



## Systematics and distribution of shelled molluscs (Gastropoda, Bivalvia and Scaphopoda) from the South Shetland Islands to the Bellingshausen Sea, West Antarctica

### Sistemática y distribución de los moluscos con concha (Gastropoda, Bivalvia y Scaphopoda) desde las Islas Shetland del Sur al Mar de Bellingshausen, Antártica Oeste

Cristian ALDEA<sup>\*,\*\*</sup> and Jesús S. TRONCOSO<sup>\*</sup>

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#### ABSTRACT

The knowledge of the systematics and distribution of molluscs from the area of West Antarctica, mainly of the Bellingshausen Sea, remains relatively poor. Only 3 families and 11 species of molluscs were recorded in the Bellingshausen Sea, while 2 families and 3 species were recorded from Peter I Island. This apparently low number of species is the result of poor sampling in this area. An integral study of the benthic ecosystem was carried out in this area by the Spanish Antarctic Program: BENTART research cruises during the austral summer season in 2003 and 2006 on the continental shelf and lower slope from 53 to 3304 metres. A total of 3133 individuals belonging to 118 species of shelled molluscs were identified, of which 571 individuals corresponding to 71 species of gastropods, 2200 individuals to 42 species of bivalves and 362 individuals to 5 species of scaphopods. *Neobuccinum eatoni* with 89 individuals, *Genaxinus debilis* with 674 individuals and *Dentalium majorinum* with 159 individuals were the most abundant species of gastropods, bivalves and scaphopods, respectively. Of the total cited species, six new records are added for the South Shetland Islands, 30 for the Western Antarctic Peninsula, 34 for the Bellingshausen Sea and 30 for Peter I Island. On the other hand, new bathymetric records are given for 44 species in Antarctic waters.

#### RESUMEN

El conocimiento de la sistemática y distribución de moluscos en la Antártica Oeste, mayormente en el área del Mar de Bellingshausen es aun pobre. Sólo 3 familias y 11 especies de moluscos han sido registradas en el Mar de Bellingshausen, así como 2 familias y 3 especies en el área de la Isla Pedro I. Este aparentemente bajo número de especies es el resultado de una baja cantidad de muestreos. Un estudio integral de los ecosistemas bentónicos fue llevado a cabo en esta área por el Programa Antártico Español: los Cruceros de Investigación BENTART, durante los veranos australes del 2003 y 2006 sobre la plataforma continental y talud entre 53 y 3304 m. Fueron identificados un total de 3133 individuos pertenecientes a 118 especies de moluscos con concha, de los cuales 571 individuos corresponden a 71 especies de gasterópodos, 2200 individuos a 42 especies de bivalvos y 362 individuos a 5 especies de escafópodos. *Neobuccinum eatoni* con 89

\* Departamento de Ecología y Biología Animal, Facultad de Ciencias del Mar, Campus Lagoas Marcosende, 36310, Universidad de Vigo (España).

\*\* Fundación Centro de Estudios del Cuaternario de Fuego-Patagonia y Antártica (CEQUA), Av. Bulnes 01890, Punta Arenas (Chile).

individuos, *Genaxinus debilis* con 674 individuos y *Dentalium majorinum* con 159 individuos son las especies más abundantes de gasterópodos, bivalvos y escafópodos, respectivamente. Del total de especies registradas se aportan 6 nuevos registros para las Islas Shetland del Sur, 30 para el Oeste de la Península Antártica, 34 para el Mar de Bellingshausen y 30 para la Isla Pedro I. En tanto se amplían los registros batimétricos conocidos en la Antártica para 44 especies.

Key Words: Molluscs, Gastropods, Bivalves, Scaphopods, systematics, distribution, West Antarctica, Bellingshausen Sea.

Palabras Clave: Moluscos, Gastrópodos, Bivalvos, Escafópodos, sistemática, distribución, Antártica Oeste, Mar de Bellingshausen.

## INTRODUCTION

Knowledge of molluscs in the Southern Ocean started to build up towards the end of the XIX century with the H.M.S. Challenger expedition (1873-1876) which visited several Sub-Antarctic islands. The expedition results were published in the works of SMITH (1885) for bivalves and that of WATSON (1886) for gastropods and scaphopods. The "Venus" Expedition carried out in 1874-1875 gave the first report on molluscs from the Kerguelen Islands (Smith 1879). Years later, the "Belgian Antarctic Expedition (1897-1899)" was focused on the Antarctic continent, particularly on the South Shetland Islands and towards the West of the Antarctic Peninsula and culminated with the publication of the works of PELSENER (1903) and PLATE (1908a). The British Expedition "Southern Cross" (1898-1900) simultaneously explored the Ross Sea and Macquarie Island and reported new species in SMITH (1902), while the German "Deutsche Tiefsee-Expedition (1898-1899)" to the Kerguelen and Bouvet Islands generated new reports that were published by THIELE AND JAECKEL (1931). One year later, the German "Deutsche Südpolar-Expedition" in 1901-1903 focused on the Davis Sea, from which many species were reported by PLATE (1908b) for Scaphopoda and by THIELE (1912) for Gastropoda and Bivalvia.

Other expeditions from the time were the "Schwedische Südpolar-Expedition" to several Sub-Antarctic Islands in 1901-1903, the British National

Antarctic Expedition "Discovery" to the Ross Sea and Macquarie Island in 1901-1904 and the "Scottish National Antarctic Expedition" to Scotia Arc Islands in 1902-1904, resulting in the contributions of STREBEL (1908), SMITH (1907) and MELVILL AND STANDEN (1907, 1912), respectively. Other parallel expeditions were the "Expédition Antarctique Française" in 1903-1905 and the "Deuxième Expédition Antarctique Française" in 1908-1910, which obtained new samples on numerous sites close to the Antarctic Peninsula, their results being reported in several works (e.g. LAMY, 1906b, 1911a). Subsequently, the British Antarctic Expedition "Terra Nova" in 1910-1913, researched the Ross Sea and adjacent zones/areas and resulted in the publication of the works of SMITH (1915) and EALES (1923). The "Australian Antarctic Expedition (1911-1914)" was focused on the Eastern Antarctic and new species were cited by HEDLEY (1916).

Research came to a standstill from this date until 1926-1937, when the "Discovery Expeditions" generated important reports and inventories on molluscs from several Sub-Antarctic Islands, the Antarctic Peninsula coast and the Ross Sea (POWELL, 1951; DELL, 1964). Meanwhile, other surveys like the "Norwegian Antarctic Expedition (1927-1930)" explored the Western Peninsula and other sites and resulted in a work on Bivalvia by SOOT-RYEN (1951). The British, Australian and New Zealand

Antarctic Expedition (B.A.N.Z.: 1929-1931) provided a detailed knowledge of the Ross Sea, Enderby Land and the Sub-Antarctic Islands of East Antarctica through the works of POWELL (1957, 1958). All records and earlier reports were summarized by POWELL (1960).

Later, the works of EGOROVA (1972, 1982) communicated the results of many Soviet expeditions held from 1955 onwards mainly to the Davis Sea. The new French expeditions to Terre Adélie (e.g. ARNAUD, 1972, 1973) and the Japanese expeditions to East Antarctica published their records in several works (e.g. OKUTANI, 1986; NUMANAMI AND OKUTANI, 1991; NUMANAMI 1996; NUMANAMI, OKUTANI, IWAMI, TAKEUCHI, IGARASHI, TSUCHIYA AND FUKUCHI, 1996). The last known extensive works are those of DELL (1990) and HAIN (1990). Dell focused mainly on the Ross Sea and reported species collected from several surveys, principally from the US "Eltanin" cruises but he also examined samples from some previous expeditions that were deposited in zoological museums. Hain reported many species from the Weddell Sea that were collected in some German "Antarktis" expeditions.

Apart from the abovementioned expeditions held towards the end of the XX and the beginning of the XXI Centuries, detailed information is now available by means of reports with biogeographical analyses on enclosed areas (see ZELAYA, 2005; LINSE 2006), review of particular taxa (e.g. CERNOHORSKY, 1977; PONDER, 1983; OLIVER AND PICKEN, 1984; HARASEWYCH AND KANTOR, 1999) and descriptions of new species (e.g. ENGL, 2004b; DIAS PASSOS AND DOMANESCHI, 2006).

From a biogeographic point of view, the earlier studies of the Southern marine fauna resulted in the definition of the different subregions. There is a latitudinal division into an Antarctic/high Antarctic zone and Sub-Antarctic/low Antarctic zone, and a longitudinal division into East and West Antarctica (POWELL, 1951). The West Antarctica represents one of the most interesting Antarctic areas from both ecological/biogeographical and tax-

onomical points of view because sample coverage is still extremely patchy. Areas such as the South Shetland Islands and the Western Antarctic Peninsula have been extensively sampled whereas areas such as the Bellingshausen Sea still remains poorly sampled (CLARKE, GRIFFITHS, LINSE, BARNES AND CRAME, 2007).

There are approximately 895 species of gastropods and 379 species of bivalves that are currently known in the Southern Ocean and adjacent regions (LINSE, GRIFFITHS, BARNES AND CLARKE, 2006), and some are exclusive to the Southern Ocean. CLARKE, ARONSON, CRAME GILI AND BLAKE (2004) mentioned approximately 530 gastropod and 110 bivalve species. Only 3 families and 11 species of molluscs were recorded in the Bellingshausen Sea, while 2 families and 3 species were recorded in Peter I Island. This apparently low number of species is the result of poor sampling in this area: two samples were taken on the continental shelf (1-1000 m), zero on the continental slope (1000-3000 m) and six deeper (>3000 m) ones were obtained in the Bellingshausen and Amundsen seas. A total of 1624 samples were taken from the Southern Ocean (CLARKE *ET AL.*, 2004), of which 1490 were from the continental shelf, 98 were taken from the continental slope and 36 were from deeper waters.

Therefore, knowledge of the biodiversity of the area of West Antarctica, mainly of the Bellingshausen Sea, and in particular of subtidal marine habitats, remains relatively poor, except for the South Shetland Islands (e.g. Arnaud, Troncoso and Ramos, 2001). Also, there is an important dispersion of literature available for the identification of molluscs from this area. An integral study of the benthic ecosystem: BENTART program was carried out in this area by means of two research cruises during the austral summer season in 2003 and 2006, which were organized and supported by the Spanish Antarctic Program of the Ministry of Education and Science (MEC). This report describes the results of the survey of subtidal marine molluscs and this paper briefly de-

scribes and illustrates the species obtained during the BENTART 2003 and 2006 research cruises to facilitate future marine research in this part of the Southern Ocean.

## MATERIAL AND METHODS

The study area was located in West Antarctica from the South Shetland Islands (63° 03' S, 60° 38' W) to the Bellingshausen Sea off Thurston Island (70° 53' S, 98° 26' W) on the border of the Amundsen Sea (Fig. 1), and included the continental shelf and lower slope from 53 to 3304 metres. Additional samples were taken in shallow waters (5-8 m) by means of SCUBA diving (Table I). Samples were obtained in the austral summer during the BENTART 2003/2006 cruises aboard the vessel *BIO Hespérides* belonging to the Spanish Navy. The molluscs were collected from 47 sampling sites using six sampling gears: a box-corer with a maximum breakthrough of 60-cm and an effective sampling area of 30 x 20 cm, an Agassiz trawl (width-2.01m, height-1.12m and a mesh size of 10.0mm), an epibenthic sledge that consists of a rectangular steel frame with three levels (width-0.8m, height-0.4m and an attached mesh net), a rock dredge with 0.8 m wide, 0.3 m height, and a mesh size of 10.0 mm, a Nassa trap designed to catch scavenger organisms, and SCUBA diving in shallow water. Samples were sorted on deck and fixed in borax-buffered 4% formaldehyde in seawater. Later, in the laboratory, they were sorted by species and transferred to plastic vials with 70% alcohol for preservation. All specimens were identified to species level, considering shell features and morphometric ratios compared with

similar species. Taxonomic classification follows PONDER AND LINDBERG (1997) and ROSENBERG (2005) for Gastropoda, GIRIBET AND WHEELER (2002) and ROSENBERG (2005) for Bivalvia and STEINER AND KABAT (2001, 2004) for Scaphopoda. The specimens were deposited in the scientific collection of the Animal Ecology and Biology of Universidad de Vigo, Spain.

For each species, the systematic description and synonymies are given. This includes the reference to the original description and subsequent systematic works that were used for identification. The studied material was detailed by stations as number of live collected specimen/s (spm.) and fresh empty shell/s (sh.) and the measurements of the larger and smaller specimens were included. Measurements for gastropods refer to maximum height from apex to basis and diameter (width, perpendicular to height); for bivalves, maximum height from umbo to ventral margin and width from anterior to posterior margins, and for scaphopods, longitude and diameter of anterior and posterior apertures. The stations were named MB for Bellingshausen Sea, PI for Peter I Island, PA for Antarctic Peninsula, LOW for Low Island, DEC for Deception Island, and MAR for Margarita Bay.

All figured specimens are from this survey and were obtained using digital photography or Scanning Electron Microscopy (SEM) at the University of Vigo. The geographic and bathymetric distributions are given taking account of all taxonomical and biogeographical works revised, and also including the records of this study, and marking as "new record/s" the species occurring for the first time in the study area. The geographic locations are shown in Figure 1.

(Right page) Figure 1. Study area, stations of benthic samples from BENTART and locations around Antarctica mentioned in text. MB: stations of Bellingshausen Sea, PI: Peter I Island, PA: Antarctic Peninsula, LOW: Low Island, DEC: Deception Island, and MAR: Margarita Bay.

(Página derecha) Figura 1. Área de estudio, estaciones de muestreos bentónicos de BENTART y lugares alrededor de la Antártica mencionados en el texto. MB: estaciones del Mar de Bellingshausen, PI: Isla Pedro I, PA: Península Antártica, LOW: Isla Low, DEC: Isla Decepción, y MAR: Bahía Margarita.

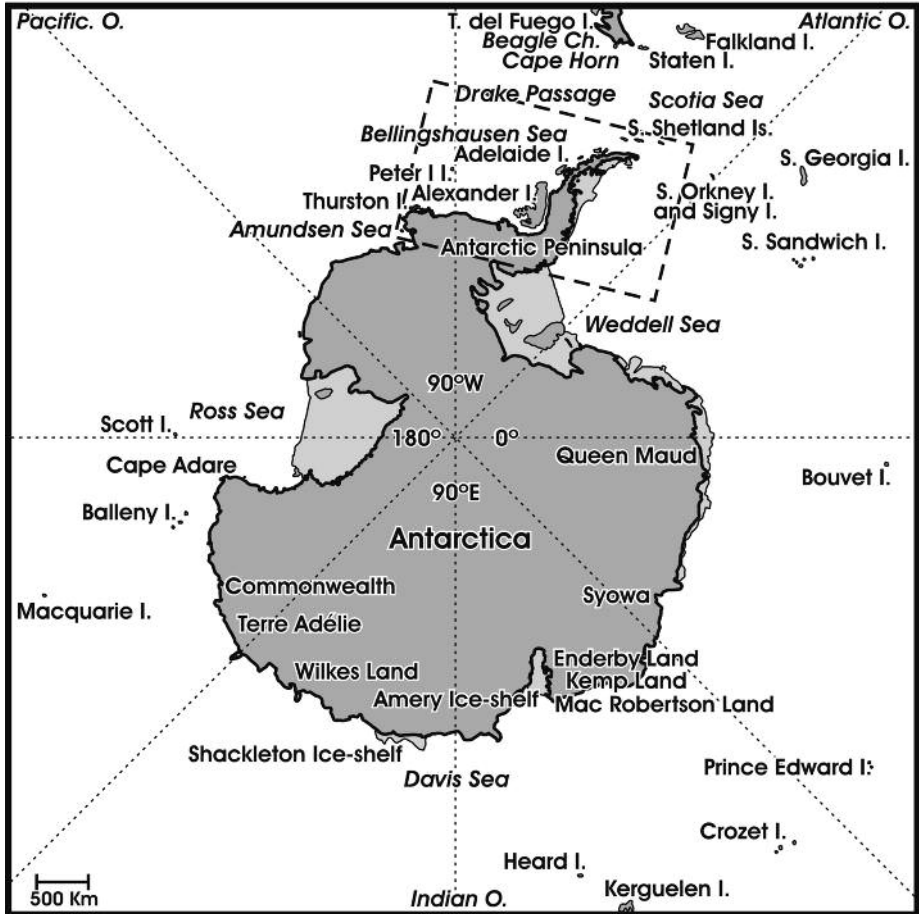
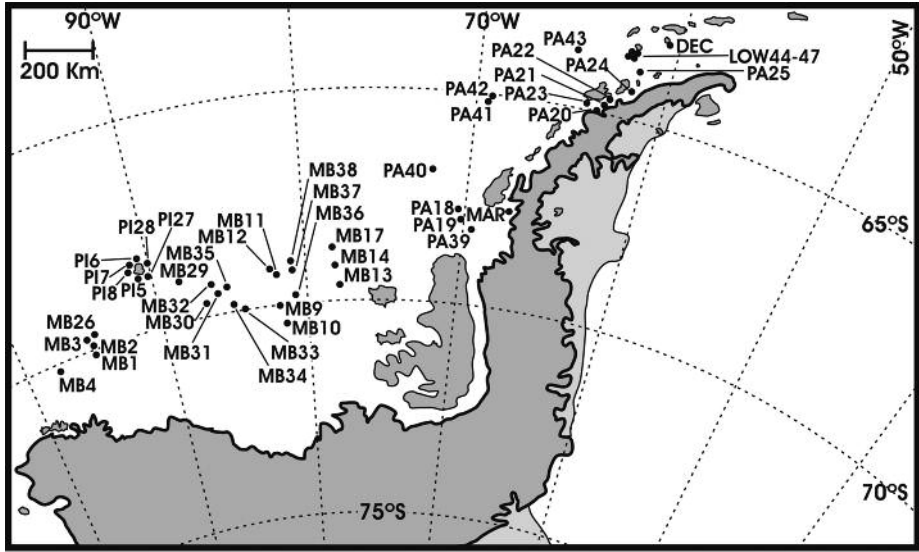


Table I. Location, depth and sample device of survey stations, named MB for Bellingshausen Sea, PI for Peter I Island, PA for Antarctic Peninsula, LOW for Low Island, DEC for Deception Island, and MAR for Margarita Bay. AT: Agassiz trawl, BC: Box-corer, RD: Rock dredge, ES: Epibenthic sledge, NT: Nassa trap, SD: Scuba diving.

*Tabla I. Ubicación, profundidad y arte de muestreo de las estaciones, nombradas como MB para el Mar de Bellingshausen, PI para la Isla Pedro I, PA para la Península Antártica, LOW para la Isla Low, DEC para la Isla Decepción, y MAR para Bahía Margarita. AT: Red Agassiz, BC: Box-corer, RD: Draga de roca, ES: Trineo suprabentónico, NT: Nassas, SD: Buceo Scuba.*

Station	Latitude S	Longitude W	Depth (m)	Sample device
MB1	70° 38.22'	95° 15.36'	534	AT, BC
MB2	70° 29.25'	95° 14.83'	780	AT, BC
MB3	70° 17.58'	95° 11.86'	1431	AT, BC
MB4	70° 52.86'	98° 26.12'	425	AT, BC
PI5	68° 56.70'	90° 35.70'	126	AT, BC, RD, ES
PI6	68° 49.61'	90° 48.78'	210	AT, BC, NT
PI7	68° 42.20'	90° 40.80'	410	AT, BC
PI8	68° 50.18'	90° 51.08'	90	AT, BC, NT
MB9	70° 14.40'	81° 47.03'	532	AT, BC
MB10	70° 44.31'	81° 27.85'	497	BC
MB11	69° 27.07'	82° 06.76'	1289	AT, BC
MB12	69° 24.27'	82° 11.88'	2032	BC
MB13	69° 49.56'	77° 43.68'	605	AT, BC, NT, ES
MB14	69° 21.12'	78° 04.91'	498	BC, ES
MB17	68° 54.88'	78° 14.16'	2044	AT, BC
PA18	67° 57.31'	71° 04.70'	354	AT
PA19	68° 04.13'	70° 52.38'	513	AT
PA20	65° 01.03'	63° 25.25'	53	AT, NT
PA21	64° 54.01'	63° 01.11'	107	AT, BC
PA22	64° 50.58'	62° 57.91'	294	AT, BC
PA23	64° 55.95'	63° 38.40'	655	AT, BC
PA24	64° 20.11'	61° 58.82'	1056	AT, BC
PA25	63° 52.85'	61° 48.52'	110	AT, BC
MB26	70° 14.62'	95° 02.20'	1920	AT, BC
PI27	68° 59.20'	90° 26.60'	1873	ES
PI28	68° 52.31'	90° 18.80'	1191	ES, AT
MB29	69° 26.08'	88° 26.17'	3304	AT
MB30	69° 58.98'	87° 31.08'	1814	AT, BC
MB31	69° 56.98'	86° 19.27'	1426	AT, BC, ES
MB32	69° 47.60'	86° 27.33'	1847	AT
MB33	70° 15.90'	84° 11.45'	438	BC, ES
MB34	70° 08.20'	84° 51.68'	603	AT, BC, ES
MB35	69° 56.03'	85° 11.30'	1117	AT, BC, ES
MB36	69° 56.28'	80° 24.55'	560	AT, BC, ES
MB37	69° 26.38'	80° 51.62'	495	AT, BC
MB38	69° 14.08'	80° 61.20'	1324	AT, BC, ES
PA39	68° 07.62'	69° 36.20'	157	AT, ES
PA40	66° 57.55'	72° 34.97'	402	AT
PA41	65° 28.29'	69° 01.71'	350	ES
PA42	65° 09.99'	68° 56.18'	1272	ES
PA43	63° 21.71'	64° 17.68'	254	ES
LOW44	63° 25.81'	62° 12.23'	82	AT
LOW45	63° 25.90'	62° 12.69'	86	AT
LOW46	63° 26.22'	62° 14.70'	97	AT
LOW47	63° 28.01'	62° 12.91'	115	AT
DEC	63° 03.00'	60° 36.60'	60-80	AT
MAR	68° 04.20'	67° 34.80'	5-8	SD

## RESULTS

Class GASTROPODA Cuvier, 1797  
Subclass EOGASTROPODA Ponder and Lindberg, 1996  
Order PATELLOGASTROPODA Lindberg, 1986  
Family NACELLIDAE Thiele, 1891  
Genus *Nacella* Schumacher, 1817

*Nacella polaris concinna* (Strebel, 1908) (Fig. 2)

*Nacella polaris* var. *concinna* Strebel, 1908: 82, pl. 5, figs. 76a-e, 78a-b.

*Patinigera polaris concinna*: Powell, 1951: 83; Castellanos and Landoni, 1988: 26, pl. 4, fig. 5.

*Nacella* cf. *concinna*: Hain, 1990: 36, fig. 4.1.

*Lepeta depressa* Hedley, 1916: 42, pl. 6, fig. 64; Arnaud, 1972: 114; Dell, 1972: 32, figs. 19, 24-25; Egorova, 1982: 14, fig. 75.

**Material studied:** 16 spm. (9.0 × 6.1 - 29.6 × 20.5 mm), PA20; 1 spm. (10.4 × 7.1 mm), PA21.

*Remarks:* Although morphologic variation is present, only two morphotypes have been cited that separate this subspecies of *Nacella polaris polaris* (HOMBRON AND JAQUINOT, 1841). POWELL (1951) described *N. polaris concinna* as an endemic species from deep water around South Georgia, but BEAUMONT AND WEI (1991) studied the morphologic variation between specimens from South Georgia and the South Orkney Islands and concluded that it was a single species and not a separate subspecies. However, these specimens can be differentiated from the subspecies *N. polaris polaris* because they

are paler, thinner and have a more central umbo and stronger radial ribs. There is also a bathymetric pattern between both subspecies since *N. polaris concinna* can be found at greater depths.

*Distribution:* Weddell Sea (Hain, 1990), South Georgia (POWELL, 1951; STREBEL, 1908), South Orkney and South Shetland Islands (CASTELLANOS AND LANDONI, 1988), Western Antarctic Peninsula (CARCELLES, 1953; this study), Ross Sea (DELL, 1972), Terre Adélie (ARNAUD, 1972), Shackleton Ice Shelf (HEDLEY, 1916) and Davis Sea (EGOROVA, 1982); from 10 m (STREBEL, 1908) to 695 m (DELL, 1972).

*Nacella polaris polaris* (Hombron and Jaquinot, 1841) (Fig. 3)

*Patella polaris* Hombron and Jaquinot, 1841: 191.

*Nacella aenea* var. *polaris*: Pelseneer, 1903: 14.

*Nacella polaris*: Lamy, 1906b: 10; 1911a: 15; 1911b: 26; Zelaya, 2005: 111, fig. 2.

*Patella polaris*: Martens and Pfeffer, 1886: 101, pl. 2, figs. 11-13; Melvill and Standen, 1907: 127.

*Patinella polaris*: Strebel, 1908: 81, pl. 5, figs. 77a-b, 79-82.

*Patinigera polaris polaris*: Powell, 1951: 82; Castellanos and Landoni, 1988: 25, pl. 4, fig. 8.

**Material studied:** 12 spm. (7.8 × 5.1 - 55.8 × 41.8 mm), MAR.

*Remarks:* Smallest specimens look similar to *N. polaris concinna* (Strebel, 1908), but they can be differentiated by their darker, thicker and smoother shell, with more anterior umbo. Powell (1951) reported *N. polaris polaris* as a shallow water species, occurring in Antarctica and Scotia Arc Islands.

*Distribution:* South Sandwich (LAMY, 1911b) and South Georgia Islands (MARTENS AND PFEFFER, 1886; STREBEL, 1908, LAMY, 1911b; POWELL, 1951; ZELAYA, 2005), reaching 38°S in the Atlantic Ocean (CASTELLANOS AND LANDONI, 1988), cited in the Weddell Sea as well (ZELAYA, 2005), East of the Antarctic Peninsula (STREBEL,

1908), South Orkney (PELSENEER, 1903; MELVILL AND STANDEN, 1907; POWELL, 1951) and the South Shetland Islands (POWELL, 1951), West of the Antarctic

Peninsula (LAMY, 1906b, 1911a; POWELL, 1951; this study), also in Bouvet Island (POWELL, 1951); from 0 m (POWELL, 1951) to 195 m (STREBEL, 1908).

Family LEPETIDAE Dall, 1869

Genus *Iothia* Gray, 1857

*Iothia coppingeri* (Smith, 1881) (Fig. 4)

*Tectura coppingeri* Smith, 1881: 35, pl. 4, figs. 12, 12a.

*Pilidium coppingeri*: Strebel, 1908: 83.

*Tectura coppingeri*: Rochebrune and Mabile, 1889: 90.

*Lepeta coppingeri*: Thiele, 1912: 183, 233; Smith, 1915: 62; Hedley 1916: 41; Eales, 1923: 6; Powell, 1951: 84; Powell, 1957: 128; 1958: 184; Arnaud, 1972: 114, fig. 1 (radula); Castellanos and Landoni, 1988: 32, pl. 1, fig. 6, pl. 3, fig. 9; Linse, 1997: 27.

*Iothia coppingeri*: Egorova, 1982: 12, figs. 25 (radula), 73-74; Dell, 1990: 105, figs. 185-186; Hain, 1990: 37, pl. 1, figs. 4a-c, pl. 17, fig. 4; Numanami *et al.*, 1996: 212 (table, text), pl.1, figs. 3-4; Reid and Osorio, 2000: 119, fig. 7A; Troncoso, Van Goethem and Troncoso, 2001: 90, fig. 8. (conferred); Zelaya, 2005: 112, fig. 3.

*Patella (?) emarginuloides* Philippi, 1868: 224.

*Lepeta antarctica* Smith, 1907a: 12, pl. 2, figs. 11-11a; Hedley, 1911: 4.

*Pilidium fulviformes* Egorova, 1972: 384, figs. 3a-b.

**Material studied:** 1 spm. (6.1 x 4.5 mm), PA19; 1 spm. (5.7 x 4.1 mm), PA22.

**Remarks:** Its synonymies are validated in previous works (DELL, 1990). LINSE (2002, p. 56) described *Iothia coppingeri magellanica* in Magellanic waters; but her figures 9.1.1 1-4 from plate I are confused in their captions and repeated in plate X. Therefore the comparison with Linse's subspecies is not possible.

**Distribution:** Circumantarctic and Sub-Antarctic. South Georgia (ZELAYA, 2005), South Orkney (DELL, 1990) and the Falkland/Malvinas Islands (STREBEL, 1908; POWELL, 1951), Cape Horn (ROCHEBRUNE AND MABILLE, 1889), Beagle Channel (LINSE, 1997) and Punta Arenas (POWELL, 1951), also in Staten Island, Magellan Strait, reaching

Valdivia (38° S) in the South Pacific (DELL, 1990). In Antarctica in the Weddell Sea (DELL, 1990; HAIN, 1990), South Shetland Islands, Western Antarctic Peninsula (DELL, 1990; this study), the Ross Sea (SMITH, 1907a; HEDLEY, 1911; POWELL, 1951; DELL, 1990), Commonwealth (HEDLEY, 1916; POWELL, 1958), Terre Adélie (ARNAUD, 1972) and Wilkes Land (Dell, 1990), the Davis Sea (THIELE, 1912; EGOROVA, 1982; DELL, 1990), Kerguelen Islands (POWELL, 1957; TRONCOSO *ET AL.*, 2001), Crozet Islands (POWELL, 1957), Enderby Land (POWELL, 1958) and Syowa (NUMANAMI *ET AL.*, 1996); from 5 m (EGOROVA, 1982) to 1108 m (HAIN, 1990).

Subclass ORTHOGASTROPODA Ponder and Lindberg, 1996

Superorder VETIGASTROPODA Salvini-Pläwen, 1980

Family ANATOMIDAE McLean, 1989

Genus *Anatoma* Woodward, 1859

*Anatoma euglypta* (Pelseneer, 1903) (Fig. 5)

*Scissurella euglypta* Pelseneer, 1903: 17, 38, pl. 4, figs. 43-45; Thiele, 1912: 187; Melvill and Standen, 1912: 345.



*Schizotrochus euglyptus*: Powell, 1951: 79; Powell, 1958: 179; Arnaud, 1972: 113; Egorova, 1982: 11, fig. 72; Castellanos and Landoni, 1988: 9, pl. 1, fig. 7.

*Anatoma euglypta*: Dell, 1990: 75, fig. 129; Hain, 1990: 33, pl. 1, fig. 1, pl. 17, fig. 1 (radula); Numanami and Okutani, 1990a: 94, figs. 2-5; Branch, Arnaud, Cantera and Gianakouras, 1991: 58 (key); Numanami, 1996: 13, figs. 6A-C, D (radula); Zelaya, 2005: 12, fig. 5; Zelaya and Geiger, 2007: 399, figs. 16-40, 41-47, 50 (anatomy), 48-49 (radula).

**Material studied:** 2 spm. (broken), MB2; 2 spm. (2.4 x 3.0 - 2.9 x 3.6 mm), MB31; 2 spm. (2.1 x 2.8 - 2.1 x 2.9 mm), MB33; 1 spm. (4.8 x 5.6 mm), MB34; 2 spm. (2.6 x 3.3 - 4.1 x 4.8 mm), MB35; 3 spm. (2.5 x 3.5 - 4.8 x 6.1 mm), MB38; 1 spm. (1.1 x 1.7 mm), PA39; 1 spm. (0.8 x 1.2 mm), PA41; 2 spm. (1.9 x 2.5 - 2.9 x 3.8 mm), PA42.

*Remarks:* Other similar species are *A. conica* (d'Orbigny, 1841), which is proportionally higher and has only a Magellanic distribution (DELL, 1990), and *A. shiraseae* Numanami and Okutani, 1990 which differs in having a keel on the shoulder, a distinctive constriction below the selenizone, and a coarser sculpture. *Thielella amoena* (Thiele, 1912) is more globose with a stronger selenizone; *T. weddelliana* Zelaya and Geiger, 2007 has a globular instead of a biconical last whorl, and stronger axial sculpture. Also, this species has affinity in contour and sculpture with the northern hemisphere species, *A. crispata* (Fleming, 1828), cited by WATSON (1886) from Prince Edward Island, but it is a higher and larger species with shorter selenizone. In this sense, ZELAYA AND GEIGER (2007) in the revision of the group, found some of Watson's specimens named *A. crispata*, which actually correspond to *A. euglypta*.

*Distribution:* Weddell Sea (DELL, 1990; HAIN 1990; ZELAYA AND GEIGER, 2007), South Sandwich (ZELAYA AND GEIGER, 2007), South Georgia (POWELL, 1951; ZELAYA, 2005), South Orkney Islands (DELL, 1990) and Discovery Bank (60° 08' S, 34° 56' W) (ZELAYA AND

GEIGER, 2007), reaching Burdwood Bank (MELVILL AND STANDEN, 1912; ZELAYA AND GEIGER, 2007), Staten Island (ZELAYA AND GEIGER, 2007), Cape Horn (DELL, 1990), Drake Passage (56° 19' S, 67° 09' W) (ZELAYA AND GEIGER, 2007), and South Atlantic (46° S, 60° W) (CASTELLANOS AND LANDONI, 1988); South Shetland Islands (DELL, 1990; ZELAYA AND GEIGER, 2007) and Western Antarctic Peninsula (POWELL, 1951; DELL, 1990; ZELAYA AND GEIGER, 2007; this study), Bellingshausen Sea (70-71° S, 83-88° W) (PELSENEER, 1903) to off Thurston Island (new record), Ross Sea (DELL, 1990; ZELAYA AND GEIGER, 2007), Terre Adélie (POWELL, 1958; ARNAUD, 1972) and Wilkes Land (DELL, 1990), Davis Sea (THIELE, 1912; EGOROVA, 1982; DELL, 1990; ZELAYA AND GEIGER, 2007), Kerguelen and Crozet Islands (CANTERA AND ARNAUD, 1985; ZELAYA AND GEIGER, 2007), Enderby Land (POWELL, 1958; ZELAYA AND GEIGER, 2007), Marion and Prince Edward Islands (BRANCH ET AL., 1991), ca. 40° E (GRIFFITHS, LINSE AND CRAME, 2003), in 24° E (NUMANAMI AND OKUTANI, 1990a; NUMANAMI, 1996) and in 3° E-11° E (ZELAYA AND GEIGER, 2007); from 18 m (DELL, 1990) to 4420 m (ZELAYA AND GEIGER, 2007).

### Family Fissurellidae Fleming, 1822

#### Genus *Cornisepta* McLean and Geiger, 1998

#### *Cornisepta antarctica* (Egorova, 1972) (Fig. 6)

*Fissurisepta antarctica* Egorova, 1972: 383, figs. 1a-b; Egorova, 1982: 10, figs. 66-67; Hain, 1990: 34, pl. 10, fig. 6, pl. 28, fig. 8 (radula).

*Cornisepta antarctica*: McLean and Geiger, 1998: 20, figs. 10a-g.

**Material studied:** 2 spm. (2.8 x 2.0 - 3.4 x 3.1 mm), MB14.

*Remarks:* Although it has a *Fis-surisepta* shell form, MCLEAN AND GEIGER (1998), described the new genus *Cornisepta* from this species, mainly by its radular characteristics. There are no similar species in Antarctica.

*Distribution:* Only known from the Weddell (HAIN 1990; MCLEAN AND GEIGER 1998), Bellingshausen (new record) and Davis Seas (EGOROVA, 1972, 1982); from 280 m to 700 m (EGOROVA, 1972).

