

Doubling the known diversity of a remote island fauna: marine bivalves of the Juan Fernández and Desventuradas oceanic archipelagos (southeastern Pacific Ocean) (#93091)

1

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Doubling the known diversity of a remote island fauna: marine bivalves of the Juan Fernández and Desventuradas oceanic archipelagos (southeastern Pacific Ocean)

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Juan Fernández and Desventuradas are two oceanic archipelagos located in the Southeast Pacific Ocean far off the Chilean coast. Remoteness and access difficulty contributed to historically poor biodiversity sampling. Those few samples received limited study, often resulting in provisional names and spurious taxonomy. This is particularly noticeable for bivalves, with most of the regional publications focused on single taxa or un-illustrated checklists. This study, including new expedition material, represents the most comprehensive treatment of bivalves from these archipelagos to date. The biogeographic status of these archipelagos, which have received protected status as marine parks in 2016, is discussed. This study investigates material collected during (1) the IOC97 expedition aboard the M/V Carlos Porter, with special focus on scuba-collected micro-mollusks of both archipelagos, (2) two expeditions by the R/V Anton Bruun (Cruise 12/1965 and Cruise 17/1966), and (3) Cruise 21 of USNS Eltanin under the United States Antarctic Program, which sampled at Juan Fernández in 1965. Also, relevant historical material of the British H.M.S. Challenger Expedition (1873-1876), the Swedish Pacific Expedition (1916-1917), and by German zoologist Ludwig H. Plate (1893-1895) is critically revised. All species currently recognized are described and figured. This study provides information on the diversity of bivalves occurring from the intertidal to 415 m depth. A total of 48 species are recognized, including 19 new species (described herein) and six other potentially new species to science. The presence of two species mentioned in the literature for the region (*Aulacomya atra* and *Saccula cuneata*) could not be confirmed. The genera *Verticipronus* and *Halonympha* are reported for the first time from the Eastern Pacific, as are *Anadara* and *Condylocardia* for Chilean waters. Lectotypes are designated for *Arca* (*Barbatia*) *platei* and *Mytilus algosus*. These findings double the number of extant bivalve species known from the Juan Fernández and Desventuradas archipelagos, highlighting the lack of

attention these islands groups have received in the past. Most of the new taxa are small-shelled bivalves collected by scuba from comparatively shallow waters. Contrary to prior findings for other taxa, the study reveals that the bivalve fauna of Juan Fernández and Desventuradas does not share species with the Indo-West Pacific, sub-Antarctic islands, or the Magellan Province. Also, the similarities of the archipelago faunas with that of the Peru-Chile Province are low (20%). Instead, a high percentage of species endemic to one or both of the Juan Fernández and Desventuradas archipelagos are recognized herein, accounting for almost 78% of the total species. The current level of bivalve endemism supports the consideration of Juan Fernández and Desventuradas as two different biogeographic units (Provinces or Ecoregions) of the Eastern Pacific Ocean.

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3

4 **Abstract**

5 Juan Fernández and Desventuradas are two oceanic archipelagos located in the southeastern
6 Pacific Ocean far off the Chilean coast. Remoteness and access difficulty contributed to
7 historically poor biodiversity sampling. Those few samples received limited study, often
8 resulting in provisional names and spurious taxonomy. This is particularly noticeable for
9 bivalves, with most of the regional publications focused on single taxa or un-illustrated
10 checklists. This study, including new expedition material, represents the most comprehensive
11 treatment of bivalves from these archipelagos to date. The biogeographic status of the
12 archipelagos, which have received protected status as marine parks in 2016, is discussed.

13 This study investigates material collected during (1) the *IOC97* expedition aboard the M/V
14 *Carlos Porter*, with special focus on scuba-collected micro-mollusks of both archipelagos, (2)
15 two expeditions by the R/V *Anton Bruun* (Cruise 12/1965 and Cruise 17/1966), and (3) Cruise 21
16 of USNS *Eltanin* under the United States Antarctic Program, which sampled at Juan Fernández
17 in 1965. Also, relevant historical material of the British *H.M.S. Challenger Expedition* (1873-
1876), the *Swedish Pacific Expedition* (1916-1917), and by German zoologist Ludwig H. Plate
19 (1893-1895) is critically revised. All species currently recognized are described and figured.

20 This study provides information on the diversity of bivalves occurring from the intertidal to 415
21 m depth. A total of 48 species is recognized, including 19 new species (described herein) and six
22 other potentially new species. The presence of two species mentioned in the literature for the
23 region (*Aulacomya atra* and *Sacella cuneata*) could not be confirmed. The genera *Verticipronus*
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26 *Mytilus algosus*.

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28 Desventuradas archipelagos, highlighting the lack of attention these islands groups have received

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30 comparatively shallow waters.

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33 islands, or the Magellan Province. Also, similarities of the archipelago faunas with that of the
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35 archipelagos are recognized herein, accounting for almost 78% of the total species. The current
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37 two different biogeographic units (Provinces or Ecoregions) of the Eastern Pacific Ocean.

38

39 **Introduction**

40

41 Recent decades have seen international efforts that greatly improved our knowledge of the global
42 marine fauna, by intensifying sampling in previously understudied regions and by formally
43 inventorying the species-level diversity (e.g. Mora et al., 2011; Appeltans et al., 2012; Kennedy
44 et al., 2019; WoRMS Editorial Board, 2023). Much work remains to be done and the faunas of
45 many regions are still imperfectly known (Costello et al., 2010). Among these lesser-known
46 regions are the remote Juan Fernández and Desventuradas archipelagos of the Southeast Pacific
47 Ocean. The islands are volcanic seamounts resulting from hotspots of the oceanic Nazca Plate
48 (Bello-González, Contreras-Reyes & Arriagada, 2018), with ages spanning about 1-4 mya
49 (Stuessy et al., 1984; González-Ferrán, 1987, Philippi & Rodrigo, 2020). Far offshore the
50 Chilean coast, the groups are under the influence of subtropical and subantarctic waters (Dyer &
51 Westneat, 2010). Juan Fernández is located about 650 km west of Valparaíso, Chile (33°S), and
52 is composed of three main islands: Robinson Crusoe (= Más a Tierra), Alejandro Selkirk (= Más
53 Afuera), and Santa Clara, together with several smaller islets. The Desventuradas, about 840 km
54 west of Antofagasta Chile (26°S), are comprised of the island of San Ambrosio and the San Félix
55 group, the latter consisting of San Félix, Islote González, and Roca Catedral de Peterborough.
56 The Juan Fernández archipelago is sparsely inhabited and nowadays reliant on fishing and
57 tourism; the Desventuradas have no civilian population but host a small detachment of the

58 Chilean navy. The two archipelagoes, together with Salas y Gómez and Rapa Nui farther west in
59 the Pacific, constitute Insular Chile (Isla Oceánicas Chilenas, IOC) and administratively belong
60 to Chile's Valparaíso Region. Both archipelagoes have been under formal protection since 2016,
61 when marine parks were established for the Juan Fernández archipelago, covering the Crusoe
62 and Selkirk Seamounts and a network of marine parks named "Lobería Selkirk", "El Arenal",
63 "Tierra Blanca", and "El Palillo". At the same time, the Desventuras became part of the Nazca-
64 Desventuradas Marine Park, the largest such park of Chile (Sernapesca, 2021).

65 The scientific study of Juan Fernández marine fauna began in the 19th century. The majority of
66 studies focused on fishes (Pequeño & Sáez, 2000; Pequeño & Lamilla, 2000; Dyer & Westneat,
67 2010; Ramírez et al., 2013; and references therein) and comparatively few studies have
68 addressed mollusks and other invertebrates of the region. Bivalve research in the region has a
69 particularly sparse history: Juan Fernández became a resupply and rest stop for sailing ships in
70 the 18th and 19th centuries. During such visits, some specimens were collected by captains and
71 crews and subsequently described in British publications. One such bivalve example is *Arca*
72 *angulata* P. P. King, 1832 (now *Arca fernandezensis* Hertlein & Strong, 1943), described from
73 "a collection formed by the Officers of *H.M.S. Adventure* and *Beagle* employed between the
74 years 1826 and 1830 in surveying the southern coasts of South America" (King, 1832: 332). The
75 first comprehensive bivalve data from the archipelago stem from the deep-water materials
76 collected during the British *H.M.S. Challenger Expedition* (1873-1876) (published by Smith,
77 1885) and from intertidal and shallow-subtidal collections made by the German zoologist
78 Ludwig H. Plate (1893-1895) (published by Stempell, 1899). Summarizing the prior work, Dall
79 (1909) recognized nine marine bivalve species from Juan Fernández. Collecting by the *Swedish*
80 *Pacific Expedition* (1916-1917) led to additional species and other data provided by Odhner
81 (1922). In the second half of the 20th century, Stuardo, Saelzer & Rosende (1970), Villarroel
82 (1971), Roth (1975), Osorio (1979), Villarroel & Stuardo (1998), and Coan (2000) described
83 some individual new species and provided additional distributional records for others.
84 Rozbaczylo & Castilla (1987) compiled the then-available information, reporting 14 species of
85 bivalves from Juan Fernández archipelago. Adding information from specimens obtained during
86 the *Southeast Pacific Biological Oceanographic Project (SEPBOP)* *Anton Bruun* cruise 17 of
87 1966 (and apparently also including material from the *Anton Bruun* cruise 12 of 1965, see
88 below), Bernard, McKinnell & Jamieson (1991) extended this number to a list of 31 named and

89 unnamed species, without however providing any descriptions or illustrations. As will be shown
90 below, some identifications by Bernard, McKinnell & Jamieson (1991) were surprisingly
91 incorrect (even at the family or order levels), which likely is explained by the fact that the work
92 was published after the death of the lead author and might have been based on unfinished work.

93 Without a natural harbor or permanent freshwater sources, the Desventuradas archipelago has
94 seen even less attention; it is considered one of the least explored sites in the Pacific Ocean
95 (National Geographic Society, 2013). Published information on its bivalve fauna is limited to a
96 listing of 13 described and undescribed species by Bernard, McKinnell & Jamieson (1991),
97 based on a preliminary analysis of *Anton Bruun* cruise 17, and two species listed by Tapia-
98 Guerra et al. (2021: table S2).

99 In this context, it is not surprising that the marine fauna of Juan Fernández and Desventuradas
100 has been widely regarded as poorly known (e.g., Rozbacylo & Castilla, 1987; Bernard,
101 McKinnell & Jamieson, 1991; Ramírez & Osorio, 2000; Vargas-Gaete et al., 2014). Additional
102 data are needed, especially in view of the suggested complex faunal affinities, the assumed high
103 level of endemism in the islands, and the special status of the protected marine areas involved.
104 Prior studies on various other taxonomic groups showed similarities with the adjacent coast of
105 Chile (i.e., the Perú-Chile Province), the southern tip of South America (the Magellan Province),
106 the sub-Antarctic islands, and the Indo-Pacific Region (Andrade, 1985; Parin, Mironov & Nesis,
107 1997; Santelices & Meneses, 2000; Moyano et al., 2001; Friedlander et al., 2016). For some
108 taxonomic groups, high percentages of endemic taxa were reported, with values reaching 62%
109 (Friedlander et al., 2016).

110 To improve our understanding of the zoological diversity of both archipelagoes, an expedition
111 (*IOC-97*) was launched in 1997 as a collaborative effort between the Field Museum of Natural
112 History in Chicago and three Chilean institutions, the Universidad del Mar (Viña del Mar),
113 Museo Nacional de Historia Natural (Santiago), and Universidad Austral de Chile (Valdivia).
114 Special focus of *IOC97* was on collecting fishes, with the senior author of this paper (RB)
115 focusing on marine invertebrates, particularly mollusks. The results of the fish survey were
116 published by Dyer & Westneat (2010). The analysis of the extensive molluscan material obtained
117 during *IOC-97* remained hampered by limited comparative knowledge of the Chilean mainland

118 coastal fauna. For Bivalvia, this information became available with the work of Valentich-Scott,
119 Coan & Zelaya (2020).

120 The objective of this contribution is to refine the current knowledge of the bivalve fauna from the
121 Juan Fernández and Desventuradas archipelagos and, based on that information, to re-evaluate
122 the endemicity and faunistic affinities of these areas. In this context, available material from the
123 mentioned expeditions is investigated.

124 **Materials & Methods**

125

126 **Specimen sources and station data**

127 The majority of the material studied herein stems from four expeditions for which the material
128 has been deposited in the collections of FMNH, MNHN-CL, LACM, and USNM; see acronyms,
129 below (Fig. 1). A supplemental file provides detailed location and accession data for the
130 expedition material studied herein. 

131 **IOC97**

132 The IOC97 (Isla Oceánicas de Chile 1997) expedition was undertaken aboard the M/V Carlos
133 Porter of the Chilean Instituto Fomento Pesquero (IFOP) for the period of February 17 to March
134 12, 1997. The following IOC97 stations resulted in bivalve samples investigated for this study
135 (all by Rüdiger Bieler, scuba, unless otherwise noted):

136 IOC97-12: 26°20'05" S, 79°53'25" W, Caleta Las Moscas, N coast of San Ambrosio Island,
137 Desventuradas, 10-16 m; rocky slope with volcanic boulders and rocks bordering on sand
138 plain, some large macroalgae; 21 February 1997.

139 IOC97-13: [same site/date as IOC97-12]; sediment at base of rock wall in 18.2 m depth.

140 IOC97-16: 26°20'18" S, 79°53'54" W, between Caleta Patos and Punta Saliente, in shallow inlet,
141 NE side of San Ambrosio Island, Desventuradas, 5-19 m; rock cliff dropping to sea,
142 volcanic rock rubble and large macroalgae (kelp); 22 February 1997.

- 143 IOC97-18: 26°20'20.23" S, 79°53'52.04" W, Caleta Potal, N coast of San Ambrosio Island,
144 Desventuradas, intertidal to 10 m; volcanic rock rubble, macroalgae, some sand; 23
145 February 1997.
- 146 IOC97-22: 26°17'23" S, 80°06'34" W, N coast of San Félix Island, Desventuradas, 10-14 m;
147 volcanic rock, rubble, macroalgae; 24 February 1997.
- 148 IOC97-26: 26°17'15.18" S, 80°6'44.16" W, between caves and Roca Catedral de Peterborough,
149 NW of San Félix Island, Desventuradas, 25-35 m; 25 February 1997.
- 150 IOC97-29: 26°17'28.19" S, 80°6'37.77" W; N coast of San Félix Island, Desventuradas, 20-25
151 m; rock, sand, macroalgae; 26 February 1997.
- 152 IOC97-30: 26°17'24.14" S, 80°6'36.22" W, N coast of San Félix Island, Desventuradas,
153 intertidal to 12.2 m; 26 February 1997.
- 154 IOC97-30A: [same site as IOC97-30] sediment from bottom collected in 12.2 m; 26 February
155 1997.
- 156 IOC97-32: 26°17'9.50" S, 80°6'7.85" W; W of Punta Negra, N coast of San Félix Island,
157 Desventuradas, intertidal to 20 m; large volcanic rocks, some sand pockets; 27 February
158 1997.
- 159 IOC97-39: 26°16'52.86" S, 80°6'48" W; between San Félix Island and Roca Catedral de
160 Peterborough, Desventuradas, 40-110 m; sandy bottom; collected by IOC-97 team by
161 bottom trawl; 28 February 1997.
- 162 IOC97-44: 33°38'27.6" S, 78°49'22.8" W; NE point of Cumberland Bay, N of Robinson Crusoe
163 Island, Juan Fernández, 1-14 m; volcanic rock reef with sheer walls with much algal
164 coverage; bottom with sand, rubble and algal mats, 4 March 1997.
- 165 IOC97-44A: [same site as IOC97-44]; volcanic rocks at bottom (10-14 m) with arcids, sediment
166 from bottom at 14 m; 4 March 1997.
- 167 IOC97-48: 33°42'34.8" S, 80°46'30" W, about 100 m off Punta Iman, N of Alejandro Selkirk
168 Island, Juan Fernández, 18-21 m; rocky bottom with some large volcanic boulders and
169 sand pockets; 5 March 1997.
- 170 IOC97-48A: [same site/date as IOC97-48]; macromollusks from rocks, sediment in sand pockets
171 at 22 m.

172 IOC97-50: 33°45'37.14" S, 80°45'8.1" W; east side of Alejandro Selkirk Island, Juan
173 Fernández, 20-25 m; rocky bottom, sparse algal coverage, some large (3 m) volcanic
174 boulders, sand pockets; 6 March 1997.

175 IOC97-50A: [same site/date as IOC97-50]; sediment samples from sand pockets in 25 m depth.

176 IOC97-57: [same site as IOC97-44]; in 1-10 m depth; 7 March 1997.

177 IOC97-57A: [same site/date as IOC97-57]; sediment from 7.3 m depth.

178 IOC97-59: 33°38'28.21" S, 78°49'6.83" W, E of Cumberland Bay, N coast of Robinson Crusoe
179 Island, Juan Fernández, 2-25 m; collected by IOC-97 team by scuba; 7 March 1997.

180 IOC97-62: 33°36'01"–33°36'12" S, 78°53'42"–78°53'08" W; W side of N tip of Robinson
181 Crusoe Island, Juan Fernández, 50-80 m; collected by IOC-97 team by bottom trawl; 8
182 March 1997.

183 IOC97-64: [same site as IOC97-62].

184 IOC97-66A: 33°40'20" S, 78°56'27" W, off S shore of Bahia Padres, SW point of Robinson
185 Crusoe Island, Juan Fernández, 17-18 m; volcanic rock, sand patches, algae; sediment
186 sample; 8 March 1997.

187 IOC97-67: 33°38'25.96" S, 78°49'18.73" W, NE point of Cumberland Bay, N coast of Robinson
188 Crusoe Island, Juan Fernández, 20-25 m; volcanic rocks, algal mats, sand pockets; 9
189 March 1997.

190 IOC97-68A: [same site/date as IOC97-67] sediment from sand pockets in 24.7 m depth; 9 March
191 1997.

192 **R/V *Anton Bruun* Cruise 12 (December 1965)**

193 R/V *Anton Bruun* Cruise 12 focused on the flora and fauna of San Félix and Juan Fernández
194 Islands, with Robert L. Wisner serving as chief scientist (Wisner, 1966). The party spent 3 days
195 [4-7 December 1965] at San Félix, with 5 scuba-based fish poison stations (9-35 m), 1 otter trawl
196 (75 m) and many hook & line (fish) collections. It spent 6 days [10-16 December 1965] at Juan
197 Fernández, conducting 9 scuba poison stations (3-30 m), 8 otter trawls (80-200 m), 1 beam trawl
198 haul (135 m), one Isaacs-Kidd midwater trawl haul (530 m), and 3 free vehicle set lines (1100-
199 2400 m). "No appraisal of the invertebrate fauna was made at the time at either island, but the
200 collections have been sent to the U.S." (Wisner, 1966: 6). The cruise report does not provide
201 station details for the activities by scuba, otter [= 40-foot shrimp] trawl, or beam [= 5-foot

202 double-beam with 1/8 inch mesh] trawl (see lots USNM 846082 and 880644 discussed herein).
203 Specimens from 10 collecting events were obtained from LACM for this study, with data taken
204 from collection labels and enhanced with information in Wisner (1966) and from data on USNM
205 collection labels:

206 LACM 1965-94: "26°17' S, 80°05' W", NW side of San Félix Island, Desventuradas, intertidal;
207 leg. Diane E. Robbins, Janet Haig, John Hall, David Wallen; 5 December 1965 [stated
208 coordinates too far east and not matching described intertidal].
209 LACM 1965-95: "26°17.5' S, 80°05.6' W", NW side of San Félix Island, Desventuradas, 10-45
210 ft [3-13.7 m]; leg. Sylvia E. Taylor, Alan Chapman; 5-6 December 1965 [stated
211 coordinates too far inland].
212 LACM 1965-96: 33°38' S, 78°49' W, Cumberland Bay, Robinson Crusoe Island, Juan
213 Fernández, intertidal; leg. Diane E. Robbins; 11-12 December 1965.
214 LACM 1965-97: 33°38' S, 78°49' W, Cumberland Bay, Robinson Crusoe Island, Juan
215 Fernández, 10-30 ft [3-9.1 m]; leg. Sylvia E. Taylor; 11 December 1965.
216 LACM 1965-98: 33°37.5' S, 78°49.7' W, off Cumberland Bay, Robinson Crusoe Island, Juan
217 Fernández, trawled [150 m]; "station MV65-IV-47"; 12 December 1965 [depth
218 information from lot USNM 76215].
219 LACM 1965-99: 33°37'18" S, 78°50'20" W, 0.5 mi NW of San Carlos Point, Robinson Crusoe
220 Island, Juan Fernández, 30-70 ft [9.1-21.3 m]; rocky, leg. Sylvia E. Taylor, "station 240";
221 12 December 1965.
222 LACM 1965-100: 33°38' S, 78°49' W, Cumberland Bay, Robinson Crusoe Island, Juan
223 Fernández, 46 m; "grab 130"; 12 December 1965.
224 LACM 1965-101: 33°34-41' S, 78°45-55' W, off W side of Robinson Crusoe Island, Juan
225 Fernández, 130-180 m; trawled, 13-15 December 1965 [lot USNM 764195 from "station
226 MV65-IV-54" is dated 13 December, USNM 764199 from "station MV65-IV-63" with
227 starting and ending coordinates of 33°41.2' S, 78°57' W to 33°40.7'S, 78°51.8' W is
228 dated 15 December 1965, and USNM 679522-23 from "station 255, 130-170 m" are
229 dated 15 December 1965].
230 LACM 1965-102: "approximately 33°38' S, 78°49' W", Chamelo Point, Robinson Crusoe
231 Island, Juan Fernández, intertidal; 16 December 1965.

232 LACM 1965-103: "approximately 33°38' S, 78°49' W", SE of Bacalao Point, Robinson Crusoe
233 Island, Juan Fernández, 85 ft [25.9 m]; leg. Sylvia E. Taylor; 16 December 1965.

234

235 **R/V *Anton Bruun* Cruise 17 (July 1966)**

236 R/V *Anton Bruun* Cruise 17 focused on the relationships between benthic organisms and their
237 environments in the region. Orville L. Bundy (Bundy, 1967) provided the cruise report; Roger R.
238 Seapy and Robert M. Woollacott sampled the benthic invertebrates. The party spent 2 days [11-
239 12 July 1966] at Desventuradas, employing 4 Campbell grab stations, and 1 each of Ockelmann
240 dredge, Newell dredge, and Menzies trawl. It spent 2 days [17-18 July 1966] at Juan Fernández,
241 conducting 10 Campbell grab stations and 1 Newell grab station. Specimens from 6 collecting
242 events were obtained from LACM for this study, with data taken from collection labels and
243 checked against information in Bundy (1967):

244 LACM 1966-98: 26°20' S, 80°03' W, SE off San Félix Island, Desventuradas, 415 m; station
245 675H, by Campbell grab; 12 July 1966.

246 LACM 1966-99: 26°20' S, 80°02' W, SE off San Félix Island, Desventuradas, 170-160 m;
247 station 676B, by Menzies trawl; 12 July 1966. Bernard

248 LACM 1966-100: 33°38' S, 78°50' W, off Robinson Crusoe Island, Juan Fernández, 62 m;
249 station 680E, by Campbell grab; 18 July 1966.

250 LACM 1966-101: 33°38' S, 78°50' W, off Robinson Crusoe Island, Juan Fernández, 255 m;
251 station 680H, by Campbell grab; 18 July 1966.

252 LACM 1966-102: 33°38' S, 78°48' W, off Robinson Crusoe Island, Juan Fernández, 188 m;
253 station 680I, by Campbell grab; 18 July 1966.

254 LACM 1966-103: 33°38' S, 78°46' W, off Robinson Crusoe Island, Juan Fernández, 210 m;
255 station 680J, by Campbell grab; 18 July 1966.

256

257 **USNS *Eltanin* Cruise 21 (November 1965)**

258 United States Antarctic Program (USAP) cruise 21 of the USNS *Eltanin* took place from 23
259 November 1965 to 7 January 1966. Under chief scientist George R. Toney, efforts included
260 sediment-core sampling and heat-flow stations (Sandved, 1966; Houtz & Aitken, 1973). Start
261 and end ports were Valparaiso and Punta Arenas, Chile. The early part of the cruise included
262 trawl stations in the Juan Fernández archipelago, with material deposited at the USNM.

263 Station 21-203: 33°45'00" S, 80°40'48" W, Alejandro Selkirk Island, Juan Fernández, 79-91 m,
264 Blake trawl; 26 November 1965.

265 Station 21-205: 33°43'12" S, 80°43'12" W, Alejandro Selkirk Island, Juan Fernández, 128-183
266 m, Blake trawl; 26 November 1965.

267 **Type deposition:**

268 All primary types of new species obtained during the IOC97 expedition have been transferred to
269 the collections of the Museo Nacional de Historia Natural de Chile (MHNH-CL). Details are
270 listed under each species treatment and in the Supplementary Table.

271 **Scanning electron microscopy (SEM):**

272 The shell material was cleaned of encrustations by immersion in an ultrasonic water bath and
273 examined using SEM to observe sculpture and hinge and prodissoconch detail. Specimens to be
274 imaged were mounted on conductive carbon tabs, coated with gold, and examined using a Leo
275 EVO 60 SEM at FMNH. Specimens of *Condylocardiidae* sp A. were imaged, without prior
276 coating, at low voltage (1 kV) using a Hitachi SU7000 SEM at FMNH.

277 **Other:**

278 For the previously unnamed species, only empty shell material was collected, thus providing no
279 opportunity to obtain relevant molecular data under current technology. Our species descriptions
280 therefore focus on morphological characters of the shell as well as organic components of the
281 hinge and periostracum when present.

282 For the analysis of faunistic affinities, *Amygdalum* sp., *Entodesma* sp. and *Bathyarca corpulenta*
283 were excluded, for reasons explained below.

284 The electronic version of this article in Portable Document Format (PDF) will represent a
285 published work according to the International Commission on Zoological Nomenclature (ICZN),
286 and hence the new names contained in the electronic version are effectively published under that
287 Code from the electronic edition alone. This published work and the nomenclatural acts it
288 contains have been registered in ZooBank, the online registration system for the ICZN. The

289 ZooBank LSIDs (Life Science Identifiers) can be resolved and the associated information viewed
290 through any standard web browser by appending the LSID to the prefix <http://zoobank.org/>. The
291 LSID for this publication is: urn:lsid:zoobank.org:pub:571610DE-8F2D-4CB4-B527-
292 8B999F6CB098. The online version of this work is archived and available from the following
293 digital repositories: PeerJ, PubMed Central SCIE, and CLOCKSS.

294

295 **Museum acronyms:**

296 ANSP – Academy of Natural Sciences of Drexel University, Philadelphia, USA
297 FMNH – Field Museum of Natural History, Chicago, USA
298 GNM – Göteborgs Naturhistoriska Museum, Gothenburg, Sweden
299 LACM – Natural History Museum of Los Angeles County, Los Angeles, USA
300 MCZ – Museum of Comparative Zoology at Harvard University, Cambridge, USA
301 MHNG – Muséum d'histoire naturelle Genève, Switzerland
302 MNHN – Muséum national d'Histoire naturelle, Paris, France
303 MNHN-CL – Museo Nacional de Historia Natural, Santiago, Chile
304 NHMUK – Natural History Museum, London, United Kingdom
305 NMV – Museum of Victoria, Melbourne, Australia
306 NSMT – National Museum of Nature and Science, Tokio, Japan
307 NZNM – Museum of New Zealand - Te Papa Tongarewa, Wellington, New Zealand
308 SGO.Pi – Colección de Paleontología de Invertebrados, Museo Nacional de Historia Natural de
309 Chile, Santiago, Chile
310 SMNH – Swedish Museum of Natural History, Stockholm, Sweden
311 USNM – National Museum of Natural History-Smithsonian Institution, Washington, USA 
312 ZMB – Museum für Naturkunde Berlin (Zoological Collections), Berlin, Germany

313

314 **Text conventions:**

315 av, avs – associated shell valve/s (a matching pair of valves, dry-preserved; sometimes still in
316 closed condition)
317 spec, specs – whole specimen/s, wet-preserved
318 v, vs – single shell valve/s

319

320 **Results**

321

322 Taxonomic account of bivalve species

323

324 **NUCULIDAE**325 ***Nucula fernandensis* Villarroel, 1971**326 **Fig. 2 A-O**

327 *Nucula fernandensis* Villarroel, 1971: 159-171, pl. 1, figs. 1, 1A, 2, 2B; pl. 2, figs. 3, 4; pl. 3,
328 figs. 5, 6, 7A, 7B [line drawings; shell and gross morphology].

329 *Nucula fernandensis*, – Cekalovic & Artigas, 1981: 80. Rozbaczylo & Castilla, 1987: 176 [listed
330 only]. Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. Valentich-Scott, Coan &
331 Zelaya, 2020: 46, pl. 16.

332 *Nucula (Linucula) fernandensis*, – Bernard, 1983: 10 [listed only].

333 *Nucula (Nucula) fernandensis*, – Villaroel & Stuardo, 1998: 128-129, figs. 23-26 [stomach,
334 drawing], 99-101 [shell SEM].

335 *Nucula pisum*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not Sowerby, 1833).

336 **Type locality:** 33°35'0" S 78°31'2" W, [off Robinson Crusoe Island], Juan Fernández
337 archipelago, 220 m [“220-280 m” fide Villaroel & Stuardo (1998)].

338 **Type material:** Two possible paratypes studied herein (MZUC 10387 and MZUC 10388).

339 **Other material studied:** Desventuradas: San Félix: LACM 1966-98.1 (2 vs, Fig. 2 E, F). Juan
340 Fernández: Alejandro Selkirk: IOC97-50A (FMNH 322329: 9 avs, 3 vs, with Fig. 2 N, O).
341 Robinson Crusoe: IOC97-44A (FMNH 322328: 1 av); IOC97-66A (FMNH 322327: 12 avs, 8
342 vs, with Fig. 2 M); MNHN-CL MOL 101609 ex FMNH 327897: 3 av); LACM 1966-100.1 (3
343 avs, 48 vs, with Fig. 2 G-L); LACM 1966-101.1 (1 av, 6 vs, with Fig. 2 A-D); LACM 1966-
344 102.1 (3 vs).

345 **Other published records:** Topotypic specimens (Villaroel & Stuardo (1998)).

346 **Distribution:** Juan Fernández and Desventuradas archipelagos.

347 **Description:** Shell up to 4.5 mm L, triangular to subovate, longer than high, somewhat inflated,
348 inequilateral, solid. Anterior end projected, posterior end abbreviated. Umbo large, high and
349 wide, posteriorly displaced, opisthogyrate. Antero-dorsal margin long, convexly sloping, forming
350 a continuous curve with anterior margin. Ventral margin widely arcuated. Posterior margin
351 flattened. Postero-dorsal margin short, sloping straight. Dissoconch sculptured with numerous,
352 narrow and flat radial riblets and strong, irregular growth disruptions. Radial sculpture stronger
353 on posterior than anterior and median areas. Shell surface shiny, whitish; periostracum yellowish
354 pale. Hinge plate solid, with two series of strong, bluntly pointed teeth, reducing in size toward
355 the umbo. Anterior series composed of 7 to 12 teeth, posterior series of 3 to 6 teeth; both series
356 separated by a minute resilifer. Inner shell surface nacreous. Inner margin finely crenulated.

357 **Comments:** The status of the type material of *Nucula fernandensis* is problematic. In the
358 original description, Villaroel (1971) announced the planned deposition of the holotype in
359 MNHN-CL (no number provided). The specimen was never received at that institution (O.
360 Galvez Herrera in litt., June 2022). The author also stated that an unspecified number of
361 paratypes were present in the MZUC collection (registration under number “4578”) and provided
362 dimensions for 18 of them (Villaroel, 1971: table 1). However, lot 4578 does not appear in the
363 MZUC type catalog (Cekalovic & Artigas, 1981) and could not be located during a personal visit
364 to that collection in March 2013. It is unclear whether the originally published paratype lot was
365 lost or the repository number was erroneous or changed subsequently. Cekalovic & Artigas
366 (1981) reported two other lots as paratypes: MZUC 10387 and MZUC 10388. We had an
367 opportunity to study these lots and their current labels indeed state “paratypes”. The first of these
368 was also mentioned by Villaroel & Studardo (1998), who, in addition, listed eight other lots as
369 having paratype status: MZUC 4577, 4580, 10295, 10296, 10297, 10298, 10299, 10300.
370 Although topotypic and identified by the original author, the type status of this material is
371 uncertain. Even with these uncertainties, the adequate illustration of this species provided by
372 Villaroel (1971) and Villaroel & Studardo (1998) makes a neotype designation unnecessary.
373 The specimens studied herein from the *Anton Bruun* expedition are indistinguishable from the
374 holotype of *N. fernandensis* (figured by Villaroel, 1971: pl. 1, figs. 1, 1a). Bernard, McKinnell &

375 Jamieson (1991) listed this species from Juan Fernández under the names *N. fernandensis* and
376 *Nucula pisum* Sowerby, 1833. The latter, however, does not occur here. It differs by having a
377 lower and narrower umbo, more delicate and pointed hinge teeth, and a larger resilifer. Villaroel
378 (1971) reported as an additional difference the presence of a gastric caecum in *N. fernandensis*,
379 which is absent in *N. pisum*.

380 The present study provides the first record of *N. fernandensis* from Desventuradas archipelago.

381 **TINDARIIDAE**

382 ***Tindaria sanfelixensis* n. sp.**

383 **Fig. 3 A-J**

384 **Type locality:** 26°20' S, 80°03' W, SE off San Félix Island, Desventuradas, 415 m (R/V *Anton*
385 *Bruun* Cruise 17, station 675H, by Campbell grab, 12 July 1966; LACM 1966-98).

386 **Type material:** Holotype (LACM 3819: 1 v, Fig. 3 A, B) and 21 paratypes (LACM 3820: 3 avs,
387 14 vs, + 2 fragments, with Fig. 3 C, D, I, J; FMNH 312472 ex LACM 3820 (2 vs, with Fig. 3 E-
388 H); MNHN-CL MOL 101610 ex LACM 3820 (2 vs), all from type locality.

389 **Distribution:** Only known from Desventuradas archipelago.

390 **Diagnosis:** Shell ovate, with low umbo and comarginal sculpture increasing in solidness towards
391 ventral margin. Hinge plate narrow, with anterior and posterior series of teeth in contact.

392 **Description:** Shell up to 4.8 mm L, ovate, longer than high, inequilateral, moderately solid,
393 somewhat inflated. Anterior end short, posterior end projected. Umbo low, broad, anteriorly
394 located, prosogyrate. Antero-dorsal margin, anterior, ventral and posterior margins forming a
395 continuous curve. Postero-dorsal margin long, almost straight. Lunule and escutcheon indistinct,
396 unmarked. Dissoconch with fine comarginal sculpture, increasing in strength toward ventral
397 margin, where it forms low, regularly separated cords. Shell surface whitish, shiny. Hinge plate
398 narrow, with two series of teeth decreasing in size towards the umbo, where they remain in
399 contact. Anterior series composed of 10 teeth, posterior series of about 18 teeth, more delicate

400 than anterior teeth. Ligament completely external, small, delicate, opisthodetic. Inner shell
401 surface whitish, porcellaneous. Inner shell margin smooth. Pallial sinus entire.

402 **Etymology:** Named for the type locality, San Félix Island, Desventuradas; adjective.

403 **Comments:** The material studied herein was previously identified as *Nucula grayi* d'Orbigny,
404 1846 by Bernard, McKinnell & Jamieson (1991), for which Valentich-Scott, Coan & Zelaya
405 (2020) designated a lectotype. It is a member of the Nuculidae, belonging to the genus *Ennucula*
406 Iredale, 1931. The specimens studied herein differ strikingly from that species and other nuculids
407 by having the anterior and posterior series of hinge teeth in contact (not separated by a resilifer),
408 and by lacking nacre interiorly. They fit the concept of Tindariidae as defined by Valentich-
409 Scott, Coan & Zelaya (2020).

410 *Tindaria salaria* Dall, 1908 is the only species of the genus thus far known from Chilean waters.
411 The type material of that species consists of three valves and two shell fragments. Raines and
412 Huber (2012: fig. 3 F-H) figured two of these valves for the first time. Additional photographs of
413 the syntypes are available at the Smithsonian National Museum of Natural History's site
414 (<https://collections.nmnh.si.edu>). The new species described herein resembles the two smaller
415 syntypes of *T. salaria* in general shell outline but differs strikingly by having a narrower hinge
416 plate and more delicate teeth. The largest syntype has a higher shell and a more triangular
417 ("nuculiform") shell outline than *Tindaria sanfelixensis* n. sp. To date, *Tindaria salaria* is
418 restricted to off Salas and Gomez archipelago (Villaroel & Stuardo, 1998; Raines & Huber,
419 2012).

420 In general shell outline, *Tindaria sanfelixensis* n. sp. also resembles the northwestern Atlantic
421 *Tindaria amabilis* (Dall, 1889), the Antarctic *T. antarctica* Thiele, 1931, the northeastern Pacific
422 *Tindaria compressa* Dall, 1908, and the east Indian *Tindaria sundaensis* Knudsen, 1970.
423 However, the first two species clearly differ from *T. sanfelixensis* n. sp. by having coarser
424 comarginal sculpture evenly distributed all along the dissoconch; *Tindaria compressa* differs by
425 having a higher umbo and a large "central" tooth in the left valve, which fits into a deep socket in
426 the right valve (see Knudsen, 1970); and *T. sundaensis* differs by having a narrow triangular pit
427 between the anterior and posterior series of teeth. In addition, radial sculpture on the anterior and

428 posterior parts of the shell was described for *T. antarctica*, *T. compressa*, and *T. sundaensis*,
429 whereas it is absent in *T. sanfelixensis* n. sp.

430 Another Chilean species originally placed in *Tindaria* is *Malletia (Tindaria) virens* Dall, 1890.
431 However, based on the anatomical information provided by Villaroel & Stuardo (1998) and the
432 ligament characteristics, Valentich-Scott, Coan & Zelaya (2020) excluded this species from
433 *Tindaria* and reallocated it to *Pseudoneilonella* (Neilonellidae).

434 **NUCULANIDAE**

435 ***Ledella costulata* n. sp.**

436 **Fig. 4 A, B**

437

438 **Type locality:** 26°20' S, 80°03' W, SE off San Félix Island, Desventuradas archipelago, 415 m.
439 (R/V *Anton Bruun* Cruise 17, station 675H, by Campbell grab, 12 July 1966; LACM 66-98).

440

441 **Type material:** Holotype (LACM 3821: 1 v, Fig. 4 A, B).

442

443 **Distribution:** Only known from Desventuradas archipelago.

444

445 **Diagnosis:** Shell ovate, projected in a long, wide posterior rostrum. Dissocoach with comarginal
446 sculpture, increasing in strength ventrally. Resilifer extending entire hinge plate height.

447

448 **Description:** Shell 3.7 mm L, ovate, longer than high, inequilateral, solid. Anterior end broadly
449 rounded, posterior end rostrate. Umbo stout, slightly anteriorly displaced, opisthogyrate. Antero-
450 dorsal and postero-dorsal margins sloping at similar angles, the anterior one convex, the
451 posterior straight. Ventral margin widely curved, forming a well-marked sinuation before
452 reaching the rostrum. Rostrum bluntly pointed, long, wide, posteriorly directed. Lunule
453 indistinct. Escutcheon narrow, flanked by ridges. Dissocoach sculptured with comarginal lines,
454 increasing in solidness towards the ventral margin, where they originate strong, regularly
455 separated cords. Shell surface whitish, shiny. Hinge plate thick, with two series of teeth
456 decreasing in size towards the umbo. Anterior series composed of 9 teeth, posterior series of 7

457 teeth. Anterior and posterior series of teeth separated by a deep, rectangular resilifer, extending
458 for the entire hinge plate height. Inner shell surface whitish, porcellaneous. Inner shell margin
459 smooth. Pallial sinus absent.

460

461 **Etymology:** Latin *costulatus*, -a, -um, bearing small ribs; adjective.

462

463 **Comments:** In general shell outline and shell morphology, *Ledella costulata* n. sp. closely
464 resembles the northeast Atlantic and Mediterranean *Ledella messanensis* (Jeffreys, 1870) (see
465 <https://naturalhistory.museumwales.ac.uk>) and the Brazilian *Ledella elfica* Viegas, Benaim &
466 Absalão, 2014, *Ledella legionaria* Viegas, Benaim & Absalão, 2014, and *Ledella spocki* Viegas,
467 Benaim & Absalão, 2014 (as figured in their original descriptions). However, *Ledella costulata*
468 n. sp. has strong comarginal cords on the ventral part of the dissoconch, a condition different
469 from the almost completely smooth shell surface of all other known species. In addition, *Ledella*
470 *legionaria* and *L. spocki* have much smaller resilifers than *L. costulata* n. sp.

471

472 ***Saccella cuneata* (Sowerby I, 1833)**

473 **Comments:** The only published record of the occurrence of this species in Juan Fernández
474 archipelago comes from 33°35' S, 78°31'12" W, 220-280 m (Villaroel & Stuardo, 1998). The
475 material could not be located during a personal visit to the MZUC collection in March 2013.

476 **MYTILIDAE**

477 ***Amygdalum* sp.**

478 **Fig. 5 A-D**

479 *Amygdalum americanum*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only].

480 **Material examined:** Juan Fernández: Robinson Crusoe: LACM 1965-98.1 (10 avs, 1 v; partially
481 damaged, with dried tissue, with Fig. 5 A-D).

482 **Distribution:** Uncertain (see Comments).

483 **Description:** Shell to 149 mm L, ovate, longer than high, markedly inequilateral, thin. Posterior
484 end higher than anterior end. Umbo close to anterior end, low, rounded. Anterior margin

485 relatively broad, evenly arched with ventral and posterior margins. Dorsal margin long, almost
486 straight. Dissoconch smooth. Shell surface shiny, white, with narrow, widely spaced,
487 anastomosing, brownish radial lines at posterior end. Neponic shell grayish, hyaline, clearly
488 distinct from the rest of the shell. Periostracum thin. Hinge plate narrow, edentulous. Nymph
489 long, narrow. Inner shell surface whitish. Inner margin smooth.

