

## SUB-RECENT MARINE OSTRACODA (PONTOCYPRIDIDAE AND BAIRDIIDAE) FROM THE SOUTHERN BRAZILIAN CONTINENTAL SHELF

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**ABSTRACT** – This work is part of a long-term project that attempts to describe the Ostracoda present in the southern Brazilian shelf between Rio de Janeiro and Rio Grande do Sul states (almost 2,050 km in length), and to assess the zoogeographical significance of a total 102 benthic species. In this paper the families Pontocyprididae and Bairdiidae have been identified with the description of five new taxa: *Argilloecia inflata*, *A. subacuta*, *Pontocypris? punctatus*, *Bairdoppilata sudbrasiliensis*, and *Neonesidea? rotunda*. *Argilloecia parameridionalis* Whatley *et al.*, is here recorded farther north than previous records.

**Key words:** Sub-Recent, marine, ostracods, Pontocyprididae, Bairdiidae, south Brazil.

**RESUMO** – O presente trabalho é parte de um projeto maior que pretende descrever os Ostracoda presentes na plataforma continental sul-brasileira, entre os estados do Rio de Janeiro e Rio Grande do Sul (aproximadamente 2.050 km de extensão), bem como interpretar o significado zoogeográfico de um total de 102 espécies. As famílias Pontocyprididae e Bairdiidae são representadas por quatro e duas espécies, respectivamente, sendo cinco novas: *Argilloecia inflata*, *A. subacuta*, *Pontocypris? punctatus*, *Bairdoppilata sudbrasiliensis* e *Neonesidea? rotunda*. *Argilloecia parameridionalis* Whatley *et al.*, tem sua distribuição estendida para o norte.

**Palavras-chave:** Sub-recente, marinho, ostracodes, Pontocyprididae, Bairdiidae, sul do Brasil.

### INTRODUCTION

This study is part of the doctoral thesis by Ramos (1998), who studied the taxonomy and zoogeography of benthic Recent marine ostracods from the southern Brazilian continental shelf of sub-orders Podocopina, Platycopina and Cladocopina. The total ostracod fauna is represented by 17 families, 47 genera and 102 species. Forty-two species also occur as fossil, three ranging back to the Oligocene, sixteen to the Miocene, and nineteen to the Quaternary. A number of these species (62%) are restricted to the southern Brazilian coast. Also, 38% of species extend southwards to the Uruguayan and Argentinean coasts.

Although the species of the families Pontocyprididae and Bairdiidae considered herein comprise only a small part of the overall studied ostracode fauna, they are important, since most are new and their register will contribute to the future zoogeographical studies. Subsequent taxonomical papers will deal with the Platycopina and the various families of Cytheracea.

### Previous studies

The study of the Recent marine ostracods from the southern Brazilian shelf began with Hartmann (1955, 1956), where a few new species of the families Cytheridae, Cytheruridae, Loxoconchidae and Paradoxostomatidae were recorded from the northern inner shelf off São Paulo State. This was followed by a series of papers dealing with the generic and specific descriptions of a number of marine taxa from south Brazil (Coimbra & Ornellas, 1987; Purper & Ornellas, 1989; Coimbra *et al.*, 1994, 1995; Carmo & Sanguinetti, 1995, 1999; Machado & Drozinski, 2002; Coimbra & Bergue, 2001, 2003; Aiello *et al. in press*). Publications at higher taxonomic level can be found in Ramos (1994, 1996) that studied the subfamily Coquimbinae along the Brazilian shelf, Ramos *et al.* (1999) with the study of the family Cytheruridae from Rio de Janeiro coast, both with descriptions of new species, and Whatley *et al.* (1998a) and platycopid ostracods from part of the Southern Brazilian coast.

Four studies with emphasis in zoogeography are very important for the knowledge of the ostracod geographical distribution patterns in the study area. On the basis of the distribution of the subfamily Orionininae and of the genus *Callistocythere*, Coimbra & Ornellas (1989) and Coimbra *et al.* (1995) reckon the existence of three assemblages in the Brazilian continental shelf: Northern-Eastern, Southern and Transitional assemblages. In a preliminary study based on the distribution of ostracod assemblages, Whatley *et al.* (1998b) proposed five zoogeographical provinces for the area localized between Rio de Janeiro (22°S, Brazil) and Tierra del Fuego (55°S, Argentina). Finally, Wood *et al.* (1999) described key patterns in the distribution of marine Ostracoda genera since Oligocene to Recent in the SW Atlantic and adjacent areas.

### STUDY AREA

The study area comprises the southern Brazilian continental shelf from Rio de Janeiro to Rio Grande do Sul states, between latitudes 21°S and 35°S and longitudes 40°W and 57°W, covering almost 2,050 km in length. It is located in the South Region (subdivision of Chaves, 1983), and its maximum width is around Santos city (SP), reaching 230 km, while the minimum is off Cabo Frio town (RJ), at only 80 km. The mean width is about 130 km (Figure 1).