### Genus *Puncturella* Lowe, 1827

#### *Puncturella spirigera* Thiele, 1912 (Fig. 7)

*Puncturella spirigera* Thiele, 1912: 186, pl. 11, figs. 4-10; Powell, 1958: 180; Egorova, 1982: 10, figs. 24 (radula), 68-70; Dell, 1990: 76, figs. 125, 127; Numanami *et al.*, 1996: 211 (table), pl. 1, figs 1-2; Zelaya, 2005: 112, fig. 4.

**Material studied:** 5 spm. (3.9 x 2.8 - 6.2 x 4.1 mm), PA39.

*Remarks:* This species was frequently considered as a junior synonym of the Sub-Antarctic, widely distributed species *P. conica* (d'Orbigny, 1841) (see ARNAUD, 1972; HAIN, 1990; REID AND OSORIO, 2000), although DELL (1990) commented that *P. spirigera* probably formed part of a complex with wide distribution. These specimens are considered, therefore, as *P. spirigera* until a systematic revision of the genus in the Southern Ocean and neighboring areas is attempted. Individuals from the Weddell Sea at 16-820 m depth of Hain (1990, p. 34), that were assigned to *P. conica*, resemble these specimens.

*Distribution:* South Georgia Island (DELL, 1990; ZELAYA, 2005), also cited for the Weddell Sea and the South Shetland Islands (ZELAYA, 2005); Western Antarctic Peninsula (new record), Ross Sea (DELL, 1990), Terre Adélie (POWELL, 1958), Davis Sea (THIELE, 1912; EGOROVA, 1982), from 71° E to Enderby (POWELL, 1958) and Syowa (NUMANAMI *ET AL.*, 1996); from 60 m (Egorova, 1982) to 2804 m (DELL, 1990). The references of GRIFFITHS *ET AL.* (2003) for several sites in the South Pacific from ca. 42° S and Marion, Prince Edward, Crozet and Kerguelen Islands, may be related to *P. conica*.

### Family TROCHIDAE Rafinesque, 1815

#### Genus *Antimargarita* Powell, 1951

#### *Antimargarita smithiana* (Hedley, 1916) (Fig. 8)

*Submargarita smithiana* Hedley, 1916: 38, pl. 5, fig. 58.

*Antimargarita smithiana:* Powell, 1951: 100; 1958: 183; Egorova, 1982: 19, fig. 95.

**Material studied:** 1 spm. (7.4 x 8.0 mm), MB35.

*Remarks:* It differs from *A. dulcis* (Smith, 1907) mainly by its more spiral cords, which are similar in solidity.

*Distribution:* Known from East Antarctica, ca. 160° E (GRIFFITHS *ET AL.*, 2003), Commonwealth (POWELL,

1958), Shackleton Ice Shelf (HEDLEY, 1916) and Davis Sea (EGOROVA, 1982), in West Antarctica only in the Bellingshausen Sea (new record); from 30 m (POWELL, 1958) to 1117 m (new record).

Genus *Calliotropis* Seguenza, 1903

*Calliotropis antarctica* Dell, 1990 (Fig. 9)

*Calliotropis antarctica* Dell, 1990: 86, figs. 136-137, 143.

**Material studied:** 1 spm. (7.8 x 9.8 mm), MB2; 2 spm. (8.0 x 11.0 - 10.5 x 13.6 mm), MB34; 1 spm. (8.1 x 10.2 mm), MB37.

*Remarks:* Among the species within this genus, described from around Antarctica, the most closely related species is *C. lateumbilicata* Dell, 1990, which possesses a wider umbilicus and a lower spire with smoother sculpture. *Calliotropis eltanini* Dell, 1990 has less convex whorls with a more conic and angulose shape and *C. pelseeneeri* (*sensu*

*lato*) differs by its occluded or semi-occluded umbilicus and higher spire.

*Distribution:* Only reported from the Western Antarctic Peninsula (64° S, 68° W) (DELL, 1990), Bellingshausen Sea to off Thurston Island (new records), and the Bouvet Island (LINSE, 2006); from 247 m (LINSE, 2006) to 2818 m (DELL, 1990).

*Calliotropis pelseeneeri* Cernohorsky, 1977 (Fig. 10)

*Calliotropis pelseeneeri* Cernohorsky, 1977: 106; Hain, 1990: 37, pl. 1, fig. 5, pl. 17, fig. 5 (radula).

*Calliotropis pelseeneeri pelseeneeri* Dell, 1990: 82, fig. 131.

*Margarita lamellosa* Pelseeneer, 1903: 18, pl. 5, fig. 47.

*Solarilopos? lamellosa*: Thiele, 1912: 187, pl. 11, fig. 12.

*Calliotropis lamellosa*: Powell, 1958: 182; Egorova, 1982: 14, fig. 76.

**Material studied:** 1 sh. (broken), MB4; 4 spm. (5.1 x 5.3 - 10.5 x 12.0 mm), MB30; 3 spm. (7.0 x 8.3 - 9.9 x 11.0 mm), MB31; 1 spm. (4.2 x 4.5 mm), MB35.

*Remarks:* DELL (1990) reported *C. pelseeneeri* Cernohorsky, 1977 as *C. pelseeneeri pelseeneeri* in order to describe the new subspecies *C. pelseeneeri rossiana* Dell, 1990, that differs by its more angulose whorls "with the major spiral sculpture much more prominent" (DELL, 1990). Individuals collected in BENTART cruises, were reported as *C. pelseeneeri* (*s.l.*) because of their more angulose whorls with a major spiral cord, but these specimens possess several grades in rising and thickness

without being possible to observe a clearcut difference between these. The last whorl has a second principal spiral cord and the occluded or semi-occluded umbilicus is the main character that separates it from *C. eltanini* Dell, 1990, with an open umbilicus.

*Distribution:* Weddell Sea (DELL, 1990; HAIN, 1990), Bellingshausen Sea (PELSENEER, 1903; this study), Davis Sea (THIELE, 1912; EGOROVA, 1982) and Enderby Land (POWELL, 1958); from 371 m (HAIN, 1990) to 1814 m (new record).

Genus *Margarella* Thiele, 1893

*Margarella antarctica* (Lamy, 1905) (Fig. 11)

*Margarita antarctica* Lamy, 1905: 481, fig. 5; 1906b: 9, pl. 1, figs. 2-4.

*Valvatella antarctica*: Melvill and Standen, 1907: 129; Lamy, 1911a: 13.

*Margarella antarctica*: Powell, 1951: 98, fig. G9 (radula); Linse, 2002: 69, pl. 2, fig. 9.1.1- 13, 14-16 (radula); Zelaya, 2004: 113 (table), fig. 8 (radula).

*Margarites antarctica*: Dell, 1990: 79 (text), fig. 178.

**Material studied:** 8 spm. (3.7 x 4.8 - 8.0 x 10.8 mm), MAR.

**Remarks:** The low spire and open umbilicus separate it from the other two species of this genus reported from West Antarctica: the deeper water species *Margarella refulgens* (Smith, 1907), and *M. whiteana* Linse, 2002, which also differs by having spiral ribs. However, there are others species confined to South Georgia Island (see ZELAYA, 2005), such as *M. achilles* (Strebel, 1908), *M. jason* Powell, 1951, *M. obsoleta* Powell, 1951, *M. steineni* (Strebel, 1905), *M. sub-*

*antarctica* (Strebel, 1908) and *M. trophoroides* (Strebel, 1908).

**Distribution:** West Antarctica, only from the South Orkney (MELVILL AND STANDEN, 1907; POWELL, 1951; LINSE, 2002) and South Shetland Islands (POWELL, 1951), Western Antarctic Peninsula (LAMY, 1906b, 1911a; THIELE, 1912; POWELL, 1951; LINSE, 2002; this study) and the Bellingshausen Sea (70° S, 81° W) (LAMY, 1911a); from 0 m (POWELL, 1951) to 460 m (LAMY, 1911a).

### *Margarella refulgens* (Smith, 1907) (Fig. 12)

*Valvatella refulgens* Smith, 1907a: 11, pl. 2, fig. 7; Hedley, 1911: 4.

*Margarella refulgens*: Thiele, 1912: 188; Smith, 1915: 64; Hedley, 1916: 37; Eales, 1923: 9; Powell, 1958: 182; Egorova, 1982: 16, figs. 28 (radula), 82; Hain, 1990: 38, pl. 1, fig. 7, pl. 17, figs. 7-8 (radula).

*Margarites refulgens*: Arnaud, 1972: 115, figs. 2 (anatomy), 5 (radula); Dell, 1990: 78, figs. 175-177; Numanami, 1996: 25, figs. 12A-E, F (radula).

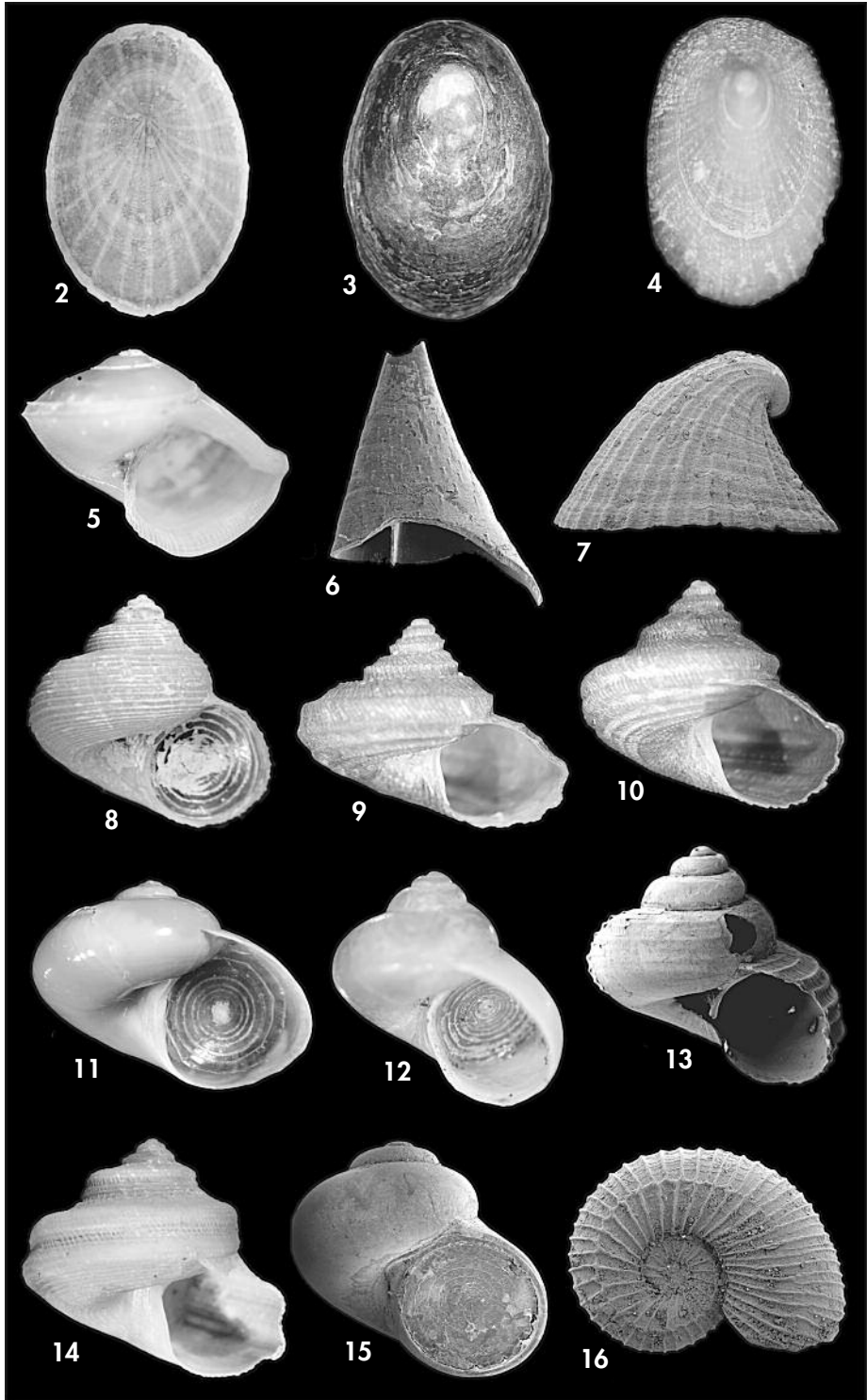
**Material studied:** 3 spm. (3.7 x 4.1 - 4.6 x 6.0 mm), P18; 6 spm. (2.2 x 2.6 - 5.7 x 6.2 mm), PA20; 2 spm. (3.5 x 4.3 - 5.6 x 6.1 mm), PA22; 1 spm. (4.0 x 4.7 mm), PA39; 1 spm. (4.3 x 5.0 mm), LOW.

**Remarks:** It differs from *Margarella antarctica* by its narrow or semi-occluded umbilicus and higher spire. Although this species has been cited as *Margarites* or *Margarella*, ZELAYA (2004) indicates that the constancy of five lateral teeth of the radula and the morphology of the first marginal tooth with a base that is greatly enlarged laterally, but with a well-developed shaft and cutting edge, place the species in genus *Margarella*. Those characteristics were

observed on radulae detailed by ARNAUD (1972), EGOROVA (1982) and HAIN (1990). Conversely, in *Margarites* the number of lateral teeth varies and the first marginal tooth is represented by an expanded plate, without cutting edge. NUMANAMI (1996) described *Margarites gunnerusensis* and *Margarites biconicus* from East Antarctica, with characteristics that clearly separate them from *M. refulgens*, such as periostracum and angulose whorls, respectively.

(Right page) Figure 2. *Nacella polaris concinna*, 29.6 x 20.5 mm, PA20. Figure 3. *Nacella polaris polaris*, 29.8 x 20.5 mm, MAR. Figure 4. *Iothia coppingeri*, 5.7 x 4.1 mm, PA22. Figure 5. *Anatoma euglypta*, 4.8 x 6.1 mm, MB38. Figure 6. *Cornisepta antarctica*, 2.8 x 2.0, MB14. Figure 7. *Puncturella spirigena*, 5.6 x 3.6 mm, PA39. Figure 8. *Antimargarita smithiana*, 7.4 x 8.0 mm, MB35. Figure 9. *Calliotropis antarctica*, 7.8 x 9.8 mm, MB2. Figure 10. *Calliotropis pelseneeri*, 10.5 x 12.0 mm, MB30. Figure 11. *Margarella antarctica*, 9.1 x 6.8 mm, MAR. Figure 12. *Margarella refulgens*, 3.7 x 4.1 mm, P18. Figure 13. *Solariella antarctica*, 3.9 x 4.1 mm, MB11. Figure 14. *Tropidomarga biangulata*, 6.9 x 8.0 mm, LOW. Figure 15. *Cirsonella extrema*, 2.5 x 2.7 mm, PA39. Figure 16. *Liotella endeavourensis*, 0.9 x 1.7 mm, MB38.

(Página derecha) Figuras 2-16. Ver los nombres científicos en el rótulo en inglés.



*Distribution:* Presumably Circumantarctic. South Sandwich Islands (DELL 1990), Weddell Sea (HAIN, 1990), Magellan (THIELE, 1912), South Shetland Islands, Western Antarctic Peninsula and Peter I Island (new records), Ross Sea (SMITH, 1907a; HEDLEY, 1911; SMITH, 1915; DELL, 1990), ca. 163° E (SMITH, 1915), Commonwealth (HEDLEY, 1916), Terre Adélie (POWELL, 1958; ARNAUD, 1972), Wilkes Land (DELL, 1990), Davis Sea (THIELE, 1912; HEDLEY, 1916; Powell,

1958; EGOROVA, 1982; DELL, 1990), Kerguelen Islands (THIELE, 1912), Enderby Land (POWELL, 1958), ca. 40°E, Prince Edward Island (GRIFFITHS *ET AL.*, 2003) and 24°E (NUMANAMI, 1996); from 0 m (ARNAUD, 1972) to 1108 m (HAIN, 1990). DELL (1990) doubts the distribution boundaries, due to records of some specimens reported as *M. antarctica* from some localities close to the South Sandwich Islands; but they could correspond to *M. refulgens*.

### Genus *Solariella* Wood, 1842

#### *Solariella antarctica* Powell, 1958 (Fig. 13)

*Solariella antarctica* Powell, 1958: 183, pl. 2, fig. 4; Dell, 1990: 98, fig. 147.

**Material studied:** 1 spm. (3.9 × 4.1 mm), MB11.

*Remarks:* The individual reported by HAIN (1990 p. 40) as *Solariella* sp. resembles BENTART specimen. Other described species are *Solariella kempii* Powell, 1951, *S. charopus charopus* (Watson, 1879), *S. charopus caeruleus* (Watson, 1879) and *S. bathyantartica*

Numanami, 1996, all of them with more or finer and denser spiral cords.

*Distribution:* Weddell Sea (GRIFFITHS *ET AL.*, 2003), Bellingshausen Sea (new record), Ross Sea (DELL, 1990) and Kemp Land (POWELL, 1958); from 455 m (DELL, 1990) to 1289 m (new record).

### Genus *Tropidomarga* Powell, 1951

#### *Tropidomarga biangulata* Powell, 1951 (Fig. 14)

*Tropidomarga biangulata* Powell, 1951: 101, pl. 5, figs. 5, G6 (radula); Castellanos and Landoni, 1989: 26, pl. 2, fig. 6; Zelaya, 2005: 115.

**Material studied:** 1 spm. (6.9 × 8.0 mm), LOW.

*Distribution:* Only in the South Georgia (POWELL, 1951) and the South Shetland

Islands (POWELL, 1951; this study); from 97 m (new record) to 342 m (POWELL, 1951).

### Family SKENEIDAE Clark, 1851

#### Genus *Cirsonella* Angas, 1877

#### *Cirsonella extrema* Thiele, 1912 (Fig. 15)

*Cirsonella extrema* Thiele, 1912: 191, pl. 11, fig. 23; Powell, 1951: 103; 1958: 184; Egorova, 1982: 21, fig. 99; Dell, 1990: 99, fig. 160; Numanami, 1996: 43, figs. 22A-D, F (radula).

**Material studied:** 4 spm. (2.0 × 2.2 - 2.4 × 3.0 mm), PA39.

*Remarks:* Together with this species, only *Cirsonella kerguelenensis* Thiele, 1912 was cited from the Southern Ocean and neighboring areas, but *C. extrema* differs by having a lower spire.

*Distribution:* Weddell Sea (GRIFFITHS ET AL., 2003), South Shetland Islands

(DELL, 1990), Western Antarctic Peninsula (new record), Ross Sea (POWELL, 1951; DELL, 1990), Wilkes Land (DELL, 1990), Davis Sea (THIELE, 1912; EGOROVA, 1982; DELL, 1990), Enderby Land (POWELL, 1958) and 24° E (NUMANAMI, 1996); from 15 to 870 m (DELL, 1990).

#### Genus *Liotella* Iredale, 1915

##### *Liotella endeavourensis* Dell, 1990 (Fig. 16)

*Liotella endeavourensis* Dell, 1990: 103, figs. 172-173.

**Material studied:** 1 spm. (0.9 × 1.7 mm), MB38.

*Remarks:* The only Antarctic representative known. According to DELL (1990) it presents a certain likeness to species from southern New Zealand, and differs from them in the sunken

spire and by having a pair of raised spiral cords in the last whorl.

*Distribution:* Only known from the Ross Sea at 362 m (DELL, 1990) and Bellingshausen Sea at 1324 m (new record).

#### Family TURBINIDAE Rafinesque, 1815

##### Genus *Leptocollonia* Powell, 1951

##### *Leptocollonia innocens* (Thiele, 1912) (Fig. 17)

*Leptothyra innocens* Thiele, 1912: 192, pl. 11, figs. 24, 24a.

*Leptocollonia innocens*: Powell, 1951: 105; 1958; 183; Egorova, 1982: 20, figs. 32 (radula), 90; Dell, 1990: 98, figs. 161-162; Hain, 1990: 41, pl. 2, fig. 1, pl. 18, figs. 7-8 (radula); Numanami, 1996: 57, figs. 31A-D, E (operculum), F (radula).

**Material studied:** 6 spm. (2.8 × 3.9 - 6.0 × 6.3 mm), MB37.

*Remarks:* *L. thielei* Powell, 1951, from South Georgia Island, is the only other species known from the area, but *L. innocens* differs mainly by having fewer spiral cords on the spire and last whorl.

*Distribution:* Weddell (DELL, 1990; HAIN, 1990), Bellingshausen (new

record), Ross (DELL, 1990) and Davis Seas (THIELE 1912; POWELL, 1958; EGOROVA, 1982), Enderby Land (POWELL, 1958), 34° E and 24° E (NUMANAMI, 1996); from 193 m (POWELL, 1958) to 673 m (HAIN, 1990).

#### Superorder CAENOGASTROPODA Cox, 1960

##### Family ZEROTULIDAE Warén and Hain, 1996

##### Genus *Dickdellia* Warén and Hain, 1996

##### *Dickdellia labioflecta* (Dell, 1990) (Fig. 18)

*Laevilitorina labioflecta* Dell, 1990: 110, figs. 187-188.

*Dickdellia labioflecta*: Warén and Hain, 1996: 321, figs. 27-29, 30a-b, 31-32, 34e. Mesogastropoda sp. 2: Hain, 1990: 54, pl. 5, figs. 1a-d, pl. 22, fig. 6 (radula).

**Material studied:** 10 spm. (2.8 x 3.1 - 2.9 x 3.4 mm), PA22; 3 spm. (3.1 x 3.6 - 3.2 x 3.7 mm), MAR.

*Remarks:* It differs from littorinid species by having a less calcified shell and more globose aperture. Juveniles live as ectoparasites on the cuticle of the pycnogonid *Colossendeis megalonyx megalonyx* (Lehmann, Gailer, Melzer and Schwabe, 2007).

*Distribution:* Weddell Sea (HAIN, 1990; WARÉN AND HAIN, 1996), South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (new record) and Ross Sea (DELL, 1990); from 220 to 891 m (DELL, 1990).

Family EATONIELLIDAE Ponder, 1965

Genus *Eatoniella* Dall, 1876

*Eatoniella glacialis* (Smith, 1907) (Fig. 19)

*Rissoia glacialis* Smith, 1907a: 9, pl. 2, fig. 4; Smith, 1915: 65.

*Rissoa glacialis*: Hedley, 1911: 5.

*Subonoba glacialis*: Hedley, 1916: 48.

*Eatoniella glacialis*: Arnaud, 1972: 118, figs. 8 (radula), 11 (operculum); Ponder, 1983: 11, figs. 2c, 5e; Dell, 1990: 111, fig. 191; Numanami, 1996: 62, figs. 34A-B, C (operculum), D (radula); Zelaya, 2005: 115, fig. 14.

*Eatoniella kerguelensis* f. *major* Strebel, 1908: 57, pl. 4, figs. 56a-c.

**Material studied:** 1 spm. (2.8 x 1.9 mm), PA21; 2 spm. (2.0 x 1.1 - 2.8 x 1.6 mm), PA39.

*Remarks:* Its resemblance to *E. kerguelensis* (s.l.) was discussed by Ponder (1983), who found that the species *Eatoniella kerguelensis* f. *major* Strebel, 1908, from the Western Antarctic Peninsula is a junior synonym of *E. glacialis*.

*Distribution:* Circumantarctic. Weddell Sea (DELL, 1990), South Georgia Island (ZELAYA, 2005), South Shetland Islands (STREBEL, 1908; DELL, 1990) and Western

Antarctic Peninsula (STREBEL, 1908; DELL, 1990; this study), Ross Sea (SMITH, 1907a; HEDLEY 1911; SMITH, 1915; DELL, 1990), Cape Adare (SMITH, 1915), Balleny Islands (GRIFFITHS ET AL., 2003), Commonwealth (HEDLEY, 1916), Terre Adélie (ARNAUD, 1972) and Enderby Land (DELL, 1990), 24° E (NUMANAMI, 1996) and ca. 40° E (GRIFFITHS ET AL., 2003); from 6 m (ARNAUD, 1972) to 870 m (DELL, 1990).

*Eatoniella kerguelensis regularis* (Smith, 1915) (Fig. 20)

*Rissoia regularis* Smith, 1915: 65, pl. 1, fig. 5.

*Eatoniella kerguelensis regularis*: Ponder, 1983: 7, figs. 2b, 3a-c; Dell, 1990: 113, fig. 190; Branch et al., 1991: 57 (key); Numanami, 1996: 65, figs. 36A-B, C (operculum), D (radula).

*Eatoniella regularis*: Castellanos, 1989: 26, pl. 2, fig. 26.

*Eatoniella kerguelensis* (Smith): Lamy, 1906b: 7; Melvill and Standen, 1907: 134; Lamy, 1911a: 11; Hedley, 1916: 46; Arnaud, 1972: 118, figs. 9 (radula), 11 (operculum) (no Smith, 1875).

*Eatoniella kerguelensis* f. *major* Strebel: Melvill and Standen, 1912: 351; Powell, 1951: 110 (no Strebel, 1908).

**Material studied:** 2 spm. (3.5 x 2.0 - 4.0 x 2.2 mm), PA20.

*Remarks:* It differs from the similar subspecies *E. kerguelensis kerguelensis* (Smith, 1875) by having a shell that is usually larger, thicker, with flatter whorls and a higher spire of  $1/2$

or 1 whorl more. There are the same differences, though more evident, with other species, such as *E. glacialis* (Smith, 1907) and *E. demissa* (Smith, 1915).



*Distribution:* Weddell Sea and South Georgia Island (GRIFFITHS *ET AL.*, 2003), South Orkney Islands (MELVILL AND STANDEN, 1907, 1912; POWELL, 1951), South Atlantic Ocean (CASTELLANOS, 1989) and Falkland/Malvinas Islands (CARCELLES, 1953), South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (LAMY, 1906b; DELL, 1990; this

study), Ross Sea (SMITH, 1915; DELL, 1990) to Cape Adare (SMITH, 1915), Commonwealth (HEDLEY, 1916), Terre Adélie (ARNAUD, 1972), Wilkes Land and ca. 63° E (DELL, 1990), Marion and Prince Edward Islands (BRANCH *ET AL.*, 1991), ca. 40° E (GRIFFITHS *ET AL.*, 2003) and 24° E (NUMANAMI, 1996); from 0 m (DELL, 1990) to 457 m (SMITH, 1915).

*Eatoniella cf. kerguelenensis kerguelenensis* (Smith, 1875) (Fig. 21)

*Eatonia kerguelenensis* Smith, 1875: 70.

*Eatoniella kerguelenensis kerguelenensis*: Smith, 1879: 174, pl. 9, fig. 10; Powell, 1957: 129; 1958: 185; Arnaud, 1972: 118 (in part); Ponder, 1983: 11, figs. 2a, 7e-f; Troncoso *et al.* 2001: 92, figs. 10, 43 (radula).

*Eatoniella kerguelensis* (sic): Thiele, 1912: 235, pl. 14, fig. 26, pl. 16, fig. 1 (radula); Castellanos, 1989: 23, pl. 2, fig. 22, pl. 4, fig. 45.

**Material studied:** 14 spm. (1.4 × 1.0 - 3.0 × 1.8 mm), PA39; 1 spm. (1.6 × 1.1 mm), PA41.

*Remarks:* Although PONDER (1983) restricted *E. kerguelenensis kerguelenensis* to East Antarctica, CASTELLANOS (1989) presented a specimen from the Antarctic Peninsula, which was clearly different from *E. kerguelenensis regularis*. Likewise, our specimens differ by having a usually smaller shell, thinner, with more convex whorls and with a shorter spire of  $1/2$  or 1 whorl less.

*Distribution:* Mainly in East Antarctica. Known from Commonwealth (POW-

ELL, 1958), Terre Adélie (ARNAUD, 1972) and Kerguelen Islands (SMITH, 1879; THIELE, 1912; POWELL, 1957; TRONCOSO *ET AL.*, 2001). Also from the Western Antarctic Peninsula (this study). CASTELLANOS (1989) assigned a widespread Antarctic and Sub-Antarctic distribution in South Georgia, South Orkney Islands and Antarctic Peninsula, and GRIFFITHS *ET AL.* (2003) added the Weddell Sea. The bathymetric range is from 0 m (POWELL, 1957) to 100 m (POWELL, 1960).

Family RISSOIDAE Gray, 1847

Genus *Onoba* H. and A. Adams, 1852

*Onoba gelida* (Smith, 1907) (Fig. 22)

*Rissoia gelida* Smith, 1907a: 9, pl. 2, fig. 5; Smith, 1915: 65.

*Rissoia gelida*: Hedley, 1911: 5; Thiele, 1912: 195, pl. 11, figs. 37-38.

*Subonoba gelida*: Hedley, 1916: 48; Powell, 1958: 185; Arnaud, 1972: 121; Egorova, 1982: 24, figs. 37 (radula), 108-109.

*Onoba gelida*: Ponder, 1983: 20, figs. 13a-b, 16a-d; Dell, 1990: 114, fig. 194; Ponder and Worsfold, 1994: 54; Numanami, 1996: 66, figs. 38A-B; Zelaya, 2005: 116, fig. 16.

*Subonoba contigua* Powell, 1958: 184, pl. 1, fig. 8.

**Material studied:** 6 spm. (1.8 × 1.1 - 2.4 × 1.8 mm), PI5; 4 spm. (2.1 × 1.4 - 2.7 × 1.7 mm), PI8; 1 spm. (2.6 × 1.4 mm), MB14; 1 spm. (2.2 × 1.6 mm), PA21; 1 spm. (2.0 × 1.1 mm), MB34; 9 spm. (1.1 × 0.8 - 3.0 × 1.9 mm), PA39; 3 spm. (1.3 × 1.0 - 1.7 × 1.1 mm), PA41; 3 spm. (1.2 × 1.0 - 1.4 × 1.1 mm), PA42; 1 spm. (2.1 × 1.5 mm), LOW.

*Remarks:* Several Antarctic and Sub-Antarctic species, sharing wide shape and spiral sculpture have been cited. In this respect, *O. scythei* (Philippi, 1868) from Tierra del Fuego Island has a great affinity in macrosculpture, though more elongate. *O. filostrina* (Melvill and Standen, 1912), *O. suavis* (Thiele, 1925), *O. transenna* (Watson, 1886), *O. subantarctica subantarctica* (Thiele, 1912) and *O. subantarctica wilkesiana* (Hedley, 1916), differ by having more spirals; on the other hand, *O. delecta* Ponder, 1983 and *O. paucicarinata* Ponder, 1983, have less spirals. *O. inflatella* (Thiele, 1912) differs in having a widely open umbilicus and more spaced spirals and *O. grisea* (Martens, 1885) by flatter cords. PONDER (1983) synonymized the species *Subonoba contigua* Powell, 1958.

*Distribution:* South Georgia Island (PONDER AND WORSFOLD, 1994; ZELAYA, 2005) and cited for the Weddell Sea (ZELAYA, 2005); South Shetland Islands (PONDER, 1983; DELL, 1990; this study), Western Antarctic Peninsula, Bellingshausen Sea and Peter I Island (new records), Ross Sea (SMITH, 1907a; HEDLEY, 1911; SMITH, 1915; DELL, 1990) to Cape Adare (SMITH, 1915), Commonwealth (HEDLEY, 1916; POWELL, 1958), Terre Adélie (ARNAUD, 1972), Wilkes Land (DELL, 1990), Davis Sea (THIELE, 1912; EGOROVA, 1982; DELL, 1990), Enderby Land (POWELL, 1958), ca. 40° E (GRIFFITHS ET AL., 2003), 24° E (NUMANAMI, 1996) and Bouvet Island (LINSE, 2006); from 4 m (DELL, 1990) to 1272 m (new record).

### *Onoba kergueleni* (Smith, 1875) (Fig. 23)

*Rissoa kergueleni* Smith, 1875: 69; 1879: 176, pl. 9, fig. 12; Thiele, 1912: 238, pl. 14, fig. 30.

*Onoba kergueleni*: Ponder, 1983: 17, figs. 12f-h, 18 e-g; Dell, 1990: 115, fig. 196.

*Rissoa adarensis* Smith, 1902: 205, pl. 24, fig. 17; Melvill and Standen, 1907: 132; Hedley, 1911: 5; Lamy, 1911a: 10.

*Rissoia adarensis*: Smith, 1907a: 8, pl. 2, fig. 2; Smith, 1915: 65.

*Ovirissoa adarensis*: Hedley, 1916: 47; Arnaud, 1972: 120.

? *Rissoa columna* Pelseener, 1903: 21, pl. 5, fig. 55.

*Rissoa observationis* Thiele, 1912: 239, pl. 15, fig. 4.

**Material studied:** 1 spm. (3.0 x 1.4 mm), PI8.

*Remarks:* The extremely thin and transparent periostracum marks the difference with all species with smooth surface known for the area, such as *O. anderssoni* (Strebel, 1908), *O. georgiana* (Pfeffer, 1886) and *O. melvilli* (Hedley, 1916), these last two also with weak spirals. *Rissoa adarensis* Smith, 1902, *R. columna* Pelseener, 1903 and *R. observationis* Thiele, 1912 were synonymized by PONDER (1983); the last two species were described from immature specimens.

*Distribution:* Circumantarctic. South Orkney (MELVILL AND STANDEN, 1907)

and Signy Islands (PONDER, 1983), South Shetland Islands (PONDER, 1983; DELL, 1990), Western Antarctic Peninsula (LAMY, 1911a) and Bellingshausen Sea (70° S, 83° W) (PELSENER, 1903), Peter I Island (new record), Ross Sea (SMITH, 1907a; HEDLEY, 1911; SMITH, 1915; DELL, 1990), Cape Adare (SMITH, 1902), Commonwealth (HEDLEY, 1916), Terre Adélie (ARNAUD, 1972) and Wilkes Land (DELL, 1990), Kerguelen Islands (SMITH, 1879), Crozet Island and Mac Robertson Land (DELL, 1990); from 0 m (ARNAUD, 1972) to 870 m (DELL, 1990).

### *Onoba turqueti* (Lamy, 1905) (Fig. 24)

*Rissoia turqueti* Lamy, 1905: 479, fig. 3; 1906b: 6, pl. 1, fig. 8.

*Rissoa turqueti*: Melvill and Standen, 1912: 350.

*Subonoba turqueti*: Powell, 1951: 55; Arnaud, 1972: 121.

*Onoba turqueti*: Ponder, 1983: 16, figs. 11f-g, 12a-e, 14c-e; Dell, 1990: 114, fig. 195; Ponder and Worsfold, 1994: 54.

*Rissoia fraudulentata* Smith, 1907a: 9, pl. 2, fig. 3.

*Rissoia fraudulentata*: Melvill and Standen, 1907: 133; Thiele, 1912: 194, pl. 11, fig. 35.

*Subonoba fraudulentata*: Powell, 1951: 110; Egorova, 1982: 23, figs. 36 (radula), 111.

*Subonoba bickertoni* Hedley, 1916: 47, pl. 7, fig. 76.

**Material studied:** 2 spm. (1.8 × 1.0 - 2.1 × 1.1 mm), P15.

**Remarks:** The spiral sculpture is one of the main characters that differentiate Antarctic and Sub-Antarctic species with a common elongate shape. In this sense, *O. sulcula* Ponder and Worsfold, 1994 differs in having threads interrupted by dot-like marks, *O. schraderi* (Strebel, 1908) by its triple threads, *O. sactipauli* (Vélain, 1877) and *O. egorovae* Numanami, 1996 by their weaker threads, *O. steineni* (Strebel, 1908) and *O. protofimbriata* Ponder and Worsfold, 1994 by their thicker ridges and *O. lantzi* (Vélain, 1877), although having a similar sculpture, differs in having shouldered whorls. *Rissoia fraudulentata* Smith, 1907 and *Subonoba bickertoni* Hedley,

1916 were synonymized by PONDER (1983).