490 **Comments:** Oliver (2001) recognized three informal groups of species in *Amygdalum*. In
491 general shell outline and color pattern, the Juan Fernández specimens studied herein fits within
492 the group in which Oliver (2001) included the Caribbean *Amygdalum dendriticum* (Megerle von
493 Mühlfeld, 1811) [regarded by Beu (2004) as a junior synonym of *A. arborescens* (Fischer von
494 Waldheim, 1807), the type species of the genus], the Indo-Pacific *Amygdalum peasei* (Newcomb,
495 1870), the Japanese *Amygdalum plumeum* (Kuroda & Habe, 1971) [= *A. peasei* according to
496 Huber (2010) and Raines & Huber (2012)], the Australian *Amygdalum beddomei* (Iredale, 1924)
497 [a junior synonym of *Amygdalum striatum* (F. W. Hutton, 1873) fide Beu (2004)] and the eastern
498 Pacific *Amygdalum americanum* (Soot-Ryen, 1955). The Juan Fernández specimens studied
499 herein (previously identified as *A. americanum* by Bernard, McKinnell & Jamieson, 1991)
500 resemble the similar-sized Japanese specimen figured by Oliver (2001) as *Amygdalum plumeum*
501 and the Eastern Island specimen figured by Raines & Huber (2012) as *Amygdalum peasei*. At
502 present, the taxonomy of these nominal species remains unclear. In fact, some authors suggested
503 that all these names could correspond to a single, widely distributed species (see Beu, 2004).
504 Under this scenario, we refer to the material examined herein as *Amygdalum* sp.

505 ***Gregariella exilis* (Philippi, 1847)**

506 **Fig. 5 E-L**

507 *Mytilus exilis* Philippi, 1847: 120 

508 *Gregariella chenui*, – Soot-Ryen, 1955: 13. Soot-Ryen, 1959: 23 [listed only; “record needs
509 confirmation”]. Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not Récluz,
510 1842).

511 *Gregariella opifex*, – Osorio & Bahamonde, 1970: 192 [listed only]. Rozbaczylo & Castilla,
512 1987: 176 [listed only] (Not Say, 1825, not Philippi, 1847).

513 *Modiolaria (Gregariella) opifex*, – Odhner, 1922: 221. (Not Say, 1825, not Philippi, 1847).

514 *Gregariella coarctata*, – Valentich-Scott, Coan & Zelaya, 2020: 109, pl. 36. (Not Carpenter,
515 1857).

516

517 **Type locality:** “Orae Chilensis et Peruviana.”

518 **Type material:** One syntype of *Mytilus exilis* studied herein (MNHN-CL 100031).

519 **Other material studied:** Desventuradas: San Félix: IOC97-26 (FMNH 322294: 1 avs, 20 vs;
520 MNHN-CL MOL 101611 ex FMNH 327898: 20 vs); IOC97-29 (FMNH 322288: 20 vs, with
521 Fig. 5 K, L); IOC97-30 (FMNH 322295: 1 v); IOC97-32 (FMNH 322296: 3 vs); LACM 1965-
522 95.1(3 avs, 5 vs; with dried tissue); LACM 1966-98.2 (fragments); LACM 1966-99.1 (1 v juv.,
523 fragments). San Ambrosio: IOC97-12 (FMNH 322291: 1 v, 1 fragment; juvenile); IOC97-13
524 (FMNH 322292: 5 vs, juvenile); IOC97-18 (FMNH 322293: 1 fragment). Juan Fernández:
525 Alejandro Selkirk: IOC97-48A (FMNH 322297: 1 v, juvenile); IOC97-50A (FMNH 322299: 2
526 vs). Robinson Crusoe: IOC97-44A (FMNH 322289: 4 vs, with Fig. 5 E, F); IOC97-57A (FMNH
527 322298: 1 v); IOC97-68A (FMNH 322290: 5 vs, with Fig. 5 G-J); LACM 1965-100.1 (1 v);
528 LACM 1966-100.2 (3 vs); “Masatierra”, 30-45 m (SMNH 1227: 4 spec, mentioned by Odhner
529 (1922) as *Modiolaria (Gregariella) opifex* Philippi).

530 **Other published records:** Bahía Cumberland, Juan Fernández (Valentich-Scott, Coan &
531 Zelaya, 2020).

532 **Distribution:** Only known with certainty from Juan Fernández and Desventuradas archipelagos.
533 The occurrence of this species in Perú and Chile mainland (from where the specimens described
534 by Philippi (1847) apparently came) is uncertain.

535 **Description:** Shell up to 14 mm L, trapezoidal to subovate, longer than high, inflated, markedly
536 inequilateral, thin. Posterior end higher than anterior end. Umbo very broad, low, almost at
537 anterior end, dorsally located. Anterior margin extremely short, slightly arcuated. Ventral margin
538 straight to markedly sinuated by byssal embayment, which is associated with a median sulcus
539 along outer shell surface. Posterior margin gently curved. Dorsal margin straight to slightly
540 convex. Posterior area of shell wide, limited by an obscure fold running from the umbo to the
541 junction of posterior and ventral margins. Dissococonch sculptured with prominent comarginal

542 folds and numerous, fine but solid radial riblets anterior and posteriorly. Radial sculpture of the
543 posterior area densely packed, stronger than that of anterior area, forming small granulations in
544 the intersection with com marginal sculpture. Median area lacking radial sculpture. Shell surface
545 whitish, iridescent in smaller specimens, dull in larger, well-preserved specimens, purple
546 iridescent in eroded specimens. Periostracum thick, dehiscent, yellowish to dark brown,
547 projected in numerous, long, branched setae on the posterior area. Hinge thickened anterior to
548 the umbo; posteriorly narrow, slightly widening distally; with small, dysodont teeth, and 4 – 8
549 stronger tubercles at posterior end. Nymph narrow, long. Inner shell surface nacreous. Inner
550 margin finely crenulated at anterior, ventral and ventral part of posterior margins; dorsal part of
551 posterior margin with stronger crenulations.

552 **Comments:** Our study of the Juan Fernández specimens previously mentioned in the literature
553 as well as the material obtained during IOC97 revealed the presence of a single species of
554 *Gregariella* in this area. However, three different names were previously applied to this entity:
555 “*Gregariella opifex* Philippi, 1847”, *Gregariella chenui* (Récluz, 1842), and *Gregariella*
556 *coarctata* (P. P. Carpenter, 1857). The first was reported by Odhner (1922), who erroneously
557 attributed the authorship of this species to Philippi. As pointed out by Kabat & Coan (2017) the
558 author of *G. opifex* is Say (1825), who described the species based on a specimen collected at
559 Minorca in the Mediterranean Sea. Philippi (1847) tentatively identified as “*Modiola opifex* Say”
560 specimens from Brazil. The figure of the material he studied (Philippi, 1847: pl. 2, fig. 7) differs
561 from the specimen illustrated by Say (1825: pl. 9, fig. 2) in having a much shorter and rounded
562 anterior margin, and a considerably lower shell. There is no doubt that the specimens studied by
563 Philippi (1847) belong to *Gregariella*. However, the identity of *Modiola opifex* Say is an enigma
564 (Huber, 2010): some authors (e.g., Soot-Ryen, 1955) placed it in *Gregariella*, whereas others
565 (e.g. Palazzi, 1983; Kleemann, 1983) questioned such generic placement, and Say’s species is
566 currently considered a *nomen dubium* (MolluscaBase Eds., 2023).

567 The drawing provided by Philippi (1847: pl. 2, fig. 7) for the Brazilian material clearly differs
568 from the *Gregariella* species occurring in the Juan Fernández archipelago by having a much
569 narrower posterior area of the shell, a more projected anterior end, and a higher anterior margin,
570 which results in a more dorsally displaced umbo. Soot-Ryen (1959) suggested that Odhner’s
571 (1922) record of *Gregariella opifex* “Philippi” from Juan Fernández could correspond to the

572 same entity that he (Soot-Ryen, 1955) had identified as *Gregariella chenui*, a species he reported
573 as ranging from Monterrey, California to Bahía de la Independencia, Perú. However, Coan &
574 Valentich-Scott (2012) excluded this taxon from the Eastern Pacific, restricting its distribution to
575 the western Atlantic, where it ranges from its type locality in Bahía, Brazil, to Florida, USA
576 (Huber, 2010). Coan & Valentich-Scott (2012) recognized for the Eastern Pacific only two valid
577 species of *Gregariella*: *G. denticulata* (Dall, 1871) and *G. coarctata*. These species are readily
578 distinguished by their shell outline, particularly by the posterior margin: *G. denticulata* has an
579 obliquely straight, rapidly sloping posterior margin, which results in a triangular shell outline,
580 whereas in *G. coarctata* the posterior margin is convex and more slowly sloping, resulting in an
581 ovate-elongate shell outline. In this context, Valentich-Scott, Coan & Zelaya (2020) identified
582 specimens from Juan Fernández as *G. coarctata*.

583 *Gregariella coarctata* was originally described from Mazatlán, Mexico, and the Galápagos
584 Islands. Specimens from various sites in the regions of the type localities were figured by various
585 authors (e.g., Olson, 1961: pl. 16, figs. 4-4d; Keen, 1971: fig. 133; Coan & Valentich-Scott,
586 2012: pl. 41; Hendrickx et al., 2014: fig. 8; López-Rojas et al., 2017: fig.3f; Valentich-Scott,
587 1998: fig. 5.19). All these specimens appear conspecific with additional material from the
588 Panamic Province that we studied in museum collections (e.g., FMNH 103022, specimens from
589 Sonora, Mexico). However, all these show a consistently higher anterior shell margin than the
590 Juan Fernández specimens, which results in a more dorsal placement of the umbo. Furthermore,
591 the posterior margin in these specimens is straight or only slightly convex, slopes fast, and
592 results in a pointed posterior end, which is as high as the anterior end. By contrast, in the Juan
593 Fernández specimens the posterior margin is markedly convex and evenly curved, thus resulting
594 in a rounded posterior end, which also is positioned much higher than the anterior end. The
595 significance of these differences is difficult to interpret in the context of the currently imperfect
596 knowledge of *Gregariella* species, although we expect them to reflect species-level distinction.

597 The Juan Fernández specimens closely resemble the primary type material of *Mytilus exilis*
598 Philippi, 1847 (MNHN-CL 100031, syntype), originally described from the Peruvian-Chilean
599 coast. That nominal species was previously considered as a possible synonym of *Perumytilus*
600 *purpuratus* (Lamarck, 1819) (e.g., Coan & Valentich-Scott, 2012). However, we consider these

601 two species as distinct and confirm the placement of *M. exilis* in *Gregariella*, a placement also
602 suggested by Valentich-Scott, Coan & Zelaya (2020).

603 ***Modiolus aurum* Osorio, 1979**

604 **Fig. 5 M-T**

605 *Modiolus aurum* Osorio, 1979: 199, figs. 1-7 [shell, gross morphology].
606 *Modiola plumescens* Dunker, – Odhner, 1922: 221. Soot-Ryen, 1959: 23 [“records need
607 confirmation”]. Osorio & Bahamonde, 1970: 192 [listed only]. [See comments on the
608 name *Modiola plumescens*, below].
609 *Modiolus aurum*, – Bernard, 1983: 19 [listed only]. Rozbaczylo & Castilla, 1987: 176 [listed
610 only]. Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. Ramírez & Osorio, 2000:
611 6 [listed only]. Valentich-Scott, Coan & Zelaya, 2020: 115, pl. 39 [holotype and 1
612 paratype].
613 *Mytilus pilosus*, – Stempell, 1899: 221 [specimens from Juan Fernández]. Dall, 1909: 258 [listed
614 only]. Lamy, 1936: 110-111 [with reference to Stempell and Dall]. (Not Reeve, 1858).

615 **Type locality:** 33°37' S, 78°49' W, Bahía Cumberland, Robinson Crusoe Island [Juan
616 Fernández archipelago].

617 **Type material:** Holotype (MNHN-CL 100230), two paratypes (MNHN-CL 100231, MNHN-CL
618 100232), “one hundred additional paratypes in the author’s [C. Osorio’s] collection”; 5 paratypes
619 (NMV F 96495) [the latter not mentioned in the original description].

620 **Other material studied:** Desventuradas: San Félix: LACM 1965-94.1 (2 vs); LACM 1965-95.2
621 (2 vs). San Ambrosio: IOC97-16 (FMNH 322265: 2 av). Juan Fernández: Alejandro Selkirk:
622 *Eltanin* Station 21-203 (USNM 887909: 6 specs, 23 avs, 2 vs; mostly juvenile). Robinson
623 Crusoe: IOC97-44 (FMNH 322262: 2 avs, Fig. 5 M-T; FMNH 322266: 1 spec); MNHN-CL
624 MOL 101612 ex FMNH 327899: 1 av, 4 vs); IOC97-44A (FMNH 322270: 6 vs, fragments);
625 IOC97-57 (FMNH 322263: 3 avs); IOC97-57A (FMNH 322264: 5 vs); IOC97-66A (FMNH
626 322269: 3 vs, juvenile); IOC97-68A (FMNH 322268: 5 vs); LACM 1965-96.1 (2 avs); LACM
627 1965-97.1 (2 avs with dried tissue); LACM 1965-101.2 (7 avs, 1 v; partly with dried tissue);
628 LACM 1966-100.3 (4 vs, juvenile).

629 **Other published records:** Bahía Padres, Juan Fernández (Stempell, 1899). “Masatierra”, 30-45
630 m (Odhner, 1922). Playa “El Palillo” and Playa “El Pangal”, Robinson Crusoe, Juan Fernández;
631 and Alejandro Selkirk Island (Osorio, 1979).

632 **Distribution:** Only known from Juan Fernández and Desventuradas archipelagos.

633 **Description:** Shell to 38.2 mm L, triangular, longer than high, flat, markedly inequilateral,
634 moderately solid. Posterior end much higher than anterior end. Umbo almost at anterior end,
635 rounded, low, only slightly outstanding from dorsal margin. Anterior margin extremely short, not
636 distinctly separated from ventral margin. Ventral margin straight to variably sinuated by byssal
637 embayment. Posterior margin gently curved, high. Dorsal margin long, straight, oblique, forming
638 an obscure angulation at the junction with posterior margin. Posterior area of shell somewhat
639 depressed. Dissoconch only sculptured with low, irregular growth marks; surface yellowish, dull.
640 Periostracum thick, golden-yellowish to brown; projected in long, simple, pointed or spatuliform
641 setae; the latter kind of setae only present in the dorsal area of larger specimens. Hinge plate
642 extremely narrow, lacking tubercles or any other teeth-elements. Nymph long, extending for
643 about half of the total dorsal margin length. Inner shell surface whitish, somewhat nacreous.
644 Inner margin smooth.

645 **Comments:** Stempell (1899) identified as *Mytilus pilosus* specimens from Juan Fernández and
646 Iquique. None of these specimens could be located at ZMB (C. Zorn in litt., July 2022), where
647 other specimens studied by Stempell are housed. Stempell’s records were subsequently copied
648 by Dall (1909) and Lamy (1936). Most probably, the Juan Fernández records were based on
649 *Modiolus aurum*, a species still undescribed at the time. *Modiolus aurum* resembles “*Mytilus*”
650 *pilosus* in general shell outline and by having the periostracum projected in setae. However,
651 according to the original description (Reeve, 1858: species 35) *M. pilosus* strikingly differs by
652 being sculptured with numerous, strong, serrated radial ribs. *Mytilus pilosus* is currently
653 considered a *nomen dubium* (Huber, 2015, electronic appendix).

654 Odhner (1922) identified a specimen collected in Juan Fernández as “*Modiola plumescens*
655 Dunker, 1868”. Osorio (1979) reported that this specimen was lost and, in view of the great
656 similarities of *M. plumescens* and *Modious aurum*, suggested that Odhner’s (1922) record might
657 have been a misidentification. It should be noted that the name *Modiola plumescens*, although

658 widely used (e.g., Huber, 2010, as “*Modiolus plumescens* (Dunker, 1868)”) was never introduced
659 by Dunker. As discussed by Bieler & Petit (2012: 27, 65), the name was first listed as a *nomen*
660 *nudum* by Schmeltz (1864) and formally introduced as *Modiola tumescens* [sic] by Clessin
661 (1888).

662 ***Perumytilus purpuratus* (Lamarck, 1819)**

663 **Fig. 5 U-V**

664 *Modiola purpurata* Lamarck, 1819: 113.
665 *Mytilus ovalis* Lamarck, 1819: 121. Hupé, 1854: 312-313 [listed only].
666 ?*Mytilus exaratus* R. A. Philippi, 1847: 119.
667 *Mytilus (Aulacomya) purpuratus*, – Stempell 1899: 226.
668 *Modiolus purpuratus*, – Dall, 1909: 258 [listed only].
669 *Brachidontes purpuratus*, – Soot-Ryen, 1955: 45, pl. 4, fig. 18 and text fig. 30. Soot-Ryen, 1959:
670 28 [listed only]. Bernard, 1983 [listed only]. Skoglund, 2001: 16-17 [listed only].
671 *Perumytilus purpuratus*, – Olsson, 1961: 117, pl. 12, fig. 1 and pl. 14, figs. 1, 1b. Osorio &
672 Bahamonde, 1970: 192 [listed only]. Marincovich, 1973: 9, fig. 6. Ramorino & Campos,
673 1979: 207-218, pls. 1, 2. Lozada & Reyes, 1981: 147-154. Alamo & Valdivieso, 1997:
674 100, fig. 232. Guzmán, Saá & Ortíz, 1998: 63-64. Aldea & Valdovinos, 2005: 395, fig.
675 10D. Pérez-García et al., 2010: 199-205. Coan & Valentich-Scott, 2012: 119, pl. 37.
676 Uribe et al., 2013: 215. Trovant et al., 2015: 60-74. Oyarzún et al., 2016: 375-385 (in
677 part). Paredes et al., 2016: 132. Valentich-Scott, Coan & Zelaya, 2020: 105-107, pl. 35
678 [neotype].

679 **Type localities:** 9.359° S 78.425° W, Bahía Huaynuna, Ancash, Perú (see Valentich-Scott, Coan
680 & Zelaya, 2020) (*Modiola purpurata*). Mers du Pérou [Perú] (*Mytilus ovalis*). Unknown: *Mytilus*
681 *exaratus*.

682 **Type material:** Neotype of *Modiola purpurata* (= syntype of *Mytilus ovalis*) (MHNG-Moll
683 50635). Holotype of *Mytilus exaratus* (MNHN-CL 100030).

684 **Material studied:** Juan Fernández: Robinson Crusoe: 33°38'09.13" S, 78°49'22.09" W,
685 Cumberland Harbor (MCZ 143489: 1 spec, Fig. 5 U, V).

686 **Distribution:** Estero Zarumilla, Tumbes, Perú [03°30' S] (Dall, 1909) to Coliumo, Bío Bío,
687 Chile [36°36' S] (Trovant et al., 2015); and Juan Fernández (this study).

688

689 **Description:** Shell to 50 mm L, subovate to subtrigonal, longer than high, inflated, markedly
690 inequilateral, thick. Posterior end higher than anterior end. Umbo at or close to anterior end,
691 broadly rounded, low. Anterior margin extremely short, not distinctly separated from ventral
692 margin. Ventral margin straight to markedly curved. Posterior margin gently curved, high.
693 Dorsal margin long, straight, oblique, forming an angulation at the junction with posterior
694 margin. Dissoconch sculptured with radial ribs and comarginal threads. Radial ribs moderate to
695 strong in central and dorsal areas, much thinner ventrally. Shell surface purple. Periostracum
696 thick, dark brown to black. Hinge plate narrow, with several, small tubercles. Nymph long,
697 strong. Inner shell surface whitish to purple, shiny to silky. Inner margin strongly crenulate.

698 **Comments:** *Perumytilus purpuratus* was historically regarded as a widespread species in South
699 America, occurring from Perú in the Pacific Ocean to Golfo San Matías in the Atlantic Ocean
700 (Prado & Castilla, 2006). However, based on data from three molecular markers (COI, 18S and
701 28S), Trovant et al. (2015) recognized two clades: a “North Clade”, restricted to the Peru-Chile
702 Province (in the Pacific coast, north of Coliumo, Bío Bío, Chile [36°36' S]) and a “South Clade”
703 occurring in the Magellanic Province (south of La Misión, Los Lagos, Chile [39°48' S] at the
704 Pacific coast, and extending along southern Argentina, in the Atlantic coast). This distinction is
705 consistent with the result of the microsatellite marker used by Pérez et al. (2008) and the sperm
706 polymorphism reported by Briones et al. (2012). Although no morphological differences
707 between northern and southern clades were detected, Valentich-Scott, Coan & Zelaya (2020)
708 restricted the usage of *Perumytilus purpuratus* to the northern clade, suggesting that a different
709 name might be needed for the southern clade. The two articulated valves studied herein represent
710 the only record of a member of Brachidontinae thus far known from Juan Fernández. These
711 specimens are tentatively identified as *P. purpuratus*.

712

Semimytilus patagonicus (Hanley, 1843)

713

Fig. 5 W-Z

- 714 *Mytilus patagonicus* Hanley, 1843: 236 [based on d'Orbigny MS].
- 715 *Mytilus patagonicus* d'Orbigny, 1846: 646-647; 1847: pl. 85, figs. 12, 13. Clessin, 1887: 82-83,
716 pl. 18, figs. 5, 6. Dall, 1909: 258 [listed only]. Carcelles, 1950: 76, pl. 4, fig. 70. Carcelles
717 & Williamson, 1951: 329 [listed only].
- 718 *Mytilus algosus* Gould, 1850: 344; 1852: 450; 1860: pl. 41, figs. 566, 566a. Johnson, 1964: 39.
- 719 *Mytilus dactyliformis* Hupé, 1854: 310. Hupé, 1858: pl. 5, figs. 6, 6a. Dall, 1909: 258 [listed
720 only]. Carcelles & Williamson, 1951: 329 [listed only].
- 721 *Mytilus splendens* Dunker, 1857: 358. Clessin, 1887: 86. Dall, 1909: 258 [listed only].
- 722 *Modiola splendens*, – Reeve, 1857: *Modiola* plate 7, species 37.
- 723 *Mytilus cuneiformis* Reeve, 1857: *Mytilus* plate 5, species 18. Stempell, 1899: 221. (Not Hanley,
724 1843).
- 725 ? *Mytilus angustanus*, – Reeve, 1858: *Mytilus* plate 9, species 36. Clessin, 1887: 43, pl. 13, figs.
726 5, 6. (Not Lamarck 1819).
- 727 ? *Mytilus similis* Clessin, 1887: 82, pl. 16, figs 3, 4. (Not Münster 1841).
- 728 *Mytilus edulis patagonicus*, – Ihering, 1907: 411.
- 729 *Modiola pseudocapensis* Lamy, 1931: 305-306.
- 730 *Modiolus (Modiolus) nonuranus* Pilsbry & Olsson, 1935: 16, pl. 1 fig. 3. Olsson, 1961: 115, pl.
731 17, fig. 10. Clench & Turner, 1962: 105.
- 732 *Semimytilus algosus*, – Soot-Ryen, 1955: 25-26, text figs 8, 9, 14-16, pl. 4, fig. 17. Soot-Ryen,
733 1959: 25-26. Olsson, 1961: 114-115, pl. 14, fig. 8. Kensley & Penrith, 1970: 17-20, figs
734 2-4. Osorio & Bahamonde, 1970: 191 [listed only]. Marincovich, 1973: 9, fig. 7. Bernard,
735 1983: 19 [listed only]. Alamo & Valdivieso, 1997: 100, 103, fig. 233. Guzmán, Saá &
736 Ortlieb, 1998: 64. Skoglund, 2001: 16-17 [listed only]. Aldea & Valdovinos, 2005: 395,
737 fig. 10H. Villegas, Stotz & Laudien, 2006: 25-31. Coan & Valentich-Scott, 2012: 120, pl.
738 38. Uribe et al., 2013: 216. Bigatti, Signorelli & Schwindt, 2014: 241-246. Paredes et al.,
739 2016: 132. Valentich-Scott, Coan & Zelaya, 2020: 101, pl. 33. Ma et al., 2020a: 507-515;
740 2020b: 1-13.
- 741 *Semimytilus nonuranus*, – Olsson, 1961: 115, pl. 17, fig. 10.
- 742 *Mytella speciosa*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not Reeve, 1857).
- 743 *Modiolus patagonicus*, – Zelaya, 2015: 253.
- 744 *Semimytilus patagonicus*, – Signorelli & Pastorino, 2021a: 55-63; 2021b: 173 [authorship].

745 **Type localities:** Patagonia (Hanley, based on d'Orbigny's manuscript); elaborated by d'Orbigny
746 as îles de Las Gamas [= Gamma Island, 40°30' S 062°12' W] et de los Chanchos [Jabali Island,
747 40°35' S 62°12' W], baie de San-Blas [San Blas Bay, Argentina] (*Mytilus patagonicus*). Perú
748 (*Mytilus algosus*; here restricted). "Ad litus Peruanus" [Perú coast] (*Mytilus splendens*). Bay of
749 Guayaquil [Ecuador] (*Mytilus cuneiformis*). Walfisch [= Walfish Bay, Namibia] (*Modiola*
750 *pseudocapensis*) [fide Huber, 2010]. Beach of Nonura Bay, near Punta Aguja, Peru (*Modiolus*
751 *Modiolus*) *nonuranus*). Unknown localites: *Mytilus dactyliformis*; *Mytilus similis*.

752 **Type material:** *Mytilus patagonicus*: lectotype and 4 paralectotypes (NHMUK
753 1854.12.4.805.5). *Mytilus algosus*: 1 lectotype (MCZ 216829, designated herein, Fig. 5 Y, Z), 2
754 paralectotypes (MCZ 154352), and 1 paralectotype (ANSP 55842). *Modiola pseudocapensis*: 3
755 syntypes, Ponta Gea [Mozambique] (MNHN-IM 25767), 6 syntypes Walfisch [= Walvis Bay,
756 Namibia] (MNHN-IM 25765, MNHN-IM 25766). *Modiolus* (*Modiolus*) *nonuranus*: 2 syntypes
757 (ANSP 164612) and 5 syntypes (ANSP 164613). *Mytilus dactyliformis*, *Mytilus splendens*,
758 *Mytilus cuneiformis*, and *Mytilus similis*: types not found.

759 **Material studied:** Juan Fernández: Robinson Crusoe: 33°38'09.13" S, 78°49'22.09" W,
760 Cumberland Harbor (MCZ 250131: 2 av, with Fig. 5 W, X).

761 **Distribution:** In the eastern Pacific from Manta, Manabí, Ecuador [1° S] (Soot-Ryen, 1955) to
762 Maicolpué, Chile (40°35' S) (Oyarzún et al., 2020), and Juan Fernández (Soot-Ryen, 1955; this
763 study). In the eastern Atlantic [introduced]: from Luanda, Luanda, Angola [8.8° S] (Ma et al.,
764 2020b) to Hermanus, Western Cape, South Africa [34.4° S] (Ma et al., 2020a). In the western
765 Atlantic, only mentioned from Bahía San Blas, Buenos Aires, Argentina [40.5° S] (d'Orbigny,
766 1846) and Puerto Madryn, Chubut, Argentina [42.2° S] (Bigatti, Signorelli & Schwindt, 2014).
767 Introduced in the Indian Ocean, the species was reported from Mozambique (NaGISA Project,
768 2018).

769 **Description:** Shell to 74 mm L, ovate-elongate, longer than high, inflated, markedly
770 inequilateral, thin. Posterior end higher than anterior end. Umbo almost at anterior end, broad,
771 low, only slightly outstanding from dorsal margin. Anterior margin extremely short, not
772 distinctly separated from ventral margin. Ventral margin nearly straight. Posterior margin gently
773 curved, high. Dorsal margin long, straight, oblique, forming an angulation at the junction with

774 posterior margin. Dissoconch only sculptured with thin growth lines; surface whitish to purple.
775 Periostracum thick, light greenish to dark brown. Hinge plate narrow, lacking tubercles or any
776 other teeth-elements. Nymph long, narrow. Inner shell surface whitish to purple, somewhat
777 nacreous. Inner margin smooth.

778 **Comments:** *Semimytilus algosus* was the name predominantly used to refer to this species, until
779 Signorelli & Pastorino (2021a) considered that taxon a junior synonym of *Semimytilus*
780 *patagonicus*. The latter was originally described from the Atlantic coast of South America (Bahía
781 San Blas), where, judging from d'Orbigny's (1846: 647) comment [“elle est excellente à
782 manger”], it appears to have been abundant. However, there are no subsequent records of this
783 species at the Atlantic coast of South America, except for specimens found attached to a squid-
784 fishing vessel during an in-water hull cleaning (Bigatti, Signorelli & Schwindt, 2014). At
785 present, the species is apparently not living in this area (Signorelli & Pastorino, 2021a).

786 The type locality of *Mytilus algosus* has been historically unclear: Gould (1850) originally
787 described the species as coming from the “South Seas”, and later (Gould 1852) specified “Feejee
788 islands” [= Fiji]. Soot-Ryen (1955) regarded *M. algosus* as a South American species,
789 consequently considering “Fiji” as an incorrect provenance. Considering that the *U.S. Exploring*
790 *Expedition* – as part of which the material studied by Gould was collected – visited the
791 surroundings of only two localities in the Southeastern Pacific (Valparaiso in Chile and Callao in
792 Peru), Soot-Ryen (1955) considered “it therefore safe to make Valparaiso the type locality”, but
793 did not indicate the reason why he chose this locality over Callao. Signorelli & Pastorino (2021a)
794 considered the locality selected by Soot-Ryen (1955) as wrong, alternatively correcting it to
795 “Callao, Peru”, based on the provenance of the three syntypes of *M. algosus* they studied (MCZ
796 154352: 2 loose valves; MCZ 216829: 1 syntype, consisting of 2 loose valves). However, the
797 only information currently available in the MCZ original book register and specimen lot labels,
798 is “Perú” (<https://mczbase.mcz.harvard.edu/guid/MCZ:Mala:154352>;
799 <https://mczbase.mcz.harvard.edu/guid/MCZ:Mala:216829>). In addition, there is another
800 supposed syntype of *M. algosus* (ANSP 55842), labeled as coming from “Pasco, Perú”, a site in
801 fact visited by some members of the *U.S. Exploring Expedition* (Wilkes, 1845), although not
802 located on the coast. In view of the prior confusion concerning the exact provenance of the type
803 material, a lectotype is here designated for *M. algosus* (lot MCZ 216829; figured in Signorelli &

804 Pastorino, 2021a: fig. 3 A-D). This lectotype designation consequently fixes the type locality of
805 the species as “Perú”.

806 Pilsbry & Olsson (1935) described *Modiolus (Modiolus) nonuranus* from the “Beach of Nonura
807 Bay, near Punta Aguja, northern Peru (Olsson), type 164612 ANSP; also at Punta Capullana [...].
808 Paratypes in Olsson collection.” They provided dimensions (39.00 mm and 37.50 mm L) for two
809 specimens, of which one was illustrated. The specimens from Punta Capullana were described as
810 small (up to 30 mm). Signorelli & Pastorino (2021a) described the type series as composed of
811 the “holotype (ANSP 164612) and 2 paratypes (ANSP 164613, ANSP 164614).” However, ever
812 since the time of cataloging (on 13 February 1935), the lot ANSP 164612 has contained 4 valves
813 (= 2 specimens) (G. Rosenberg, *in litt.*, February 2023), which matches the original account of
814 two differently sized shells in the original “type” lot. These qualify as syntypes, as does lot
815 ANSP 164613 from the type locality. Lot ANSP 164614 stems from Punta Capullana.

816 In the eastern Atlantic, *Semimytilus patagonicus* has been known since the end of the 1920s and
817 it was described by Lamy (1931) under the name *Modiola pseudocapensis*. The exact date of
818 arrival of this South American species to Africa and the vector allowing that process remain
819 unknown, and it was not until recent times that the conspecificity of these two entities was
820 confirmed (de Greef, Griffiths & Zeeman, 2013). Today, *S. patagonicus* spans along the African
821 coasts for more than 25° latitude (Ma et al., 2020b).

822 The specimens examined as part of this study represent the only record of this species from Juan
823 Fernández archipelago to date. These specimens were previously mentioned by Soot-Ryen
824 (1955) as *Semimytilus algosus* and by Bernard, McKinnell & Jamieson (1991) as *Mytella*
825 *speciosa*.

826 *Aulacomya atra* (Molina, 1782)

827 **Comments:** The only record of this species in Juan Fernández archipelago comes from Osorio
828 (2002), who included this archipelago in the geographic distribution of the species without
829 providing specific data.

830

ARCIDAE

831 *Acar pusilla* (Sowerby I, 1833)
832 **Fig. 6 A-D**
833
834 *Byssarca pusilla* Sowerby I, 1833: 18.
835 *Arca pusilla*, – Philippi, 1860: 176. Dall, 1909: 252 [listed only].
836 ? *Arca gradata*, – Stempell, 1899: 220. (Not Broderip & G. B. Sowerby, 1829).
837 *Barbatia (Acar) pusilla*, – Marincovich, 1973: 8, fig. 2. Alamo & Valdivieso, 1997: 93 [listed
838 only]. Guzmán, Saá & Ortíeb, 1998: 60.
839 *Barbatia pusilla*, – Bernard, 1983: 15 [listed only]. Bernard, McKinnell & Jamieson, 1991: 36
840 [listed only].
841 *Acar pusilla*, – Reinhart, 1939: 41-42, pl. 3, figs. 2a, b. Rost, 1955: 191-192, pl. 12, fig. 13. Soot-
842 Ryen, 1959: 20. Osorio & Bahamonde, 1970: 189 [listed only]. Nielsen, 2013: 50, fig. 8g.
843 h. Paredes et al., 2016: 134 [listed only]. Valentich-Scott, Coan & Zelaya, 2020: 121, pl.
844 40.
845
846 **Type locality:** “Iquique, Peruviae” [= Iquique, Chile].
847
848 **Type material:** Holotype (NHMUK 1969.236).
849 **Other material studied:** Desventuradas: San Félix: LACM 1965-94.2 (2 vs; Fig. 6 A-D).
850 **Distribution:** San Bartolo, Lima, Perú ($12^{\circ}18' S$) to Bahía de la Herradura de Guayacán,
851 Coquimbo, Chile ($30^{\circ}00' S$) (Valentich-Scott, Coan & Zelaya, 2020), and Desventuradas
852 archipelago; with a published record from Isla La Plata, Manabí, Ecuador ($1^{\circ}18' S$), see
853 Comments below.
854 **Description:** Shell to 12 mm L, trapezoidal, longer than high, markedly inflated, slightly
855 inequilateral, solid. Posterior end higher than anterior end. Umbo low but wide, truncated,
856 subcentrally located, prosogyrate. Dorsal margin straight, forming well-marked angulations at
857 the junctions with anterior and posterior margins. Anterior margin broadly rounded. Ventral
858 margin almost straight, not distinctly separated from anterior and posterior margins, with

859 variably developed byssal embayment. Posterior margin oblique, somewhat arched. Posterior
860 area of shell depressed; umbo strong, rounded. Dissocoach sculptured with about 30
861 heavy radial ribs and finer comarginal sculpture. Radial ribs separated by narrow interspaces and
862 somewhat projected from shell margins. Comarginal sculpture of low and thin cords near the
863 umbo, gradually increasing in height towards ventral margin, originating bars and scales when
864 crossing over radial sculpture. Shell surface whitish. Hinge plate solid, wider posteriorly than
865 anteriorly; ventral margin arched; with 15 striated teeth, arranged in two continuous series,
866 perpendicular to hinge line. Exterior cardinal area narrow. Ligament elongate, mostly posterior.
867 Inner shell surface porcelaneous, strongly crenulated outside pallial line.

868

869 **Comments:** Stempell (1899) identified specimens from Cavancha, Iquique, Chile as *Acar*
870 *gradata* (under *Arca*). The specimens he studied were not figured, but according to Coan &
871 Valentich-Scott (2012), the range of *A. gradata* does not extend south of Isla Galápagos,
872 Ecuador. The only *Acar* species thus far known from the Chilean coastline is *A. pusilla*. The
873 specimen figured by Huber (2010: 131) as *Acar pusilla* shows a more trapezoidal shell outline,
874 with obliquely truncated posterior margin, and narrower and more uniform radial sculpture than
875 the holotype of the species (figured by Reinhart, 1939: 2a, b). Due to the lack of provenance
876 information with Huber's specimen, the identity of this material could not be determined. Rost
877 (1955) identified as *Acar pusilla* seven specimens collected at Isla [de] la Plata, Ecuador (1.3° S).
878 Valentich-Scott, Coan & Zelaya (2020) were unable to locate these specimens or any other
879 specimen of this species north of Perú. We are uncertain about the northern distributional limit
880 for this species. It may be occasionally found in Equatorial waters or, alternatively, Rost's (1955)
881 record may be reflecting another case of cryptic speciation, which according to Marko and
882 Moran (2009) is a common phenomenon within this genus.

883

884 *Acar bernardi* n. sp.

885 **Fig. 6 E-J**

886

887 *Hiatella solida*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not Sowerby, 1834).

888

889 **Type locality:** 26°20' S, 80°03' W, SE off San Félix Island, Desventuradas, 415 m (R/V *Anton*
890 *Bruun* Cruise 17, station 675H, by Campbell grab, 12 July 1966; LACM 1966-99).

891

892 **Type material:** Holotype (LACM 3822: 1 v, Fig. 6 E, F) and 2 paratypes (LACM 3823: 1 v,
893 Fig. 6 G, H; FMNH 312477 ex LACM 3823: 1 v, Fig. 6 I, J) from the type locality.

894 **Distribution:** Only known from Desventuradas archipelago.

895

896 **Diagnosis:** Shell trapezoidal, sculptured with wide radial ribs and thin com marginal sculpture, the
897 latter increasing in height ventrally, forming lamellae.

898

899 **Description:** Shell to 9.0 mm L, trapezoidal, longer than high, inflated, inequilateral, solid.
900 Posterior end higher than anterior end. Umbo small in smaller specimens, broad in larger
901 specimens, anteriorly located, prosogyrate. Dorsal margin straight, forming angulations at the
902 junctions with anterior and posterior margins. Anterior margin curved. Ventral margin almost
903 straight, not distinctly separated from anterior margin. Posterior margin obliquely truncated,
904 slightly arched. Posterior area of shell wide, depressed; umbonal carina indistinct. Dissoconch
905 sculptured with strong, low but wide radial ribs and thin com marginal sculpture. Radial ribs
906 separated by interspaces wider than ribs width. Com marginal sculpture consisting of cords near the
907 umbo, gradually increasing in height, forming low lamellae towards ventral margin; originating
908 bars when crossing over radial sculpture. Shell surface whitish. Hinge plate narrow, somewhat
909 wider posteriorly than anteriorly; ventral margin forming a weak angle; with about 20 teeth,
910 perpendicular to hinge line. Anterior and posterior series of teeth continuous. Exterior cardinal
911 area narrow. Inner shell surface porcelaneous, strongly crenulated outside pallial line.

912

913 **Etymology:** Named for Frank R. Bernard (1940-1989), biologist and head of the Shellfish
914 Section and the Salmon and International Section of the Pacific Biological Station in Nanaimo,
915 Canada, who published a preliminary listing of the bivalves collected by the *Anton Bruun*
916 expeditions to the Desventuradas.

917

918 **Comments:** *Acar bernardi* n. sp. closely resembles *Acar gradata* Broderip and Sowerby, 1829
919 (a syntype of the latter figured by Coan and Valentich-Scott, 2012: pl. 50), from which it differs

920 by having a shorter and higher shell and narrower and higher comarginal sculpture forming
921 lamellae (instead of comarginal cords, as in *A. gradata*). The trapezoidal shell outline, with
922 anteriorly displaced umbo, markedly projected posterior end, and truncated posterior margin
923 clearly allow the distinction of *Acar bernardi* n. sp. from *Acar pusilla*. The present material was
924 previously identified by Bernard, McKinnell & Jamieson (1991) as *Hiatella solida*. However, the
925 taxodont hinge clearly excludes these specimens from the Hiatellidae.

926

927 ***Anadara stempelli* n. sp.**

928 **Fig. 6 K-M**

929 *Arca (Barbatia) platei* Stempell, 1899: 220 (in part).

930 **Type locality:** Juan Fernández archipelago, intertidal.

931 **Type material:** Holotype (ZMB 51988a: 1 v, Fig. 6 K-M).

932 **Distribution:** Only known from Juan Fernández archipelago.

933 **Diagnosis:** Shell ovate-elongate, with low umbo, wide posterior area and uniformly crenulated
934 inner shell margin.

935 **Description:** Shell to 2.6 mm L, ovate-elongate, longer than high, only slightly inflated,
936 inequilateral, solid. Posterior end higher than anterior end. Umbo prominent, low but wide,
937 anteriorly located, prosogyrate. Dorsal margin straight, forming prominent angulations at the
938 junctions with anterior and posterior margins. Anterior margin broadly rounded. Ventral margin
939 widely curved, not distinctly separated from anterior and posterior margins. Posterior margin
940 sinuous, sloping obliquely. Posterior area of shell somewhat depressed, slightly auriculate;
941 umbonal carina indistinct. Dissoconch sculptured with about 35 coarse and flat radial ribs and
942 finer comarginal sculpture. Radial ribs simple, similar in solidness all along shell surface,
943 producing undulations in shell margins. Comarginal sculpture originating weak bars over radial
944 sculpture. Shell surface pale cream with brownish blotches. Periostracum dark brown, dehiscent.
945 Hinge plate moderately solid, widening at anterior and posterior ends; ventral margin weakly
946 arched. Two continuous series of small teeth, increasing in size anterior and posteriorly,

947 obliquely oriented with respect to hinge line, present. Anterior and posterior series with 16 teeth
948 each. Exterior cardinal area narrow, slightly depressed. Ligament amphidetic, well extended
949 anteriorly and posteriorly. Inner shell surface porcelaneous, strongly crenulated outside pallial
950 line, with weaker radial lines inside pallial line.

951 **Ethymology:** Named for the German biologist Carl Ludwig Walter Stempell (1869-1938), who
952 in 1899 published a foundational work on the Juan Fernández bivalve fauna.

953 **Comments:** The material on which this new species is based stems from a mixed collection lot
954 that served as syntype series for *Arca (Barbatia) platei* Stempell, 1899 [currently in genus
955 *Kamanevus*, see below]. The new species described herein clearly differs from *K. platei* by
956 having a greater number of hinge teeth, which are oriented obliquely (instead of parallel) to the
957 hinge line. In addition, the inner shell margin of the new species is strongly crenulated, whereas
958 that of *K. platei* is smooth. This represents the first record of the genus *Anadara* in Chilean
959 waters. Among the *Anadara* species occurring in the eastern Pacific, *Anadara stempelli* n. sp. is
960 morphologically most similar to *A. formosa* (Sowerby I, 1833) [syntype figured in Coan &
961 Valentich-Scott, 2012: pl. 56], from which it differs by having a less projected posterior end,
962 resulting in a shorter and higher shell outline, and by its wider posterior area. Furthermore, the
963 inner shell margin crenulations in *Anadara stempelli* n. sp. are uniform in solidness, whereas in
964 *A. formosa* there are strong anterior and posterior crenulations and more delicate ventral
965 crenulations.

966 ***Bathyarca corpulenta* (Smith, 1885)**

967 **Fig. 6 N-P**

968 *Arca (Barbatia) corpulenta* Smith, 1885: 263, pl. 17, figs. 5, 5b.
969 *Bathyarca corpulenta*, – Bernard, 1983: 16 [listed only]. Valentich-Scott, Coan & Zelaya, 2020:
970 125, pl. 41 [syntype from Philippines].

