corresponding identifications to the same one.

In regard to the external morphology cited by SAMAAI *et al*. (2006), it was not possible to compare because the studied sample is not entire. Other morphological features of the species, like the skeletal patterns and spicules, confer with the sample here studied.

Nevertheless it is important to stand out that for this species is considered an ample variation in the dimensions and structure of the discorhabds. Analysis of the comparative material confirms such affirmation, where it can be observed aciculodiscorhabds with a reduced apical projection.

Currently is valid for the Antarctic Faunistic Complex the following species: *L. bocagei*, *L. apicalis*, *L. biformis*, *L. basilis* and *L. brevis* (SAMAAI *et al*. 2006). Probably the morphology of the discorhabds is the character that better distinguishes such species.

Distribution. Indic Ocean: Kerguelen I. (BOURY-ESNAULT & VAN BEVEREN 1982). Africa: South Africa (SAMAAI *et al*. 2003). South America: Argentina (RIDLEY & DENDY 1886; 1887). Antarctica: Victoria Land (KIRKPATRICK 1908; BURTON 1929; PANSINI *et al*. 1994; CATTANEO-VIETTI *et al*. 1999); Princess Astrid Land; Queen Mary Land (KOLTUN 1964); South Shetland Is.: Livingston I. (RÍOS *et al*. 2004); King George I. (present study). **Bathymetry**: 18 m (SAMAAI *et al*. 2003) to 1097 m (RIDLEY & DENDY 1886).

ACKNOWLEDGEMENTS

We thanks a lot to Prof. Dr. Edmundo Nonnato (Instituto Oceanográfico da Universidade de São Paulo - IOUSP), for making possible the donation and direction of all Porifera specimens collected by PROANTAR for inclusion in MCNPOR. We thank Clare Valentine (BMNH) and Dr. Carsten Lüter (ZMB) for the loan of comparative material; Dr. Eduardo Hajdu (Museu Nacional, Universidade Federal do Rio de Janeiro, Brazil) and Ruth Desqueyroux-Faúndez (Museum d'Histoire Naturelle de Genève, Geneva, Switzerland) for help in bibliography. We also thank CAPES and CNPq (Brazil) for research grants.

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Table I. *Iophon unicornis* Topsent, 1907: spicules measurements.

MCNPOR	Styles	Acanthostrongyles	Anisochelas	Bipocillas
1974	480–*535*–610 / 15–*20.6*–22.5	270–*310.8*–350 / 7.5–*11*–12.5	15–*19.6*–22.5	-----
1991	450–*561.4*–620 / 12.5–*24.5*–27.5	260–*311*–380 / 8.8–*12.2*–15	16.3–*19.6*–23.8	8.8–*11.2*–12.5
1994	480–*553*–630 / 17.5–*24.9*–35	230–*250*–280 / 5.0–*7.6*–10	16.3–*18.6*–21.3	10–*11.4*–13.8
3125	390–*472.4*–540 / 11.3–*18.6*–22.5	250–*287.8*–330 / 5.0–*8.8*–11.3	18.8–*20.6*–23.8	10–*12.3*–13.8

Table II. *Clathria (Axosuberites) flabellata* (Topsent, 1916): spicules measurements.

MCNPOR	Styles I	Styles II	Toxas
1972	420–*688.4*–1050 / 25–*36.2*–53.8	380–*579*–750 / 2.5–*7.4*–12.5	80–*153.4*–220 / < 2.5
3118	470–*740.2*–1250 / 17.5–*32.1*–57.5	340–*579.4*–850 / 2.5–*7.9*–13.8	75–*133.6*–247.5 / < 2.5

Table III. *Clathria (Axosuberites) nidificata* (Kirkpatrick, 1907): spicules measurements.

MCNPOR	Styles I	Styles II	Toxas I	Toxas II
1969	520–*1173.6*–2240 / 22.5–*37.5*–47.5	280–*392.8*–570 / 3.8–*6.0*–8.8	310–*564.2*–810 / 3.8–*5.7*–8.8	95–*164*–275 / < 2.5
1993	580–*1276.4*–2740 / 27.5–*40.6*–53.8	280–*411*–600 / 3.8–*6.4*–8.8	285–*455.2*–712.5 / 2.5–*5.3*–9.2	78.2–*144.2*–230 / < 2.5

Table IV. *Tedania (Tedaniopsis) vanhoffeni* (Hentschel, 1914): spicules measurements.

	Styles	Tornotes	Onychaetes I	Onychaetes II
MCNPOR 3108	590–*649.6*–720 / 26.3–*32.9*–40	290–*343.4*–390 / 6.3–*7.9*–10	389.5–*440.9*–513 / 3.5–*4.7*–5.8	87.4–*115.5*–154.1 / 2.5
MCNPOR 3694	418–*471.4*–532 / 16.3–*20.3*–23.8	250–*269*–290 / 3.8–*5.3*–6.3	290–*338.2*–370 / 2.5	107.5–*138.6*–155 / 2.5–3.5–5.0
ZMB 3108	570–*639*–779 / 15–*20*.4–26.5	275.5–*329.7*–361 / 4.6–*5*.8–6.9	427.5–*510.7*–570 / 2.5	66.7–*90.1*–110.4 / 2.5

Table V. *Tedania (Tedaniopsis) oxeata* (Topsent, 1916): spicules measurements.

MCNPOR	Oxeas	Tornotes	Onychaetes I	Onychaetes II
1566	541.5–*596.2*–655.5 / 20.7–*25.1*–29.9	380–*458.9*–532 / 6.9–*11.7*–16.1	332.5–*377.5*–418	55.2–*71.5*–92
2008	541.5–*595.8*–655.5 / 27.6–*32.2*–36.8	418–*477.1*–541.5 / 11.5–*15.3*–17.3	323–*368.2*–418	59.8–*71*–98.9

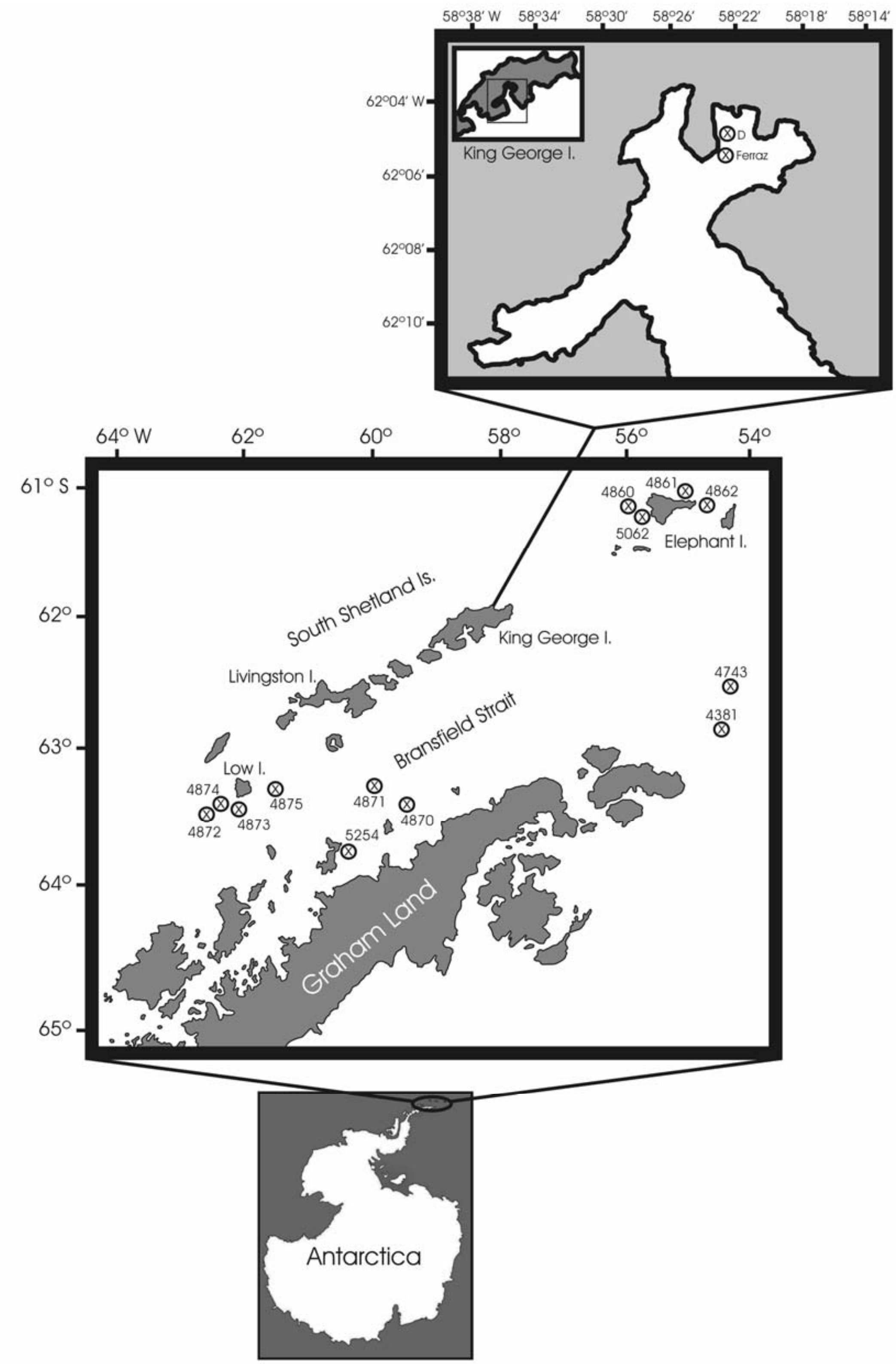
Table VI. *Isodictya lankesteri* (Kirkpatrick, 1907): spicules measurements.

MCNPOR	Oxeas	Canonochelas
3133	280–*382*–490 / 15–*21.1*–27.5	57.5–*63.1*–67.5
3137	270–*374.8*–500 / 15–*23.2*–35	55–*60.9*–67.5
3142	300–*396.6*–520 / 12.5–*22.5*–30	55–*61.6*–67.5
3161	290–*385.2*–520 / 17.5–*23.6*–30	57.5–*64.2*–70

Table VII. *Isodictya bentarti* Ríos, Cristobo & Urgorri, 2004: spicules measurements.

MCNPOR	Oxeas	Isochelas
1942	370–*481.6*–580 / 17.5–*24.3*–33.8	55–*66.9*–77.5
1945	380–*472*–550 / 15–*26*–32.5	57.5–*65.1*–70
1953	370–*471.8*–560 / 17.5–*26*–32.5	55–*66.4*–77.5

Figure 1. Map showing the collecting area.


58°38′ W
58°34′
58°30′
58°26′
58°22′
58°18′
58°14′
62°04′ W
62°06′
62°08′
62°10′
King George I.
D
Ferraz
64° W
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61° S
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63°
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Elephant I.
South Shetland Is.
King George I.
Livingston I.
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Bransfield Strait
Low I.
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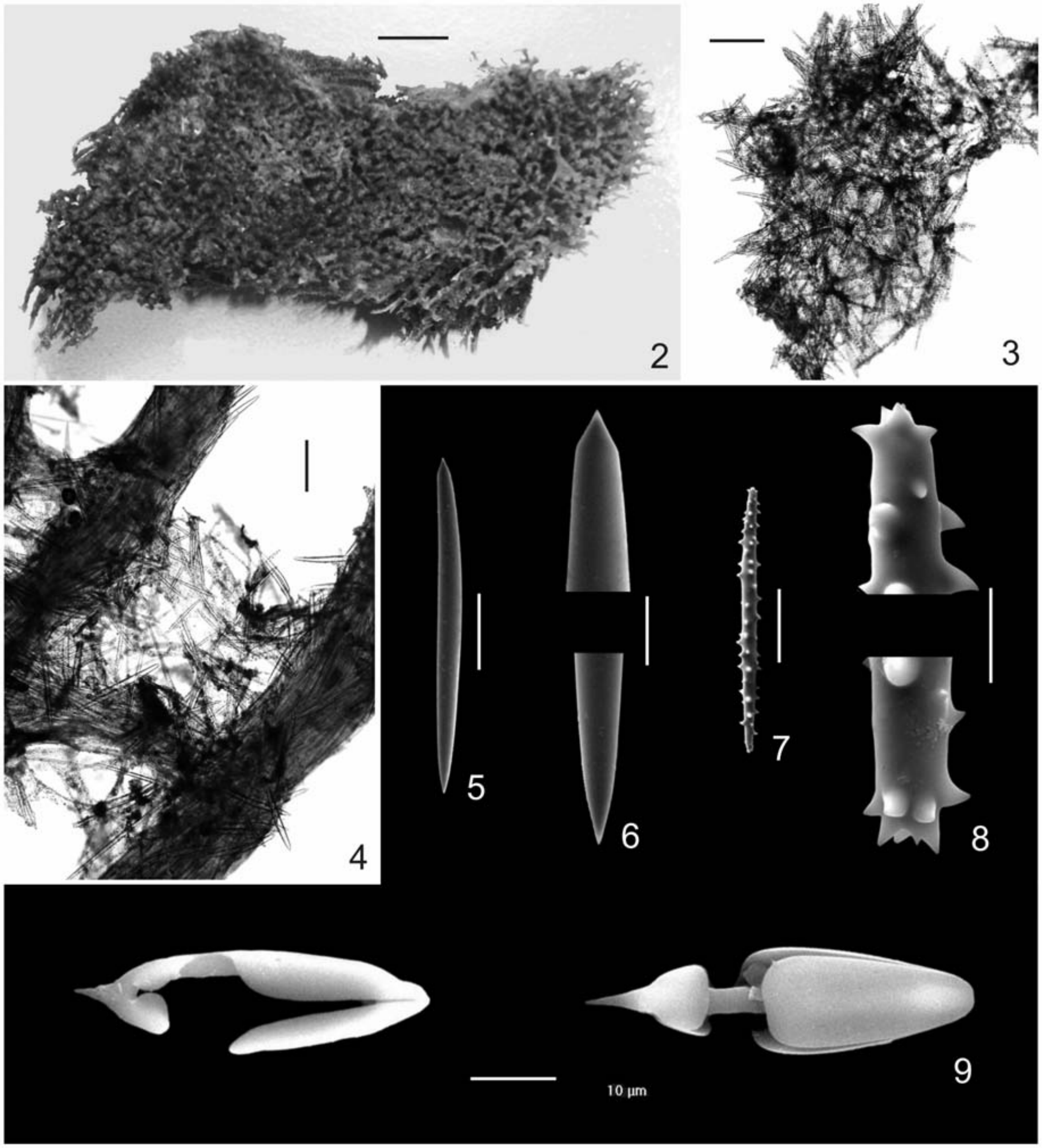
5254
Graham Land
Antarctica