**Distribution:** Cited ca. 10° W (GRIFFITHS ET AL., 2003); Burdwood Bank (MELVILL AND STANDEN, 1912), South Georgia (PONDER AND WORSFOLD, 1994), South Orkney (MELVILL AND STANDEN, 1907; POWELL, 1951), Signy (PONDER 1983) and South Shetland Islands (PONDER, 1983; DELL, 1990), Western Antarctic Peninsula (LAMY, 1905, 1906b; DELL, 1990), Peter I Island (new record), Ross Sea (SMITH, 1907a; DELL, 1990), Macquarie Island (POWELL, 1951), Commonwealth (HEDLEY, 1916), Terre Adélie (ARNAUD, 1972) and Davis Sea (THIELE, 1912, EGOROVA, 1982); from 2 to 385 m (EGOROVA, 1982).

### Genus *Powellisetia* Ponder, 1965

#### *Powellisetia deserta* (Smith, 1907) (Fig. 25)

*Rissoia deserta* Smith, 1907a: 9, pl. 2, fig. 1.

*Rissoia deserta*: Thiele, 1912: 194, pl. 11, fig. 33; Melvill and Standen, 1912: 349.

*Subonoba deserta*: Hedley, 1916: 48; Powell, 1951: 62; Powell, 1958: 185; Arnaud, 1972: 120; Egorova, 1982: 23, figs. 35 (radula), 110.

*Powellisetia deserta*: Ponder, 1983: 24, figs. 19a-c, 21c; Dell, 1990: 116, fig. 197; Numanami, 1996: 71, figs. 43A-C, D (radula).

**Material studied:** 2 spm. (2.2 × 1.2 - 2.8 × 1.8 mm), PA41.

**Remarks:** The size and shape are the main characters that allow the differentiation of several species without any spiral sculpture. *P. principis* (Watson, 1886) is a tiny species that does not reach more than 2.1 mm, *P. australis* (Watson, 1886) and *P. inornata* (Strebel, 1908) differ in having a more elongated shape. *P. pelse-neeri* (Thiele, 1912), that was described as a new name for *Rissoia subtruncata* Pelse-neer, 1903, from the Bellingshausen Sea, differs by having finer spiral striae.

**Distribution:** Cited ca. 10° W (GRIFFITHS ET AL., 2003); South Orkney

(MELVILL AND STANDEN, 1912) and Signy Islands (PONDER, 1983), Western Antarctic Peninsula (new record), Ross Sea (SMITH, 1907a; PONDER, 1983; DELL, 1990), Commonwealth (HEDLEY, 1916; POWELL, 1958), Terre Adélie (ARNAUD, 1972); Wilkes Land (DELL, 1990), Davis Sea (THIELE, 1912; EGOROVA, 1982), ca. 60°E (GRIFFITHS ET AL., 2003), Enderby Land (POWELL, 1958), ca. 50° E and 40° E (GRIFFITHS ET AL., 2003) and 24° E (NUMANAMI, 1996); from 4 m (PONDER, 1983) to 870 m (Dell, 1990).

Family CAPULIDAE Fleming, 1822  
Genus *Torellia* Lovén in Jeffrey, 1867

*Torellia insignis* (Smith, 1915) (Fig. 26)

*Neonconcha insignis* Smith, 1915: 68, pl. 1, fig. 9; Eales, 1923: 13, fig. 11; Arnaud, 1972: 123; Numanami and Okutani, 1990b: 87, figs. 2C-D, 3A (radula), 5A; Numanami, 1996: 89, figs. 58A-B, D, C (radula).

*Torellia insignis*: Warén, Arnaud and Cantera, 1986: 163 (text), fig. 6; Dell, 1990: 135, fig. 229-230; Hain, 1990: 48, pl. 3, fig. 1, pl. 20, fig. 6 (radula).

**Material studied:** 1 spm. (16.9 x 21.0 mm), LOW.

**Remarks:** The higher spire, and very thick periostracum, rather lamellose along the growth lines and raised into long, divergent hairy processes on the shoulder and on the spiral carinae, separates *T. insignis* from the other Antarctic and Sub-Antarctic species: *T. mirabilis* (Smith, 1907), *T. planispira* (Smith, 1915), *T. exilis* (Powell, 1958), *T. smithi* Warén, Cantera and Arnaud, 1986, *T. angulifera* Warén, Cantera and Arnaud, 1986 and *T. cornea* Powell, 1951. NUMANAMI AND OKUTANI (1990b) have studied and compared this species with the most similar

species *T. lanata* Warén, Arnaud and Cantera, 1986, from the Kerguelen Islands, that differs in having a more angulose aperture. *T. antarctica* (Thiele, 1912) differs in having a more dense sculpture and less developed periostracum.

**Distribution:** Weddell Sea (HAIN, 1990), South Shetland Islands (new record), Ross Sea (SMITH, 1915; DELL, 1990), Terre Adélie (ARNAUD, 1972), ca. 40°E (GRIFFITHS ET AL., 2003) and 24° E (NUMANAMI AND OKUTANI, 1990b; NUMANAMI, 1996); from 91 m (DELL, 1990) to 695 m (HAIN, 1990).

*Torellia mirabilis* (Smith, 1907) (Fig. 27)

*Trichoconcha mirabilis* Smith, 1907a: 6, pl. 1, figs. 7-7b; Hedley, 1916: 50; Eales, 1923: 14; Powell, 1951: 124; Castellanos and Landoni, 1990: 7, pl. 3, fig. 35; Hain, 1990: 46, pl. 2, figs. 12a-e, pl. 20, figs. 1-2 (radula).

*Torellia mirabilis*: Thiele, 1912: 197; Smith, 1915: 68; Warén *et al.*, 1986: 163 (text); Dell, 1990: 131, figs. 222-225; Numanami and Okutani, 1990b: figs. 2E-F; Numanami, 1996: 92 (table), figs. 60A-B, C (radula); Numanami *et al.*, 1996: 211 (table), pl. 1, figs. 10-11; Zelaya, 2005: 119, fig. 25.

**Material studied:** 1 spm. (22.0 x 30.0 mm), PA39.

**Remarks:** Together with *T. planispira* (Smith, 1915) and *T. cornea* Powell, 1951, there are the three species with low spire, but *T. planispira* has strong spiral carinae instead of the rounded shape of *T. mirabilis*, and *T. cornea* has a broader and depressed aperture, not rounded as in *T. mirabilis*.

**Distribution:** Weddell Sea (HAIN, 1990), South Georgia (POWELL, 1951;

DELL, 1990; ZELAYA, 2005) and South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (new record), Ross Sea (SMITH, 1907a; SMITH, 1915; DELL, 1990), Commonwealth to Terre Adélie (HEDLEY, 1916), Davis Sea (THIELE, 1912; HEDLEY, 1916); also is indicated from Kerguelen and Crozet Islands (ZELAYA, 2005); Enderby Land (NUMANAMI ET AL., 1996); from 70 to 1120 m (DELL, 1990).

*Torellia planispira* (Smith, 1915) (Fig. 28)

*Trichotropis planispira* Smith, 1915: 67, pl. 1, fig. 7.

*Trichoconcha planispira*: Powell, 1958: 188; Hain, 1990: 47, pl. 2, fig. 13, pl. 20, fig. 3 (radula).

*Torellia planispira*: Warén *et al.*, 1986: 163 (text); Dell, 1990: 134; Numanami and Okutani, 1990b: 82, figs. 2A-B, 3B (radula), 5B; Numanami, 1996: 86, figs. 56A-B, D, C (radula).

**Material studied:** 3 spm. (2.6 × 3.9 - 3.7 × 5.3 mm), PA21; 1 spm. (4.0 × 5.8 mm), PA24.

*Remarks:* NUMANAMI AND OKUTANI (1990b) observed that its semi-detached whorls of the teleoconch allow differentiation from other related species.

*Distribution:* Weddell Sea (HAIN, 1990), cited for the South Shetland Islands (GRIFFITHS *ET AL.*, 2003); Western

Antarctic Peninsula (new record), Ross Sea (SMITH, 1915; DELL, 1990), Mac Robertson Land (POWELL, 1958), *ca.* 40° E (GRIFFITHS *ET AL.*, 2003) and 24° E (NUMANAMI AND OKUTANI, 1990b, NUMANAMI, 1996); from 107 to 1056 m (new records).

### Family VELUTINIDAE Gray, 1840

#### Genus *Marseniopsis* Bergh, 1886

#### *Marseniopsis conica* (Smith, 1902)

*Lamellaria conica* Smith, 1902: 206, pl. 24, fig. 4; Strebel, 1908: 60.

*Marseniopsis conica*: Smith, 1915: 66, Eales, 1923: 23; Egorova, 1982: 27, figs. 132-135; Dell, 1990: 164; Hain, 1990: 52, pl. 4, figs. 2a-c, pl. 21, figs. 7-8 (radula); Numanami and Okutani, 1991: 53, figs. 4A-E, 9A (radula); Numanami, 1996: 93, figs. 61A-E, 66A (radula).

*Lamellariosis turqueti* Vayssière, 1906: 40, pl. 4, figs. 42-53.

**Material studied:** 1 spm. (14.7 × 8.9 mm), PA21.

*Remarks:* It can be differentiated from the other two representatives of the genus in the area by its heterogeneous and rough mantle with numerous mammillate processes, giving a polygonal contour; it does not have an elliptic shape like *M. mollis* (Smith, 1902) and *M. syowaensis* Numanami and Okutani, 1991. According to NUMANAMI AND OKUTANI (1991) *Lamellariosis turqueti* Vayssière, 1906 is a junior synonym.

*Distribution:* Weddell Sea (HAIN, 1990) and Eastern Antarctic Peninsula (STREBEL, 1908), Western Antarctic Peninsula (new record), Ross Sea (SMITH, 1915; DELL, 1990), Cape Adare (SMITH, 1902), probably in the Macquarie Island (Tomlin 1948 in POWELL, 1960), Davis Sea (EGOROVA, 1982), Mac Robertson Land and 24° E (NUMANAMI AND OKUTANI, 1991); from 41 m (EGOROVA, 1982) to 860 m (DELL, 1990).

#### *Marseniopsis mollis* (Smith, 1902)

*Lamellaria mollis* Smith, 1902: 205, pl. 24, figs. 19-21; Hedley, 1911: 7.

*Marseniopsis mollis*: Thiele, 1912: 200; Smith, 1915: 66; Hedley, 1916: 53; Eales, 1923: 25; Arnaud, 1972: 126, fig. 17 (radula); Egorova, 1982: 28, figs. 40 (radula), 128-131; Dell, 1990: 164; Hain, 1990: 53, pl. 4, figs. 3a-c, pl. 22, figs. 1-2; Numanami and Okutani, 1991: 56, figs. 6A-D, 9B (radula), pl. 1, figs. 3-5; Numanami, 1996: 96, figs. 63A-D, 66B (radula); Numanami *et al.*, 1996: 212 (table, text), pl. 2, figs. 9-11.

**Material studied:** 4 spm. (44.5 × 33.0 - 47.7 × 38.9 mm), PI5; 5 spm. (41.2 × 33.4 - 59.9 × 48.4 mm), PI8.

*Remarks:* This species differs from *M. syowaensis* Numanami and Okutani,

1991, in having a more regular elliptic shape and homogeneous mantle.

*Distribution:* Weddell Sea (HAIN, 1990), South Shetland Islands (GRIFFITHS ET AL., 2003) and Western Antarctic Peninsula (DELL, 1990), Peter I Island (new record), Ross Sea (HEDLEY, 1911; SMITH, 1915; DELL, 1990), Cape Adare (SMITH, 1902), 163° E (SMITH, 1915), Commonwealth (HEDLEY, 1916), Terre

Adélie (ARNAUD, 1972), Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (EGOROVA, 1982), Syowa (NUMANAMI AND OKUTANI, 1991; NUMANAMI 1996; NUMANAMI ET AL., 1996) and 24° E (NUMANAMI AND OKUTANI, 1991; NUMANAMI, 1996); from 1 m (HAIN, 1990) to 800 m (POWELL, 1960).

### *Marseniopsis syowaensis* Numanami and Okutani, 1991

*Marseniopsis syowaensis* Numanami and Okutani, 1991: 58, figs. 7A-F, 9C (radula), pl. 1, figs. 1-2; Numanami, 1996: 99, figs. 65A-F, 66C (radula).

**Material studied:** 3 spm. (50.1 x 45.1 - 50.1 x 45.1 mm), PI5.

*Remarks:* The same differences as the similar species *M. mollis* (Smith, 1902) are indicated above and were established by NUMANAMI AND OKUTANI (1991).

*Distribution:* Only known from Syowa (NUMANAMI AND OKUTANI, 1991; NUMANAMI, 1996) and Peter I Island (new record); from 5 m (NUMANAMI, 1996) to 126 m (new record).

### Family NATICIDAE Forbes, 1838

#### Genus *Falsilunatia* Powell, 1951

#### *Falsilunatia delicatula* (Smith, 1902) (Fig. 29)

*Natica delicatula* Smith, 1902: 206, pl. 24, fig. 6; 1907a: 5; Thiele, 1912: 199, pl. 12, figs. 16-17.

*Falsilunatia delicatula:* Dell, 1990: 148, figs. 237, 256-257, 269 (radula); Troncoso et al. 2001: 95, figs. 15, 46 (radula).

**Material studied:** 1 spm. (5.5 x 6.0 mm), MB4; 1 spm. (10.0 x 11.0 mm), PI5; 4 spm. (4.0 x 4.2 - 5.2 x 5.5 mm), PI8.

*Remarks:* The diameter (D) of the shell is greater than its height (H), the holotype having a D/H ratio of 1.03. On the other hand, similar species such as *F. soluta* (Gould, 1848), *F. fartilis* (Watson, 1881), *F. notocardensis* Dell, 1990, *F. eltanini* Dell, 1990 and *F. xantha* (Watson, 1881), differ in other features, such as thicker and/or higher shells. This species was considered a junior synonym of *Amauropsis grisea* (Martens, 1878) by CERNOHORSKY (1977), but DELL (1990) concluded that *F.*

*delicatula* is a distinct species based on examination of several samples.

*Distribution:* Cited for the Weddell Sea (GRIFFITHS ET AL., 2003); South Shetland Islands (DELL, 1990), Peter I Island and off Thurston Island (new records), Ross Sea (SMITH, 1907a; DELL, 1990), Cape Adare (SMITH, 1902), Balleny Islands (DELL, 1990), Davis Sea (THIELE, 1912) and Kerguelen Islands (TRONCOSO ET AL., 2001); from 40 m (TRONCOSO ET AL., 2001) to 1890 m (DELL, 1990).

### Genus *Pseudamauropsis* Egorova, 2007

#### *Pseudamauropsis anderssoni* (Strebel, 1906) (Fig. 30)

*Natica anderssoni* Strebel, 1906: 142, pl. 11, figs. 67a-b; 1908: 61, pl. 5, figs. 64a-b.

*Amauropsis anderssoni*: Powell, 1951: 116, pl. 10, figs. 58-59, J44 (radula); Castellanos and Landoni, 1990: 19, pl. 3, fig. 34; Dell, 1990: 140, figs. 245, 265 (radula); Branch *et al.*, 1991: 57 (key); Pastorino, 2005: 252, figs. 102-113; Zelaya, 2005: 120, fig. 26.

*Pseudamauropsis anderssoni*: Egorova, 2007: figs. 2d, 6v (radula), 7-1 (map), table 1.

*Amauropsis powelli* Dell, 1990: 144, figs. 246, 268 (radula); Zelaya, 2005: 120.

*Pseudamauropsis powelli*: Egorova, 2007: figs. 2e, 7-6 (map), table 1.

**Material studied:** 2 sh. (8.6 × 8.6 - 8.8 × 8.5 mm), PI6; 1 spm. (9.0 × 8.2 mm), PI7; 2 sh. and 1 spm. (8.0 × 8.0 - 8.2 × 8.0 mm), PA25.

**Remarks:** The deep and narrow open umbilicus, partially occluded by the parietal callus, marks the difference with the other species of the genus. DELL (1990) described *A. powelli* based on the open umbilicus, but PASTORINO (2005) presented a pattern of variation in samples from the same geographic locations as Dell's specimens, concluding that *A. powelli* is a junior synonym of *P. anderssoni*. EGOROVA (2007) described the genus *Pseudamauropsis* based on morphometric analyses and comparisons of the morphospecies *Natica prasina* Watson, 1881, *N. suturalis* Watson, 1881, *N. anderssoni* Strebel, 1908, *N. aureolutea* Strebel, 1908, *N. georgiana* Strebel, 1908, *N. subpallascens* Strebel, 1908, *N. godfroyi* Lamy, 1910, *Lunatia?*

*bransfieldensis* Preston, 1916, *Amauropsis rossiana* Smith, 1907 and *A. powelli* Dell, 1990 with the northern hemisphere species *Amauropsis islandica* (Gmelin, 1791), situating the species under this new genus and removing it from the genus *Amauropsis* Mörch, 1857. However, her study did not consider the previous revision of the group (PASTORINO, 2005).

**Distribution:** South Georgia Island (STREBEL, 1908; POWELL, 1951; DELL, 1990; ZELAYA, 2005), Falkland/Malvinas Islands (STREBEL, 1906; STREBEL, 1908; DELL, 1990), Western Antarctic Peninsula and Peter I Island (new records), and Marion and Prince Edward Islands (BRANCH *ET AL.*, 1991); from 12 m (STREBEL, 1908) to 578 m (DELL, 1990).

### *Pseudamauropsis aureolutea* (Strebel, 1908) (Fig. 31)

*Natica aureolutea* Strebel, 1908: 63, pl. 5, figs. 63a-b.

*Amauropsis aureolutea*: Powell, 1951: 116, fig. J42 (radula); Dell, 1990: 142, figs. 251, 266 (radula); Pastorino, 2005: 253, figs. 114-123; Zelaya, 2005: 120, fig. 27.

*Pseudamauropsis aureolutea*: Egorova, 2007: figs. 2v, 3a-v, 5g (operculum), 6a (radula), 7-2 (map), table 1.

*Natica subpallascens* Strebel, 1908: 62, pl. 5, fig. 67.

*Pseudamauropsis subpallascens*: Egorova, 2007: fig. 7-10 (map), table 1.

*Natica georgiana* Strebel, 1908: 62, pl. 5, fig. 65a-b.

*Amauropsis georgianus*: Powell, 1951: 117; Castellanos and Landoni, 1990: 20, pl. 3, fig. 29g; Numanami, 1996: 109, figs. 70A-B, C (radula); Zelaya, 2005: 120.

*Pseudamauropsis georgianus*: Egorova, 2007: figs. 5e (operculum), 7-4 (map), table 1.

*Natica godfroyi* Lamy, 1910a: 322; 1911a: 12, pl. 1, figs. 10-11.

*Pseudamauropsis godfroyi*: Egorova, 2007: fig. 7-5 (map), table 1.

*Lunatia bransfieldensis* Preston, 1916: 270, fig. 2.

*Pseudamauropsis bransfieldensis*: Egorova, 2007: fig. 7-3 (map), table 1.

? *Natica xantha* Watson: Lamy, 1911b: 23, fig. 1 (no Watson, 1881).

*Amauropsis rossiana* Smith: Hain, 1990: 49, pl. 3, figs. 3a-b, pl. 20, fig. 8 (radula), pl. 21, fig. 1 (radula) (no Smith, 1907).

**Material studied:** 3 spm. (15.0 × 14.6 - 18.0 × 16.9 mm), PI8; 1 sh. (13.1 × 12.1 mm), MB11; 1 spm. (11.1 × 10.1 mm), PA20; 1 spm. (8.5 × 8.0 mm), MB37; 1 spm. (13.5 × 13.0 mm), MB38; 1 spm. (13.0 × 11.4 mm), PA39; 11 spm. (8.2 × 8.0 - 24.1 × 22.1 mm), LOW.

*Remarks:* The similar *A. rossiana* Smith, 1907 differs in having a higher spire and a spiral rib on the penultimate whorl. PASTORINO (2005) considered STREBEL's (1908) species *Natica subpallascens* and *N. georgiana* as junior synonyms, because all species, including *N. aureolutea*, were described from juvenile specimens with few significant differences; also he suspected that the little-known *N. godfroyi* Lamy, 1910 and *Lunatia? bransfieldensis* Preston, 1916 might be junior synonyms as well, and reported the misidentification of some specimens as *Falsilunatia xantha* (Watson, 1881) and as *A. rossiana* Smith, 1907 (see PASTORINO, 2005).

*Distribution:* Widespread West distribution in the South Sandwich (POWELL, 1951; DELL, 1990), South Georgia (STREBEL, 1908; POWELL, 1951; DELL, 1990; PASTORINO, 2005; ZELAYA, 2005) and South Orkney Islands (DELL, 1990), Weddell Sea (HAIN, 1990) and Eastern Antarctic Peninsula (STREBEL, 1908), South Shetland Islands (LAMY, 1911a; PRESTON, 1916; POWELL, 1951; DELL, 1990; this study), Western Antarctic Peninsula, Bellingshausen Sea and Peter I Island (new records), and 34° E and 24° E (NUMANAMI, 1996); from 6 m (STREBEL, 1908) to 1324 m (new record).

Family EPITONIIDAE Berry, 1910

Genus *Acirsa* Mörch, 1857

*Acirsa antarctica* (Smith, 1907) (Fig. 32)

*Scala antarctica* Smith, 1907a: 8, pl. 1, figs. 10-10b.

*Epitonium antarcticum*: Smith, 1915: 64.

*Acirsa antarctica*: Powell, 1951: 115; 1957: 131; 1958: 187; Dell, 1990: 123, fig. 203.

**Material studied:** 1 spm. (8.6 × 3.3 mm), MB32.

*Remarks:* Its generic placement is uncertain, because it has been cited as *Acirsa*, but NEVILLE (1997) located it in the genus *Opalia* H. and A. Adams, 1853. Comparisons with other epitoniids reveal that it differs from the similar species *A. annectens* Powell, 1951 in having a strong sculpture but a weaker basal rib.

*Distribution:* Bellingshausen Sea (new record), Ross Sea (SMITH, 1907a; SMITH, 1915; POWELL, 1951; DELL, 1990), Kerguelen Islands (POWELL, 1957), Crozet Islands (GRIFFITHS ET AL., 2003) and Enderby Land (POWELL, 1958); from 8 m (DELL, 1990) to 1847 m (new record).

Family EULIMIDAE Troschel, 1853

Genus *Hemiaclis* Sars, 1878

*Hemiaclis incolorata* (Thiele, 1912) (Fig. 33)

*Alaba incolorata* Thiele, 1912: 201; pl. 12, fig. 19; Egorova, 1982: 31, fig. 145.

*Hemiaclis incolorata*: Dell, 1990: 128, figs. 213-216; Numanami, 1996: 129, fig. 80F; Engl, 2004a: 11, fig. 1.

**Material studied:** 1 spm. (4.1 × 1.9 mm), PA39.

*Remarks:* Comparisons revealed that this species has no related ones in the Southern Ocean, as shown in the well developed discussion by ENGL (2004a).

*Distribution:* Weddell Sea and South Sandwich Islands (ENGL, 2004a), South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (new record), Ross Sea



(DELL, 1990), Davis Sea (THIELE, 1912; EGOROVA, 1982), ca. 40° E (GRIFFITHS ET AL., 2003) and 24° E (NUMANAMI, 1996); from 157 m (new record) to 1437 m (DELL, 1990).

### Genus *Melanella* Bowdich, 1822

#### *Melanella antarctica* (Strebel, 1908) (Fig. 34)

*Eulima antarctica* Strebel, 1908: 65, pl. 6, figs. 91a-c; Melvill and Standen, 1912: 353; Thiele, 1912: pl. 12, fig. 30.

*Balcis antarctica*: Powell, 1951: 113; Castellanos, 1990: 27, pl. 3, fig. 27; Hain, 1990: 45, pl. 2, figs. 9a-b.  
*Melanella antarctica*: Engl, 2004a: 12, fig. 3.

**Material studied:** 4 spm. (3.9 × 1.3 - 4.1 × 1.6 mm), PI8; 1 spm. (broken), MB13; 1 spm. (3.5 × 1.7 mm), PA22; 7 spm. (1.6 × 0.7 - 3.6 × 1.1 mm), MB38.

**Remarks:** ENGL (2004a) studied Antarctic *Melanella* species, not concluding on the affinity between this species and the similar species *M. subantarctica* (Strebel, 1908) from South Georgia Island, that possesses a higher spire similar to *M. convexa* (Smith, 1907). Other Antarctic species such as *M. solitaria* (Smith, 1915) and *M. exulata* (Smith, 1915) differ in having the columellar axis arched; *M. boscheineni* Engl, 2004, *M. sankuriae* Engl, 2004 and *M. tumidula* (Thiele, 1912) differ in having a higher

and narrow spire with more whorls; and *M. guenterii* Engl, 2004 is a conic and shiny species with flat whorls.

**Distribution:** South Sandwich Islands (POWELL, 1951), Weddell Sea (HAIN, 1990), Eastern Antarctic Peninsula (STREBEL, 1908), South Shetland Islands (ENGL, 2004a), Burdwood Bank (MELVILL AND STANDEN, 1912), Western Antarctic Peninsula, Bellingshausen Sea and Peter I Island (new records); from 90 m (new record) to 5194 m (ENGL, 2004a).

### Family CERITHIOPSIDAE H. and A. Adams, 1854

#### Genus *Cerithiopsilla* Thiele, 1912

#### *Cerithiopsilla antarctica* (Smith, 1907) (Fig. 35)

*Lovenella antarctica* Smith, 1907a: 10, pl. 2, fig. 6-6a; Hedley, 1911: 5.

*Cerithiopsilla antarctica*: Thiele, 1912: 205, pl. 12, fig. 28; Smith, 1915: 70; Hedley, 1916: 49; Powell, 1958: 186; Egorova, 1982: 33, figs. 151-152.

**Material studied:** 1 spm. (6.0 × 2.1 mm), PA22.

**Remarks:** Several species of this genus and of some related ones (e.g., *Cerithiella* Verrill, 1882) described from the Southern Ocean, reveal the limitations of any taxonomic revision. *Cerithiopsilla bisculpta* (Strebel, 1908), *C. charcoti* (Lamy, 1906) and *C. cincta* Thiele, 1912 are the most similar species to *C. antarctica*, and they share a common pattern of sculpture with 3-4 spiral cords crossed by axial striae, therefore an examination and compari-

son of type specimens will reveal the taxonomic status of these species. *Cerithiopsilla gaussiana* Egorova, 1972 lacks axial sculpture; *C. austrina* (Hedley, 1911), *C. liouvillei* (Lamy, 1910) and *C. georgiana* (Pfeffer, 1886) differ in having only two spiral cords; and *C. burdwoodiana* (Melvill and Standen, 1912) is distinguished by its granulose surface. Strebel (1908) and Thiele (1912) have situated a considerable number of species in the genus *Cerithiella*, which

differs in having a smooth, stout and bulging protoconch of about two whorls.

*Distribution:* Western Antarctic Peninsula (new record), Ross Sea

(SMITH, 1907a; HEDLEY, 1911; SMITH, 1915), Commonwealth (HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982) and Enderby Land (POWELL, 1958); from 45 to 500 m (EGOROVA, 1982).

*Cerithiopsilla austrina* (Hedley, 1911) (Fig. 36)

*Lovenella austrina* Hedley, 1911: 5, pl. 1, fig. 7.

*Cerithiopsilla austrina*: Thiele, 1912: 205, pl. 12, fig. 29; Powell, 1958: 186; Arnaud, 1972: 122; Egorova, 1982: 34, fig. 153.

**Material studied:** 2 spm. (6.1 x 2.2 - 6.6 x 2.1 mm), MAR.

*Remarks:* It is very similar to *Cerithiella erecta* Thiele, 1912, but the species of that genus have a smooth and bulbous protoconch.

*Distribution:* Weddell Sea ca. 10° W (GRIFFITHS ET AL., 2003), Western Antarc-

tic Peninsula (new record), Ross Sea (HEDLEY, 1911; ARNAUD, 1972) to Terre Adélie (ARNAUD, 1972), Davis Sea (THIELE, 1912; EGOROVA, 1982) and Enderby Land (POWELL, 1958); from 0 m (ARNAUD, 1972) to 385 m (EGOROVA, 1982).

Family MURICIDAE Rafinesque, 1815

Genus *Trophon* Montfort, 1810

*Trophon coulmanensis coulmanensis* Smith, 1907 (Fig. 37)

*Trophon coulmanensis* Smith, 1907a: 3, pl. 1, figs. 4-4b; Thiele, 1912: 212; Smith, 1915: 73, pl. 1, fig. 14; Hedley, 1916: 61, pl. 9, fig. 99; Cernohorsky, 1977: 115, fig. 14; Egorova, 1982: 38, fig. 168; Dell, 1990: 201, figs. 356-359.

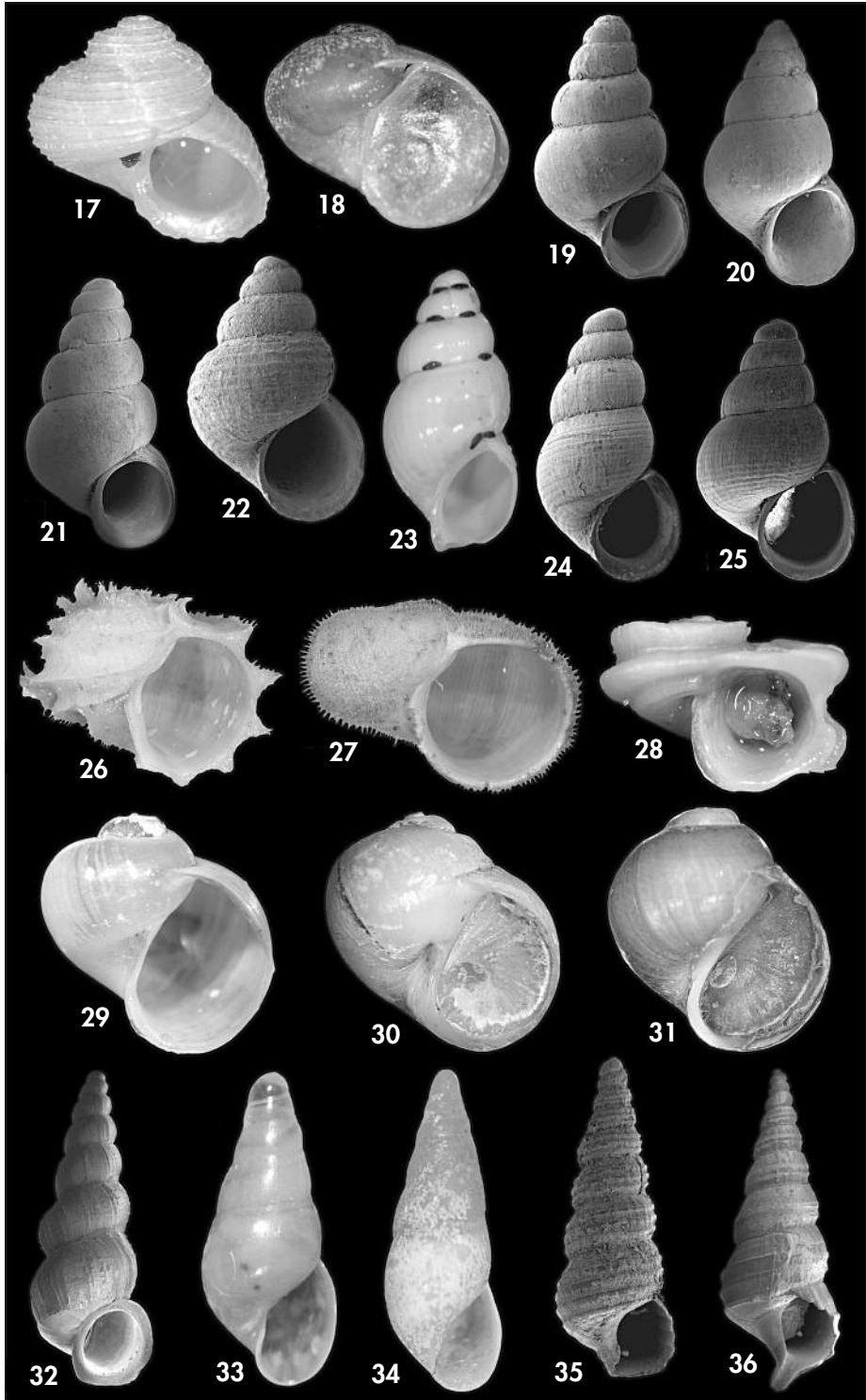
**Material studied:** 1 spm. (17.8 x 12.0 mm), PA22.

*Remarks:* The higher spire and a little expanded external lip, giving a pyriform aperture and less globose form, mark the difference with *T. shackletoni*

*paucilamellatus* Powell, 1951. NUMANAMI (1996) described the subspecies *T. coulmanensis multilamellatus* from East Antarctica, based on the different

(Right page) Figure 17. *Leptocollonia innocens*, 6.0 x 6.3 mm, MB37. Figure 18. *Dickdellia labioflecta*, 2.9 x 3.4 mm, PA22. Figure 19. *Eatoniella glacialis*, 2.8 x 1.9 mm, PA21. Figure 20. *Eatoniella kerguelenensis regularis*, 3.5 x 2.0 mm, PA20. Figure 21. *Eatoniella* cf. *kerguelenensis kerguelenensis*, 2.8 x 1.5 mm, PA39. Figure 22. *Onoba gelida*, 2.2 x 1.6 mm, PI8. Figure 23. *Onoba kergueleni*, 3.0 x 1.4 mm, PI8. Figure 24. *Onoba turqueti*, 2.1 x 1.1 mm, PI5. Figure 25. *Powellisetia deserta*, 2.5 x 1.5 mm, PA41. Figure 26. *Torellia insignis*, 16.9 x 21.0 mm, LOW. Figure 27. *Torellia mirabilis*, 22.0 x 30.0 mm, PA39. Figure 28. *Torellia planispira*, 4.0 x 5.8 mm, PA24. Figure 29. *Falsilunatia delicatula*, 4.6 x 4.7 mm, PI8. Figure 30. *Pseudamauropsis anderssoni*, 8.6 x 8.6 mm, PI6. Figure 31. *Pseudamauropsis aureolutea*, 15.9 x 14.0 mm, PI8. Figure 32. *Acirsa antarctica*, 8.6 x 3.3 mm, MB32. Figure 33. *Hemiaclis incolorata*, 4.1 x 1.9 mm, PA39. Figure 34. *Melanella antarctica*, 3.9 x 1.3 mm, PI8. Figure 35. *Cerithiopsilla antarctica*, 6.0 x 2.1 mm, PA22. Figure 36. *Cerithiopsilla austrina*, 6.1 x 2.2 mm, MAR.

(Página derecha) Figuras 17-36. Ver los nombres científicos en el rótulo en inglés.



number of lamellae, and he commented that the species *T. coulmanensis* (s.s.) "having no expansion in basal varices"; therefore the BENTART samples, that do not have expansion, correspond to subspecies *T. coulmanensis coulmanensis*. Although our individual is not as elongate as the holotype, which has a D/H ratio of 0.54, HEDLEY (1916) reported a specimen with a ratio of 0.67, the same

as our specimen, indicating variability in D/H ratio.

*Distribution*: South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (new record), Ross Sea (SMITH, 1907a; DELL, 1990), 163° E (SMITH, 1915), Terre Adélie (HEDLEY, 1916), Davis Sea (THIELE, 1912; DELL, 1990) and Kerguelen Islands (DELL, 1990); from 183 m (SMITH, 1907a) to 1674 m (DELL, 1990).