971 **Comments:** Smith (1885) described *B. corpulenta* based on specimens collected during the
972 H.M.S. Challenger Expedition in deep waters of Oceania, Indonesia, mid-Pacific Ocean, and
973 Juan Fernández. At present, the affinities of this material with specimens of *Bathyarca* reported
974 from other parts of the world remain uncertain. Knudsen (1970) included *Bathyarca corpulenta*

975 (together with *Arca (Barbatia?) imitata* Smith, 1885, *Bathyarca abyssorum* Verrill & Bush,
976 1898, *Arca strebeli* Melvill & Standen, 1907, *Arca (Bathyarca) nucleator* Dall, 1908, and *Arca*
977 (*Bathyarca*) *corpulenta pompholyx* Dall, 1908) in the synonymy of *Bathyarca orbiculata* (Dall,
978 1881), considering the latter as a widespread species, occurring in the Atlantic and Pacific
979 Oceans, as well as in the Antarctic waters. However, this interpretation was not shared by Oliver
980 & Allen (1980), who regarded *B. corpulenta* as a distinct, valid species, restricted to the Pacific
981 Ocean. Coan & Valentich-Scott (2012) and Valentich-Scott, Coan & Zelaya (2020) accepted the
982 synonymy of *Arca (Bathyarca) corpulenta pompholyx* Dall, 1908 with *B. corpulenta*,
983 consequently considering the species extending to the North Pacific Ocean. *Bathyarca*
984 *corpulenta* is currently known from a single Juan Fernández specimen, an original syntype,
985 obtained at H.M.S. *Challenger* Expedition station 300 [33°42' S, 78°18' W, off Robinson
986 Crusoe Island], in 1,375 fathoms [2,515 m] depth (Smith, 1885), which is here figured for the
987 first time (NHMUK 1889.11.11.131, Fig. 6 N-P). This syntype, although severely damaged,
988 shows some differences in general shell outline, inflation, sculpture, and form of the lunule from
989 the other (eastern Pacific and Indonesian) syntypes. The significance of these differences could
990 not be determined.

991 ***Tetraarca fernandezensis* (Hertlein & Strong, 1943)**

992 **Fig. 6 Q-EE**

993 *Arca angulata* King, 1832: 336. (Not Brugière, 1789).
994 *Arca (Arca) fernandezensis* Hertlein & Strong, 1943: 154 [replacement name for *Arca angulata*
995 King, 1832].
996 *Arca angulata* King, – Reeve, 1844: *Arca* plate XIII, species 84. Stempell, 1899: 219, pl. 12,
997 figs. 1-9. Dall, 1909: 251 [listed only]. Odhner, 1922: 222.
998 *Arca (Arca) fernandezensis*, – Soot-Ryen, 1959: 20 [listed only]. Osorio & Bahamonde, 1970:
999 189 [listed only]. Bernard, 1983: 14 [listed only]. Rozbaczylo & Castilla, 1987: 176
1000 [listed only]. Ramírez & Osorio, 2000: 6 [listed only].
1001 *Arca fernandezensis*, – Bernard, 1983: 14 [listed only]. Bernard, McKinnell & Jamieson, 1991:
1002 36 c.
1003 “*Arca*” *fernandezensis*, – Valentich-Scott, Coan & Zelaya, 2020: 123, pl. 40.

- 1004 “*Arca*” species A Valentich-Scott, Coan & Zelaya, 2020: 123, pl. 41.
- 1005 *Tetraarca fernandezensis*, – Vermeij & Amano, 2021: 44.
- 1006 ? *Arca cf. fernandezensis*, – Tapia-Guerra et al., 2021: Table S2 [listed only].
- 1007 **Type locality:** Off Cumberland Bay, [Robinson Crusoe Island], Juan Fernández archipelago, 80
1008 fathoms [146.3 m].
- 1009 **Type material:** 2 syntypes (NHMUK 1969.202; with Fig. 6 Q-U).
- 1010 **Other material studied:** Desventuradas: San Félix: IOC97-26 (FMNH 322280: 12 vs, juvenile),
1011 MNHN-CL MOL 101613 ex FMNH 327895: 11 vs, juvenile); IOC97-29 (FMNH 322282: 2 vs);
1012 IOC97-30 (FMNH 322281: 1 v); IOC97-32 (FMNH 322283: 6 vs); LACM 1965-95.3 (1 av, 15
1013 vs); LACM 1966-98.3 (3 vs, juvenile). Juan Fernández: (LACM 10496: 2 av, with Fig. 6 Y, Z).
1014 Alejandro Selkirk: IOC97-48 (FMNH 322285: 3 specs; FMNH 322287: 4 specs); IOC97-48A
1015 (FMNH 322278: 12 vs, juvenile); IOC97-50 (FMNH 322279: 9 vs); IOC97-50A (FMNH
1016 322272: 12 vs, juvenile, with Fig. 6 AA-CC); *Eltanin* Station 21-203 (USNM 886931B: 1 av,
1017 juvenile). Robinson Crusoe: IOC97-44 (FMNH 322271: 6 avs, 5 vs, with Fig. 6 W, X); IOC97-
1018 44A (FMNH 322276: 46 vs, juvenile); IOC97-57 (FMNH 322274: 1 av, Fig. 6 V; FMNH
1019 322286: 4 specs); IOC97-57A (MNHN-CL MOL 101614 ex FMNH 322275: 12 vs, juvenile);
1020 IOC97-64 (FMNH 322284: 1 spec); IOC97-66A (MNHN-CL MOL 101615 ex FMNH 322267:
1021 2 avs, 2 vs); IOC97-66A (FMNH 322273: 1 av, 6 vs, juvenile, with Fig. 6 DD, EE); IOC97-68A
1022 (FMNH 322277: 17 vs, juvenile); LACM 1965-96.2 (2 vs); LACM 1965-97.2 (4 vs); LACM
1023 1965-99.2 (3 vs, juvenile); LACM 1965-101.3 (1 v); LACM 1965-103.1 (1 v); LACM 1966-
1024 100.4 (14 vs, juvenile); “Masatierra”, 60-70 m (SMNH 1225: 2 specs, reported by Odhner,
1025 1922).
- 1026 **Other published records:** Juan Fernández, intertidal and in 20–40 fathoms [37–73 m]
1027 (Stempell, 1899). Playa “El Palillo”, Robinson Crusoe, Juan Fernández (Ramírez & Osorio,
1028 2000). West Bay, Isla Santa Clara, Juan Fernández, 25 fathoms, USNM 368920; Bahía
1029 Cumberland, Robinson Crusoe, Juan Fernández, USNM 368930 (Valentich-Scott, Coan &
1030 Zelaya, 2020).
- 1031 **Distribution:** Only known from Juan Fernández and Desventuradas archipelagos.

1032 **Description:** Shell to 41 mm L, subquadrate, trapezoidal or triangular, longer than high, inflated,
1033 inequilateral, thick. Posterior end obliquely truncated; anterior end pointed, usually lower than
1034 posterior end. Umbo small and pointed in small-sized specimens, wide and rounded in larger
1035 specimens; anteriorly displaced, sometimes terminal; usually well-outstanding from dorsal shell
1036 margin, frequently eroded in larger specimens; prosogyrate. Antero-dorsal and postero-dorsal
1037 margins straight, the former sometimes indistinct. Posterior margin sloping obliquely, straight or
1038 sinuous, forming well-marked angulations at the junction with dorsal and ventral margins.
1039 Ventral margin sometimes straight and parallel to dorsal margin, sometimes forming a gentle
1040 curve; situated by a usually broad byssal embayment. Anterior margin parallel to posterior
1041 margin, straight to slightly arched; distinctly separated from ventral margin or clearly
1042 differentiated and forming a weak angulation with it. Posterior area of shell depressed, delimited
1043 by prominent, rounded umbonal carina. Dissoconch sculptured with scaly radial ribs, which
1044 crenulate shell margins. Posterior area with 5–7 strong, wide and low ribs; central and anterior
1045 areas with numerous, narrow, densely packed ribs, the anteriomost sometimes broader than the
1046 others, particularly in smaller specimens. Largest specimens usually with sculpture eroded. Shell
1047 surface whitish with brownish blotches or lines. Periostracum light brown, forming foliated
1048 distally-branched periostracal bristles, with irregular margins; longer bristles along umbonal
1049 carina; periostracum usually lost in larger specimens. Hinge plate narrow, usually uniformly in
1050 width, sometimes widening anterior and posteriorly; ventral margin angled to almost straight.
1051 Teeth in two series, at weak angle in the smaller specimens, but forming a continuous, straight
1052 line in larger specimens. Teeth small, increasing in size from the umbo to the anterior and
1053 posterior ends; obliquely oriented in smaller specimens, perpendicular to the hinge line in larger
1054 ones; microstriated. Exterior cardinal area wide. Ligament external, amphidetic. Inner shell
1055 surface also showing brownish blotches or color lines. Inner margin crenulated. Anterior and
1056 ventral margins with fine crenulations, posterior margin with strong crenulations; crenulations
1057 restricted to the outside of pallial line. Posterior adductor muscle scar with myophoric ridge
1058 extending into the umbonal cavity; anterior adductor muscle sometimes also with myophoric
1059 ridge.

1060 **Comments:** Hertlein & Strong (1943) introduced *Arca (Arca) fernandezensis* as a replacement
1061 name for *Arca angulata* King, 1832 “non *Arca angulata* Meuschen, 1787”. Coan & Petit (2006)
1062 did not find any available usage of *Arca angulata* prior to 1832, consequently considering

1063 Hertlein & Strong's name as an unnecessary replacement name. However, *Arca angulata* King,
1064 1832 is a junior homonym of *Arca angulata* Brugière, 1789 (= *Glycymeris decussata* (Linnaeus,
1065 1758)), a fact that makes Hertlein & Strong's name valid.

1066 The studied material reveals that *Tetrarca fernandezensis* is greatly variable in shell outline,
1067 morphology of the umbo, and shell sculpture. This is consistent with the variation previously
1068 described and figured by Stempell (1899: figs. 1-9). The material reported by Valentich-Scott,
1069 Coan & Zelaya (2020) as “*Arca*” species A fits within this range of variability and consequently
1070 this name is included in the synonymy.

1071 Tapia-Guerra et al. (2021) identified as *Arca cf. fernandezensis* specimens collected in
1072 Desventuradas, at 150-180 m. These specimens most probably correspond to *Tetrarca*
1073 *fernandezensis*.

1074 **GLYCYMERIDIDAE**

1075 ***Tucetona sanfelixensis* n. sp.**

1076 **Fig. 7 A-F**

1077 ? *Tucetona kauaia*, – Tapia-Guerra et al., 2021: Table S2 [listed only]. (Not Dall, Bartsch &
1078 Rehder, 1938).

1079 **Type locality:** 26°16'52.86" S, 80° 06' 48" W, NW side of San Félix Island, Desventuradas, 40-
1080 110 m (by bottom trawling; 28 February 1997; IOC97-39).

1081 **Type material:** Holotype (MNHN-CL MOL 101616 ex FMNH 327892: 1 v, Fig. 7 A, B) and 4
1082 paratypes (MNHN-CL MOL 101617 ex FMNH 327893: 1 v, Fig. 7 C, D; FMNH 322250: 3 v;
1083 with Fig. 7 E-F; LACM 3824 ex FMNH 327894: 1 v) from the type locality.

1084 **Distribution:** Only known from Desventuradas archipelago.

1085 **Diagnosis:** Shell subovate, with low and wide umbo, strong hinge plate and prominent
1086 crenulations along inner margin. Anterior radial rib flat-topped; posterior radial ribs triangular in
1087 outline.

1088 **Description:** Shell to 36 mm L, subovate, slightly longer than high, somewhat inflated,
1089 inequilateral, solid. Umbo subcentrally located, low, wide, orthogyrate. Anterior margin forming
1090 a continuous curve with anterior part of ventral margin. Posterior part of ventral margin
1091 flattened. Posterior margin straight to slightly arcuated, forming a prominent angulation at the
1092 junction with ventral margin. Posterior shell area flattened. Dissocoach sculptured with 21–23
1093 strong radial ribs, crossed by fine, regularly distributed, widely spaced comarginal threads, which
1094 forms crossbars over radial ribs. Radial sculpture profile differing along shell: anterior ribs flat-
1095 topped, divided longitudinally by a thin furrow; posterior ribs triangular in cross-section. Ribs
1096 undulating shell margin. Interspaces as wide as ribs. Hinge plate moderately strong, with
1097 relatively long hinge line; 8–12 anterior teeth and 8–13 posterior teeth; both series of teeth
1098 separated by a short, edentulous space. Ligament subsymmetrical, slightly longer anteriorly, with
1099 4 chevron grooves. Inner shell surface white to cream, with brown-yellowish mottling. Inner
1100 shell margins strongly crenulated. Adductor muscle scars well marked, subovate, subequal.

1101 **Etymology:** Named for the type locality, San Félix Island, Desventuradas; adjective.

1102 **Comments:** *Tucetona sanfelixensis* n. sp. closely resembles the Hawaiian *Tucetona kauaia*
1103 (Dall, Bartsch & Rehder, 1938) (holotype: USNM 173043), from which it differs by having a
1104 smaller posterior area of shell and a shorter anterior end. In addition, *Tucetona sanfelixensis* n.
1105 sp. has wider and higher umbos than *T. kauaia*, and a stronger hinge plate. The radial ribs in
1106 *Tucetona sanfelixensis* are less numerous than in the holotype of *T. kauaia* (21–23 vs. 29), and
1107 contrary to those found in that species, they differ in outline along the shell. Raines & Huber
1108 (2012) identified as *T. kauaia* two valves collected at Eastern Island. However, these valves
1109 strikingly differ from the holotype of *T. kauaia* by having full umbos, less projected anterior and
1110 posterior ends, and fewer radial ribs. The specimen figured by Raines & Huber (2012: fig. 9A-E)
1111 appears similar to that described herein as *Tucetona sanfelixensis* n. sp.. The question of
1112 conspecificity of these Easter Island specimens deserves further study. Tapia-Guerra et al. (2021)
1113 also listed as *Tucetona kauaia* specimens collected in Desventuradas and the adjacent seamounts,
1114 in a bathymetric range of 130 to 215 m depth. These specimens most probably also correspond to
1115 the new species described herein.

1116 In general shell outline, *Tucetona sanfelixensis* n. sp. also resembles *Tucetona bicolor* (Reeve,
1117 1843) [syntype figured in Valentich-Scott & Garfinkle, 2011: fig. 1H-J], from which it differs by
1118 having a greater number of coarser radial ribs, wider interspaces between the radial ribs, and
1119 stronger internal crenulations.

1120 **PARALLELODONTIDAE**

1121 ***Kamanevus platei* (Stempell, 1899)**

1122 **Fig. 8 A-F**

1123 *Arca (Barbatia) platei* Stempell, 1899: 220, pl. 12, figs. 10-12 (in part).
1124 *Arca (Cucullaria) platei*, – Dall, 1909: 252 [listed only].
1125 *Barbatia platei*, – Soot-Ryen, 1959: 20 [listed only]. Osorio & Bahamonde, 1970: 189 [listed
1126 only]. Rozbaczylo & Castillo, 1987: 176 [listed only].
1127 *Barbatia magellanica*, – Bernard, 1983: 15 [listed only]. Bernard, McKinnell & Jamieson, 1991:
1128 36 [listed only]. (Not Gmelin, 1791).
1129 *Barbatia s.l. platei*, – Huber, 2010: 564.
1130 *Kamanevus platei*, – Valentich-Scott, Coan & Zelaya, 2020: 135, pl. 45 [syntype].

1131 **Type locality:** Juan Fernández [archipelago], intertidal.

1132 **Type material:** The syntype figured by Stempell (1899) was studied herein and is designated as
1133 lectotype (ZMB 51988; Fig. 8 A-F).

1134 **Distribution:** Only known from Juan Fernández archipelago.

1135 **Description:** Shell to 23 mm L, elongated, longer than high, flat, inequilateral, moderately solid.
1136 Posterior end higher than anterior end. Umbo broad, low, only slightly raised from dorsal
1137 margin, prosogyrate. Dorsal margin straight. Posterior margin sloping obliquely, straight to
1138 slightly convex. Ventral margin not clearly separated from anterior margin, with well-marked
1139 byssal embayment. Posterior area of shell slightly depressed. Umbonal carina ill defined.
1140 Dissococonch sculptured with numerous, thin radial ribs and comarginal threads. Periostracum
1141 dark brown, slightly projected from shell margin, and forming relatively long, thin periostracal
1142 bristles, uniform in morphology along the shell. Hinge plate extremely narrow below the umbos,

1143 widening anteriorly and posteriorly. Hinge line straight; ventral margin of hinge plate arcuated.
1144 Two series of crenulated teeth, parallel to hinge line, comprising 4 anterior and 5 posterior teeth;
1145 both series separated by an edentulous space. Anterior teeth short, increasing in size from the
1146 umbo forwards. Posterior teeth long, straight, reducing in size from the umbo backwards.
1147 Exterior cardinal area extremely narrow. Ligament amphidetic, more extended posteriorly than
1148 anteriorly. Inner shell surface porcellaneous. Inner shell margin smooth.

1149 **Comments:** The material on which Stempell (1899) based the description of this species is
1150 housed at the ZMB. The syntype series currently consists of one valve pair and a single valve
1151 (ZMB 51988). Stempell (1899) mentioned additional specimens not currently in the ZMB
1152 collection (C. Zorn *in litt.*, July 2022). The individuals in the available type series are not
1153 conspecific. One valve of a different species was separated and described (above) as a new
1154 species: *Anadara stempelli*. To fix the species concept of *Arca (Barbatia) platei*, we here
1155 designate a lectotype for this species (illustrated in Fig. 8 B-F; ZMB 51988). The selected
1156 specimen is the specimen originally figured by Stempell (1899: figs. 10-12) and was marked by
1157 his label stating “Dieses Expl. liegt meiner Zeichnung zu Grunde” = this specimen is the basis of
1158 my drawing).

1159 Bernard, McKinnell & Jamieson (1991) listed *Barbatia magellanica* for Juan Fernández
1160 archipelago, “from Rozbacylo & Castilla (1987)”. However, these authors did not report that
1161 species, but “*Barbatia platei*”, a species missing in Bernard, McKinnell & Jamieson’s (1991)
1162 list.

1163 Bernard (1983) placed *Arca (Barbatia) platei* as a junior synonym of *Barbatia magellanica*
1164 Bruguière, 1789 (incorrectly as of Gmelin, 1791), a species originally described from the
1165 “Magellan Strait”. This was followed by Bernard, McKinnell & Jamieson (1991) when reporting
1166 *Barbatia magellanica* from Juan Fernández archipelago. Bernard did not explain the proposed
1167 synonymy, which disagrees with earlier opinions by Philippi (1849), Kobelt (1891) and Lamy
1168 (1907), who considered the stated type locality of *B. magellanica* as erroneous and viewed it as a
1169 junior synonym of Mediterranean *Barbatia barbata* (Linnaeus, 1758). This was also followed by
1170 recent authors (e.g., Huber, 2010).

1171 *Kamanevus platei* is the first unequivocal extant member of the family Parallelodontidae
1172 (Hickman, 2021).

1173 **PHILOBRYIDAE**

1174 ***Philobrya aequivalvis* (Odhner, 1922)**

1175 **Fig. 9 A-L**

1176 *Avicula (Stempellia* n. subgen.) *aequivalvis* Odhner, 1922: 221, pl. 8, figs. 3, 4. (Not *Stempellia*
1177 Léger & Hesse, 1910).

1178 *Philobrya aeqvivalvis* [sic], – Soot-Ryen, 1959: 22 [listed only; transfer to Philobryidae].

1179 *Philobrya aequivalvis*, – Osorio & Bahamonde, 1970: 190 [listed only]. Rozbaczylo & Castilla,
1180 1987: 176 [listed only]. Valentich-Scott, Coan & Zelaya, 2020: 142, pl. 47 [holotype].

1181 *Avicula (Stempellia) aequivalvis*, – Sandberg & Warén, 1993: 121 [list of Odhner's taxa].

1182 *Philobrya antarctica*, – Bernard, 1983: 16 [listed only]. Bernard, McKinnell & Jamieson, 1991:
1183 36 [listed only]. (Not Philippi, 1868).

1184 *Philobrya brattstroemi* (sic), – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not *P.*
1185 *brattstromi* Soot-Ryen, 1957).

1186 **Type locality:** Masatierra [= Robinson Crusoe Island, Juan Fernández archipelago], 20-35 m.

1187 **Type material:** Holotype (GNM 11968: 1 av, Fig. 9 A, B).

1188 **Other material studied:** Juan Fernández: Alejandro Selkirk: IOC97-48A (FMNH 322235: 2
1189 vs); IOC97-50A (FMNH 322237: 12 vs, with Fig. 9 G); *Eltanin* station 21-203 (USNM 886931:
1190 > 500 specs, with Fig. 9 H-J; USNM 904366: > 200 specs, mostly juvenile); *Eltanin* station 21-
1191 205 (USNM 870044: 2 avs, with Fig. 9 E, F). Robinson Crusoe: IOC97-44A (FMNH 322236: 21
1192 vs); IOC97-57A (FMNH 322234: 1 v); IOC97-66A (FMNH 322239: 53 vs, 2 fragments, with
1193 Fig. 9 K, L), MNHN-CL MOL 101618 ex FMNH 327896: 40 vs); LACM 1965-97.3 (1 av, Fig.
1194 9 C); LACM 1965-98.2 (1 av); LACM 1965-101.4 (2 avs, with Fig. 9 D); LACM 1965-103.2 (1
1195 av).

1196 **Distribution:** Only known from Juan Fernández archipelago.

1197 **Description:** Shell to 5.6 mm L, trigonal to ovoidal, longer than high, somewhat inflated,
1198 markedly inequilateral, moderately solid. Posterior end much higher than anterior end. Umbo at
1199 anterior end, wide, well projected, particularly in larger specimens. Dorsal margin comprising a
1200 short, obliquely straight anterior part, and a widely curved posterior part, the latter clearly
1201 separated from posterior margin. Ventral margin straight or with a small byssus embayment;
1202 forming a right angle with the anterior part of dorsal margin. Dorsal area of shell weakly
1203 differentiated, flat to slightly depressed. Prodissoconch about 1.9 mm long, bounded by a
1204 prominent, rounded cord; surface with moderately solid, regularly distributed, zigzag cords,
1205 comarginally arranged. Dissoconch sculptured with low but wide comarginal folds and 6–7 low,
1206 widely separated radial ribs. Shell surface whitish, shiny. Periostracum thin, pale brownish,
1207 slightly projected beyond shell margin; forming radial folds over dissoconch sculpture, and
1208 relatively long, stout setae. Hinge with two series of elongate, irregular G1b teeth, perpendicular
1209 to hinge line: one anterior, the other posterior to the umbo; the anterior series shorter than the
1210 posterior series. Resilifer elongate, triangular, asymmetric. Inner shell surface whitish. Inner
1211 margin smooth. Only one (the posterior) adductor muscle scar, present.

1212 **Comments:** When describing this species, Odhner (1922) thought he was dealing with an
1213 unusual pteriid species and consequently introduced a new subgenus. His proposed name
1214 *Stempellia* is preoccupied by a genus of Sporozoa (*Stempellia* Léger & Hesse, 1910). A
1215 replacement name for Odhner's name is unnecessary, as the species is a member of *Philobrya*,
1216 closely related to *P. setosa* (Carpenter, 1864) [type species of the genus] and other (sub-)
1217 Antarctic species of this genus described by Urcola & Zelaya (2021).

1218 Huber (2010) synonymized *Philobrya aequivalvis* with *P. brattstromi* Soot-Ryen, 1957.
1219 However, the study of the holotype of the latter (SMNH 3894) reveals that these species are
1220 clearly different: *P. aequivalvis* has a much shorter anterior part of the dorsal margin, more
1221 outstanding umbos, a dissoconch with fewer radial ribs (6–7 vs. 9–13), a periostracum that is less
1222 projected from the shell margin, and an inner shell surface that is completely smooth, lacking the
1223 strong posterior radial folds of *P. brattstromi*. In addition, *P. brattstromi* has a nearly smooth
1224 prodissoconch, whereas that of *P. aequivalvis* is strongly sculptured with zigzag lines.

1225 Bernard (1983) included *P. aequivalvis* and *Avicula (Meleagrina) magellanica* Stempell, 1899 in
1226 the synonymy of *P. antarctica* (Philippi, 1868) (not Thiele, 1931). Philippi's description of *P.*
1227 *antarctica*, based on a Magellanic specimen, provides few details, and the nominal species was
1228 never illustrated. Its type material could not be located at MNHN-CL (Oscar Gálvez Herrera, in
1229 litt., October 2019) or ZMB (pers. obs.), where other species studied by Philippi are housed.
1230 *Philobrya antarctica* (Philippi, 1868) is here regarded as a *nomen dubium*. The study of a
1231 syntype of *Avicula (Meleagrina) magellanica* (ZMB-Moll 51991) revealed that this species
1232 strikingly differs from *P. aequivalvis* by having a more rounded shell outline and a periostracum
1233 not projected into setae. SEM-aided study of conspecific (Magellanic) specimens of *P.*
1234 *magellanica* showed that this species bears microscopic pits, a sculpture that clearly differs from
1235 the zigzag lines present in *P. aequivalvis*. Accordingly, Bernard's (1983) synonymy is not
1236 accepted herein. Bernard, McKinnell & Jamieson (1991) reported *Philobrya antarctica* and
1237 *Philobrya brattstroemi* (sic) Soot-Ryen, 1957 from Juan Fernández archipelago, based on
1238 material collected by the *Anton Bruun* Cruise 17, 1966. The study of the *Philobrya* specimens
1239 collected at this locality by the *Anton Bruun* proved they actually correspond to *P. aequivalvis*.
1240 Odhner (1922) reported a size of 6 mm for the holotype of *P. aequivalvis*. A new measurement
1241 of this specimen (herein) reveals that the maximum antero-posterior distance actually is 5.6 mm.

1242 ***Verticipronus denticulatus* n. sp.**

1243 **Fig. 9 M-S**

1244 **Type locality:** 33°45'37.14" S, 80°45'08.13" W, E coast of Alejandro Selkirk Island, Juan
1245 Fernández, 25 m (sediment sample collected from sand pockets by R. Bieler; 6 March 1997;
1246 IOC97-50A).

1247 **Type material:** Holotype (MNHN-CL MOL 101619 ex FMNH 327900: 1 v, Fig. 9 M, N) and 7
1248 paratypes (MNHN-CL MOL 101620 ex FMNH 327901: 2 v; FMNH 322238: 5 v, with Fig. 9 O-
1249 S) from the type locality.

1250 **Distribution:** Only known from Juan Fernández archipelago.

1251 **Diagnosis:** Shell modioliform, extremely high, with a prominent angulation at the junction of
1252 dorsal and posterior margins. Shell surface glossy, with orange-brownish color bands. G1b teeth
1253 persistent in larger specimens.

1254 **Description:** Shell to 2.3 mm L, trigonal, longer than high, markedly inequilateral, inflated, thin.
1255 Posterior end much higher than anterior end. Umbo near anterior end, low, not outstanding from
1256 shell margin. Dorsal margin long, straight, oblique; forming a prominent angulation at the
1257 junction with the dorsal part of posterior margin. Ventral part of posterior margin widely curved.
1258 Ventral margin straight to slightly concave. Anterior margin extremely short, curved. Dorsal area
1259 of shell wide, depressed. Prodissococonch of about 340 μ m in diameter, sculptured with strong
1260 radial ribs, increasing in number distally by intercalation. Dissococonch only sculptured with
1261 irregular growth marks, some of them forming folds. Shell surface glossy, with wide, orange-
1262 brownish color bands. Hinge with two series of minute G1b teeth, perpendicular to hinge line:
1263 one anterior and the other posterior to the ligament, the latter twice longer than the former. G1b
1264 teeth persistent in larger specimens. G2 teeth represented by three elements in each valve: a
1265 minute, tubercular anterior (“cardinal”) tooth, located just behind the umbo, and two larger
1266 posterior (“lateral”) teeth, well distanced from umbo. Posterior G2 teeth elongate. The most
1267 ventral posterior tooth of the right valve distally bifurcated. Resilifer elongated, widening
1268 posteriorly. Inner shell surface shiny, also showing external color. Inner shell margin smooth.
1269 Posterior adductor muscle scar large, subcircular, dorsally displaced.

1270 **Etymology:** The name of the species refers to the numerous (G1b) teeth present in the larger
1271 specimens.

1272 **Comments:** To date, *Verticipronus* is the only philobryid genus having small but stout, anterior
1273 G2 “cardinal” and two elongated, posterior G2 “lateral” teeth. These conditions are present in the
1274 Juan Fernández material studied herein. However, specimens of the new species show two
1275 anterior G2 teeth, instead of only one as described for the genus by Urcola & Zelaya (2021); and
1276 the G1 teeth remain well-developed in larger specimens (instead of fading during the ontogeny).
1277 In view of our imperfect knowledge of philobryids, the significance of these morphological
1278 differences remains unclear and we tentatively place the new species in *Verticipronus*.

1279 To date, only three living species of *Verticipronus* are known worldwide: *V. mytilus* Hedley,
1280 1904 (from New Zealand), *V. tristanensis* Soot-Ryen, 1952 (from Tristan da Cunha in the central
1281 South Atlantic Ocean), and *V. cowuti* Urcola & Zelaya, 2012 (from southern Patagonia)
1282 (MolluscaBase eds., 2023). The modioliform shape of *Verticipronus denticulatus* n. sp. makes
1283 this species most similar to *V. tristanensis*, from which it differs by a much higher shell with a
1284 wider posterior area and a prominent angulation at the junction of dorsal and posterior margins.
1285 *Verticipronus mytilus* and *V. cowuti* have the umbo at the anterior shell end, resulting in a
1286 mytiliform shape. This is the first record of the genus in the Eastern Pacific.

1287 **ANOMIIDAE**

1288 ***Monia* sp. B**

1289 **Fig. 10 A-F**

1290 **Material studied:** Desventuradas: San Félix: IOC97-22 (FMNH 322337: 1 v, Fig. 10 A, B);
1291 IOC97-29 (FMNH 322336: 1 v, Fig. 10 E, F); IOC97-32 (FMNH 322338: 1 v, Fig. 10 C, D).

1292 **Description:** Shell to 5.5 mm H, subcircular to ovate, irregular in outline, higher than long, flat,
1293 thin, translucent. Upper valve only slightly inflated. Umbo not outstanding from shell margin.
1294 Shell sculptured with numerous, wart-like, rounded or somewhat elongated, protuberances that
1295 show some radial arrangement; additional growth striae are evident towards the margins.
1296 Prodissoconch I orange, of about 240 μ m in diameter; prodissoconch II amber, well discernible
1297 from dissoconch. Prodissoconch I + Prodissoconch II = 1100 μ m in diameter. Dissoconch
1298 whitish or brownish. Inner surface smooth, glossy, showing the outer shell color. Resilifer wide,
1299 arched, deep. Hinge teeth absent. Central area with two elongate, confluent, finely striated
1300 muscle scars.

1301 **Comments:** To date, only one anomiid species is known from Chilean waters: *Monia* sp. (fide
1302 Raines & Huber, 2012). The material studied herein likewise shows two elongated and striated
1303 muscles scars. However, our material strikingly differs by lacking the radial sculpture described
1304 and figured by Raines & Huber (2012: fig. 15) for *Monia* sp.

1305 *Monia* sp. B appears to be a new, undescribed, species. However, the limited material we have
1306 available (three upper valves) preclude us from formally naming it herein.

1307 **PECTINIDAE**

1308 ***Argopecten purpuratus* (Lamarck, 1819)**

1309 **Fig. 11 A-D**

- 1310 *Pecten purpuratus* Lamarck, 1819: 166.
1311 *Pecten rufus* Sowerby, 1846: 254, pl. 3, fig. 32.
1312 *Pecten purpuratus*, – Hupé, 1854: 289. Philippi, 1860: 178. Stempell, 1899: 228. Dall, 1909: 256
1313 [listed only]. Dijkstra, 1994: 473, pl. 4, figs. 9-11 [lectotype].
1314 *Chlamys (Argopecten) purpurata*, – Grau, 1959: 103, pl. 34. Herm, 1969: 107-109, pl. 4, figs. 1-
1315 5. Osorio & Bahamonde, 1970: 193 [listed only]. Osorio, Atria Cifuentes & Mann
1316 Fischer, 1979: 27, fig. 29.
1317 *Plagioctenium purpuratum*, – Soot-Ryen, 1959: 31.
1318 *Aequipecten (Plagioctenium) purpuratus*, – Olsson, 1961: 162-163, pl. 19, figs. 1-1b. Peña
1319 González, 1971: 130.
1320 *Argopecten purpuratus*, – Marincovich, 1973: 10, fig. 8. Wolff, 1988: 213-217. Bernard,
1321 McKinnell & Jamieson, 1991: 36 [listed only]. Rombouts, 1991: 8, pl. 4, fig. 5. Bellolio,
1322 Lohrmann & Dupré, 1993: 332-342; Bellolio, Toledo & Campos, 1994: 229-237.
1323 Bernard, 1983: 24 [listed only]. Tapia, Dupré & Bellolio, 1993: 75-84. Alamo &
1324 Valdivieso, 1997: 106, fig. 255. Avendaño & Le Pennec, 1997: 175-182; 1998: 13-16.
1325 Guzmán, Saá & Ortíz, 1998: 65. González et al., 1999: 307. Aguilar & Stotz, 2000:
1326 749-755. Moraga et al., 2001: 51. Osorio, 2002: 132. Raines & Poppe, 2006: 310, 311,
1327 pls. 269, figs. 1-3, pl. 270, figs. 1-3. Thébault et al., 2008: 45. Pérez et al., 2009: 1585-
1328 1593. Huber, 2010: 203. Coan & Valentich-Scott, 2012: 282, pl. 92. Uribe et al., 2013:
1329 217. Paredes et al., 2016: 136 [listed only]. Valentich-Scott, Coan & Zelaya, 2020: 170,
1330 pl. 55.
1331 *Pecten rufus*, – Griffin & Nielsen, 2008: 285, pl. 15, figs. 7, 8 [holotype].

1332 **Type localities:** Callao, Perú (*Pecten purpuratus*, see Grau, 1959). Coquimbo, Chile (*Pecten*
1333 *rudis*).

1334 **Type material:** Lectotype (MHNG 1088/20/2), 1 paralectotype (MNHG 1088/20/1) and 2
1335 paralectotypes (MNHN-IM 2000-29951) of *Pecten purpuratus*.

1336 **Material studied:** Desventuradas: San Félix: LACM 1965-95.4 (1 av, Fig. 11 A-D).

1337 **Other published records:** Juan Fernández (Bernard, McKinnell & Jamieson, 1991).

1338 **Distribution:** Paita, Perú (Peña González, 1971) to Valparaíso, Chile (Osorio, 2002);
1339 Desventuradas and Juan Fernández archipelagos.

1340 **Description:** Shell to 159 mm L, subcircular, slightly longer than high, somewhat inflated, thick.
1341 Umbo minute, pointed. Shell disc sculptured with 22–30 wide and flat radial ribs, square in
1342 section, crossed by fine comarginal threads. Interspaces narrower than ribs. Anterior auricle
1343 slightly longer than posterior auricle. Base of posterior auricle completely attached to the disc;
1344 base of anterior auricle detached from the disc, more evident in the right valve. Anterior auricle
1345 sculptured with 3–5 scaly radial riblets. Posterior auricle with 7–10 scaly riblets. Byssal notch
1346 moderately deep. Exterior color evenly purple, brownish, violet, violet or orange, sometimes
1347 mottling or radially banded; right valve usually paler. Interior shell relief reflecting outer shell
1348 surface, strongly serrated at the margin. Inner surface shiny, whitish, usually variably stained in
1349 brownish or reddish, and with a dark color band along hinge line. Hinge edentulous. Resilifer
1350 small, triangular, symmetric with respect to the umbo.

1351 **Comments:** Lamarck (1819) reported this species as coming from “Japon.” Grau (1959)
1352 considered this locality in error, emending it to “Callao, Peru.” *Argopecten purpuratus* was
1353 reported northward to Nicaragua (e.g., Grau, 1959) but these records are based on
1354 misidentifications of *Argopecten ventricosus* (Sowerby, 1842) (see Coan & Valentich-Scott,
1355 2012).

1356 ***Zygochlamys phalara* (Roth, 1975)**

1357 **Fig. 11 E-P**

1358 *Chlamys phalara* Roth, 1975: 81-84, pl. 6, figs. 1-4.
1359 *Chlamys phalara*, – Bernard, 1983: 25 [listed only]. Bernard, McKinnell & Jamieson, 1991: 36
1360 [listed only]. Waller, 1991: 30.
1361 *Chlamys (Chlamys) phalara*, – Rombouts, 1991: 17, pl. 7 fig. 3.
1362 *Psychrochlamys phalara*, – Jonkers, 2003: 52-53, pls. 1, 8. Raines & Poppe, 2006: 226-228, pl.
1363 175, 8 figs.
1364 *Zygochlamys phalara*, – Huber, 2010: 205. Valentich-Scott, Coan & Zelaya, 2020: 174, pl. 56.

1365 **Type locality:** 33°29-42' S, 78°55' W, Isla Más a Tierra [= Robinson Crusoe Island], Juan
1366 Fernández archipelago, 80-200 m.

1367 **Type material:** Holotype (CAS 54752); 2 paratypes (CAS 54753, 54754); 3 paratypes
1368 (F277692); 4 paratypes (4 av, USNM 880644; here studied); 4 paratypes (LACM 2653).

1369 **Other material studied:** Juan Fernández: 200 m (USNM 846081: 1 av; USNM 888364: 1av).
1370 Alejandro Selkirk: *Eltanin* Station 21-203 (USNM 887914: 1 spec, 1 v); *Eltanin* Station 21-205
1371 (USNM 870045: 1 av, 3 vs; USNM 897774: 12 specs. juvenile). Robinson Crusoe: LACM 1965-
1372 98.3 (62 vs, juvenile); LACM 1965-101.5 (8 avs, 48 vs); LACM 1966-102.2 (5 vs); Anton Bruun
1373 Cr. 12, [33°40'27" S, 78°56'3" W], W Carvajal Bay, 9-12 m (USNM 764206: 1 v); Anton Bruun
1374 Cr. 12, R-206, 80-200 m (USNM 701662: 16 vs); 80-200 m, by fish trawler (USNM 846082: 2
1375 avs); Anton Bruun Cr. 12, 33°41.2' S, 78°57' W to 33°40.7' S, 78°51.8' W, 130-170 m (USNM
1376 764199: 10 avs, 72 vs, with Fig. 11 E-P); Anton Bruun Cr. 12, station 255, 33°40'35" S,
1377 78°54'40" W, 130-170 m (USNM 679522: 5 avs, 10 vs); station MV65-IV-47, 33°37'52" S
1378 78°49'07" W, 150 m (USNM 764215: 275 vs); station MV65-IV-54, 33°37'54" S, 78°46'03" W
1379 (USNM 764195: 20 vs).

1380 **Distribution:** Only known from Juan Fernández archipelago.

1381 **Description:** Shell to 39 mm L, subcircular, as high as long, somewhat obliquely projected
1382 posteriorly, compressed, thin. Umbo minute, pointed. Shell disc sculptured with 30-65, thin, flat
1383 radial ribs, crossed by fine comarginal threads. Interspaces as wide as or wider than ribs.
1384 Anterior auricle larger than posterior auricle. Base of anterior and posterior left valve, and
1385 posterior right valve auricles completely attached to the disc; base of right valve anterior auricle

1386 detached from the disc for about a half of its length. Anterior auricle sculptured with 5–6 scaly to
1387 nodulose radial riblets. Posterior auricle with 5 spiny riblets. Byssal notch moderately deep.
1388 Exterior color of left valve ochraceous, orange or reddish, sometimes with color bands or
1389 blotches; right valve usually paler, uniform in color or with color bands. Interior shell surface
1390 shiny, yellowish or whitish, sometimes stained reddish near the umbo. Hinge edentulous.
1391 Resilifer small, triangular, symmetric with respect to the umbo.

1392 **Comments:** When describing this species, Roth (1975) examined 34 specimens, all of them
1393 considered as part of the type series, with the originally illustrated holotype and 2 paratypes
1394 deposited in numbered lots of the CAS collection, and additional, unspecified number of
1395 paratypes distributed to LACM, MNHN-CL, and USNM. Of these type specimens, we could
1396 trace the holotype and 13 paratypes. The paratypes intended for MNHN-CL were not received
1397 (O. Galvez Herrera, *in. litt.*, June 2022). The USNM collection contains about 1,000 topotypic
1398 specimens from the *Anton Bruun*'s Cruise 12, but these could not be unambiguously linked to the
1399 type series. The exact type locality is unknown. As noted by Roth (1975), the *Anton Bruun*'s
1400 Cruise 12 performed eight hauls off Juan Fernández Island on 15 December 1965. Roth (1975)
1401 deemed specimens cited by Soot-Ryen (1959) from south-central Chile (as *C. amandi*) as
1402 “almost certainly conspecific” with *Zygochlamys phalara*, and thus gave the distributional range
1403 of his new species as “Calbuco to Chonos Archipelago, in 5–300 meters.” However, Soot-Ryen’s
1404 records most probably correspond to *Zygochlamys patagonica* (King, 1832), a common species
1405 in this area (Valentich-Scott, Coan & Zelaya, 2020).

1406 PROPEAMUSSIIDAE

1407 *Propeamussium* / *Parvamussium* sp. A

1408 Fig. 12 A-B

1409 *Propeamussium* cf. *malpelonium*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not
1410 Dall, 1908).

1411 **Material examined:** Desventuradas: San Félix: LACM 1966-98.4 (1 v, Fig. 12 A, B).

1412 **Description:** Shell of 4.5 mm L (partially broken), ovate, as high as long, somewhat obliquely
1413 projected anteriorly, fragile. Shell disc sculptured with weak, regularly distributed comarginal
1414 lirae. Auricles not present in the available material. Exterior color white, opaque. Inner shell
1415 surface showing 11 radial riblets.

1416 **Comments:** The material reported herein was previously identified by Bernard, McKinnell &
1417 Jamieson (1991) as *Propeamussium cf. malpelonium* (Dall, 1908). However, the syntypes of that
1418 species (USNM 122871, figured by Coan & Valentich-Scott, 2012: pl. 100), from the north-
1419 eastern Pacific, show a more orbicular shell outline, and that species is considerably larger than
1420 the material studied herein (up to 20 mm H, according to Coan et al., 2000). The material studied
1421 herein appears to be undescribed, but the poor state of preservation of the single (right) valve
1422 precludes a formal description herein. The valve is internally corroded near the umbo and broken
1423 in its ventral margin, thus not allowing to determine the total extension of the internal radial
1424 riblets, and consequently the exact generic placement for this entity.

1425

LIMIDAE

1426

Limaria crusoensis n. sp.

1427

Fig. 13 A-H

1428 *Lima angulata*, – Stempell, 1899: 229. Dall, 1909: 256 [listed only]. Odhner, 1922: 221. (Not
1429 Sowerby II, 1843, not Münster, 1841).