Figures 2-9. *Acanthorhabdus fragilis* Burton, 1929. (2) preserved specimen; (3) ectosomal arrangement of the skeleton; (4) choanosomal skeleton; (5) anisoxea; (6) detail of anisoxea extremities; (7) acanthorhabd; (8) detail of acanthorhabd extremities; (9) anisochelas. Scale bars: (2) 1 cm; (3), (4) 500 µm; (5) 100 µm; (6) 30 µm; (7) 80 µm; (8) 10 µm; (9) 5 µm.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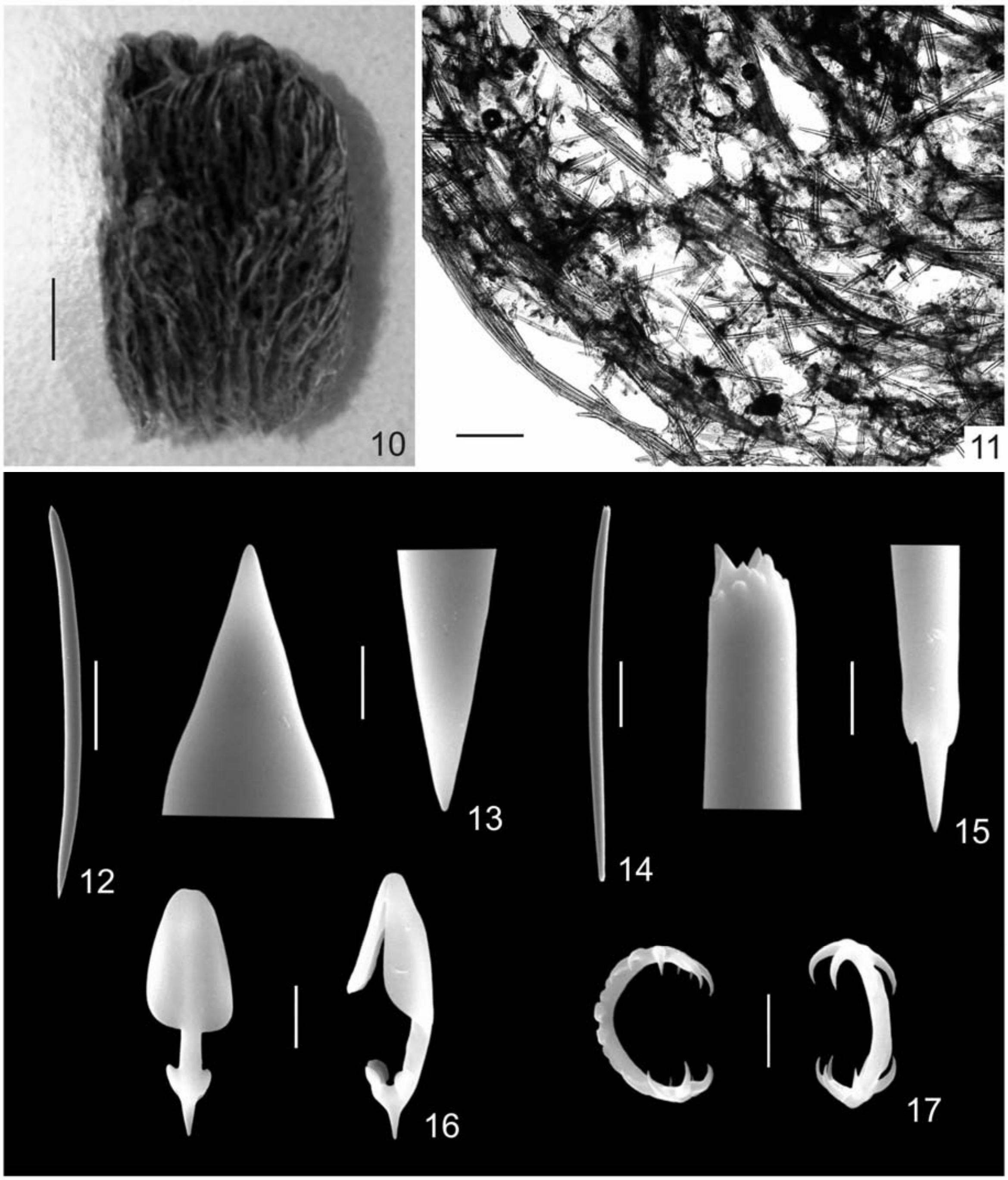
Figures 10-17. *Iophon unicornis* Topsent, 1907. (10) preserved specimen; (11) skeleton; (12) style; (13) detail of style extremities; (14) acanthostrongyle; (15) detail of acanthostrongyle extremities; (16) anisochelas; (17) bipocillas. Scale bars: (10) 0.5 cm; (11) 500 µm; (12) 100 µm; (13) 5 µm; (14) 50 µm; (15), (16), (17) 5 µm.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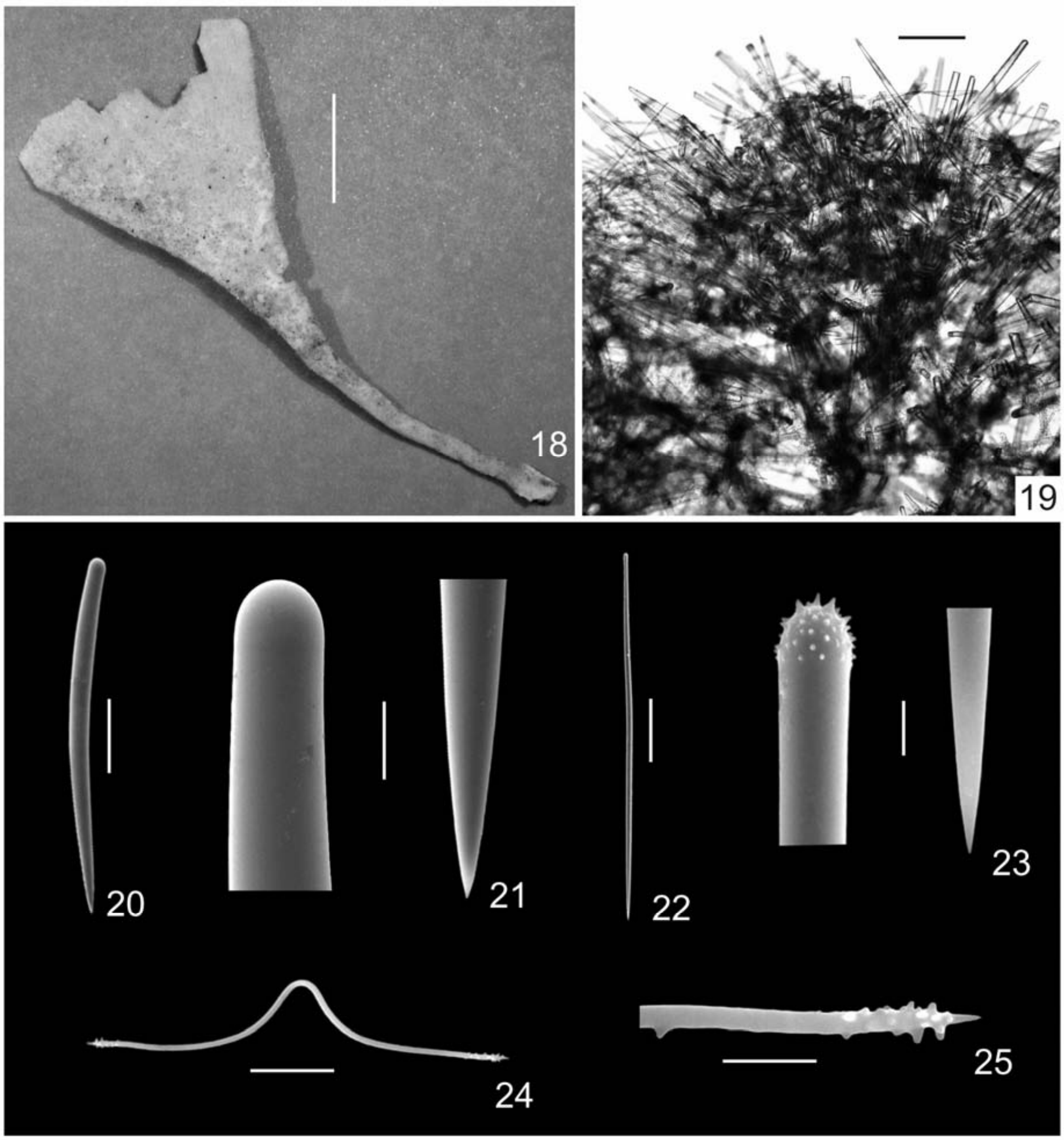
Figures 18-25. *Clathria (Axosuberites) flabellata* (Topsent, 1916). (18) preserved specimen; (19) skeleton; (20) style I; (21) detail of style I extremities; (22) style II; (23) detail of style II extremities; (24) toxa; (25) detail of toxa extremity. Scale bars: (18) 2 cm; (19) 500 µm; (20) 100 µm; (21) 20 µm; (22) 100 µm; (23), 5 µm; (24), 20 µm; (25) 5 µm.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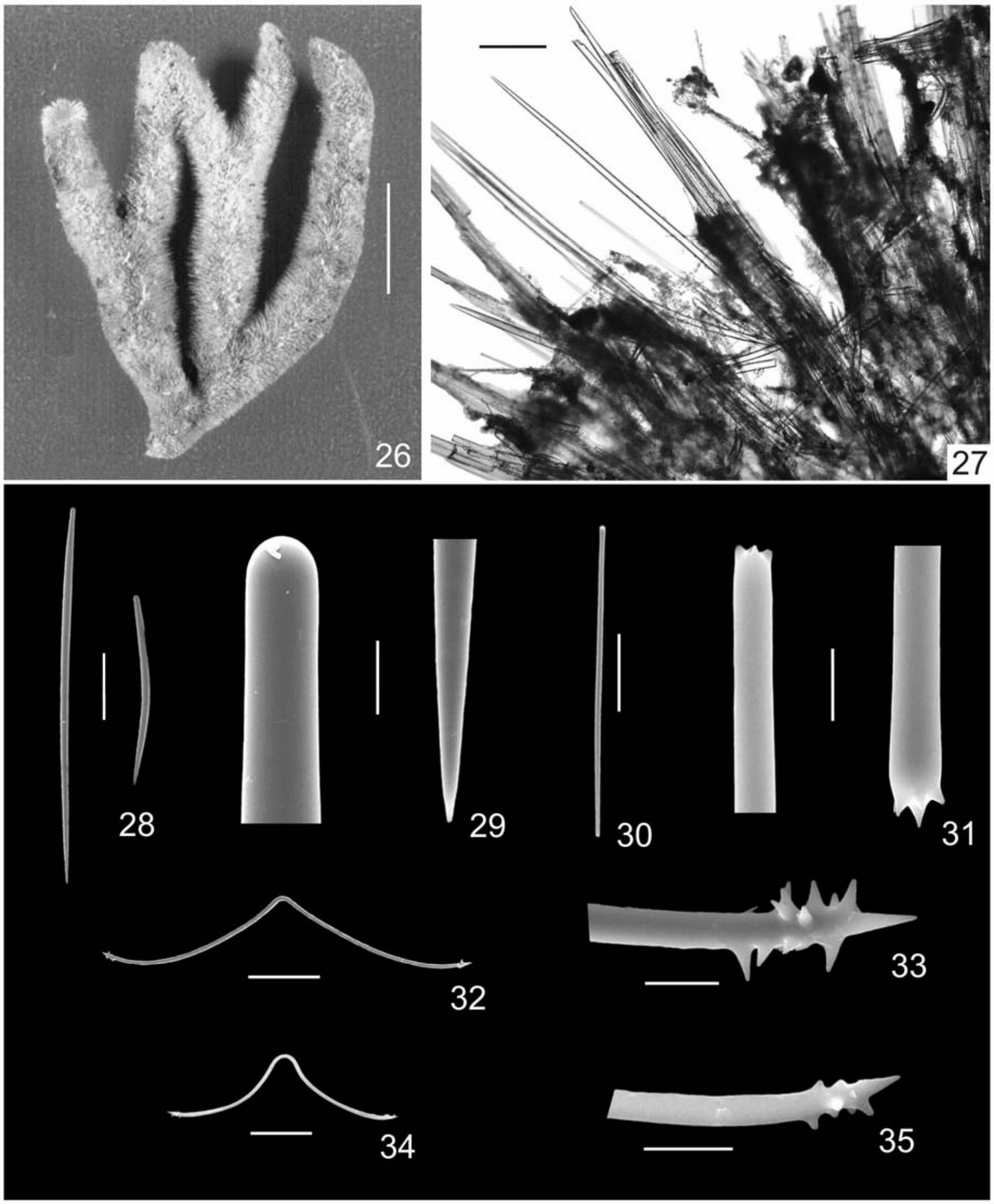
Figures 26-35. *Clathria (Axosuberites) nidificata* (Kirkpatrick, 1907). (26) preserved specimen; (27) skeleton; (28) style I; (29) detail of style I extremities; (30) style II; (31) detail of style II extremities; (32) toxa I; (33) detail of toxa I extremity; (34) toxa II; (35) detail of toxa II extremity. Scale bars: (26) 2 cm; (27) 500 µm; (28) 300 µm; (29) 20 µm; (30) 75 µm; (31) 7 µm; (32) 120 µm; (33) 10 µm; (34) 25 µm; (35) 5 µm.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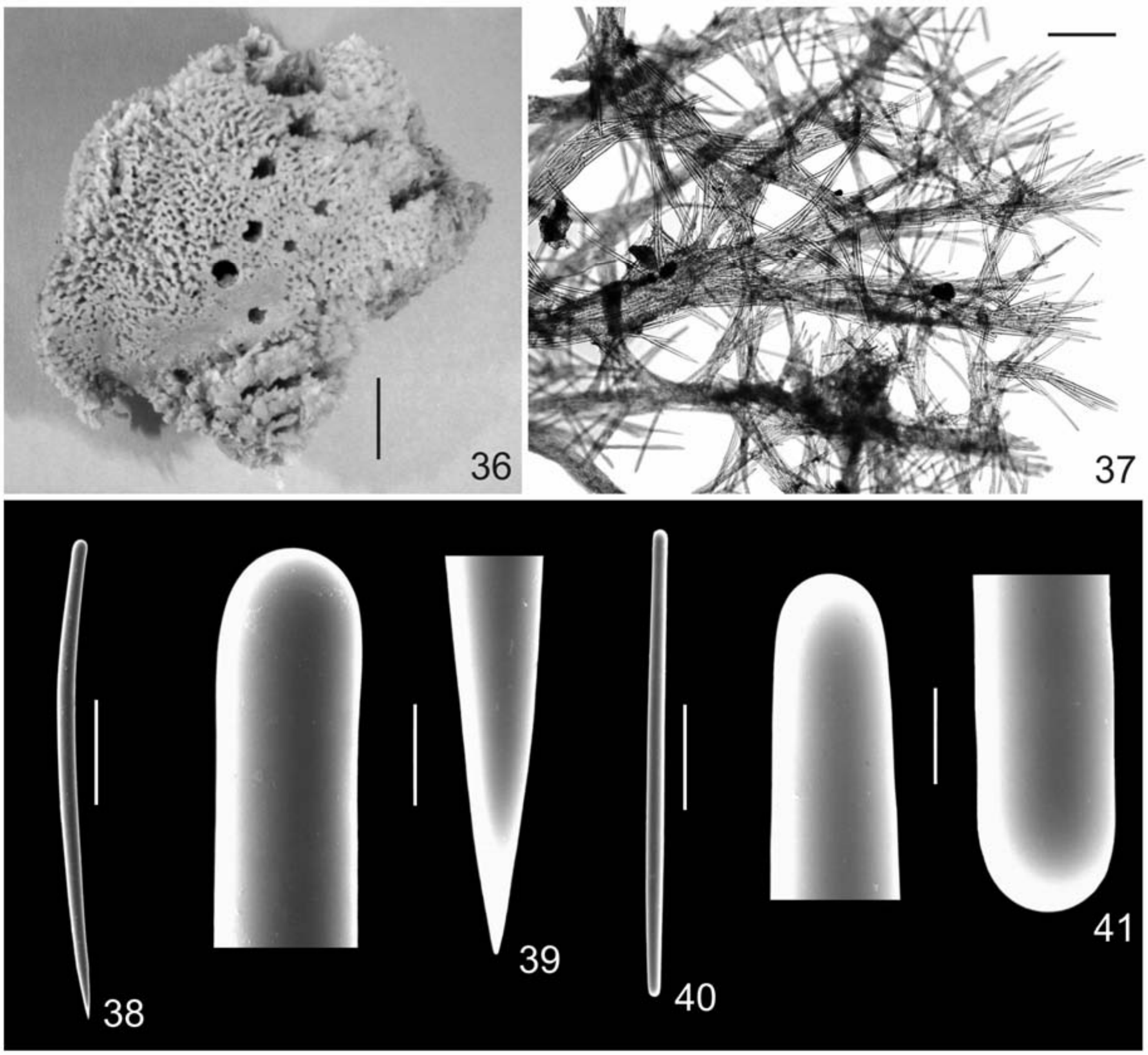
Figures 36-41. *Kirkpatrickia variolosa* (Kirkpatrick, 1907). (36) preserved specimen; (37) skeleton; (38) style; (39) detail of style extremities; (40) tornote; (41) detail of style extremities. Scale bars: (36) 2 cm; (37) 500 µm; (38) 100 µm; (39) 10 µm; (40) 50 µm; (41) 5 µm.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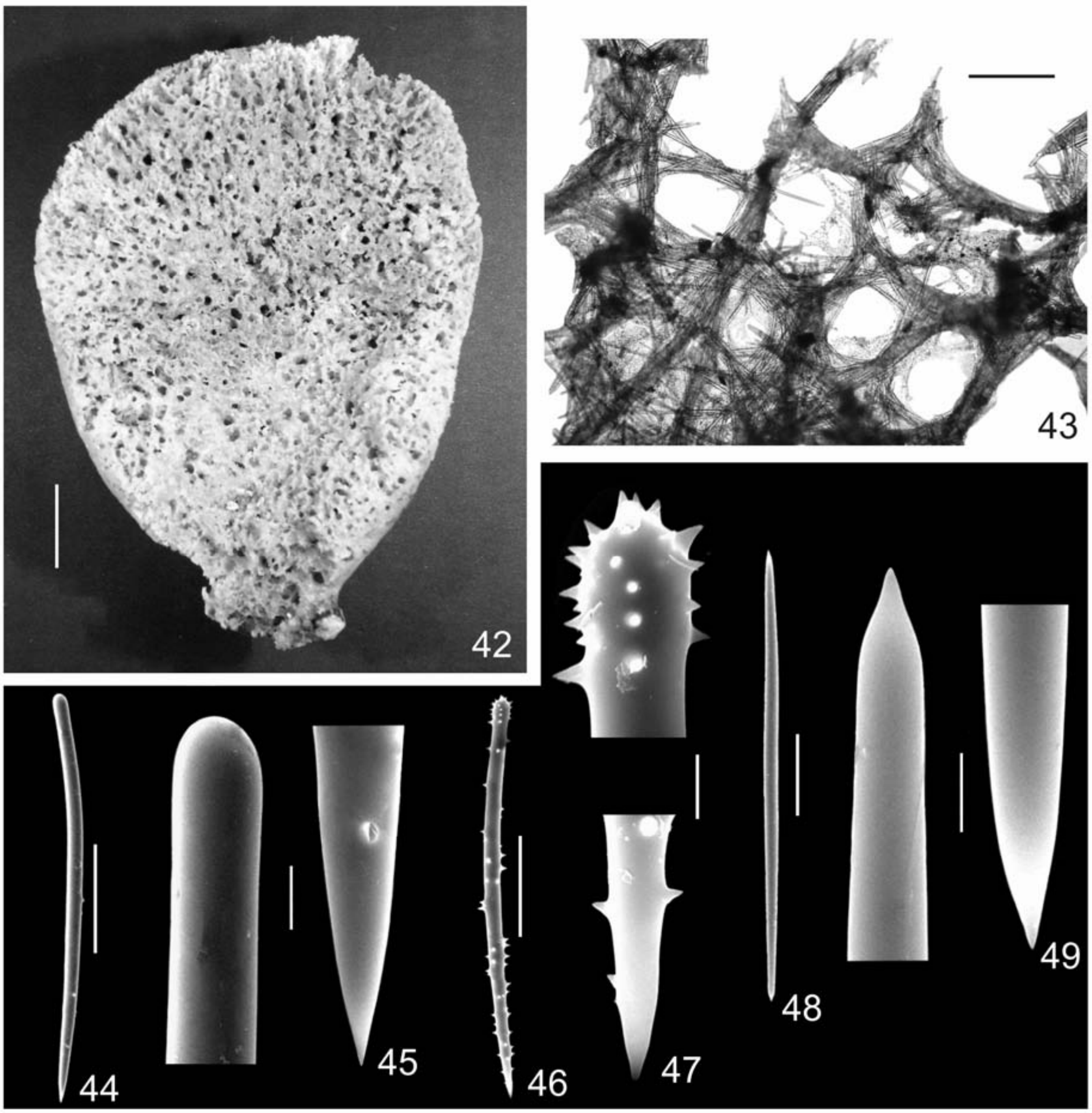
Figures 42-49. *Myxodoryx hanitschi* (Kirkpatrick, 1907). (42) preserved specimen; (43) skeleton; (44) style; (45) detail of style extremities; (46) acanthostyle; (47) detail of acanthostyle extremities; (48) tornote; (49) detail of tornote extremities. Scale bars: (42) 2 cm; (43) 500 µm; (44) 100 µm; (45) 10 µm; (46) 50 µm; (47) 5 µm; (48) 50 µm; (49) 5 µm.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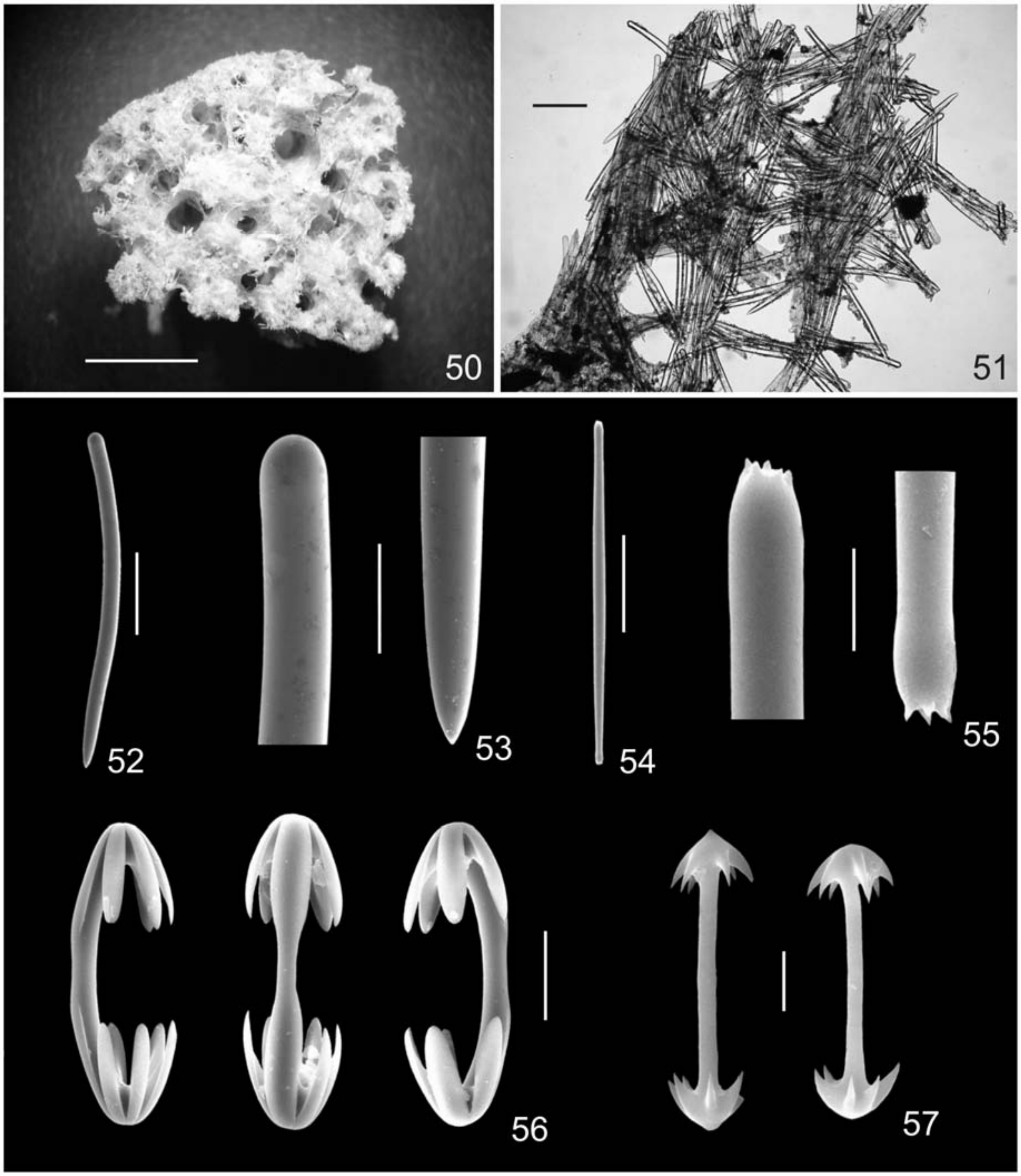
Figures 50-57. *Iotroata somovi* (Koltun, 1964). (50) preserved specimen; (51) skeleton; (52) style; (53) detail of style extremities; (54) tylotes; (55) detail of tylote extremities; (56) isochelas; (57) birotulas. Scale bars: (50) 0.5 cm; (51) 500 µm; (52) 150 µm; (53) 50 µm; (54) 75 µm; (55) 10 µm; (56) 20 µm; (57) 5 µm.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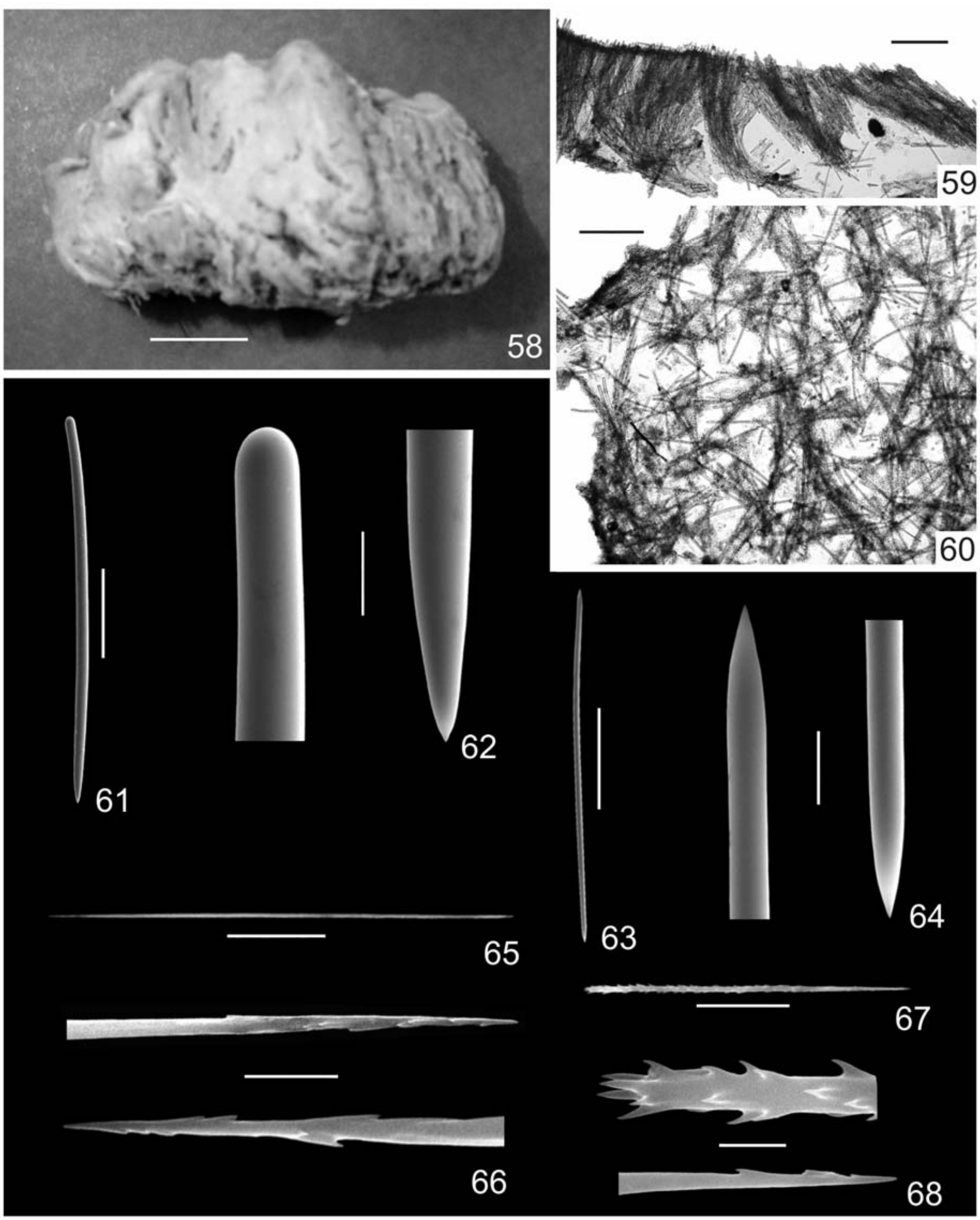
Figures 58-68. *Tedania (Tedaniopsis) charcoti* (Topsent, 1907). (58) preserved specimen; (59) ectosomal arrangement of the skeleton; (60) choanosomal skeleton; (61) style; (62) detail of style extremities; (63) tornote; (64) detail of tornote extremities; (65) onychaete I; (66) detail of onychaete I extremities; (67) onychaete II; (68) detail of onychaete II extremities. Scale bars: (58) 2 cm; (59), (60) 500 µm; (61) 100 µm; (62) 15 µm; (63) 100 µm; (64) 10 µm; (65) 50 µm; (66) 3 µm; (67) 20 µm; (68) 2 µm.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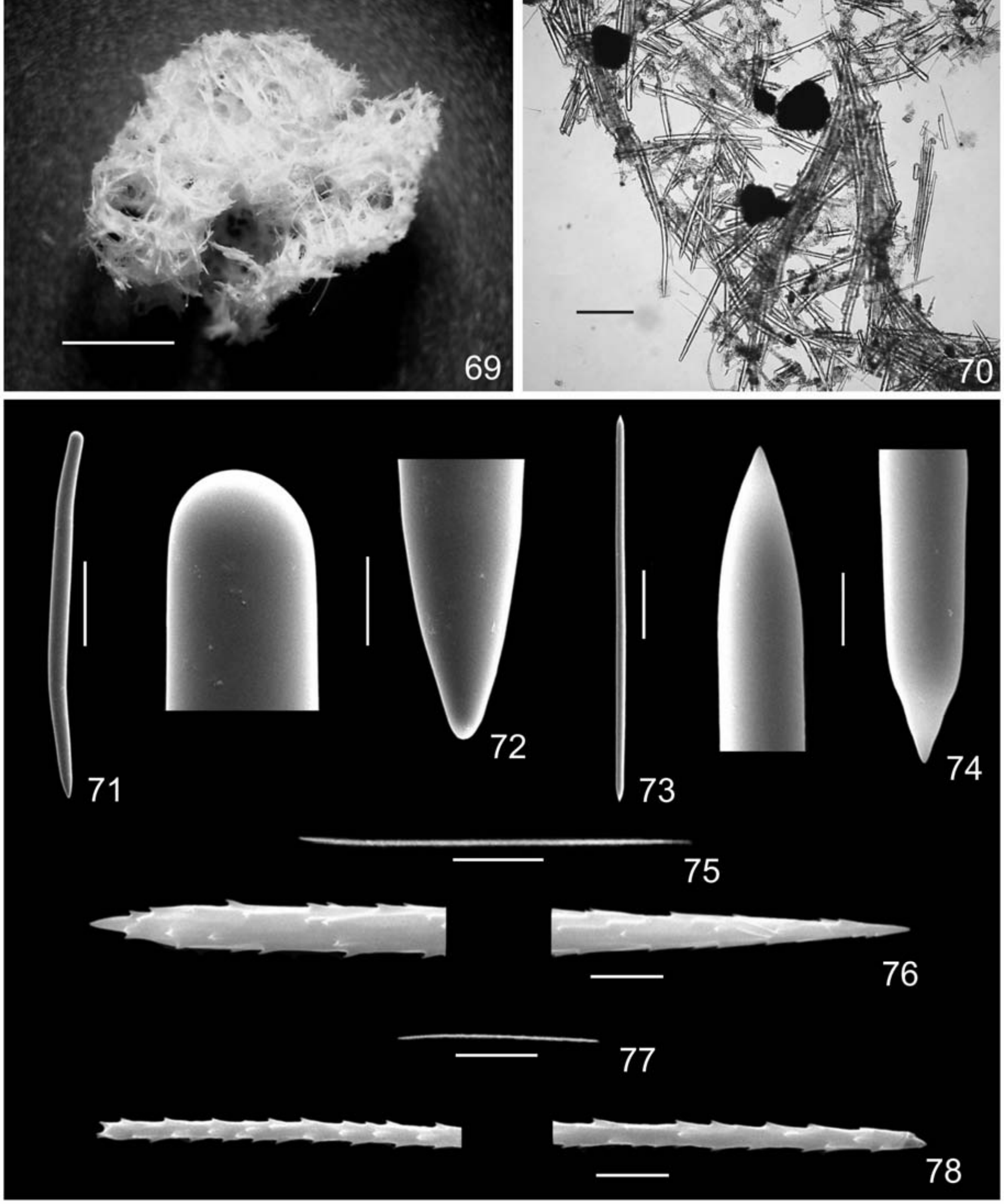