### *Trophon cuspidarioides* Powell, 1951 (Fig. 38)

*Trophon cuspidarioides* Powell, 1951: 155, pl. 9, figs. 50, M89; Castellanos and Landoni, 1993a: 7, pl. 2, fig. 25; Pastorino, 2002: 359 (text), figs. 35-37, 43b, tab. 1; Zelaya, 2005: 122.

**Material studied**: 3 spm. (15.0 × 6.5 - 18.3 × 7.4 mm), PI7.

*Remarks*: Its resemblance to some Antarctic species with a long siphon was discussed by PASTORINO (2002), in this sense *T. scolopax* Watson, 1882 presents a longer and straighter siphon, *T. septus* Watson, 1882 presents more conspicuous lamellae and *T. arnaudi* Pastorino, 2002, though similar by its curved siphon, differs in having a reticulated surface with spiral and axial lamellae. Moreover, some specimens of *T. drygalskii* Thiele, 1912 (see below) with a long siphon, may resemble it, but the sculpture and a

more angulose shape make that species different. Sub-Antarctic species with similar shape were compared by HOUART AND SELLANES (2006), where *T. veronicae* Pastorino, 1999 and *T. condei* Houart, 2003, described from larger specimens, have a higher spire, and *T. vangoethemi* Houart, 2003 can have abapical lamellae on shoulders.

*Distribution*: Only reported from South Georgia Island between 120 and 204 m (POWELL, 1951) and Peter I Island at 410 m (new records).

### *Trophon drygalskii* Thiele, 1912 (Fig. 39)

*Trophon drygalskii* Thiele, 1912: 213, pl. 13, fig. 25; Smith, 1915: 73; Powell, 1958: 197; Egorova, 1982: 38, fig. 165; Dell, 1990: 203, figs. 354-355; Hain, 1990: 62, pl. 6, fig. 8, pl. 25, fig. 1; Numanami, 1996: 131, figs. 85A-C, D (radula).

**Material studied**: 3 spm. (3.2 × 1.6 - 11.9 × 5.2 mm), MB30; 2 spm. (7.0 × 3.1 - 12.1 × 5.0 mm), MB31.

*Remarks*: Spiral ridges give the whorls a shape which is not globose, but with an angular shoulder, separating this species from others with a long siphon.

*Distribution*: Weddell Sea (HAIN, 1990), South Shetland Island and Western Antarctic Peninsula (DELL,

1990), Bellingshausen Sea (new record), Ross Sea (SMITH, 1915; DELL, 1990), Davis Sea (THIELE, 1912), Enderby Land (POWELL, 1958), ca. 40° E (GRIFFITHS ET AL., 2003) and 24° E (NUMANAMI, 1996); from 193 m (POWELL, 1958) to 1814 m (new record).

### *Trophon echinoramellatus* Powell, 1951 (Fig. 40)

*Trophon echinoramellatus* Powell, 1951: 152, pl. 9, figs. 44-45, L83 (radula).

**Material studied:** 1 spm. (65.1 x 37.2 mm), LOW.

*Remarks:* The fusiform shape with the anterior aperture expanded and a sculpture with flat-spiral cords crossed by dense axial lamellae, sinuate exactly above the crossing with the spiral cord “produced into hollow recurved spines” (POWELL, 1951), give a particular surface and shape which are

distinct from other species with fine lamellae such as *T. geversianus* (Pallas, 1774), from the southern end of South America.

*Distribution:* Only reported in the South Shetland Islands (POWELL, 1951; this study); from 115 m (new record) to 342 m (POWELL, 1951).

*Trophon longstaffi* Smith, 1907 (Fig. 41)

*Trophon longstaffi* Smith, 1907a: 3, pl. 1, figs. 3-3d; Hedley, 1911: 8; Smith, 1915: 73; Hedley 1916: 61; Eales, 1923: 31, figs. 31-33; Arnaud, 1972: 131; Cernohorsky, 1977: 116, fig. 16; Dell, 1990: 205, figs. 351-352; Numanami, 1996: 134, figs. 87A-C, D (radula).

**Material studied:** 2 spm. (9.0 x 6.4 - 13.3 x 9.0 mm), PI5; 2 spm. (18.1 x 11.0 - 21.0 x 13.0 mm), PI8.

*Remarks:* Axial lamellae are shorter, thinner and more fragile than in *T. shackletoni shackletoni* Hedley, 1911, which is similar in shape, but with more conspicuous lamellae, prolonged on shoulders.

*Distribution:* Cited for the Weddell Sea (GRIFFITHS ET AL., 2003), Eastern

Antarctic Peninsula (SMITH, 1907a), Peter I Island (new record), Ross Sea (HEDLEY, 1911; SMITH, 1915; DELL, 1990), Commonwealth (HEDLEY, 1916), Terre Adélie (HEDLEY, 1916; ARNAUD, 1972) and 40° E (NUMANAMI, 1996); from 5 m (ARNAUD, 1972; NUMANAMI, 1996) to 1080 m (DELL, 1990).

*Trophon minutus* Strebel, MS. Melvill and Standen, 1907 (Fig. 42)

*Trophon minutus* Strebel, MS. Melvill and Standen, 1907: 137, figs. 7-7a; Strebel, 1908: 44, pl. 4, figs. 47a-b; Melvill and Standen, 1912: 354; Powell, 1951: 155; Oliver and Picken, 1984: 113, figs. 33a-b; Dell, 1990: 203, fig. 353; Castellanos and Landoni, 1993a: 13, pl. 4, fig. 48; Zelaya, 2005: 122. *Trophon condensatus* Hedley, 1916: 60, pl. 9, fig. 98; Arnaud, 1972: 131, fig. 21.

**Material studied:** 1 sh. (4.5 x 3.0 mm), PA20.

*Remarks:* Assuming the synonymy of *T. condensatus* Hedley, 1916 proposed by DELL (1990), the number of axial lamellae is widely variable, as same as other species of the genus.

*Distribution:* Cited for the Weddell Sea (GRIFFITHS ET AL., 2003), South Sandwich (DELL, 1990), South Georgia (STREBEL, 1908), South Orkney (MELVILL AND

STANDEN, 1907), Signy (OLIVER AND PICKEN, 1984) and South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (POWELL, 1951; DELL, 1990; this study), Ross Sea (DELL, 1990), Commonwealth (HEDLEY, 1916), Terre Adélie (ARNAUD, 1972) and Kerguelen Islands (CANTERA AND ARNAUD, 1985); from 2 m (OLIVER AND PICKEN, 1984) to 265 m (DELL, 1990).

Family BUCCINIDAE Rafinesque, 1815

Genus *Antarctodomus* Dell, 1972

*Antarctodomus thielei* (Powell, 1958) (Fig. 43)

*Bathydomus thielei* Powell, 1958: 194, pl. 3, fig 8; Arnaud, 1972: 129, fig. 20.  
*Antarctodomus thielei*: Dell, 1990: 168; Hain, 1990: 57, pl. 5, fig. 7, pl. 23, fig. 4 (radula); Numanami, 1996: 147, figs. 96A-C, D (radula).

**Material studied:** 2 spm. (29.2 × 18.5 - 36.1 × 22.0 mm), LOW.

**Remarks:** This species is variable in shape (DELL, 1990), and specimens collected over several expeditions presented a wide variation in diameter/height ratio (D/H): 0.56 in holotype, 0.60 in a specimen from Dell (1990), 0.59 in HAIN's (1990) specimen and 0.64 in NUMANAMI's (1996) specimen. *Antarctodomus okutanii* Numanami, 1996, variable in D/H ratio as

well, was described based on radular characteristics.

**Distribution:** Weddell Sea (HAIN, 1990), South Shetland Islands (new record), Ross Sea (DELL, 1990), Terre Adélie (ARNAUD, 1972), Mac Robertson Land (DELL, 1990), Enderby Land (POWELL, 1958), cited ca. 40° E (GRIFFITHS ET AL., 2003) and 24° E (NUMANAMI, 1996); from 100 m (DELL, 1990) to 695 m (HAIN, 1990).

### Genus *Chlanidota* Martens, 1878

#### *Chlanidota signeyana* Powell, 1951 (Fig. 44)

*Chlanidota signeyana* Powell, 1951: 141, pl. 8, figs. 34-35, L74 (radula), N129 (operculum); Dell, 1990: 177, fig. 307; Harasewych and Kantor, 1999: 267, figs. 9-11, table 5.

*Cominella vestita* var. *elongata* Lamy, 1910a: 318; 1911a: 6, pl. 1, fig. 6.

*Chlanidota elongata*: Powell, 1951: 140, fig. L76 (radula); Cernohorsky, 1977: 110; Hain, 1990: 55, pl. 5, fig. 4, pl. 23, fig. 1 (radula); Numanami, 1996: 160, figs. 106A- F, G-H (radula); Numanami et al., 1996: 211-212 (tables), 213 (text), pl. 2, figs. 3-4.

*Chlanidota lamyi* Dell, 1990: 182, fig. 310 (*nom. nov.* for *Cominella vestita* var. *elongata* Lamy, 1910, not *Cominella elongata* Dunker, 1857).

*Chlanidota* cf. *lamyi*: Dell, 1990 182, fig. 315.

*Chlanidota pyriformis* Dell, 1990: 182, fig. 309.

**Material studied:** 8 spm. (8.4 × 5.6 - 34.2 × 21.2 mm), PI5; 5 spm. (23.1 × 16.0 - 28.2 × 18.0 mm), PI6; 2 spm. (12.0 × 9.0 - 26.2 × 16.1 mm), PI7; 1 spm. (19.4 × 11.3 mm), MB13; 4 spm. (22.3 × 12.9 - 32.9 × 20.2 mm), PA24; 2 spm. (27.5 × 17.1 - 29.0 × 17.8 mm), PA25; 24 spm. (14.4 × 9.6 - 25.0 × 15.3 mm), MB34; 1 spm. (20.7 × 11.8 mm), PA39; 1 spm. (19.0 × 13.2 mm), PA40; 5 spm. (12.5 × 9.0 - 22.0 × 14.2 mm), LOW.

**Remarks:** HARASEWYCH AND KANTOR (1999) have revised the genus and synonymized many species; also they comment that in examination of individuals, some are strongly sculptured with pilose projections on the spiral cords, but these specimens differ from *C. pilosa* Powell, 1951 in not having a densely pilose periostracum. This is a variable species in shape, there are some very thin individuals with a thin columellar callus, and others which are very thick with a well developed columellar callus, resembling therefore *C. invenusta* Harasewych and Kantor, 1999, which differs in having a larger operculum.

**Distribution:** Cited ca. the South Sandwich Islands (GRIFFITHS ET AL., 2003); South Georgia Island (DELL, 1990), Weddell Sea (DELL, 1990; HAIN, 1990), South Orkney (POWELL, 1951; DELL, 1990), Signy (DELL, 1990) and South Shetland Islands (LAMY, 1911a; POWELL, 1951; DELL, 1990; this study), Western Antarctic Peninsula (DELL, 1990; this study), Bellingshausen Sea and Peter I Island (new records), Ross Sea (DELL, 1990), Enderby Land and Syowa (NUMANAMI ET AL., 1996), 24° E (NUMANAMI, 1996) and Queen Maud (HARASEWYCH AND KANTOR, 1999); from 10 m (HAIN, 1990) to 1116 m (DELL, 1990).

Genus *Lusitromina* Harasewych and Kantor, 2004

*Lusitromina abyssorum* (Lus, 1993) (Fig. 45)

*Tromina abyssorum* Lus, 1993: 178.

*Lusitromina abyssorum*: Harasewych and Kantor, 2004: 26, figs. 99-137, table 5.

**Material studied:** 1 spm. (9.0 × 6.1 mm), MB26.

*Remarks:* HARASEWYCH AND KANTOR (2004) have revised the genus and they also placed *L. abyssicola* (Clarke, 1961) (described as *T. bella abyssicola*) from the South Atlantic Ocean in this genus. *L. abyssicola* differs in having a more rounded shape with more convex whorls without the characteristic shoulder of *L. abyssorum*.

*Distribution:* Known only from the South Sandwich and South Georgia Islands (HARASEWYCH AND KANTOR, 2004), South Orkney (LUS, 1993), South-east of Tierra del Fuego Island (56° S, 62° W) (HARASEWYCH AND KANTOR, 2004) and Bellingshausen Sea (new record); from 1920 m (new record) to 5480 m (HARASEWYCH AND KANTOR, 2004).

Genus *Neobuccinum* Smith, 1879

*Neobuccinum eatoni* (Smith, 1875) (Fig. 46)

*Buccinopsis eatoni* Smith, 1875: 68.

*Neobuccinum eatoni*: Smith, 1879: 169, pl. 9, fig. 1; Watson, 1886: 216; Smith, 1902: 202; Lamy, 1906b: 2; Smith, 1907a: 1; Melvill and Standen, 1907: 139; Hedley, 1911: 6, pl. 1, figs. 11, 12 (eggs); Lamy, 1911a: 5; Thiele, 1912: 248; Smith, 1915: 72; Hedley, 1916: 59, pl. 9, fig. 97; Eales, 1923: 28; Powell, 1951: 143; Powell, 1957: 132; 1958: 193; Arnaud, 1972: 128; Egorova, 1982: 41, figs. 51 (radula), 172-176; Dell, 1990: 165, figs. 280-282; Hain 1990: 56, pl. 5, figs. 6a-e, pl. 23, fig. 3 (radula); Numanami, 1996: 143, figs. 94A-B, D-G, C (radula); Numanami *et al.*, 1996: 211-212 (tables), 214 (text), pl. 2, fig. 2; Troncoso *et al.*, 2001: 97, fig. 19.

*Neobuccinum eytoni* (sic): Thiele, 1912: 211.

*Neobuccinum praeclarum* Strebel, 1908: 31, pl. 3, figs. 38a-g.

*Chlanidota smithi* Powell, 1958: 192, pl. 3, fig. 3; Harasewych and Kantor, 1999: 291: fig. 27.

**Material studied:** 2 spm. (28.0 × 15.0 - 40.0 × 25.0 mm), MB1; 6 spm. (35.0 × 20.0 - 53.0 × 30.0 mm), PI5; 2 spm. (48.0 × 29.1 - 51.5 × 32.5 mm), PI6; 51 spm. (31.3 × 20.0 - 55.9 × 33.9 mm), PI8; 1 spm. (31.8 × 22.1 mm), MB13; 20 spm. (36.0 × 21.5 - 54.2 × 27.7 mm), PA22; 7 spm. (34.8 × 22.0 - 49.1 × 29.8 mm), PA23.

*Remarks:* Although it is variable in shape, this is a well known species. HEDLEY (1916) maintained that *N. praeclarum* Strebel, 1908 is a junior synonym, because it was described based on the variability of some specimens that may have spiral lines. Furthermore, HARASEWYCH AND KANTOR (1999) considered *Chlanidota smithi* Powell, 1958 as another junior synonym.

*Distribution:* Widespread Antarctic and Sub-Antarctic distribution, but not cited for the South Georgia Island nor the Magellanic zone. Reported in the

South Sandwich (POWELL, 1951; DELL, 1990), South Orkney (MELVILL AND STANDEN, 1907; DELL, 1990) and Signy Islands (DELL, 1990), Weddell Sea (HAIN, 1990) and Eastern Antarctic Peninsula (STREBEL, 1908), South Shetland Islands (Powell, 1951; Dell, 1990) and Western Antarctic Peninsula (LAMY, 1906b, 1911a; DELL, 1990; this study), Bellingshausen Sea (LAMY, 1911a; this study) and Peter I Island (DELL, 1990; this study), off Thurston Island (new record), Ross Sea (SMITH, 1915; EALES, 1923; POWELL, 1951; DELL, 1990), Cape Adare (SMITH, 1902),

Balleny Islands (DELL, 1990), Commonwealth (HEDLEY, 1916), Terre Adélie (ARNAUD, 1972), Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982), Heard (WATSON, 1886) and Kerguelen Islands (SMITH, 1879;

WATSON, 1886; POWELL, 1957; TRONCOSO ET AL., 2001), Kemp Land (POWELL, 1958), Enderby Land (NUMANAMI ET AL., 1996) and Syowa (NUMANAMI, 1996; NUMANAMI ET AL., 1996); from 4 to 2350 m (DELL, 1990).

### Genus *Notoficula* Thiele, 1917

#### *Notoficula bouveti* (Thiele, 1912) (Fig. 47)

*Cominella bouveti* Thiele, 1912: 270, pl. 19, fig. 13.

*Notoficula bouveti*: Powell, 1958: 193; Oliver, 1983: 4 (in part), figs. 1d-e; Dell, 1990: 168, fig. 287.

**Material studied:** 1 spm. (11.2 x 8.7 mm), LOW.

*Remarks:* OLIVER (1983) discussed the systematic position of this genus in Antarctica, the affinities between species and its relationship with Lamellariacea. The species *N. signyensis* Oliver, 1983, differs in having a more globose last whorl, with a broader aperture and a shorter spire.

*Distribution:* Cited ca. 10° W (GRIFFITHS ET AL., 2003); South Shetland Islands (new record), Ross Sea (DELL, 1990), from the Amery Ice Shelf to the Enderby Land (POWELL, 1958), and Bouvet Island (THIELE, 1912; LINSE, 2006); from 86 m (new record) to 540 m (POWELL, 1958).

### Genus *Pareuthria* Strebel, 1905

#### *Pareuthria regulus* (Watson, 1882) (Fig. 48)

*Fusus regulus* Watson, 1882: 378; 1886: 204, pl. 12, fig. 7.

*Pareuthria regulus*: Powell, 1957: 132; Branch et al., 1991: 59 (key); Troncoso et al., 2001: 98, fig. 21.

**Material studied:** 1 spm. and 1 sh. (6.9 x 3.0 - 8.1 x 3.5 mm), PI5; 1 spm. (6.5 x 3.0 mm), PA39.

*Remarks:* *P. turiformis* Egorova, 1982, differs in having axial ribs crossed by spiral striae. *P. innocens* (Smith, 1907), differing in having a shorter siphon, being smoother and having a sculpture which is stronger spirally than axially. *P. plicatula* Thiele, 1912 has stronger and denser spiral ribs and no spiral sculpture. *P. hoshiaii* Numanami, 1996 is a species with a poorly developed shell sculpture. DELL (1990) remarked that the

little known *P. valdiviae* Thiele, 1925, has an affinity with this species.

*Distribution:* East Antarctica in the Kerguelen (WATSON, 1886; POWELL, 1957; TRONCOSO ET AL., 2001), Crozet (GRIFFITHS ET AL., 2003), Marion and Prince Edward Islands (BRANCH ET AL., 1991); West Antarctica in Western Antarctic Peninsula and Peter I Island (new records); from 0 to 527 m (BRANCH ET AL., 1991).

### Genus *Probuccinum* Thiele, 1912

#### *Probuccinum tenerum* (Smith, 1907) (Fig. 49)

*Neobuccinum tenerum* Smith, 1907a: 2, pl. 1, figs. 2-2a; Smith, 1915: 72.



*Probuccinum tenerum*: Thiele, 1912: 211, pl. 13, figs. 21-21a, pl. 16, fig. 21 (radula); Dell, 1990: 171, figs. 279, 283-284; Hain, 1990: 58, pl. 5, fig. 9, pl. 23, fig. 6 (radula).

*Probuccinum tenuistriatum* Hedley, 1916: 58, pl. 8, figs. 95-96; Powell, 1958: 194; Egorova, 1982: 42, figs. 52 (radula), 178-179; Hain, 1990: 58, pl. 5, fig. 10, pl. 23, fig. 7 (radula); Numanami, 1996: 157, figs. 104A- G, H (radula); Numanami *et al.*, 1996: 212 (table, text) pl. 2, fig. 10.

**Material studied:** 1 spm. (17.0 × 8.2 mm), PA25.

*Remarks:* *Probuccinum delicatum* Powell, 1951 and *P. angulatum* Powell, 1951 differ in having a straighter spire with slightly convex whorls. The synonymy of *P. tenuistriatum* Hedley, 1916 was proposed by DELL (1990), maintaining that the double labial varix and details of sculpture, the main characteristics of *P. tenuistriatum*, correspond to the characteristic variability and changes through development of the species.

*Distribution:* Weddell Sea (HAIN 1990), South Orkney and South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (DELL, 1990; this study) and Peter I Island (DELL, 1990), Ross Sea (SMITH, 1907a, 1915; DELL, 1990), Commonwealth (HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982; DELL, 1990), from Amery Ice Shelf to Enderby (POWELL, 1958), Syowa (NUMANAMI *ET AL.*, 1996) and 24° E (NUMANAMI, 1996); from 30 m (NUMANAMI *ET AL.*, 1996) to 673 m (HAIN, 1990).

### Genus *Prosipho* Thiele, 1912

#### *Prosipho chordatus* (Strebel, 1908) (Fig. 50)

*Sipho? chordatus* Strebel, 1908: 30, pl. 2, figs. 29a-c.

*Prosipho chordatus*: Powell, 1951: 146; Dell, 1990: 197 (text), fig. 335; Castellanos, 1992b: 18, pl. 2, fig. 20; Zelaya, 2005: 126, fig. 43.

**Material studied:** 1 spm. (8.0 × 3.9 mm), P18.

*Remarks:* The species *P. spiralis* Thiele, 1912 is very close in shape and sculpture, but it has one whorl less, being slightly shorter and with slightly stronger spiral chords over the entire shell. DELL (1990) discussed the affinity between *P. spiralis* and *P. chordatus*, contending that the two species would require critical comparison when more material is available from closer localities. Also, it has a resemblance with *P. antarctidis* (Pelseneer, 1903) cited for the Bellingshausen Sea, but that species presents wider first whorls.

*Distribution:* Known only from South Georgia Island (STREBEL, 1908; POWELL, 1951; ZELAYA, 2005) and Peter I Island (new record), although it was cited for the South Atlantic Ocean (CASTELLANOS, 1992b) and Weddell Sea (GRIFFITHS *ET AL.*, 2003). The bathymetric distribution is from 90 m (new record) to 600 m (CASTELLANOS, 1992b). ZELAYA (2005) doubts the presence of this species in the South Atlantic Ocean after comparison of the original description with the specimens figured by CASTELLANOS (1992b) and the lack of these samples in museums.

#### *Prosipho hedleyi* Powell, 1958 (Fig. 51)

*Prosipho hedleyi* Powell, 1958: 195, pl. 2, fig. 7; Dell, 1990: 194, fig. 327.

**Material studied:** 2 spm. (6.9 × 2.8 - 7.3 × 2.9 mm), P18.

*Remarks:* The closest species is *P. turritus* Oliver and Picken, 1984, that differs mainly in having a smaller number of spiral cords at the base (4-5 vs. 6-9 in *P. hedleyi*) and being wider in D/H ratio which varies: 0.42-0.53 vs. 0.36-0.40 in *P. hedleyi*, according to DELL (1990).

*Distribution:* Cited ca. 10° W in the Weddell Sea (GRIFFITHS ET AL., 2003); Western Antarctic Peninsula (DELL, 1990), Peter I Island (new record), Ross Sea (DELL, 1990) and Enderby Land (POWELL, 1958); from 64 to 472 m (DELL, 1990).

### *Prosipho hunteri* Hedley, 1916 (Fig. 52)

*Prosipho hunteri* Hedley, 1916: 56, pl. 8, fig. 92; Powell, 1951: 147; Powell, 1958: 196; Arnaud, 1972: 130; Dell, 1990: 194, fig. 322; Hain, 1990: 60, pl. 6, fig. 2, pl. 24, fig. 3 (radula); Numanami, 1996: 165, figs. 110A-B, C (radula); Engl, 2004b: 1 (text), fig. 1; Zelaya, 2005: 126.

**Material studied:** 2 spm. (5.3 x 2.8 - 5.8 x 3.0 mm), PA39.

*Remarks:* ENGL (2004b) established that *P. hunteri* may correspond to a variation of *P. nodosus* Thiele, 1912, because both species share the characteristic of two nodulose spiral cords on each whorl and four in the last whorl; He also described *P. enricoi* Engl, 2004, a similar species from the South Shetland Islands, without indicating differences with *P. hunteri*, though he figured its holotype, that is distinguished in having slightly weaker spiral cords than *P. enricoi*. Summarizing, we agree with ENGL (2004b) that a study comparing the material published from several expeditions (THIELE, 1912; HEDLEY, 1916; POWELL, 1951, 1958;

ARNAUD, 1972; DELL, 1990; HAIN, 1990; ENGL, 2004b; this study) is necessary to clarify the relationship between *P. hunteri*, *P. nodosus* and *P. enricoi*.

*Distribution:* Weddell Sea (HAIN, 1990), South Sandwich (DELL, 1990) and South Georgia Islands (POWELL, 1951), South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (DELL, 1990; this study) and Ross Sea (DELL, 1990), Commonwealth (HEDLEY, 1916), Terre Adélie (ARNAUD, 1972), Enderby Land (POWELL, 1958), ca. 40° E (GRIFFITHS ET AL., 2003) and 24° E (NUMANAMI, 1996); from 45 m (HAIN, 1990) to 464 m (DELL, 1990).

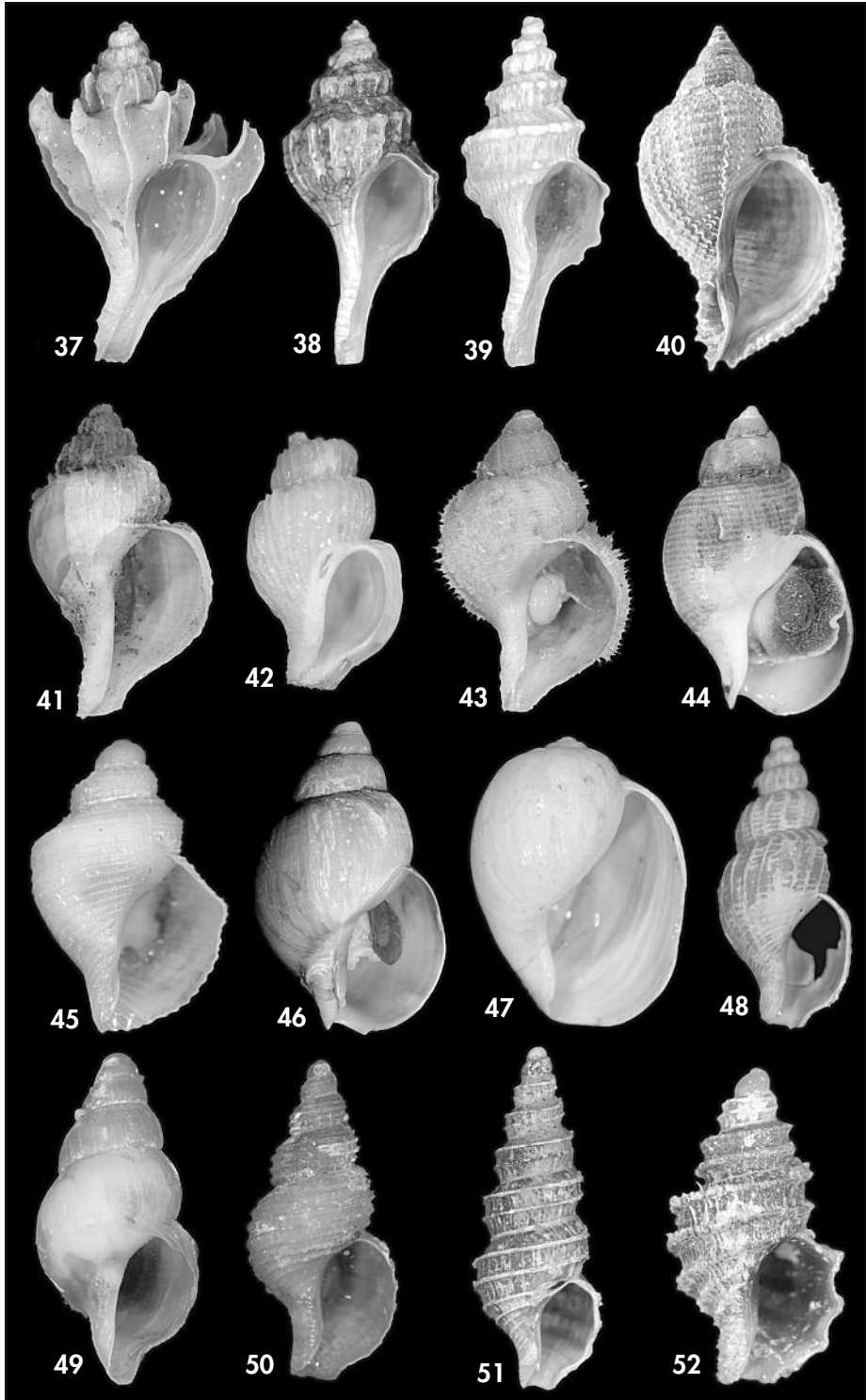
### *Prosipho pellitus* Thiele, 1912 (Fig. 53)

*Prosipho pellitus* Thiele, 1912: 245, pl. 13, fig. 9; Powell, 1957: 133; Dell, 1990: 195, fig. 329; Zelaya, 2005: 126, fig. 45.

**Material studied:** 1 spm. (4.1 x 2.0 mm), PI8.

(Right page) Figure 37. *Trophon coulmanensis coulmanensis*, 17.8 x 12.0 mm, PA22. Figure 38. *Trophon cuspidarioides*, 15.0 x 6.5 mm, PI7. Figure 39. *Trophon drygalskii*, 12.1 x 5.0 mm, MB31. Figure 40. *Trophon echinolamellatus*, 65.1 x 37.2 mm, LOW. Figure 41. *Trophon longstaffi*, 21.0 x 13.0 mm, PI8. Figure 42. *Trophon minutus*, 4.5 x 3.0 mm, PA20. Figure 43. *Antarctodomus thielei*, 29.2 x 18.5 mm, LOW. Figure 44. *Chlanidota signeyana*, 34.2 x 21.2 mm, PI5. Figure 45. *Lusitromina abyssorum*, 9.0 x 6.1 mm, MB26. Figure 46. *Neobuccinum eatoni*, 48.0 x 29.1 mm, PI6. Figure 47. *Notoficula bouveti*, 11.2 x 8.7 mm, LOW. Figure 48. *Pareuthria regulus*, 8.1 x 3.5 mm, PI5. Figure 49. *Probuccinum tenerum*, 17.0 x 8.2 mm, PA25. Figure 50. *Prosipho chordatus*, 8.0 x 3.9 mm, PI8. Figure 51. *Prosipho hedleyi*, 7.3 x 2.9 mm, PI8. Figure 52. *Prosipho hunteri*, 5.3 x 2.8 mm, PA39.

(Página derecha) Figuras 37-52. Ver los nombres científicos en el rótulo en inglés.



*Remarks:* Its main characteristic is the periostracum developed in conspicuous axial lamellae, which distinguish it from other species similar in shape and sculpture, but not having lamellae - such as *P. hedleyi* Powell, 1958, *P. turritus* Oliver and Picken, 1984, *P. gracilis* Thiele, 1912 and *P. glacialis* Thiele, 1912.

*Distribution:* Cited ca. 10° W from the Weddell Sea (GRIFFITHS ET AL., 2003); South Georgia (DELL, 1990; ZELAYA, 2005), Peter I (new record) and Kerguelen Islands (THIELE, 1912; POWELL, 1957); from 90 m (new record) to 150 m (POWELL, 1957).

*Prosipho pusillus* Thiele, 1912 (Fig. 54)

*Prosipho pusillus* Thiele, 1912: 208, pl. 12, fig. 35; Egorova, 1982: 46, figs. 58 (radula), 193; Dell, 1990: 196, fig. 316.

**Material studied:** 1 spm. (5.0 × 2.5 mm), PI8.

*Remarks:* *P. crassicosatus* (Melvill and Standen, 1907) and *P. aurora* Hedley, 1916 are similar in shape, but have one whorl more and one spiral cord more per whorl, this being the last spiral cord on the suture.

*Distribution:* Cited ca. 10° W in the Weddell Sea (GRIFFITHS ET AL., 2003); Peter I Island (new record), Ross Sea (DELL, 1990) and Davis Sea (THIELE, 1912; EGOROVA, 1982); from 90 m (new record) to 563 m (DELL, 1990).

*Prosipho reversus* Powell, 1958 (Fig. 55)

*Prosipho reversa* Powell, 1958: 197, pl. 2, fig. 6; Dell, 1990: 196, fig. 341.

**Material studied:** 1 spm. (broken), PA39.

*Remarks:* Although we only found a fragment of a fresh shell with remains of soft parts, the spiral sculpture of two spiral cords on the penultimate whorl, being the adapical above the base, clearly differentiates this species from *P. perversus* Powell, 1951 and *P. contrarius* Thiele, 1912.

*Distribution:* Known only from the South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (new record) and Enderby Land (POWELL, 1958); from 157 m (new record) to 220 m (POWELL, 1958).

*Prosipho turritus* Oliver and Picken, 1984 (Fig. 56)

*Prosipho turrita* Oliver and Picken, 1984: 99, figs. 2a-b, 6a-d; Dell, 1990: 194 (text), fig. 328; Hain, 1990: 61, pl. 6, fig. 4, pl. 24, fig. 5 (radula).

*Cerithium georgianum* Martens and Pfeffer: Melvill and Standen, 1907: 134 (no Martens and Pfeffer, 1886).

**Material studied:** 1 spm. (5.6 × 2.4 mm), PA39.

*Remarks:* OLIVER AND PICKEN (1984) examined individuals assigned to *Cerithium georgianum* Martens and Pfeffer, 1886 by MELVILL AND STANDEN (1907 p. 134), and concluded that those

specimens are co-specific with *P. turritus*. The species *P. harrietae* Engl and Schwabe, 2003 has a weaker sculpture and is narrower; also when considering the description of its radular characteris-

tics. *P. hedleyi* Powell is narrower as well (see above for remarks on *P. hedleyi*).

*Distribution*: Weddell Sea (HAIN, 1990), South Orkney (MELVILL AND STANDEN,

1907) and Signy Islands (OLIVER AND PICKEN, 1984), Western Antarctic Peninsula (new record); from 2 m (OLIVER AND PICKEN, 1984) to 300 m (HAIN, 1990).

### Family VOLUTIDAE Rafinesque, 1815

#### Genus *Harpovoluta* Thiele, 1912

#### *Harpovoluta charcoti* (Lamy, 1910) (Fig. 57)

*Buccinum charcoti* Lamy, 1910a: 318; 1911a: 4, pl. 1, figs. 1-2.

*Harpovoluta charcoti*: Thiele, 1912: 271; Powell, 1951: 164; Powell, 1958: 199; Dell, 1990: 218, figs. 365-366, 374-375, 383 (radula); Hain, 1990: 64, pl. 6, figs. 10a-d, pl. 25, fig. 3 (radula); Numanami, 1996: 195, figs. 134A- D, F (radula); Numanami *et al.*, 1996: 211-212 (tables), 214 (text), pl. 2, figs. 6-7.

*Volutharpa charcoti*: Smith, 1915: 72; Eales, 1923: 33

*Harpovoluta vanhoeffeni* Thiele, 1912: 213, pl. 14, fig. 1; Hedley, 1916: 53; Egorova, 1982: 36, fig. 163. *Harpovoluta vanhoeffeni* var. *striatula* Thiele, 1912: 214, pl. 14, fig. 2; Egorova, 1982: 37, figs. 48 (radula), 164.