1430 *Limaria orbignyi*, – Soot-Ryen, 1959: 33 [listed only]. Stuardo, 1968: 172 [listed only]. (Not
1431 Lamy, 1930).

1432 *Limaria orbigny* [sic], – Osorio & Bahamonde, 1970: 193 [listed only]. Rozbaczylo & Castilla,
1433 1987: 176 [listed only]. (Not Lamy, 1930).

1434 *Promantellum orbignyi*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not Lamy,
1435 1930).

1436 *Limaria hemphilli*, – Valentich-Scott, Coan & Zelaya, 2020: 187, pl. 60. (Not Hertlein & Strong,
1437 1946).

1438 **Type locality:** 33°36'01"–33°36'12" S, 78°53'42"–78°53'08" W, W side of N tip of Robinson
1439 Crusoe Island, Juan Fernández, 50–80 m (by bottom trawling, IOC-97 team; 8 March 1997;
1440 IOC97-62).

1441 **Type material:** Holotype (MNHN-CL MOL 101621 ex FMNH 322331: 1 av (1 v broken), Fig.
1442 13 A, B). Paratypes: Juan Fernández: Alejandro Selkirk: *Eltanin* Cruise 21, station 203 (USNM
1443 887913: 2 vs, with Fig. 13 G, H). Robinson Crusoe: IOC97-44 (FMNH 322332: 2 vs, damaged);
1444 IOC97-67 (FMNH 322330: 1 v); LACM 3835 (66-100; 1 av, 6 vs, with Fig. 13 C-F).

1445 **Other material examined:** Juan Fernández, “Masatierra” (Robinson Crusoe), 30-40 m (SMNH
1446 1226: 1 spec., reported by Odhner, 1922 as *L. angulata*).

1447 **Other published records:** Juan Fernández, 20 and 40 fathoms (Stempell, 1899: as *L. angulata*).

1448 **Distribution:** Only known from Juan Fernández archipelago.

1449 **Diagnosis:** Shell obliquely ovate, with flat posterior margin. Umbo narrow and pointed. Radial
1450 sculpture prominent, separated by wide interspaces.

1451 **Description:** Shell to 12.4 mm H, obliquely ovate, higher than long, weakly inflated,
1452 inequilateral, thin. Anterior end somewhat produced. Umbo small, narrow, pointed; only slightly
1453 projected from shell margin. Dorsal margin straight. Anterior margin long, sloping obliquely,
1454 only slightly arched. Anterior part of ventral margin markedly curved. Posterior part of ventral
1455 margin and posterior margin flattened, forming an obscure angulation among them. Auricles
1456 small, subequal; margin of anterior auricle continuous with anterior margin of disc; auricular
1457 sinus indistinct; posterior auricle minutely projected, with a barely developed sinus. Dissococonch
1458 sculptured with fine radial ribs and regularly distributed comarginal threads. Radial ribs
1459 restricted to median and posterior areas. Median area with 20–26 ribs, separated by interspace
1460 wider than ribs width, ventrally developing into narrow lamellae, originating serration in shell
1461 margin; posterior area with 5–6 ribs, lower, weaker and more spread than those of central area.
1462 Shell surface whitish, translucent. Anterior and posterior gaps absent. Hinge plate solid,
1463 edentulous. Resilifer broadly triangular, symmetric with respect to the umbo, shallow. Inner shell
1464 surface reflecting outer shell sculpture.

1465 **Etymology:** Named for the type locality, Robinson Crusoe Island; adjective.

1466 **Comments:** Three nominal species of *Limaria* have been indicated as occurring in the Juan
1467 Fernández Archipelago: Stempell (1899) and Odhner (1922) reported *L. angulata* Sowerby,
1468 1843, Osorio & Bahamonde (1970), Rozbacylo & Castilla (1987) and Bernard, McKinnell &
1469 Jamieson (1991) reported *Promantellum orbignyi*, and Valentich-Scott, Coan & Zelaya (2020)
1470 reported *L. hemphilli* (Hertlein & Strong, 1946). Study of the specimens mentioned by Stempell
1471 (1899), Bernard, McKinnell & Jamieson (1991) and Valentich-Scott, Coan & Zelaya (2020)
1472 showed the presence of only a single species of *Limaria* at Juan Fernández archipelago. These
1473 mentioned taxa do resemble the Juan Fernández specimens but a comparison of their type
1474 material revealed that it does not match *Limaria crusoensis* n. sp. herein.

1475 The holotype of *L. hemphilli* (figured in Coan & Valentich-Scott, 2012: pl. 105) clearly differs
1476 from the Juan Fernández specimens by having shells with a broad posterior area, more projected
1477 and sharply pointed posterior auricles, and the more numerous (about 45), wider, and lower
1478 radial ribs. We thus consider the record of *L. hemphilli* from Juan Fernández Islands by
1479 Valentich-Scott, Coan & Zelaya (2020) as a misidentification.

1480 Lamy (1930) noticed that *Lima angulata* G.B. Sowerby II, 1843 is a homonym of *Lima angulata*
1481 Münster, 1841, consequently proposing *Lima (Mantellum) orbignyi* as a replacement name for
1482 the former. This species was later considered a member of *Limaria* (e.g., Hertlein & Strong,
1483 1946; Stuardo, 1968; Coan & Valentich-Scott, 2012). Within this species, Lamy (1930)
1484 recognized the “form basilanica”, including the nominal species *Limaria basilanica* (A. Adams
1485 & Reeve, 1850) and its presumed synonym, *Limaria orientalis* (A. Adams & Reeve, 1850).
1486 However, recent studies suggest not only that *L. basilanica* and *L. orientalis* are different
1487 species, but also that these taxa are different from *L. orbignyi*, with the first two species
1488 restricted to the western Pacific and Indo-Pacific Oceans (Stuardo, 1968; Beu, 1977, 2004;
1489 Kilburn, 1998; Higo, Callomon & Goto, 1999; Beu & Raine, 2009; Marshall & Spencer, 2013),
1490 and the latter to the eastern Pacific (Stuardo, 1968; Coan & Valentich-Scott, 2012). Kilburn
1491 (1998) figured the holotype of *L. basilanica* which differs from *Limaria crusoensis* n. sp. by
1492 having longer shell, with narrower and more numerous radial sculpture and markedly inflated
1493 umbo. Several specimens of *L. orientalis* were figured by Beu (1977: pl. 1; 2004: fig. 11B, D)

1494 and Kilburn (1998: fig. 5). All these specimens differ from the Juan Fernández specimens
1495 studied herein by having more numerous and irregular radial sculptural elements and a markedly
1496 convex posterior shell margin. *Limaria crusoensis* n. sp. also differs from the syntypes of
1497 *Limaria orbignyi* (NHMUK 968879) by having a flattened (instead convex) posterior margin, a
1498 less arched anterior margin, a smaller number of more widely separated radial ribs, and a
1499 narrower (not inflated) umbo.

1500 Bernard (1998) described *Limaria valdiviesae* from 6°21' S, 80°56' W, "northern Chile"
1501 [actually Perú]. The holotype of this species (LACM 2334) has a longer and straighter anterior
1502 margin and a more convex posterior margin, originating a more markedly oblique shell outline
1503 than in the Juan Fernández specimens. In addition, *L. valdiviesae* shows a rounded umbo, an
1504 indistinct posterior auricle, and obscure radial striae. Coan & Valentich-Scott (2012) considered
1505 *L. valdiviesae* as a synonym of *L. hemphilli*, which was followed by Valentich-Scott, Coan &
1506 Zelaya (2020), but not herein.

1507 In general shell outline, the Juan Fernández specimens also resemble the Eastern Island
1508 specimens mentioned by Raines & Huber (2012) as *Limaria (Limatulella)* sp. However, these
1509 specimens differ by having radial ribs all along the shell surface.

1510 Bernard, McKinnell & Jamieson (1991) listed a new species of *Limaria* from Desventuradas
1511 archipelago. The material could not be located at the LACM (L. Groves in litt., February 2022).

1512 ***Lima nasca* (Bernard, 1988)**

1513 **Fig. 13 I-L**

1514
1515 *Plicacea nasca* Bernard, 1988: 228, 230, fig. 4.
1516 *Acesta diomedia* (sic), – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not *Lima*
1517 (*Acesta*) *diomedae* Dall, 1908).
1518 *Lima* ("*Allolima*") *nasca*, – Huber, 2010: 632.

1519 **Type locality:** 25°44' S, 82°25' W, off Shoal Guyot, Nasca Ridge, 228 m.

1520 **Type material:** Holotype (LACM 2332) and 1 paratype (NSMT 64674).

1521 **Material studied:** Desventuradas: San Félix: LACM 1966-99.2 (1 av, with dried body, Fig. 13 I-
1522 L).

1523 **Distribution:** Off Chile, between 25°44'S and 26°20'W, including Desventuradas archipelago,
1524 160-228 m.

1525 **Description:** Shell up to 127 mm H, obliquely ovate, higher than long, slightly inflated,
1526 inequilateral, solid. Umbo small, narrow and pointed, only slightly projected from shell margin.
1527 Postero-dorsal margin short, straight, horizontal. Anterior margin long, sloping obliquely
1528 straight. Ventral and posterior margins forming a wide, continuous curve. Posterior auricle small,
1529 separated by a shallow auricular sinus from the disc. Dissoconch sculptured with about 40 strong
1530 radial ribs, separated by narrow interspaces. Interspaces with delicate comarginal threads.
1531 Anteriormost radial rib with a series of small but stout spines; posteriormost radial ribs with few,
1532 sparse spines, particularly towards shell margin. Posterior auricle with prominent, sharply
1533 pointed spines. Anterior auricle 'hidden' from dorsal view below strongly demarcated, oblique
1534 anterodorsal ridge (called 'lunular border' by Stuardo (1982) adorned with 6-8 finer radial ribs).
1535 Shell surface whitish. Anterior gap a narrow slit; posterior gap absent. Hinge plate solid,
1536 edentulous. Resilifer broad, posterior to the umbo. Inner shell surface furrowed by outer radial
1537 sculpture; margin strongly crenate.

1538 **Comments:** When describing this species, Bernard (1983) considered *Lima nasca* as closely
1539 related to *Acesta sphoni* (Hertlein, 1963), a species occurring in the northeast Pacific Ocean at
1540 California, USA (Coan et al., 2000). However, *L. nasca* differs strikingly from that species by
1541 having a thicker shell with coarser radial sculpture and a more clearly separated posterior auricle.
1542 In addition, *L. nasca* bears spines, which are absent in *A. sphoni*.

1543 *Lima nasca* closely resembles Atlantic *L. marioni* P. Fischer, 1882 (redescribed and figured by
1544 Mikkelsen & Bieler, 2003), from which it differs by having a longer and straighter anterior
1545 margin, a more clearly differentiated posterior auricle, and narrower radial ribs. In an
1546 unpublished dissertation, Stuardo (1968) proposed "Allolima" as a subgenus of *Lima*, for a group
1547 of species related to *Lima tomlini* Prashad, 1932. Within this group, Stuardo (1968) also included
1548 *Lima marioni* and *Lima perfecta* Smith, 1904. Thirty years later, Kilburn (1998) introduced the
1549 genus *Fukama* to include his new species *F. messura* (type species) and *L. perfecta*. Kilburn

1550 (1998: 236) recognized that “it would appear probable that... [Stuardo’s unpublished
1551 “*Allolima*”] group is equivalent to the genus here proposed.” Mikkelsen & Bieler (2003) and
1552 Huber (2010), the latter mistakenly considering Stuardo’s manuscript name a senior synonym of
1553 Kilburn’s *Fukama*, did not recognize the grouping as distinct from *Lima* at the genus level. In
1554 view of the still imperfect knowledge of worldwide limid taxonomy, we follow the placement in
1555 *Lima* sensu lato.

1556 *Lima nasca* was only known from the type locality (Nasca Ridge, off Chile), from where it was
1557 described based on disarticulated valves. A specimen from San Félix in the Desventuradas
1558 Archipelago, reported as “*Acesta diomedia* [sic]” by Bernard, McKinnell & Jamieson (1991)
1559 belongs to the same species and extends the known range. *Acesta diomedae* (Dall, 1908) differs
1560 from *Lima nasca* in having an evenly convex posterior margin (i.e., without the situation that
1561 appears in *L. nasca*) and consequently lacking a differentiated posterior auricle. In addition, *A.*
1562 *diomedae* has a greater number of radial ribs than *L. nasca* (50 vs. 40, respectively).

1563 ***Limatula sanfelixensis* n. sp.**

1564 **Fig. 13 M-P**

1565 *Limatula cf. pygmaea*, – Bernard, McKinnell & Jamieson (1991): 36 [listed only]. (Not Philippi,
1566 1845).

1567 **Type locality:** SE off San Félix Island, Desventuradas, 170-160 m; station 676B, by Menzies
1568 trawl, 26°20' S, 80°02' W; 12 July 1966 (LACM 66-99).

1569 **Type material:** Holotype (LACM 3825: 1v, Fig. 13 M, N) and 2 paratypes (LACM 3826: 1 v,
1570 Fig. 13 O, P, plus 1 fragment; FMNH 312473: 1 v ex LACM 3826) from the type locality.

1571 **Distribution:** Only known from Desventuradas archipelago.

1572 **Diagnosis:** Shell somewhat inequilateral, with posterior margin more convex than the anterior
1573 one. Auricles small, ill defined. Radial ribs strong, with scales.

1574 **Description:** Shell of up to 5.1 mm H, ovate, higher than long, inflated, somewhat inequilateral,
1575 solid. Umbo small but well outstanding from shell margin, rounded. Antero-dorsal and postero-

1576 dorsal margins straight, similar in length. Anterior, ventral and posterior margins forming a
1577 continuous curve, the posterior one somewhat more markedly convex than the anterior one.
1578 Anterior and posterior auricles small, similar in size, weakly differentiated; auricular margins
1579 continuous with anterior and posterior shell margin, lacking auricular sinus. Dissococonch
1580 sculptured with strong, scaly radial ribs and delicate comarginal threads. Radial sculpture evenly
1581 distributed along all shell surface, sometimes with a stronger, median rib. Comarginal sculpture
1582 widely separated near the umbo, more closely spaced towards ventral margin. Shell surface
1583 whitish. Anterior and posterior gaps absent. Hinge plate solid, edentulous. Resilifer small,
1584 triangular, just below the umbo. Inner shell surface furrowed by outer radial sculpture, with a
1585 median channeled groove; margins crenulated.

1586 **Etymology:** Named for the type locality, San Félix Island, Desventuradas; adjective.

1587 **Comments:** *Limatula sanfelixensis* n. sp. closely resembles *Limatula japonica* Adams, 1864
1588 from Japan and *Limatula spinulosa* Fleming, 1978 from the Kermadec Islands, from which it
1589 differs by having a more broadly curved anterior shell margin leading to a more inequilateral
1590 outline, and a smaller umbo. In addition, *Limatula sanfelixensis* n. sp. has a considerably smaller
1591 resilifer than the holotype of *Limatula spinulosa* (NZNM 226931). Fleming (1978) introduced
1592 *Limatuletta* as a subgenus of *Limatula*, based on *Lima japonica*. Within this subgenus, he also
1593 included *L. spinulosa* as a subspecies of *L. japonica*. The validity of *Limatuletta*, and its
1594 relationships to other proposed subgenera of *Limatula* could not be determined in the context of
1595 the still limited understanding of limid phylogeny.

1596 The Desventuradas specimens studied herein were previously identified by Bernard, McKinnell
1597 & Jamieson (1991) as *Limatula* cf. *pygmaea*. The original description of *Lima pygmaea* (R. A.
1598 Philippi, 1845) lacks detail and illustration; its type material is considered lost and was never
1599 figured. Consequently, the identity of this species is an enigma. However, Lamy (1931a),
1600 Carcelles (1947), and Dell (1964) regarded *Limatula falklandica* A. Adams, 1864 as a synonym
1601 of *L. pygmaea*; and Carcelles (1947) added *Limea martiali* Mabille & Rochebrune *in*
1602 Rochebrune & Mabille, 1889 to that synonymy. Most recent researchers (e.g., Fleming, 1978;
1603 Dell, 1990; Allen, 2004; Engl, 2012) followed this treatment. Huber (2010) distinguished more
1604 than one species under the concept of “*Limatula pygmaea*” as used by various authors. The

1605 Desventuradas specimens studied here strikingly differ from the holotype of *Limatula*
1606 *falklandica* (NHMUK without number) and the syntype of *Limea martiali* (MNHN-IM-2000-
1607 31627) by having radial sculpture distributed all along the dissoconch (instead of restricted to the
1608 central part) and with prominent scales, stronger and more separated comarginal sculpture, and
1609 smaller resilifer. The above-mentioned set of characters also allows the distinction of *Limatula*
1610 *sanfelixensis* n. sp. from *L. ceciliaosorioae* Gálvez & Wacquez, 2018, a species described from
1611 central Chile.

1612 *Limatula chilensis* Campusano, Ruz & Oliva, 2012, described from northern Chile, differs from
1613 *Limatula sanfelixensis* n. sp. by having more elongated and arched shell outline and narrower
1614 radial ribs.

1615 **LUCINIDAE**

1616 ***Cavilinga taylorgloverorum* n. sp.**

1617 **Fig. 14 A-K**

1618 *Cavilinga* species A Valentich-Scott, Coan & Zelaya, 2020: 195, pl. 62.

1619 **Type locality:** LACM 1965-95: “26°17.5’ S, 80°05.6’ W”, NW side of San Félix Island,
1620 Desventuradas, 10-45 ft [3-13.7 m]; leg. Sylvia E. Taylor, Alan Chapman, 5-6 December 1965
1621 [stated coordinates too far inland].

1622 **Type material:** Holotype (LACM 3827: 1 av, Fig. 14 A-D). Paratypes: Desventuradas: San
1623 Félix: IOC97-22 (FMNH 322315: 1 av, 23 vs, with Fig. 14 E-J; MNHN-CL MOL 101622 ex
1624 FMNH 327902: 10 vs); IOC97-26 (FMNH 322313: 9 avs juv, 28 vs, with Fig. 14 K).

1625 **Other material studied:** Desventuradas: San Félix: IOC97-29 (FMNH 322317: 5 vs); IOC97-32
1626 (FMNH 322316: 4 vs); LACM 1965-94.3 (3 vs); LACM 1965-98.4 (1 v); “San Félix” (MZUC,
1627 without number/10005: 35 v). Juan Fernández: Robinson Crusoe: IOC97-68A (FMNH 322318: 1
1628 v).

1629 **Distribution:** Only known from Desventuradas and Juan Fernández archipelagos.

1630 **Diagnosis:** Shell subovate, with short antero-dorsal margin, incised lunule, wide posterior area
1631 of shell, and weak comarginal sculpture.

1632 **Description:** Shell up to 14 mm L, subovate, longer than high, somewhat inflated, inequilateral,
1633 moderately solid. Anterior end projected; posterior end truncated. Umbo small, narrow,
1634 markedly prosogyrous. Postero-dorsal margin steeply sloping, straight to slightly convex.
1635 Posterior margin short, straight, slightly oblique, forming angulations at the junction with ventral
1636 and dorsal margins. Anterior margin gently curved, not distinctly separated from ventral margin.
1637 Antero-dorsal margin short, markedly concave, forming a well-marked angulation at the junction
1638 with anterior margin. Posterior area of shell flat, set off by weak radial fold. Lunule broad,
1639 moderately excavated. Dissoconch sculptured with fine, regular comarginal lines, originating
1640 deeply impressed growth disruptions. Shell surface creamy white, with anterior and posterior
1641 rusty incrustations. Periostracum yellowish. Hinge plate narrow. Left valve with two divergent
1642 cardinal teeth: the anterior strong, triangular, high; the posterior narrowly elongate, a half the
1643 length of the anterior one. Right valve with a strong, triangular, relatively high cardinal tooth.
1644 Both valves with small, short, similar in morphology anterior and posterior lateral teeth. Nymph
1645 long, narrow, shallow. Inner shell surface whitish, glossy outside pallial line. Inner margin finely
1646 crenulate. Anterior adductor muscle scar long, broad, detached from pallial line for a half of its
1647 length; posterior adductor muscle scar ovate, smaller than the anterior one.

1648 **Etymology:** Named for our colleagues John D. Taylor and Emily A. Glover in recognition of
1649 their remarkable contributions to our understanding of Lucinidae phylogeny and systematics.

1650 **Comments:** To date, only seven living species of *Cavilinga* are known worldwide
1651 (MolluscaBase eds., 2023, with three of them occurring in the Eastern Pacific Ocean (*C. lampra*
1652 (Dall, 1901), *C. lingualis* (P. P. Carpenter, 1864), and *C. prolongata* (P. P. Carpenter, 1857)),
1653 three in the Atlantic Ocean (*C. compacta* (E. A. Smith, 1890), *C. inconspicua* (E. A. Smith,
1654 1890) and *C. blanda* (Dall in Dall & Simpson, 1901)), and one in the Indian Ocean (*C. fieldingi*
1655 (H. Adams, 1871)). The presence of a short and horizontal antero-dorsal margin, and a broadly
1656 rounded anterior margin, make *Cavilinga taylorgloverorum* n. sp. closely similar to *C.*
1657 *prolongata*. However, the latter differs from *C. taylorgloverorum* n. sp. by having the anterior
1658 end less projected, the shell higher than long, more prominent umbos, and the dissoconch with

1659 stronger comarginal sculpture. *Cavilinga lampra*, *C. lingualis*, *C. blanda*, *C. inconspicua*, and *C.*
1660 *fieldingi* differ strikingly from *C. taylorgloverorum* n. sp. by having the antero-dorsal margin
1661 longer and steeply sloping, resulting in shell outlines that are higher than long or as high as long.
1662 *Cavilinga inconspicua* differs by a more rounded shell outline, with wider, subcentrally located
1663 umbos.

1664 **THYASIRIDAE**

1665 ***Thyasira fernandezensis* n. sp.**

1666 **Fig. 15 A-H**

1667 **Type locality:** 33°38' S, 78°50' W, off Robinson Crusoe Island, Juan Fernández, 62 m (R/V
1668 *Anton Bruun* Cruise 17, station 680E, by Campbell grab, 18 July 1966; LACM 1966-100).

1669 **Type material:** Holotype (LACM 3828: 1 v, Fig. 15 A, B) and 35 paratypes (LACM 3829: 31
1670 vs [and fragments], with Fig. 15 C; FMNH 312474 ex LACM 3829: 2 vs; MNHN-CL MOL
1671 101622 ex LACM 3829: 2 vs) from the type locality.

1672 **Other material studied:** Juan Fernández: Alejandro Selkirk: *Eltanin* Station 21-203 (USNM
1673 886931C: 10 vs, with Fig. 15 D-H).

1674 **Distribution:** Only known from Juan Fernández archipelago.

1675 **Diagnosis:** Shell subovate, with projected anterior end, short antero-dorsal margin and markedly
1676 flattened postero-ventral margin.

1677 **Description:** Shell up to 2.2 mm L, subovate, longer than high, only slightly inflated, markedly
1678 inequilateral, thin. Anterior end projecting; posterior end short, truncated. Umbos small, pointed,
1679 posteriorly located, prosogyrate. Antero-dorsal margin short, nearly straight, horizontal. Anterior
1680 margin widely curved, forming weak angulation at the junction with dorsal margin; not clearly
1681 separated from ventral margin, which is evenly arched. Postero-ventral margin flat, forming a
1682 prominent angulation at the junction with posterior margin. Posterior margin slightly sinuated.
1683 Postero-dorsal margin short, straight, steeply sloping. Posterior area of shell flat. First posterior
1684 fold strong. Second posterior fold weak. Submarginal sulcus well marked, but narrow. Auricle

1685 extending along the entire length of submarginal sulcus. Lunule ill defined. Prodissoconch ovate,
1686 of about 150 µm in diameter, smooth. Dissoconch with low growth lines. Shell surface whitish,
1687 glossy. Anterior and posterior ends encrusted with ferruginous material. Hinge plate narrow,
1688 with prominent pseudocardinal tubercle in left valve, and a smaller tubercle in the right valve.
1689 Resilifer elongate, short.

1690 **Etymology:** Named for the type locality in the Juan Fernández archipelago; adjective.

1691 **Comments:** *Thyasira fernandezensis* n. sp. closely resembles the Antarctic and sub-Antarctic *T.*
1692 *debilis* (Thiele, 1912) (figured by Zelaya, 2009) from which it however differs by having a more
1693 projected anterior shell end, and a more markedly flattened postero-ventral margin. In addition,
1694 the posterior shell auricle in *T. fernandezensis* n. sp. is more developed than in *T. debilis*, and the
1695 hinge tubercle appears over the left (instead of the right) valve. *Thyasira fernandezensis* n. sp.
1696 also resembles smaller specimens of *Thyasira succisa* (Jeffreys, 1876) as illustrated by Oliver &
1697 Killeen (2002: pl. 19), although the latter has a much longer antero-dorsal shell margin, resulting
1698 in a more projected anterior end, shorter auricle, and stronger pseudocardinal tubercle.

1699 **LASAEIDAE**

1700 ***Kellia tumbeiana* (Stempell, 1899)**

1701 **Fig. 16 A-D**

1702

1703 *Diplodontina tumbeiana* Stempell, 1899: 232, pl. 12, figs. 18, 19, 19a.

1704 *Kellia tumbeiana*, – Dall, 1909: 264 [listed only]. Soot-Ryen, 1959: 50, text fig. 4. Osorio &
1705 Bahamonde, 1970: 200 [listed only]. Bernard, McKinnell & Jamieson, 1991: 36 [listed
1706 only]. Guzmán, Saá & Ortlieb, 1998: 67-68. Valentich-Scott, Coan & Zelaya, 2020: 233,
1707 pl. 70 [holotype].

1708 *Telimya (Diplodontina) tumbeiana* (sic), – Carcelles & Williamson, 1951: 340 [listedonly].

1709 *Kellia cf. tumbeiana*, – Marincovich, 1973: 11-12, figs. 12-14.

1710 *Diplodontina tumbeiana*, – Bernard, 1983: 19 [listed only]. Paredes & Cardoso, 2004: 210-212,
1711 fig. 2.

1712

1713 **Type locality:** Halbinsel Tumbes bei Talcahuano [36°36' S, 73°00' W, Caleta Tumbes,
1714 Talcahuano, Chile].
1715
1716 **Type material:** Holotype (ZMB-Moll 51985).
1717
1718 **Other material studied:** Juan Fernández: Robinson Crusoe: LACM 1965-100.2 (1 av, 7 vs, with
1719 Fig. 16 A-D).
1720
1721 **Distribution:** Callao, Lima, Perú (12°06' S) to Península de Tumbes, Bío Bío, Chile (36°36' S)
1722 (Valentich-Scott, Coan & Zelaya, 2020); and Juan Fernández.
1723
1724 **Description:** Shell up to 10 mm L, ovate, longer than high, somewhat inflated, subequilateral,
1725 thin. Anterior end somewhat projected. Umbo small, low, subcentral, prosogyrate. Antero-dorsal,
1726 anterior, ventral, and posterior margins forming a continuous, ovoidal curve. Postero-dorsal
1727 margin rapidly sloping, straight to slightly arched. Dissococonch only sculptured with low growth
1728 lines. Shell surface shiny, whitish. Periostracum yellowish. Hinge plate extremely weak; hinge
1729 teeth and resilifer appearing as hanging from dorsal shell margin. Left valve with two divergent
1730 cardinal teeth and an elongated posterior lateral tooth. Anterior cardinal antero-ventrally
1731 directed, posterior cardinal ventrally directed, half the size of anterior cardinal; both cardinals in
1732 contact at their bases. Right valve with a strong, triangular cardinal tooth, and a thin, elongated,
1733 posterior lateral tooth. Resilifer elongated, posterior to the umbo. Inner shell surface whitish.
1734 Inner margin smooth.

1735 ***Lasaea macrodon* Stempell, 1899**

1736 **Fig. 16 E-K**

1737 *Lasaea macrodon* Stempell, 1899: 231, pl. 12, figs. 16, 17.
1738 *Lasaea macrodon*, – Keen, 1938: 22 [listed only]. Soot-Ryen, 1959: 51 [listed only]. Osorio &
1739 Bahamonde, 1970: 201 [listed only]. Ponder, 1971: 133 [listed only]. Bernard, 1983: 31
1740 [listed only]. Rozbaczylo & Castilla, 1987: 176 [listed only]. Bernard, McKinnell &
1741 Jamieson, 1991: 36 [listed only]. Ramírez & Osorio, 2000: 6 [listed only].

1742 *Lasaea petitiana*, – Dall, 1909: 264 [listed only]. Bernard, McKinnell & Jamieson, 1991: 36
1743 [listed only]. Valentich-Scott, Coan & Zelaya, 2020: 227, pl. 72 [syntype of *Lasaea*
1744 *macrodon*]. (Not Récluz, 1842).

1745 **Type locality:** Bahía Padres, [33°40'45" S, 78°56'45" W, Robinson Crusoe Island], Juan
1746 Fernández [archipelago].

1747 **Type material:** 3 syntypes (fide Stempell, 1899), although only one of them (the syntype figured
1748 by Stempell, 1899) is currently preserved (C. Zorn *in litt.*, July 2022; ZMB 51987: 1 v, Fig. 16 E,
1749 F).

1750 **Other material studied:** Desventuradas: San Félix: LACM 1965-94.4 (1 av, 1 v, with Fig. 16 H,
1751 I). Juan Fernández: Alejandro Selkirk: IOC97-50A (FMNH 322339: 2vs, Fig. 16 J, K). Robinson
1752 Crusoe: IOC97-57A (FMNH 322342: 1 v); IOC97-66A (FMNH 322340: 1 v; MNHN-CL MOL
1753 101624 ex FMNH 327903: 2 vs); LACM 1965-102.1 (6 avs, 1 v, with Fig. 15 G).

1754 **Other published records:** Playa “El Palillo”, Robinson Crusoe, Juan Fernández (Ramírez &
1755 Osorio, 2000).

1756 **Distribution:** Only known from Juan Fernández and Desventuradas archipelagos.

1757 **Description:** Shell to 5.5 mm L, ovate, longer than high, inflated, markedly inequilateral, thick.
1758 Anterior end widely projected. Umbo low but wide, posteriorly located, prosogyrate. Antero-
1759 dorsal margin not clearly separated from anterior margin, forming a wide curve. Ventral margin
1760 gently arched. Posterior margin relatively short, curved. Postero-dorsal margin steeply sloping,
1761 straight to somewhat arched, forming an obscure angulation at the junction with posterior
1762 margin. Dissoconch sculptured with conspicuous comarginal lines and microscopic pits. Shell
1763 surface shiny, whitish to reddish. Hinge plate short but stout, deeply excavated below the umbo;
1764 with one anterior and one posterior lateral tooth, similar in length. Lateral teeth short, elongate,
1765 strong; the anterior one fused to a small cardinal tooth. Resilifer long and wide. Inner shell
1766 surface withish. Inner margin smooth.

1767 **Comments:** Stempell (1899) introduced the name *Lasaea macrodon* for specimens collected in
1768 the Juan Fernández archipelago. Stempell’s name was subsequently accepted as valid (e.g., Soot-

1769 Ryen, 1959; Osorio & Bahamonde, 1970; Rozbaczylo & Castilla, 1987; Bernard, McKinnell &
1770 Jamieson, 1991; Ramírez & Osorio, 2000; MolluscaBase eds., 2023). Dall (1909), in a checklist
1771 of the mollusks of the Peruvian province, included the Juan Fernández archipelago in the
1772 distributional range of *L. petitiana*, likely resulting from considering *L. macrodon* as a synonym
1773 of *L. petitiana*, a synonymy also followed by Valentich-Scott, Coan & Zelaya (2020). Bernard,
1774 McKinnell & Jamieson (1991) listed *Lasaea macrodon* from Juan Fernández but *Lasaea*
1775 *petitiana* from Desventuradas. The study of these specimens (housed at LACM) revealed that
1776 they correspond to the same species. In view of the scarcity of available material of *Lasaea* from
1777 these archipelagoes Islands, consisting of empty shells only, and the general difficulties for
1778 properly delineating *Lasaea* species (which are known for polyploidy), we conservatively retain
1779 as valid the local name provided by Stempell (1899). Ponder (1971) suggested that *Lasaea*
1780 *helenae* Soot-Ryen, 1957, described from Iquique, Chile, is possibly a synonym of *L. macrodon*.

1781 Stempell (1899) referred to three specimens in his original description, which qualify as
1782 syntypes. The mention of a “holotype” by Valentich-Scott, Coan & Zelaya (2020: 228) was
1783 erroneous.

1784 ***Malvinasia selkirkensis* n. sp.**

1785 **Fig. 16 L-R**

1786 **Type locality:** 33°45'37.14" S, 80°45'8.13" W, E side of Alejandro Selkirk Island, Juan
1787 Fernández, 25 m (sediment sample collected from sand pockets by R. Bieler, 6 March 1997;
1788 IOC97-50A).

1789 **Type material:** Holotype (MNHN-CL MOL 101625 ex FMNH 322333: 1 v, Fig. 16 L, M), and
1790 3 paratypes, Juan Fernández: Robinson Crusoe: IOC97-66A (FMNH 322334: 1 av, Fig. 16 R);
1791 IOC97-68A (FMNH 322335: 2 vs, Fig. 16 N-Q).

1792 **Distribution:** Only known from Juan Fernández archipelago.

1793 **Diagnosis:** Shell minute, low, elongate. Anterior end markedly projected, pointed. Umbos low,
1794 strongly displaced posteriorly.

1795 **Description:** Shell to 1.8 mm L, trigonal-ovate, longer than high, somewhat inflated, markedly
1796 inequilateral, thin. Anterior end widely projected, pointed. Umbo extremely low, not outstanding
1797 from shell margin, markedly posteriorly displaced, opisthoglyrate. Antero-dorsal margin long,
1798 slightly to markedly convex. Anterior, ventral and posterior margins not distinctly separated,
1799 forming a uniform curve. Postero-dorsal margin short, sloping straight to slightly concave,
1800 sloping slightly more steeply than antero-dorsal margin. Dissoconch sculptured with low,
1801 irregularly spaced comarginal ridges; usually with 3–4 stronger growth folds. Shell surface
1802 whitish. Periostracum thick, straw yellowish. Hinge plate relatively weak, appearing as cleft
1803 below umbo. Right valve with long, strong peg-like tooth anterior to ligament, overhanging from
1804 hinge plate; dorsal margin anterior and posterior to ligament forming shallow, narrow grooves to
1805 receive left dorsal margin. Left valve with deep triangular socket where right tooth fits; antero-
1806 dorsal and postero-dorsal margins enlarged forming strong, long but narrow ridges. Inner shell
1807 surface whitish. Inner margin smooth.

1808 **Etymology:** Named for the type locality, Alejandro Selkirk Island; adjective.

1809 **Comments:** *Malvinasia selkirkensis* n. sp. is most similar to *Malvinasia piccola* Ituarte &
1810 Zelaya, 2015, from which it differs by having a lower and more elongated shell outline, an
1811 anterior end that is more projected and pointed, and much lower umbos. This set of characters
1812 also allows the distinction of *Malvinasia selkirkensis* n. sp. from *M. arthuri* Cooper & Preston,
1813 1910 and *Malvinasia cf. arthuri* of Ituarte & Zelaya (2015). The low and elongate shell outline of
1814 *Malvinasia selkirkensis* n. sp. also resembles that figured by Ituarte & Zelaya (2015) as
1815 *Malvinasia* sp. 1, from which it differs by having a shorter posterior end with faster-sloping
1816 postero-dorsal margin. Another low-umboned species is *Malvinasia molinae* (Ramorino, 1968),
1817 although that species is much higher-shelled and has a shorter and more rounded anterior end
1818 than *M. selkirkensis* n. sp.

1819 ***Melliteryx platei* (Stempell, 1899)**

1820 **Fig. 16 S-Y**

1821 *Lepton platei* Stempell, 1899: 233, pl. 12, figs. 20, 21. Kaspar, 1913: 545-625 [anatomy].

- 1822 *Bornia platei*, – Dall, 1909: 263 [listed only]. Soot-Ryen, 1959: 49 [listed only]. Osorio &
1823 Bahamonde, 1970: 200 [listed only]. Rozbaczylo & Castilla, 1987: 176 [listed only].
- 1824 *Erycina platei*, – Bernard, 1983: 31 [listed only]. Bernard, McKinnell & Jamieson, 1991: 36
1825 [listed only].
- 1826 ? *Melliteryx* ? n. sp., Bernard, McKinnell & Jamieson, 1991: 36 [listed only].
- 1827 *Litigiella platei*, – Huber, 2010: 550.
- 1828 *Melliteryx platei*, – Valentich-Scott, Coan & Zelaya, 2020: 229, pl. 73 [syntype].
- 1829 **Type locality:** Bahía Padres, [33°40'45" S, 78°56'45" W, Robinson Crusoe Island], Juan
1830 Fernández [archipelago].
- 1831 **Type material:** 9 syntypes (*fide* Stempell, 1899), although only one of them is currently
1832 preserved (C. Zorn, *in litt*, July 2022; ZMB 51986: 1 av, Fig. 16 S, T).
- 1833 **Other material studied:** Desventuradas: San Félix: IOC97-26 (FMNH 322310: 1 v); IOC97-29
1834 (FMNH 322309: 1 v); IOC97-32 (FMNH 322307: 1 v). San Ambrosio: IOC97-13 (FMNH
1835 322308: 3 vs); IOC97-18 (FMNH 322256: 10 vs). Juan Fernández: Alejandro Selkirk: IOC97-
1836 48A (FMNH 322260: 35 vs); IOC97-50A (FMNH 322257: 4 avs, 41 vs). Robinson Crusoe:
1837 IOC97-44A (FMNH 322255: 5 av, 43 vs, with Fig. 16 U-Y; MNHN-CL MOL 101626 ex FMNH
1838 327904: 25 vs); IOC97-57A (FMNH 322258: 18 vs); IOC97-66A (FMNH 322259: 2 avs, 72
1839 vs); IOC97-68A (FMNH 322261: 1 av, 17 vs).
- 1840 **Other published records:** Bahía Padres, Juan Fernández (Kaspar, 1913); Juan Fernández
1841 (Bernard, McKinnell & Jamieson, 1991).
- 1842 **Distribution:** Juan Fernández and Desventuradas archipelagos, and Caldera, Atacama, Chile
1843 (Valentich-Scott, Coan & Zelaya, 2020).
- 1844 **Description:** Shell to 4 mm L, subquadrate, longer than high, inflated, subequilateral,
1845 moderately solid. Anterior end as high as posterior end. Umbo low, wide, subcentrally located to
1846 slightly posteriorly displaced, orthogyrate. Antero-dorsal and postero-dorsal margins sloping at
1847 similar angle, straight to slightly arched. Posterior margin height, obliquely straight or forming a
1848 continuous curve with postero-dorsal margin, in the first case originating a weak angulation at
1849 the junction with dorsal margin. Ventral margin only slightly curved. Anterior margin widely

1850 rounded, not clearly separated from dorsal and ventral margins. Dissoconch sculptured with
1851 shallow, microscopic punctae, forming a honeycomb pattern, and densely packed, regularly
1852 distributed comarginal cords. Comarginal sculpture more evident ventrally. Shell surface
1853 whitish, brilliant. Periostracum yellowish. Hinge plate markedly excavated below the umbo,
1854 stout anteriorly, narrower posteriorly; with a small cardinal and two lateral teeth in each valve.
1855 Cardinal tooth small, triangular, ventrally directed. Anterior and posterior lateral teeth straight,
1856 extending all along hinge plate height, similar in length; the anterior stronger than the posterior
1857 one. Resilifer elongate, on the margin of posterior lateral tooth, supporting an internal ligament.
1858 External ligament present. Inner shell surface whitish, reflecting outer comarginal sculpture.

1859 ***Tellimya crusoensis* n. sp.**

1860 **Fig. 16 Z-EE**

1861 **Type locality:** 33°38'27.6" S, 78°49'22.8" W, Cumberland Bay, Robinson Crusoe, 14 m
1862 (sediment sample collected from sand pockets by R. Bieler, 4 March 1997; IOC97-44A).

1863 **Type material:** Holotype (MNHN-CL MOL 101627 ex FMNH 327365: 1 v, Fig. 16 Z, AA),
1864 and 2 paratypes, Juan Fernández: Alejandro Selkirk: IOC97-50 (FMNH 327366: 1 v, Fig. 16
1865 DD, EE); IOC97-50A (FMNH 327364: 1 v, Fig. 16 BB, CC).

1866 **Distribution:** Only known from Juan Fernández archipelago.

1867 **Diagnosis:** Shell ovate-elongate, with long posterior flap. Umbos wide, orthogyrate. Left valve
1868 with short, postero-ventrally directed anterior tooth.

1869 **Description:** Shell to 9.1 mm L, ovate, longer than high, somewhat inflated, markedly
1870 inequilateral, thin. Anterior end greatly produced, as high as posterior end. Umbo low but wide,
1871 posteriorly displaced, orthogyrate. Antero-dorsal margin long, straight to slightly arched, sloping
1872 slowly. Anterior, ventral and postero-ventral margins uniformly curved. Postero-dorsal margin
1873 obliquely straight. Postero-dorsal margin short, obliquely sloping, forming a prominent
1874 angulation at the junction with posterior margin. Posterior flap low but long. Prodissococonch I
1875 brownish, only preserved in smaller specimens; worn away by erosion and producing an
1876 umbonal cleft in larger specimens. Dissoconch sculptured with regularly distributed comarginal

1877 threads, and numerous, discontinuous radial lines. Shell surface whitish, shiny, translucent,
1878 sometimes crusted with ferruginous material. Periostracum yellowish. Hinge plate extremely
1879 narrow. Left valve with a single, short, stout, postero-ventrally directed anterior tooth,
1880 overhanging from hinge plate. Resilifer long, broad, spoon-shaped. Inner shell surface whitish.
1881 Inner shell margin smooth.

1882 **Etymology:** Named for the type locality, Robinson Crusoe Island; adjective.

1883 **Comments:** *Tellimya crusoensis* n. sp. is most similar to *T. pauciradiata* Raines & Huber, 2012,
1884 from which it differs by having wider umbos, longer posterior flap, and a greater number of
1885 radial lines. In addition, the anterior tooth is ventrally directed in *T. pauciradiata* (Raines &
1886 Huber, 2012) and postero-ventrally directed in *Tellimya crusoensis* n. sp..

1887 In general shell outline, *Tellimya crusoensis* n. sp. also resembles *Tellimya ferruginosa*, from
1888 which it differs by having lower and orthogyrate (instead of opisthogyrate) umbos. Furthermore,
1889 in *Tellimya crusoensis* n. sp. the left valve anterior tooth is short, postero-ventrally directed and
1890 overhanging from hinge plate, while in *T. ferruginosa*, this tooth is longer, antero-ventrally
1891 directed and completely supported by the hinge plate (see Gofas, 2000: fig. 6; Kamenev, 2008:
1892 fig. 5). Another similar species is *Tellimya auporia* (Ponder, 1968), which differs by having a
1893 less projected anterior end than *Tellimya crusoensis* n. sp., resulting in higher shell outlines.
1894 Furthermore, *T. auporia* has fewer radial lines than *Tellimya crusoensis* n. sp.