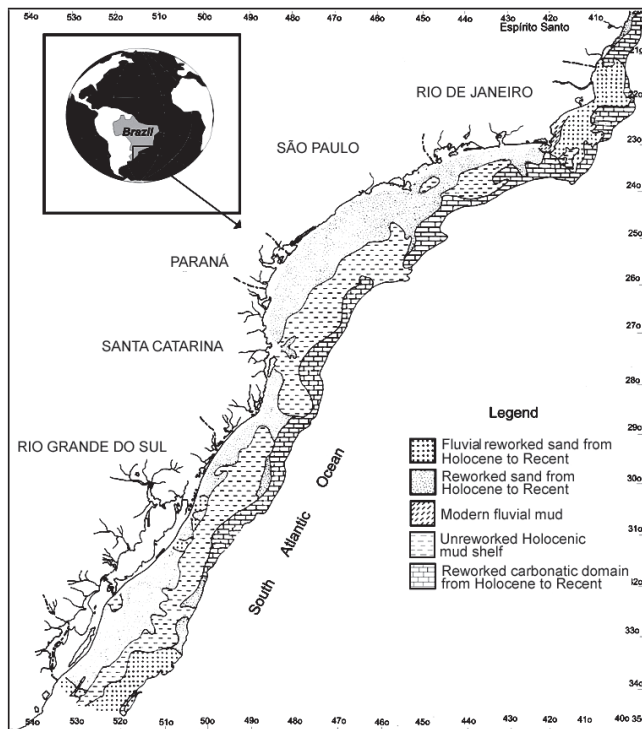


Figure 1. Location of the study area and distribution of bottom sediment types (modified from Kowsmann & Costa, 1979).

### Sedimentology

The distribution of the sediments in this area comprises a mixture of Recent and relict deposits, the product of modern hydrodynamical processes and glacio-eustatic variations during the Quaternary, especially the influence of the Wisconsinian Regression and Holocene Transgression.

According to Koswmann & Costa (1979) the area possesses two main domains: terrigenous and carbonate. The terrigenous domain comprises a mixture of muddy and sandy sediments, predominating between Vitória City (20°19'S) and the town of Cabo Frio (22°53'S) on the inner and middle shelf respectively, and from Cabo Frio to the town of Chuí (33°41'S) where they predominate on the outer shelf. The carbonate sediments between Vitória City and Cabo Frio comprise more than 95% on the outer shelf, while from Cabo Frio to the town of Mostardas (31°06'S), they rarely exceed 50-70% (Figure 1). The carbonate sediments comprise algal reef sand, benthonic foraminifers and a mixture of molluscs with bryozoans. The poor preservation of the biotic components of the carbonate facies is due to high levels of reworking and high environmental energy (Koswmann & Costa, 1979).

### Oceanography

The oceanic water masses are the main factor influencing the geographical distribution of the ostracods, and their different temperatures and salinities are directly related to latitude and current systems. According to data from Boltovskoy (1970, 1976, 1979, 1981), Weber (1994), Martins (1984) and Godoi (1982), six types of water masses influence the southern Brazilian continental margin: Sub-Antarctic Water, South Atlantic Central Water, Antarctic Intermediate Water, Coastal Water, Tropical Water and Subtropical Water; characterised by typical temperature and salinity ranges.

The main currents influencing the southern Brazilian continental shelf are Brazil and Falklands currents. The Brazil

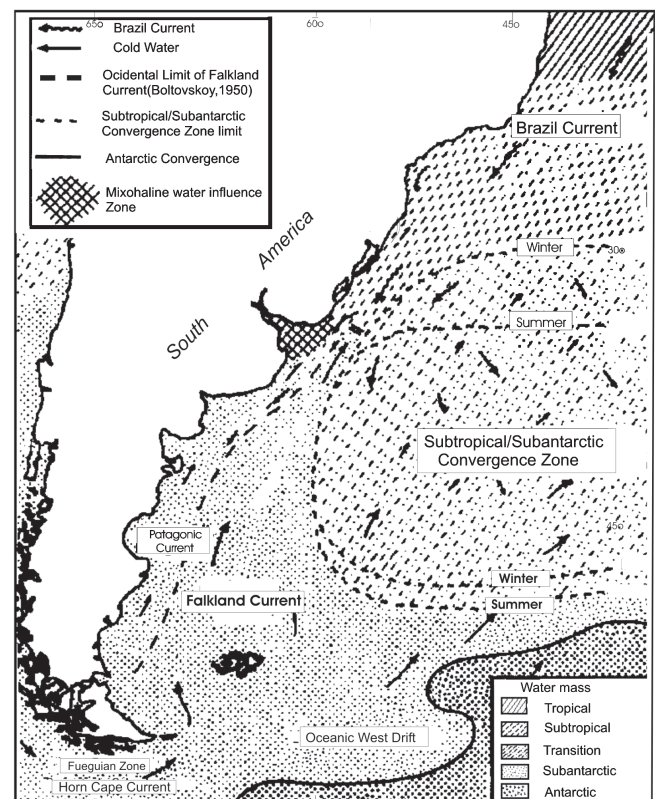


Figure 2. Oceanographical map of the South West Atlantic (modified from Boltovskoy, 1981).