Figures 69-78. *Tedania (Tedaniopsis) vanhoffeni* (Hentschel, 1914). (69) preserved specimen; (70) skeleton; (71) style; (72) detail of style extremities; (73) tornote; (74) detail of tornote extremities; (75) onychaete I; (76) detail of onychaete I extremities; (77) onychaete II; (78) detail of onychaete II extremities. Scale bars: (69) 0.3 cm; (70) 500 µm; (71) 150 µm; (72) 15 µm; (73) 50 µm; (74) 5 µm; (75) 100 µm; (76) 5 µm; (77) 50 µm; (78) 5 µm.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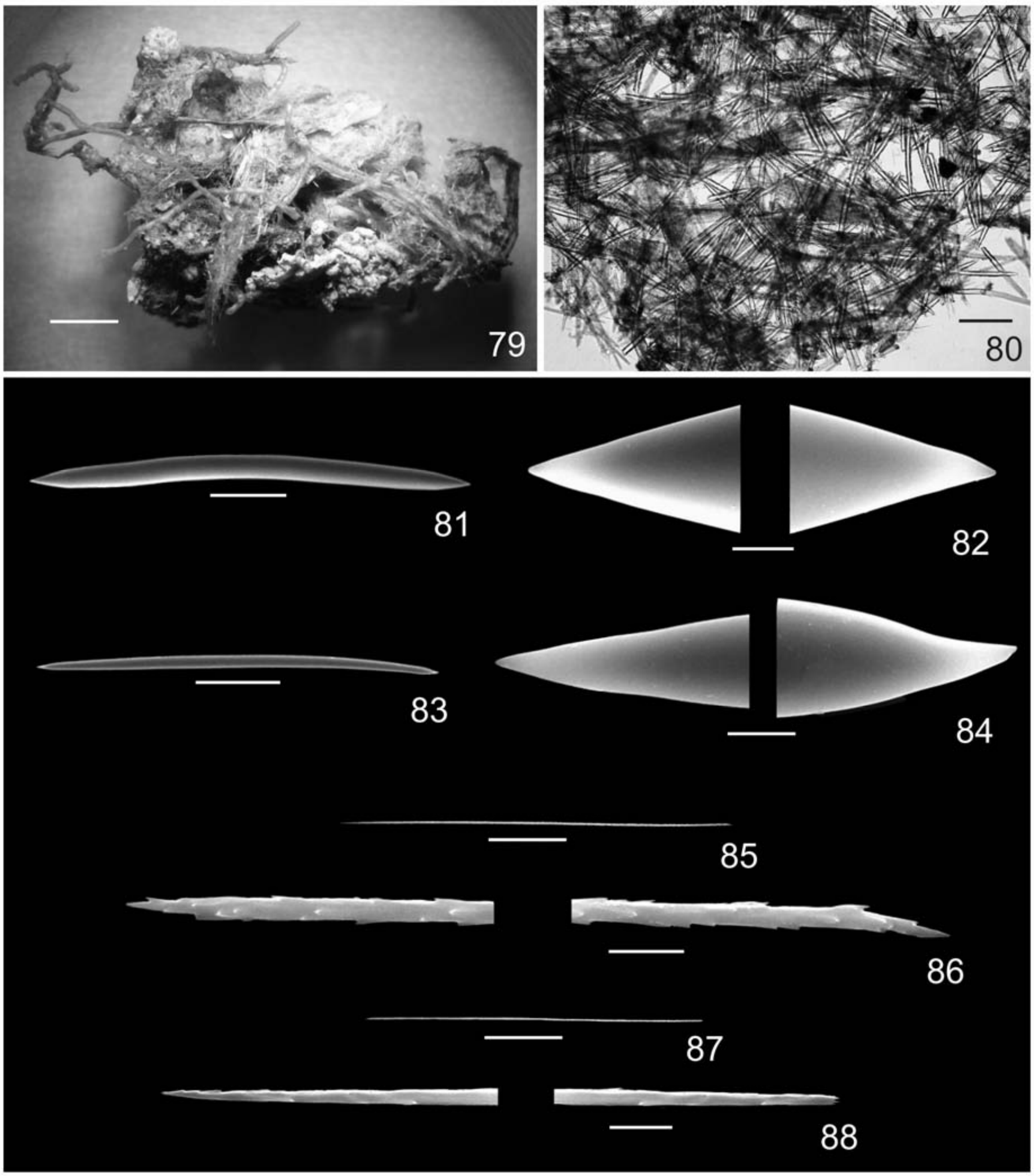
Figures 79-88. *Tedania (Tedaniopsis) oxeata* (Topsent, 1916). (79) preserved specimen; (80) skeleton; (81) oxea; (82) detail of oxea extremities; (83) tornote; (84) detail of tornote extremities; (85) onychaete I; (86) detail of onychaete I extremities; (87) onychaete II; (88) detail of onychaete II extremities. Scale bars: (79) 0.3 cm; (80) 500 µm; (81) 100 µm; (82) 5 µm; (83) 100 µm; (84) 5 µm; (85) 75 µm; (86) 5 µm; (87) 15 µm; (88) 5 µm.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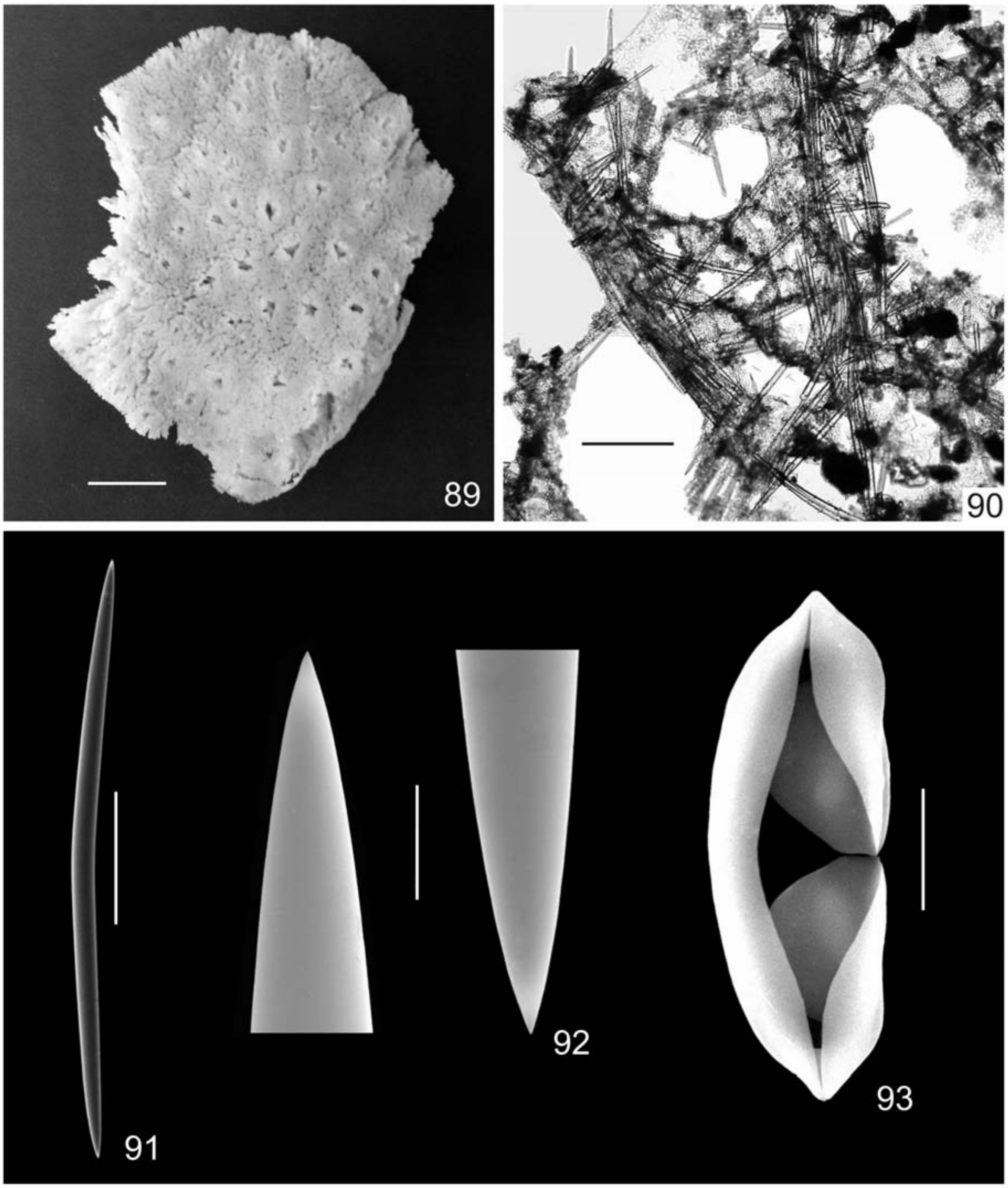
Figures 89-93. *Isodictya kerguelenensis* (Ridley & Dendy, 1886). (89) preserved specimen; (90) skeleton; (91) oxea; (92) detail of oxea extremities; (83) isochela. Scale bars: (89) 2 cm; (90) 500 µm; (91) 150 µm; (92) 15 µm; (93) 5 µm.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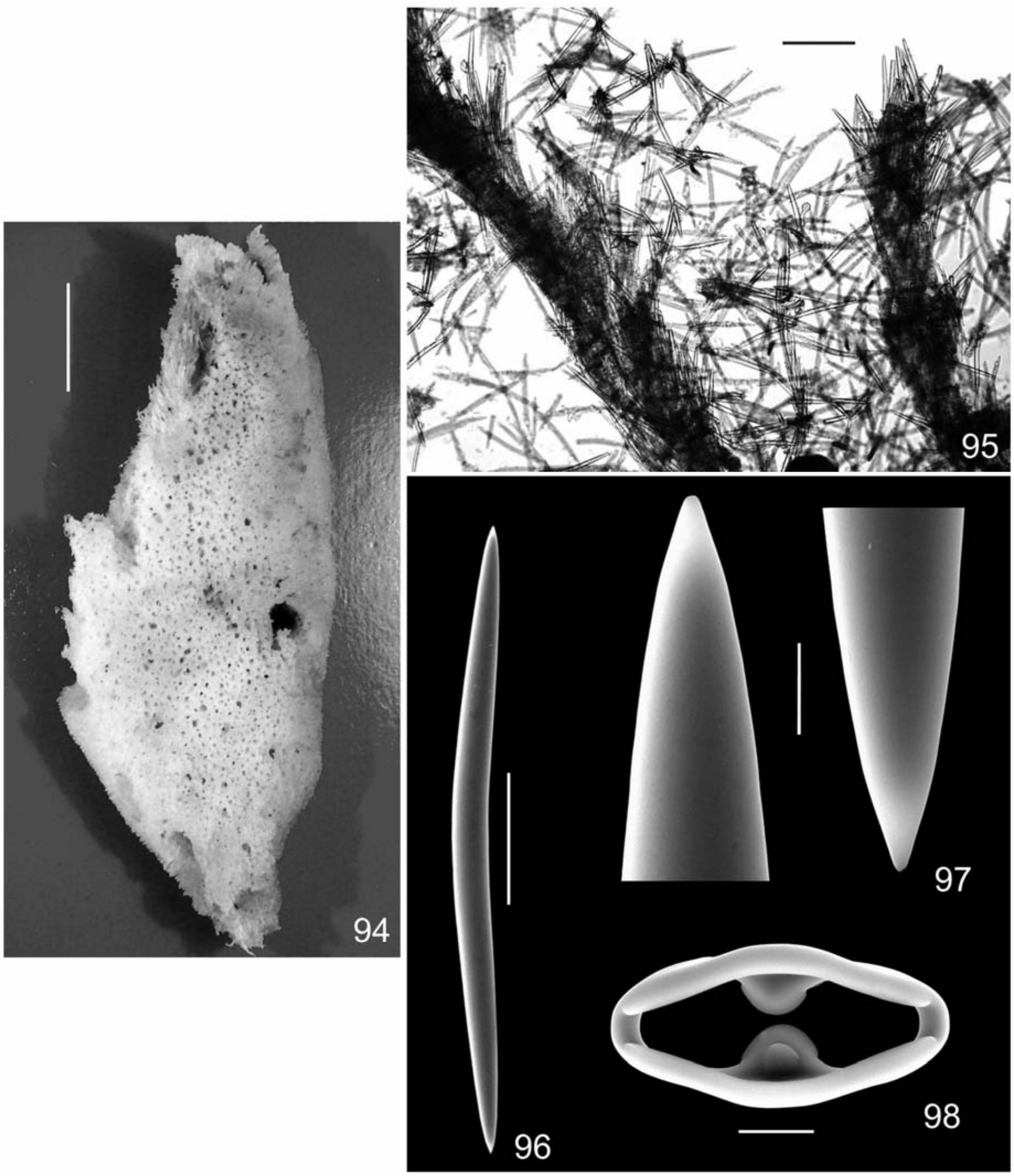
Figures 94-98. *Isodictya lankesteri* (Kirkpatrick, 1907). (94) preserved specimen; (95) skeleton; (96) oxea; (97) detail of oxea extremities; (98) canonochelas. Scale bars: (94) 2 cm; (95) 500 µm; (96) 75 µm; (97) 7 µm; (98) 15 µm.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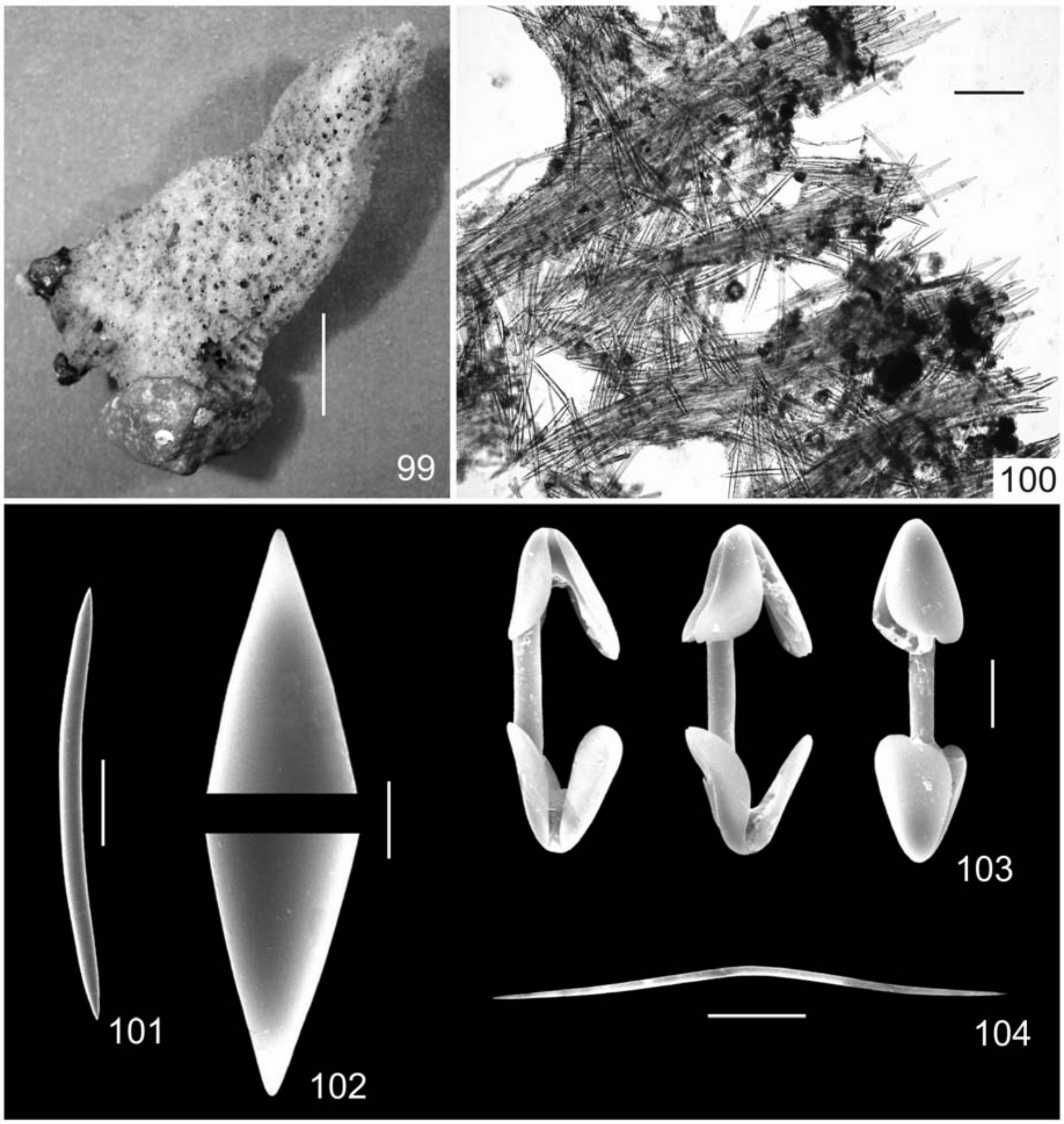
Figures 99-104. *Isodictya toxophila* Burton, 1932. (99) preserved specimen; (100) skeleton; (101) oxea; (102) detail of oxea extremities; (103) isochelas; (104) toxas. Scale bars: (99) 1 cm; (100) 500 µm; (101) 100 µm; (102) 5 µm; (103) 10 µm; (104) 40 µm.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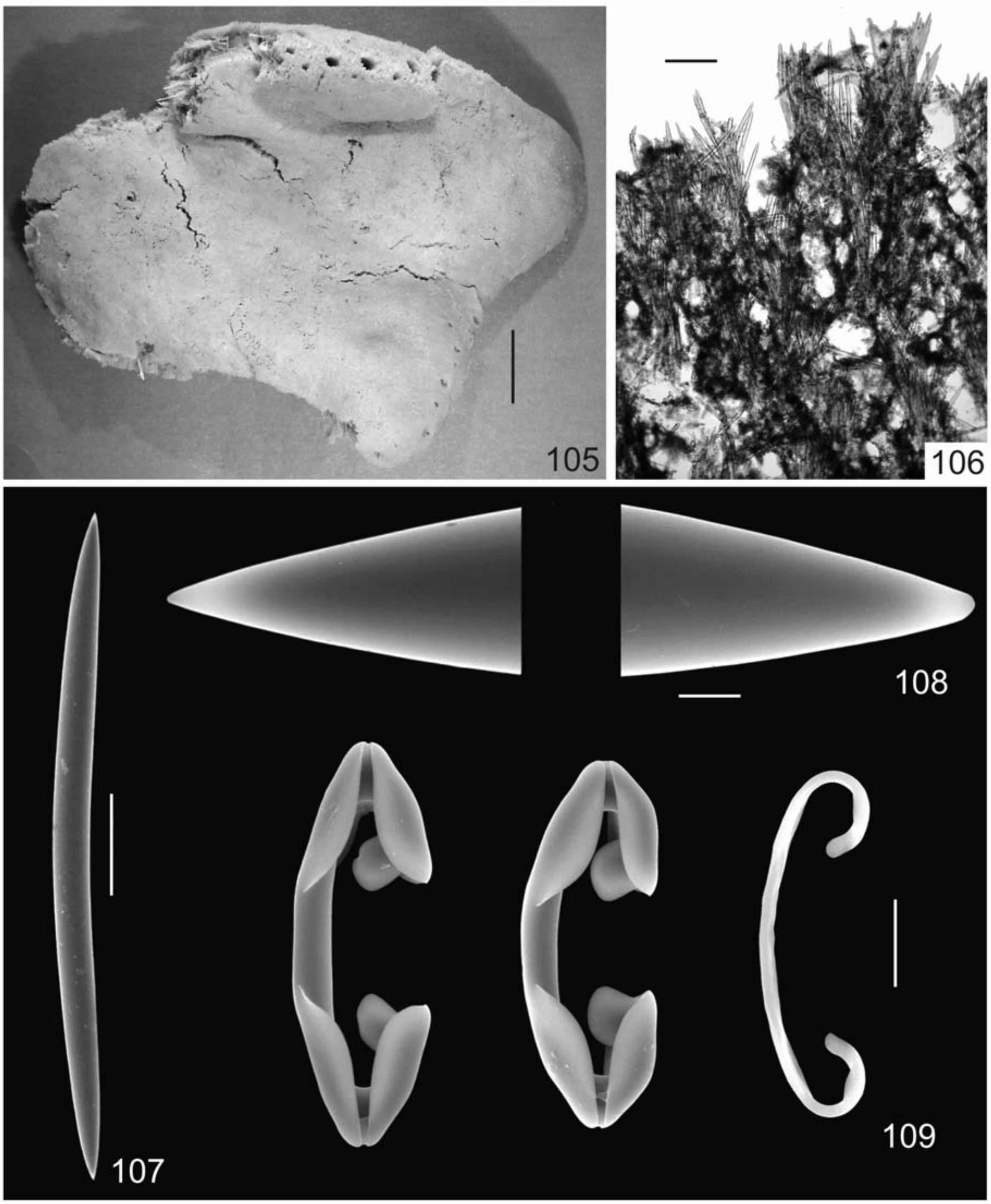
Figures 105-109. *Isodictya bentarti* Ríos, Cristobo & Urgorri, 2004. (105) preserved specimen; (106) skeleton; (107) oxea; (108) detail of oxea extremities; (109) isochelas. Scale bars: (105) 2 cm; (106) 500 µm; (107) 75 µm; (108) 5 µm; (109) 15 µm.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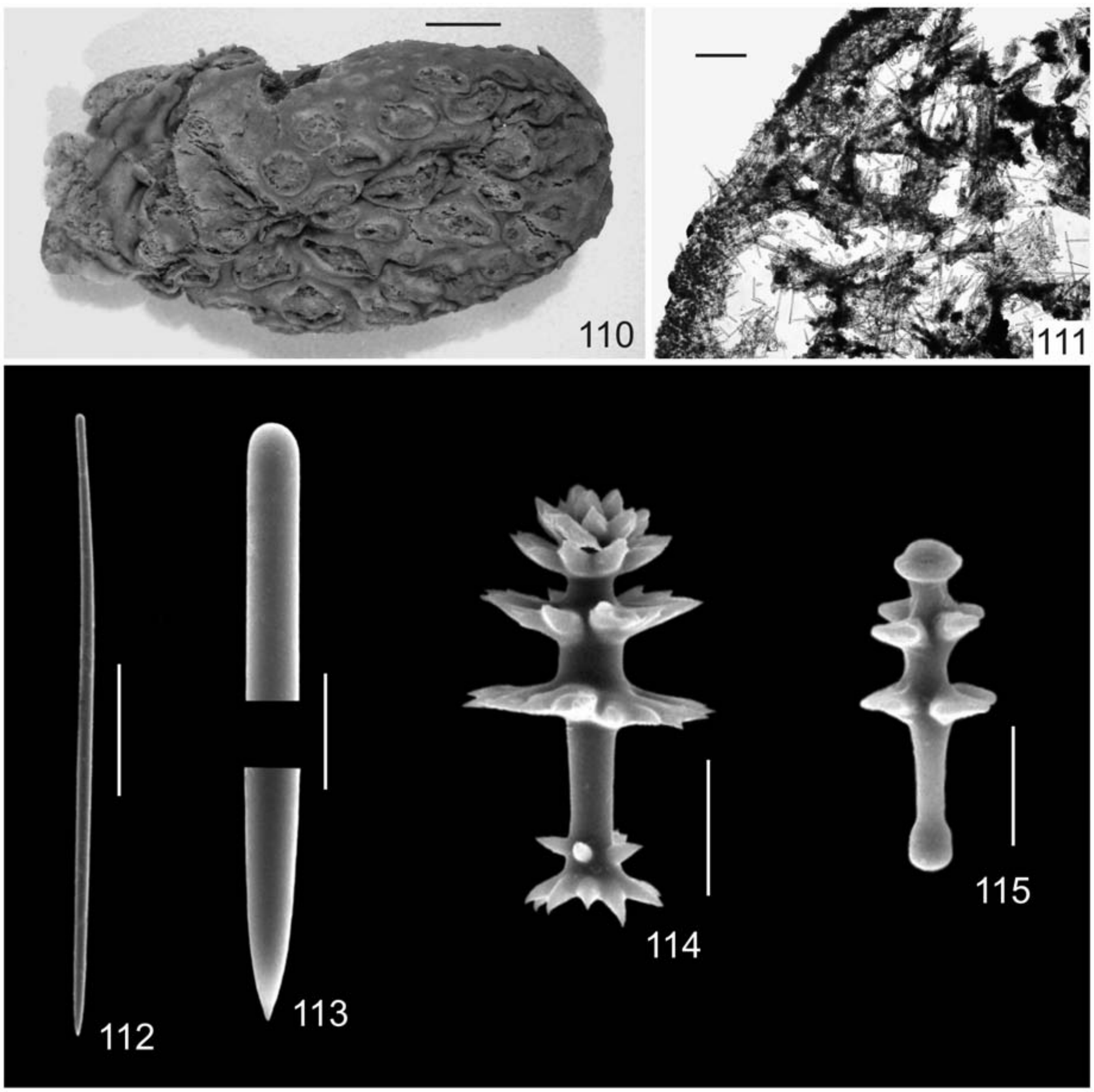
Figures 110-115. *Latrunculia (Latrunculia) brevis* Ridley & Dendy, 1886. (110) preserved specimen; (111) skeleton; (112) anisostyle; (113) detail of anisostyle extremities; (114) anisodiscorhabd; (115) anisodiscorhabd in growth stage. Scale bars: (110) 1 cm; (111) 500 µm; (112) 100 µm; (113) 15 µm; (114) 20 µm; (115) 15 µm.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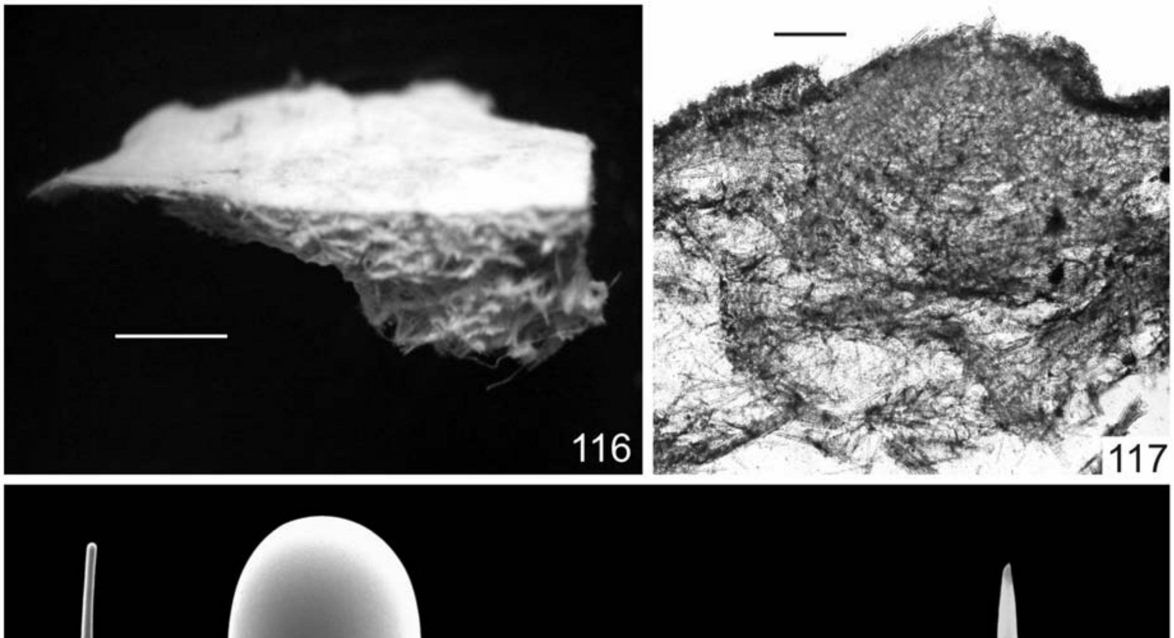
Figures 116-121. *Latrunculia (Latrunculia) biformis* (Kirkpatrick, 1908). (116) preserved specimen; (117) skeleton; (118) anisostyle; (119) detail of anisostyle extremities; (120) anisodiscorhabd; (121) Aciculodiscorhabd. Scale bars: (116) 0.2 cm; (117) 500 µm; (118) 100 µm; (119) 5 µm; (120), (121) 20 µm.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CAPÍTULO 7