1895 CONDYLOCARDIIDAE

1896 *Condylocardia angusticostata* n. sp.

1897 Fig. 17 A-H

1898 *Condylocardia* n. sp., Bernard, McKinnell & Jamieson, 1991: 36 [listed only].

1899 **Type locality:** 33°40'20" S, 78°56'27" W, SW of Robinson Crusoe Island, Juan Fernández, 17–
1900 18 m (sediment sample collected from sand patches by R. Bieler, 8 March 1997; IOC97-66A).

- 1901 **Type material:** Holotype (MNHN-CL MOL 101628 ex FMNH 327992: 1 v, Fig. 17 A, C), and
1902 17 paratypes; 11 from the type locality (MNHN-CL MOL 101629 ex FMNH 327993: 1 v, Fig.
1903 17 B; FMNH 322251: 10 vs, with Fig. 17 D-G) and 6 from 66-100 (LACM 3838: 6 v).
- 1904 **Other material studied:** Juan Fernández: Alejandro Selkirk: *Eltanin* Station 21-203 (USNM
1905 904366C: 1 av). Robinson Crusoe: IOC97-44A (FMNH 322254: 2 avs, 1v); IOC97-68A (FMNH
1906 322252: 1 av, 1 v, with Fig. 17 H).
- 1907 **Distribution:** Only known from Juan Fernández archipelago.
- 1908 **Diagnosis:** Shell minute, triangular, sculptured with 9–13 radial ribs, separated by interspaces
1909 wider than ribs width.
- 1910 **Description:** Shell up to 1.7 mm H, triangular, as high as long, compressed to slightly inflated,
1911 inequilateral, moderately solid. Umbo prominent, pointed, anteriorly located. Antero-dorsal and
1912 postero-dorsal margins sloping at similar angle; the former straight to somewhat concave, the
1913 latter markedly straight, longer than the anterior one. Ventral margin widely convex, producing
1914 weak angulations in the junction with antero-dorsal and postero-dorsal margins. Lunule and
1915 escutcheon elongated, relatively wide, deep. Prodissoconch of about 400 μ m, mamillated; P-1
1916 with a central depression. P-2 sculptured with weak radial sculpture; separated from teleoconch
1917 by a strong rim, which is higher posteriorly than anteriorly. Dissoconch sculptured with 9–13
1918 narrow radial ribs, separated by wider interspaces. In addition, with fine comarginal lamellae,
1919 some forming folds. Shell surface whitish, glossy. Periostracum thin, ambarine. Hinge plate
1920 narrow. Right valve with a minute, trigonal posterior cardinal tooth and a larger, arched anterior
1921 cardinal; the latter with the posterior branch stronger than the anterior branch; both anterior and
1922 posterior cardinals dorsally attached to hinge line. Anterior lateral tooth narrow, elongate, well-
1923 discernible from shell margin. Posterior lateral tooth indistinct. Left valve with a free, short but
1924 stout, obliquely directed and well separated from hinge line anterior cardinal tooth, a massive
1925 posterior cardinal tooth, and an elongated posterior lateral tooth. Anterior lateral tooth indistinct.
1926 Internal ligament small, on a small resilifer, between anterior and posterior cardinal teeth.
1927 External ligament absent. Inner shell surface reflecting outer sculpture. Inner margin undulated
1928 by radial sculpture.

1929 **Etymology:** The name of the species refers to the narrow radial sculpture; adjective.

1930 **Comments:** In general shell outline, *Condylocardia angusticostata* n. sp. closely resembles the
1931 Australian *Condylocardia limnaeformis* Cotton, 1930 (figured by Middelfart, 2002: fig. 4) and
1932 some specimens of *Condylocardia digueti* Lamy, 1917, particularly those from Baja California,
1933 US (figured by Coan, 2003: figs. 1-3, 5-7). However, the new species described herein strikingly
1934 differs from these two species by having much narrower radial ribs that are separated by wider
1935 interspaces. In addition, the radial ribs in *C. digueti* are crossed by strong comarginal bars, which
1936 are virtually absent in *Condylocardia angusticostata*.

1937 Recent studies have questioned the status of Condylocardiidae (see Passos, Batistão & Bieler,
1938 2021) after multilocus molecular studies (González & Giribet, 2015; Combosch et al., 2017)
1939 found members of *Carditopsis* E. A. Smith, 1881 and *Carditella* E. A. Smith, 1881 – two genera
1940 historically considered as condylocardidiids – nested within the family Carditidae. However, the
1941 name-bearing genus *Condylocardia* has yet to be analyzed.

1942 **Condylocardiidae sp. A**

1943 **Fig. 17 I-N**

1944 **Material studied:** Desventuradas: San Félix: IOC97-26 (FMNH 322312: 1 v, Fig. 17 I, K, L);
1945 IOC97-29 (FMNH 322253: 1 v, Fig. 17 J, M, N).

1946 **Distribution:** Only known from Desventuradas archipelago.

1947 **Description:** Shell up to 1.48 mm L, ovate, longer than high, inequilateral, solid. Umbo
1948 prominent, widely rounded, posteriorly located. Antero-dorsal and postero-dorsal margins
1949 sloping at similar angles, straight to somewhat concave, the anterior longer than the posterior
1950 one. Ventral margin widely convex, not clearly separated from anterior and posterior margins in
1951 smaller specimens, producing weak angulations in the junction with antero-dorsal and postero-
1952 dorsal margins. Posterior margin flattened in larger specimens. Prodissococonch of about 300 μ m
1953 in diameter, mammillated; P-1 with two radially elongate depressions. P-2 separated from
1954 teleoconch by a prominent rim, which is higher posteriorly than anteriorly. Dissococonch
1955 sculptured with 10 broad and low radial ribs, separated by interspaces narrower than ribs width.

1956 In addition, fine comarginal lamellae, forming projected flat scales on the radial ribs. Shell
1957 surface whitish. Hinge plate narrow. Left valve with elongated anterior and posterior lateral
1958 teeth. Cardinal teeth imperfectly preserved in the available material. Internal ligament small, on a
1959 small resilifer. Inner shell surface and inner margin smooth.

1960 **Comments:** *Condylocardiidae* sp. A appears to be a new species. The limited material, two
1961 isolated shell valves, precludes us from naming it herein. *Condylocardiidae* sp. A resembles
1962 some species of *Carditella* considered by Güller & Zelaya (2013) and some species assigned to
1963 *Condylocardia* by Coan (2003). The imperfect state of preservation of the hinge plate of the
1964 available material (namely, the number and arrangement of cardinal teeth) precludes us from
1965 confirming the generic placement of this material. In general shell outline, it is most similar to
1966 *Condylocardia koolsae* Coan, 2003, from Galapagos Islands, Equator. However,
1967 *Condylocardiidae* sp. A clearly differs from that species by having a smaller number of broader
1968 radial ribs on the dissoconch (10 vs. 15–16) and displaying a smooth inner shell surface and
1969 margin.

1970 **PSAMMOBIIDAE**

1971 ***Gari* sp. B**

1972 **Fig. 18 A, B**

1973 *Gari solida* (Gray, 1828), – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. Valentich-
1974 Scott, Coan & Zelaya, 2020: 260 (in part: Juan Fernández record). (Not Gray, 1828).

1975 **Material studied:** Juan Fernández: Robinson Crusoe: LACM 1965-101.6 (1 v, Fig. 18 A, B).

1976 **Distribution:** Only known from Juan Fernández archipelago.

1977 **Description:** Shell of 29.6 mm L, ovate-elongate, longer than high, compressed, subequilateral,
1978 thin. Anterior end as high as posterior end. Umbo minute, pointed, slightly anteriorly displaced.
1979 Antero-dorsal margin sloping straight. Anterior margin rounded. Ventral margin evenly arcuated.
1980 Posterior margin obliquely straight. Postero-dorsal margin straight, almost horizontal. Posterior
1981 area of the shell ill defined. Dissoconch sculptured with weak comarginal lines. Shell surface
1982 whitish, shiny; stained with reddish. Hinge plate narrow. Right valve with two small, divergent

1983 cardinal teeth, the anterior one stronger, bifid, and ventrally directed; the posterior one postero-
1984 ventrally directed. Nymph short. Inner shell surface whitish, stained in reddish. Inner margin
1985 smooth. Pallial sinus broad, deep, completely separated from pallial line, anteriorly directed.
1986 Anterior adductor muscle scar ovoid, ventrally directed; posterior adductor muscle scar
1987 subcircular, dorsally displaced.

1988 **Comments:** The specimen of *Gari* sp. B studied herein was previously identified by Bernard,
1989 McKinnell & Jamieson (1991) as *Gari solida*, listing an incorrect locality of “Isla San Félix,
1990 Desventuradas”. Based on the same material, Valentich-Scott, Coan & Zelaya (2020) also
1991 reported *Gari solida*, but from Juan Fernández (provenance confirmed herein by the lot label).
1992 The nominal species *Gari solida* represented thus far the only species of that genus from Chilean
1993 waters. However, *Gari solida* strikingly differs from *Gari* sp. B by its more rapidly sloping
1994 antero-dorsal and postero-dorsal margins and higher shell, resulting in a more triangular shell
1995 outline. Moreover, in *Gari solida* the ventral part of the pallial sinus is convergent with the
1996 pallial line for about one-third of its total length, and the nymph is narrower and longer.

1997 Coan (2000) revised the species of *Gari* occurring in the Eastern Pacific. In general shell outline,
1998 the Juan Fernández specimen is most similar to the Galapagean specimen identified by Coan
1999 (2000) as *Gari* new species A and small specimens of *Gari helenae* Olsson, 1961 (both of them
2000 also figured by Coan & Valentich-Scott, 2012). These two species however differ from the
2001 material studied herein by having a longer antero-dorsal margin, which consequently results in a
2002 more posteriorly placed umbo, and by having the ventral part of the pallial sinus confluent for
2003 more than a half of its length with the pallial line. Furthermore, *Gari* new species A of Coan
2004 (2000) has a higher posterior end and more arcuated ventral margin than the specimen referred
2005 herein as *Gari* sp. B.

2006 *Gari* sp. B appears to be a new, undescribed, species. However, the limited material we have
2007 available (a single valve) and its poor state of preservation, preclude us from naming it herein.

2008 **SEMELIDAE**

2009 ***Ervilia producta* Odhner, 1922**

2010 **Fig. 19 A-I**

- 2011 *Ervilia producta* Odhner, 1922: 222, pl. 8, figs. 11, 12.
- 2012 *Ervilia producta*, – Soot-Ryen, 1959: 65 [listed only]. Osorio & Bahamonde, 1970: 205 [listed only].
- 2013 Bernard, 1983: 41 [listed only]. Rozbacylo & Castilla, 1987: 176 [listed only].
- 2014 Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. Sandberg & Warén, 1993: 128 [list of Odhner's taxa]. Huber, 2010: 703. ? Valentich-Scott, Coan & Zelaya, 2020: 266, pl. 85.
- 2017 *Ervilia galapagana*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. [Not Dall & Ochsner, 1928].
- 2019 **Type localities:** Masatierra [= Robinson Crusoe Island, Juan Fernández archipelago], 20-35 m and 30-45 m.
- 2021 **Type material:** Syntypes at SMNH and GNM (Sandberg & Warén, 1993); 6 syntypes studied herein (GNM Moll. 7066: 2 avs, 2 vs, with Fig. 19 A-E).
- 2023 **Other material studied:** Desventuradas: San Félix: IOC97-26 (FMNH 322311: 1 av, 2 vs); IOC97-29 (FMNH 322300: 7 vs); LACM 1966-98.5 (1 v). Juan Fernández: Alejandro Selkirk: IOC97-50A (FMNH 322243: 4 avs, 1 v); 33°45' S, 80°40'48" W, 79-91 m (USNM 887915: 1 av, 38 vs; USNM 904373: 15 avs, 61 vs). Robinson Crusoe: IOC97-66A (FMNH 322240: 3avs, 3 vs, with Fig. 19 F-I; MNHN-CL MOL 101630 ex FMNH 327994: 2 avs, 7 vs); IOC97-66A (FMNH 322241: 2 avs); IOC97-68A (FMNH 322242: 2 avs, 7 vs); LACM 1965-100.3 (4 vs); LACM 1965-101.7 (1 v); LACM 1966-100.5 (>100 vs); LACM 1966-102.3 (4 vs); LACM 1966-103.1 (35 vs).
- 2031 **Distribution:** Only known from Juan Fernández and Desventuradas archipelagos.
- 2032 **Description:** Shell to 8.4 mm L, ovate, longer than high, compressed, inequilateral, thin. Anterior end broadly rounded, posterior end bluntly pointed, lower than anterior one. Umbo small, narrow, pointed; subcentral to slightly anteriorly displaced, opisthoglyrate. Antero-dorsal margin sloping straight and forming a weak angulation at the junction with the rounded anterior margin, or markedly arcuate, connected in a broad curve with anterior margin. Ventral margin evenly arched or flattened in the posterior half, with the maximum projection in the medial line. Posterior margin short and rounded, forming weak angulation at the junction with postero-dorsal

2039 margin, which may be either straight and obliquely sloping, or convex. Postero-dorsal margin
2040 longer than antero-dorsal margin. Escutcheon wide and deep. Prodissococonch pale cream.
2041 Dissococonch sculptured with numerous, low, regularly distributed comarginal cords, separated by
2042 interspaces as wide as the cords; posterior third of the shell also bearing prominent radial lines.
2043 Lines extending from umbo to shell margin, forming granules at the intersection with comarginal
2044 sculpture. Shell surface translucent, whitish, shiny; sometimes stained with violet, brownish or
2045 yellowish. Hinge plate narrow at anterior and posterior ends, but widened below the umbos.
2046 Right valve with a triangular, high and stout median cardinal, anterior to the resilifer. Anterior
2047 and posterior cardinal teeth merged to shell margin. Anterior and posterior lateral teeth similar in
2048 size, narrow, elongate, separated by a shallow depression from shell margin. Left valve with
2049 three straight cardinal teeth: posterior cardinal short and stout; anterior and median cardinals
2050 narrow, longer than the posterior cardinal. Anterior tooth antero-ventrally directed, median tooth
2051 ventrally directed. Anterior and ventral teeth delimiting a socket where the median tooth of the
2052 opposite valve articulates. Median and posterior teeth delimiting the resilifer. Resilifer large,
2053 triangular. Internal ligament massive. External ligament narrow, amphidetic, longer anteriorly
2054 than posteriorly. Inner shell surface whitish or stained as the outer shell surface. Inner margin
2055 smooth. Pallial sinus broad, deep, reaching the half of shell length; base fused to pallial line for
2056 three-fourth of its total length.

2057 **Comments:** Odhner (1922) mentioned “many specimens” in the original diagnosis, without
2058 selecting a holotype. Four of these syntypes were studied herein.

2059 Bernard, McKinnell & Jamieson (1991: 36) listed *Ervilia producta* and *Ervilia galapagana* Dall
2060 & Ochsner, 1928 from Juan Fernández. However, the specimens they identified as *E.*
2061 *galapagana* strikingly differ from the holotype of that species (CAS 2971) by being higher and
2062 by having the umbos narrower and pointed. These specimens fit within the variability of the
2063 syntypes of *E. producta*, and we interpret Bernard, McKinnell & Jamieson’s (1991) records of *E.*
2064 *galapagana* in Juan Fernández as based on a misidentification.

2065 Valentich-Scott, Coan & Zelaya (2020) identified as *Ervilia producta* an eroded specimen from
2066 12°05' S, 77°08' W, off Callao, Lima, Perú, 88 m. The provided SEM micrographs (Valentich-
2067 Scott, Coan & Zelaya, 2020: pl. 85) show straighter antero-dorsal and postero-dorsal shell

2068 margins than in any of the Juan Fernández specimens studied herein. The comarginal and radial
2069 sculpture is not visible in the corroded figured specimen. An assessment of the conspecificity of
2070 the Peruvian shell, and the associated wider geographic range, needs access to further material.

2071 **CHAMIDAE**

2072 ***Chama pellucida* Broderip, 1835**

2073 **Fig. 20 A-N**

2074 *Chama pellucida* Broderip, 1835a: 149; 1835b: 302-303, pl. 38, fig. 3.
2075 *Chama pellucida*, – Hanley, 1843: 228, pl. 24, fig. 19. d'Orbigny, 1846: 670-671. Chenu, 1846:
2076 pl. 6, fig. 12. Reeve, 1847: *Chama* species 32, pl. 6, fig. 32 [topotypic specimen; Mus.
2077 Cuming]. Philippi, 1860: 177. Clessin, 1889: 18-19, pl. 8, figs. 3, 4. Stempell, 1899: 238.
2078 Dall, 1909: 156, 262 [listed only]. Grieser, 1913 [anatomy]. Lamy, 1928: 343 [review of
2079 genus]. Pilsbry & Lowe, 1934: 82. Soot-Ryen, 1959: 40 [listed only; coastal Chile].
2080 Olsson, 1961 [in part: Perú record]: 225, pl. 33, figs. 2, 2a, pl. 34, fig. 5. Herm, 1969:
2081 115, pl. 5, fig. 6. Osorio & Bahamonde, 1970: 198 [listed only; in part: Juan Fernández
2082 records]. Marincovich, 1973: 11, fig. 10. Bernard, 1976: 20, figs. 4c [topotypic
2083 specimen], 4d [holotype of *Chama chilensis*]; 1983: 35 [listed only]. Rozbaczylo &
2084 Castilla, 1987: 176 [listed only]. Bernard, McKinnell & Jamieson, 1991: 36 [listed only].
2085 Alamo & Valdivieso, 1997: 115 [listed only]. Guzmán, Saá & Ortíeb, 1998: 69-70.
2086 Ramírez & Osorio, 2000: 6 [listed only]. Huber, 2010: 284. Coan & Valentich-Scott,
2087 2012: 437, pl. 144. Uribe et al., 2013: 219. Nielsen, 2013: 56, figs. 11, g-j. Cardoso et al.,
2088 2016: 18, fig. 6. Paredes et al., 2016: 139 [listed only]. Valentich-Scott, Coan & Zelaya,
2089 2020: 276, pl. 88.
2090 *Chama chilensis* Philippi, 1887: 173, pl. 37, fig. 9.
2091 *Chama imbricata*, – Odhner, 1922: 222. Soot-Ryen, 1959: 40 [listed only]. Osorio &
2092 Bahamonde, 1970: 198 [listed only]. Rozbaczylo & Castilla, 1987: 176 [listed only]. (Not
2093 Broderip, 1835).
2094 *Pseudochama janus*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not *Chama*
2095 *janus* Reeve, 1847).

2096 **Type localities:** Iquique, Chile [“ad Peruviam. (Iquique)”), “dredged up attached to stones,
2097 *Mytili*, and turbinated shells, at a depth varying from nine to eleven fathoms, from a bottom of
2098 coarse sand, and also found under stones at low water mark” (*Chama pellucida*). Pliocene of
2099 Laguna Cahuil, Chile [“Cahuil, about 1 hour far from the sea and 25 to 30 meters above sea
2100 level”] (*Chama chilensis*).

2101 **Type material:** 3 syntypes of *Chama pellucida* (NHMUK 1950.11.1.63-65, Fig. 20 A-D).
2102 Holotype of *Chama chilensis* (SGO.PI.632: 1 av, Fig. 20 L-N).

2103 **Other material studied:** Juan Fernández: Alejandro Selkirk: IOC97-48A (FMNH 322322: 6 vs,
2104 juvenile); IOC97-50 (FMNH 322319: 7 vs). Robinson Crusoe: IOC97-44 (FMNH 322326: 7 vs;
2105 MNHN-CL MOL 101631 ex FMNH 327995: 7 vs); IOC97-44A (FMNH 322323: 4 vs, juvenile;
2106 MNHN-CL MOL 101632 ex FMNH 327996: 7 vs, juvenile); IOC97-57A (FMNH 322321: 3 vs,
2107 juvenile); IOC97-62 (FMNH 322320: 1 v); IOC97-66A (FMNH 322325: 3 vs); IOC97-68A
2108 (FMNH 322324: 11 vs); LACM 1965-97.4 (2 vs); LACM 1965-99.3 (5 avs, 2 vs, with Fig. 20 E-
2109 G); LACM 1965-103.3 (4 avs, 1 v, with Fig. 20 H-K); LACM 1966-100.6 (1 v, juvenile).

2110 **Other published records:** Bahía Padres, Juan Fernández [33°40'45" S 78°56'45" W], lower
2111 intertidal to 40 fathoms (73 m) (Stempell, 1899). Masatierra (= Robinson Crusoe) [33°38'27" S
2112 78°52'10" W], Juan Fernández, 40-100 m (Odhner, 1922: as *Chama imbricata*). Juan Fernández
2113 (Bernard, 1976; Valentich-Scott, Coan & Zelaya, 2020). Playa “El Palillo”, Robinson Crusoe,
2114 Juan Fernández (Ramírez & Osorio, 2000)

2115 **Distribution:** Puerto Pizarro, Tumbes, Perú [5°18' S] (Cardoso et al., 2016) to Tocopilla,
2116 Antofagasta, Chile [22°06' S], Juan Fernández (Valentich-Scott, Coan & Zelaya, 2020 and
2117 herein).

2118 **Description:** Shell to 76.5 mm H, irregular in outline, usually subcircular, sometimes ovoid,
2119 higher than long; inflated, thick, attached to substratum by left valve. Right valve smaller and
2120 flatter than left valve. Umbo wide, well outstanding from shell margin. Shell sculptured with
2121 comarginal lamellae, with short, flat, blunt projections. Outer sculpture usually eroded in larger
2122 specimens. Exterior color white to pink. Inner surface whitish. Margins finely crenulated. Hinge

2123 plate wide; with a prominent tubercle in the left valve and the corresponding depression in the
2124 right valve.

2125 **Comments:** Odhner's (1922) reference to *C. imbricata* Broderip, from Juan Fernández
2126 (Masatierra, 40–100 m) [repeated by Osorio and Bahamonde, 1970]. was assigned to *C.*
2127 *pellucida* by Bernard (1976). Bernard, McKinnell & Jamieson (1991) listed two chamid species
2128 from Juan Fernández: *Chama pellucida* and *Chama janus* Reeve, 1847 (the latter under
2129 *Pseudochama*). However, only one species was recognized in the material studied herein. The
2130 records of *C. pellucida* from the northern hemisphere (e.g. Adams & Adams, 1857; Carpenter,
2131 1857, 1864; Olsson, 1961) actually correspond to *C. arcana* Bernard, 1976.

2132 Bernard (1976) included *Chama chilensis* Philippi, 1887 in the synonymy of *C. pellucida*.
2133 However, the specimen that he (Bernard, 1976: fig. 4d) figured as holotype of *C. chilensis* does
2134 not agree with the original figure of this species (Philippi 1887: pl. 37, fig. 9). A photograph of
2135 the holotype is reproduced herein (Fig. 20 L-N). This specimen, as well as the Pliocene
2136 specimens from Mejillones (northern Chile) figured by Nielsen (2013: fig. 11 g-j), match the
2137 syntypes of *C. pellucida*.

2138 **VENERIDAE**

2139 ***Paphonotia fernandesiana* (Stempell, 1899)**

2140 **Fig. 21 A-H**

2141 *Venerupis fernandesiana* Stempell, 1899: 237, pl. 12, fig. 22, 23.
2142 *Venerupis fernandesiana*, – Lamy, 1923: 299 [taxonomic note]. Hertlein & Strong, 1948: 193.
2143 *Venerupis fernandeziana* [sic], – Dall, 1909: 269 [listed only], 292 [synonymy]. Odhner, 1922:
2144 222. Riveros Zuñiga & González Reyes, 1950: 153, fig. 44.
2145 *Irus fernandeziana* [sic], – Soot-Ryen, 1959: 56 [listed only]. Osorio & Bahamonde, 1970: 202
2146 [listed only]. Rozbaczylo & Castilla, 1987: 176 [listed only].
2147 *Irus fernandezianus* [sic], – Fischer-Piette & Métivier, 1971: 91 [taxonomic review]. Bernard,
2148 1983: 55 [listed only].
2149 *Irusella fernandiziana* [sic], – Bernard, McKinnell & Jamieson, 1991: 36 [listed only].
2150 *Paphonotia fernandesiana*, – Valentich-Scott, Coan & Zelaya, 2020: 325, pl. 104 [“holotype”].

2151 **Type locality:** Bahía Cumberland, [Robinson Crusoe Island], Juan Fernández [archipelago].

2152 **Type material:** “Numerous syntypes” (fide Stempell, 1899), although only one of them (the
2153 syntype figured herein) is currently preserved (C. Zorn *in litt.*, July 2022; ZMB 51989: 1 v, Fig.
2154 21 A).

2155 **Other material studied:** Juan Fernández: Alejandro Selkirk: IOC97-48A (FMNH 322248: 1 v);
2156 IOC97-50 (FMNH 322244: 2 avs, 6 vs, with Fig. 21 B-H; MNHN-CL MOL 101633 ex FMNH
2157 327997: 5vs); 33°45'S 80°40'48" W, 79-91 m (USNM 904373B: 1 av). Robinson Crusoe:
2158 IOC97-44A (FMNH 322247: 2 vs); IOC97-59 (FMNH 322249: 6 vs, fragment); IOC97-66A
2159 (FMNH 322246: 4 vs); IOC97-68A (FMNH 322245: 7 vs); LACM 1965-100.7 (6 vs); LACM
2160 1966-100.4 (>200 avs + vs); Masatierra [= Robinson Crusoe], 20-35 m (SMNH 1228: 4 spec;
2161 specimens mentioned by Odhner, 1922).

2162 **Distribution:** Only known from Juan Fernández archipelago.

2163 **Description:** Shell to 12.5 mm L, subovate to subquadrate, longer than high, somewhat inflated,
2164 inequilateral, moderately solid. Posterior end higher than anterior end. Umbo small, pointed,
2165 anteriorly located, prosogyrate. Antero-dorsal margin short, steeply sloping, straight to slightly
2166 arched, not distinctly separated from anterior margin. Anterior margin short, rounded. Ventral
2167 margin forming a wide curve. Posterior margin obliquely straight to slightly curve, higher than
2168 anterior margin. Postero-dorsal margin long, almost straight, sloping slowly; forming a well-
2169 marked angulation at the junction with posterior margin. Posterior area of the shell flatter than
2170 the other parts. Lunule not defined. Escutcheon raised. Dissoconch sculptured with numerous,
2171 low and narrow radial riblets, closely spaced and delicate comarginal threads, and
2172 wrinkled, widely separated comarginal lamellae. Shell surface whitish, yellowish, reddish or
2173 brownish, sometimes with color bands or blotches. Hinge plate moderately solid, with 3 cardinal
2174 teeth in each valve: an elongate anterior tooth, antero-ventrally directed; a markedly triangular
2175 median tooth, ventrally directed; an elongate posterior tooth postero-ventrally directed. Median
2176 tooth stout in both valves. Anterior cardinal moderately solid and longer than median tooth in the
2177 left valve, small and narrow in the right valve. Posterior cardinal narrow, fused to shell margin in
2178 the left valve, almost as strong as median cardinal in the right valve. Median cardinal and

2179 posterior cardinal of right valve grooved. Nymph short. Inner shell surface whitish, brownish or
2180 pinkish. Inner shell margin smooth. Pallial sinus wide, deep, bluntly pointed.

2181 **Comments:** There is no doubt about the close affinities of *Paphonotia fernandesiana* with *P.*
2182 *elliptica* (Sowerby I, 1834), the type species of the genus. However, the relationship of these two
2183 species with *Irus* Schmidt, 1818 is less clear. *Paphonotia* was originally created as a subgenus of
2184 *Irus*, from which it was differentiated by the presence of a crenulated (instead smooth) inner
2185 shell margin, ascending pallial sinus, an incised line bounding the lunule (absent in *Irus*), and
2186 more divergent teeth (Hertlein & Strong, 1948: 192-193). The present study reveals that in *P.*
2187 *fernandesiana* the smooth inner margin may appear crenulated as a consequence of erosion and
2188 that the pallial sinus is ascending in some specimens but horizontal in some others. In addition,
2189 the comparison of the material of *P. fernandesiana* here studied with photographs of *Irus irus*
2190 (Linnaeus, 1758) (type species of the genus) [figured by Oliver et al., 2016] shows no clear
2191 difference in the degree of divergence of hinge teeth between these two species. The only
2192 recognizable differences between these taxa are: 1) the three cardinal teeth of *I. irus* are narrow
2193 and similar in width, contrary to the wider median and the right valve posterior cardinal of *P.*
2194 *fernandesiana*; 2) the anterior cardinal of the right valve appears completely separated from the
2195 shell margin in *Irus irus*, whereas in *Paphonotia fernandesiana* it is fused; and 3) the posterior
2196 cardinal of the left valve appear somewhat more separated from the base of median cardinal in
2197 *Irus irus* than in *Paphonotia fernandesiana*. The significance of these differences cannot be
2198 resolved in the context of this study and we retain both nominal genera as distinct.

2199 Stempell (1899) based the original description on several syntypes. The label of “holotype” of
2200 the specimen figured by Valentich-Scott, Coan & Zelaya (2020: pl. 104) is erroneous, as is the
2201 associated repository number given by the authors for this syntype.

2202 Stempell (1899) spelled the species name *Venerupis fernandesiana*, although the species was
2203 described from Juan Fernández. His original spelling is here considered not an inadvertent error
2204 (in the sense of ICZN, 1999, Art. 32.5.1.) but instead Stempell’s choice of latinization (Latin
2205 does not properly have a letter “z”). Subsequent citations with “z” by some authors (see
2206 synonymy list above) are here interpreted as incorrect subsequent spellings and not emendations
2207 in the sense of ICZN (1999) Art. 33.2.

2208

Timoclea sanfelixensis n. sp.

2209

Fig. 21 I-K

2210 **Type locality:** 26°20' S, 80°03' W, SE off San Félix Island, Desventuradas archipelago, 415 m
2211 (R/V *Anton Bruun* Cruise 17, station 675H, by Campbell grab, 12 July 1966, LACM 1966-98).

2212 **Type material:** Holotype (LACM 3830: 1 v, Fig 21 I-K).

2213 **Distribution:** Only known from Desventuradas archipelago.

2214 **Diagnosis:** Shell subovate, higher posterior than anteriorly. Umbo small, pointed, markedly
2215 recurved. Dissoconch sculptured with thin radial ribs and comarginal cords.

2216 **Description:** Shell of 4.0 mm L, subovate, longer than high, inequilateral, solid. Posterior end
2217 higher than anterior end. Umbo markedly recurved, low, narrow, pointed, anteriorly located,
2218 prosogyrate. Antero-dorsal margin steeply sloping, not distinctly separated from anterior margin.
2219 Anterior, ventral and posterior margins forming a continuous curve. Postero-dorsal margin long,
2220 almost straight. Lunule well-marked, sculptured with densely placed lamellar. Dissoconch
2221 cancellate. Radial sculpture consisting of about 30 radial ribs, separated by interspaces wider
2222 than ribs width. Comarginal sculpture consisting of regularly, widely separated cords, narrower
2223 than radial elements; originating small granules at the intersection with radial sculpture. Shell
2224 surface whitish. Hinge plate solid, with 3 cardinal teeth in the right valve: a narrow, elongate
2225 anterior tooth, anteriorly directed; a stout median tooth, antero-ventrally directed; a solid,
2226 elongate posterior tooth postero-ventrally directed. Median and posterior teeth dorsally
2227 connected, forming a right angle. Posterior cardinal grooved. Nymph relatively short and wide.
2228 Inner shell surface whitish. Inner shell margin finely crenulate. Pallial sinus hardly discernible.

2229 **Etymology:** Named for the type locality, San Félix Island, Desventuradas; adjective.

2230 **Comments:** *Timoclea sanfelixensis* n. sp. is most similar to Eastern Island *T. keegani* Raines &
2231 Huber, 2012, the only species of the genus thus far known from the southeastern Pacific Ocean.
2232 However, *T. keegani* differs from *Timoclea sanfelixensis* n. sp. by having higher and wider
2233 umbos and colorful shells. In addition, *T. keegani* has secondary radial ribs between the primary

2234 ribs (absent in *Timoclea sanfelixensis* n. sp.), small scales projected in the intersection of radial
2235 and comarginal sculpture, and a stronger anterior cardinal tooth than *T. sanfelixensis* n. sp.

2236 In general shell outline, *Timoclea sanfelixensis* n. sp. also resembles *T. infans* (Smith, 1885) and
2237 *T. scabra* (Hanley, 1845), from which it differs by having a more broadly rounded and higher
2238 posterior margin, a smaller and more recurved umbo, as well as narrower radial ribs that are
2239 separated by wider interspaces.

2240 **NEOLEPTONIDAE**

2241 ***Neolepton sanfelixensis* n. sp.**

2242 **Fig. 22 A-I**

2243 **Type locality:** 26°17'24.14" S, 80°6'36.22" W, San Félix Island, Desventuradas, 12.2 m
2244 (collected by scuba by Rüdiger Bieler, 26 February 1997; IOC97-30A).

2245 **Type material:** Holotype (MNHN-CL MOL 101634 ex FMNH 327998: 1 v, Fig. 22 A, B) and
2246 14 paratypes from the type locality (MNHN-CL MOL 101635 ex FMNH 327999: 5 vs, with Fig.
22 C, D; FMNH 322301: 7 vs, with Fig. 22 E, F; LACM 3831 ex FMNH 328000: 2 vs, with Fig.
22 G).

2249 **Other material studied:** Desventuradas: San Félix: IOC97-26 (FMNH 322314: 18 vs, 2
2250 fragments); IOC97-29 (FMNH 322302: 2 avs subadult, 19 vs, with Fig. 22 H, I); IOC97-32
2251 (FMNH 322306: 7 vs). San Ambrosio: IOC97-12 (FMNH 322303: 1 av); IOC97-13 (FMNH
2252 322305: 5 vs); IOC97-18 (FMNH 322304: 2 vs).

2253 **Distribution:** Only known from Desventuradas archipelago.

2254 **Diagnosis:** Shell ovate, with the anterior end bluntly pointed. Umbos low. Dissococonch
2255 sculptured with regularly distributed comarginal cords. Hinge plate completely supporting
2256 cardinal teeth. Shell surface usually stained brown in the posterior area.

2257 **Description:** Shell up to 3.7 mm L, ovate, longer than high, not inflated, somewhat inequilateral,
2258 solid. Anterior end bluntly pointed, posterior end evenly rounded, higher than anterior end.

2259 Umbo small, low, subcentral. Antero-dorsal and postero-dorsal margins of about the same
2260 length, sloping at similar angle, the anterior one almost straight, the posterior one markedly
2261 convex. Anterior, ventral, and posterior margins forming a wide, even curve. Prodissococonch of
2262 975 μ m in diameter. Dissococonch sculptured with low, coarse, closely spaced, regularly
2263 distributed comarginal cords. Shell surface shiny, whitish, usually widely stained in brown at the
2264 posterior area, sometimes with small brownish stains behind the umbo. Hinge plate relatively
2265 solid. Left valve with two solid cardinal teeth behind the resilifer; cardinal dorsally in contact,
2266 forming a hook. In addition, an elongate posterior lateral tooth. Posterior cardinal one-third the
2267 length of the anterior one. Right valve: with 3 cardinal teeth behind the resilifer, and two
2268 posterior lateral teeth. Median cardinal strong, sharply triangular, with relatively short base and
2269 posteriorly displaced cusp. Anterior and posterior cardinals short, narrowly elongate, located at
2270 right angle, the posterior about a half the length of the anterior one. Posterior laterals elongate,
2271 massive. Resilifer moderate in size, stout, supporting a strong internal ligament. External
2272 ligament narrow, amphidetic, with the posterior part longer than the anterior one. Inner shell
2273 surface reflecting outer shell sculpture; whitish or stained in brown in externally colored
2274 specimens. Inner margin smooth.

2275 **Etymology:** Named for the type locality, San Félix Island, Desventuradas; adjective.

2276 **Comments:** In general shell outline, *Neolepton sanfelixensis* n. sp. closely resembles Magellanic
2277 *N. hupei* Soot-Ryen, 1957 (figured and described in Zelaya & Ituarte, 2004). However, *N.*
2278 *sanfelixensis* n. sp. has coarser and evenly distributed comarginal sculpture (cords), whereas *N.*
2279 *hupei* only has irregularly spaced comarginal lines. Another difference lies in the width of the
2280 hinge plate: in *N. sanfelixensis* n. sp., the hinge is evenly wide and completely supports the
2281 cardinal teeth. In *N. hupei*, the hinge plate is narrowed below the umbo, producing an
2282 overhanging of the distal part of cardinal teeth. In addition, the posterior area of the shell is
2283 usually stained brown in *N. sanfelixensis* n. sp., whereas the shell of *N. hupei* is uniformly white.
2284 A similarly speckled posterior part of the shell appears in *Neolepton chaneyi* Coan & Valentich-
2285 Scott, 2012, but that species has the antero-dorsal and postero-dorsal margins sloping more
2286 steeply, resulting in a markedly triangular shell outline. That species also has wider umbos than
2287 *N. sanfelixensis* n. sp..

2288

***Neolepton* sp. A**

2289

Fig. 22 J-L

2290 **Material studied:** 26°20' S, 80°03' W, SE off San Félix Island, Desventuradas archipelago, 415
2291 m (R/V *Anton Bruun* Cruise 17, station 675H, by Campbell grab, 12 July 1966, LACM 1966-
2292 98.6 (1 v, Fig. 22 J-L).

2293 **Distribution:** Only known from Desventuradas archipelago.

2294 **Description:** Shell of 3.8 mm L, triangular, longer than high, not inflated, somewhat
2295 inequilateral, thin. Anterior end somewhat projected, posterior end higher than anterior end.
2296 Umbo small, low, subcentral. Antero-dorsal and postero-dorsal margins of about the same
2297 length, the anterior one almost straight, the posterior slightly convex. Anterior and ventral
2298 margins forming an even curve. Dissococonch sculptured with fine growth lines. Shell surface
2299 shiny, whitish. Hinge plate solid. Right valve: with 3 cardinal teeth behind the resilifer, and two
2300 posterior lateral teeth. Median cardinal massive, sharply triangular, with short base and
2301 posteriorly displaced cusp. Anterior and posterior cardinals short, narrowly elongate, located at
2302 right angle, the posterior weaker and shorter than the anterior one. Posterior laterals elongate,
2303 massive. Resilifer triangular, deep. Inner shell surface withish. Inner margin smooth.

2304 **Comments:** In general shell outline, *Neolepton* sp. A resembles Magellanic *Neolepton amatoi*
2305 Zelaya & Ituarte, 2004, from which it differs by having a less projected anterior end that leads to
2306 a more subcentrally located umbo. In addition, the right valve median cardinal tooth has a shorter
2307 base in *Neolepton* sp. A. It appears to be a new, undescribed, species. However, the limited
2308 material (a single valve) and its poor state of preservation preclude us from naming it herein.

2309

XYLOPHAGAIDAE

2310

***Xylophaga* sp. A**

2311

Fig. 23 A-D

2312 *Xylophaga globosa*, – Rozbaczylo & Castilla, 1987: 176 [listed only]. Bernard, McKinnell &
2313 Jamieson, 1991: 36 [listed only]. (Not Sowerby, 1835).

2314 **Material studied:** Juan Fernández; Robinson Crusoe: LACM 1965-101.8 (15 av with dried
2315 tissue, with Fig. 23 A-D).

2316 **Description:** Shell of 4.1 mm L, ovate, higher than long, flatter posteriorly than anteriorly,
2317 equivalve, thin. Umbo broad and low. Umbonal-ventral sulcus wide and deep; flanked by two
2318 low but strong radial ribs, originating ventral sinuation. Posterior rib more ventrally projected
2319 than anterior rib. Postumbonal area of shell subcircular in outline, sculptured with low growth
2320 lines. Anterior area of shell shorter than posterior area, inflate, sculptured with few, widely
2321 spaced comarginal ridges. Anterior incision relatively small. Umbonal reflection small.
2322 Prodissoconch orange. Dissoconch surface whitish. Hinge plate edentate. Umbonal-ventral ridge
2323 gradually increasing in width, with semicircular condyle at ventral end.

2324 **Comments:** Stempell (1899) reported *Xylophaga dorsalis* (Turton, 1819) from the Juan
2325 Fernández archipelago. This is a European species (Turner, 1955; Romano et al., 2014),
2326 morphologically similar to *X. globosa* (Turner, 1955). Dall (1909: 292) considered Stempell's
2327 record as belonging to *X. globosa*, an opinion followed by Valentich-Scott, Coan & Zelaya
2328 (2020). No additional records of *Xylophaga* species appear in the literature from this archipelago,
2329 although *X. globosa* was listed from Juan Fernández in several checklists (Osorio & Bahamonde,
2330 1970; Rozbaczylo & Castilla, 1987; Bernard, McKinnell & Jamieson, 1991). The specimen
2331 studied herein has a shorter and more evenly rounded posterior end of the shell, and the anterior
2332 area sculptured with fewer and more widely separated ridges than the specimens of *X. globosa*
2333 figured by Sowerby (1849: pl. 108, figs. 101-102) [type material] and Turner (1955: pl. 89).
2334 Recently, Marcel Velasques (pers. com., December 2021; ongoing research) studied freshly
2335 collected material from Juan Fernández, resulting in the recognition of two *Xylophaga* species:
2336 one of them morphologically similar to *X. globosa* (but possibly new to science) and another
2337 indubitably new. The specimens identified as *X. dorsalis* by Stempell (1899) could not be located
2338 at the ZMB (C. Zorn *in litt.*, July 2022), where other specimens reported by this author are
2339 housed.

2340 **TEREDINIDAE**

2341 ***Bankia martensi* (Stempell, 1899)**

2342

Fig. 24 A, B

- 2343 *Teredo (Xylotrya) martensi* Stempell, 1899: 240-242, pl. 12, figs. 24-27.
- 2344 *Xylotrya martensi*, – Dall, 1909: 278 [listed only].
- 2345 *Bankia (Bankia) chiloensis* Bartsch, 1923: 147-149.
- 2346 *Bankia odhneri* Roch, 1931: 20-21, pl. 4, fig. 10. Carcelles & Williamson, 1951: 348 [listed
2347 only].
- 2348 *Bankia valparaisensis* Moll in Roch & Moll, 1935: 273, pl. 2, fig. 3.
- 2349 *Bankia argentinica* Moll in Roch & Moll, 1935: 274, pl. 2, fig. 5.
- 2350 *Bankia chiloensis*, – Carcelles & Williamson, 1951: 348. [listed only].
- 2351 *Bankia martensi*, – Turner, 1966: 88, 93, 109, 114, 128, pl. 61 A-D. Campos & Ramorino, 1990:
2352 19-20, 23-25, pl. 1, figs. 1-4, pl. 3, figs. 1-4, pl. 5, figs. 1-6, pl. 6, figs. 1-6. Bernard,
2353 McKinnell & Jamieson, 1991: 36 [listed only]. Sporman et al., 2006: 105-109. Zelaya,
2354 2009: 447. Velásquez, Gallardo Silva & Lira, 2011: 33-36; 2014: 211-220. Valentich-
2355 Scott, Coan & Zelaya, 2020: 376, pl. 121.
- 2356 *Bankia (Bankia) martensi*, – Soot-Ryen, 1959: 70. Stuardo, Saelzer & Rosende, 1970: 153-166.
2357 Osorio & Bahamonde, 1970: 207 [listed only]. Osorio, Atria Cifuentes & Mann Fischer,
2358 1979: 36, fig. 44. Bernard, 1983: 62 [listed only]. Reid & Osorio, 2000: 140, fig. 5N-P.
2359 Osorio, 2002: 166-167.