**Material studied**: 3 spm. (broken), PA19; 1 spm. (54.8 x 32.0 mm), PA22; 3 spm. (14.0 x 9.0 - 14.3 x 9.2 mm), PA23; 6 spm. (26.3 x 16.1 - 44.1 x 22.1 mm), PA39; 1 spm. (20.0 x 13.1 mm), LOW.

*Remarks*: Based on the examination of many specimens, DELL (1990) concluded that the variability in shell proportions is definitive to place *H. vanhoeffeni* and *H. vanhoeffeni* var. *striatula* as junior synonyms of *H. charcoti*.

*Distribution*: South Sandwich Islands (DELL, 1990), Weddell Sea (HAIN, 1990), Scotia Sea and South Orkney Islands (DELL, 1990), South Shetland Islands (LAMY, 1911a; POWELL, 1951; DELL, 1990;

this study), Western Antarctic Peninsula (DELL, 1990; this study), Ross Sea (DELL, 1990), 163° E (SMITH, 1915), from Terre Adélie to Wilkes Land and Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982), Amery Ice-Shelf (NUMANAMI *ET AL.*, 1996), Mac Robertson Land (POWELL, 1958), Enderby Land, Syowa (NUMANAMI *ET AL.*, 1996) and 34° E (NUMANAMI, 1996); from 0 m (NUMANAMI *ET AL.*, 1996) to 1469 m (DELL, 1990).

### Family CONIDAE Rafinesque, 1815

#### Genus *Belaturricula* Powell, 1951

#### *Belaturricula ergata* (Hedley, 1916) (Fig. 58)

*Pontiothauma ergata* Hedley, 1916: 55, pl. 8, figs. 85-87; Powell, 1958: 204, pl. 3, figs. 7, C1-4; Egorova, 1982: 50, figs. 63a-b (radula), 204-205; Okutani, 1986: 279 (table), pl. 1, figs. 4-5; Dell, 1990: 245 (text), figs. 397, 418-419; Hain, 1990: 72, pl. 8, figs. 6a-d, pl. 27, fig. 2 (radula); Numanami, 1996: 224, figs. 159A-C, D-E (radula).

*Belaturricula ergata*: Kantor and Harasewych, 1999: 434 (text).

*Pontiothauma elgata* (sic): Numanami *et al.*, 1996: 211 (table), 213 (text), pl.3, fig. 3.

**Material studied**: 1 spm. (18.0 x 7.9 mm), MB1.

*Remarks*: HEDLEY (1916) described this species from two individuals, one eroded and the other broken, but his description agrees with our specimen.

KANTOR AND HARASEWYCH (1999) studied the similar species *B. gaini* (Lamy, 1910) and assigned *B. ergata* to the genus *Belaturricula* because of its

affinity to *B. gaini*, which differs in having convex whorls, different from the concave-convex whorls of *B. ergata*. On the other hand, the shape and proportions of this species seem variable, because the holotype has a D/H ratio of 0.38 while the three specimens figured by HAIN (1990) vary in 0.37-0.51 and those by NUMANAMI (1996) in 0.33-0.40.

*Distribution:* Weddell Sea (HAIN, 1990), off Thurston Island (new record), Terre Adélie (HEDLEY, 1916), Wilkes Land (POWELL, 1958), Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (EGOROVA, 1982), Mac Robertson Land to Enderby Land (POWELL, 1958), Syowa (NUMANAMI ET AL., 1996) and 24° E (OKUTANI, 1986; NUMANAMI, 1996); from 100 to 695 m (HAIN, 1990).

### *Belaterricula gaini* (Lamy, 1910) (Fig. 59)

*Sipho gaini* Lamy, 1910a: 319; 1911a: 7, pl. 1, figs. 7-8.

*Prosipho? gaini*: Thiele, 1912: 262.

?*Chlanidota gaini*: Powell, 1951: 142.

*Chlanidota gaini*: Dell, 1990: 177 (text); Harasewych and Kantor, 1999: 293.

*Belaterricula gaini*: Kantor and Harasewych, 1999: 430, figs. 1-4.

*Belaterricula antarctica* Dell, 1990: 228, figs. 401, 431 (radula).

**Material studied:** 1 spm. (20.0 x 8.1 mm), PA23; 2 spm. (15.3 x 6.9 - 53.9 x 19.5 mm), LOW.

*Remarks:* KANTOR AND HARASEWYCH (1999) redescribed this little known species and examined its alimentary system and radula, concluding that *B. antarctica* Dell, 1990 is a junior synonym. Other species of this genus, *B. turrita turrita* (Strebel, 1908) and *B. turrita multispiralis* Dell, 1990, are differentiated in having a sharper spiral sculpture. The relationship with *B. ergata* (Hedley, 1916) is discussed above (see *B. ergata*).

*Distribution:* South Sandwich Islands (DELL, 1990), Eastern Antarctic Peninsula (KANTOR AND HARASEWYCH, 1999), South Orkney Islands (DELL, 1990; KANTOR AND HARASEWYCH, 1999), South Shetland Islands (LAMY, 1911a; DELL, 1990; KANTOR AND HARASEWYCH, 1999; this study), Western Antarctic Peninsula (new record) and Ross Sea (DELL, 1990; KANTOR AND HARASEWYCH, 1999); from 97 m (new record) to 759 m (DELL, 1990).

## Family TURRIDAE Swainson, 1840

### Genus *Aforia* Dall, 1889

### *Aforia magnifica* (Strebel, 1908) (Fig. 60)

?*Surcula magnifica* Strebel, 1908: 19, pl. 2, figs. 23a-d.

*Aforia magnifica*: Powell, 1951: 167, fig. M91 (radula); Powell, 1958: 201; Dell, 1990: 231, figs. 411-412, 436 (radula); Hain, 1990: 69, pl. 7, figs. 8a-c, pl. 26, figs. 1-2 (radula); Numanami et al., 1996: 211 (table), 213 (text), pl. 3, figs. 1, 4.

**Material studied:** 1 spm. (69.0 x 26.0 mm), PA18; 1 spm. (47.9 x 17.5 mm), PA21; 2 spm. (41.8 x 17.5 - 47.0 x 16.1 mm), LOW.

*Remarks:* The main difference with the similar species *A. multispiralis* Dell, 1990, is in the number of spiral keels per whorl: two sharp keels on the spire whorls in *A. multispiralis* instead

of the single rounded carina in *A. magnifica*. DELL (1990) noted the variability of the strength of sculpture between individuals collected at different depths.

*Distribution:* South Sandwich Islands (POWELL, 1951; DELL, 1990), Weddell Sea (HAIN, 1990) and Eastern Antarctic Peninsula (STREBEL, 1908), South Orkney Islands (DELL, 1990), South Shetland Islands and Western Antarctic

Peninsula (POWELL, 1951; DELL, 1990; this study), Ross Sea (DELL, 1990), Amery Ice Shelf to Mac Robertson Land (POWELL, 1958), Syowa (NUMANAMI ET AL., 1996) and ca. 10° E (GRIFFITHS ET AL., 2003); from 73 to 1890 m (DELL, 1990).

*Aforia multispiralis* Dell, 1990 (Fig. 61)

*Aforia multispiralis* Dell, 1990: 231, figs. 413-414, 416, 433, 435 (radula); Numanami et al., 1996: 211 (table), 213 (text), pl. 3, figs. 2, 5.

**Material studied:** 1 spm. (65.1 × 25.3 mm), PA24; 1 spm. (87.2 × 28.5 mm), PA25.

*Remarks:* DELL (1990) noted the variability of the strength of sculpture, similarly to *A. magnifica* (see above), concluding that individuals from greater depths may have finer secondary spirals.

*Distribution:* South Orkney and South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (DELL, 1990; this study) and Amery Ice-Shelf (NUMANAMI ET AL., 1996); from 110 m (new record) to 1455 m (DELL, 1990).

Genus *Conorbela* Powell, 1951

*Conorbela antarctica* (Strebel, 1908) (Fig. 62)

*Bela antarctica* Strebel, 1908: 16, pl. 3, figs. 30a-b.

*Conorbela antarctica:* Powell, 1951: 170; Dell, 1990: 239, figs. 395, 415, 434 (radula); Hain, 1990: 70, pl. 7, figs. 9a-b, pl. 26, figs. 3-4 (radula).

**Material studied:** 2 spm. (15.7 × 8.3 - 23.0 × 10.8 mm), MB34; 1 spm. (17.2 × 9.1 mm), PA39.

*Distribution:* South Sandwich Islands (POWELL, 1951), Weddell Sea (STREBEL, 1908; HAIN, 1990), South Georgia Island (CARCELLES, 1953), South Shetland Islands (POWELL, 1951;

DELL, 1990), Western Antarctic Peninsula, Bellingshausen Sea (new records) and Ross Sea (DELL, 1990); from 18 m (CARCELLES, 1953) to 1437 m (DELL, 1990).

Genus *Leucosyrinx* Dall, 1889

*Leucosyrinx paratenoceras* Powell, 1951 (Fig. 63)

*Leucosyrinx paratenoceras* Powell, 1951: 168, pl. 9, fig. 54; Castellanos and Landoni, 1993b: 6, pl. 3, fig. 21.

**Material studied:** 1 spm. (31.5 × 10.3 mm), MB4; 1 spm. (38.6 × 11.9 mm), MB36; 2 spm. (37.9 × 11.1 - 42.9 × 12.8 mm), MB37.

*Remarks:* Two similar species were described together for Falkland/Malvinas Islands in the same work (POWELL 1951): *L. paragenota* and *L. falklandica*; the first can be differentiated

from *L. paratenoceras* mainly by its D/H ratio (0.35 in holotype of *L. paragenota* vs. 0.30 of *L. paratenoceras*) and having axial cords; the second is distinguished mainly by having stronger axial sculpture.

*Distribution:* Cited for the South Orkney Islands (CASTELLANOS AND LANDONI, 1993b), South Shetland Islands and Western Antarctic Penin-

sula (POWELL, 1951), Bellingshausen Sea and off Thurston Island (new records); from 200 to 810 m (POWELL, 1951).

### Genus *Typhlodaphne* Powell, 1951

#### *Typhlodaphne innocentia* Dell, 1990 (Fig. 64)

*Typhlodaphne innocentia* Dell, 1990: 240, figs. 394, 406.

**Material studied:** 1 spm. (6.0 x 3.1 mm), PI5; 11 spm. (4.2 x 2.2 - 10.4 x 5.1 mm), PI8.

*Remarks:* DELL (1990) described this species based upon individuals of about 4 mm, but the characteristics of our specimens agree with Dell's description. *T. nipri* Numanami, 1996, from East Antarctica is similar because its author defined it as an allied species, but

without axial sculpture. *T. corpulenta* (Watson, 1881), from Kerguelen Island, differs in having a thicker shell.

*Distribution:* Cited for the Weddell Sea (GRIFFITHS ET AL., 2003); Peter I Island (new record) and Ross Sea (DELL, 1990); from 90 m (new record) to 549 m (DELL, 1990).

### Genus *Typhlomangelia* Sars, 1878

#### *Typhlomangelia principalis* Thiele, 1912 (Fig. 65)

*Typhlomangelia? principalis* Thiele, 1912: 215, pl. 14, figs. 6-7; Egorova, 1982: 50, figs. 64 (radula), 209-210.

**Material studied:** 3 spm. and 1 sh. (9.2 x 4.1 - 17.5 x 7.9 mm), MB35; 1 spm. (19.2 x 7.0 mm), MB37; 1 sh. (16.8 x 7.9 mm), MB38.

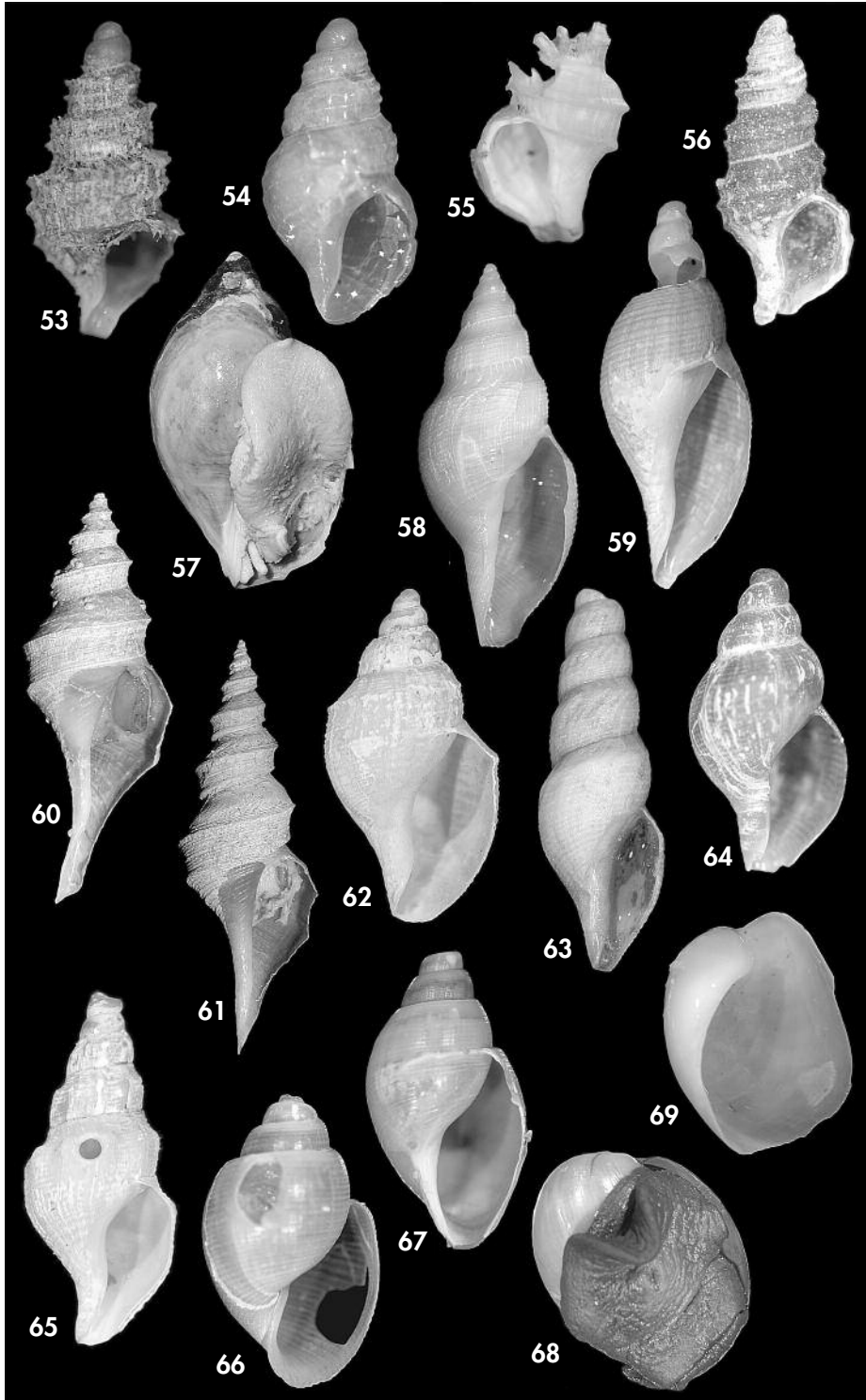
*Remarks:* Although some specimens are a little eroded, the shell characteristics, such as flattened spiral cords crossing the axial ridges and marked growth striae, allowed us to assign it to Thiele's species, which has been little cited.

*Distribution:* Cited for the Weddell Sea (GRIFFITHS ET AL., 2003); Bellingshausen Sea (new record) and Davis Sea (THIELE, 1912; EGOROVA, 1982) from 310 m (EGOROVA, 1982) to 1117 m (new record).

(Right page) Figure 53. *Prosipho pellitus*, 4.1 x 2.0 mm, PI8. Figure 54. *Prosipho pusillus*, 5.0 x 2.5 mm, PI8. Figure 55. *Prosipho reversus*, scale bar = 2.0 mm, PA39. Figure 56. *Prosipho turritus*, 5.6 x 2.4 mm, PA39. Figure 57. *Harpovoluta charcoti*, 54.8 x 32.0 mm, PA22. Figure 58. *Belaturricula ergata*, 18.0 x 7.9 mm, MB1. Figure 59. *Belaturricula gaini*, 20.0 x 8.1 mm, PA23. Figure 60. *Aforia magnifica*, 47.9 x 17.5 mm, PA21. Figure 61. *Aforia multispiralis*, 87.2 x 28.5 mm, PA25. Figure 62. *Conorbela antarctica*, 23.0 x 10.8 mm, MB34. Figure 63. *Leucosyrinx paratenoceras*, 31.5 x 10.3 mm, MB4. Figure 64. *Typhlodaphne innocentia*, 6.0 x 3.1 mm, PI5. Figure 65. *Typhlomangelia principalis*, 17.5 x 7.9 mm, MB35. Figure 66. *Acteon antarcticus*, 6.1 x 3.7 mm, MB3. Figure 67. *Neactaeonina edentula*, 6.7 x 3.5 mm, PI5. Figure 68. *Newnesia antarctica*, 18.0 x 15.0 mm, PA39. Figure 69. *Philine alata*, 9.2 x 7.3 mm, DEC.

(Página derecha) Figuras 53-69. Ver los nombres científicos en el rótulo en inglés.





Superorder HETEROBRANCHIA Gray, 1840  
Order OPISTHOBRANCHIA Milne-Edwards, 1848  
Family ACTEONIDAE d'Orbigny, 1842  
Genus *Acteon* Montfort, 1810  
*Acteon antarcticus* Thiele, 1912 (Fig. 66)

*Acteon antarcticus* Thiele, 1912: 219, pl. 14, fig. 17.

*Acteon antarcticus*: Powell, 1951: 175; 1958: 205; Dell, 1990: 247, fig. 444.

**Material studied:** 1 spm. (6.1 × 3.7 mm), MB3.

**Remarks:** Several species of the former genus *Acteon* were described from Sub-Antarctic waters, although a lot of them have been situated in other genera in later works (e.g. *Toledonia vagabunda* (Mabille, 1885)). Among valid recent species, the Magellanic *A. biplicatus* (Strebel, 1908) and *A. elongatus* Castellanos, Rolán and Bartolotta, 1987

are separated by being more elongate forms.

**Distribution:** South Sandwich (DELL, 1990) and South Shetland Islands (POWELL, 1951), off Thurston Island (new record), Ross Sea (DELL, 1990), Davis Sea (THIELE, 1912) and Enderby Land (POWELL, 1958); from 101 m (DELL, 1990) to 1431 m (new record).

Genus *Neactaeonina* Thiele, 1912

*Neactaeonina edentula* (Watson, 1883) (Fig. 67)

*Acteon edentulus* Watson, 1883: 284; 1886: 632, pl. 47, fig. 6.

*Neactaeonina edentula*: Thiele, 1912: 219; Powell, 1951: 176; Powell, 1957: 136; Dell, 1990: 248, figs. 439-440; Castellanos, Landoni and Dadon, 1993: 9, pl. 1, fig. 10.

**Material studied:** 6 spm. (6.3 × 3.3 - 9.0 × 5.0 mm), PI5; 1 spm. (18.0 × 9.5 mm), MB34; 1 spm. (5.3 × 3.1 mm), LOW.

**Remarks:** The individuals can be distinguished from *N. cingulata* (Strebel, 1908) by having spiral furrows which are shallower, irregular and and less numerous. However, DELL (1990) remarked on the uncertain relationship with *N. fragilis* (Thiele, 1912), because the original description of *N. fragilis* was made from a single damaged small specimen, and does not include a good description and figure of this. The record in POWELL

(1951) from South Shetland and South Georgia Islands may correspond to *N. cingulata*, according to POWELL (1960).

**Distribution:** South Georgia (POWELL, 1951), South Orkney (CARCELLES, 1953) and South Shetland Islands (POWELL, 1951; DELL, 1990; this study), Bellingshausen Sea and Peter I Island (new records), Ross Sea (DELL, 1990) and Kerguelen Islands (WATSON, 1886; POWELL, 1957; DELL, 1990); from 5 to 1116 m (DELL, 1990).

Family DIAPHANIDAE Odhner, 1914

Genus *Newnesia* Smith, 1902

*Newnesia antarctica* Smith, 1902 (Fig. 68)

*Newnesia antarctica* Smith, 1902: 208, pl. 25, figs. 1-6; Thiele, 1912: 218; Hedley, 1916: 64; Odhner, 1926: 7, figs. 4-8; Dell, 1990: 254, fig. 482; Hain, 1990: 75, pl. 9, figs. 1a-i, pl. 28, fig. 1 (radula); Zelaya, 2005: 130, fig. 64.

*Anderssonia sphinx* Strebel, 1908: 12, pl. 2, figs. 21a-g.

**Material studied:** 4 spm. (7.3 x 5.8 - 18.0 x 15.0 mm), PA39.

*Remarks:* ODHNER (1926) synonymized this with Strebel's species *N. sphinx*.

*Distribution:* South Georgia (ZELAYA, 2005) and South Orkney Islands (CARCELLES, 1953), Weddell Sea (HAIN, 1990) and Eastern Antarctic Peninsula

(STREBEL, 1908), Western Antarctic Peninsula (new record), Ross Sea (DELL, 1990), Cape Adare (SMITH, 1902) Terre Adélie and Shackleton Ice Shelf (HEDLEY, 1916), and Davis Sea (DELL, 1990); from 16 m (CARCELLES, 1953) to 655 m (DELL, 1990).

Family PHILINIDAE Gray, 1850

Genus *Philine* Ascanius, 1772

*Philine alata* Thiele, 1912 (Fig. 69)

*Philine alata* Thiele, 1912: 220, pl. 14, figs. 19-20; Powell, 1951: 177; Powell, 1958: 207; Vicente and Arnaud, 1974: 534, figs. 1a-d; Hain, 1990: 76, pl. 9, figs. 2a-l, pl. 28, fig. 2 (radula); Castellanos *et al.*, 1993: 16, pl. 2, fig. 15.

**Material studied:** 9 spm. (15.7 x 8.4 - 35.5 x 17.8 mm), PI5; 7 spm. (19.0 x 7.9 - 24.9 x 12.6 mm), PI6; 2 spm. (13.0 x 8.0 mm - broken), PA39; 70 spm. (4.0 x 3.0 - 12.5 x 8.6 mm), DEC.

*Remarks:* Some morphological differences in shell were observed between BENTART individuals and other Antarctic species. The outer lip is much higher than the spire, contrary to *P. antarctica* Smith, 1902; the shape is rhomboidal contrary to *P. apertissima* Smith, 1902 which is rounded, the spiral sculpture is lacking whereas it is present in *P. falklandica* Powell, 1951 and the hump present in *P. gibba* Strebel, 1908. DELL (1990) believes that

a detailed revision of the genus is needed.

*Distribution:* Weddell Sea (HAIN, 1990), Scotia Sea, South Sandwich and South Orkney Islands (POWELL, 1951), South Shetland Islands and Western Antarctic Peninsula (POWELL, 1951; this study), Peter I Island (new record), Terre Adélie (VICENTE AND ARNAUD, 1974), Davis Sea (THIELE, 1912) and Enderby Land (POWELL, 1958); from 4 m (VICENTE AND ARNAUD, 1974) to 640 m (HAIN, 1990).

Class BIVALVIA Linnaeus, 1758

Subclass PROTOBRANCHIA Pelseneer, 1889

Order NUCULIDA Dall, 1889

Family NUCULIDAE Gray, 1824

Genus *Nucula* Lamarck, 1799

*Nucula austrobenthalis* Dell, 1990 (Fig. 70)

*Nucula austrobenthalis* Dell, 1990: 6, figs. 1, 3.

**Material studied:** 4 spm. (7.4 x 5.9 - 13.6 x 10.0 mm), MB29.

*Remarks:* In spite of there being few records of this species it is clearly separable as an elongate species from deeper-water, without similar species in Antarctic waters.

The other deeper-water species of this genus, *N. notobenthalis* Thiele, 1912 from the Davis Sea at 2725 m depth, is more rounded and has a shorter anterior end.

*Distribution:* Drake Passage (57-62° S, 68-75° W) (DELL, 1990), Bellingshausen (DELL, 1990; this study), Amundsen and Ross Seas (DELL, 1990); from 3304 m (new record) to 4209 m (DELL, 1990).

Family NUCULANIDAE H. and A. Adams, 1858  
Genus *Propeleda* Iredale, 1924

*Propeleda longicaudata* (Thiele, 1912) (Fig. 71)

*Leda longicaudata* Thiele, 1912: 229, pl. 17, fig. 22.

*Poroleda longicaudata*: Hedley, 1916: 18; Soot-Ryen, 1951: 5.

*Propeleda longicaudata*: Powell, 1951: 77; Powell, 1958: 171; Dell, 1964: 146; Egorova, 1982: 56: figs. 238-241; Dell, 1990: 15, figs. 51-52; Hain, 1990: 80, pl. 11, figs. 4a-b; Linse, 1997: 46.

**Material studied:** 1 spm. (16.3 x 6.1 mm), MB13; 1 spm. (15.0 x 6.0 mm), PA21; 1 spm. (9.0 x 3.5 mm), MB33; 3 spm. (2.0 x 1.1 - 3.0 x 1.8 mm), PA41.

*Distribution:* Circumantarctic. Weddell Sea (HAIN, 1990), cited for the South Sandwich Islands (LINSE, 1997), South Georgia, South Orkney and South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (DELL, 1990; this study), Bellingshausen Sea off Adelaide Island (POWELL, 1951; this study), Beagle Channel (LINSE, 1997),

Antipodes Islands (50° S, 179° E) and Ross Sea (DELL, 1990), Terre Adélie (HEDLEY, 1916), Wilkes Land (POWELL, 1958), Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982) and from Amery Ice Shelf to Mac Robertson Land (POWELL, 1958); from 43 to 2100 m (DELL, 1990).

Family YOLDIIDAE Habe, 1977  
Genus *Yoldia* Möller, 1842

*Yoldia eightsi* (Couthouy in Jay, 1839) (Fig. 72)

*Nucula eightsi* Couthouy in Jay, 1839: 113, pl. 1, figs. 12-13.

*Yoldia eightsi*: Melvill and Standen, 1907: 143; Hedley, 1911: 3; Dell, 1964: 147, pl. 2, fig. 11; Nicol, 1966: 11, pl. 1, figs. 6-8; Rabarts and Whybrow, 1979: 177, figs. 3-5, 8-10, 14a-b, 15a-b; Dell, 1990: 10, figs. 2, 5; Troncoso *et al.*, 2001: 106, fig. 33.

*Yoldia subaequilateralis* Smith, 1875: 73; 1879: 187, pl. 9, fig. 18; 1885: 243; 1902: 211. Soot-Ryen, 1951: 6; Powell, 1957: 114.

*Yoldia kerguelensis* Thiele and Jaekel, 1931: 207, pl. 3 (8), fig. 65.

*Yoldia woodwardi* Hanley: Pelseener, 1903: 10; Lamy, 1906b; 19; 1911a: 29; Soot-Ryen, 1951: 7, figs. 1-6 (no Hanley, 1860).

**Material studied:** 65 spm. (18.0 x 11.9 - 47.8 x 27.1 mm), PA22; 20 spm. (26.8 x 16.9 - 44.1 x 26.8 mm), PA23; 67 spm. (5.1 x 3.4 - 18.5 x 11.3 mm), DEC.

*Remarks:* SOOT-RYEN (1951) considered the Magellanic species *Y. woodwardi* Hanley, 1860 as a junior synonym and, since his work, several authors have followed him. But RABARTS AND WHYBROW (1979) revised this genus synonymizing *Y. subaequilateralis* Smith, 1875 and *Y. kerguelensis* Thiele and Jaekel, 1931 and reporting the misiden-

tification of some specimens named *Y. woodwardi*, by PELSEENER (1903), LAMY (1906b, 1911a) and SOOT-RYEN (1951), concluding that two species are valid for the Southern Ocean and neighboring areas: *Y. eightsi* and *Y. woodwardi*, the latter restricted to the Falkland/Malvinas Islands and South Atlantic Ocean.

*Distribution:* Cited for the Weddell Sea (GRIFFITHS *ET AL.*, 2003), South Sandwich, South Georgia (DELL, 1990) and South Orkney Islands (MELVILL AND STANDEN, 1907; DELL, 1990), Eastern Antarctic Peninsula (DELL, 1990), South Shetland Islands (JAY, 1839; LAMY, 1911a; DELL, 1990; this study), Western Antarctic Peninsula (LAMY, 1911a; DELL, 1990; this study) and Peter I Island (SOOT-

RYEN, 1951), also in Falkland/Malvinas, Staten Island, Tierra del Fuego Island (DELL, 1990) and Beagle Channel (PELSENEER, 1903), Ross Sea (SMITH, 1902; HEDLEY, 1911; DELL, 1990), Kerguelen Islands (SMITH, 1879; SMITH, 1885; THIELE AND JAECKEL, 1931; POWELL, 1957, TRONCOSO *ET AL.*, 2001) and *ca.* 10° E (GRIFFITHS *ET AL.*, 2003); from 1 m (MELVILL AND STANDEN, 1907) to 824 m (DELL, 1990).

### Genus *Yoldiella* Verrill and Bush, 1897

#### *Yoldiella antarctica* (Thiele, 1912) (Figs. 73-74)

*Leda antarctica* Thiele, 1912: 229, pl. 17, figs. 21-21a.

*Yoldiella antarctica*: Soot-Ryen, 1951: 5; Powell, 1958: 171; Dell, 1964: 145; Arnaud, 1973: 555; Egorova, 1982: 55, figs. 230-231; Dell, 1990: 12, figs. 17-18.

**Material studied:** 1 spm. (2.6 × 1.7 mm), PI7; 1 spm. (broken), MB14; 2 spm. (2.1 × 1.4 - 2.3 × 1.7 mm), PI27; 1 spm. (2.2 × 1.6 mm), MB30.

*Remarks:* The main characteristics that mark the difference from other Antarctic species are its very thin shell, a very small hinge with six anterior and seven posterior teeth, small and obliquely oriented, and a more elongated form. In this sense, DELL (1990) provides height/length ratios for related Antarctic species that allow the arranging of the species from more elongated to more rounded shape: *Yoldiella antarctica* (0.66 ± 0.01, n=6), *Y. profundorum* (Melvill and Standen, 1912) (0.69 ± 0.04, n=6), *Y. ecaudata* (Pelseneer,

1903) (0.74 ± 0.05, n=6) and *Y. valettei* (Lamy, 1906) (0.75 ± 0.05, n=10).

*Distribution:* South Sandwich and South Orkney Islands, Eastern Antarctic Peninsula and South Shetland Islands (DELL, 1990), Bellingshausen Sea and Peter I Island (new records), Ross Sea (DELL, 1990), Terre Adélie (GRIFFITHS *ET AL.*, 2003), Davis Sea (THIELE, 1912; EGOROVA, 1982), Enderby Land (POWELL, 1958) and Bouvet Island (LINSE, 2006); from 193 m (POWELL, 1958) to 1873 m (new record).

#### *Yoldiella ecaudata* (Pelseneer, 1903) (Figs. 75-76)

*Leda ecaudata* Pelseneer, 1903: 22, pl. 6, figs. 77-78; Thiele, 1912: 229, pl. 17, figs. 20-20a.

*Yoldiella ecaudata*: Soot-Ryen, 1951: 5; Dell, 1964: 145; Egorova, 1982: 55, figs. 234-237; Dell, 1990: 12: 15-16.

**Material studied:** 1 spm. (2.8 × 1.9 mm), MB3; 14 spm. (1.2 × 1.0 - 2.3 × 1.8 mm), MB36; 7 spm. (1.1 × 0.8 - 2.3 × 1.8 mm), PA41.

*Remarks:* A hinge with large teeth, a marked postero-ventral rostrum and rounded shape (see remark of *Y. antarctica*) differentiate this species from the others.

*Distribution:* Western Antarctic Peninsula (DELL, 1990; this study),

Bellingshausen Sea to off Thurston Island (PELSENEER, 1903; this study), Ross Sea, Balleny Islands (DELL, 1990) and Davis Sea (THIELE, 1912; EGOROVA, 1982); from 265 to 2525 m (DELL, 1990).

*Yoldiella oblonga* (Pelseneer, 1903) (Figs. 77-78)

*Leda oblonga* Pelseneer, 1903: 23, pl. 6, figs. 79-80; Hedley, 1916: 17; Soot-Ryen, 1951: 6.  
*Yoldiella oblonga*: Egorova, 1982: 56, figs. 232-233; Hain, 1990: 79, pl. 11, figs. 1a-b.

**Material studied:** 1 sh. (broken), MB9; 1 spm. (5.3 x 3.9 mm), MB14; 1 spm. (2.8 x 1.9 mm), MB36.

*Remarks:* CARCELLES (1953) was the first author to include this species as *Yoldiella*. Due to its *Tindaria*-like form there are no similar species in Antarctic waters.

*Distribution:* Weddell Sea (HAIN, 1990), Bellingshausen Sea (PELSE-

NEER, 1903; this study), cited for the Ross Sea (GRIFFITHS *ET AL.*, 2003), Shackleton Ice Shelf (HEDLEY, 1916) and Davis Sea (EGOROVA, 1982); from 459 to 2800 m (PELSENEER, 1903).

*Yoldiella profundorum* (Melvill and Standen, 1912) (Figs. 79-80)

*Yoldia profundorum* Melvill and Standen, 1912: 359, figs. 18-18b.

*Yoldiella profundorum*: Soot-Ryen, 1951: 6; Dell, 1990: 14, figs. 21-22; Branch *et al.*, 1991: 53 (key).

**Material studied:** 3 spm. (2.9 x 2.1 - 3.8 x 2.8 mm), PA22; 1 spm. (2.0 x 1.4 mm), MB26; 86 spm. (1.7 x 1.0 - 3.2 x 2.2 mm), PI28; 1 spm. (3.3 x 2.2 mm), MB30; 33 spm. (1.0 x 0.6 - 2.1 x 1.3 mm), MB33; 2 spm. (1.5 x 0.9 - 1.5 x 0.9 mm), MB34; 1 spm. (2.1 x 1.6 mm), PA39; 16 spm. (1.0 x 0.6 - 2.1 x 1.4 mm), PA41; 14 spm. (1.1 x 0.8 - 2.5 x 1.8 mm), PA42; 4 spm. (1.2 x 0.9 - 1.9 x 1.1 mm), PA43.

*Remarks:* A somewhat elongated hinge with seven anterior and six posterior, medium to large and weakly oblique teeth, mark the difference from the similar species *Y. ecaudata* (with nine anterior and seven posterior strong teeth) and *Y. antarctica* (six anterior and seven posterior small teeth).

*Distribution:* Weddell Sea (MELVILL AND STANDEN, 1912), Drake Passage

(ca. 55-62° S, 61° W) (DELL, 1990), Western Antarctic Peninsula, Bellingshausen Sea to off Thurston Island, and Peter I Island (new records), Amundsen Sea (ca. 70° S, 99° W) (DELL, 1990), Marion and Prince Edward Islands (BRANCH *ET AL.*, 1991); from 157 m (new record) to 4758 m (DELL, 1990).

*Yoldiella sabrina* (Hedley, 1916) (Figs. 81-82)

*Malletia sabrina* Hedley, 1916: 18, pl. 1, figs. 3-4; Soot-Ryen, 1951: 9; Powell, 1958: 172; Dell, 1964: 149; Nicol, 1966: 17, pl. 1, figs. 3, 5; Egorova, 1982: 54, figs. 226-228.

*Yoldiella sabrina*: Dell, 1972: 24, figs. 8-9; 1990: 14, fig. 14; Hain, 1990: 79, pl. 11, figs. 2a-b.