CONCLUSÕES

Considerações zoogeográficas

A fauna de esponjas presente na Antártica apresenta características bem estabelecidas em relação à distribuição geográfica das espécies. As primeiras observações realizadas foram abordadas por BURTON (1932) e corroboradas por KOLTUN (1970), que constataram uma similaridade entre a fauna antártica e a da porção mais austral da América do Sul. Conforme BARNES (2005) esta similaridade entre as faunas antártica e magelânica seria pela existência de uma conexão geológica entre a região Magelânica e a Península Antártica, o Arco de Scotia, uma cadeia de montanhas representada superficialmente por arquipélagos como Geórgia do Sul, Is. Sandwich do Sul, Is. Órcades do Sul e Is. Shetland do Sul. Observações mais completas e detalhadas sobre a conexão entre essas duas áreas encontram-se em ARNTZ *et al*. (2005).

SARÀ *et al*. (1992) a partir de uma investigação mais abrangente e amplificada, forneceram uma listagem com a distribuição de todas as espécies assinaladas para as regiões antártica e subantártica até o momento. Com base nesse estudo os autores verificaram, através de uma análise de correspondência entre a ausência e presença das espécies, a ocorrência de uma área denominada "Complexo Antártico Faunístico", inserindo-se nesta a região continental da Antártica, ilhas antárticas e circumantárticas e a região Magelânica.

No presente estudo três espécies constituem-se em novos registros para a Antártica: *Hymedesmia (Hymedesmia) laevis* Thiele, 1905, *Halichondria (Eumastia) attenuata* (Topsent, 1915) e *Haliclona (Soestella) chilensis* (Thiele, 1905), todas com distribuição restrita à área compreendida entre a porção extrema da Península Antártica (Is. Shetland do Sul) e o extremo sul da América do Sul (Fig. 1).

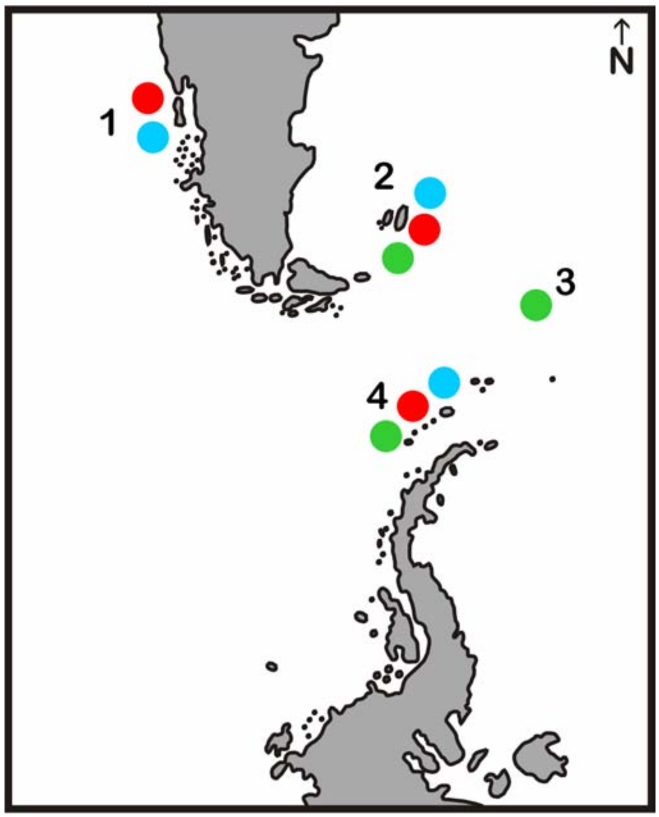

Figura 1. Locais de ocorrência de *Hymedesmia (Hymedesmia) laevis* Thiele, 1905 (●), *Halichondria (Eumastia) attenuata* (Topsent, 1915) (●) e *Haliclona (Soestella) chilensis* (Thiele, 1905) (●). Localidades: 1. Chile, 2. Is. Malvinas, 3. Geórgia do Sul, 4. Is. Shetland do Sul.