2360 **Type localities:** Punta Arenas, Chile (*Teredo (Xylotrya) martensi*). Chiloé Island (*Bankia*
2361 (*Bankia*) *chiloensis*). Valparaíso, Chile (*Bankia valparaisensis*). Buenos Aires, [Argentina]
2362 (*Bankia argentinica*). Port Williams, [Malvinas] / Falklands Inseln (*Bankia odhneri*).

2363 **Type material:** Types of *Bankia martensi* originally deposited in ZMB, but not currently found
2364 there (Turner, 1966; C. Zorn, pers. com. October 2023). Holotype of *Bankia (Bankia) chiloensis*
2365 (USNM 348498). Holotype of *Bankia odhneri* (SMNH 5094). Holotype of *Bankia argentinica*
2366 (ZMB 108920). Holotype of *Bankia valparaisensis* (ZMB 108923).

2367 **Material studied:** Juan Fernández: Robinson Crusoe: LACM 1966-100.8 (1 v, Fig. 24 A, B).

2368 **Distribution:** Valparaíso (33° S), Chile to Tierra del Fuego (54° S) (Turner, 1966), and Juan
2369 Fernández (herein), extending in the Atlantic to Malvinas / Falkland Islands (51° S) (Roch,

2370 1931) and “Buenos Aires” Province, Argentina (Moll in Roch & Moll, 1935). Nair (1975)
2371 identified as *Bankia martensi* specimens from Gulf of Cariaco, Venezuela. However, Velásquez,
2372 Valentich-Scott & Capelo (2017) considered this record as a species-level misidentification.

2373 **Description:** Shell of 3 mm H, higher than long, equilateral, thin; composed of two clearly
2374 discernible parts: an ovate, globose anterior part and an auricular and flat posterior part
2375 (“posterior slope”). Umbo low and wide. A narrow, relatively shallow sulcus running from the
2376 umbo to the ventral margin, dividing the anterior part of the shell in two areas: an anterior slope
2377 and a posterior disc. Ventral margin of anterior slope forming a deep, right angle indentation;
2378 ventral margin of disc evenly rounded. Anterior slope sculptured with numerous, serrated
2379 comarginal ridges; disc and auricle only sculptured with weak growth lines. Shell surface
2380 whitish. Hinge plate edentate. Umbonal area projected forming an apophysis. A rounded ventral
2381 condyle present.

2382 **Comments:** Two teredinid species were mentioned previously from Juan Fernández: *Lyrodus*
2383 *pedicellatus* (Quatrefages, 1849) and *Bankia martensi* (Stempell, 1899). The former was reported
2384 by Stuardo, Saelzer & Rosende (1970), who however did not detail the collection site, the
2385 number of specimens found, or the repository of the studied material. The only other record of *L.*
2386 *pedicellatus* in Chilean waters stems from Coquimbo (Valentich-Scott, Coan & Zelaya, 2020).
2387 By contrast, *Bankia martensi* is a common species in Chilean waters. The species was reported
2388 from Juan Fernández by Bernard, McKinnell & Jamieson (1991) based on the same *Anton Bruun*
2389 specimens studied herein. This material consists of empty valves, which indeed are
2390 morphologically indistinguishable from those of *B. martensi*. We tentatively assign this material
2391 to this species, although the pallet morphology, crucial for confirming species identity (Turner,
2392 1966), remains unknown.

2393 CUSPIDARIIDAE

2394 *Cuspidaria fernandezensis* n. sp.

2395 Fig. 25 A-H

2396 *Cuspidaria* cf. *patagonica*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not
2397 Smith, 1885).

2398 **Type locality:** 33°45'00" S, 80°40'48" W, off Alejandro Selkirk Island, Juan Fernández
2399 archipelago, 79-91 m (R/V *Eltanin* Cruise 21, station 203, by Blake trawl, 26 November 1965).

2400 **Type material:** Holotype (USNM 898738: 1 av, Fig. 25 A-D) and 4 paratypes from 65-98
2401 (LACM 3832: 3 vs, with Fig. 25 E-H; FMNH 312475 ex LACM 3832: 1 av, damaged).

2402 **Distribution:** Only known from Juan Fernández archipelago.

2403 **Diagnosis:** Disc ovate-elongate, sculptured with irregular com marginal striae. Rostrum long,
2404 dorsally recurved, widely connected with the disc.

2405 **Description:** Shell up to 11 mm L, ovate-elongate, low, somewhat inflated, markedly
2406 inequilateral, moderately solid. Anterior end wide, roundly projected; posterior end narrowly
2407 projected into rostrum. Umbo extremely low, only slightly outstanding from shell margin;
2408 somewhat anteriorly displaced, opisthogyrate. Antero-dorsal, anterior and anterior half of ventral
2409 margins forming a round arch; posterior half of ventral margin sinuous. Postero-dorsal margin
2410 longer than antero-dorsal margin; sloping, evenly straight in smaller specimens, distally recurved
2411 in larger specimens. Rostrum long, massive, widely connected with disk. Transition between
2412 disk and rostrum moderately demarcated by a depression of shell surface. Rostral ridge strong.
2413 Dissoconch sculptured with irregular com marginal striae. Shell surface white, dull. Periostracum
2414 thin, yellowish. Hinge: right valve with a narrow, elongated posterior lateral tooth with
2415 subcentral cusp; forming a depression with the dorsal margin, where the dorsal margin of the
2416 opposite valve fits. Left valve with no distinct teeth, just a postero-dorsal thickened margin.
2417 Resilifer large, elongate-ovate, posterior to umbo, postero-ventrally directed. Inner shell surface
2418 whitish. Inner margin smooth.

2419 **Etymology:** Named for the type locality in the Juan Fernández archipelago; adjective.

2420 **Comments:** *Cuspidaria fernandezensis* n. sp. is most similar to *Cuspidaria hawaiiensis* Dall,
2421 Bartsch & Rehder, 1938, from which it differs by having a shorter and wider rostrum, and a
2422 smaller and less recurved umbo. In general shell outline, *Cuspidaria fernandezensis* n. sp. also
2423 resembles the material referred to by Raines and Huber (2012) as "Myonera sp.". However, the
2424 latter strikingly differs by having com marginal lamellae. Among the Eastern Pacific *Cuspidaria*
2425 species, *Cuspidaria fernandezensis* n. sp. is also similar to *C. parapodema* Bernard, 1969 and *C.*

2426 *parkeri* Knudsen, 1970. *Cuspidaria fernandezensis* n. sp. differs from these species by having a
2427 distally concave postero-dorsal shell margin, which results in a dorsally recurved rostrum. By
2428 comparison, the postero-dorsal margin of *C. parapodema* is completely straight, resulting in an
2429 anteriorly directed rostrum. *Cuspidaria fernandezensis* n. sp. also resembles the specimen from
2430 southern Chile identified by Cárdenas, Aldea & Valdovinos (2008: fig. 7.104) as *Cuspidaria cf.*
2431 *infelix*, although the latter has a more steeply sloping antero-dorsal shell margin and less
2432 projected anterior end and rostrum.

2433 ***Cuspidaria sanfelixensis* n. sp.**

2434 **Fig. 25 I-P**

2435 **Type locality:** 26°20' S, 80°03' W, SE off San Félix Island, Desventuradas archipelago, 415 m
2436 (R/V *Anton Bruun* Cruise 17, station 675H, by Campbell grab, 12 July 1966, LACM 1966-98).

2437 **Type material:** Holotype (LACM 3833: 1 v, Fig. 25 I, J) and 3 paratypes from the type locality
2438 (LACM 3834: 2 vs, Fig. 25 K-N [plus 7 fragments]; FMNH 312476 ex LACM 3834: 1 v, Fig. 25
2439 O, P).

2440 **Distribution:** Only known from Desventuradas archipelago.

2441 **Diagnosis:** Antero-dorsal margin straight, steeply sloping. Rostrum wide, short to medium in
2442 size. Right valve with short posterior lateral tooth.

2443 **Description:** Shell up to 9.8 mm L, subovate, high, inflated, markedly inequilateral, moderately
2444 solid. Anterior end wide and rounded; posterior end projected into rostrum. Umbo prominent,
2445 high and wide, slightly anteriorly displaced, markedly opisthogyrate. Antero-dorsal margin
2446 straight, steeply sloping. Anterior and anterior half of ventral margins forming a wide,
2447 continuous curve; posterior half of ventral margin sinuous. Postero-dorsal margin concave,
2448 sloping at a similar angle than antero-dorsal margin. Rostrum short to medium in size, massive,
2449 widely connected with disk. Transition between disk and rostrum moderately demarcated by a
2450 depression of shell surface. Rostral ridge weak. Dissoconch only sculptured with low growth
2451 lines. Shell surface whitish, shiny, translucent. Hinge: right valve with short but high posterior
2452 lateral tooth, with subcentral cusp; forming a depression with the dorsal margin, where the dorsal

2453 margin of the opposite valve fits. Left valve with a postero-dorsal thickened margin. Resilifer
2454 small, posterior to umbo. Inner shell surface whitish. Inner margin smooth.

2455 **Etymology:** Named for the type locality, San Félix Island, Desventuradas; adjective.

2456 **Comments:** Among Eastern Pacific *Cuspidaria* species, *Cuspidaria sanfelixensis* n. sp. is most
2457 similar to *Cuspidaria parapodema* Bernard, 1969, from which it differs by having a more
2458 concave postero-dorsal margin, a shorter and wider rostrum, and a smaller posterior lateral tooth
2459 in the right valve. The markedly triangular disc of *Cuspidaria sanfelixensis* n. sp. resembles that
2460 of *Luzonia chilensis* (Dall, 1890), a name applied by Bernard, McKinnell & Jamieson (1991) to
2461 the Juan Fernández specimens studied herein. However, *Cuspidaria sanfelixensis* n. sp. clearly
2462 differs from that species by having a narrower and more markedly set-off and projected rostrum.
2463 In general shell outline, *Cuspidaria sanfelixensis* n. sp. also resembles *Plectodon scaber*
2464 Carpenter, 1884, although the latter bears elongate anterior and posterior teeth in the right valve,
2465 and has a granulate shell surface (both characters considered as distinctive for that genus by
2466 Coan & Valentich-Scott, 2012).

2467 **HALONYMPHIDAE**

2468 ***Halonympha recurvirostris* n. sp.**

2469 **Fig. 26 A, B**

2470 **Type locality:** 26°20' S, 80°03' W, SE off San Félix Island, Desventuradas archipelago, 415 m
2471 (R/V *Anton Bruun* Cruise 17, station 675H, by Campbell grab, 12 July 1966, LACM 1966-98).

2472 **Type material:** Holotype (LACM 3836: 1 v, Fig. 26 A, B).

2473 **Distribution:** Only known from Desventuradas archipelago.

2474 **Diagnosis:** Disc ovate, widely rounded anteriorly. Posteriorly projected in long, dorsally arched
2475 rostrum. Shell surface with dense comarginal ribs. Internal surface with a wide posterior shelf.

2476 **Description:** Shell up to 7.5 mm L, ovate, high, inflated, markedly inequilateral, moderately
2477 solid. Anterior end widely rounded; posterior end narrow, projected into rostrum. Umbo broad

2478 but low, slightly posteriorly displaced, markedly opisthogyrate. Antero-dorsal, anterior and
2479 antero-ventral margins forming a continuous curve; posterior half of ventral margin sinuous.
2480 Postero-dorsal margin markedly concave. Rostrum short and wide. Transition between disk and
2481 rostrum moderately demarcated by a depression of shell surface. Dissoconch sculptured with
2482 numerous, low, densely packed comarginal cords. Shell surface whitish. Right valve edentulous.
2483 Chondrophore narrowly triangular, elongate, oblique. Inner shell surface whitish, with an
2484 elongate, oblique posterior ridge (“clavicular rib”), delimiting a wide shelf. Inner margin smooth.

2485 **Etymology:** The name of the species refers to the markedly curved rostrum (used as Latin
2486 adjective; curved-beaked).

2487 **Comments:** *Halonympha recurvirostris* n. sp. closely resembles *Halonympha claviculata* (Dall,
2488 1881) and *Halonympha inflata* Jeffreys, 1882, from which it differs by having a longer rostrum,
2489 a narrower umbo, more markedly arched postero-dorsal margins, and a wider posterior shelf.

2490 The new species described herein provides the first record of *Halonympha* from the eastern
2491 Pacific. Previously, the genus was reported from the Atlantic, western Pacific, and Indian Oceans
2492 (Poutiers & Bernard, 1995).

2493 **PANDORIDAE**

2494 ***Pandora pyxis* n. sp.**

2495 **Fig. 27 A-D**

2496 *Pandora cistula*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not Gould, 1850).

2497 **Type locality:** 33°34-41' S, 78°45-55' W, off W side of Robinson Crusoe Island, Juan
2498 Fernández archipelago, 130-180 m (R/V *Anton Bruun* Cruise 12, trawled, 13-15 December 1965,
2499 LACM 65-101).

2500 **Type material:** Holotype (LACM 3837: 1 av, Fig. 27 A-D).

2501 **Distribution:** Only known from Juan Fernández archipelago.

2502 **Diagnosis:** Shell elongate, low, with vertical posterior margin. Posterior area of shell wide, not
2503 projected into rostrum.

2504 **Description:** Shell of 6.3 mm L, elongate-cuneiform, longer than high, relatively low, markedly
2505 inequilateral, delicate. Right valve flat; left valve somewhat inflated, with a shallow sulcus,
2506 running from the umbo to the ventral margin, delimiting a projected anterior area of shell.
2507 Anterior end pointed, posterior end evenly flattened, higher than anterior end. Umbo small, low,
2508 anteriorly displaced. Antero-dorsal margin short, sloping nearly straight, forming a prominent
2509 angulation at the junction with anterior margin; postero-dorsal margins long, nearly horizontal.
2510 Anterior and ventral margins evenly arched, only slightly indented by radial sulcus. Posterior
2511 margin straight, vertical. In the left valve, a solid radial rib running from the umbo to the junction
2512 of ventral and posterior margins delimits a wide, flat, posterior area. In the right valve, an
2513 obscure ridge running from the umbo to the dorsal fourth part of the posterior margin.
2514 Dissoconch sculptured with irregularly growth folds, and faint radial grooves only in right valve.
2515 Shell surface whitish. Right valve with two straight, posteroventrally directed crura diverging
2516 from umbo. Posterior crus long and narrow; anterior crus short and stout. In addition, with a
2517 prominent thickening bordering dorsally the anterior muscle scar. Left valve with a short,
2518 straight and solid anterior crus, posteroventrally directed.

2519 **Etymology:** The Latin noun *pyxis* (small box), a play on Pandora's Box, an artifact in Greek
2520 mythology.

2521 **Comments:** The material studied herein was previously identified as *Pandora cistula* by
2522 Bernard, McKinnell & Jamieson (1991). This name was used by several authors (e.g. Osorio &
2523 Reid, 2004; Cárdenas, Aldea & Valdovinos, 2008) to refer to Magellanic pandorids. However,
2524 Güller & Zelaya (2016) demonstrated that *P. cistula* remains at present only known from its type
2525 material, and that other records previously attributed to that species actually correspond to
2526 *Pandora braziliensis* Sowerby, 1874. However, this is not the case of the Juan Fernández
2527 material, which clearly differs from *P. braziliensis* by having a considerably lower and more
2528 elongated shell outline, a vertical posterior margin, a wider posterior area of shell, and narrower
2529 crura. The above-mentioned characters resulted in the distinction of the Juan Fernández
2530 specimen from the Peruvian specimen reported by Valentich-Scott et al. (2020) as *Pandora cf.*

2531 *braziliensis*. *Pandora pyxis* n. sp. resembles the southwestern Atlantic *Pandora brevirostris*
2532 Güller & Zelaya, 2016, from which it differs by having an even lower shell outline and a wider
2533 posterior area of shell, which in addition is not projected into a rostrum as in that species.

2534 **LYONSIIDAE**

2535 ***Entodesma* sp.**

2536 **Fig. 28 A, B**

2537 *Entodesma cuneatum*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not Gray,
2538 1828).

2539 **Material examined:** Desventuradas: San Félix: LACM 1966-98.7 (1 v, Fig. 28 A, B).

2540 **Description:** Shell of 5.8 mm L, ovate, longer than high, inflated, markedly inequilateral, solid.
2541 Posterior end much higher than anterior end. Umbo broad, low, anteriorly displaced. Antero-
2542 dorsal margin short, sloping straight. Ventral margin truncated at anterior half; posterior half of
2543 ventral margin forming a continuous curve with posterior margin. Postero-dorsal margins longer
2544 than antero-dorsal margin. Dissoconch sculptured with irregular comarginal lamellae. Shell
2545 surface whitish. Inner margin smooth.

2546 **Comments:** The Juan Fernández material studied herein consists in a single, eroded, partially
2547 broken and small valve, which closely resembles the specimen figured by Prezant (1981: fig. 10)
2548 as *Entodesma chilensis* Philippi, 1845, the latter an objective synonym of *E. cuneatum* (see
2549 Valentich-Scott, Coan & Zelaya, 2020). However, the scarce material available from Juan
2550 Fernández, and its poor state of preservation, preclude us from confirming conspecificity.

2551 **PARALIMYIDAE**

2552 ***Panacca chilensis* Coan, 2000**

2553 **Fig. 29 A, B**

2554 *Pholadomya cf. darwini*, – Bernard, McKinnell & Jamieson, 1991: 36 [listed only]. (Not Dall &
2555 Ochsner, 1928).

- 2556 *Panacca chilensis* Coan, 2000: 165, figs. 1, 2.
- 2557 *Panacca chilensis*, – Valentich-Scott, Coan & Zelaya, 2020: 406, pl. 131 [holotype].
- 2558 **Type locality:** 33°34-41' S, 78°45-55' W, [off Robinson Crusoe Island], Juan Fernández archipelago, 130-180 m.
- 2560 **Type material:** Holotype (LACM 2876: 1 v, Fig. 29 A, B).
- 2561 **Distribution:** Only known from Juan Fernández archipelago.
- 2562 **Description:** Shell of 21 mm L, triangular, longer than high, markedly inequilateral, thin.
- 2563 Anterior end short, posterior end projected. Umbo wide, anteriorly located. Antero-dorsal and
- 2564 postero-dorsal margins sloping at similar angle, the latter much longer than the former. Anterior
- 2565 and ventral margins forming a continuous wide curve. Dissoconch sculptured with granulate,
- 2566 comarginal striae and 11 strong radial rib on central area; radial sculpture separated by wide
- 2567 interspaces. Shell surface dull, whitish. Hinge edentulous. Ligament external, seated on a weak
- 2568 nymph. Inner shell surface reflecting outer shell sculpture. Inner margins crenulated by radial
- 2569 sculpture.
- 2570 **Comments:** The species is currently known only from the original description, which was based
- 2571 on a single right valve (Coan, 2000). The holotype was refigured by Valentich-Scott, Coan &
- 2572 Zelaya (2020).
- 2573
- 2574 Diversity and distribution of species
- 2575
- 2576 Resulting from this study, a total of 48 taxa are recognized from the Juan Fernández and
- 2577 Desventuradas archipelagos. Three of them (*Bathyarca corpulenta*, *Entodesma* sp. and
- 2578 *Amygdalum* sp.) could not be determined with certainty. Of the 45 remaining taxa, only 18
- 2579 species had been previously reported from the area. Nineteen species proved to be new to science
- 2580 (and are described herein), and six species are probably new, but not formally named herein due
- 2581 to limited material (Fig. 30). Most of the taxa recognized in this study correspond to endemic
- 2582 species from Juan Fernández (16 species), Desventuradas (13 species), or shared between these
- 2583 two areas and not present anywhere else (6 species). Ten species are shared with the Perú-Chile

2584 Province (Fig. 30). Two additional species were reported as regionally occurring but lack
2585 concrete records.

2586

2587 **Discussion**

2588

2589 Although the Juan Fernández and Desventuradas archipelagos have been globally recognized as
2590 important biodiverse ecosystems (Grandi-Nagashiro et al., 2010; Pompa et al., 2011; Friedlander
2591 et al., 2016; Tapia-Guerra et al., 2021), the knowledge of their marine invertebrate fauna remains
2592 poor, and bivalves are no exception. The remoteness and the difficulty of accessing these islands
2593 have undoubtedly limited the historical study of these areas. In fact, most of the bivalve species
2594 reported from Juan Fernández come from occasional findings, in contributions usually covering
2595 single or few species each. Rozbaczylo & Castilla (1987) compiled the information of the
2596 species mentioned throughout history from this archipelago, recognizing 14 species.

2597 Subsequently, Bernard, McKinnell & Jamieson (1991) extended this number to 31 preliminarily
2598 identified species by adding data from the *Anton Bruun* cruises 12 and 17. However, the
2599 published information was limited to a species listing, without descriptions or illustrations, and
2600 including provisional names. The knowledge of the Desventuradas bivalve fauna is even more
2601 limited: the only available information comes from the specimens collected by the *Anton Bruun*
2602 cruise 17, on the basis of which Bernard, McKinnell & Jamieson (1991) recognized 13 species
2603 (with the same limitations of the species list as that from Juan Fernández), and two additional
2604 species listed by Tapia-Guerra et al. (2021). The present study is the most comprehensive
2605 contribution to the Juan Fernández and Desventuradas bivalve fauna available to date. For the
2606 Desventuradas, the number of recorded species nearly doubled the previously known. In the case
2607 of the Juan Fernández archipelago, the raw number of recorded nominal species recognized
2608 herein almost matches the number compiled by Bernard, McKinnell & Jamieson (1991) (30 and
2609 31 species, respectively), although only one third of the species listed by those authors are here
2610 recognized as valid for this archipelago. In fact, we found that 21 of the names applied by
2611 Bernard, McKinnell & Jamieson (1991) were based on misidentifications. Furthermore, three
2612 nominal species reported by these authors from Juan Fernández (as “*Nucula grayi*”, “*Cuspidaria*
2613 *chilensis*”, and “*Cuspidaria* n. sp.”) actually originated in the Desventuradas, whereas another
2614 species (“*Limaria* n.sp.”) reported from Desventuradas came from Juan Fernández. Most of the

2615 new findings arising from this study are species new to science, with 19 species obtained from
2616 the intertidal to 415 m depth. In addition, six other – and probably new – species are recognized:
2617 two from Juan Fernández (*Gari* sp. B; *Xylophaga* sp. A), the other four from Desventuradas
2618 (*Propeamussium/Parvamussium* sp. A; *Neolepton* sp. A; *Monia* sp. B; *Condylocardiidae* sp. A).
2619 Most of the new species described in this study are micro-mollusks, with 79% of the species
2620 having maximum shell sizes smaller than 10 mm, of which 60% are smaller than 5 mm. The high
2621 number of previously unrecognized species with small body size clearly point to the scarce
2622 attention that this fraction of regional mollusks has received in the past. Several of the previously
2623 undescribed species found in this study correspond to families that are known to be highly
2624 diverse in deeper waters (e.g. *Cuspidariidae*, *Nuculidae*, *Propeamussiidae*) and were obtained at a
2625 single station sampled by the R/V *Anton Bruun* at 415 m off Desventuradas. Additional deeper-
2626 water sampling will undoubtedly lead to a substantive increase of bivalve species richness in this
2627 region.

2628

2629 In addition to Juan Fernández and Desventuradas, two other oceanic archipelagos are positioned
2630 in the southeastern Pacific off Chile: Easter Island and Salas & Gómez. These archipelagos are
2631 located at about the same latitude as Desventuradas, but nearly 2,900 km westward. The bivalves
2632 from these archipelagos were studied by Raines & Huber (2012). Salas & Gómez (with 24
2633 species), shows a species richness similar to that recognized in the present study for Juan
2634 Fernández (31 species) and Desventuradas (25 species). However, Easter Island has a
2635 considerably higher reported diversity (69 species). This fact is most probably based on the more
2636 intensive historic sampling efforts in that archipelago compared to the still unsatisfactory
2637 sampling effort in the other areas, as evidenced by the species accumulation curve provided by
2638 Tapia et al. (2021) for Desventuradas. There is a clear bias in the distribution of sampling sites
2639 both at Desventuradas and Juan Fernández archipelagos, with most concentrated on the northern
2640 side of the islands and in sheltered bays (see Fig. 1), with a predominance of shallow-water
2641 collections. A similar difference in bivalve richness is evident when comparing Juan Fernández
2642 and Desventuradas with that of the Chilean continental coast. A compilation (current authors,
2643 unpublished 2023) accounts for a total of 50 and 59 bivalve species at the Chilean coast,
2644 respectively, at the corresponding latitudes of Desventuradas (26°S) and Juan Fernández
2645 (33.5°S).

2646

2647 **Faunistic affinities of Juan Fernández and Desventuradas archipelagos**

2648

2649 Several recent studies highlighted the great affinities between Juan Fernández and Desventuradas
2650 marine biota (Meneses & Hoffmann, 1994; Dyer & Westneat, 2010; Pequeño & Lamilla, 2000;
2651 Pequeño & Saéz, 2000; Moyano, 2005; Silva & Chacana, 2005; Retamal & Moyano, 2010;
2652 Rodríguez-Ruiz et al., 2014). However, depending on the target taxa, different affinities of these
2653 archipelagos with other geographic areas were proposed. Based on algae, sessile and mobile
2654 invertebrates, and fishes, sampled between 10 and 20 m depth, Friedlander et al. (2016) reported
2655 for Juan Fernández and Desventuradas the presence of a mixture of tropical, subtropical, and
2656 temperate species, with strong affinities to the Indo-west Pacific. Such affinities were also
2657 mentioned by other authors, when considering bryozoans (Moyano, 2005), fishes (Springer,
2658 1982; Parin, 1991; Pequeño & Lamilla, 2000; Pequeño & Saéz, 2000, 2004; Dyer & Westneat,
2659 2010), and algae (Meneses & Hoffmann, 1994), a fact that led to considering Juan Fernández and
2660 Desventuradas (or at least the latter) as the easternmost extension of the Indo Pacific Region
2661 (e.g., Pequeño & Lamilla, 2000; Pequeño & Saéz, 2000, 2004; Moyano, 2005; Dyer & Westneat,
2662 2010). Within this framework, an Indo-west Pacific faunal origin, followed by subsequent
2663 dispersal and arrival event(s) to Desventuradas and Juan Fernández, was proposed (Briggs, 1999;
2664 Dyer & Westneat, 2010). Santelices & Meneses (2000) found in Juan Fernández and
2665 Desventuradas a group of algal species shared with several sub-Antarctic islands and the
2666 southern tip of South America (i.e., the Magellan Province). The occurrence of such cold-water
2667 species in Juan Fernández and Desventuradas is not surprising considering that these
2668 archipelagos lie at a confluence of subtropical and sub-Antarctic waters (Silva, 1985; Meneses &
2669 Hoffmann, 1994; Parin, Mironov & Nesis, 1997; National Geographic Society, 2013). On the
2670 other hand, Andrade (1985) and Bernard, McKinnell & Jamieson (1991) reported (for decapods
2671 and bivalves, respectively) high similarities of Juan Fernández/ Desventuradas with the adjacent
2672 continental coast of Perú and Chile, which led Bernard, McKinnell & Jamieson (1991) to
2673 consider these archipelagos as part of the Perú-Chile Province.

2674

2675 Most of the species shared between Juan Fernández and Desventuradas archipelagos are either
2676 byssally attached (mytilids and arcids) or nestling species (*Lasaea*). Likewise, most of the

2677 species shared between Juan Fernández/Desventuradas and the Perú-Chile Province are byssally
2678 attached (mytilids and arcids) or cementing (chamids). Thus, a faunal exchange might be
2679 explained by natural means (e.g., drifting wood) and/or through human mediation (e.g., fishing
2680 vessels). In this context, it is noteworthy that the cementing species *Chama pellucida* has reached
2681 Juan Fernández, which has seen long-distance vessel traffic for centuries, but not the traffic-
2682 isolated Desventuradas archipelago, which has no harbor.

2683

2684 **Conclusions**

2685

2686 The present study comes to different conclusions, for bivalves, than the prior studies cited above:

2687 1. We found low similarity between the Juan Fernández and Desventuradas bivalve faunas: of
2688 the 48 species recognized in this study, only 9 species (19%) are present in both archipelagos.
2689 Most of this faunal overlap might be explained by natural or human-mediated rafting.

2690 2. Juan Fernández and Desventuradas have no bivalve species in common with the Indo-west
2691 Pacific. The only exception is “*Bathyarca corpulenta*”, a taxon excluded from our biogeographic
2692 analysis because conspecificity of the specimens reported from Juan Fernández with those from
2693 the Indo-west Pacific is unresolved (see comments under that species). Indeed, the results arising
2694 from our study agree with the biogeographic scheme proposed by Parin, Mironov & Nesis
2695 (1997), as part of which Juan Fernández and Desventuradas remain outside the Indo-Pacific
2696 Region (in contrast to Easter Island and Salas & Gómez, which fit within that region based on
2697 the data provided by Raines & Huber, 2012). The present study shows no bivalve species in
2698 common between Juan Fernández/Desventuradas and Eastern Island/Salas & Gómez, much in
2699 contrast to the reports for algae by Santelices & Meneses (2000) and Silva & Chacana (2005).

2700 3. No sub-Antarctic or Magellanic bivalve species are found in Juan Fernández and
2701 Desventuradas. These data do not seem to be biased by limited knowledge; in fact, our (DGZ and
2702 MG) extensive prior work on the southern fauna (e.g. Zelaya, 2005, 2016; Güller & Zelaya,
2703 2016) recorded none of the species here recognized for Juan Fernández and Desventuradas.

2704 4. There is low similarity of the bivalve fauna of Juan Fernández and Desventuradas
2705 archipelagos with that of the Perú-Chile Province: only 9 bivalve species occurring in
2706 Desventuradas and Juan Fernández (20%) appear in continental South America. This contrasts
2707 with the considerably higher similarity inferred by Bernard, McKinnell & Jamieson (1991): 95

2708 and 68%, respectively, which arose from misidentifications as discussed above. The presence of
2709 a different fauna in Juan Fernández and Desventuradas compared to that of the Perú-Chile
2710 Province has been previously explained as a consequence of the biogeographic barrier imposed
2711 by the Humbolt current system (e.g., Rodriguez-Ruiz et al., 2014). However, the present study,
2712 as well as prior ones (e.g., Meneses & Hoffmann, 1994; Pequeño & Lamilla, 2000; Santelices &
2713 Meneses, 2000; Silva & Chacana, 2005; Retamal & Moyano, 2010) show that some Perú-Chile
2714 species have been able to surpass this current system and occur in the Juan
2715 Fernández/Desventuradas archipelagos. This may be explained by the frequent mesoscale eddies
2716 and meanders occurring in the area. These elements, which originate in central Chile, move
2717 westwards, from the coast to 600-800 km offshore, with a coherent spatial structure that could
2718 extend for several months (Hormazabal, Shaffer & Leth 2004a; Hormazabal et al. 2004b). In the
2719 case of bivalves, these eddies and meanders may be contributing (facilitating or determining) the
2720 dispersal of certain larvae from the continent to Juan Fernández and Desventuradas. Also, at least
2721 some of this faunal exchange might be explained by human-mediated rafting.

2722 5. Instead of having obvious affinities with other (close or distant) geographic areas, the bivalve
2723 fauna of Juan Fernández and Desventuradas is extremely peculiar, characterized by a high
2724 number of species only known from these archipelagos. This involves a total of 35 species (77%
2725 of the species studied herein), including 13 species only known from Desventuradas and 16
2726 species only known from Juan Fernández. Bernard, McKinnell & Jamieson (1991) suggested that
2727 the high endemicity in the bivalve fauna of these archipelagos could be “merely a result of poor
2728 knowledge of the fauna of the adjacent mainland coast of South America”. However, the study
2729 of extant museum collections (Valentich-Scott, Coan & Zelaya, 2020) suggests that the lack of
2730 records of numerous Juan Fernández and Desventuradas species in the Perú-Chile Province is
2731 not an artifact. High percentages of endemic species in Juan Fernández and Desventuradas was
2732 also mentioned by some previous authors for algae and other invertebrate groups (e.g.,
2733 Rozbaczylo & Castilla, 1987; Santelices & Meneses, 2000; Friedlander et al., 2016), with values
2734 reaching 80% in the case of echinoderms (Rodriguez-Ruiz et al., 2014).

2735

2736 The current findings give weight for considering Juan Fernández and Desventuradas as two
2737 distinctive biogeographic units, of either Province (e.g., Moyano, 1983; Parin, Mironov & Nesis,

2738 1997; Spalding et al., 2007; Retamal & Moyano, 2010) or Ecoregion (Friedlander et al., 2016)
2739 rank.

2740

2741 The following new marine bivalve species are described herein, all by Zelaya, GÜller & Bieler:

2742

2743 *Tindaria sanfelixensis* n. sp. (Tindariidae) urn:lsid:zoobank.org:act:F28DBF89-B0E9-408C-
2744 9450-4B6215F6CB2A

2745

2746 *Ledella costulata* n. sp. (Nuculanidae)

2747 urn:lsid:zoobank.org:act:BD240F8C-4278-4972-B8E4-8E724CC12E52

2748

2749 *Acar bernardi* n. sp. (Arcidae) urn:lsid:zoobank.org:act:0B006933-BCDE-4838-AAE1-
2750 85BFB91EC6F6

2751

2752 *Anadara stempelli* n. sp. (Arcidae) urn:lsid:zoobank.org:act:127CE134-89DA-43CD-9988-
2753 C1AEA962F679

2754

2755 *Tucetona sanfelixensis* n. sp. (Glycymerididae) urn:lsid:zoobank.org:act:90A05C1E-C102-46B8-
2756 9684-22A3F9CB8540

2757

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2764 *Limatula sanfelixensis* n. sp. (Limidae) urn:lsid:zoobank.org:act:06000C16-F13A-46DE-94F0-
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Figure 1

Figure 1: Bivalve collection sites in Juan Fernández and Desventuradas archipelagos.

Symbols correspond to stations of IOC-97 expedition (circles), *R/V Anton Bruun* 12 and 17 cruises (triangles) and additional museum material and bibliographic records (diamonds).

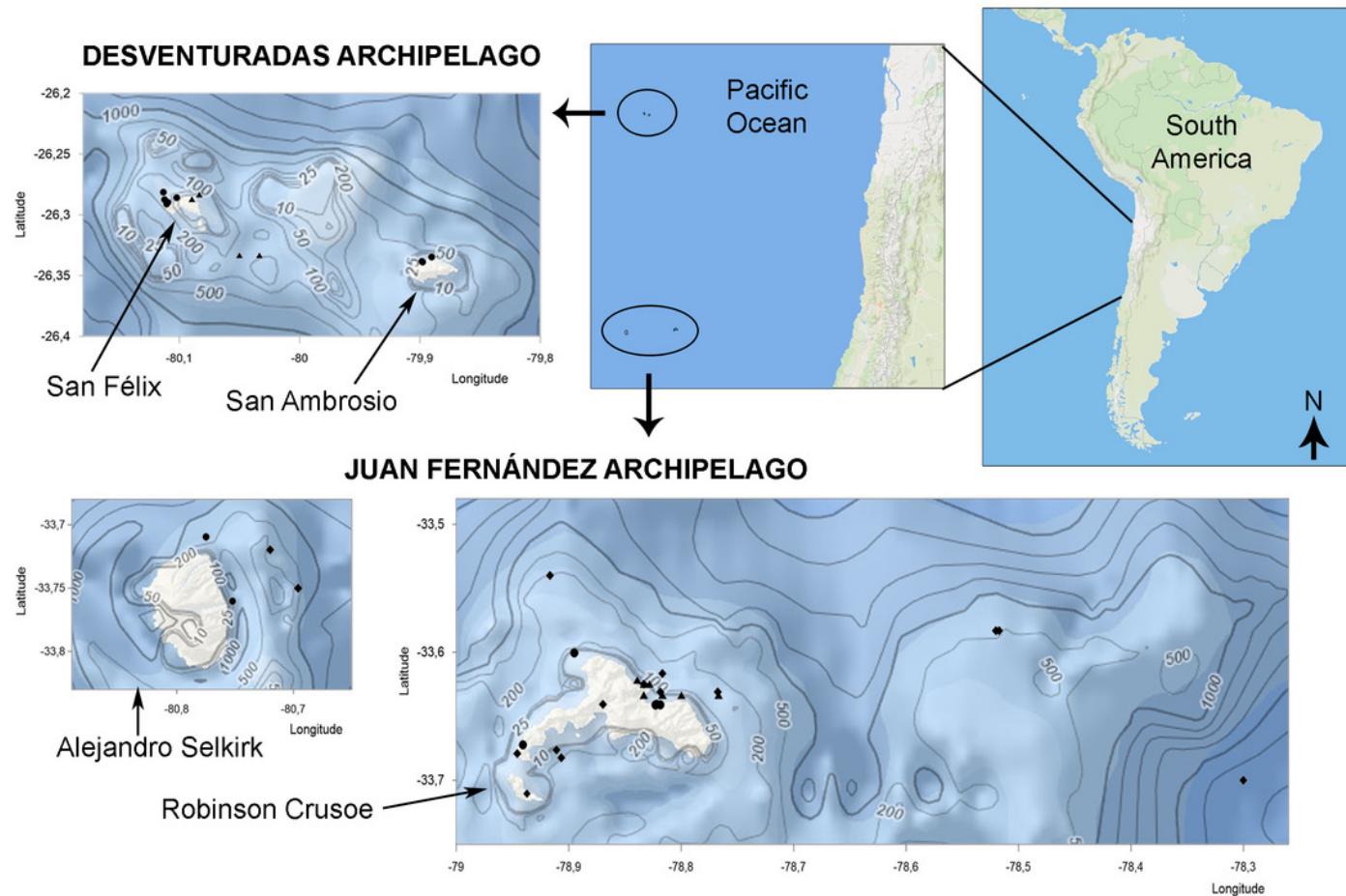


Figure 2

Figure 2: Family Nuculidae.

A-O: *Nucula fernandensis* Villarroel, 1971; A-D: LACM 1966-101.1; E, F: LACM 1966-98.1; G-L: LACM 1966-100.1; M (SEM): FMNH 322327; N, O (SEM): FMNH 322329. Scale bars: A-L, M = 2 mm; N, O = 500 μ m.

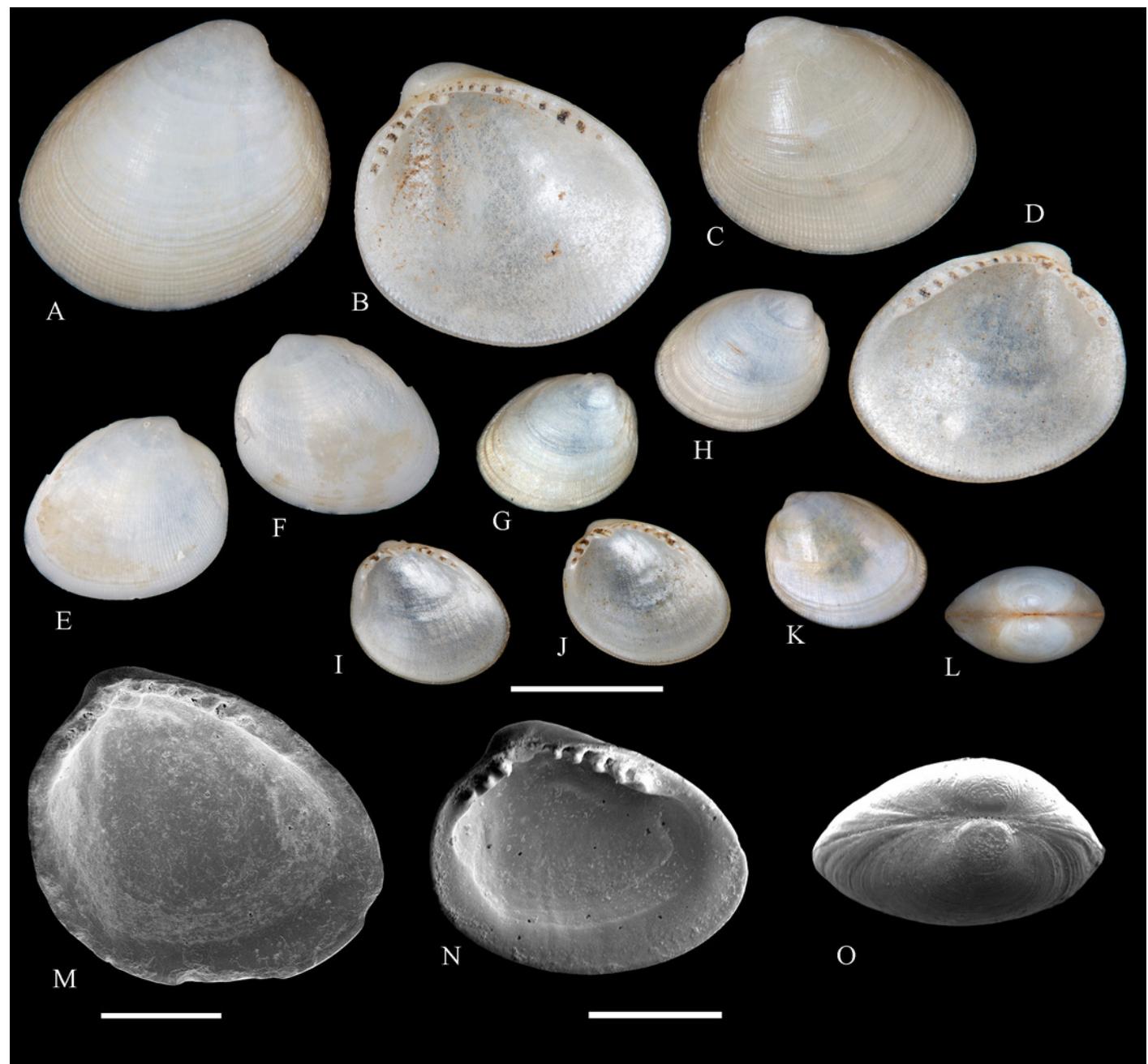


Figure 3

Figure 3: Family Tindariidae.