**Material studied:** 3 spm. (5.8 x 3.9 - 5.9 x 3.9 mm), MB30; 5 spm. (4.2 x 2.7 - 6.9 x 4.2 mm), MB31; 1 spm. (6.0 x 3.9 mm), MB32; 1 spm. (6.1 x 4.1 mm), MB35; 2 spm. (1.9 x 1.2 - 4.2 x 2.8 mm), MB36.

*Remarks:* Similar in external morphology to species of the genus *Malletia* Desmoulins, 1832. DELL (1972) situated this species as *Yoldiella* based on its internal ligament, and he compared it with the Southern Chile species *Y. chilénica* (Dall, 1908), very similar in shell proportions and secondarily in the hinge.

*Distribution:* Weddell Sea (HAIN, 1990), South Shetland Islands (DELL, 1990), Bellingshausen Sea (new record), Ross Sea (DELL, 1990), Terre Adélie and Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (EGOROVA, 1982) and Mac Robertson Land (POWELL, 1958); from 12 m (HAIN, 1990) to 1847 m (new record).

Subclass PTERIOMORPHIA Beurlen, 1944

Order ARCIDA Stoliczka, 1871

Family ARCIDAE Lamarck, 1809

Genus *Bathyarca* Kobelt, 1891

*Bathyarca sinuata* Pelseneer, 1903 (Fig. 83)

*Bathyarca sinuata* Pelseneer, 1903: 23, pl. 6, figs. 81-82; Lamy, 1911a: 27; Soot-Ryen, 1951: 9; Dell, 1990: 17, figs. 4, 10-11

**Material studied:** 6 spm. (6.2 x 5.0 - 8.6 x 6.9 mm), MB3; 4 spm. (6.1 x 4.3 - 9.0 x 6.2 mm), MB11; 1 spm. (6.9 x 4.7 mm), MB13; 11 spm. (4.8 x 3.6 - 8.8 x 7.0 mm), MB17; 6 spm. (6.0 x 4.5 - 8.0 x 6.0 mm), MB30; 5 spm. (6.0 x 4.7 - 8.8 x 6.8 mm), MB31; 4 spm. (4.8 x 3.2 - 8.1 x 6.7 mm), MB35; 4 spm. (7.1 x 5.1 - 8.1 x 6.2 mm), MB38.

**Remarks:** The other species of the genus cited for Antarctica is *B. strebeli* (Melvill and Standen, 1907) from the Weddell Sea, which is very different in shell shape, presenting an oval form.

**Distribution:** Cape Horn (DELL, 1990), Bellingshausen Sea (PELSENEER, 1903; LAMY, 1911a; this study) to off Thurston Island (new record) and Ross Sea (DELL, 1990); from 400 m (PELSENEER, 1903) to 2044 m (new record).

Family LIMOPSIDAE Dall, 1895

Genus *Limopsis* Sassi, 1827

*Limopsis knudseni* Dell, 1990 (Fig. 84)

*Limopsis knudseni* Dell, 1990: 23, figs. 30-31.

**Material studied:** 1 spm. (7.4 x 7.6 mm), MB29.

**Remarks:** DELL (1990) described this species after examination of many individuals series of several Antarctic species, concluding that the posteroventral elongated form of some individuals, together with the development of a byssus in most of them, are definitive and particular characteristics of the new species. Our specimen have the umbos

larger than the figure of the holotype, which may be eroded.

**Distribution:** South Atlantic Ocean off South Georgia Island (ca. 50° S, 43° W), Cape Horn, Drake Passage (ca. 60° S, 69° W) (DELL, 1990) and Bellingshausen Sea (DELL, 1990; this study); from 1043 to 3693 m (DELL, 1990).

*Limopsis lilliei* Smith, 1915 (Fig. 85)

*Limopsis lilliei* Smith, 1915: 76, pl. 1, fig. 18; Powell, 1958: 172; Dell, 1964: 158, pl. 3, figs. 1-2; Nicol, 1966: 18, pl. 2, figs. 3, 6; Arnaud, 1973: 555; Egorova, 1982: 57, figs. 248-249; Dell, 1990: 20, figs. 32-33; Hain, 1990: 82, pl. 11, figs. 7a-b; Branch *et al.*, 1991: 54.

**Material studied:** 1 spm. (4.4 x 4.1 mm), PA21; 1 spm. (6.3 x 4.9 mm), PA25; 2 spm. (17.2 x 15.2 - 21.5 x 17.0 mm), LOW.

**Remarks:** According to DELL (1990) it presents an affinity in shape with *L.*

*hirtella* Mabilie and Rochebrune, 1889, but that species apparently is confined

to the Magellanic Region (DELL, 1990). Also, *L. scotiana* Dell, 1964 is close as well, but its distribution is in the Scotia Arc Islands (DELL, 1990).

*Distribution:* Weddell Sea (HAIN, 1990), South Sandwich, South Georgia and South Orkney Islands (DELL, 1990), South Shetland Islands and Western Antarctic Peninsula (DELL, 1990; this

study), Antipodes Islands (*ca.* 179° E) (DELL, 1990), Ross Sea (SMITH, 1915; DELL, 1990), Terre Adélie (GRIFFITHS ET AL., 2003), Davis Sea (EGOROVA, 1982), Enderby Land (POWELL, 1958), Marion and Prince Edward Islands (BRANCH ET AL., 1991) and Bouvet Island (LINSE, 2006); from 20 m (DELL, 1990; HAIN, 1990) to 2100 m (DELL, 1990).

### *Limopsis longipilosa* Pelseneer, 1903 (Fig. 86)

*Limopsis longipilosa* Pelseneer, 1903: 25, pl. 7, figs. 89-90; Melvill and Standen, 1912: 360; Soot-Ryen, 1951: 9, figs. 7-8; Dell, 1964: 155; Egorova, 1982: 58, figs. 250-251.

**Material studied:** 1 spm. (2.2 x 2.5 mm), MB4; 1 spm. (3.3 x 3.5 mm), MB14; 1 spm. (2.3 x 2.7 mm), MB33; 7 spm. (1.2 x 1.3 - 3.8 x 3.9 mm), MB36; 11 spm. (2.3 x 2.3 - 3.3 x 3.3 mm), MB37.

*Remarks:* *L. mabilliana* Dall, 1908 is similar in shape and periostracum, though it differs in having the dorsal border straighter with angulose anterior and posterior ends. DELL (1990 pp. 20, 25-26) mentioned that *L. longipilosa* may correspond to juvenile specimens of *L. marionensis* Smith, 1885 or of *L. tenella* Jeffreys, 1879, but *L. tenella tenella* inhabits deeper waters (> 2400 m depth). Due to the confusion that exists in this group of related species, we maintained *L. longipilosa* as a valid species, though it is necessary to

make a comparative study of the hinge and juvenile stages of several related species (e.g. MALCHUS AND WARÉN, 2005).

*Distribution:* Weddell Sea (MELVILL AND STANDEN, 1912), Western Antarctic Peninsula (SOOT-RYEN, 1951), Bellingshausen Sea (PELSENEER, 1903; this study) to off Thurston Island (new record) and Davis Sea (EGOROVA, 1982), but cited for the South Shetland Islands as well (CARCELLES, 1953). The bathymetry is from 90 m (EGOROVA, 1982) to 2579 m (MELVILL AND STANDEN, 1912).

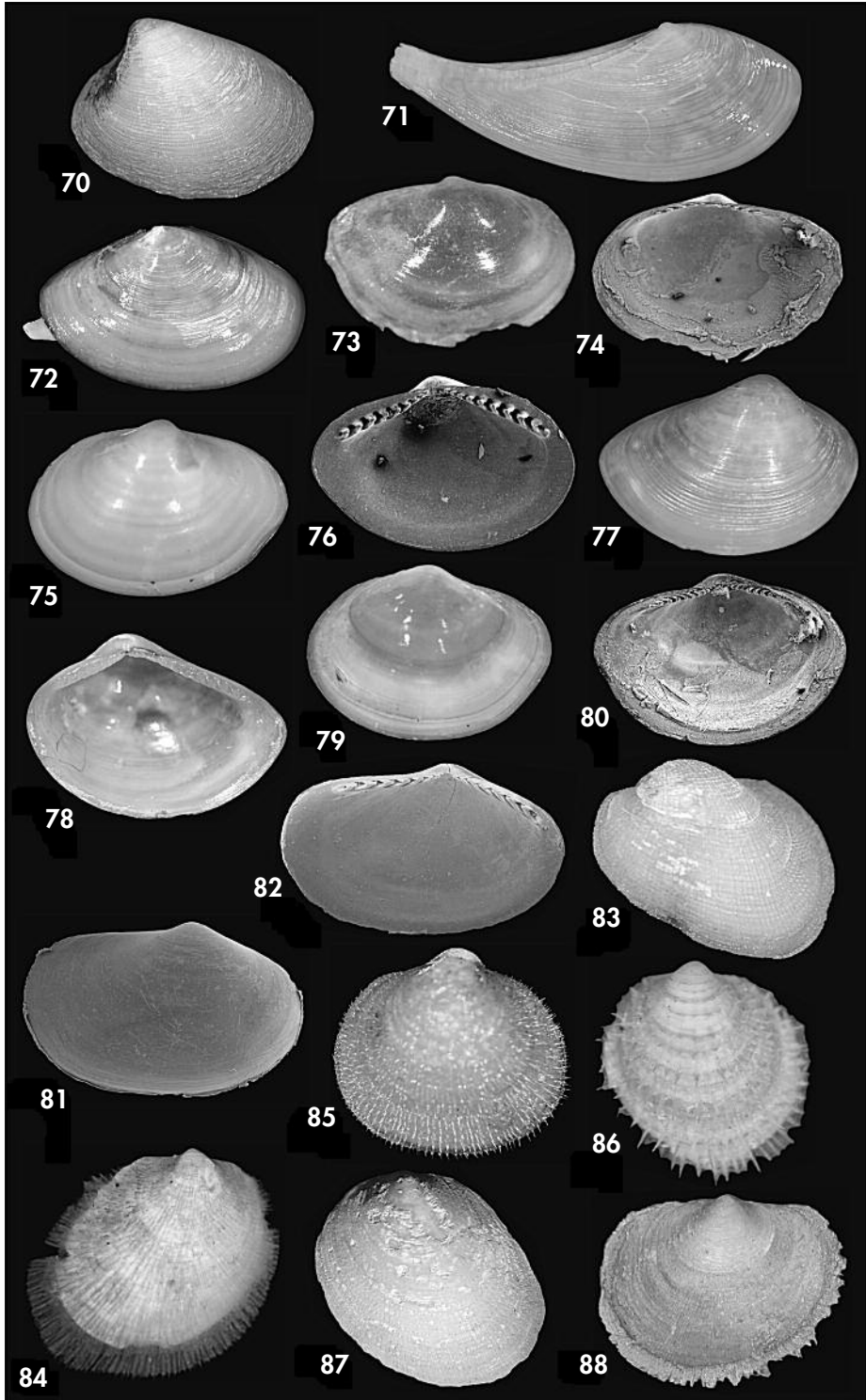
### *Limopsis marionensis* Smith, 1885 (Fig. 87)

*Limopsis marionensis* Smith, 1885: 254, pl.18, figs. 2-2b; 1915: 75; Dell, 1964: 152, pl. 3, figs. 6-14, pl. 4, figs. 1-2; Nicol, 1966: 22, pl. 2, figs. 1, 5; Egorova, 1982: 59, figs. 252-253; Okutani, 1986: 279 (table), pl. 2, fig. 12; Dell, 1990: 19, figs. 25-26; Hain, 1990: 82, pl. 12, figs. 1a-b; Branch *et al.*, 1991: 53 (key); Numanami *et al.*, 1996: 211 (table), 213 (text), pl. 4, fig. 10; Osorio and Reid, 2004: 80, fig. 3b.

*Felicia jousseaumi* Mabilbe and Rochebrune, 1889: 116, pl. 7, figs. 9a-b.

(Right page) Figure 70. *Nucula austrobenthalis*, 12.0 x 8.9 mm, MB29. Figure 71. *Propeleda longicaudata*, 16.3 x 6.1 mm, MB13. Figure 72. *Yoldia eightsi*, 24.0 x 15.1 mm, PA22. Figures 73, 74. *Yoldiella antarctica*, 2.6 x 1.7 mm, PI7. Figures 75-76. *Yoldiella ecaudata*, 2.8 x 1.9 mm, MB3. Figures 77, 78. *Yoldiella oblonga*, 5.3 x 3.9 mm, MB14. Figure 79. *Yoldiella profundorum*, 2.9 x 2.1 mm, PA22. Figure 80. *Yoldiella profundorum*, 3.8 x 2.8 mm, PA22. Figure 81. *Yoldiella sabrina*, 4.2 x 2.7 mm, MB31. Figure 82. *Yoldiella sabrina*, 4.3 x 2.8 mm, MB31. Figure 83. *Bathyarca sinuata*, 6.9 x 4.7 mm, MB13. Figure 84. *Limopsis knudseni*, 7.4 x 7.6 mm, MB29. Figure 85. *Limopsis lillieii*, 4.4 x 4.1 mm, PA21. Figure 86. *Limopsis longipilosa*, 2.2 x 2.5 mm, MB4. Figure 87. *Limopsis marionensis*, 25.5 x 24.6 mm, MB37. Figure 88. *Limopsis enderbyensis*, 15.0 x 12.0 mm, LOW. (*Página derecha*) Figuras 70-88. Ver los nombres científicos en el rótulo en inglés.





*Limopsis jousseaumei*: Lamy, 1911a: 26; Thiele, 1912: 228 (text), pl. 17, fig. 14b; Powell, 1951: 78; Soot-Ryen, 1951: 9; Stuardo, 1962: 7, figs. 1-6.

*Limopsis laeviuscula* Pelseneer, 1903: 24, pl. 7, figs. 91-92.

*Limopsis grandis* Smith, 1907b: 5, pl. 3, figs. 7-7b; Thiele, 1912: 228, pl. 17, figs. 14a, 15; Smith, 1915: 76; Hedley, 1916: 19.

*Limopsis jousseaumi grandis*: Powell, 1958: 173; Egorova, 1982: 57, figs. 245-247.

**Material studied:** 7 spm. (25.5 x 24.3 - 39.5 x 42.2 mm), MB37.

**Remarks:** The Magellanic species *L. hirtella* Mabilie and Rochebrune, 1889 has an affinity with this species, though it is more oval and equilateral. The numerous species that have been synonymized have been accepted as such, because some authors have examined many individuals from several localities. According to DELL (1990) *L. hardingi* Melville and Standen, 1914 from Falkland/Malvinas Islands is a junior synonym.

**Distribution:** Widespread Antarctic and Sub-Antarctic distribution. Has been cited from the Weddell Sea (HAIN, 1990), South Sandwich Islands, South Orkney Islands, Falkland/Malvinas Islands and Burdwood Bank (DELL, 1990), Beagle Channel (ROCHEBRUNE AND MABILLE, 1889), Magellan Strait and Tierra del Fuego Island (DELL, 1990) and from several sites northward to South Pacific coast: South of Chiloé Islands (44° S) (OSORIO AND REID, 2004), Seno de Reloncaví and Chiloé Islands (41-42° S) (CÁRDENAS, ALDEA AND VALDOVINOS, in press), 39° S off Valdivia

(DELL, 1990), reaching off Algarrobo (33° S) in central Chile (STUARDO, 1962); also in South Shetland Islands (DELL, 1990) and Western Antarctic Peninsula (LAMAY, 1911a; DELL, 1990), off Adelaide Island (POWELL, 1951) and Bellingshausen Sea (PELSENEER, 1903; DELL, 1990; this study); Southwest Pacific Ocean (59° S, 160° W) (DELL, 1990), Ross Sea (SMITH, 1907b; SMITH, 1915; DELL, 1990), cited for the Scott and Balleny Islands (GRIFITHS ET AL., 2003), Terre Adélie and Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (THIELE, 1912; POWELL, 1958; EGOROVA, 1982), Amery Ice-Shelf (POWELL, 1958; NUMANAMI ET AL., 1996), cited for the Heard and Kerguelen Islands (DELL, 1990), Mac Robertson Land to Enderby Land (POWELL, 1958), Marion and Prince Edward Islands (SMITH, 1885; BRANCH ET AL., 1991) and 24° E (OKUTANI 1986); from 27 to 2804 m (DELL, 1990). Has not been cited for South Georgia Island, which is an anomaly in the Biogeography of the Southern Ocean (DELL, 1990).

### *Limopsis enderbyensis* Powell, 1958 (Fig. 88)

*Limopsis enderbyensis* Powell, 1958: 172, pl. 1, fig. 4; Dell, 1964: 159; Hain, 1990: 82, pl. 11, figs. 6a-b.

**Material studied:** 1 spm. (15.0 x 12.0 mm), LOW.

**Remarks:** This species looks similar to the deeper-water species *L. tenella dalli* Lamy, 1912 from close to the Amundsen Sea (DELL, 1990), but that species is characterized by a more inequilateral shell.

**Distribution:** Only known in the Weddell Sea (HAIN, 1990), South Shetland Islands (new record) and Enderby Land (POWELL, 1958); from 115 m (new record) to 673 m (HAIN, 1990).

Family PHILOBRYIDAE Bernard, 1897  
Genus *Adacnarca* Pelseneer, 1903

*Adacnarca nitens* Pelseneer, 1903 (Fig. 89)

*Adacnarca nitens* Pelseneer, 1903: 24, 41, pl. 7, figs. 83-88; Lamy, 1906b: 19; Smith, 1907b: 5, pl. 3, fig. 6-6c; Hedley, 1911: 3; Lamy, 1911a: 27; Thiele, 1912: 228; Smith, 1915: 76; Hedley, 1916: 22; Soot-Ryen, 1951: 13; Powell, 1958: 175; Dell, 1964: 172; Nicol, 1966: 31, pl. 4, figs. 9-10; Arnaud, 1973: 556; Egorova, 1982: 61, figs. 262-265; Dell, 1990: 31, figs. 38-39, 40, 43; Hain, 1990: 86, pl. 12, figs. 6a-b.

**Material studied:** 200 spm. (2.2 x 2.1 - 5.4 x 5.1 mm), PI5; 17 spm. (3.1 x 2.9 - 5.4 x 5.1 mm), PI8; 3 spm. (3.8 x 3.7 - 5.1 x 5.0 mm), PA20; 1 spm. (4.2 x 3.8 mm), PA21; 1 spm. (3.1 x 3.0 mm), PA22; 1 spm. (3.1 x 3.2 mm), MB36; 1 spm. (3.8 x 3.9 mm), MB38; 3 spm. (4.0 x 4.0 - 4.2 x 4.3 mm), PA39; 1 spm. (4.8 x 4.7 mm), LOW; 3 spm. (2.8 x 2.5 - 4.9 x 3.6 mm), DEC.

*Remarks:* *A. polarsterni* Egorova, 2003 seems to be an allied species, but it differs in being more elongated and not having a subcircular shape. *A. limopsoides* (Thiele, 1912) differs in having radial ribs and larger hinge teeth.

*Distribution:* Weddell Sea (HAIN, 1990), South Sandwich, South Georgia, South Orkney Islands and Eastern Antarctic Peninsula (DELL, 1990), South Shetland Islands (DELL, 1990; this study), Western Antarctic Peninsula (LAMY, 1911a; DELL, 1990; this study), Bellingshausen Sea

(PELSENEER, 1903; this study) and Peter I Island (SOOT-RYEN, 1951; this study), Cape Horn (DELL, 1990), Ross Sea (SMITH, 1907b; HEDLEY, 1911; SMITH, 1915; DELL, 1990) to 163° E (SMITH, 1915), Commonwealth (HEDLEY, 1916) to Terre Adélie (POWELL, 1958), Wilkes Land (DELL, 1990), Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982), Amery Ice Shelf (GRIFFITHS ET AL., 2003), Mac Robertson to Enderby Land (POWELL, 1958), and Bouvet Island (LINSE, 2006); from 8 to 2350 m (DELL, 1990).

Genus *Lissarca* Smith, 1879*Lissarca notorcadensis* Melvill and Standen, 1907 (Fig. 90)

*Lissarca notorcadensis* Melvill and Standen, 1907: 44, figs. 14-14a; Smith, 1915: 75, pl. 1, figs. 16-17; Hedley, 1916: 19; Soot-Ryen, 1951: 15; Powell, 1951: 78; Powell, 1958: 175; Dell, 1964: 173; Nicol, 1966: 36, pl. 4, figs. 2, 4, 6; Arnaud, 1973: 555; Egorova, 1982: 62, figs. 266-268; Okutani, 1986: 279 (table), pl. 2, figs. 13-14; Dell, 1990: 32, figs. 46, 58; Hain, 1990: 87, pl. 13, figs. 2a-b.

*Arca gourdoni* Lamy, 1910b: 393; 1911a: 28, pl. 1, figs. 21-22.

*Lissarca gourdoni*: Thiele, 1912: 228, pl. 18, figs. 3-3a.

**Material studied:** 1 spm. (7.0 x 6.6 mm), PA21; 36 spm. (2.9 x 2.8 - 6.1 x 6.2 mm), PA39; 49 spm. (1.6 x 1.5 - 4.3 x 4.4 mm), LOW; 2 spm. (4.5 x 3.2 - 4.5 x 3.2 mm), MAR.

*Remarks:* It is a variable species since COPE AND LINSE (2006) found considerable morphological differences between samples from the Scotia Arc, the Ross Sea and the Weddell Sea. The synonymy of *L. gourdoni* (Lamy, 1911) was proposed by SMITH (1915). Two other species of the genus, *L. miliaris* (Philippi, 1845) and *L. rubrofusca* (Smith, 1879) differ in having more inequilateral shells which are very similar, because DELL (1990) remarks that the distinction between both species has been difficult.

*Distribution:* Weddell Sea (HAIN, 1990), South Sandwich, South Georgia (DELL, 1990), South Orkney (MELVILL AND STANDEN, 1907; DELL, 1990), Falkland/Malvinas (POWELL, 1951) and South Shetland Islands (SOOT-RYEN, 1951; DELL, 1990; this study), Western Antarctic Peninsula (LAMY, 1911a; SOOT-RYEN, 1951; DELL, 1990; this study), Ross Sea (SMITH, 1915; DELL, 1990) to 163° E (SMITH, 1915), Commonwealth (HEDLEY, 1916) to Terre Adélie (HEDLEY, 1916; POWELL, 1958), Wilkes Land (DELL, 1990), Shackleton Ice Shelf

(HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982), Amery Ice-Shelf, Mac Robertson Land and Enderby Land (POWELL, 1958), probably in Kerguelen Islands (DELL, 1990), and 24° E (OKUTANI, 1986); from 0 to 1890 m (DELL, 1990).

### Genus *Philobrya* Carpenter, 1872

#### *Philobrya sublaevis* Pelseneer, 1903 (Fig. 91)

*Philobrya sublaevis* Pelseneer, 1903: 25, pl. 7, figs. 93-94; Lamy, 1906b: 18, pl. 1, figs. 17-18; Lamy, 1911a: 25; Thiele, 1912: 227, pl. 17, fig. 11; Melvill and Standen, 1912: 361; Thiele and Jaeckel, 1931: 192; Dell, 1964: 163, pl. 4, fig. 7, fig. 2 (N° 3, 15-16); Nicol, 1966: 28, pl. 4, figs. 3, 5, 7; Arnaud, 1973: 555; Dell, 1990: 27, figs. 41, 50; Hain, 1990: 84, pl. 12, figs. 4a-d; Numanami *et al.*, 1996: 211 (table), pl. 4, fig. 1.  
*Philippiella sublaevis*: Soot-Ryen, 1951: 12.  
*Hochstetteria sublaevis*: Egorova, 1982: 60, figs. 257-259.  
*Philobrya limoides* Smith, 1907b: 4, pl. 3, figs. 2-2b; Hedley, 1911: 3; Thiele, 1912: 268; Smith, 1915: 77; Thiele and Jaeckel, 1931: 191.  
*Philippiella limoides*: Hedley, 1916: 20; Soot-Ryen, 1951: 10.  
*Hochstetteria limoides*: Powell, 1958: 173.  
*Philippiella bagei* Hedley, 1916: 20, pl. 1, figs. 5-7; Soot-Ryen, 1951: 10.  
*Hochstetteria bagei*: Powell, 1958: 174.  
*Philippiella orbiculata* Hedley, 1916: 21, pl. 1, figs. 12-13.  
*Philobrya antarctica* Thiele and Jaeckel, 1931: 190 (*nom. nov.* for *P. limoides* Smith, 1907).

**Material studied:** 14 spm. (4.9 x 4.1 - 12.8 x 12.1 mm), PI5; 5 spm. (5.7 x 5.2 - 10.5 x 11.0 mm), PI8; 5 spm. (5.8 x 5.4 - 9.2 x 8.5 mm), PA20; 1 spm. (6.4 x 6.6 mm), PA21; 1 spm. (11.0 x 11.0 mm), PA22; 11 spm. (2.9 x 3.0 - 12.0 x 12.0 mm), PA39; 3 spm. (6.0 x 6.0 - 8.3 x 8.2 mm), LOW; 9 spm. (2.2 x 3.0 - 6.9 x 7.0 mm), DEC; 2 spm. (6.0 x 6.0 - 8.7 x 8.0 mm) MAR.

**Remarks:** It is a well known and reported species, whose synonymies are accepted (see DELL, 1990). The central position of the straight umbo marks the difference between this species and others cited from neighboring areas, all of them showing a certain degree of inequilaterality, e.g. *P. quadrata* (Pfeffer, 1886) and *P. unguolata* (Pfeffer, 1886). D-shape larvae were identified following EGOROVA (1982).

**Distribution:** Weddell Sea (HAIN, 1990), South Sandwich (DELL, 1990), South Georgia (SOOT-RYEN, 1951; DELL, 1990) and South Orkney Islands (DELL, 1990), Burdwood Bank (MELVILL AND STANDEN, 1912), Eastern Antarctic Peninsula (DELL, 1990), South Shetland Islands and Western Antarctic Peninsula (LAMY, 1911a; SOOT-RYEN, 1951; DELL,

1990; this study), Bellingshausen Sea (PELSENEER, 1903) and Peter I Island (SOOT-RYEN, 1951; this study), Ross Sea (SMITH, 1907b; HEDLEY, 1911; SMITH, 1915; DELL, 1990) to 163° E (SMITH, 1915), Commonwealth to Terre Adélie (HEDLEY, 1916), Wilkes Land (DELL, 1990), Davis Sea (THIELE, 1912; HEDLEY, 1916; EGOROVA, 1982; DELL, 1990), Amery Ice-Shelf (GRIFFITHS *ET AL.*, 2003), Mac Robertson to Enderby Land (POWELL, 1958), Syowa (NUMANAMI *ET AL.*, 1996), South of Africa in South Atlantic Ocean (34-35° S, 19-26° E) (THIELE AND JAECKEL, 1931), Bouvet Island (THIELE AND JAECKEL, 1931; LINSE, 2006) and ca. 10° E (GRIFFITHS *ET AL.*, 2003); from 1 m (DELL, 1990; HAIN, 1990) to 923 m (DELL, 1990).

#### *Philobrya wandelensis* Lamy, 1906 (Fig. 92)

*Philobrya wandelensis* Lamy, 1906a: 50; 1906b: 17, pl. 1, figs. 15-16; Melvill and Standen, 1907: 146; Lamy, 1911a: 24; Melvill and Standen, 1912: 361; Hedley, 1916: 19; Thiele, 1912: 268; Dell, 1964: 167; Arnaud, 1973: 556; Dell, 1990: 29, figs. 42, 47-49.

*Hochstetteria wandelensis*: Soot-Ryen, 1951: 11; Powell, 1958: 174.

*Adacnarca wandelensis*: Nicol, 1966: 33, pl. 3, figs. 4-5; Hain, 1990: 87, pl. 13, figs. 1a-b.

**Material studied:** 1 spm. (3.2 × 2.5 mm), PA20; 5 spm. (2.1 × 3.1 - 3.1 × 4.1 mm), DEC; 2 spm. (5.0 × 3.2 - 5.0 × 3.2 mm), MAR.

*Remarks:* Its strong inequilaterality marks the difference between this species and the other related species with a lesser degree of inequilaterality (*P. quadrata* (Pfeffer, 1886) and *P. unguata* (Pfeffer, 1886)), though *P. crispa* Linse, 2002 from Tierra del Fuego Island, is a strongly inequilateral species, but differs in having periostracal spines, that *P. wandelensis* does not have.

*Distribution:* Weddell Sea (HAIN, 1990), South Sandwich, South Georgia (DELL, 1990) and South Orkney Islands

(MELVILL AND STANDEN, 1907, 1912; DELL, 1990), Burdwood Bank and Falkland/Malvinas Islands (MELVILL AND STANDEN, 1912), Eastern Antarctic Peninsula (DELL, 1990), South Shetland Islands (DELL, 1990; this study), Western Antarctic Peninsula (LAMY, 1911a; DELL, 1990; this study), Ross Sea (DELL, 1990), Commonwealth (HEDLEY, 1916), Amery Ice-Shelf (GRIFFITHS ET AL., 2003), Mac Robertson to Enderby Land (POWELL, 1958) and Bouvet Island (LINSE, 2006); from 5 m (HEDLEY, 1916) to 870 m (DELL, 1990).

Order MYTILIDA Férussac, 1822

Family MYTILIDAE Rafinesque, 1815

Genus *Dacrydium* Torell, 1859

*Dacrydium albidum* Pelseneer, 1903 (Fig. 93)

*Dacrydium albidum* Pelseneer, 1903: 26, pl. 8, fig. 100; Thiele, 1912: 226, pl. 17, fig. 10; Soot-Ryen, 1951: 20; Nicol, 1966: 25, pl. 3, figs. 2, 8; Egorova, 1982: 63, figs. 269-270; Dell, 1990: 33, figs. 55-57; Hain, 1990: 88, pl. 13, figs. 3a-b; Numanami et al., 1996: 211 (table), pl. 4, fig. 2.

*Dacrydium modioliforme* Thiele, 1912: 226, pl. 17, fig. 9; Thiele and Jaeckel, 1931: 170; Soot-Ryen, 1951: 20; Powell, 1958: 175; Egorova, 1982: 64, figs. 271-272.

**Material studied:** 9 spm. (2.1 × 2.5 - 2.8 × 3.4 mm), MB30; 4 spm. (1.8 × 2.1 - 3.6 × 4.1 mm), MB34; 4 spm. (2.1 × 2.4 - 3.6 × 4.0 mm), MB38; 1 spm. (2.1 × 2.3 mm), PA41.

*Remarks:* NICOL (1966) and DELL (1990) considered that *D. modioliforme* Thiele, 1912, from the Davis Sea, may be a synonym.

*Distribution:* Weddell Sea (HAIN, 1990), South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (new record), Bellingshausen Sea (PELSENEER, 1903; DELL, 1990; this study), Ross Sea

(DELL, 1990), Davis Sea (THIELE, 1912; EGOROVA, 1982), Amery Ice-Shelf (POWELL, 1958), Enderby Land (THIELE AND JAECKEL, 1931) and Syowa (NUMANAMI ET AL., 1996); from 122 m (DELL, 1990) to 4636 m (THIELE AND JAECKEL, 1931). Also, GRIFFITHS ET AL. (2003) indicated this species in several sites off Africa in the South Atlantic Ocean.

Order LIMIDA Waller, 1978

Family LIMIDAE Rafinesque, 1815

Genus *Limatula* S. V. Wood, 1839

*Limatula hodgsoni* (Smith, 1907) (Fig. 94)

*Lima hodgsoni* Smith, 1907b: 6, pl. 3, figs. 8-8b; Hedley, 1911: 3; Thiele, 1912: 226; Smith, 1915: 77; Hedley, 1916: 24; Thiele and Jaekel, 1931: 167.

*Limatula hodgsoni*: Soot-Ryen, 1951: 20; Powell, 1958: 177; Dell, 1964: 184; Nicol, 1966: 43, pl. 5, figs. 6-7; Arnaud, 1973: 556; Egorova, 1982: 66, figs. 285-287; Okutani, 1986: 279 (table), pl. 2, figs. 18-19; Dell, 1990: 53, fig. 95; Hain, 1990: 91, pl. 13, figs. 7a-f; Numanami *et al.*, 1996: 211 (table), 213 (text), pl. 4, fig. 3; Page and Linse, 2002: 819 (table, text); Linse and Page, 2003: 290, figs. 1e, 3 (produssoconch); Allen, 2004: 2645.

*Lima closei* Hedley, 1916: 23, pl. 2, fig. 16.

*Limatula closei*: Soot-Ryen, 1951: 20; Dell, 1964: 184; Egorova, 1982: 65, fig. 288.

**Material studied:** 2 spm. (11.5 x 9.3 - 29.3 x 22.7 mm), PA20; 1 spm. (9.0 x 7.6 mm), MB30; 9 spm. (2.1 x 1.9 - 12.1 x 10.0 mm), MB31; 6 spm. (1.4 x 1.1 - 36.2 x 27.9 mm), PA39; 2 spm. (10.9 x 14.0 - 24.0 x 18.0 mm), LOW.

*Remarks:* PAGE AND LINSE (2002) situated it as sister species of *L. ovalis* (Thiele, 1912) and *L. pygmaea* (Philippi, 1845), utilizing molecular techniques; they also established that they have indirect development with lecithotrophic larvae (LINSE AND PAGE, 2003). This species differs from *L. ovalis* and *L. pygmaea* in having a more developed concentric sculpture with lamellae. DELL (1964) commented that *L. closei* (Hedley, 1916) is an allied species and DELL (1990) situated it as a junior synonym.

*Distribution:* Weddell Sea (HAIN, 1990), South Sandwich, South Georgia, South Orkney Islands, Eastern Antarctic Peninsula and Cape Horn (DELL, 1990), South

Shetland Islands and Western Antarctic Peninsula (DELL, 1990; this study), Bellingshausen Sea (new record), Ross Sea (SMITH, 1907b; HEDLEY, 1911; SMITH, 1915; DELL, 1990) to 163° E (SMITH, 1915), Macquarie Island (Tomlin 1948 in POWELL, 1960), Commonwealth to Terre Adélie, and Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982; DELL, 1990), Amery Ice-Shelf (NUMANAMI *ET AL.*, 1996), Enderby Land (POWELL, 1958), 24° E (OKUTANI, 1986), cited *ca.* 10° E (GRIFITHS *ET AL.*, 2003) and Bouvet Island (THIELE AND JAECKEL, 1931; SOOT-RYEN, 1951); from 6 m (DELL, 1990) to 1814 m (new record).

### *Limatula pygmaea* (Philippi, 1845) (Fig. 95)

*Lima pygmaea* Philippi, 1845: 56; Smith, 1885: 292; Melvill and Standen, 1907: 148; Thiele, 1912: 251, pl. 17, figs. 6-8.

*Radula pygmaea*: Smith, 1879: 191, pl. 10, fig. 16; Lamy, 1906b: 15; 1911a: 22.

*Limatula pygmaea*: Powell, 1957: 116; Dell, 1964: 182, pl. 2, fig. 13; Arnaud, 1973: 557; Dell, 1990: 55; Branch *et al.*, 1991: 50 (key); Linse, 1997: 52; Troncoso *et al.*, 2001: 109, fig. 37; Page and Linse, 2002: 819 (table, text); Linse and Page, 2003: 290, figs. 1a-c (produssoconch); Allen, 2004: 2647.

*Linea martiali* Mabile and Rochebrune, 1889: 124.

*Lima falklandica* Adams, 1864: 509; Thiele and Jaekel, 1931: 167.

*Limatula falklandica*: Soot-Ryen, 1951: 21; Dell, 1964: 183.