Algumas das espécies estudadas apresentam distribuição geográfica ampla, desde a região antártica até ambas as costas da América do Sul – Atlântico e Pacífico. As espécies conhecidas com sua distribuição mais setentrional no oceano Pacífico junto à costa chilena são: *Craniella leptoderma* (Sollas, 1886), *Polymastia invaginata* Kirkpatrick, 1907, *Myxilla (Myxilla) mollis* Ridley & Dendy, 1886, *Tedania (Tedaniopsis) charcoti* Topsent, 1913 e *Mycale (Oxymycale) acerata* Kirkpatrick, 1907 (DESQUEYROUX & MOYANO 1987). Por outro lado há um elenco de espécies que atingem a costa argentina: *Craniella leptoderma* (Sollas, 1886), *Myxilla (Myxilla) mollis* Ridley & Dendy, 1886, *Tedania (Tedaniopsis) charcoti* Topsent, 1913, *Mycale (Oxymycale) acerata* Kirkpatrick, 1907 e *Isodictya kerguelenensis* (Ridley & Dendy, 1886) (LÓPEZ-GAPPA & LANDONI 2005). A espécie *Tedania (Tedaniopsis) vanhoeffeni* Hentschel, 1914 tem seu registro mais setentrional na costa do Rio Grande do Sul (MOTHES *et al*. 2004). Em contrapartida à afinidade supracitada, a espécie *Latrunculia (Latrunculia) biformis* (Kirkpatrick, 1907) foi identificada para o extremo sul da costa africana (SAMAAI *et al*. 2006).

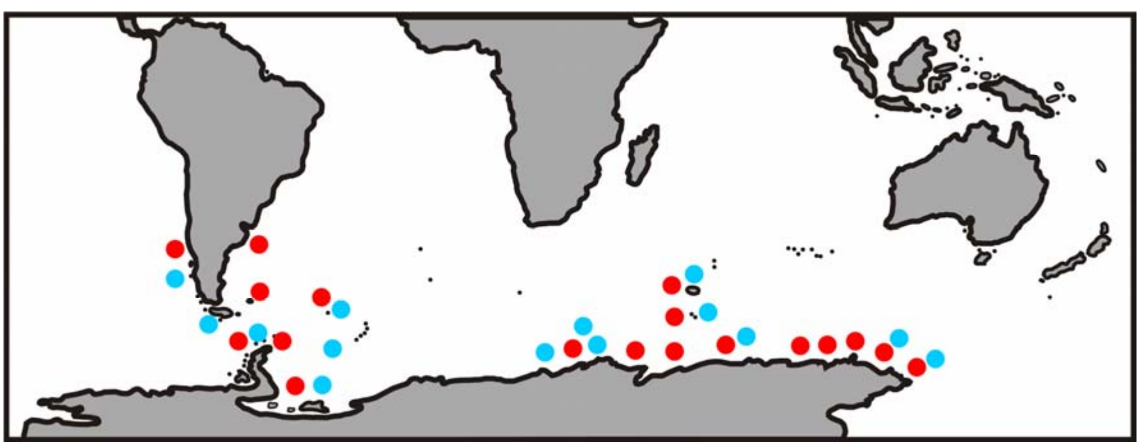

Figura 2. Locais de ocorrência de *Craniella leptoderma* (Sollas, 1886) (●) e *Polymastia invaginata* Kirkpatrick, 1907 (●).

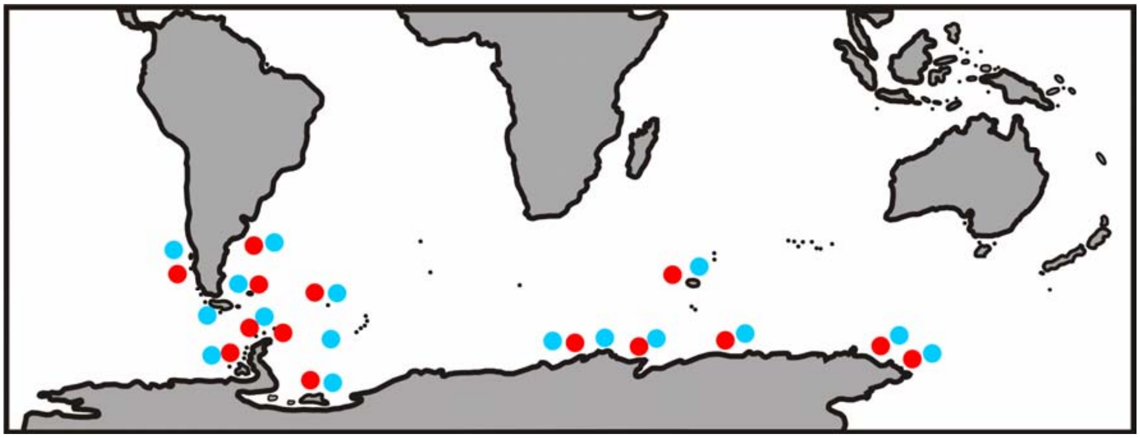

Figura 3. Mapa indicando locais de ocorrência de *Myxilla (Myxilla) mollis* Ridley & Dendy, 1886 (●) e *Tedania (Tedaniopsis) charcoti* Topsent, 1913 (●).

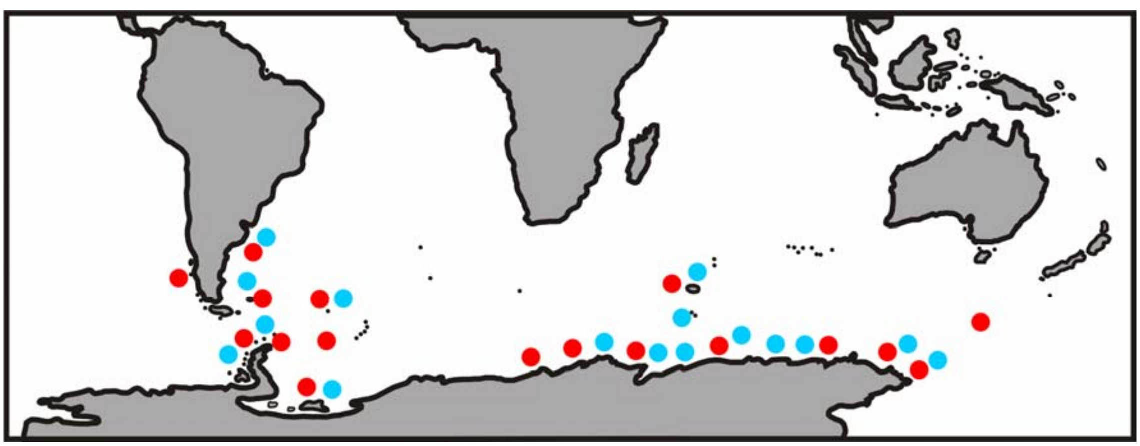

Figura 4. Mapa indicando locais de ocorrência de *Mycale (Oxymycale) acerata* Kirkpatrick, 1907 (●) e *Isodictya kerguelenensis* (Ridley & Dendy, 1886) (●).

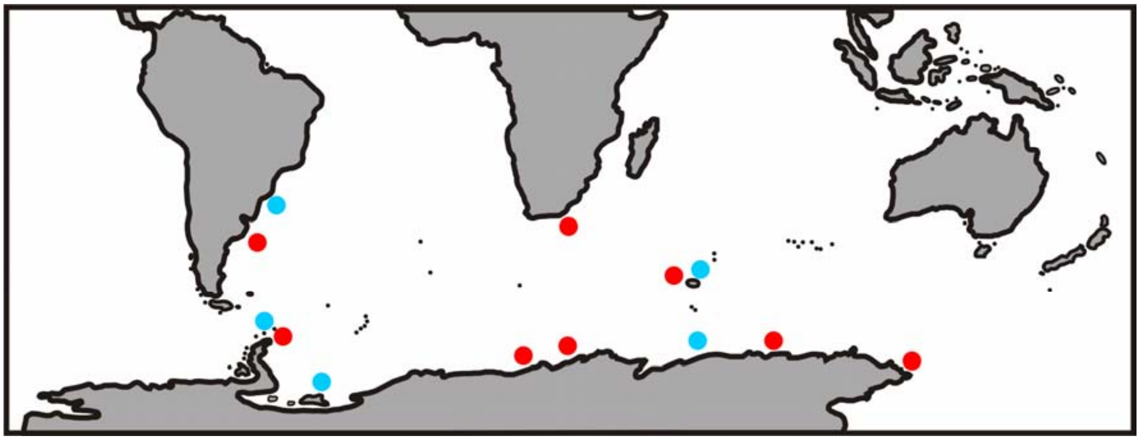

Figura 5. Mapa indicando locais de ocorrência de *Latrunculia (Latrunculia) biformis* (Kirkpatrick, 1907) (●) e *Tedania (Tedaniopsis) vanhoeffeni* Hentschel, 1914 (●).

Uma alta porcentagem de espécies endêmicas é típica para a espongofauna antártica, considerando que um significativo número de espécies tem sua distribuição limitada a esse continente (SARÀ *et al*. 1992).

Conforme SARÀ *et al*. (*op*. *cit*.) o nível de endemismo conhecido é alto; de um total de 361 espécies, até então registradas para a fauna da região, 76 apresentam distribuição restrita ao continente antártico (21%). Poucas espécies são restritas a um local específico (KOLTUN 1970). No elenco estudado esta afirmação foi observada apenas com *I. bentarti*, que possui distribuição provisoriamente endêmica para as Is. Shetland do Sul. Considerando todas as espécies inventariadas até o momento, apenas 7.5% (27 espécies) são restritas a um setor específico do continente.

Tabela I. Distribuição na Antártica (Is. Shetland do Sul, I. Joinville e Estreito de Bransfield) dos poríferos (Demospongiae). (IS) Is. Shetland do Sul; (IJ) I. Joinville; (EB) Estreito de Bransfield; [1] BURTON 1932; [2] KOLTUN 1964; [3] DESQUEYROUX 1972; [4]

DESQUEYROUX 1975; [5] DESQUEYROUX-FAÚNDEZ 1989; [6], MOTHES & LERNER 1995; [7], RÍOS *et al*. 2004; [8] presente estudo.

TÁXONS / REFERÊNCIAS	LOCAL DE COLETA
TETILLIDAE	
[1], [4], [5], [8] *Cinachyra antarctica* (Carter, 1872)	IS (63º17' S - 59º48' W / 63º26' S - 62º10' W)
	EB (63º25' S - 62º05' W / 63º25' S - 62º19' W)
	EB (64º20' S - 63º00' W)
	EB (64º53' S - 62º51' W)
[1], [4], [5], [8] *Cinachyra barbata* Sollas, 1886	IS (61º25' S - 53º46' W)
	IS (62º13' S - 58º54' W / 62º23' S - 59º40' W)
	IS (63º02' S - 62º42' W)
	IS (63º17' S - 59º48' W)
	EB (63º25' S - 62º19' W)
	IS (sem registro de coordenadas)
[1], [2], [4], [8] *Craniella leptoderma* (Sollas, 1886)	IS (61º25' S - 53º46' W)
	IS (62º27' S - 59º39' W)
ANCORINIDAE	
[8] *Tethyopsis longispinum* (Lendenfeld, 1907)	IS (62º05' S - 58º23' W)
	EB (62º30' S - 54º16' W / 62º58' S - 57º10' W)
POLYMASTIIDAE	
[1], [8] *Polymastia invaginata* Kirkpatrick, 1907	EB (63º17' S - 61º17' W)
	EB (63º25' S - 62º19' W)
SUBERITIDAE	
[5], [8] *Homaxinella balfourensis* (Ridley & Dendy, 1886)	IS (sem registro de coordenadas)
	IS (61º07' S - 55º03' W)
	IS (61º12' S - 55º40' W)
	IS (62º05' S - 58º23' W / 62º06' S - 58º22' W)
[8] *Suberites montiniger* Carter, 1880 *sensu* Topsent, 1915	EB (63º28' S - 62º31' W)

Continua

TÁXONS / REFERÊNCIAS	LOCAL DE COLETA
ACARNIDAE	
[8] *Acanthorhabdus fragilis* Burton, 1929	EB (63º16' S - 59º55' W)
[2], [4], [8] *Iophon unicornis* Topsent, 1907	IS (sem registro de coordenadas)
	IS (61º08' S - 55º52' W / 62º05' S - 58º23' W)
	IS (62º55' S - 60º47' W / 63º00' S - 60º31' W)
	EB (63º16' S - 59º55' W)
[8] *Iophon terranovae* Calcinai & Pansini, 2000	IJ (62º55' S - 55º16' W)
	EB (63º26' S - 59º32' W)
MICROCIONIDAE	
[7], [8] *Clathria (Axosuberites) flabellata* (Topsent, 1916)	IS (62º05' S - 58º23' W)
	IS (62°39' S - 60º23' W)
	EB (63º26' S - 59º32' W)
[2], [4], [6], [8] *Clathria (Axosuberites) nidificata* (Kirkpatrick, 1907)	IS (61º16' S - 55º05' W)
	IS (62º28' S - 59º39' W)
	EB (63º25' S - 62º19' W / 63º28' S - 62º31' W)
[4], [5], [7], [8] *Artemisina apollinis* (Ridley & Dendy, 1886)	IS (62°39' S - 60º23' W)
	IJ (62º53' S - 56º27' W)
	EB (63º18' S - 57º55' W / 64º52' S - 63º36' W)
	IS (63º24' S - 62º14' W)
	EB (63º25' S - 62º19' W)
HYMEDESMIIDAE	
[8] *Hymedesmia (Hymedesmia) laevis* (Thiele, 1905)	EB (63º25' S - 62º19' W)
[1], [8] *Kirkpatrickia variolosa* (Kirkpatrick, 1907)	IS (63º17' S - 59º48' W)
	EB (63º26' S - 59º32' W / 63º44' S - 60º25' W)
[8] *Myxodoryx hanitschi* (Kirkpatrick, 1907)	EB (63º17' S - 62º30' W)
[8] *Phorbas areolata* (Thiele, 1905)	IS (62º23' S - 59º40' W)
	IJ (62º53' S - 56º27' W)
IOTROCHOTIDAE	
[8] *Iotroata somovi* (Koltun, 1964)	IS (61º02' S - 54º55' W)

Continua

TÁXONS / REFERÊNCIAS	LOCAL DE COLETA
MYXILLIDAE	
[4], [6], [8] *Myxilla (Myxilla) mollis* (Ridley & Dendy, 1886)	IS (62º05' S - 58º23' W / 62º40' S - 59º33' W)
	IJ (62º48' S - 54º20' W)
	IJ (62º57' S - 56º50' W)
	IS (63º17' S - 59º48' W)
	IS (63º48' S - 61º45' W)
[8] *Myxilla (Ectyomyxilla) mariana* Ridley & Dendy, 1886	IJ (62º55' S - 55º16' W)
TEDANIIDAE	
[4], [5], [7], [8] *Tedania (Tedaniopsis) charcoti* (Topsent, 1907)	IS (60º33' S - 62º40' W / 62°39' S - 60º42' W)
	IS (61º07' S - 55º03' W)
	IS (61º12' S - 55º40' W)
	IS (62º23' S - 59º37' W)
[8] *Tedania (Tedaniopsis) vanhoffeni* (Hentschel, 1914)	EB (63º16' S - 59º55' W)
	IS (61º25' S - 53º46' W)
[1], [4], [6], [8] *Tedania (Tedaniopsis) oxeata* (Topsent, 1916)	IS (62º23' S - 59º37' W)
	IJ (62º48' S - 54º20' W)
	EB (63º25' S - 62º05' W)
[1], [2], [4], [7], [8] *Mycale (Oxymycale) acerata* (Kirkpatrick, 1907)	IS (sem registro de coordenadas)
	IS (61º08' S - 55º52' W / 62º05' S - 58º23' W)
	IS (62°23' S - 60º42' W)
	IS (62º55' S - 60º47' W)
	IJ (63º01' S - 54º49' W)
	EB (63º16' S - 59º55' W / 62º30' S - 54º16' W)
	EB (63º17' S - 59º48' W)
ISODICTYIDAE	
[3], [4], [5], [7], [8] *Isodictya kerguelenensis* (Ridley & Dendy, 1886)	IS (61º07' S - 55º03' W)
	IS (61º08' S - 54º34' W)
	IS (62°39' S - 60º23' W / 62°43' S - 60º26' W)
	IS (62º30' S - 59º55' W)
	IS (62º55' S - 60º47' W / 62º59' S - 60º28' W)

Continua

TÁXONS / REFERÊNCIAS	LOCAL DE COLETA
	EB (63°18' S - 57°54' W)
	EB (63°25' S - 62°19' W)
[4], [8] *Isodictya lankesteri* (Kirkpatrick, 1907)	IS (62°05' S - 58°23' W)
	IS (62°28' S - 59°39' W)
	EB (62°30' S - 54°16' W)
[2], [3], [4], [7], [8] *Isodictya erinacea* (Topsent, 1916)	IS (sem registro de coordenadas)
	IS (62°05' S - 58°23' W)
	IS (62°23' S - 59°36' W / 62°55' S - 60°47' W)
	IS (62°43' S - 60°26' W)
	IJ (62°55' S - 55°16' W)
	EB (63°16' S - 59°55' W / 63°17' S - 62°30' W)
	EB (63°25' S - 62°05' W / 63°26' S - 59°32' W)
[1], [2], [8] *Isodictya toxophila* Burton, 1932	IS (sem registro de coordenadas)
	EB (63°17' S - 59°48' W)
[7], [8] *Isodictya bentarti* Ríos, Cristobo & Urgorri, 2004	IS (62°24' S - 60°15' W / 62°24' S - 60°24' W)
	IS (63°25' S - 62°05' W)
LATRUNCULIIDAE	
[8] *Latrunculia (Latrunculia) brevis* Ridley & Dendy, 1886	IS (61°02' S - 54°55' W)
[7], [8] *Latrunculia (Latrunculia) biformis* (Kirkpatrick, 1908)	IS (62°05' S - 58°23' W)
	IS (62°39' S - 60°23' W)
HALICHONDRIIDAE	
[8] *Halichondria (Eumastia) attenuata* (Topsent, 1915)	EB (63°25' S - 62°19' W)
CHALINIDAE	
[5], [8] *Haliclona (Gellius) rudis* (Topsent, 1901)	IS (61°02' S - 54°55' W)
	IJ (62°53' S - 56°27' W)
	EB (63°25' S - 62°05' W)
[8] *Haliclona (Rhizoniera) dancoi* (Topsent, 1901)	IS (62°05' S - 58°23' W)
	IJ (62°57' S - 56°50' W)
[8] *Haliclona (Soestella) chilensis* (Thiele, 1905)	IS (62°06' S - 58°22' W)

Continua

TÁXONS / REFERÊNCIAS	LOCAL DE COLETA
NIPHATIDAE	
[3], [8] *Haliclonissa verrucosa* Burton, 1932	IS (62º05' S - 58º23' W)
	IJ (62º53' S - 56º27' W)
	IS (62º59' S - 60º33' W)
[8] *Hemigellius bidens* (Topsent, 1901)	EB (63º33' S - 59º15' W)
[2], [4], [8] *Microxina benedeni* Topsent, 1901	IJ (62º53' S - 56º27' W)
	IS (sem registro de coordenadas)
	IS (63º02' S - 62º42' W)
[8] *Microxina phakelloides* (Kirkpatrick, 1907)	IJ (62º55' S - 55º16' W)
	EB (63º25' S - 62º05' W)
PHLOEODICTYIDAE	
[2], [4], [8] *Calyx arcuarius* (Topsent, 1913)	IS (62º40' S - 59º33' W)
	IS (62º55' S - 60º47' W)
	IS (sem registro de coordenadas)
	EB (63º16' S - 59º55' W / 63º17' S - 62º30' W)

Das espécies inventariadas foram recoletadas 24 (60%), confirmando-se a ocorrência das mesmas na região.

Tabela II. Distribuição batimétrica (mínima-máxima) das espécies estudadas, com as respectivas referências, destacando em negrito os novos limites.