A-J: *Tindaria sanfelixensis* n. sp.; A, B: Holotype, LACM 3819; C, D, I, J: Paratypes, LACM 3820; E-H: Paratype, FMNH 312472. Scale bar: A-J = 2 mm.



Figure 4

Figure 4: Family Nuculanidae.

A, B: *Ledella costulata* n. sp., holotype, LACM 3821. Scale bar: A, B = 1 mm.

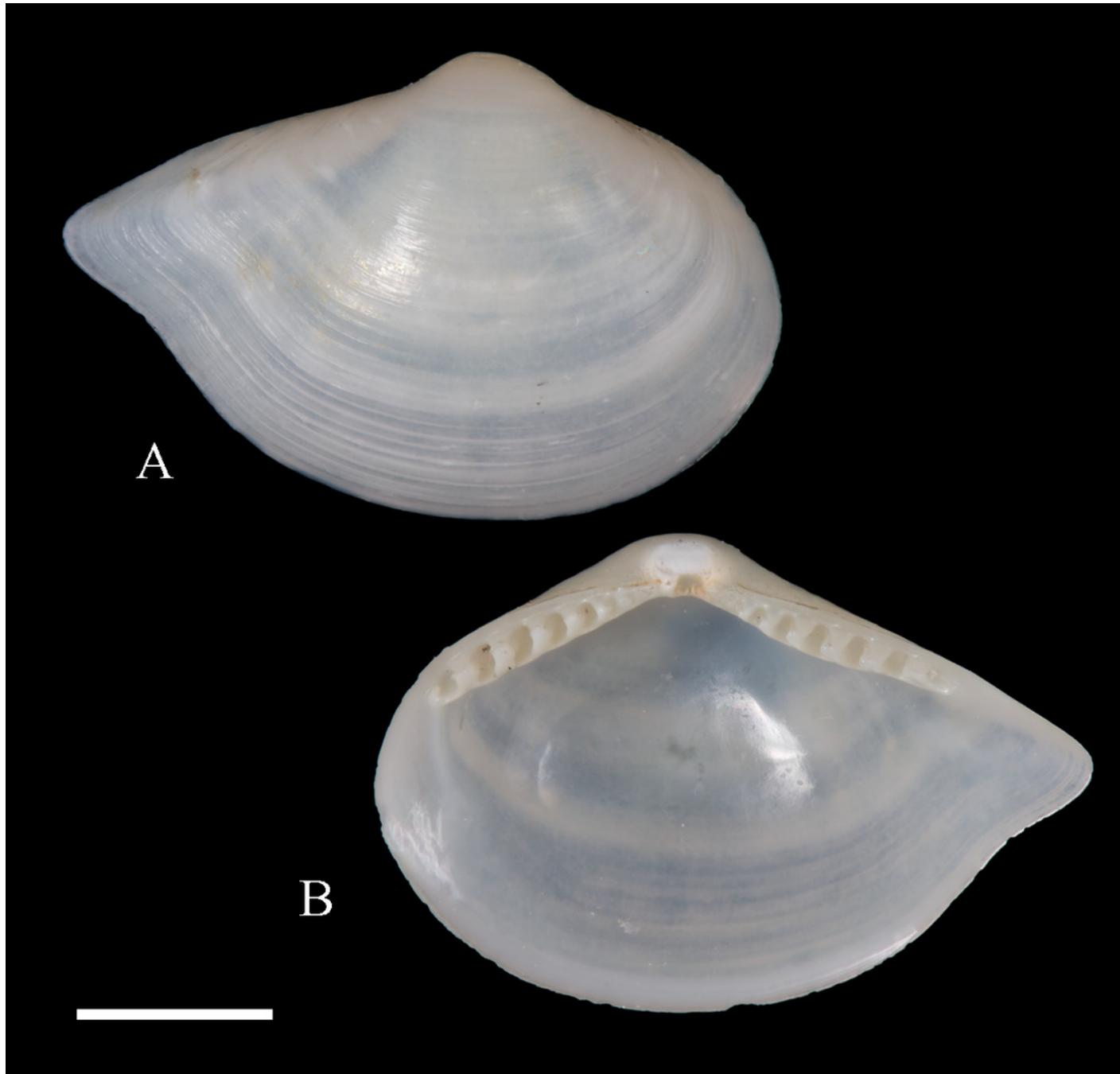


Figure 5

Figure 5: Family Mytilidae.

A-D: *Amygdalum* sp., LACM 1965-98.1. **E-L:** *Gregariella exilis* (Philippi, 1847); E, F: FMNH 322289; G-J: FMNH 322290; K, L: FMNH 322288. **M-T:** *Modiolus aurum* Osorio, 1979, FMNH 322262. **U, V:** *Perumytilus purpuratus* (Lamarck, 1819), MCZ 143489. **W-Z:** *Semimytilus patagonicus* (Hanley, 1843); W, X: MCZ 250131; Y, Z: lectotype of *Mytilus algosus* Gould, 1850 (designated herein), MCZ 216829. Scale bars: A-D, U, V = 5 mm; E-L = 2 mm; M-T = 2 cm; W-Z = 10 mm.

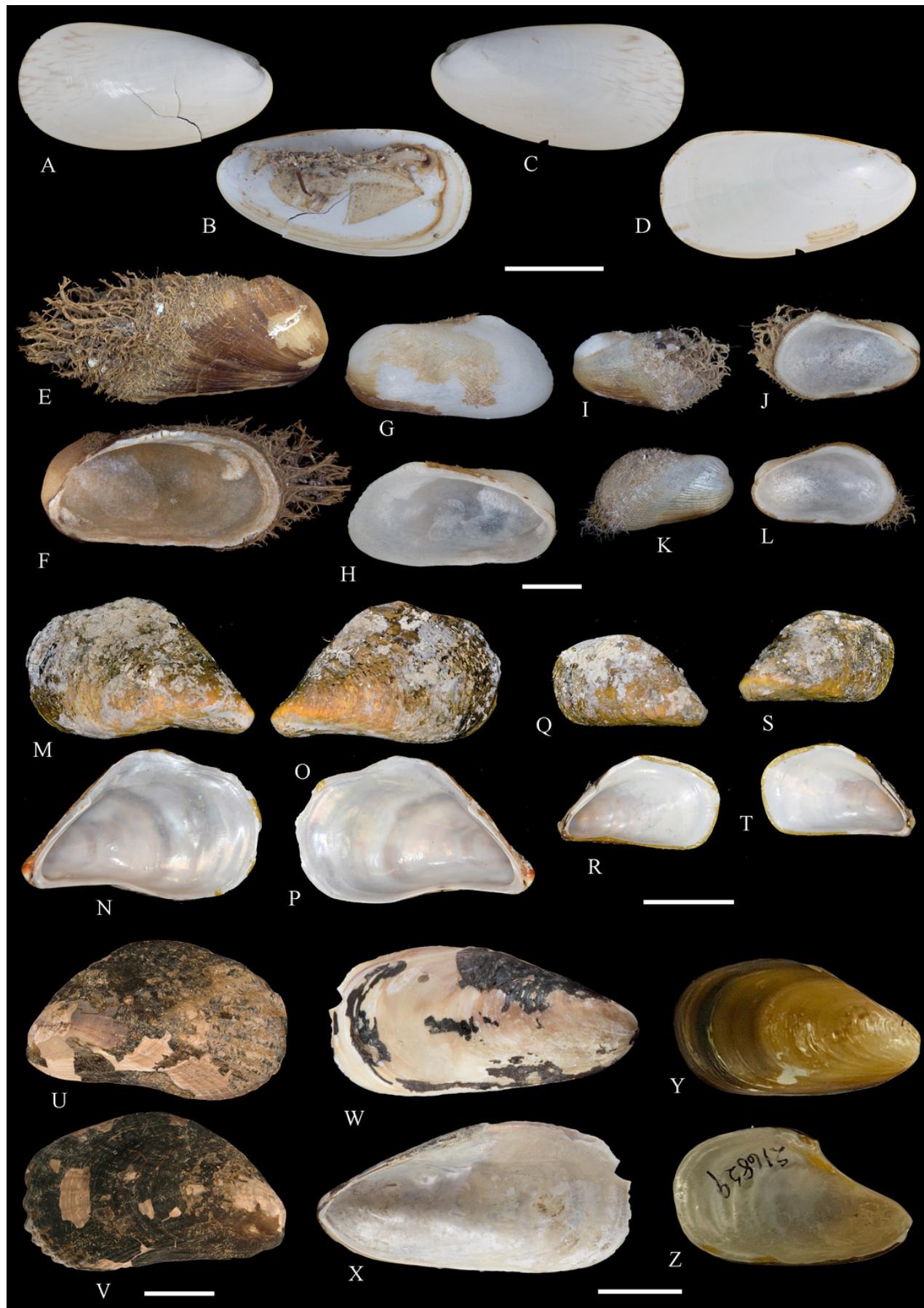


Figure 6

Figure 6: Family Arcidae.

A-D: *Acar pusilla* (Sowerby I, 1833), LACM 1965-94.2. **E-J: *Acar bernardi* n. sp.**; E-F: Holotype, LACM 3822; G, H: Paratype, LACM 3823; I, J: Paratype, FMNH 312477. **K-M: *Anadara stempelli* n. sp.**, holotype, ZMB 51988a. **N-P: *Bathyarca corpulenta* (Smith, 1885)**; syntype of *Arca (Barbatia) corpulenta* Smith, 1885, NHMUK 1889.11.11.131. **Q-EE: *Tetraparca fernandezensis* (Hertlein & Strong, 1943)**; Q-U: Syntype of *Arca (Arca) fernandezensis* Hertlein & Strong, 1943, NHMUK 1969.202; V: FMNH 322274; W, X: FMNH 322271; Y, Z: LACM 10496; AA-CC: FMNH 322272; DD, EE: FMNH 322273. Scale bars: A-J, AA-CC, DD, EE = 2 mm; K-M = 5 mm; N-P = 10 mm; Q-Z: 2 cm.



Figure 7

Figure 7: Family Glycymerididae.

A-F: *Tucetona sanfelixensis* n. sp.; A, B: Holotype, MNHN-CL MOL 101616; C-D: Paratype, MNHN-CL MOL 101617; E-F: Paratype, FMNH 32250. Scale bar: A-F = 2 cm.

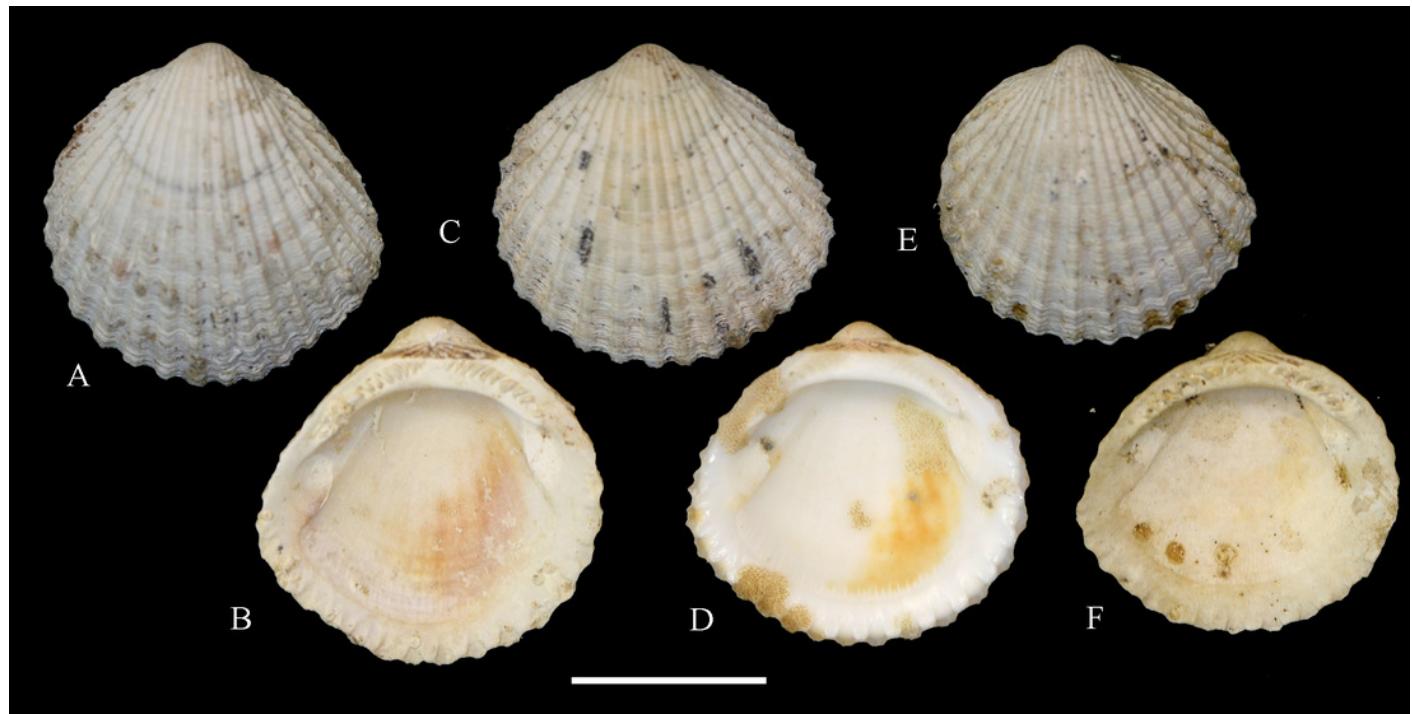


Figure 8

Figure 8: Family Paralellodontidae.

A-F: *Kamanevus platei* (Stempell, 1899); A: Original labels; B-F: Lectotype, ZMB 51988.

Scale bar: A-F = 5 mm.

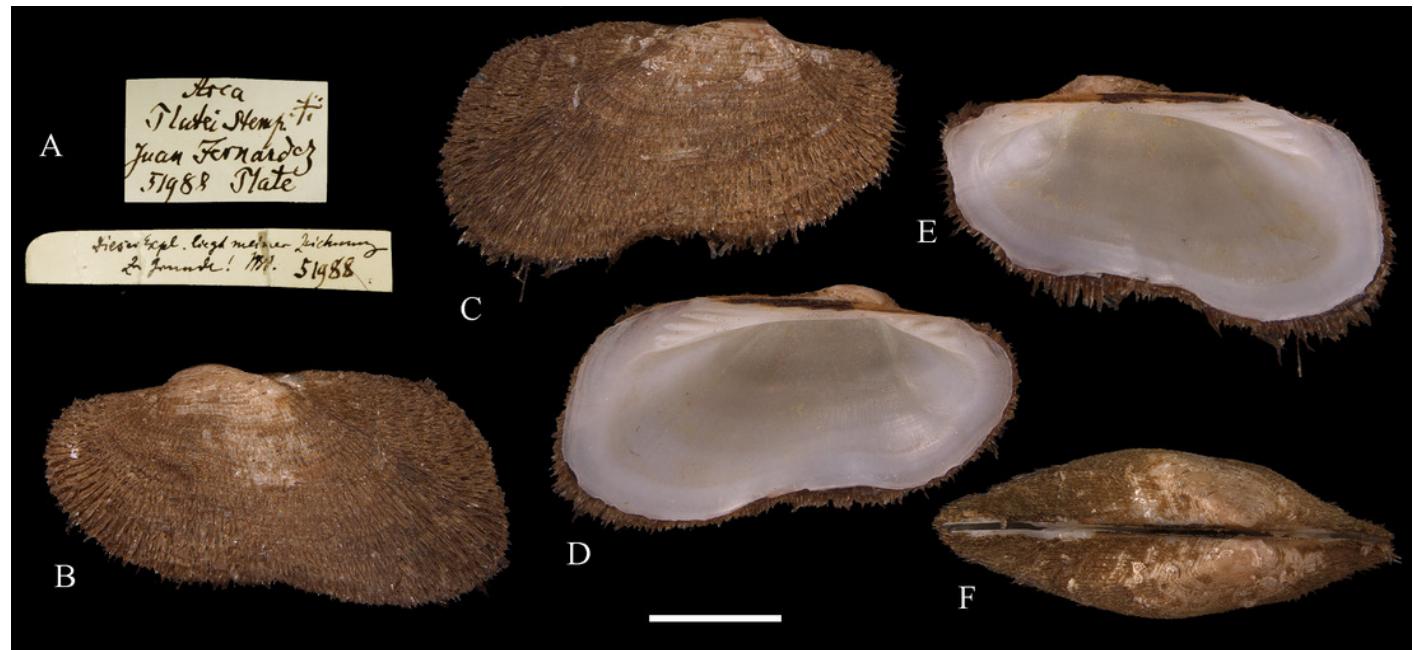


Figure 9

Figure 9: Family Philobryidae.

A-L: *Philobrya aequivalvis* (Odhner, 1922); A, B: Holotype, GNM 11968; C: LACM 1965-97.3; D: LACM 1965-101.4; E, F: USNM 870044; G: FMNH 322237; H-J: USNM 886931; K, L (SEM): FMNH 322239. **M-S:** *Verticipronus denticulatus* n. sp.; M, N: Holotype, MNHN-CL MOL 101619; O-S (Q-S, SEM): Paratypes, FMNH 322238. Scale bars: A, B, L = 2 mm; C-J, M-P, Q, R = 1 mm; K = 500 μ m; S = 200 μ m.

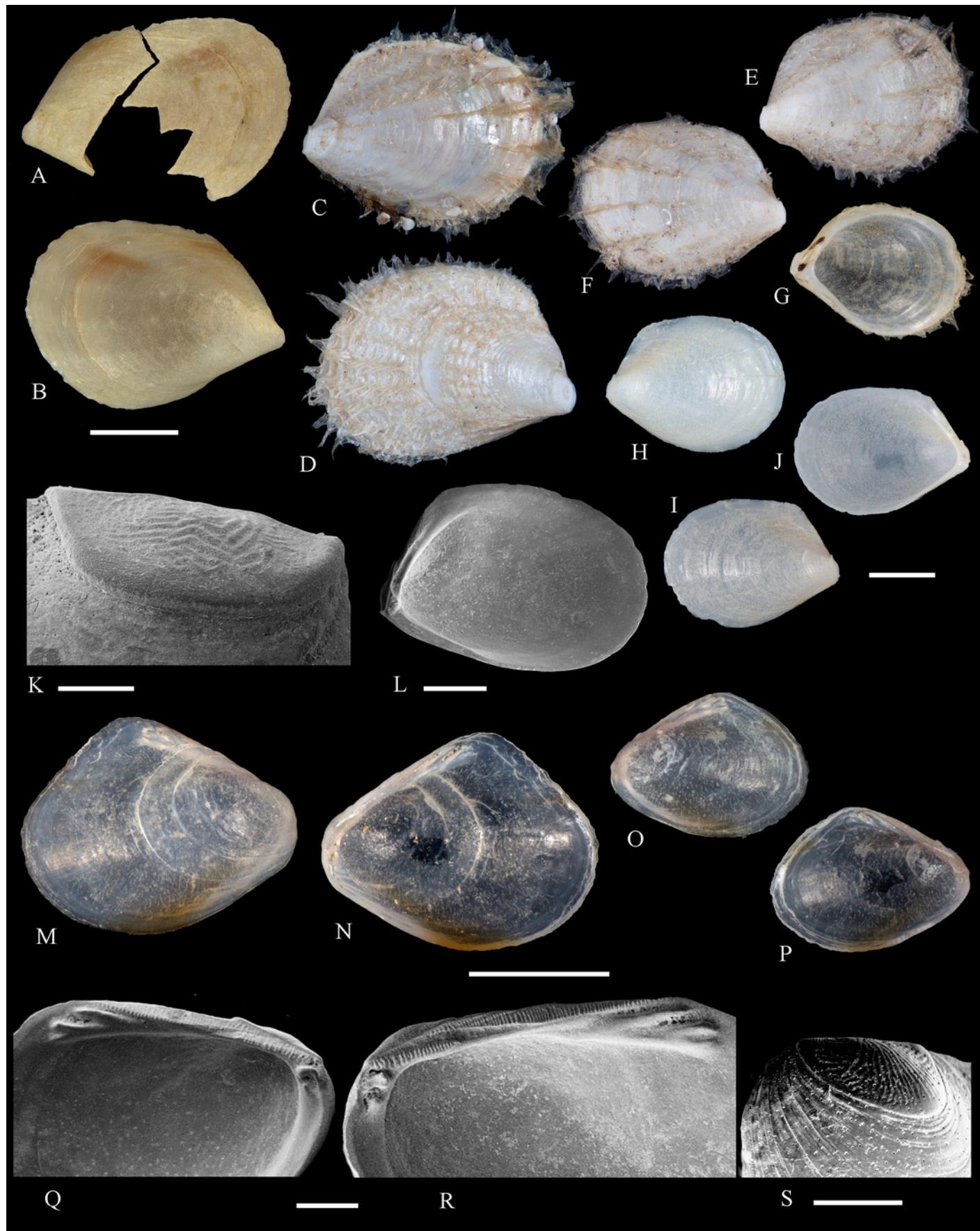


Figure 10

Figure 10: Family Anomiidae.

A-F: *Monia* sp. B; A, B: FMNH 322337; C, D: FMNH 322338; E, F: FMNH 322336. Scale bar: A-F = 2 mm.

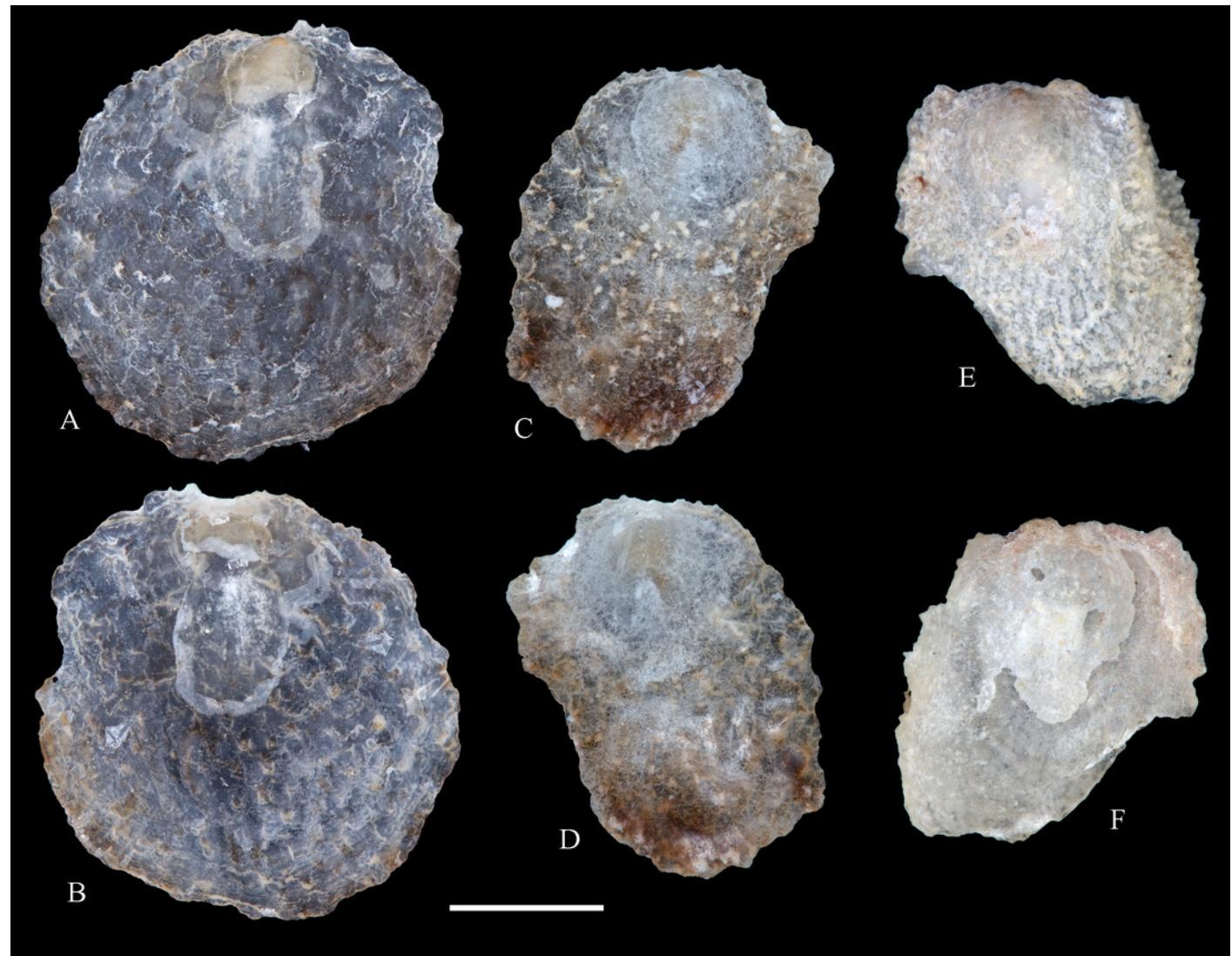


Figure 11

Figure 11: Family Pectinidae.

A-D: *Argopecten purpuratus* (Lamarck, 1819), LACM 1965-95.4. **E-P: *Zygochlamys phalara* (Roth, 1975)**, USNM 764199. Scale bars: A-P: 2 cm.



Figure 12

Figure 12: Family Propeamussiidae.

A, B: *Propeamussium / Parvamussium* sp. A, LACM 1966-98.4. Scale bar: 1 mm.

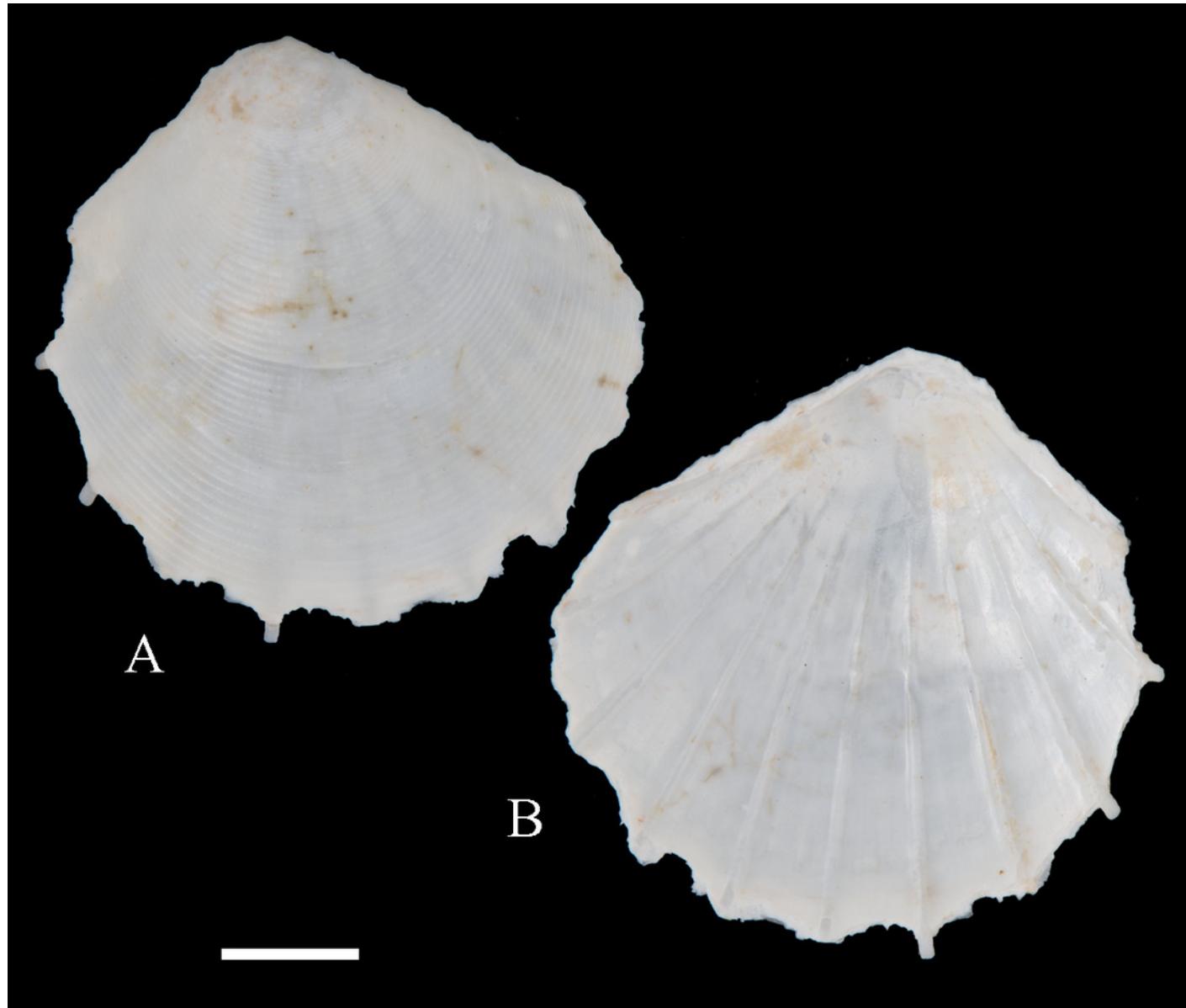


Figure 13

Figure 13: Family Limidae.

A-H: *Limaria crusoensis* n. sp.; A, B: Holotype, MNHN-CL MOL 101621; C-F: LACM 3835; G, H: USNM 887913. **I-L:** *Lima nasca* (Bernard, 1988), LACM 1966-99.2. **M-P:** *Limatula sanfelixensis* n. sp.; M, N: Holotype, LACM 3825; O, P: Paratype, LACM 3826. Scale bars: A-F, I-L = 5 mm; G, H, M-P: 1 mm.

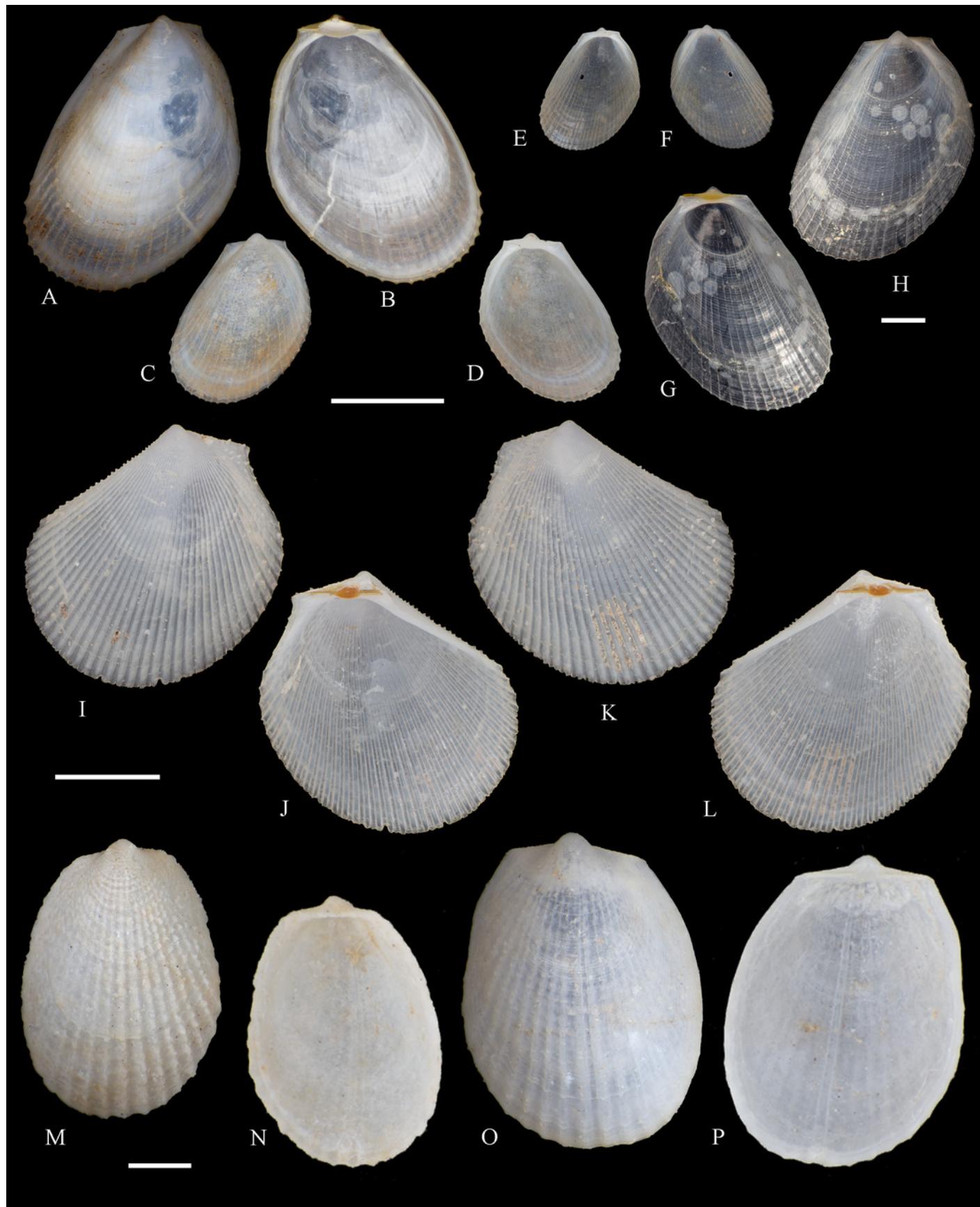


Figure 14

Figure 14: Family Lucinidae.

A-K: *Cavilinga taylorgloverorum* n. sp.; A-D: Holotype, LACM 3827; E-J: Paratypes, FMNH 322315; K: Paratype, FMNH 322313. Scale bars: A-J = 5 mm; K = 2 mm.

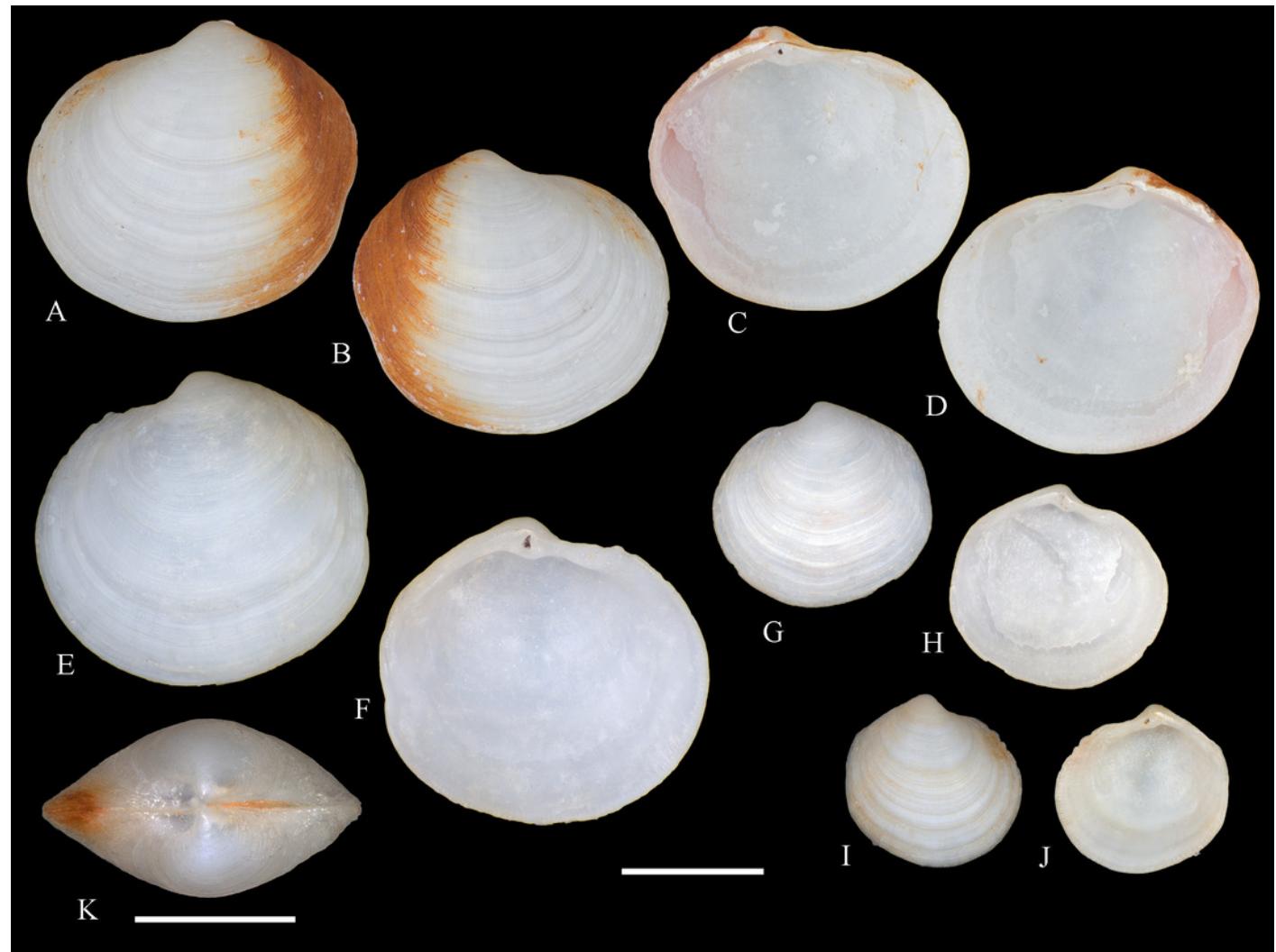


Figure 15

Figure 15: Family Thyasiridae.

A-H: *Thyasira fernandezensis* n. sp.; A, B: Holotype, LACM 3828; C: Paratype, LACM 3829; D, E: USNM 904366B; F-H (SEM): USNM 886931C. Scale bars: A-F = 1 mm; G, H = 500 μ m.

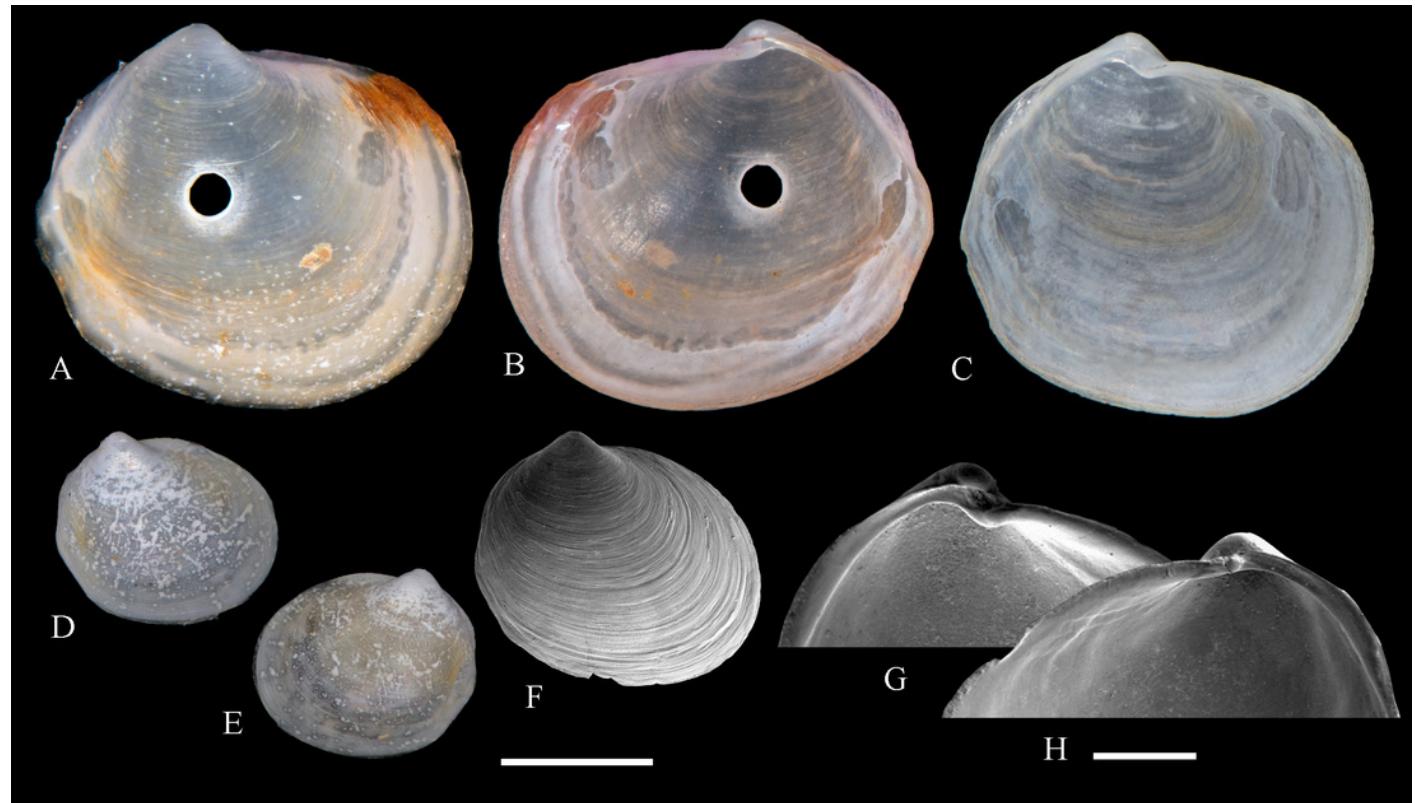


Figure 16

Figure 16: Family Lasaeidae.

A-D: *Kellia tumbesiana* (Stempell, 1899), LACM 165-100.2. **E-K:** *Lasaea macrodon* Stempell, 1899; E, F: Syntype of *Lasaea macrodon* Stempell, 1899, ZMB 51987; G: LACM 1965-102.1; H, I: LACM 1965-94.4; J, K (SEM): FMNH 322339. **L-R:** *Malvinasia selkirkensis* n. sp.; L, M: Holotype, MNHN-CL MOL 101625; N-Q: FMNH 322335; R: FMNH 322334. **S-Y:** *Melliteryx platei* (Stempell, 1899); S, T: Syntype of *Lepton platei* Stempell, 1899, ZMB 51986; U-X, Y (SEM): FMNH 322255. **Z-EE:** *Tellimya crusoensis* n. sp.; Z, AA: Holotype, MNHN-CL MOL 101627; Paratypes, BB, CC: FMNH 327364; DD, EE: FMNH 327366. Scale bars: A-D = 5 mm; E-I, S-X, Y, Z-EE = 2 mm; J-R = 1 mm.