**Material studied:** 5 spm. (6.2 x 4.6 - 8.1 x 6.3 mm), PA20; 1 spm. (7.5 x 6.0 mm), LOW.

*Remarks:* This species resembles *L. ovalis* (Thiele, 1912), which is smaller and narrower. In this sense, PAGE AND LINSE (2002) considered them sister species, not synonyms, utilizing molecular techniques; but ALLEN (2004) referred to *L. ovalis* as a junior synonym of *L. pygmaea* without mentioning the matter. LINSE AND PAGE

(2003) also evidenced the development of species by means of observation to produssoconchs, concluding that both *L. ovalis* and *L. pygmaea* having direct brooding development. The synonymies of *Linea martiali* Mabile and Rochebrune, 1889 and *L. falklandica* (Adams, 1864) are accepted (see DELL, 1990).

*Distribution:* South Sandwich (SOOT-RYEN, 1951), South Georgia (DELL, 1990) and South Orkney Islands (MELVILL AND STANDEN, 1907; DELL, 1990), Burdwood Bank, South Atlantic Ocean (DELL, 1990) and Falkland/Malvinas Islands, Beagle Channel (LINSE, 1997) and Cape Horn (MABILLE AND ROCHEBRUNE, 1889; DELL, 1990), Staten Island, Magellan Strait and Tierra del Fuego Island (DELL, 1990), South Shetland Islands (SOOT-RYEN, 1951; DELL, 1990; this study), Western

Antarctic Peninsula (LAMY, 1906b, 1911a; SOOT-RYEN, 1951; DELL, 1990; this study) and Bellingshausen Sea (DELL, 1990), Macquarie Island (Tomlin 1948 in POWELL, 1960), Terre Adélie (GRIFFITHS *ET AL.*, 2003), Kerguelen Islands (SMITH, 1879; SMITH, 1885; THIELE, 1912; THIELE AND JAECKEL, 1931; POWELL, 1957; TRONCOSO *ET AL.*, 2001), Marion and Prince Edward Islands (SMITH, 1885; BRANCH *ET AL.*, 1991); from 3 m (MELVILL AND STANDEN, 1907) to 3714 m (DELL, 1990).

### *Limatula simillima* Thiele, 1912 (Fig. 96)

*Limatula simillima* Thiele, 1912: 226, pl. 17, fig. 4; Soot-Ryen, 1951: 20; Powell, 1958: 177; Dell, 1964: 185, pl. 2, fig. 12; Nicol, 1966: 46, pl. 4, fig. 8; Dell, 1990: 53, fig. 97; Branch *et al.*, 1991: 50 (key); Page and Linse, 2002: 819 (table, text); Linse and Page, 2003: 290, fig. 1f (prodissoconch); Allen, 2004: 2648.

*Limatula similliana* (sic) Hain, 1990: 92, pl. 14, figs. 2a-c.

**Material studied:** 2 spm. (6.8 x 4.8 - 8.3 x 6.0 mm), MB31; 1 spm. (broken), MB37.

*Remarks:* LINSE AND PAGE (2003) established an indirect mode of development with lecithotrophic larvae. Molecular techniques allowed the establishing of its phylogenetic distance from other species (PAGE AND LINSE, 2002), which is reflected externally by having a more elongated shell.

*Distribution:* Weddell Sea (HAIN, 1990), Bellingshausen Sea (new record), Ross Sea (DELL, 1990), Davis Sea (THIELE, 1912), Mac Robertson to Enderby Land (POWELL, 1958) and Marion and Prince Edward Islands (BRANCH *ET AL.*, 1991); from 64 m (DELL, 1990) to 1426 m (new record).

### Order OSTREIDA Férussac, 1822 Family PECTINIDAE Rafinesque, 1815 Genus *Adamussium* Thiele, 1934 *Adamussium colbecki* (Smith, 1902)

*Pecten colbecki* Smith, 1902: 212, pl. 25, fig. 11; 1907b: 6, pl. 3, figs. 9-9a; Melvill and Standen, 1907: 146; Hedley, 1911: 3; Lamy, 1911a: 23; Thiele, 1912: 225, pl. 17, figs. 1-1a.

*Chlamys colbecki*: Smith, 1915: 77; Hedley, 1916: 22.

*Adamussium colbecki*: Soot-Ryen, 1951: 16; Powell, 1958: 176; Nicol, 1966: 40, pl. 2, fig. 7, pl. 3, figs. 1, 7; Arnaud, 1973: 556; Egorova, 1982: 64, figs. 275-280; Dell, 1990: 35, figs. 59-60; Hain, 1990: 89, fig. 4.2; Numanami *et al.*, 1996: 212 (table, text), pl. 4, fig. 6.

*Pecten racovitzai* Pelseneer, 1903: 27, pl. 8, figs. 101-102; Lamy, 1906b: 16, pl. 1, fig. 19-21.

**Material studied:** 1 sh. (broken), MB2; 2 sh. (broken), MB3; 1 sh. (broken), PI5; 1 sh. (broken), PI7; 4 sh. (broken), MB26; 13 sh. (broken), MB30; 10 sh. (broken), MB31; 1 sh. (broken), MB34; 2 sh. (broken), MB35; 1 sh. (broken), MB36.

*Remarks:* All specimens of BENTART cruises correspond to fragmented shells, and these were not photographed since

this is a well-known species illustrated in several works. The synonymy of *Pecten racovitzai* Pelseneer, 1903 was

suggested by LAMY (1911a) and accepted in subsequent works.

*Distribution:* Weddell Sea (MELVILL AND STANDEN, 1907; DELL, 1990; HAIN, 1990), South Sandwich, South Orkney and South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (LAMY, 1906b, 1911a; DELL, 1990), Bellingshausen Sea (PELSENEER, 1903; this study) and Peter I Island (SOOTRYEN, 1951; this study), Scott and

Balleny Islands (GRIFFITHS ET AL., 2003), Ross Sea (SMITH, 1902; SMITH, 1907b; HEDLEY, 1911; SMITH, 1915; DELL, 1990), Commonwealth to Terre Adélie and Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982), Mac Robertson to Enderby Land (POWELL, 1958), Syowa (NUMANAMI ET AL., 1996) and ca. 10° E (GRIFFITHS ET AL., 2003); from 2 m (EGOROVA, 1982) to 4545 m (MELVILL AND STANDEN, 1907).

### Genus *Hyalopecten* Verrill, 1897

#### *Hyalopecten pudicus* (Smith, 1885) (Fig. 97)

*Pecten pudicus* Smith, 1885: 302, pl. 21, figs. 8-8b; Pelseeneer, 1903: 26.

*Pecten undatus* Verrill and Smith, in Verrill, 1885: 444, pl. 44, fig. 8.

*Hyalopecten undatus*: Dell, 1990: 37.

*Hyalopecten dilectus* Verrill and Bush, in Verrill, 1897: 80.

**Material studied:** 1 spm. (16.5 x 17.0 mm), MB38.

*Remarks:* This species was assigned to *Hyalopecten* after CARCELLES (1953). DELL (1990) considered *Hyalopecten dilectus* Verrill and Bush, 1897 as a junior synonym and cited it for several Antarctic points, though it seems to have a greater distribution. *Hyalopecten arntzi* Egorova, 1999, from the Weddell Sea, is very similar, but according to its author, the main difference is in the concavity of the shell, greater than in

*H. pudicus* and in the distinct size of the ears.

*Distribution:* South Sandwich Islands (DELL, 1990), cited for the Burdwood Bank and the South Shetland Islands (CARCELLES, 1953), Bellingshausen Sea (PELSENEER, 1903; this study), South Tasmania (48° S, 148° E) (DELL, 1990) and Marion Island (SMITH, 1885); from 400 m (PELSENEER, 1903) to 5453 m (DELL, 1990).

### Family PROPEAMUSSIIDAE Abbott, 1954

#### Genus *Cycloclamys* Finlay, 1926

#### *Cycloclamys gaussianus* (Thiele, 1912) (Fig. 98)

*Camptonectes gaussianus* Thiele, 1912: 226, pl. 17, fig. 2; Dijkstra and Köhler, 2008: 37, fig. 1c.

*Cyclopecten gaussianus*: Egorova, 1982: 65, figs. 281-282; Hain, 1990: 89, pl. 13, figs. 4a-c;

Numanami et al., 1996: 212 (table, text), pl. 4, figs. 4, 7.

**Material studied:** 2 spm. (1.2 x 1.1 - 2.8 x 2.7 mm), PA39.

*Remarks:* Several species have been described from the Southern Ocean, being necessary a revision of the group since the unknowns status of some species. The individuals found agree with THIELE'S description (1912), with EGOROVA'S figures (1982) and with the

specimens figured by HAIN (1990) and NUMANAMI ET AL. (1996). The taxonomic position of this species is *Cycloclamys gaussianus* (Thiele, 1912) (DIJKSTRA AND KÖHLER, 2008).

*Distribution:* Weddell Sea (HAIN, 1990), Western Antarctic Peninsula (new



record), Davis Sea (THIELE, 1912; EGOROVA, 1982) and Syowa (NUMANAMI ET AL., 1996); from 157 m (new record) to 481 m (HAIN, 1990).

Genus *Cyclopecten* Verrill, 1897

*Cyclopecten notalis* (Thiele, 1912) (Fig. 99)

*Camptonectes notalis* Thiele, 1912: 251, pl. 17, figs. 3-3a; Dijkstra and Köhler, 2008: 39, fig. 1f.  
*Palliolium notalis*: Egorova, 1982: 64, figs. 283-284.

**Material studied:** 1 spm. (4.1 x 4.0 mm), PI27; 4 spm. (3.0 x 3.0 - 7.0 x 6.9 mm), MB38.

*Remarks:* Although it has been reported only by THIELE (1912) and redrawn by EGOROVA (1982), the description agrees with BENTART individuals. According to DIJKSTRA AND KÖHLER (2008) it belongs to Propeamus-siidae as *Cyclopecten notalis* (Thiele, 1912).  
*Distribution:* Bellingshausen Sea, Peter I Island (new records) and Davis Sea (THIELE, 1912); from 1324 m (new record) to 3423 m (THIELE, 1912).

*Cyclopecten pteriola* (Melvill and Standen, 1907) (Fig. 100)

*Pecten pteriola* Melvill and Standen, 1907: 147, figs. 16-16a.  
*Cyclopecten pteriola*: Soot-Ryen, 1951: 16; Dell, 1964: 141, fig. 1 (N°1); Hain, 1990: 90, pl. 13, figs. 5a-c.

**Material studied:** 1 spm. (4.6 x 4.2 mm), MB36.

*Remarks:* The inequilateral shell and marked concentric ridges of *Cyclopecten pteriola* are conclusive to attribute the species, which has been seldom recorded.  
*Distribution:* Weddell Sea (HAIN, 1990), South Orkney Islands (MELVILL AND STANDEN, 1907) and Bellingshausen Sea (new record); from 16 m (MELVILL AND STANDEN, 1907) to 560 m (new record).

Subclass HETERODONTA Neumayr, 1884  
Order VENERIDA Adams and Adams, 1856  
Family THYASIRIDAE Dall, 1901  
Genus *Genaxinus* Iredale, 1930

*Genaxinus debilis* (Thiele, 1912) (Fig. 101)

*Axinopsis debilis* Thiele, 1912: 232, pl. 18, figs. 25-25a; Hedley, 1916: 27; Soot-Ryen, 1951: 30.  
*Genaxinus debilis*: Dell, 1964: 208; Arnaud, 1973: 557; Egorova, 1982: 70, figs. 314-315; Dell, 1990: 57, figs. 93-94.  
*Genaxinus bongraini* (Lamy): Nicol, 1966: 63, pl. 6, figs. 1-2 (no Lamy, 1910).

**Material studied:** 107 spm. (1.8 x 1.6 - 3.3 x 3.3 mm), PI5; 141 spm. (2.0 x 1.9 - 3.1 x 3.0 mm), PI6; 40 spm. (1.7 x 1.6 - 2.8 x 2.6 mm), PI7; 49 spm. (2.0 x 1.8 - 3.3 x 3.0 mm), PI8; 5 spm. (2.0 x 1.9 - 3.0 x 2.9 mm), PA21; 4 spm. (2.1 x 2.1 - 2.9 x 2.7 mm), PA22; 1 spm. (broken), PA25; 58 spm. (1.0 x 0.9 - 2.1 x 2.0 mm), PI27; 1 spm. (1.1 x 1.1 mm), PI28; 1 spm. (2.1 x 2.1 mm), MB34; 1 spm. (2.0 x 2.0 mm), MB36; 7 spm. (1.6 x 1.5 - 1.9 x 1.8 mm), MB38; 8 spm. (1.1 x 1.0 - 2.1 x 2.1 mm), PA39; 6 spm. (1.1 x 0.9 - 1.8 x 1.7 mm), PA41; 1 spm. (1.5 x 1.4 mm), PA42; 244 spm. (1.9 x 1.8 - 3.8 x 3.9 mm), DEC.

*Remarks:* This species resembles *T. dearborni* Nicol, 1965, which differs in having a more developed posterior sinus, being larger, with weaker concentric striae and having the anterior border shorter and straighter. DELL (1990) commented that NICOL's (1966) specimens, reported as *Genaxinus bongraini*, corresponded to *G. debilis*. HAIN (1990) cited this species as a junior synonym of *T. bongraini* (Lamy, 1910).

*Distribution:* South Sandwich, South Georgia, South Orkney, Falkland/Malvinas and Tierra del Fuego Islands, and Eastern Antarctic Peninsula (DELL, 1990), South Shetland Islands, Western Antarctic Peninsula and Bellingshausen Sea (DELL, 1990; this study), Peter I Island (new record), Ross Sea (DELL, 1990), Shackleton Ice Shelf (HEDLEY, 1916),

Davis Sea (THIELE, 1912; EGOROVA, 1982) and Mac Robertson Land (DELL, 1990); from 9 m (DELL, 1990) to 1873 m (new record).

Genus *Thyasira* Leach in Lamarck, 1818

*Thyasira bongraini* (Lamy, 1910) (Fig. 102)

*Axinus bongraini* Lamy, 1910b: 389; 1911a: 17, pl. 1, fig. 17;

*Thyasira bongraini*: Soot-Ryen, 1951: 30; Egorova, 1982: 70, figs. 311-313.

*Thyasira cf. bongraini* (Lamy): Dell, 1964: 207, fig. 4 (N°10-11).

*Genaxinus bongraini*: Hain, 1990: 96, pl. 14, figs. 8a-b.

**Material studied:** 2 spm. (2.0 × 1.9 - 3.1 × 3.0 mm), PI6; 7 spm. (3.0 × 2.9 - 7.0 × 7.0 mm), PA22; 1 spm. (5.2 × 5.4 mm), DEC.

*Remarks:* *T. dearborni* Nicol, 1965 may be a junior synonym of *T. bongraini*, because DELL's (1964) specimens, cited as *T. cf. bongraini*, have all the characteristics of the species, and DELL (1990, p. 56, figs. 91-92) detailed and figured individuals from Ross Sea assigned to *T. dearborni*, that agree with the original description of *T. bongraini*. HAIN (1990) reported specimens collected in the Wed-

dell Sea and he named *Genaxinus bongraini* as well, but as a senior synonym of *G. debilis* (Thiele, 1912). Summarizing, a revision of the genus in the Southern Ocean is necessary.

*Distribution:* Weddell Sea (HAIN, 1990), South Shetland Island (new record), Western Antarctic Peninsula (LAMY, 1911a; SOOT-RYEN, 1951; this study), Peter I Island (SOOT-RYEN, 1951; this study), Davis Sea (EGOROVA, 1982) and Bouvet Island (LINSE, 2006); from 9 to 850 m (HAIN, 1990). *T. dearborni* has been cited in the South Orkney

and the South Shetland Islands, Western Antarctic Peninsula and the Ross Sea (DELL, 1990); from 39 to 1180 m (DELL, 1990).

Family CARDITIDAE Fleming, 1828

Genus *Cyclocardia* Conrad, 1867

*Cyclocardia astartoides* (Martens, 1878) (Fig. 103)

*Cardita astartoides* Martens, 1878: 25; Smith, 1885: 212, pl. 15, figs. 2-2c; Smith, 1902: 211; Lamy, 1906b: 14; Smith, 1907b: 2; Hedley, 1911: 3; Lamy, 1911a: 21; Thiele, 1912: 230, pl. 18, fig. 10; Smith, 1915: 77.

*Venericardia astartoides*: Hedley, 1916: 30, pl.3, figs. 33-34; Thiele and Jaekel, 1931: 216.

*Cyclocardia astartoides*: Soot-Ryen, 1951: 25; Powell, 1957: 121; 1958: 177; Dell, 1964: 189; Nicol, 1966: 49, pl. 4, fig. 1, pl. 5, figs. 1-2; Arnaud, 1973: 558; Egorova, 1982: 72, figs. 331-333; Okutani, 1986: 279 (table), pl. 2, figs. 16, 22; Dell, 1990: 59, figs. 98-99; Hain, 1990: 94, pl. 14,

figs. 4a-b; Numanami *et al.*, 1996: 211 (table), 213 (text), pl. 4, fig. 5; Troncoso *et al.*, 2001: 109, fig. 38.

*Cardita antarctica* Smith, 1907b: 2, pl. 2, figs. 15-15a.

*Cyclocardia antarctica*: Soot-Ryen, 1951: 24.

**Material studied:** 3 spm. (6.1 × 5.8 - 8.9 × 10.1 mm), MB4; 6 spm. (8.3 × 6.8 - 20.5 × 16.3 mm), PA20; 2 spm. (6.7 × 5.2 - 8.2 × 6.4 mm), PA21; 2 spm. (8.0 × 6.7 - 14.0 × 10.9 mm), PA25; 1 spm. (3.5 × 3.5 mm), MB37; 5 spm. (0.9 × 0.9 - 9.0 × 7.0 mm), PA39; 4 spm. (1.1 × 1.1 - 24.0 × 19.1 mm), LOW.

**Remarks:** DELL (1964) remarked that *C. astartoides* has variations according to geographic distribution, being possibly the senior synonym of the species *C. intermedia* (Thiele, 1912) and *C. antarctica* (Smith, 1907). The same author (DELL, 1990) validated the synonymy of *C. antarctica*, but left in doubt the synonymy of *C. intermedia*; Hain (1990) included *C. intermedia* as a junior synonym of *C. astartoides*, though EGOROVA (1982) reported it as a valid species. In this study we only considered *C. antarctica* in the synonymy of *C. astartoides*, following DELL (1990) who examined many specimens from several localities.

**Distribution:** Weddell Sea (SOOT-RYEN, 1951; HAIN, 1990), South Sandwich (DELL, 1990), South Georgia (SOOT-RYEN, 1951; CARCELLES, 1953; DELL, 1990), South Orkney (DELL, 1990) and South Shetland Islands (SOOT-RYEN, 1951; DELL, 1990; this study), Western Antarctic Peninsula (LAMY, 1906b; LAMY, 1911a; DELL, 1990; this study), Bellingshausen Sea to off Thurston Island (new records), Beagle Channel and Magellanic Area (GRIFFITHS *ET AL.*, 2003), Ross Sea (SMITH, 1902; SMITH, 1907b; HEDLEY, 1911; SMITH, 1915; DELL, 1990) to 163° E (SMITH, 1915), Balleny and Macquarie Islands (DELL, 1990), Terre Adélie (POWELL, 1958), Wilkes Land (DELL, 1990), Shackleton Ice Shelf (HEDLEY, 1916) to Davis Sea (THIELE, 1912; EGOROVA, 1982), Heard Island (SMITH, 1885) to Kerguelen Islands (SMITH, 1885; THIELE AND JAECKEL, 1931; POWELL, 1957; DELL, 1990; TRONCOSO *ET AL.*, 2001), Amery Ice Shelf (NUMANAMI *ET*

*AL.*, 1996), Mac Robertson to Enderby Land (POWELL, 1958), Syowa (NUMANAMI *ET AL.*, 1996), 24° E (OKUTANI, 1986) and cited *ca.* 10° E (GRIFFITHS *ET AL.*, 2003), and Bouvet Island (SOOT-RYEN, 1951; LINSE, 2006); from 2 m (HAIN, 1990) to 3248 m (DELL, 1990).

#### Family GALEOMMATIDAE Gray, 1840

#### Genus *Mysella* Angas, 1877

#### *Mysella antarctica* (Smith, 1907) (Figs. 104-105)

*Tellimya antarctica* Smith, 1907b: 3, pl. 2, figs. 16-16b; 1915: 78.

*Mysella antarctica*: Soot-Ryen, 1951: 33; Dell, 1964: 216, fig. 3 (N°12, 19); Dell, 1990: 42, figs. 78-79; Linse, 1997: 56.

**Material studied:** 2 spm. (1.1 × 1.0 - 2.2 × 1.8 mm), PA41; 1 spm. (1.9 × 1.4 mm), PA42; 3 spm. (2.1 × 1.7 - 2.8 × 2.1 mm), DEC.

**Remarks:** The specimens agree with the original description of SMITH (1907b),

with strong and short teeth, globose form and well defined umbo due to the concavity of the dorsal-posterior margin; however, they do not agree with the specimens figured by DELL (1990, figs. 78-79), whose teeth are long and narrow and the dorsal-posterior and anterior margins straighter. Several species have been described from the neighboring areas; in

this sense, *M. ovalis* (Thiele, 1912) is very similar, though according to the original figures it is less elongated and it has a less concave dorsal-posterior margin. *M. gibbosa* (Thiele, 1912) has the hinge with

small and subequal teeth and the dorsal-posterior margin almost straight. *M. narchii* Dias-Passos and Domaneschi, 2006 differs in having a very long anterior tooth and a shorter posterior.

*Distribution:* South Shetland Islands (DELL, 1990; this study) and Western Antarctic Peninsula (new record), Beagle Channel (LINSE, 1997), Ross Sea (SMITH, 1907b; SMITH, 1915; DELL, 1990) and Wilkes Land (DELL, 1990); from 29 m (DELL, 1990) to 1272 m (new record).

*Mysella gibbosa* (Thiele, 1912) (Figs. 106-107)

*Tellimya gibbosa* Thiele, 1912: 230, pl. 18, figs. 12-12a.

*Mysella gibbosa*: Soot-Ryen, 1951: 33; Egorova, 1982: 71, figs. 307-308; Dell, 1990: 45, figs. 74-75.

**Material studied:** 3 spm. (1.6 x 1.1 - 3.9 x 3.1 mm), MB36.

*Remarks:* Hinge of the right valve with two, short subequal teeth. The

teeth of the hinge and the shape of the shell differ from similar species (see above the remarks on *M. antarctica*).

*Distribution:* Bellingshausen Sea (new record), Ross Sea (DELL, 1990), Davis Sea (THIELE, 1912; EGOROVA, 1982) and Mac Robertson Land (DELL, 1990); from 64 to 752 m (DELL, 1990).

Genus *Pseudokellya* Pelseneer, 1903

*Pseudokellya cardiformis* (Smith, 1885) (Fig. 108)

*Kellya cardiformis* Smith, 1885: 202, pl. 11, figs. 6-6b.

*Pseudokellya cardiformis*: Pelseneer, 1903: 48; Lamy, 1911a: 20; Thiele and Jaeckel, 1931: 223; Soot-Ryen, 1951: 28; Powell, 1957: 122; Dell, 1964: 199, pl. 6, figs. 3-4; 1990: 40, figs. 66-67; Hain,

1990: 98, pl. 15, figs. 3a-b; Troncoso *et al.*, 2001: 107, fig. 34.

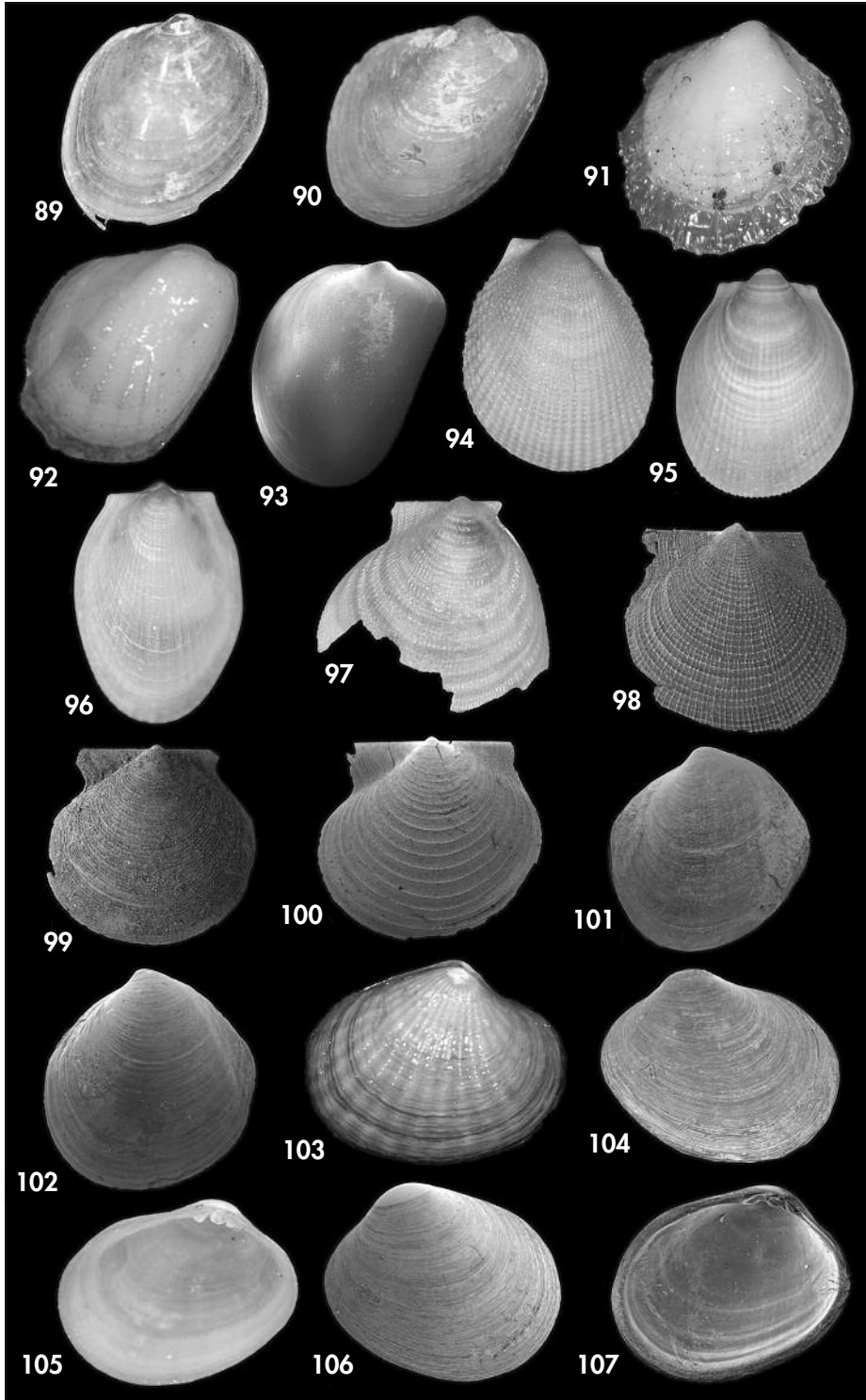
*Pseudokellya stillwelli* Hedley, 1916: 31, pl. 3, figs. 38-39; Soot-Ryen, 1951: 28; Dell, 1964: 200; Nicol, 1966: 56, pl. 6, fig. 3, pl. 7, fig. 4; Egorova, 1982: 72, figs. 326-327.

**Material studied:** 1 spm. (4.1 x 4.1 mm), PA21.

*Remarks:* NICOL (1966) and DELL (1990) suggested that *P. stillwelli* Hedley, 1916 is part of the variability of this species regarding the strength of sculpture, and is, therefore, a synonym.

(Right page) Figure 89. *Adacnarca nitens*, 4.2 x 3.8 mm, PA21. Figure 90. *Lissarca notorcadensis*, 7.0 x 6.6 mm, PA21. Figure 91. *Philobrya sublaevis*, 10.5 x 11.0 mm, PI8. Figure 92. *Philobrya wandelensis*, 3.2 x 2.5 mm, PA20. Figure 93. *Dacrydium albidum*, 2.6 x 3.2 mm, MB30. Figure 94. *Limatula hodgsoni*, 11.5 x 9.3 mm, PA20. Figure 95. *Limatula pygmaea*, 6.2 x 4.6 mm, PA20. Figure 96. *Limatula simillima*, 6.8 x 4.8 mm, MB31. Figure 97. *Hyalopecten pudicus*, 16.5 x 17.0 mm, MB38. Figure 98. *Cycloclamys gaussianus*, 2.5 x 2.3 mm, PA39. Figure 99. *Cyclopecten notalis*, 6.7 x 6.4 mm, MB38. Figure 100. *Cyclopecten pteriola*, 4.6 x 4.2 mm, MB36. Figure 101. *Genaxinus debilis*, 2.3 x 2.3 mm, PI7. Figure 102. *Thyasira bongraini*, 3.6 x 3.8 mm, PA22. Figure 103. *Cyclocardia astaroides*, 20.5 x 16.3 mm, PA20. Figures 104, 105. *Mysella antarctica*, 2.7 x 2.1 mm, DEC. Figures 106, 107. *Mysella gibbosa*, 3.0 x 2.4 mm, MB36.

(Página derecha) Figuras 89-107. Ver los nombres científicos en el rótulo en inglés.



*Distribution:* Weddell Sea (HAIN, 1990), South Sandwich and South Georgia Islands, Burdwood Bank, Falkland/Malvinas and South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (LAMY, 1911a; DELL, 1990; this

study), Ross Sea (DELL, 1990), Macquarie Island (CARCELLES, 1953), Terre Adélie (HEDLEY, 1916), Davis Sea (HEDLEY, 1916; EGOROVA, 1982), Kerguelen Islands (SMITH, 1885; THIELE AND JAECKEL, 1931; POWELL, 1957; TRONCOSO *ET AL.*, 2001) and cited for Marion and Prince Edward Islands (CARCELLES, 1953); from 20 m (POWELL, 1957) to 710 m (DELL, 1990).

Family CYAMIIDAE Philippi, 1845

Genus *Cyamiocardium* Soot-Ryen, 1951

*Cyamiocardium denticulatum* (Smith, 1907) (Fig. 109)

*Cyamiocardium denticulatum* Smith, 1907b: 3, pl. 3, figs. 4, 4b; Lamy, 1911a: 19; Melvill and Standen, 1912: 363.

*Cyamiocardium denticulatum*: Powell, 1951: 116; Soot-Ryen, 1951: 26; Powell, 1957: 116; 1958: 175; Dell, 1964: 203; Arnaud, 1973: 558; Dell, 1990: 50, figs. 80-83; Hain, 1990: 95, pl. 14, figs. 6a-b; Linse, 1997: 56.

**Material studied:** 1 spm. (broken), MB4; 292 spm. (2.0 x 1.9 - 5.7 x 5.5 mm), PI5; 2 spm. (3.0 x 2.9 - 3.1 x 3.0 mm), PI7; 153 spm. (2.1 x 1.9 - 5.0 x 4.9 mm), PI8; 1 spm. (broken), PA21; 6 spm. (1.5 x 1.4 - 2.0 x 2.0 mm), PA41; 4 spm. (1.1 x 1.1 - 1.8 x 1.7 mm), PA42; 1 spm. (2.1 x 2.0 mm), PA43.

*Remarks:* Other similar species in Antarctic and Sub-Antarctic waters are *Perrierina crassilabrum* Dell, 1964, *C. dahlia* Soot-Ryen,

1957 and *C. rotundatum* (Thiele, 1912), which differ by having more prominent radial sculpture (*P. crassilabrum* and *C. rotundatum*), or by its equilateral shape with central umbo (*C. dahlia*). *C. denticulatum* exhibits more prominent growth lines, a fainter radial sculpture and a subcentral umbo.

*Distribution:* Weddell Sea in 23-573 m (HAIN, 1990), South Orkney (Dell, 1990) and Falkland / Malvinas Islands (MELVILL AND STANDEN, 1912), Burdwood Bank (MELVILL AND STANDEN, 1912; DELL, 1990) and South Atlantic Ocean (54° S, 64° W) (DELL, 1990), Beagle Channel (LINSE, 1997), Tierra del Fuego Island, South Shetland Islands (DELL, 1990) and Western Antarc-

tic Peninsula (LAMY, 1911a; DELL, 1990; this study), Peter I Island (SOOT-RYEN, 1951; this study), off Thurston Island (new record), Ross Sea (SMITH, 1907b; DELL, 1990), *ca.* Terre Adélie (GRIFFITHS *ET AL.*, 2003), Davis Sea (DELL, 1990), Kerguelen Islands (POWELL, 1957), Mac Robertson to Enderby Land (POWELL, 1958) and Bouvet Island (SOOT-RYEN, 1951; LINSE, 2006); from 5 m (DELL, 1990) to 1272 m (new record). Despite its widespread distribution, it has not been cited in the South Georgia and South Sandwich Islands (DELL, 1990).

Genus *Cyamiomacra* Bernard, 1897

*Cyamiomacra laminifera* (Lamy, 1906) (Fig. 110)

*Macra laminifera* Lamy, 1906a: 45.

*Cyamiomacra laminifera*: Lamy, 1906b: 11, pl. 1, figs. 10-12; 1911a: 18; Soot-Ryen, 1951: 28; Dell, 1964: 202, pl. 6, fig. 9-10; Nicol,

1966: 51, pl. 7, figs. 1, 7-8; Dell, 1990: 50, fig. 100.

*Cyamiomacra laminifera*: Thiele, 1912: 270.

*Diplodonta incerta* Smith, 1907b: 4, pl. 3, figs. 5-5a.

*Cyamiomactra robusta* Nicol, 1964: 60, pl. 6, figs. 1-3; 1966: 53, pl. 8, figs. 1, 6-7; Hain, 1990: 95, pl. 14, figs. 5a-b.

**Material studied:** 1 spm. (5.6 × 4.1 mm), PI8; 1 spm. (6.3 × 5.0 mm), PA20; 1 spm. (10.0 × 7.1 mm), MAR.

**Remarks:** The synonymy of *Cyamiomactra robusta* Nicol, 1964 was suggested by DELL (1990) based on the

variability of the postero-ventral rib, the same as *Diplodonta incerta* Smith, 1907, whose synonymy was accepted before.

**Distribution:** Weddell Sea (HAIN, 1990), South Sandwich (SOOT-RYEN, 1951), South Georgia (DELL, 1990) and South Orkney Islands (CARCELLES, 1953), South Atlantic Ocean (51° S, 44° W) and Falkland/Malvinas Islands (DELL, 1990), South Shetland Islands (LAMY, 1911a; SOOT-RYEN, 1951; DELL, 1990) and Western Antarctic Peninsula (LAMY, 1906b; LAMY, 1911a; DELL, 1990; this study), Bellingshausen Sea (DELL, 1990), Peter I Island (SOOT-RYEN, 1951; this study) and Ross Sea (SMITH, 1907b; DELL, 1990); from 15 to 1281 m (DELL, 1990).

Subclass ANOMALODESMATA Dall, 1889

Order PHOLADOMYIDA Newell, 1965

Family LYONSIIDAE Fischer, 1887

Genus *Lyonsia* Turton, 1822

*Lyonsia arcaeformis* Martens, 1885 (Fig. 111)

*Lyonsia arcaeformis* Martens, 1885: 94; Martens and Pfeffer, 1886: 113, pl. 4, fig. 1; Dell, 1964: 226; Nicol, 1966: 69, pl. 9, figs. 1, 3, 9; Dell, 1972: 27, fig. 28; 1990: 63, figs. 116-117; Hain, 1990: 100, pl. 15, figs. 6a-b.