TÁXON	BATIMETRIA (m)	REFERÊNCIA
Acanthorhabdus fragilis Burton, 1929	72-560	KOLTUN 1964
Artemisina apollinis (Ridley & Dendy, 1886)	7-380	BOURY-ESNAULT & VAN BEVEREN 1982; HENTSCHEL 1914
Calyx arcuarius (Topsent, 1913)	18-900	BURTON 1929; KOLTUN 1964
Cinachyra antarctica (Carter, 1872)	18-830	KIRKPATRICK 1908; GUTT & KOLTUN 1995

Continua

TÁXON	BATIMETRIA (m)	REFERÊNCIA
Cinachyra barbata Sollas, 1886	2-830	KOLTUN 1976; GUTT & KOLTUN, 1995
Clathria (Axosuberites) flabellata (Topsent, 1916)	20-700	RÍOS *et al*. 2004; KOLTUN 1964
Clathria (Axosuberites) nidificata (Kirkpatrick, 1907)	84-540	BURTON 1940; BURTON 1929
Craniella leptoderma (Sollas, 1886)	4-2267	KOLTUN 1976
***Halichondria (Eumastia) attenuata* (Topsent, 1915)**	0-**135**	BURTON 1932; presente estudo
Haliclona (Gellius) rudis (Topsent, 1901)	20-500	DESQUEYROUX-FAÚNDEZ 1989; TOPSENT 1901
Haliclona (Rhizoniera) dancoi (Topsent, 1901)	18-2267	KOLTUN 1964; KOLTUN 1976
Haliclona (Soestella) chilensis (Thiele, 1905)	15-75	BURTON 1934; BURTON 1932
***Haliclonissa verrucosa* Burton, 1932**	**25-194**	presente estudo
Hemigellius bidens (Topsent, 1901)	30-550	TOPSENT 1908; TOPSENT 1901
Homaxinella balfourensis (Ridley & Dendy, 1886)	0-550	DESQUEYROUX-FAÚNDEZ 1989; KOLTUN 1964
***Hymedesmia (Hymedesmia) laevis* Thiele, 1905**	1-**135**	BURTON 1932; presente estudo
***Iophon terranovae* Calcinai & Pansini, 2000**	**82-135**	presente estudo
Iophon unicornis Topsent, 1907	0-623	DESQUEYROUX & MOYANO 1987; GUTT & KOLTUN 1995
Iotroata somovi (Koltun, 1964)	208-2267	GUTT & KOLTUN 1995; KOLTUN 1976
***Isodictya bentarti* Ríos, Cristobo & Urgorri, 2004**	24-**66**	RÍOS *et al*. 2004; presente estudo
Isodictya erinacea (Topsent, 1916)	20-920	DESQUEYROUX 1972; KOLTUN 1964

Continua

TÁXON	BATIMETRIA (m)	REFERÊNCIA
Isodictya kerguelenensis (Ridley & Dendy, 1886)	2-1266	TOPSENT 1908; KOLTUN 1976
***Isodictya lankesteri* (Kirkpatrick, 1907)**	**20**-840	presente estudo; KOLTUN 1964
Isodictya toxophila Burton, 1932	93-661	BURTON 1932; GUTT & KOLTUN 1995
Kirkpatrickia variolosa (Kirkpatrick, 1907)	18-640	KIRKPATRICK 1908; KOLTUN 1976
Latrunculia (Latrunculia) biformis (Kirkpatrick, 1907)	18-1097	SAMAAI *et al*. 2006
Latrunculia (Latrunculia) brevis (Ridley & Dendy, 1886)	46-1500	SAMAAI *et al*. 2003; RIDLEY & DENDY 1886
Microxina benedeni (Topsent, 1901)	81-1266	BURTON 1932; KOLTUN 1976
***Microxina phakellioides* (Kirkpatrick, 1907)**	**66**-550	presente estudo; KOLTUN 1964
Mycale (Oxymycale) acerata Kirkpatrick, 1907	0-731	DESQUEYROUX & MOYANO 1987; GUTT & KOLTUN 1995
***Myxilla (Ectyomyxilla) mariana* Ridley & Dendy, 1886**	**82**-385	presente estudo; HENTSCHEL 1914
Myxilla (Myxilla) mollis Ridley & Dendy, 1886	7-1098	KIRKPATRICK 1908; RIDLEY & DENDY 1886
Myxodoryx hanitschi (Kirkpatrick, 1907)	20-622	DESQUEYROUX-FAÚNDEZ 1989; BURTON 1938
Phorbas areolata (Thiele, 1905)	19-970	DESQUEYROUX-FAÚNDEZ 1989; BURTON 1932
Polymastia invaginata Kirkpatrick, 1907	18-1592	KIRKPATRICK 1908; BURTON 1938
Suberites montiniger Carter, 1880 *sensu* Topsent, 1915	91-424	BURTON 1929; GUTT & KOLTUN 1995
Tedania (Tedaniopsis) charcoti Topsent, 1913	0-728	DESQUEYROUX-FAÚNDEZ 1989; BURTON 1932

Continua

TÁXON	BATIMETRIA (m)	REFERÊNCIA
***Tedania (Tedaniopsis) oxeata* Topsent, 1916**	**66**-920	presente estudo; KOLTUN 1964
Tedania (Tedaniopsis) vanhoeffeni Hentschel, 1914	46-499	HENTSCHEL 1914; KOLTUN 1964
***Tethyopsis longispinum* (Lendenfeld, 1907)**	**20**-1340	presente estudo; KOLTUN 1964

Das espécies estudadas, 25% apresentam novos limites batimétricos.

Considerações Finais

- O estudo da fauna de demospongias na área estudada (Is. Shetland do Sul, Estreito de Bransfield e I. Joinville) coletadas pelo PROANTAR constitui-se no primeiro trabalho de cunho taxonômico abrangente para a área estudada.
- Foram identificadas 40 espécies, distribuídas em 26 gêneros, 17 famílias e seis ordens. Dentre as espécies identificadas, três constituem-se em novos registros para a Antártica: *Hymedesmia (Hymedesmia) laevis* (Thiele, 1905), *Halichondria (Eumastia) attenuata* (Topsent, 1915) e *Haliclona (Soestella) chilensis* (Thiele, 1905).
- Ampliou-se o conhecimento da diversidade bentônica local com os registros dos poríferos: das famílias Ancorinidae Schmidt, 1870 e Iotrochotidae Dendy, 1922; dos gêneros *Tethyopsis* Stewart, 1870 e *Iotroata* Ridley, 1884; e das espécies *Tethyopsis longispinum* (Lendenfeld, 1907), *Suberites montiniger* Carter, 1880 *sensu* Topsent, 1915, *Acanthorhabdus fragilis* Burton, 1929, *Iophon terranovae* Calcinai & Pansini, 2000, *Iotroata somovi* (Koltun, 1964), *Myxilla (Ectyomyxilla) mariana* (Ridley & Dendy, 1886), *Tedania (Tedaniopsis) vanhoffeni* (Hentschel, 1914) e *Latrunculia (Latrunculia) brevis* Ridley & Dendy, 1886. Dentre as espécies registradas, duas apresentam distribuição disjunta: *S. montiniger*, descrita para o Mar de Barents, Oceano Glacial Ártico, e *Artemisina apollinis* (Ridley & Dendy, 1886), descrita para a porção norte do Oceano Atlântico (Groenlândia). Esta situação talvez não se sustente; à medida que análises de biologia molecular forem realizadas com exemplares dessas espécies, é possível que se confirme a existência de espécies crípticas.

- Das espécies inventariadas no presente estudo, foram recoletadas 24 (60%), confirmando-se a ocorrência das mesmas na região.
- Verificou-se que a distribuição setentrional das espécies em geral estendeu-se pelas costas do Chile e Argentina, Is. Malvinas, região Magelânica e I. Kerguelen. Um número reduzido de espécies foram registradas também em ilhas dos três oceanos no Hemisfério Sul.
- Duas espécies apresentaram distribuição horizontal mais ampla: *T. (T.) vanhoffeni* - presente na costa do Rio Grande do Sul, e *L. (L.) brevis* - identificada para a África do Sul.
- Em relação às espécies identificadas através de material comparativo, todas confirmaram a identidade das amostras; porém é importante salientar que algumas apresentaram características morfológicas diferenciadas, ainda que muito sutis. Esta condição é aqui aceita como variação intraespecífica.
- Ampliaram-se as ilustrações e diagnoses de cada espécie em relação ao conhecido na literatura até o momento, com fotografias da arquitetura esqueletal e principalmente de escleras microfotografadas em Microscopia Eletrônica de Varredura.
- Dentre as espécies identificadas, 10 (25%) possuem novos limites de distribuição batimétrica. *I. terranovae* e *H. verrucosa* fornecem novos limites inferiores e superiores de batimetria. As espécies *T. longispinum*, *M. (E.) mariana*, *T. (T.) oxeata*, *I. lankesteri* e *M. phakellioides* têm seus limites inferiores ampliados, enquanto os limites superiores de batimetria são ampliados para *H. (H.) laevis*, *I. bentarti* e *H. (E.) attenuata*
- A distribuição vertical de muitas espécies pode variar bastante. Na área estudada algumas espécies concentram-se entre 20 a 82 m, mas em outras regiões foram registradas para grandes profundidades, podendo ultrapassar 2000 m.

- Corrobora-se neste estudo a coespecificidade da espongofauna presente nesta região do continente antártico com a de áreas ao sul da costa do Chile e da Argentina, região Magelânica e ilhas que compõem o Arco de Scotia (Geórgia do Sul, Órcades do Sul e Sandwich do Sul), confirmando que a continuidade da fauna antártica na região seja justificada pela conexão geológica existente entre os continentes.
- O maior esforço de coletas ocorreu próximo à I. Low, no Estreito de Bransfield, o que explica um maior número de amostras provenientes deste local e conseqüentemente um maior número de registros.

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Periódicos

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LENT, H. & J. JURBERG. 1980. Comentários sobre a genitália externa masculina em *Triatoma* Laporte, 1832 (Hemiptera, Reduviidae). **Revista Brasileira de Biologia**, Rio de Janeiro, **40** (3): 611-627.

SMITH, D.R. 1990. A synopsis of the sawflies (Hymenoptera, Symphita) of America South of the United States: Pergidae. **Revista Brasileira de Entomologia**, São Paulo, **34** (1): 7-200.

Livros

HENNIG, W. 1981. **Insect phylogeny.** Chichester, John Wiley, XX+514p.

Capítulo de livro

HULL, D.L. 1974. Darwinism and historiography, p. 388-402. *In*: T.F. GLICK (Ed.). **The comparative reception of Darwinism.** Austin, University of Texas, IV+505p.

Publicações eletrônicas

MARINONI, L. 1997. Sciomyzidae. *In*: A. SOLIS (Ed.). **Las Familias de insectos de Costa Rica.** Available in the World Wide Web at: http://www.inbio.ac.cr/papers/insectoscr/Texto630.html [data de acesso].

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>
> Daniela A. Lopes(1); Eduardo Hajdu(1); Henry M. Reiswig(2*)
>
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Epifanio RA, Gabriel R, Martins DL, Muricy G (1999) The sesterterpene variabilin as a fish-predation deterrent in the Western Atlantic sponge *Ircinia strobilina*. *J Chem Eco* 25(10): 2247-2254

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GLOSSÁRIO

As definições apresentadas seguem MOTHES (1996) e LERNER (2001), complementadas por VOS *et al*. (1991) e NONNATO *et al*. (1992).

ACANTO - prefixo que indica a presença de espinhos.

ACICULO - prefixo que indica a presença de uma estrutura serrilhada e pontiaguda.

ALA - diminuta estrutura semelhante a uma asa ou espátula presente nas porções recurvadas de uma quela; a ala anterior (a que aponta para a haste) chama-se frontal, as demais são as chamadas laterais.

ANATRIENA - triena na qual os clados encontram-se fortemente curvados em sentido contrário, em direção ao rabdoma.

ANISO - prefixo significando desigual, geralmente referindo-se às extremidades de uma esclera.

ARRANJO EM BUQUÊ - organização ectossomal de escleras, perpendiculares à superfície da esponja, com as extremidades apicais em direção ao exterior.

ARÉOLA - estrutura presente na superfície da esponja, em formato circular.

ARMADILHA - aparelho fixo para coleta de material; de dois tipos: circular, com 60 cm diâmetro, e outra retangular, com 60 x 40 cm abertura.

BEAM-TRAWL - aparelho tipo draga para coleta de material, medindo 1.55 m largura e 0.5 m altura, com 110 kg peso, dotada de rede com malha de 5 mm; realiza arrastos de curta duração (5-10 minutos).

BIPOCILA - anisoquela modificada, com alas fusionadas conectadas por uma curta haste curvava.

BIROTULA - tipo de microsclera com uma haste reta e terminações semelhantes a um guarda-chuva.

CANONOQUELA - isoquela elipsóide modificada com extensões aladas em um dos lados (na “base”).

CLADO - um raio ou ramificação axial contendo um eixo ou canal axial confluente com o do protoclado ou protorabdo de qualquer tipo de esclera; termo utilizado principalmente para escleras tetractinais.

CLADOMA - clados de uma triena, ou uma esclera derivada de uma triena.

COANOSSOMA - área do corpo da esponja onde se localizam as câmaras coanocitárias.

CONSISTÊNCIA COMPRESSÍVEL - facilmente comprimida.

CONSISTÊNCIA DURA - não cede à pressão.

CONSISTÊNCIA ELÁSTICA (= ESPONJOSA, RESILIENTE, FLEXÍVEL) - macia, porém não frágil. Esponja que depois de comprimida volta à forma original.

CONSISTÊNCIA FIRME (= RESISTENTE) - sólida, requer considerável pressão para deformar.

CONSISTÊNCIA FRÁGIL (= QUEBRADIÇA) - facilmente quebradiça.

CONSISTÊNCIA FRIÁVEL - facilmente quebradiça, delicada, frágil.

CONSISTÊNCIA INCOMPRESSÍVEL - que não se comprime facilmente.

CÔNULO - elevação da membrana superficial da esponja.

CÓRTEX - uma região do ectossoma consolidada por um esqueleto distinto; o esqueleto cortical pode ser exclusivamente orgânico ou mais frequentemente orgânico e mineral.

CROSTA SUPERFICIAL - ver CÓRTEX.

DISCORABDO - microsclera em forma de bastão com vários discos lisos ou serreados ao longo de um eixo, produzindo um aspecto verticilado.

ECTOSSOMA - região superficial da esponja não sustentada por algum esqueleto especial.

ECTOSSOMA DESTACÁVEL - que se desprende facilmente do corpo da esponja.

EQUINANTE (EQUINAÇÃO) - esclera que protraem de uma placa de espongina, fibra ou feixe espicular.

ESCLERA (= ESPÍCULA) - elemento do esqueleto mineral composto por sílica ou carbonato de cálcio.

ESPINISPIRA - microsclera de forma espiral/sigmóide, dotada de espinhos por todo o eixo.

ESPONGINA - material colagenoso depositado sob a forma de fibras homogêneas ou placas, as quais são normalmente de grande tamanho ou depositado nos nós de uma reticulação.

ESQUELETO AXIAL - esqueleto com um tipo de organização onde alguns componentes estão condensados, formando uma região central ou eixo.

ESQUELETO COANOSSOMAL - esqueleto da porção principal do corpo, contendo um sistema de canais e responsável pela forma da esponja.

ESQUELETO ECTOSSOMAL - esqueleto localizado na região superficial da esponja, distinto do coanossoma, pode estar ausente.

ESQUELETO PLUMORETICULADO - esqueleto com um tipo de arquitetura plumosa, onde ocorrem ligações entre si.

ESQUELETO RADIAL - esqueleto caracterizado por megascleras orientadas radialmente a partir de um centro da esponja, e comumente pela ausência de espongina.

ESQUELETO SUBECTOSSOMAL - esqueleto posicionado entre o ectossoma coanossoma, com um arranjo distinto dos mesmos.

ESQUELETO TANGENCIAL - esqueleto onde as escleras ectossomais estão dispostas paralelamente à superfície.

ESTILO - megasclera monaxônica monactinal, com uma extremidade pontiaguda e outra (cabeça ou base) arredondada.

ESTRÔNGILO - megasclera monaxônica diactinal, arredondada em ambas as extremidades.

ESTRONGILÓXEA - óxea fusiforme com uma das extremidades arredondadas.

EXTREMIDADE ACERADA - extremidade pontiaguda.

EXTREMIDADE ARREDONDADA - extremidade de contorno redondo.

EXTREMIDADE CÔNICA - extremidade cônica, em forma de ‘V’.

EXTREMIDADE HASTADA - extremidade mais longa e pontiaguda.

EXTREMIDADE MUCRONADA - extremidade com uma espécie de bico arredondado.

EXTREMIDADE TELESCÓPICA - extremidade dotada de “degraus”, geralmente com a terminação arredondada.

FEIXE (= TRACTO) - coluna ou raramente fila única de megascleras monaxônicas aglomeradas, sobrepostas ou alinhadas, com ou sem espongina cimentante.

FEIXE ASCENDENTE - feixe primário que se termina em um ângulo reto à superfície.

FEIXE MULTISPICULAR - feixe composto de seis ou mais escleras adjacentes umas às outras.

FEIXE LONGITUDINAL - ver FEIXE ASCENDENTE.

FEIXE PAUCISPICULAR - feixe composto de duas a cinco escleras adjacentes umas às outras.

FEIXE UNISPICULAR - uma simples fileira de escleras alinhadas.

FIBRA - coluna de espongina formando um esqueleto dendrítico ou reticulado, preenchida ou não por escleras ou detritos exógenos.

FIBRA PRIMÁRIA - fibra maior, estendendo-se até a superfície com uma orientação vertical.

FIBRA SECUNDÁRIA - fibra que conecta as fibras primárias, com orientação transversal.

FORMA ARBORESCENTE - ereta e ramificada, semelhante aos ramos de uma árvore.

FORMA CILÍNDRICA - em forma de cilindro.

FORMA ERETA - tipo de crescimento vertical a partir de um substrato.

FORMA FINAMENTE INCRUSTANTE - fina camada que cobre o substrato.

FORMA FLABELADA (= FLABELIFORME) - em forma de um leque.

FORMA GLOBULAR (= ESFÉRICA) - em forma de bola, redonda.

FORMA MASSIVA - estrutura compacta sem forma especial.

FORMA OVAL - em formato elíptico..

ISOQUELA - quela com terminações iguais.

MALHA - abertura do retículo.

MANÚBRIO - extremidade basal de uma esclera onde o eixo principal apresenta uma coroação de espinhos.

MEGASCLERA - normalmente o maior e mais robusto dos tipos espiculares. Esclera geralmente de grande importância estrutural.

MICROESPINHADURA - presença de discreta ornamentação de espinhos em uma esclera.

MICROSCLERA - esclera pequena, muitas vezes ornamentada.

MICRÓXEA - microsclera semelhante a uma óxea.

ONIQUETA - microsclera assimétrica, longa, fina e transparente.

ORTOTRIENA - megasclera do tipo triena na qual os clados estão dispostos em ângulo reto em relação ao rabdoma.

ORTIDIENA - megasclera semelhante a uma ortotriena, porém com o cladoma constituído por dois clados.

ÓSCULO - abertura exalante através da qual a água sai da esponja, não necessariamente limitado ao número de um por individuo.

OTTER-TRAWL - rede de arrasto para coleta de material, com boca de 14 m e malha do ensacador de 45 mm.

ÓXEA - megasclera monaxônica, diactinal, pontiaguda em ambas as extremidades.

ÓXEA FUSIFORME - óxea reta.

OXIÁSTER - euáster com raios pontiagudos e um pequeno centro (menos de 1/3 do diâmetro total da esclera).

PALIÇADA - arranjo perpendicular de escleras ectossomais, com as extremidades protraindo na superfície da esponja.

PAPILA - protuberância semelhante a um mamilo que se projeta da superfície da esponja e apresentando óstios, ósculos ou ambos.

PORO (= ÓSTIO) - Abertura inalante através da qual a água penetra na esponja.

PROTRAÇÃO - quando a arquitetura esqueletal de uma esponja possui no seu arranjo escleras que atravessam a membrana superficial, muitas vezes causando a hispidação superficial.

PROTRIENA - triena em que os clados são discreta ou acentuadamente encurvados para dentro e para cima, em direção oposta ao rabdoma.

QUELA - microsclera com um eixo encurvado e "dentes" ou "alas" encurvadas, algumas vezes se agrupando em forma de roseta.

QUELA ANCORADA - isoquela com três ou mais alas livres; com duas alas laterais incipientes fusionadas à haste sobre toda a sua extensão, e uma haste levemente curvada, não abruptamente arqueada.

QUELA PALMADA - quela onde as alas laterais coalescem com o eixo em toda sua porção interna. Alas frontais bastante desenvolvidas.

RABDOMA - raio de uma tetractina que é distinto dos outros três principalmente no comprimento.

RÁFIDE - microsclera muito fina, semelhante a um fio de cabelo, muitas vezes inserida em feixes denominados tricodragmas.