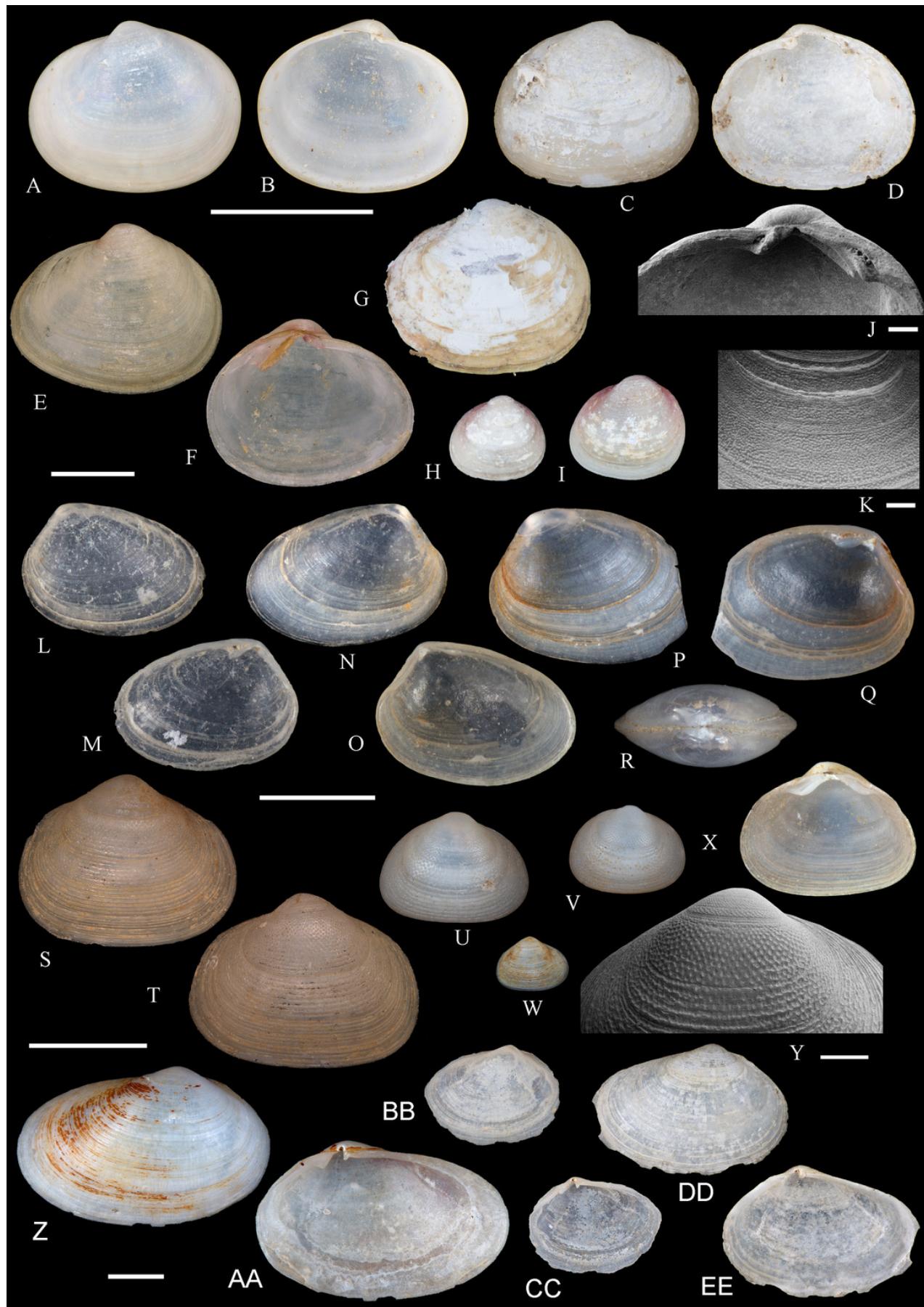


Figure 17

Figure 17: Family Condylocardiidae.

A-H: *Condylocardia angusticostata* n. sp.; A, C (SEM): Holotype, MNHN-CL MOL 101628; B (SEM): Paratype, MNHN-CL MOL 101629; D-G: Paratypes, FMNH 322251; H: FMNH 322252.

I-N: *Condylocardiidae* sp. **A**; I, K, L (K, L, SEM): FMNH 322312; J, M, N (M, N, SEM): FMNH 322253. Scale bars: A, B = 2 mm; C, D-J = 1 mm; K-M = 500 μ m; N = 100 μ m.

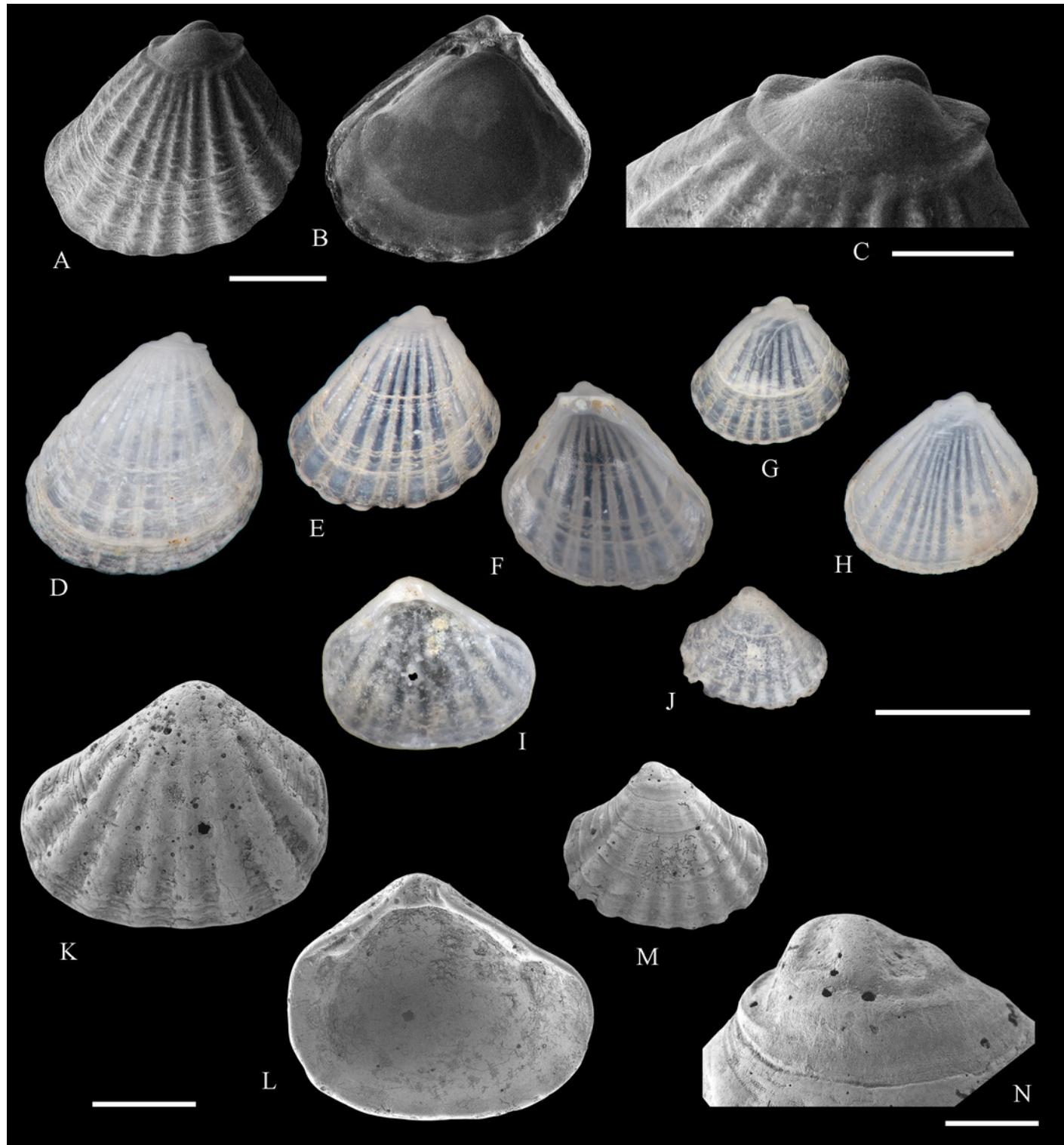


Figure 18

Figure 18: Family Psammobiidae.

A, B: *Gari* sp. B, LACM 1965-101.6. Scale bar: A, B = 1 cm.

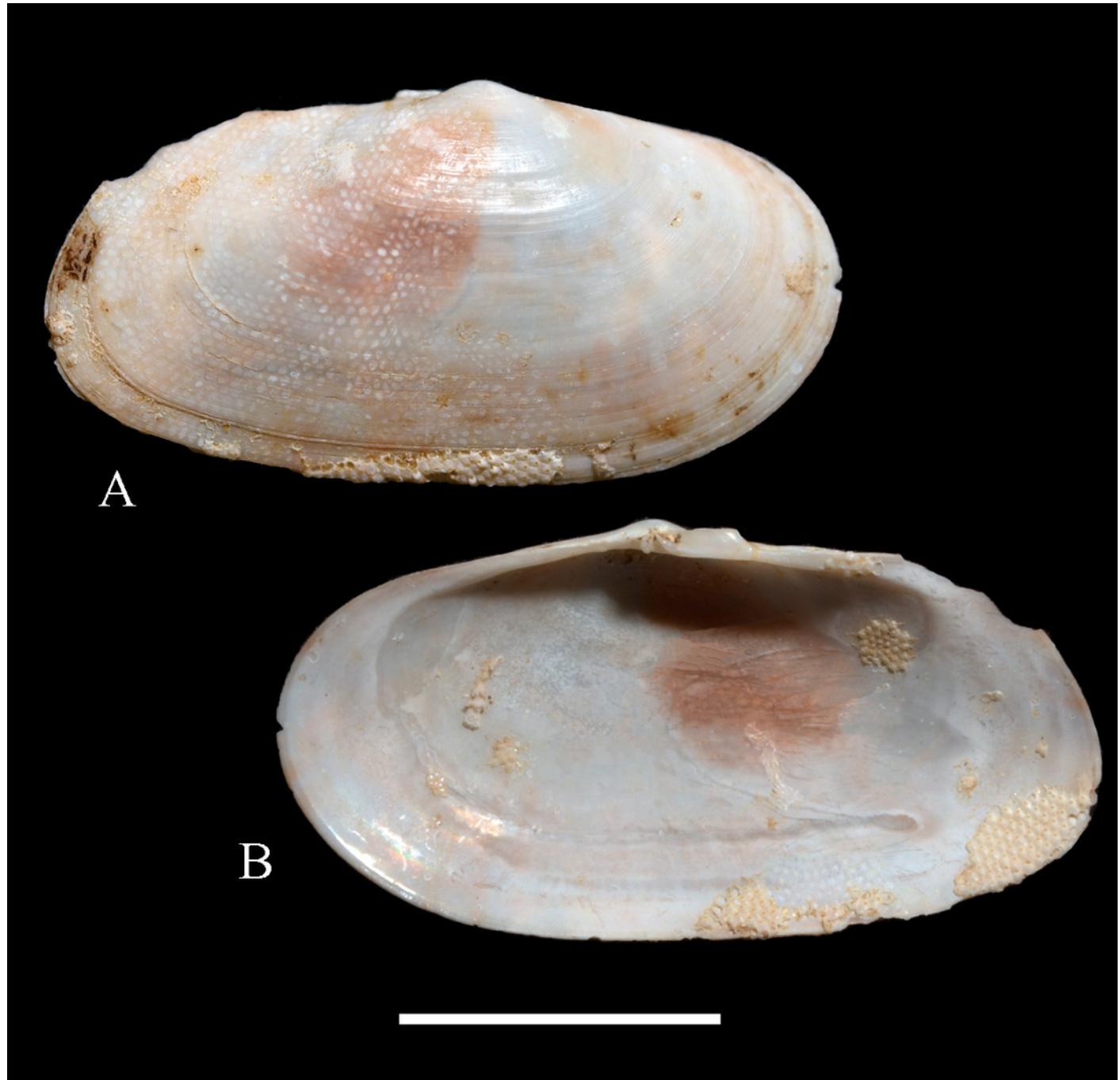


Figure 19

Figure 19: Family Semelidae.

A-I: *Ervilia producta* Odhner, 1922; A-E: Syntypes, GNM Moll. 7066; F-I: FMNH 322240.

Scale bar: A-I = 2 mm.

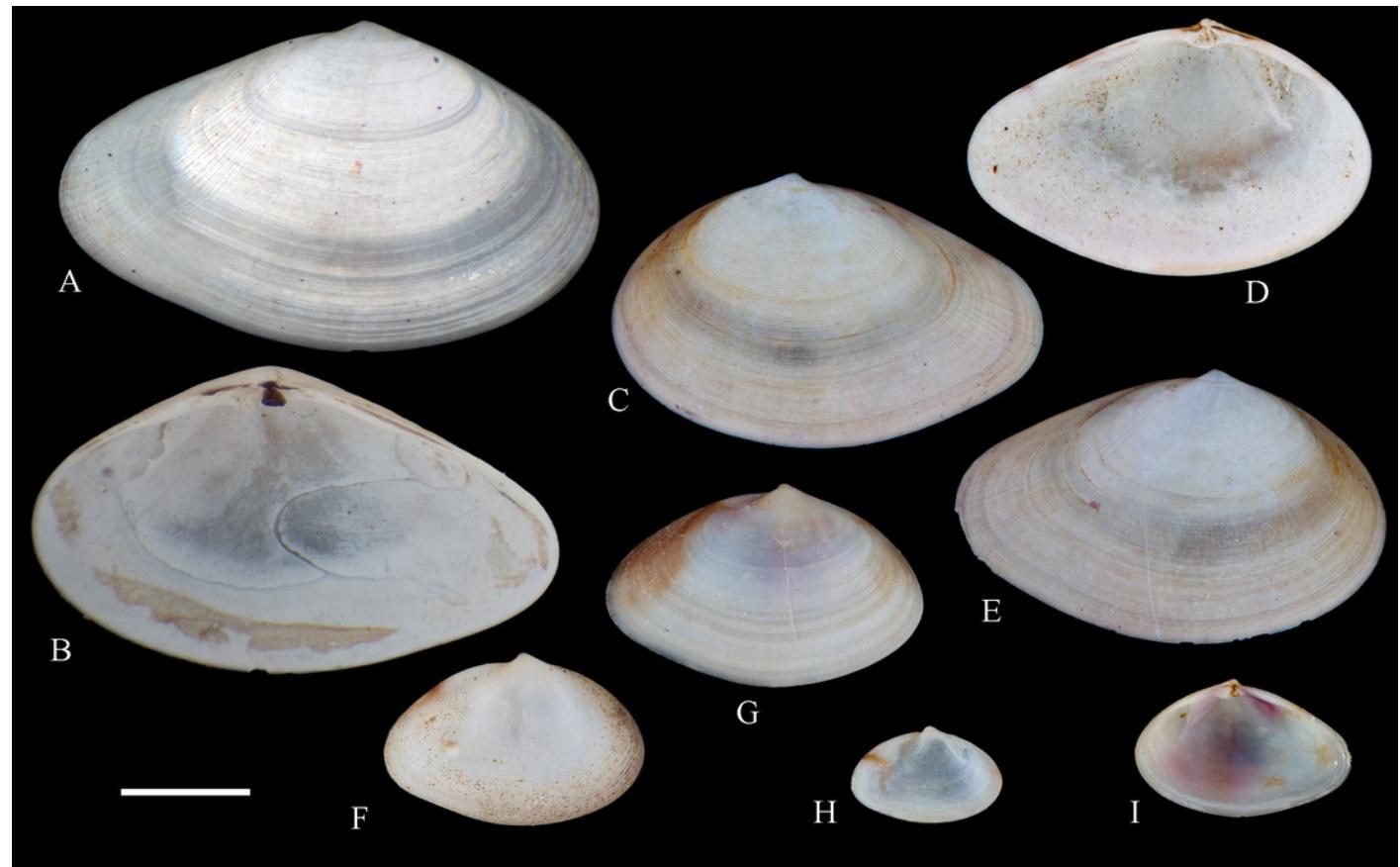


Figure 20

Figure 20: Family Chamidae.

A-N: *Chama pellucida* Broderip, 1835; A-D: Syntypes, NHMUK 1950.11.1.63-65; E-G: LACM 1965-99.3, H-K: LACM 1965-103.3; L-N: Holotype of *Chama chilensis* Philippi, 1887, SGO.PI.632; N: original label. Scale bars: A-J, L, M = 1 cm; K = 5 mm.



Figure 21

Figure 21: Family Veneridae.

A-H: *Paphonotia fernandesiana* (Stempell, 1899); A: Syntype of *Venerupis fernandesiana* Stempell, 1899, ZMB 51989; B-H: FMNH 322244. **I-K: *Timoclea sanfelixensis* n. sp.**; Holotype, LACM 3830. Scale bars: A-H, I, J = 2 mm; K = 1 mm.

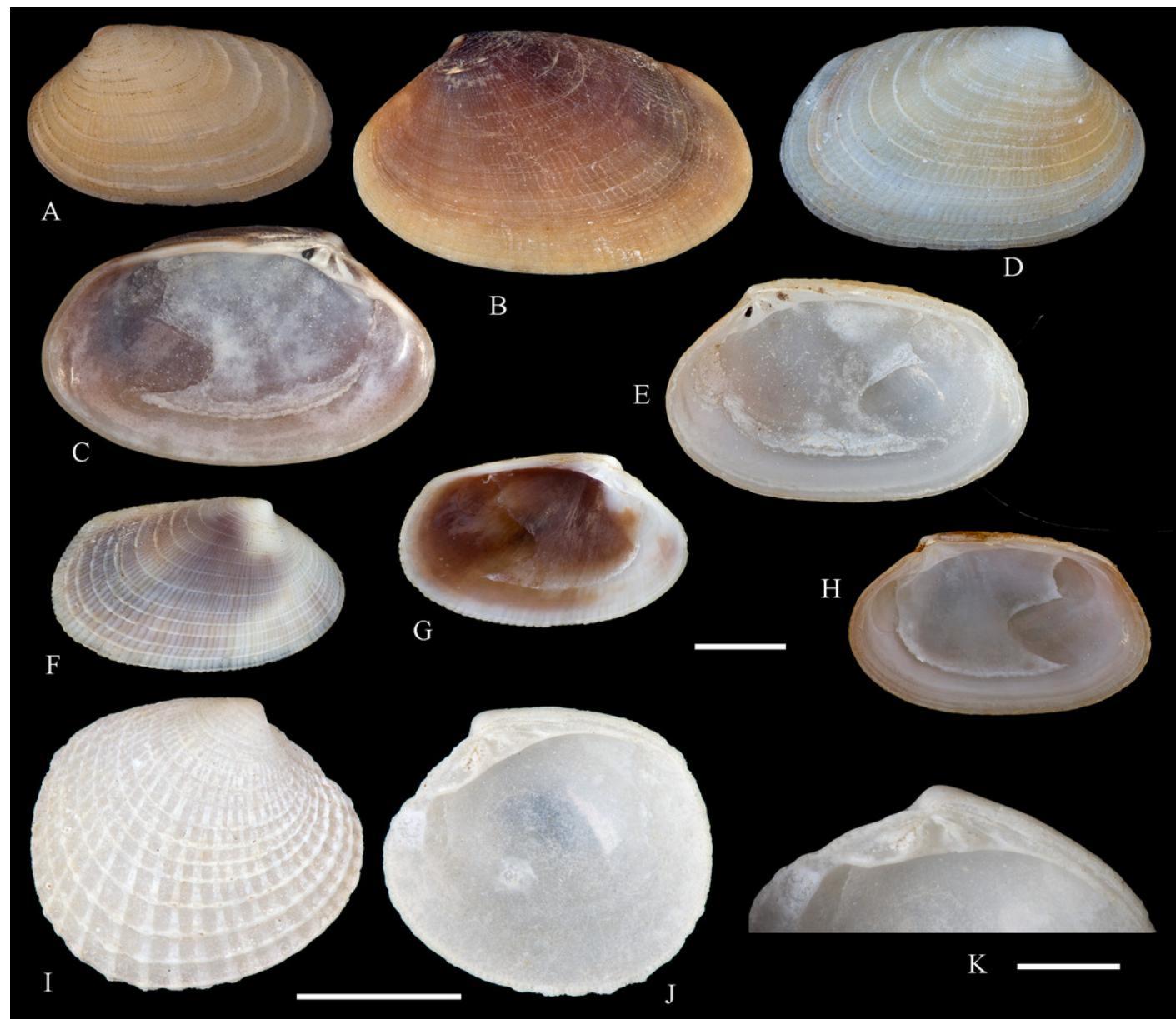


Figure 22

Figure 22: Family Neoleptonidae.

A-I: *Neolepton sanfelixensis* n. sp., A, B: Holotype, MNHN-CL MOL 101634; C, D: Paratype, MNHN-CL MOL 101635; E, F (SEM): Paratype, FMNH 322301; G (SEM): Paratype, LACM 3831; H-I (SEM): FMNH 322302. **J-L: *Neolepton* sp.** **A**, LACM 1966-98.6. Scale bars: A-F, I, L = 1 mm; G, J, K = 2 mm; H = 500 µm.

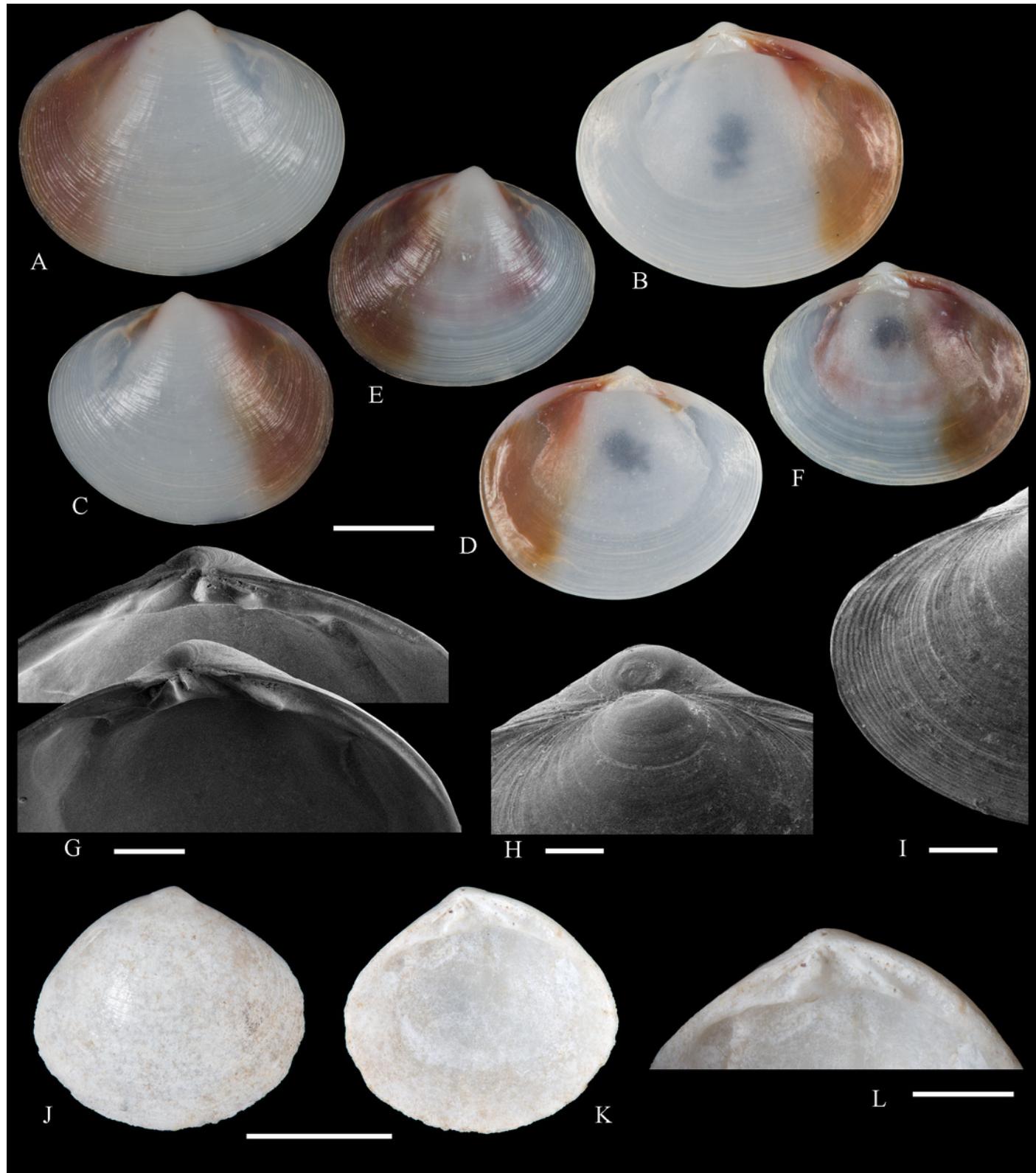


Figure 23

Figure 23: Family Xylophagidae.

A-D: *Xylophaga* sp. A, LACM 1965-101.8. Scale bar: A-D = 2 mm.

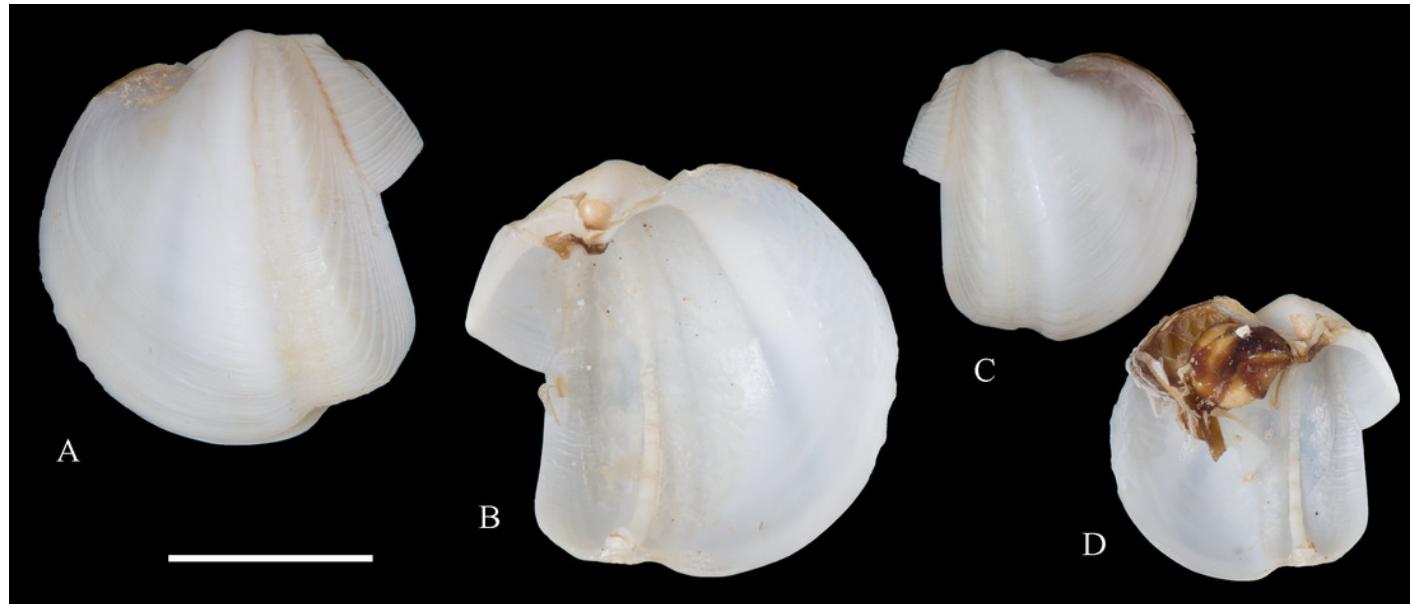


Figure 24

Figure 24: Family Teredinidae.

A, B: *Bankia martensi* (Stempell, 1899), LACM 1966-100.8. Scale bar: A, B = 1 mm.

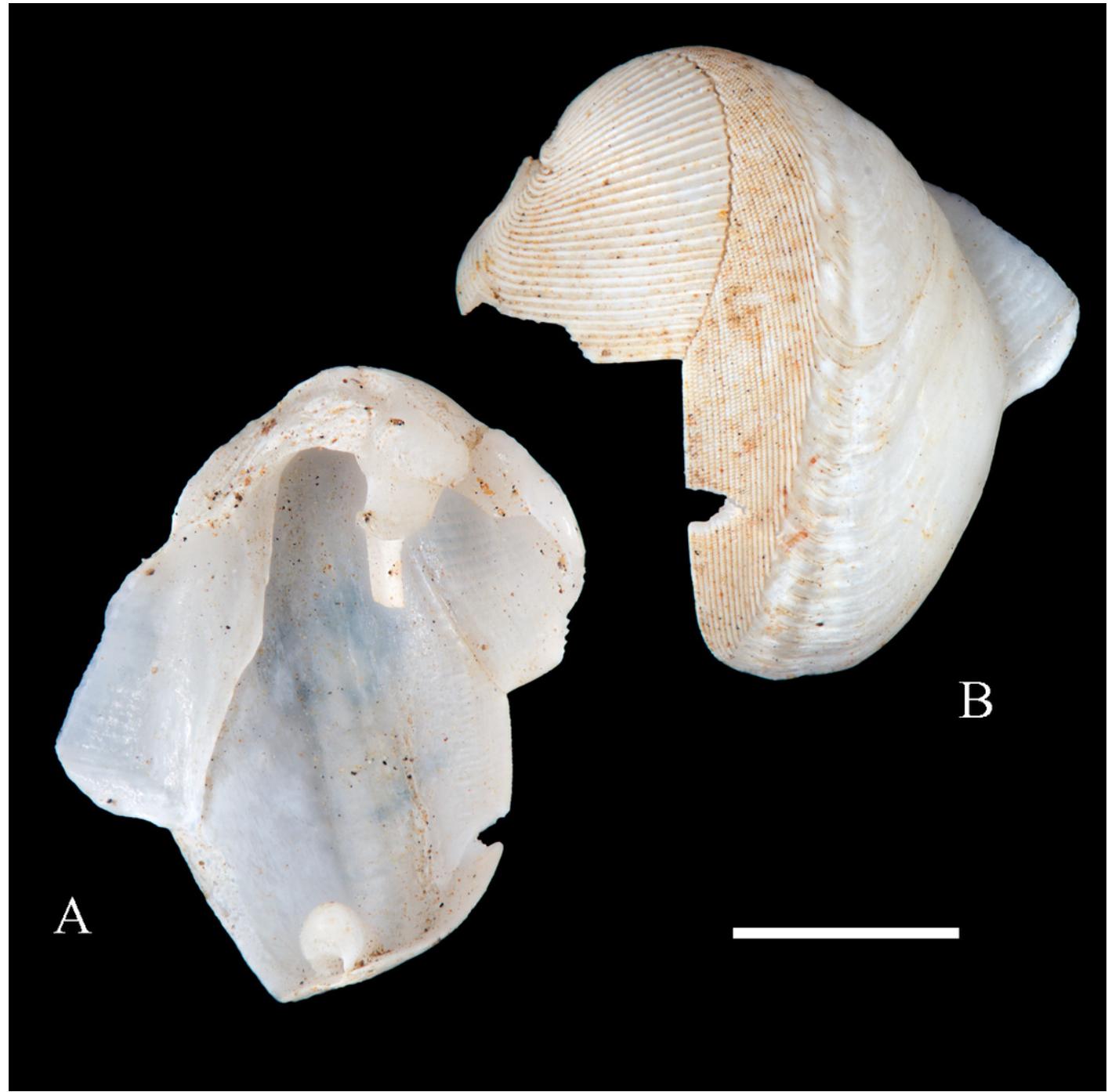


Figure 25

Figure 25: Family Cuspidariidae.

A-H: *Cuspidaria fernandezensis* n. sp.; A-D: Holotype, USNM 898738; Paratypes, E-H: LACM 3832. **I-P:** *Cuspidaria sanfelixensis* n. sp.; I, J: Holotype, LACM 3833; K-N: Paratypes, LACM 3834; O, P: Paratype, FMNH 312476. Scale bar: A-P = 2 mm.

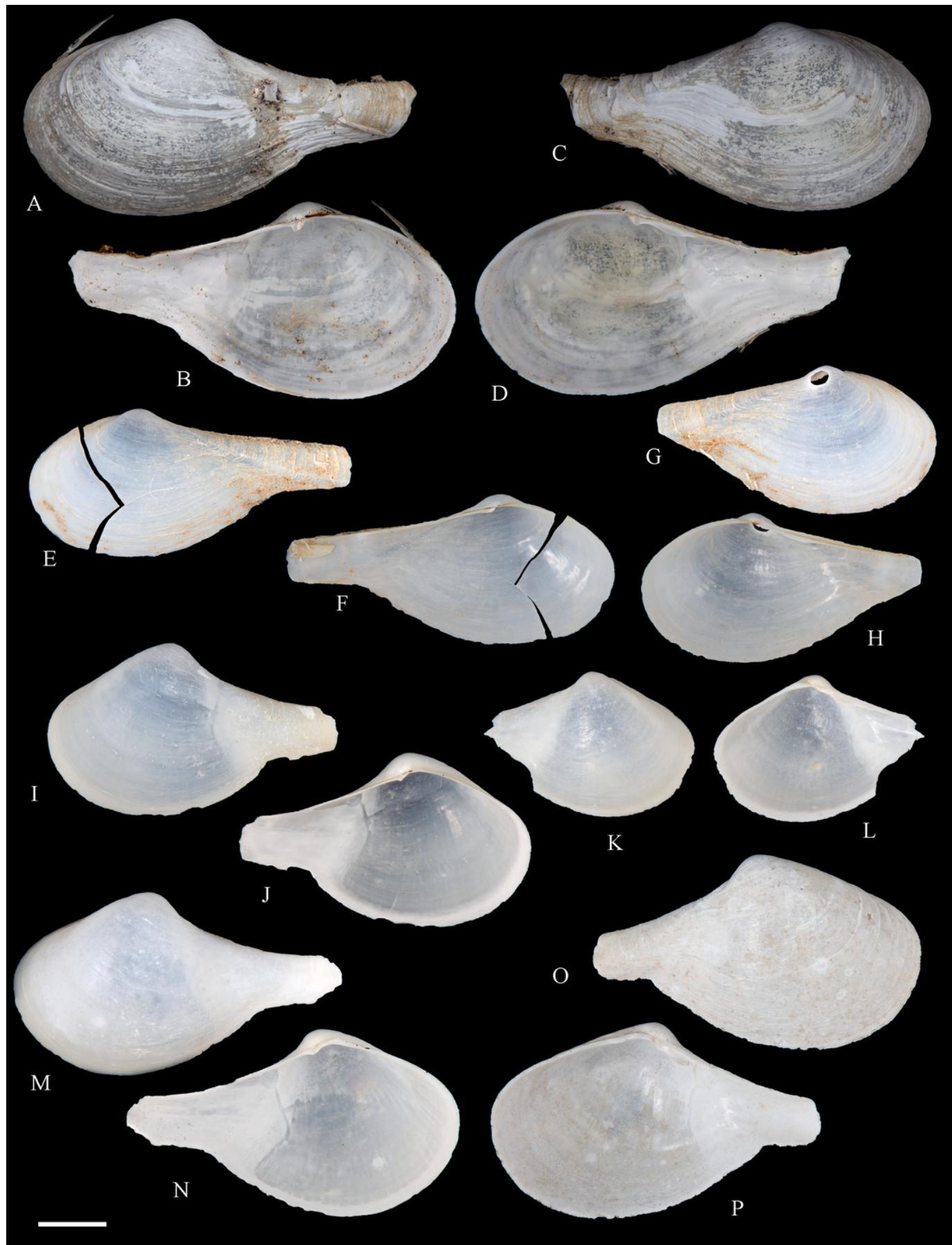


Figure 26

Figure 26: Family Halonymphidae.

A, B: *Halonympha recurvirostris* n. sp., holotype, LACM 3836. Scale bar: A, B = 2 mm.

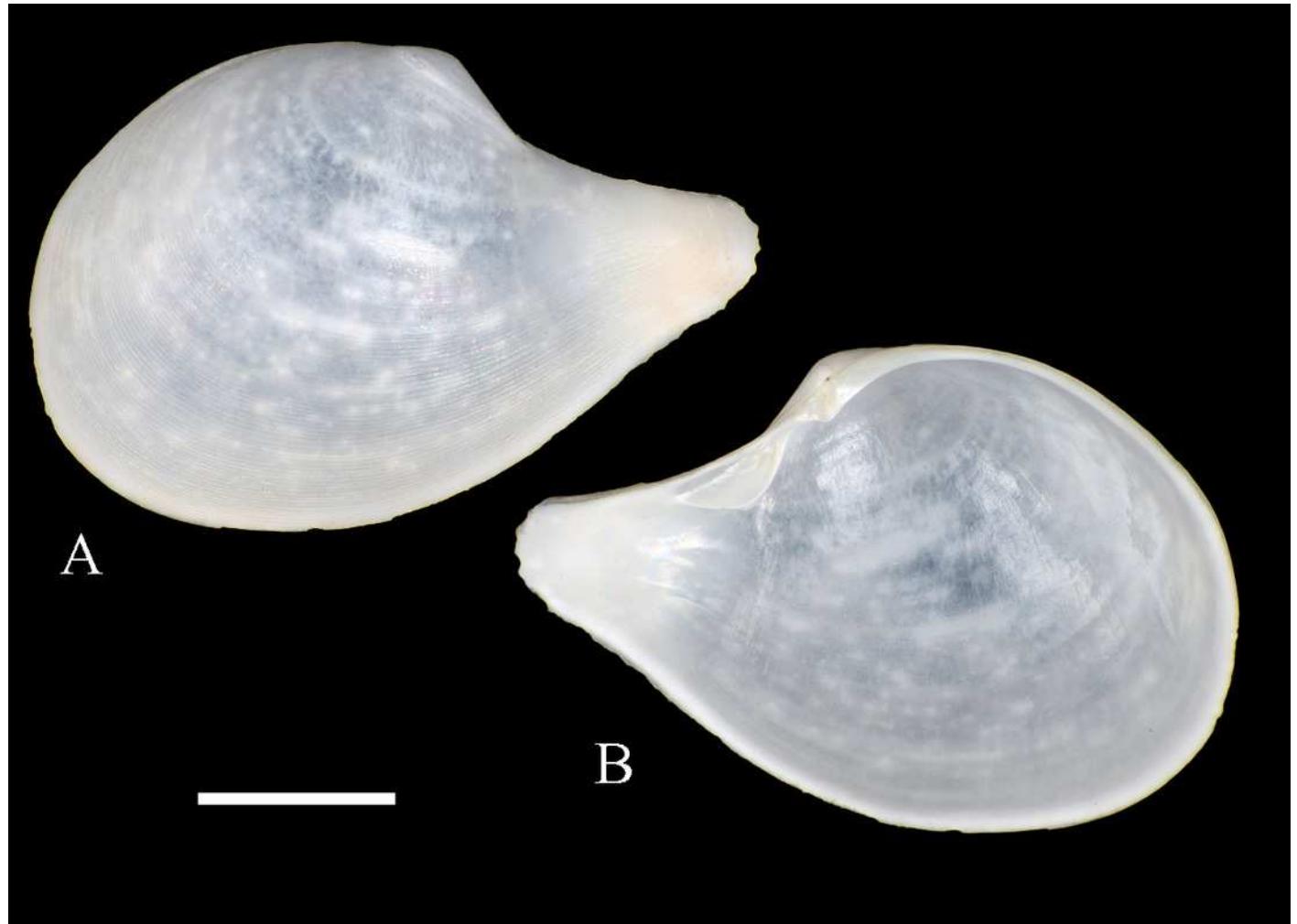


Figure 27

Figure 27: Family Pandoridae.

A-D: *Pandora pyxis* n. sp., holotype, LACM 3837. Scale bar: A-D = 2 mm.

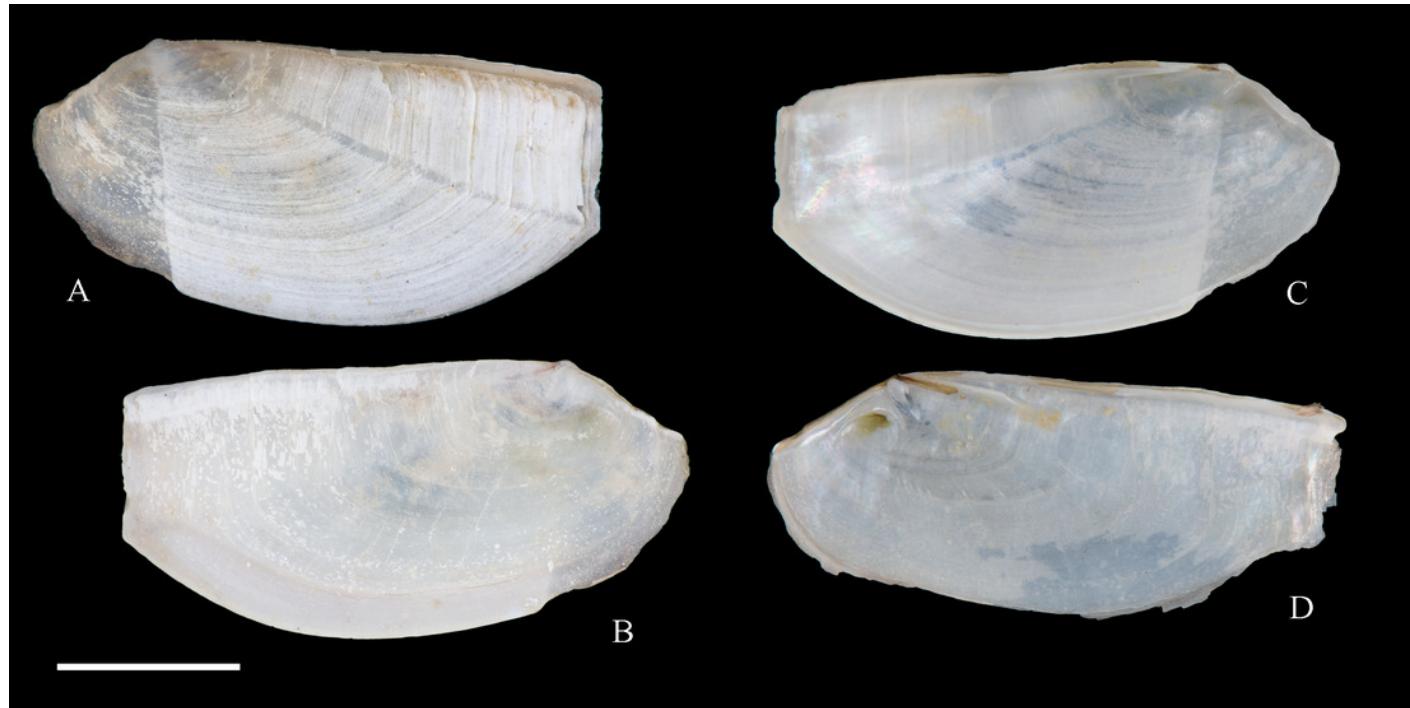


Figure 28

Figure 28: Family Lyonsiidae.

A, B: *Entodesma* sp., LACM 1966-98.7. Scale bar: A, B = 2 mm.



Figure 29

Figure 29: Family Paralimyidae.

A, B: *Panacea chilensis* Coan, 2000, holotype, LACM 2876. Scale bar: A, B = 1 cm.



Figure 30

Diversity and distribution of species

Distribution and status of the species studied from Desventuradas (DES) and Juan Fernández (JF) archipelagos. Number of species is indicated between brackets. The two species with unconfirmed literature records are excluded from this graph