*Entodesma arcaeformis*: Soot-Ryen, 1951: 21.

*Lyonsiella planulata* Thiele, 1912: 232, pl. 18, figs. 27-27a; Soot-Ryen, 1951: 22; Powell, 1958: 178; Egorova, 1982: 68, figs. 300-301.

*Lyonsia planulata*: Nicol, 1966: 69, pl. 9, figs. 1, 3, 9.

*Pholadomya mawsoni* Hedley, 1916: 28, pl. 3, figs. 29-30; Soot-Ryen, 1951: 21; Nicol, 1966: 71.

**Material studied:** 1 spm. (11.1 × 7.0 mm), PA39; 3 spm. (5.2 × 3.6 - 10.9 × 6.0 mm), DEC.

**Remarks:** DELL (1964) included *Pholadomya mawsoni* Hedley, 1916 as a junior synonym, and DELL (1972) *Lyonsia planulata* (Thiele, 1912). According to POWELL (1960) the specimen of *Entodesma cuneata* (Gray, 1828) from

Falkland/Malvinas Islands reported by MELVILL AND STANDEN (1907, p. 151) corresponds to *L. arcaeformis*.

**Distribution:** Weddell Sea (HAIN, 1990), South Sandwich (DELL, 1990), South Georgia (MARTENS AND PFEFFER, 1886; DELL, 1990), South Orkney (DELL, 1990) and probably in the Falkland/Malvinas Islands (POWELL, 1960) and Burdwood Bank (CARCELLES, 1953), South Shetland Islands and Western Antarctic Peninsula (DELL, 1990; this study), Amundsen Sea (70° S, 106° W) (DELL, 1990), Ross Sea (DELL, 1972, 1990), Terre Adélie, Shackleton Ice Shelf (HEDLEY, 1916) and Davis Sea (THIELE, 1912; EGOROVA, 1982), Enderby Land (POWELL, 1958) and Bouvet Island (LINSE, 2006); from 12 to 1812 m (DELL, 1990).

Family POROMYIDAE Dall, 1886

Genus *Poromya* Forbes, 1844

*Poromya adelaidis* (Hedley, 1916)

(Fig. 112)

1958: 178; Dell, 1964: 227; Egorova, 1982: 67, figs. 294-296.

*Poromya adelaidis*: Dell, 1990: 61, figs. 107-108.

*Poromya cf. adelaides* (sic): Hain, 1990: 102, pl. 16, fig. 1.

*Pholadomya adelaidis* Hedley, 1916: 28, pl. 3, figs. 31-32; Soot-Ryen, 1951: 21; Powell,

**Material studied:** 2 spm. (18.9 x 13.4 - 21.0 x 14.3 mm), PA43; 3 spm. (23.1 x 17.0 - 28.1 x 19.8 mm), LOW; 1 spm. (22.1 x 17.4 mm), DEC.

**Remarks:** DELL (1990, p. 61) comments that the relationship between *P. adelaidis*, *P. spinosula* (Thiele, 1912) and *P. antarctica* (Hedley, 1916) is still not clear.

**Distribution:** Weddell Sea (HAIN, 1990), South Georgia and Falkland/ Malvinas Islands, Cape Horn, South Shetland Islands (DELL, 1990; this study), Western Antarctic Peninsula (new record), Ross Sea (DELL, 1990), Terre Adélie, Shackleton Ice Shelf (HEDLEY, 1916), Davis Sea (EGOROVA, 1982) and Enderby Land (POWELL, 1958); from 110 m (HAIN, 1990) to 2154 m (DELL, 1990).

Family LATERNULIDAE Hedley, 1918

Genus *Laternula* Röding 1798

*Laternula elliptica* (King and Broderip, 1832) (Fig. 113)

*Anatina elliptica* King and Broderip, 1832: 335; Smith, 1885: 76; Smith, 1902: 210, pl. 25, figs. 9-10; Lamy, 1906b: 14; Melvill and Standen, 1907: 151; Smith, 1907b: 1, pl. 3, fig. 3; Hedley, 1911: 3; Lamy, 1911a: 21; Thiele, 1912: 256; Smith, 1915: 78; Thiele and Jaeckel, 1931: 244.

*Laternula elliptica*: Hedley, 1916: 27; Soot-Ryen, 1951: 22; Powell, 1957: 120; Dell, 1964: 229; Nicol, 1966: 74, pl. 10, figs. 1, 4, 7; Arnaud, 1973: 559; Egorova, 1982: 68, figs. 297-299; Okutani, 1986: 279, pl. 2, figs.

20-21; Dell, 1990: 62, fig. 106; Branch *et al.*, 1991: 51 (key); Numanami *et al.*, 1996: 212 (table, text), pl. 4, fig. 9; Troncoso *et al.*, 2001: 110, fig. 41.

**Material studied:** 1 spm. (33.0 x 18.0 mm), PI5; 1 spm. (12.0 x 7.3 mm), LOW; 3 spm. (20.5 x 11.5 - 46.0 x 29.1 mm), DEC.

**Distribution:** Cited for the Weddell Sea (GRIFFITHS *ET AL.*, 2003), South Sandwich (SOOT-RYEN 1951, DELL 1990), South Georgia (CARCELLES, 1953; DELL,

1990) and South Orkney Islands (MELVILL AND STANDEN, 1907; DELL, 1990), Eastern Antarctic Peninsula (DELL, 1990), South Shetland Islands (LAMY, 1911a; SOOT-RYEN 1951; DELL, 1990; this study), Western Antarctic Peninsula (LAMY, 1906b, 1911a; DELL, 1990) and Peter I Island (SOOT-RYEN, 1951; this study), Ross Sea (SMITH, 1902, 1907b; HEDLEY, 1911; SMITH, 1915; DELL, 1990), Commonwealth (HEDLEY, 1916), Wilkes Land (GRIFFITHS *ET AL.*, 2003), Davis Sea (EGOROVA, 1982), Kerguelen Islands (SMITH, 1885; THIELE, 1912; THIELE AND JAECKEL, 1931; POWELL, 1957; TRONCOSO *ET AL.*, 2001), Marion and Prince Edward Islands (BRANCH *ET AL.*, 1991), Syowa (NUMANAMI *ET AL.*, 1996) and ca. 10° E (GRIFFITHS *ET AL.*, 2003); from 1 m (TRONCOSO *ET AL.*, 2001) to 508 m (DELL, 1990).

Family THRACIIDAE Stoliczka, 1870

Genus *Thracia* Leach in Blainville, 1824

*Thracia meridionalis* Smith, 1885 (Fig. 114)



*Thracia meridionalis* Smith, 1885: 68, pl. 6, figs.

4-4b; Lamy, 1906b: 15; Smith, 1907b: 1; Hedley, 1911: 3; Lamy, 1911a: 22; Smith, 1915: 78; Hedley, 1916: 29; Soot-Ryen, 1951: 21; Powell, 1958: 178; Nicol, 1966: 71, pl. 10, figs. 2, 5; Arnaud, 1973: 559; Egorova, 1982: 69, figs. 304-306; Okutani, 1986: 279 (table), pl. 2, fig. 15; Dell, 1990: 63, figs. 109-111; Hain, 1990: 101, pl. 15, figs. 7a-b; Branch *et al.*, 1991: 51 (key); Linse, 1997: 61; Troncoso *et al.*, 2001: 112, fig. 42.

*Mysella? truncata* Thiele, 1912: 230, pl. 18, fig. 18.

*Mysella? frigida* Thiele, 1912: 231, pl. 18, fig. 19.

**Material studied:** 3 spm. (5.7 × 4.6 - 8.1 × 6.0 mm), PA21; 2 spm. (22.0 × 16.3 - 23.8 × 18.2 mm), LOW; 20 spm. (2.9 × 2.4 - 23.0 × 19.1 mm), DEC.

**Remarks:** The synonymy of THIELE'S (1912) *Mysella? truncata* and *Mysella? frigida* were accepted in many previous works (see DELL, 1990).

**Distribution:** Weddell Sea (SOOT-RYEN, 1951; HAIN, 1990), South Sandwich (DELL, 1990), South Georgia (CARCELLES, 1953; DELL, 1990) and cited for the South Orkney Islands (LINSE, 1997), Falkland/Malvinas Islands, South

Atlantic Ocean (54° S, 64° W), Cape Horn (DELL, 1990) and Beagle Channel (LINSE, 1997), South Shetland Islands (LAMY, 1911a; SOOT-RYEN, 1951; DELL, 1990; this study) and Western Antarctic Peninsula (LAMY, 1906b, 1911a; SOOT-RYEN, 1951; DELL, 1990; this study), Ross Sea (SMITH, 1907b; HEDLEY, 1911; SMITH, 1915; DELL, 1990), Terre Adélie, Shackleton Ice Shelf (HEDLEY, 1916) to Davis Sea (THIELE, 1912; EGOROVA, 1982), Kerguelen Islands (SMITH, 1885; TRONCOSO *ET AL.*, 2001), Mac Robertson to Enderby Land (POWELL, 1958), Marion and Prince Edward Islands (SMITH, 1885; BRANCH *ET AL.*, 1991), 24° E (OKUTANI, 1986) and *ca.* 10° E (GRIFFITHS *ET AL.*, 2003); from 4 to 836 m (DELL, 1990).

#### Family CUSPIDARIIDAE Dall, 1886

##### Genus *Cuspidaria* Nardo, 1840

##### *Cuspidaria infelix* Thiele, 1912 (Fig. 115)

*Cuspidaria infelix* Thiele, 1912: 233, pl. 18, fig. 28; Hedley, 1916: 29; Thiele and Jaeckel, 1931: 255; Soot-Ryen, 1951: 23; Dell, 1964: 230; Nicol, 1966: 78, pl. 9, fig. 6; Egorova, 1982: 74, figs. 334-336; Dell, 1990: 68, figs. 112-114; Hain, 1990: 103, pl. 16, figs. 3a-f; Egorova, 1993: 153, pl. 1, figs. 2-6; Linse, 1997: 62.

**Material studied:** 1 spm. (broken), MB2; 24 spm. (4.3 × 2.9 - 10.0 × 6.9 mm), PI5; 3 spm. (6.0 × 3.7 - 27.1 × 17.0 mm), PI7; 13 spm. (4.4 × 3.0 - 9.2 × 6.1 mm), PI8; 1 spm. (16.3 × 8.1 mm), MB9;

2 spm. (4.0 × 2.6 - 12.7 × 7.8 mm), PA21; 1 spm. (7.1 × 4.1 mm), PA24; 2 spm. (13.9 × 8.5 - 16.5 × 10.1 mm), MB31; 3 spm. (6.0 × 3.7 - 17.9 × 10.9), MB34; 9 spm. (2.0 × 1.3 - 7.3 × 4.6 mm), MB36.

**Remarks:** EGOROVA (1993) studied the Antarctic species of cuspidariids; in this sense, *C. tenella* Smith, 1907, differs in being a larger, more globose species, having a posterior rostrum which is narrower and shorter. *Cuspidaria smirnovi*

Egorova, 1998 differs in having more marked growth lines and a shorter and less marked rostrum.

**Distribution:** Weddell Sea (HAIN, 1990), cited for the South Georgia and South Orkney Islands (LINSE, 1997), South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (DELL, 1990; this study), Peter I Island (SOOT-RYEN, 1951; this study) and Bellingshausen Sea to off Thurston Island (new records), Beagle Channel (LINSE, 1997), Ross Sea (DELL, 1990), Terre Adélie (GRIFFITHS *ET AL.*, 2003), Shackleton Ice Shelf

(HEDLEY, 1916), Davis Sea (THIELE, 1912; EGOROVA, 1982) and Bouvet Island (THIELE AND JAECKEL, 1931; LINSE, 2006);

from 60 m (HAIN, 1990) to 1426 m (new record).

*Cuspidaria minima* (Egorova, 1993)

(Fig. 116)

*Subcuspidaria minima* Egorova, 1993: 164, pl. 3, figs. 2-3.

*Cuspidaria minima*: Zelaya and Ituarte, 2005: 173, figs. 16-27.

**Material studied:** 1 spm. (3.0 × 2.1 mm), PI5; 4 spm. (1.5 × 1.1 - 1.9 × 1.3 mm), PA42; 2 spm. (1.5 × 1.0 - 2.3 × 1.8 mm), PA43; 1 spm. (3.0 × 2.1 mm), LOW.

**Remarks:** ZELAYA AND ITUARTE (2006) established the differences between the Antarctic species of *Cuspidaria* that share

the characteristic of marked lamellae. In this sense, the similar species *C. kerguelenensis* (Smith, 1885) and *C. concentrica* Thiele, 1912 differ in having less spaced lamellae, the dorsal margin of the rostrum almost concave and a postero-ventral margin which is more concave than in *C. minima*. *Cuspidaria plicata* Thiele, 1912 differs in having no lamellose concentric sculpture.

**Distribution:** South Orkney (EGOROVA, 1993) and South Shetland Islands (ZELAYA AND ITUARTE, 2005; this study), Western Antarctic Peninsula, Peter I Island (new records) and Wilkes Land (EGOROVA, 1993); from 115 to 1272 m (new records).

Genus *Myonera* Dall and Smith,  
1886

*Myonera fragilissima* (Smith, 1885)  
(Fig. 117)

*Naera fragilissima* Smith, 1885: 53, pl. 9, figs. 1-1b.

*Cuspidaria fragilissima*: Pelseeneer, 1903: 28.

*Myonera fragilissima*: Soot-Ryen, 1951: 23; Branch *et al.*, 1991: 51 (key).

**Material studied:** 1 spm. (broken), MB14; 2 spm. (1.4 × 0.8 - 2.9 × 1.8 mm), PI27.

**Distribution:** Bellingshausen Sea (PELSENEER, 1903; this study) to Peter I Island (new record), Marion (BRANCH *ET AL.*, 1991) and Prince Edward Islands (SMITH, 1885), also in Kerguelen Islands (CARCELLES, 1953); from 498 to 1873 m (new records).

Class SCAPHOPODA Bronn, 1862  
Order DENTALIIDA da Costa, 1776  
Family DENTALIIDAE Gray, 1834  
Genus *Dentalium* Linné, 1758

*Dentalium majorinum* Mabile and Rochebrune, 1889 (Fig. 118)

*Dentalium majorinum* Mabile and Rochebrune, 1889: 100, pl. 4, fig. 10; Plate, 1908b: 1; Smith, 1915: 74; Hedley, 1916: 67, pl. 9, figs. 104-105; Dell, 1964: 123; Arnaud, 1973: 554; Linse, 1997: 42; Steiner and Linse, 2000: 17, figs. 3, 8, 10 (radula); Steiner and Kabat, 2004: 593, 596, 612, 613.

*Fissidentalium majorinum*: Dell, 1990: 72; Osorio and Reid, 2004: 84, fig. 2f.

*Dentalium majorinum* var. *magellanicum* Pilsbry and Sharp, 1897: 27, pl. 12, figs. 95-97.

*Dentalium magellanicum*: Powell, 1958: 207.

*Dentalium majorinum* var. *gaussianum* Plate, 1908b: 5, figs. 1-4.

*Dentalium shoplandi* Jousseume: Melville and Standen, 1907: 143; Lamy, 1910a: 324; 1911a: 16 (no Jousseume, 1894).

**Material studied:** 1 spm. (27.9 × 2.8 × 0.8 mm), MB1; 2 spm. (5.0 × 1.1 × 0.8 - 10.7 × 1.9 × 0.8 mm),

MB2; 21 spm. (12.5 × 2.0 × 0.7 - 35.5 × 3.9 × 1.0 mm), PI7; 2 spm. (15.0 × 2.9 × 2.3 - 16.9 × 2.2 ×

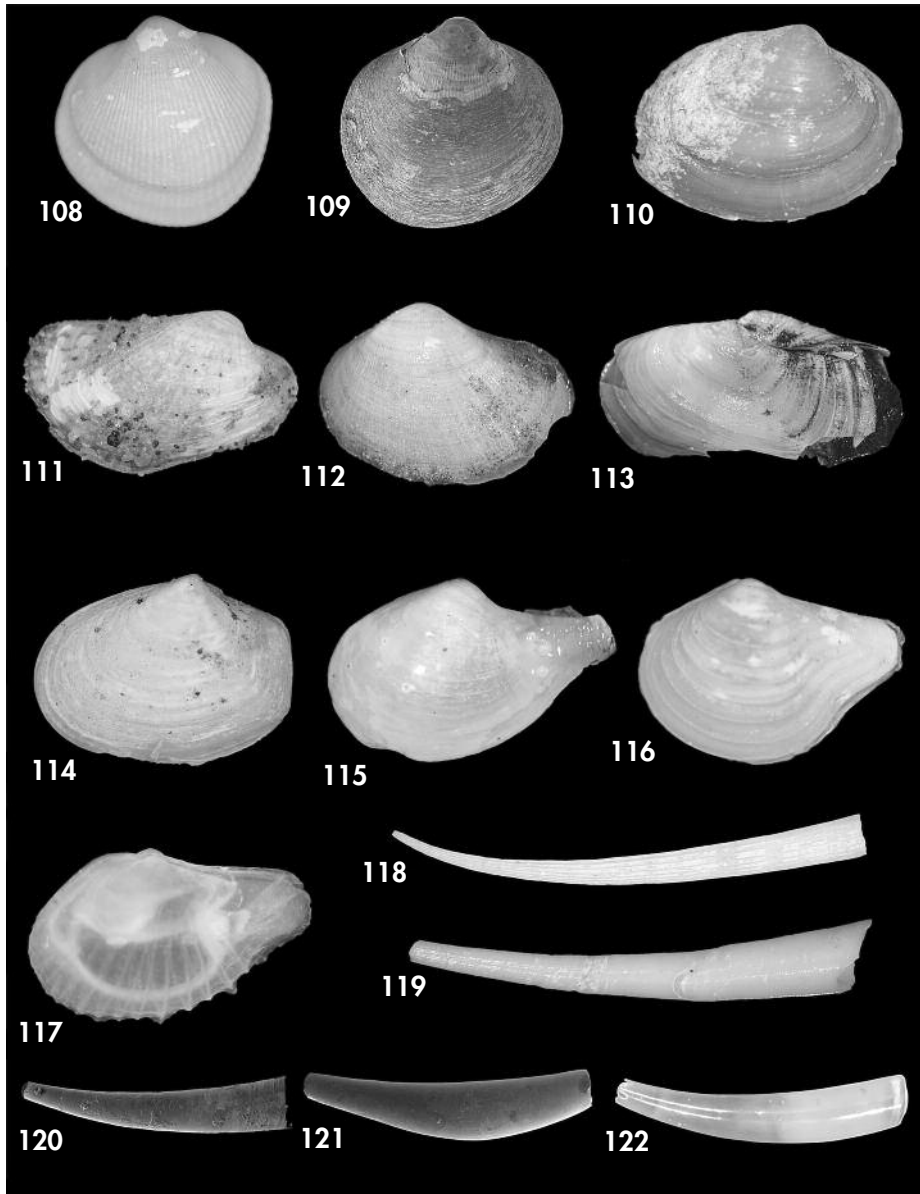


Figure 108. *Pseudokellya cardiformis*, 4.1 x 4.1 mm, PA21. Figure 109. *Cyamiocardium denticulatum*, 4.3 x 4.2 mm, PI8. Figure 110. *Cyamiomactra laminifera*, 6.3 x 5.0 mm, PA20. Figure 111. *Lyonsia arcaiformis*, 7.1 x 4.2 mm, DEC. Figure 112. *Poromya adelaidis*, 28.1 x 19.8 mm, LOW. Figure 113. *Laternula elliptica*, 33.0 x 18.0 mm, PI5. Figure 114. *Thracia meridionalis*, 8.1 x 6.0 mm, PA21. Figure 115. *Cuspidaria infelix*, 12.7 x 7.8 mm, PA21. Figure 116. *Cuspidaria minima*, 3.0 x 2.1 mm, PI5. Figure 117. *Myonera fragilissima*, 2.9 x 1.8 mm, PI27. Figure 118. *Dentalium majorinum*, 23.2 x 2.0 x 0.6 mm, MB9. Figure 119. *Rhabdus* cf. *perceptus*, 26.0 x 3.9 x 1.3 mm, MB17. Figure 120. *Striopulsellum minimum*, 3.4 x 0.6 x 0.3 mm, PI28. Figure 121. *Cadulus thielei*, 4.0 x 0.7 x 0.4 mm, MB33. Figure 122. *Siphonodentalium dalli*, 14.2 x 2.6 x 1.3 mm, PI7. *Figuras 108-122. Ver los nombres científicos en el rótulo en inglés.*

0.8 mm), PI8; 51 spm. (8.9 × 1.8 × 0.7 - 31.8 × 2.6 × 0.7 mm), MB9; 1 spm. (26.1 × 3.0 × 0.8 mm), MB10; 2 spm. (10.0 × 1.4 × 0.8 - 19.8 × 2.0 × 0.8); MB11; 18 spm. (11.4 × 1.4 × 0.5 - 36.5 × 3.8 × 1.0 mm), MB13; 5 spm. (13.6 × 1.6 × 0.5 - 24.0 × 2.7 × 1.0 mm), MB14; 2 spm. (12.0 × 1.7 × 0.8 - 12.1 × 1.8 × 0.8 mm), PA19; 1 spm. (16.1 × 3.0 × 1.7 mm), MB26; 1 spm. (16.0 × 3.0 × 1.5 mm), MB30; 2 spm. (7.2 × 1.0 × 0.4 - 12.8 × 1.8 × 0.8 mm), MB31; 1 spm. (23.7 × 3.7 × 1.4 mm), MB32; 1 spm. (20.6 × 2.5 × 0.7 mm), MB33; 2 spm. (5.8 × 1.7 × 1.1 - 7.0 × 1.8 × 1.2 mm), MB34; 4 spm. (8.2 × 3.0 × 2.6 - 12.1 × 1.8 × 0.8 mm), MB35; 27 spm. (13.5 × 1.8 × 0.8 - 25.5 × 2.2 × 0.6 mm), MB36; 4 spm. (9.2 × 1.5 × 0.7 - 15.6 × 3.0 × 1.8 mm), MB37;

9 spm. (6.3 × 1.3 × 0.8 - 20.3 × 2.0 × 0.7 mm), MB38; 2 spm. (26.1 × 3.6 × 0.7 - 27.1 × 3.2 × 0.7 mm), PA39.

*Remarks:* STEINER AND LINSE (2000) revised the group in the Magellanic Region and validated the synonyms, including *Dentalium majorinum grahamense* Odhner, 1931. STEINER AND KABAT (2004) gave a complete list of synonyms of this species.

*Distribution:* Weddell Sea (MELVILL AND STANDEN, 1907; DELL, 1990), Falkland/Malvinas Islands (DELL, 1990), Cape Horn (MABILLE AND ROCHEBRUNE,

1889), Beagle Channel (LINSE, 1997), Magellan Strait and Tierra del Fuego Island (DELL, 1990), reaching the South Pacific coast (44° S - 45° S, South Chile) (OSORIO AND REID, 2004), South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (LAMY, 1911a; Odhner 1931 in POWELL, 1960; DELL, 1990; this study), Bellingshausen Sea (LAMY, 1911a; DELL, 1990; this study) to off Thurston Island and Peter I Island (new records), Ross Sea and Balleny Islands (DELL, 1990), 163° E (SMITH, 1915), Terre Adélie to Wilkes Land (HEDLEY, 1916; POWELL, 1958), Shackleton Ice Shelf (HEDLEY, 1916; DELL, 1990), Davis Sea (PLATE, 1908b; POWELL, 1958) and from Amery Ice Shelf to Enderby (POWELL, 1958); from 24 m (DELL, 1990) to 2579 m (MELVILL AND STANDEN, 1907).

Family RHABDIDAE Chistikov, 1975  
Genus *Rhabdus* Pilsbry and Sharp, 1897

*Rhabdus* cf. *perceptus* (Mabille and Rochebrune, 1889) (Fig. 119)

*Dentalium perceptum* Mabille and Rochebrune, 1889: 99; Dell, 1964: 124; Linse, 1997: 42.

*Rhabdus perceptum*: Steiner and Linse, 2000: 18, fig. 4, 11, 13 (radula); Osorio and Reid, 2004: 84, fig. 2g.

*Rhabdus perceptus*: Steiner and Kabat, 2004: 628.

**Material studied:** 1 sh. (30.1 × 3.7 × 2.1 mm), PI7; 2 spm. (42.5 × 4.5 × 1.0 - 43.2 × 4.7 × 1.1 mm), MB12; 1 spm. and 1 sh. (18.7 × 5.0 × 3.9 - 26.0 × 3.9 × 1.3 mm), MB17; 7 spm. (6.8 × 1.3 × 0.8 - 45.8 × 5.8 × 1.2 mm), MB26; 9 spm. (18.5 × 3.0 × 1.3 - 41.4 × 4.5 × 1.3 mm), MB30; 22 spm. (26.1 × 3.0 × 1.0 - 49.8 × 5.8 × 1.1 mm), MB32.

*Remarks:* The individuals studied in BENTART expeditions were conferred to this species, because they are thicker than that used for the original description and than those from STEINER AND LINSE (2000), also they are out of the distributional range.

*Distribution:* Cape Horn (MABILLE AND ROCHEBRUNE, 1889), Beagle Channel (LINSE, 1997), reaching 41° S in the South Pacific coast (CÁRDENAS ET AL., in press); from 80 to 993 m (CÁRDENAS ET AL., in press).

Order GADILIDA Starobogatov, 1974

Family PULSELLIDAE Scarabino in Boss, 1982

Genus *Striopulsellum* Scarabino,

1995

*Striopulsellum minimum* (Plate,

1908) (Fig. 120)

*Siphonodentalium minimum* Plate, 1908b: 4, fig. 5; Dell, 1990: 74.*Striopulsellum minimum*: Steiner and Kabat, 2004: 617.

**Material studied:** 37 spm. (2.1 × 0.4 × 0.1 - 4.7 × 0.9 × 0.4 mm), PI27; 3 spm. (3.3 × 0.8 × 0.2 - 4.0 × 0.9 × 0.3 mm), PI28; 11 spm. (1.8 × 0.4 × 0.2 - 4.9 × 0.8 × 0.3 mm), MB33; 4 spm. (2.8 × 0.6 × 0.1 - 4.0 × 0.7 × 0.2 mm), MB34; 6 spm. (2.0 × 0.2 × 0.1 - 3.5 × 0.5 × 0.1 mm), MB35; 23 spm. (3.0 × 0.6 × 0.1 - 5.0 ×

0.7 × 0.2 mm), MB36; 3 spm. (4.0 × 0.7 × 0.3 - 4.1 × 0.7 × 0.3 mm), MB38.

**Distribution:** Bellingshausen Sea and Peter I Island (new records), Ross

Sea (DELL, 1990) and Davis Sea (PLATE, 1908b), also in New Caledonia (Scarabino 1995 in STEINER AND KABAT, 2004); from 238 m (DELL, 1990) to 6179 m (Scarabino 1995 in STEINER AND KABAT, 2004).

Family GADILIDAE Stoliczka, 1868

Genus *Cadulus* Philippi, 1844*Cadulus thielei* Plate, 1908 (Fig. 121)*Cadulus thielei* Plate, 1908b: 3, figs. 6-11; Dell, 1990: 73, figs. 120-121; Steiner and Kabat, 2004: 656.**Material studied:** 1 spm. (4.0 × 0.7 × 0.4 mm), MB33; 1 spm. (3.9 × 0.5 × 0.3 mm), PA39.

**Distribution:** Western Antarctic Peninsula and Bellingshausen Sea (new records), Ross Sea (DELL, 1990) and Davis Sea (PLATE, 1908b); from 157 to 438 m (new records).

Genus *Siphonodentalium* Sars, 1859*Siphonodentalium dalli* (Pilsbry and Sharp, 1898) (Fig. 122)

*Cadulus dalli* Pilsbry and Sharp, 1898: 155, pl. 30, figs. 19-23; Plate, 1908b: 4, fig. 12; Powell, 1958: 207.

*Siphonodentalium dalli*: Steiner and Linse, 2000: 21; Steiner and Kabat, 2004: 581.

*Siphonodentalium dalli* f. *dalli*: Steiner and Linse, 2000: 21, figs. 6, 15 (radula).

*Cadulus dalli* var. *antarcticus* Odhner, 1931: 5, pl. 1, figs. 5-7, 9, 11, 13-14, pl. 2, figs. 18-21, 24-25.

*Cadulus dalli antarcticus*: Dell, 1964: 130; Dell, 1990: 73, figs. 118-119.

*Siphonodentalium dalli* f. *antarcticus*: Steiner and Linse, 2000: 23, figs. 7, 14, 16 (radula); Steiner and Kabat, 2004: 563 (synonymy).

**Material studied:** 12 spm. (7.8 × 1.9 × 0.7 - 20.1 × 3.1 × 1.7 mm), PI5; 52 spm. (4.9 × 1.1 × 0.4 - 16.1 × 2.6 × 1.3 mm), PI6; 1 spm. (14.2 × 2.6 × 1.3 mm), PI7; 5 spm. (11.0 × 2.4 × 1.7 - 18.3 × 3.2 × 2.0 mm), PA24; 1 spm. (10.0 × 1.3 × 0.8 mm), MB36.

**Remarks:** STEINER AND LINSE (2000) studied the differences between the samples from the Beagle Channel (named *Siphonodentalium dalli* f. *dalli* (Pilsbry and Sharp, 1898)) and from Antarctica

(named *Siphonodentalium dalli* f. *antarcticus* Odhner, 1931) and they concluded that in spite of significant differences of morphometric characters found in statis-

tical tests, more data are necessary in order to consider them as two subspecies.

*Distribution:* South Pacific Ocean (51° S, 74° W) (PILSBRY AND SHARP, 1898), Magellan Strait (PLATE, 1908b) and Beagle Channel (STEINER AND LINSE, 2000), South Orkney and South Shetland Islands (DELL, 1990), Western Antarctic Peninsula (ODHNER, 1931; DELL, 1990; this study), Bellingshausen Sea (DELL, 1990; this study) and Peter I Island (new record), Ross Sea, Shackleton Ice Shelf and Davis Sea (DELL, 1990), and from the Amery Ice Shelf to the Enderby Land (POWELL, 1958); from 93 m (DELL, 1990) to 1056 m (new record).

### CONCLUSIONS

A total of 3133 individuals belonging to 118 species of molluscs were identified. Seventy-one of these species are gastropods with a total of 571 individuals, forty-two species are bivalves with a total of 2200 individuals and five species are scaphopods, with a total of 362 individuals. Among the gastropods, the most abundant species were *Neobuccinum eatoni* with 89 individuals, followed by *Philine alata* with 88 individuals. Among bivalves, *Genaxinus debilis* with 674 individuals, followed by *Cyamiocardium denticulatum* with 460 individuals, were the most abundant species. Among the scaphopods *Dentalium majorinum* accounted for most individuals with 159.

Of the total cited species, six new records are added for the South Shetland Islands (*Margarella refulgens*, *Torellia insignis*, *Antarctodomus thielei*, *Notoficula bouveti*, *Limopsis enderbyensis* and *Thyasira bongraini*), 30 for the Western Antarctic Peninsula (*Puncturella spirigera*, *Margarella refulgens*, *Cirsonella extrema*, *Dickdellia labioflecta*, *Onoba gelida*, *Powellisetia deserta*, *Torellia mirabilis*, *Torellia planispira*, *Marseniopsis conica*, *Pseudamauroopsis anderssoni*, *Pseudamauroopsis aureolutea*, *Acirsa antarctica*, *Hemiaclis incolorata*, *Melanella antarctica*, *Cerithiopsis antarctica*, *Cerithiopsis austrina*, *Trophon coulmanensis coulmanensis*, *Pareuthria regulus*, *Prosipho reversus*, *Prosipho turritus*, *Belaturricula gaini*,

*Conorbela antarctica*, *Newnesia antarctica*, *Yoldiella profundorum*, *Dacrydium albidum*, *Cycloclamys gaussianus*, *Mysella antarctica*, *Poromya adelaidis*, *Cuspidaria minima* and *Cadulus thielei*), 34 for the Bellingshausen Sea (*Anatoma euglypta*, *Cornisepta antarctica*, *Antimargarita smithiana*, *Calliotropis antarctica*, *Solariella antarctica*, *Liotella endeavourensis*, *Leptocollonia innocens*, *Onoba gelida*, *Pseudamauroopsis aureolutea*, *Falsilunatia delicatula*, *Acirsa antarctica*, *Melanella antarctica*, *Trophon drygalskii*, *Chlanidota signeyana*, *Lusitromina abyssorum*, *Belaturricula ergata*, *Conorbela antarctica*, *Leucosyrinx paratenoceras*, *Typhlomangelia principalis*, *Acteon antarcticus*, *Neactaeonina edentula*, *Yoldiella antarctica*, *Yoldiella profundorum*, *Yoldiella sabrina*, *Limatula hodgsoni*, *Limatula simillima*, *Cyclopecten notalis*, *Cyclopecten pteriola*, *Cylocardia astartoides*, *Mysella gibbosa*, *Cyamiocardium denticulatum*, *Cuspidaria infelix*, *Striopulsellum minimum* and *Cadulus thielei*) and 30 for Peter I Island (*Margarella refulgens*, *Onoba gelida*, *Onoba kergueleni*, *Onoba turqueti*, *Marseniopsis mollis*, *Marseniopsis syowaensis*, *Pseudamauroopsis anderssoni*, *Pseudamauroopsis aureolutea*, *Falsilunatia delicatula*, *Melanella antarctica*, *Trophon cuspidarioides*, *Trophon longstaffi*, *Chlanidota signeyana*, *Pareuthria regulus*, *Prosipho chordatus*, *Prosipho hedleyi*, *Prosipho pelltus*, *Prosipho pusillus*, *Typhlodaphne innocentia*, *Neactaeonina edentula*, *Philine alata*, *Yoldiella antarctica*, *Yoldiella profundorum*, *Cyclopecten notalis*, *Genaxinus debilis*, *Cuspidaria minima*, *Myonera fragilissima*, *Dentalium majorinum*, *Striopulsellum minimum* and *Siphonodentalium dalli*).

On the other hand, new bathymetric records are given for 44 species (*Antimargarita smithiana*, *Calliotropis pelseeneri*, *Solariella antarctica*, *Tropidomarga biangulata*, *Liotella endeavourensis*, *Onoba gelida*, *Torellia planispira*, *Marseniopsis syowaensis*, *Pseudamauroopsis aureolutea*, *Acirsa antarctica*, *Hemiaclis incolorata*, *Melanella antarctica*, *Trophon drygalskii*, *Trophon echinolamellatus*, *Lusitromina abyssorum*, *Notoficula bouveti*, *Prosipho chordatus*, *Prosipho pelltus*, *Prosipho pusillus*, *Prosipho reversus*, *Belaturricula gaini*,

*Aforia multispiralis*, *Typhlodaphne innocenticia*, *Typhlomangelia principalis*, *Acteon antarcticus*, *Nucula austrobenthalis*, *Yoldiella antarctica*, *Yoldiella profundorum*,

*Yoldiella sabrina*, *Bathycarca sinuata*, *Limopsis enderbeyensis*, *Limatula hodgsoni*, *Limatula simillima*, *Cycloclamys gaussianus*, *Cyclopecten notalis*, *Cyclopecten pteriola*,

*Genaxinus debilis*, *Mysella antarctica*, *Cyamocardium denticulatum*, *Cuspidaria infelix*, *Cuspidaria minima*, *Myonera fragilissima*, *Cadulus thielei* and *Siphonodentalium dalli*).

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