RETICULAÇÃO - qualquer tipo de estrutura reticulada, determinada pelo arranjo espacial das escleras.

RETICULAÇÃO DENSA - reticulação composta de uma grande quantidade de escleras, arranjadas ou não com espongina formando grossos feixes, às vezes sem uma clara orientação.

RETICULAÇÃO 'CRISS-CROSS' - reticulação na qual as escleras não se apresentam de forma organizada, muitas vezes confusa, com uma grande quantidade de escleras sobrepostas umas às outras.

ROSETA - ver QUELA.

SIGMA - microsclera em forma de ‘C’ ou ‘S’.

SUBECTOSSOMA - região do corpo da esponja posicionada entre o ectossoma e o coanossoma.

SUBSTRATO - qualquer superfície dura e/ou firme na qual uma esponja pode se fixar e se desenvolver.

SUPERFÍCIE CONULOSA - superfície com pequenas projeções em forma de cones ou cônulos.

SUPERFÍCIE ESPINHOSA - superfície com projeções fibrosas ou espiculares, endurecidas e pontiagudas.

SUPERFÍCIE HÍSPIDA - superfície com abundantes perfurações espiculares; áspera ao tato.

SUPERFÍCIE IRREGULAR - superfície com inúmeras elevações e depressões, não plana e sem estruturas características.

SUPERFÍCIE RUGOSA - superfície áspera dotada de saliências.

SUPERFÍCIE TUBERCULADA - ver SUPERFÍCIE VERRUCOSA.

SUPERFÍCIE VERRUCOSA - superfície apresentando saliências de formato geralmente arredondado.

TILO - qualquer inchamento arredondado localizado no eixo ou nas extremidades de uma esclera

TILÓSTILO - estilo dotado de ou tilo na base.

TILOTO - megasclera diactinal com ambas as extremidades infladas.

TORNOTO - megasclera diactinal reta, isodiamétrica, com extremidades cônicas ou mucronadas.

TOXA - microsclera em forma de arco ou discretamente flexionada na porção mediana.

TRIENA - termo utilizado para megasclera tetractinal com um raio desigual denominado rabdo, comumente maior do que os outros três, denominados clados, formando o cladoma.

TUFOS - conjunto de escleras dispostas de forma divergente.

VERTICILO - ornamentação presente em uma esclera, formada por espinhos organizados em anéis e/ou coroas ao longo do eixo, usualmente regularmente espaçados.

VERTICILO APICAL - verticilo presente no ápice de uma esclera.

VERTICILO BASAL - verticilo presente na base de uma esclera

VERTICILO MEDIANO - verticilo presente no ponto médio uma esclera
VERTICILO SUBSIDIÁRIO - verticilo presente entre o verticilo mediano e o apical.

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ESPÉCIES DE DEMOSPONGIAE PRESENTES NO COMPLEXO ANTÁRTICO FAUNÍSTICO

Demospongiae (taxonomia conforme Soest *et al*. 2005) presentes no Complexo Antártico Faunístico, ampliadas de Sarà *et al*. (1992) [S] e acrescidas de Cuartas (1994) [C], Mothes & Lerner (1995) [M], Desqueyroux-Faúndez & van Soest (1996) [D], Calcinai & Pansini (2000) [Ca], Ríos *et al*. (2004) e Samaai *et al*. (2006) [Sm]. S: Setores continentais (somente naqueles com registros); S1: área compreendida entre Terra Nova Suábia até Terra Princesa Ragnhild; S2: Terra Príncipe Harald até Terra Enderby; S3: Terra de McRobertson até Terra Queen Mary; S4: Terra Knox até Terra Adélia; S5: Terra Victoria até Mar de Ross (até 0°); S6: Mar de Ross (a partir de 0°) até Terra Marie Byrd; S8: Mar de Bellinghausen até Península Antártica (Terra de Graham, Terra de Palmer e Is. Shetland do Sul); S9: Mar de Weddell e Mar de Lazarev; GS: Geórgia do Sul; OS: Is. Órcades do Sul; SS: Is. Sandwich do Sul; MA: Is. Malvinas; MG: Região Magelânica; AR: Argentina; CH: Chile; CR: I. Croizat; KE: I. Kerguelen; HE: I. Heard; MR: I. Edward-Marion; GO: I. Gough; TC: Tristão da Cunha; MQ: I. Macquarie; BR: Brasil; CA: I. Campbell; NZ: Nova Zelândia; TA: I. Tasmânia; AF: África do Sul.

Espécies	**Região faunística antártica**																						**Entidades extra-antárticas**					**Ref.**
	Setores continentais								**Entidades não-continentais**																			
	S1	**S2**	**S3**	**S4**	**S5**	**S6**	**S8**	**S9**	**GS**	**OS**	**SS**	**MA**	**MG**	**AR**	**CH**	**CR**	**KE**	**HE**	**MR**	**GO**	**TC**	**MQ**	**BR**	**CA**	**NZ**	**TA**	**AF**	
Ordem Homosclerophorida																												
1. *Oscarella lobularis* (Schmidt, 1862)	-	-	●	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
2. *Plakina monolopha* Schulze, 1880	-	●	●	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	●	-	-	S
3. *Plakina trilopha* Schulze, 1880	-	●	●	-	●	-	●	●	●	-	-	●	-	●	●	-	●	●	-	-	-	-	-	-	●	-	-	S
Ordem Spirophorida																												
4. *Cinachyra antarctica* (Carter, 1872)	-	●	●	●	●	●	●	●	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
5. *Cinachyra barbata* Sollas, 1886	-	●	●	-	●	-	●	●	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
6. *Craniella coactifera* (Lendenfeld, 197)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
7. *Craniella leptoderma* (Sollas, 1886)	-	●	●	●	●	-	●	●	●	-	-	●	-	●	●	-	●	●	-	-	-	-	-	-	-	-	-	S
8. *Craniella metaclada* (Lendenfeld, 1907)	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
9. *Tetilla coronida* Sollas, 1888	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	S
Ordem Astrophorida																												
10. Stelletta crater Dendy, 1924	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S

11. *Stelletta maori* Dendy, 1924	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
12. *Stelletta phrissens* Sollas, 1886	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
13. *Stelletta purpurea* Ridley, 1884	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	●	S
14. *Tethyopsis longispinum* (Lendenfeld, 1907)	-	●	●	●	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
15. *Jaspis novaezelandiae* Dendy, 1924	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
16. *Penares tylotaster* Dendy, 1924	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
17. *Cladothenea andriashevi* Koltun, 1964	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
18. *Pachastrella monilifera* Schmidt, 1868	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	●	S
19. *Poecillastra compressa* (Bowerbank, 1866)	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	S
20. *Poecillastra schulzii* (Sollas, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	S
21. *Thenea delicata* (Sollas, 1886)	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	S
22. *Geodia magellani* (Sollas, 1886)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
23. *Geodia vestigifera* (Dendy, 1924)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
Ordem Hadromerida																												
24. *Acanthopolymastia acanthoxa* Koltun, 1964	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
25. *Cliona diversityla* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
26. *Cliona euryphylla* Topsent, 1888	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
27. *Clionaopsis platei* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
28. *Cliothosa hancocki* (Topsent, 1888)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
29. *Hemiasterella digitata* Burton, 1929	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
30. *Homaxinella balfourensis* (Ridley & Dendy, 1886)	-	●	●	●	●	-	●	●	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
31. *Plicatellopsis arborescens* Burton, 1932	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
32. *Plicatellopsis flabellata* Burton, 1932	-	-	-	-	-	-	-	-	-	-	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
33. *Plicatellopsis fragilis* Koltun, 1964	-	-	●	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
34. *Polymastia invaginata* Kirkpatrick, 1907	●	●	●	●	●	-	●	●	●	●	-	-	●	-	●	-	●	●	-	-	-	-	-	-	-	-	-	S
35. *Polymastia isidis* Thiele, 1905	-	-	●	-	-	-	●	●	-	-	-	●	●	-	-	-	●	●	-	-	-	-	-	-	-	-	●	S
36. *Proteleia burtoni* Koltun, 1964	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
37. *Pseudosuberites antarcticus* (Carter, 1876)	-	●	●	●	●	●	●	●	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	S
38. *Pseudosuberites digitatus* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
39. *Pseudosuberites hyalinus* (Ridley & Dendy, 1886)	-	●	●	●	●	-	●	●	-	-	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	●	S
40. *Pseudosuberites nudus* Koltun, 1964	-	●	●	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
41. *Pseudosuberites sulcatus* Thiele, 1905	-	-	-	-	●	-	●	●	●	-	-	●	●	-	●	-	●	-	-	●	-	-	-	●	●	-	-	S
42. *Rhizaxinella australiensis* Hentschel, 1909	-	-	-	-	●	-	●	-	●	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	●	-	S
43. *Sphaerotylus antarcticus* Kirkpatrick, 1907	-	●	●	●	●	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
44. *Sphaerotylus capitatus* (Vosmaer, 1885)	-	●	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S

Espécies	Região faunística antártica																					Entidades extra-antárticas					Ref.
	Setores continentais								Entidades não-continentais																		
	S1	S2	S3	S4	S5	S6	S8	S9	GS	OS	SS	MA	MG	AR	CH	CR	KE	HE	MR	GO	TC	MQ	BR	CA	NZ	TA	AF	
45. *Sphaerotylus vanhoffeni* (Hentschel, 1914)	-	-	●	-	●	-	-	●	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
46. *Stylocordyla borealis* (Loven, 1868)	-	●	●	●	●	-	●	●	●	●	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	S
47. *Suberites caminatus* Ridley & Dendy, 1886	-	-	-	-	●	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
48. *Suberites carnosus* (Johnston, 1842)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
49. *Suberites microstomus* Ridley & Dendy, 1886	-	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
50. *Suberites montiniger* Carter, 1880	-	-	●	-	●	-	●	●	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
51. *Suberites ruber* Thiele, 1905	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
52. *Suberites strongylatus* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
53. *Tentorium papillatum* (Kirkpatrick, 1907)	-	-	-	-	●	-	●	●	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
54. *Tentorium semisuberites* (Schmidt, 1870)	-	●	●	●	●	-	-	●	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
55. *Volzia azzaroliae* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
Ordem Poecilosclerida																												
Subrdem Microcionina																												
56. *Acanthorhabdus abnormalis* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	S
57. *Acanthorhabdus fragilis* Burton, 1929	-	-	●	-	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
58. *Dolichacantha macrodon* Hentschel, 1914	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
59. *Iophon aceratus* Hentschel, 1914	-	-	●	●	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
60. *Iophon cheliferum* Ridley & Dendy, 1886	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	●	-	●	-	-	-	-	-	-	-	-	S
61. *Iophon chilense* Desqueyroux-Faúndez & van Soest, 1996	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	D
62. *Iophon flabello-digitatus* Kirkpatrick, 1907	-	-	●	●	●	-	●	-	-	●	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
63. *Iophon hesperidesi* Ríos, Cristobo & Urgorri, 2004	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
64. *Iophon laevistylus* Dendy, 1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	S
65. *Iophon laminalis* Ridley & Dendy, 1886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	S
66. *Iophon proximum* (Ridley, 1881)	-	-	-	-	-	-	●	-	●	-	-	●	●	●	●	-	●	-	-	●	●	●	-	-	●	-	●	S
67. *Iophon radiatus* Topsent, 1901	-	●	●	-	●	-	-	●	-	●	-	●	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	S
68. *Iophon spatulatus* Kirkpatrick, 1907	-	-	-	-	●	-	-	●	●	●	●	-	-	-	-	-	●	-	-	-	-	●	-	-	-	-	-	S
69. *Iophon terranovae* Calcinai & Pansini, 2000	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Ca
70. *Iophon timidum* Desqueyroux-Faúndez & van Soest, 1996	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D
71. *Iophon tubiforme* Desqueyroux-Faúndez & van Soest, 1996	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	D
72. *Iophon unicornis* Topsent, 1907	●	●	●	●	●	-	●	●	-	-	-	●	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	S
73. *Megaciella pilosa* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	S
74. *Megaciella topsenti* (Burton, 1932)	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S

75. *Clathria (Clathria) discreta* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	●	-	-	●	-	-	-	-	-	-	-	S
76. *Clathria (Clathria) lipochela* Burton, 1932	-	-	-	-	●	-	-	-	●	-	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
77. *Clathria (Clathria) papillosa* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
78. *Clathria (Clathria) pauper* Broendsted, 1926	-	-	●	●	●	-	-	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
79. *Clathria (Clathria) sarai* Hooper, 1996	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
80. *Clathria (Clathria) saraspinifera* Hooper, 1996	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
81. *Clathria (Clathria) terraenovae* Dendy, 1924	-	-	-	-	-	-	-	-	●	-	-	●	-	●	-	-	●	-	-	-	-	-	-	-	●	-	-	S
82. *Clathria (Clathria) toxipraedita* Topsent, 1913	-	-	●	-	●	-	●	●	●	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
83. *Clathria (Microciona) antarctica* (Topsent, 1917)	-	●	-	-	●	●	●	-	●	-	-	●	●	●	●	-	●	-	-	●	-	-	-	-	●	-	-	S
84. *Clathria (Microciona) toxifera* (Topsent, 1913)	-	-	●	-	●	-	●	●	●	-	-	●	●	●	-	-	-	-	-	●	-	-	-	-	-	-	-	S
85. *Clathria (Axosuberites) flabellata* (Topsent, 1916)	-	-	●	●	●	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
86. *Clathria (Axosuberites) georgiaensis* Hooper, 1996	-	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
87. *Clathria (Axosuberites) nidificata* (Kirkpatrick, 1907)	-	●	●	●	●	-	-	●	●	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
88. *Clathria (Axosuberites) rameus* Koltun, 1964	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
89. *Clathria (Thalysias) amabilis* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
90. *Clathria (Thalysias) koltuni* Hooper, 1996	-	-	-	●	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
91. *Clathria (Thalysias) lissocladus* (Burton, 1934)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	S
92. *Clathria (Thalysias) membranacea* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
93. *Clathria (Thalysias) paucispicula* (Burton, 1932)	-	-	●	-	-	-	●	-	●	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
94. *Echinoclathria atlantica* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
95. *Echinoclathria contexta* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
96. *Artemisina apollinis* (Ridley & Dendy, 1886)	-	-	●	-	●	-	●	-	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
97. *Artemisina jovis* Dendy, 1924	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
98. *Artemisina plumosa* (Hentschel, 1914)	-	●	●	●	●	-	●	●	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
99. *Artemisina tubulosa* Koltun, 1964	-	-	●	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
100. *Raspailia (Raspaxilla) mariana* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	S
101. *Raspailia (Raspaxilla) phakellina* (Topsent, 1913)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
102. *Raspailia (Clathriodendron) fueguensis* Cuartas, 1994	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C
103. *Raspailia (Clathriodendron) levis* Cuartas, 1994	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C
104. *Raspailia (Hymeraphiopsis) irregularis* (Hentschel, 1914)	-	-	●	●	●	-	●	●	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	●	S
105. *Raspailia (?) flagelliformis* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	●	S
106. *Eurypon miniaceum* Thiele, 1905	-	-	-	-	●	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	●	S
107. *Rhabderemia coralloides* Dendy, 1924	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S

Subordem Myxillina

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	S1	S2	S3	S4	S5	S6	S8	S9	GS	OS	SS	MA	MG	AR	CH	CR	KE	HE	MR	GO	TC	MQ	BR	CA	NZ	TA	AF	
108. *Chondropsis chaliniformis* Lendenfeld, 1889	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	S
109. *Coelosphaera (Coelosphaera) antarctica* Koltun, 1976	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
110. *Coelosphaera (Coelosphaera) globosa* Bergquist, 1961	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
111. *Inflatella belli* (Kirkpatrick, 1907)	-	●	●	●	●	-	-	●	-	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	●	-	●	S
112. *Inflatella coelosphaeroides* Koltun, 1964	-	●	●	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
113. *Lissodendoryx (Lissodendoryx) buchanani* Topsent, 1913	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
114. *Lissodendoryx (Lissodendoryx) complicata* (Hansen, 1885)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
115. *Lissodendoryx (Lissodendoryx) flabellata* Burton, 1929	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
116. *Lissodendoryx (Lissodendoryx) fusca* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	S
117. *Lissodendoryx (Lissodendoryx) innominata* Burton, 1929	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
118. *Lissodendoryx (Lissodendoryx) paucispinata* Ridley & Dendy, 1886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
119. *Lissodendoryx (Lissodendoryx) styloderma* Hentschel, 1914	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
120. *Lissodendoryx (Ectyodoryx) anacantha* (Hentschel, 1914)	-	●	●	●	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
121. *Lissodendoryx (Ectyodoryx) antarctica* Hentschel, 1914	-	-	●	-	●	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
122. *Lissodendoryx (Ectyodoryx) minuta* (Calcinai & Pansini, 2000)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Ca
123. *Lissodendoryx (Ectyodoryx) nobilis* (Ridley & Dendy, 1886)	-	-	-	-	●	-	-	●	●	-	-	●	-	●	-	●	●	-	-	-	-	-	-	-	-	-	-	S
124. *Lissodendoryx (Ectyodoryx) patagonica* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
125. *Lissodendoryx (Ectyodoryx) plumosa* (Hentschel, 1914)	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
126. *Lissodendoryx (Ectyodoryx) ramilobosa* (Topsent, 1916)	-	-	●	●	●	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
127. *Crella (Crella) tubifex* (Hentschel, 1914)	-	●	●	-	-	-	●	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
128. *Crella (Grayella) crassa* Hentschel, 1914	-	-	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
129. *Crella (?) stylifera* Hentschel, 1914	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
130. *Fibulia cribriporosa* (Burton, 1929)	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
131. *Fibulia meandrina* (Kirkpatrick, 1907)	-	-	-	●	●	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
132. *Fibulia myxillioides* (Burton, 1932)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
133. *Pyloderma latrunculioides* (Ridley & Dendy, 1886)	-	●	●	-	●	-	-	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
134. *Desmacidon fruticosum* (Montagu, 1818)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	●	S
135. *Desmacidon nebulosum* Boury-Esnault & Van Beveren, 1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
136. *Desmacidon ramosum* Ridley & Dendy, 1886	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	●	S
137. *Hymedesmia (Hymedesmia) antarctica* Boury & Beveren, 1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
138. *Hymedesmia (Hymedesmia) decepta* (Kirkpatrick, 1907)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
139. *Hymedesmia (Hymedesmia) gaussiana* Hentschel, 1914	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
140. *Hymedesmia (Hymedesmia) laevis* Thiele, 1905	-	-	-	-	-	-	●	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S

141. *Hymedesmia (Hymedesmia) longurioides* Burton, 1932	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
142. *Hymedesmia (Hymedesmia) mariondufresni* Boury & Beveren, 1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
143. *Hymedesmia (Hymedesmia) unguifera* Burton, 1929	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
144. *Hymedesmia (Stylopus) antarctica* Hentschel, 1914	-	●	●	-	-	-	-	-	●	-	-	●	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	S
145. *Hymedesmia (Stylopus) fristedti* Topsent, 1916	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
146. *Kirkpatrickia coulmani* (Kirkpatrick, 1907)	-	-	-	●	●	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
147. *Kirkpatrickia variolosa* (Kirkpatrick, 1907)	-	●	●	●	●	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
148. *Myxodoryx hanitschi* (Kirkpatrick, 1907)	-	-	●	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
149. *Phorbas acanthochela* (Koltun, 1964)	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
150. *Phorbas areolata* (Thiele, 1905)	-	-	●	●	●	-	●	●	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
151. *Phorbas domini* (Boury-Esnault & Van Beveren, 1982)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
152. *Phorbas glaberrima* (Topsent, 1917)	●	●	●	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
153. *Phorbas leptochela* (Hentschel, 1914)	-	●	●	-	-	-	-	-	●	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	S
154. *Phorbas nexus* (Koltun, 1964)	-	-	●	●	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
155. *Phorbas pustulosa* (Carter, 1882)	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	●	S
156. *Phorbas tuberculata* (Burton, 1934)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
157. *Plocamionida gaussiana* (Hentschel, 1914)	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
158. *Spanioplon werthi* (Hentschel, 1914)	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
159. *Iotroata somovi* (Koltun, 1964)	-	●	-	●	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
160. *Ectyonopsis panis* (Boury-Esnault & van Beveren, 1982)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
161. *Ectyonopsis ruthae* (Mothes & Lerner, 1995)	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
162. *Hymenancora exigua* (Kirkpatrick, 1907)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
163. *Hymenancora rhaphidophora* Hentschel, 1914	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
164. *Hymenancora rufa* (Kirkpatrick, 1907)	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
165. *Myxilla (Myxilla) asigmata* (Topsent, 1901)	-	●	●	●	●	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
166. *Myxilla (Myxilla) australis* (Topsent, 1901)	-	●	●	●	●	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
167. *Myxilla (Myxilla) basimucronata* Burton, 1932	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
168. *Myxilla (Myxilla) caliciformis* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
169. *Myxilla (Myxilla) elongata* Topsent, 1917	-	-	-	-	●	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
170. *Myxilla (Myxilla) insolens* Koltun, 1964	-	-	-	●	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
171. *Myxilla (Myxilla) mollis* Ridley & Dendy, 1886	-	●	●	●	●	-	●	●	●	-	-	●	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	S
172. *Myxilla (Myxilla) nodaspera* (Topsent, 1913)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
173. *Myxilla (Myxilla) novaezealandiae* Dendy, 1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	S
174. *Myxilla (Burtonanchora) pistillaris* Topsent, 1916	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
175. *Myxilla (Ectyomyxilla) chilensis* Thiele, 1905	-	-	-	-	-	-	●	-	-	-	-	●	●	●	●	-	●	●	-	-	-	●	-	-	●	-	●	S
176. *Myxilla (Ectyomyxilla) kerguelensis* (Hentschel, 1914)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	●	-	-	●	-	●	S

Espécies	Região faunística antártica																						Entidades extra-antárticas					Ref.
	Setores continentais								Entidades não-continentais																			
	S1	S2	S3	S4	S5	S6	S8	S9	GS	OS	SS	MA	MG	AR	CH	CR	KE	HE	MR	GO	TC	MQ	BR	CA	NZ	TA	AF	
177. *Myxilla (Ectyomyxilla) mariana* Ridley & Dendy, 1886	-	-	●	-	-	-	●	-	-	-	-	-	-	-	●	-	-	-	●	-	-	-	-	-	-	-	-	S
178. *Stelodoryx cribrigera* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
179. *Stelodoryx lissostyla* (Burton, 1938)	-	-	●	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
180. *Stelodoryx multidentata* (Boury-Esnault & Van Beveren, 1982)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
181. *Phelloderma radiatum* Ridley & Dendy, 1886	-	-	●	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
182. *Tedania (Tedania) lanceta* Koltun, 1964	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
183. *Tedania (Tedania) trirhaphis* Koltun, 1964	-	●	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
184. *Tedania (Tedaniopsis) charcoti* Topsent, 1913	-	●	●	●	●	-	●	●	●	●	-	●	●	●	●	-	●	-	-	-	-	-	-	-	-	-	-	S
185. *Tedania (Tedaniopsis) gracilis* Hentschel, 1914	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
186. *Tedania (Tedaniopsis) massa* Ridley & Dendy, 1886	-	●	●	●	●	-	●	●	●	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
187. *Tedania (Tedaniopsis) oxeata* Topsent, 1916	-	-	●	●	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
188. *Tedania (Tedaniopsis) tenuicapitata* Ridley, 1881	-	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
189. *Tedania (Tedaniopsis) vanhoeffeni* Hentschel, 1914	-	-	●	-	-	-	●	●	-	-	-	-	-	-	-	-	●	-	-	-	-	-	●	-	-	-	-	S
190. *Tedania (Trachytedania) mucosa* Thiele, 1905	-	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
191. *Tedania (Trachytedania) patagonica* Ridley & Dendy, 1886	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	S
192. *Tedania (Trachytedania) spinata* Ridley, 1881	-	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
Subordem Mycalina																												
193. *Asbestopluma belgicae* (Topsent, 1901)	-	●	●	●	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
194. *Asbestopluma callithrix* Hentschel, 1914	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
195. *Asbestopluma calyx* Hentschel, 1914	-	-	●	●	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
196. *Chondrocladia antarctica* Hentschel, 1914	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
197. *Chondrocladia clavata* (Ridley & Dendy, 1886)	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	●	-	-	S
198. *Chondrocladia stipitata* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	S
199. *Cladorhiza mani* Koltun, 1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	S
200. *Cladorhiza moruliformis* Ridley & Dendy, 1886	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	S
201. *Cladorhiza tridentata* Ridley & Dendy, 1886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	S
202. *Biemna chilensis* Thiele, 1905	-	●	●	-	-	-	●	●	-	-	-	●	●	-	●	-	●	-	-	-	-	-	-	-	-	-	-	S
203. *Biemna polyphylla* Lévi, 1963	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	S
204. *Desmacella alba* (Wilson, 1904)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
205. *Desmacella vestibularis* (Wilson, 1904)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	S
206. *Guitarra antarctica* Hentschel, 1914	-	-	●	-	●	-	-	●	●	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	●	-	-	S
207. *Guitarra dendyi* (Kirkpatrick, 1907)	-	●	●	●	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S

208. *Guitarra fimbriata* Carter, 1874	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	S
209. *Amphilectus flabellata* Burton, 1932	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
210. *Esperiopsis fucorum* (Esper, 1874)	-	-	-	-	-	-	-	-	●	-	-	●	-	●	●	-	●	-	-	-	●	●	-	●	●	-	●	S
211. *Esperiopsis heardi* Boury-Esnault & van Beveren, 1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	S
212. *Esperiopsis informis* Stephens, 1915	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	S
213. *Esperiopsis profunda* Ridley & Dendy, 1886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	S
214. *Esperiopsis rugosus* Thiele, 1905	-	-	●	●	●	-	-	●	-	-	-	●	●	●	●	-	●	-	-	-	●	-	-	-	-	-	●	S
215. *Esperiopsis scotiae* Topsent, 1915	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
216. *Esperiopsis symmetrica* Ridley & Dendy, 1886	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	S
217. *Esperiopsis varia* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
218. *Esperiopsis villosa* (Carter, 1874)	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
219. *Ulosa plana* Cuartas, 1995	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C
220. *Mycale (Mycale) doellojuradoi* Burton, 1940	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
221. *Mycale (Mycale) lapidiformis* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
222. *Mycale (Mycale) macrochela* Burton, 1932	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
223. *Mycale (Mycale) magellanica* (Ridley, 1881)	-	●	●	●	●	-	-	●	●	-	-	●	●	●	-	-	●	●	-	-	-	-	-	-	-	-	-	S
224. *Mycale (Mycale) tridens* Hentschel, 1914	-	-	●	●	●	-	-	●	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
225. *Mycale (Anomomycale) titubans* (Schmidt, 1870)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	S
226. *Mycale (Carmia) diminuta* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
227. *Mycale (Carmia) gaussiana* Hentschel, 1914	-	●	●	●	●	-	-	●	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
228. *Mycale (Oxymycale) acerata* Kirkpatrick, 1907	●	●	●	●	●	-	●	●	●	●	-	●	-	-	●	-	●	-	-	-	-	●	-	-	-	-	-	S
229. *Mycale (?) fibrosa* Boury-Esnault & Van Beveren, 1982	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
230. *Mycale (?) mammiformis* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	S
231. *Mycale (?) profunda* Koltun, 1964	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
232. *Mycale (?) tenuis* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
233. *Mycale (?) tylotornota* Koltun, 1964	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
234. *Sigmosceptrella carlinae* (Boury-Esnault & Van Beveren, 1982)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
235. *Isodictya bentarti* Ríos, Cristobo & Urgorri, 2004	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
236. *Isodictya cavicornuta* Dendy, 1924	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
237. *Isodictya conulosa* (Ridley & Dendy, 1886)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	S
238. *Isodictya delicata* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
239. *Isodictya delicata megachela* Burton, 1934	-	-	-	●	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
240. *Isodictya dufresni* Boury-Esnault & Van Beveren, 1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
241. *Isodictya erinacea* (Topsent, 1916)	-	●	●	●	●	-	●	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
242. *Isodictya kerguelenensis* (Ridley & Dendy, 1886)	-	●	●	●	●	-	●	●	●	-	-	●	-	●	-	-	●	●	-	-	-	-	-	-	-	-	-	S
243. *Isodictya lankesteri* (Kirkpatrick, 1907)	-	●	●	●	●	-	●	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S

Espécies	Região faunística antártica																						Entidades extra-antárticas					Ref.
	Setores continentais								Entidades não-continentais																			
	S1	S2	S3	S4	S5	S6	S8	S9	GS	OS	SS	MA	MG	AR	CH	CR	KE	HE	MR	GO	TC	MQ	BR	CA	NZ	TA	AF	
244. *Isodictya microchela* (Topsent, 1915)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-	S
245. *Isodictya obliquidens* (Hentschel, 1914)	-	-	●	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
246. *Isodictya setifera* (Topsent, 1901)	-	●	●	●	●	-	●	●	●	●		●	●	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
247. *Isodictya toxophila* Burton, 1932	-	-	-	-	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
248. *Isodictya verrucosa* (Topsent, 1913)	-	-	-	-	●	-	●	-	-	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
Subordem Latrunculina																												
249. *Latrunculia (Latrunculia) apicalis* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	Sm
250. *Latrunculia (Latrunculia) basalis* (Kirkpatrick, 1908)	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	Sm
251. *Latrunculia (Latrunculia) biformis* (Kirkpatrick, 1907)		●	●	-	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	●	Sm
252. *Latrunculia (Latrunculia) bocagei* (Ridley & Dendy, 1886)	-	-	●	-	-	-	-	-	-	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	Sm
253. *Latrunculia (Latrunculia) brevis* (Ridley & Dendy, 1886)	-	-	-	-	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	Sm
Ordem Halichondrida																												
254. *Axinella antarctica* (Koltun, 1964)	-	-	●	-	-	-	●	●	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
255. *Axinella crinita* Thiele, 1905	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
256. *Dragmacidon egregium* (Ridley, 1881)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
257. *Dragmacidon fibrosum* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
258. *Dragmacidon mutans* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	●	-	●	-	●	-	-	-	●	-	-	S
259. *Bubaris vermiculata* (Bowerbank, 1866)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
260. *Halicnemia papillosa* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
261. *Halichondria (Halichondria) cristata* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
262. *Halichondria (Halichondria) flexuosa* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
263. *Halichondria (Halichondria) membranacea* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
264. *Halichondria (Halichondria) oxiparva* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
265. *Halichondria (Halichondria) panicea* (Pallas, 1766)	-	●	●	-	-	-	-	-	●	-	-	●	●	●	-	-	●	-	●	-	-	-	-	-	●	-	●	S
266. *Halichondria (Halichondria) hentscheli* Koltun, 1964	-	-	●	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
267. *Halichondria (Eumastia) attenuata* (Topsent, 1915)	-	-	-	-	-	-	●	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
268. *Hymeniacidon agminata* Ridley, 1884	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	●	-	-	●	●	-	S
269. *Hymeniacidon centrotyla* Hentschel, 1914	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
270. *Hymeniacidon dubia* Burton, 1932	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
271. *Hymeniacidon fernandezi* Thiele, 1905	-	-	-	-	-	-	-	-	●	-	-	●	●	●	●	-	●	●	-	-	-	-	-	-	-	-	-	S
272. *Hymeniacidon insutus* Koltun, 1964	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S

273.	*Hymeniacidon kerguelensis* Hentschel, 1914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	●	-	-	-	-	●	S
274.	*Hymeniacidon longistylus* Desqueyroux, 1972	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
275.	*Hymeniacidon rubiginosa* Thiele, 1905	-	-	-	●	-	-	-	-	●	-	-	-	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	S
276.	*Hymeniacidon torquata* Topsent, 1916	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
277.	*Spongosorites incisa* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
278.	*Topsentia compacta* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
	Ordem Haplosclerida																												
	Subordem Haplosclerina																												
279.	*Callyspongia (Callyspongia) ramosa* (Gray, 1843)	-	-	-	●	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	●	●	-	S
280.	*Callyspongia (Toxochalina) robusta* (Ridley, 1884)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	S
281.	*Callyspongia (?) conica* (Broendsted, 1924)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
282.	*Callyspongia (?) flabellata* Burton, 1932	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
283.	*Callyspongia (?) fortis* (Ridley, 1881)	-	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
284.	*Callyspongia (?) fusifera* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
285.	*Chalinula variabilis* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
286.	*Cladocroce gaussiana* (Hentschel, 1914)	-	●	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
287.	*Haliclona (Gellius) borzatii* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
288.	*Haliclona (Gellius) carduus* (Ridley & Dendy, 1886)	-	-	●	-	-	-	●	-	●	-	-	●	●	-	-	●	●	-	●	-	-	-	-	-	-	-	-	S
289.	*Haliclona (Gellius) constans* (Boury-Esnault & Beveren, 1982)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
290.	*Haliclona (Gellius) cucurbitiformis* (Kirkpatrick, 1907)	-	-	●	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
291.	*Haliclona (Gellius) flabelliformis* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	●	S
292.	*Haliclona (Gellius) flagellifer* (Ridley & Dendy, 1886)	-	-	●	-	●	-	-	●	-	-	-	-	●	-	-	-	●	-	●	-	-	●	-	-	●	-	●	S
293.	*Haliclona (Gellius) glacialis* (Ridley & Dendy, 1886)	-	-	●	●	●	-	●	●	●	-	-	●	●	●	-	-	●	-	●	-	-	-	-	-	●	-	●	S
294.	*Haliclona (Gellius) latisigmae* (Boury-Esnault & Beveren, 1982)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
295.	*Haliclona (Gellius) pilosus* (Kirkpatrick, 1907)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
296.	*Haliclona (Gellius) rudis* (Topsent, 1901)	-	-	-	-	●	-	●	●	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
297.	*Haliclona (Gellius) tenella* (Topsent, 1916)	-	-	●	-	-	-	●	●	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
298.	*Haliclona (Gellius) tubuloramosus* (Dendy, 1924)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	S
299.	*Haliclona (Gellius) tylotoxa* (Hentschel, 1914)	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
300.	*Haliclona (Halichoclona) conica* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	S
301.	*Haliclona (Haliclona) bifacialis* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
302.	*Haliclona (Haliclona) domingoi* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
303.	*Haliclona (Reniera) altera* (Topsent, 1901)	-	-	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
304.	*Haliclona (Reniera) delicata* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
305.	*Haliclona (Reniera) topsenti* (Thiele, 1905)	-	-	-	-	●	-	●	-	-	-	-	●	●	-	-	-	●	●	-	-	-	●	-	-	-	-	●	S

Espécies	Região faunística antártica																						Entidades extra-antárticas					Ref.
	Setores continentais								Entidades não-continentais																			
	S1	S2	S3	S4	S5	S6	S8	S9	GS	OS	SS	MA	MG	AR	CH	CR	KE	HE	MR	GO	TC	MQ	BR	CA	NZ	TA	AF	
306. *Haliclona (Rhizoniera) dancoi* (Topsent, 1901)	-	●	●	●	●	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
307. *Haliclona (Soestella) chilensis* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
308. *Haliclona (?) algicola* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
309. *Haliclona (?) bilamellata* Burton, 1932	-	-	-	-	-	-	●	●	●	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
310. *Haliclona (?) divulgata* Koltun, 1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
311. *Haliclona (?) eterospiculata* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
312. *Haliclona (?) gemina* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
313. *Haliclona (?) ignobilis* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
314. *Haliclona (?) nodosa* (Thiele, 1905)	-	-	-	-	-	-	-	-	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
315. *Haliclona (?) pedunculata* (Ridley & Dendy, 1886)	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
316. *Haliclona (?) penicillata* Topsent, 1908	-	-	-	-	●	-	●	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
317. *Haliclona (?) proletaria* (Topsent, 1908)	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
318. *Haliclona (?) spongiosissima* Topsent, 1908	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
319. *Haliclona (?) texta* Sarà, 1978	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
320. *Haliclona (?) virens* (Topsent, 1908)	-	-	-	-	●	-	●	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	S
321. *Amphimedon anomala* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
322. *Amphimedon decurtata* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
323. *Amphimedon maresi* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
324. *Amphimedon paradisus* Desqueyroux-Faúndez, 1989	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
325. *Dasychalina magellanica* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
326. *Dasychalina validissima* (Thiele, 1905)	-	-	-	-	-	-	-	-	●	-	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
327. *Gelliodes spongiosa* Topsent, 1916	-	●	●	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	S
328. *Haliclonissa sacciformis* Burton, 1932	-	-	-	-	-	-	-	-	-	-	-	●	-	●	-	-	●	●	-	-	-	-	-	-	-	-	●	S
329. *Haliclonissa verrucosa* Burton, 1932	-	-	-	-	●	-	●	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
330. *Hemigellius bidens* (Topsent, 1901)	-	-	●	●	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
331. *Hemigellius calyx* (Ridley & Dendy, 1886)	-	●	●	●	-	-	-	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
332. *Hemigellius fimbriatus* (Kirkpatrick, 1907)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
333. *Hemigellius pachyderma* Burton, 1932	-	-	●	-	●	-	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
334. *Microxina benedeni* (Topsent, 1901)	-	●	●	●	●	-	●	●	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
335. *Microxina lanceolata* Calcinai & Pansini, 2000	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Ca
336. *Microxina phakellioides* (Kirkpatrick, 1907)	-	-	●	●	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
337. *Microxina sarai* Calcinai & Pansini, 2000	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Ca
338. *Microxina simplex* (Topsent, 1916)	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S

339. *Pachychalina glacialis* (Burton, 1934)	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
Subordem Petrosina																												
340. *Calyx arcuarius* (Topsent, 1913)	-	●	●	●	●	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
341. *Calyx kerguelensis* (Hentschel, 1914)	-	-	-	-	-	-	-	●	●	-	-	●	●	-	-	-	●	●	-	-	-	-	-	-	-	-	-	S
342. *Oceanapia enigmatica* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
343. *Pachypellina fistulata* (Kirkpatrick, 1907)	-	-	-	-	●	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
344. *Xestospongia hispida* (Ridley & Dendy, 1886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	●	S
345. *Xestospongia variabilis* (Ridley, 1884)	-	-	-	-	-	-	-	●	-	-	-	●	●	-	-	-	●	●	-	-	-	-	-	-	-	●	●	S
Ordem Dictyoceratida																												
346. *Ircinia variabilis* (Schmidt, 1862)	-	-	-	-	●	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	●	-	S
347. *Hyrtios arenosa* (Thiele, 1905)	-	-	-	-	-	-	-	-	●	-	-	-	-	-	●	-	-	-	-	-	-	-	-	●	-	-	-	S
348. *Hyrtios vinciguerrae* (Sarà, 1978)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
349. *Spongia (Spongia) hispida* Lamarck, 1813	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	-	●	●	-	S
350. *Spongia (Spongia) magellanica* Thiele, 1905	-	-	-	-	-	-	-	-	●	-	-	●	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
351. *Dysidea chilensis* (Thiele, 1905)	-	-	-	-	-	-	-	-	-	-	-	●	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	S
352. *Dysidea fragilis* (Montagu, 1818)	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	●	-	-	-	-	-	-	-	●	●	●	S
353. *Dysidea oculata* (Burton, 1929)	-	-	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
354. *Dysidea tenuifibra* (Burton, 1932)	-	-	-	-	-	-	-	-	-	-	-	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	-	S
Ordem Dendroceratida																												
355. *Aplysilla rosea* (Barrois, 1876)	-	-	-	-	-	-	-	-	●	-	-	-	●	-	-	-	●	-	-	-	-	-	-	-	-	●	●	S
356. *Dendrilla antarctica* Topsent, 1905	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
357. *Dendrilla membranosa* (Pallas, 1766)	-	-	●	-	●	-	-	●	-	-	-	●	-	-	-	-	●	-	●	-	-	-	-	-	-	●	-	S
358. *Spongionella pulchella* (Sowerby, 1804)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	-	S
Ordem Halisarcida																												
359. *Halisarca magellanica* Topsent, 1901	-	-	-	-	-	-	-	-	-	-	-	●	●	●	-	-	-	-	-	-	-	-	-	-	-	-	-	S
360. *Halisarca dujardini* Johnston, 1842	-	-	●	-	●	-	●	-	-	-	-	●	●	-	-	-	●	-	-	-	-	-	-	-	-	-	●	S
Ordem Verongida																												
361. *Aplysina minima* Hentschel, 1914	-	●	●	-	●	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-	-	-	-	-	-	-	-	S