Current is part of the South Equatorial Current and flows from 8°S to 38°S with waters of high temperature and salinity. In the summer, this current reaches 40°S with temperatures between 24°C and 27°C and salinities around 36‰ and 37‰. In the winter, the Brazil Current extends from 29°S to 39°S, with temperature of 22°C and salinity of 36‰ to 36.5‰. The Falklands Current is part of the Sub-Antarctic Water and flows from the Falklands Islands and the Patagonian coast to latitude 35°S, where it meets the Brazil Current. In the winter it extends as far north as 30°S (Tramandaí town) because of the discharge of the La Plata River. The temperatures change within this current according to the season, with averages of 4°C around the Falklands Islands (~52°S) and 20°C along the Rio Grande city (~32°S). At its most northern limit it flows northwards beneath the southward flowing Brazil Current. The northeast influence of the Sub-Antarctic Water occurs at around 21°S (near Cape São Tomé) (Figure 2).

## MATERIAL AND METHODS

The 500 samples, on which this study is based, were collected by Phillips and Van Veen grabs during a series of cruises. The samples are from REMAC Project (Legs 1, 2 and 3), GEOMAR VI and from the NOC “El Austral”; only 207 samples yielded ostracods. The preparation of the samples was by standard methods. Specimens were illustrated using the “Cambridge Stereoscan 120” SEM from the Department of Geology, University of Wales, Aberystwyth, UK. The study of some species was facilitated by comparison with the lectotypes of the Brady (1880) collection. The following conventions are employed: B.M. (Department of Zoology) and with the Moguilevsky collection=AM, Toy collection=NT and Chadwick collection=JC (Department of Palaeontology) all housed in the Natural History Museum, London.

The type material is housed in the collections of the ‘Museu de Paleontologia’, Universidade Federal do Rio Grande do Sul, Section of Ostracoda (MP-O-1817 to MP-O-1837).

## SYSTEMATIC DESCRIPTIONS

Suborder PODOCOPINA Sars, 1866  
 Superfamily CYPRIDACEA Baird, 1845  
 Family PONTOCYPRIDIDAE Müller, 1894  
 Genus *Argilloecia* Sars, 1866

*Argilloecia parameridionalis* Whatley, Moguilevsky,  
 Chadwick, Toy & Ramos, 1998a.  
 (Figure 3: 1, 2)

*Argilloecia parameridionalis* Whatley *et al.*, 1998a:91, pl. 1:1-5.  
*Argilloecia parameridionalis* Drozinski *et al.*, 2003, tab. 2, fig. 4e.

**Emended diagnosis.** A species of *Argilloecia* closely resembling *A. meridionalis* Brady, from which it is distinguished by its smaller size, more umbonate dorsal margin, and differences in the nature of the inner lamella and radial pore canals.

Carapace, elongate-subovate, narrowly rounded anteriorly, dorsally subumbonate. Anterior vestibulum almost residual.  
**Figured Specimen.** MP-O-1817, carapace.

**Material.** 262 adult valves, 96 carapaces and 8 juveniles.

**Locality and horizon.** Southern Brazilian continental shelf, sample GVI-349 (31°24.5'S, 50°41'W, depth 60 m). Recent.

**Dimensions (mm).** Homotype MP-O-1817: RV, length: 0.60; height: 0.24; LV, length: 0.60; height: 0.27. Homotype MP-O-1818: RV, length: 0.58; height: 0.24; width: 0.22; LV, length: 0.56; height: 0.26.

**Remarks.** The present specimens have the same characteristics of the type-material housed in the Natural History Museum, London. This species was originally described from Recent sediments from Argentina and southernmost Brazil by Whatley *et al.* (1998a). In the present study, its geographical distribution is expanded to 22°24.5'S, with the most southerly occurrence being 52°13.5'S. The diagnosis of this species is emended to complement that given by Whatley *et al.* (1998a).

**Distribution.** Argentinean and southern Brazilian continental shelves between 22°24.5'S and 52°13.5'S. Depth range between 15 m and 155 m, and occurring preferentially on sands. In the present study it occurs predominantly in sandy and muddy sediments.

*Argilloecia inflata* sp. nov.  
 (Figure 3: 4, 5, 7, 8)

*Argilloecia* sp. 2. Whatley *et al.*, 1998a: 92, pl. 1:8-11.  
*Argilloecia* sp. 1. Drozinski *et al.*, 2003, tab. 2, fig. 4f.

**Derivation of name.** *L.* with reference to the inflated carapace of this species.

**Diagnosis.** Elongate subrectangular, rather thick-shelled. Smooth, except for weak ribs antero-dorsally. Inflated, but parallel-sided in dorsal view. Inequivalve, with RV much larger and strongly overlapping LV, especially dorsally.

**Holotype.** MP-O-1819, carapace.

**Paratypes.** MP-O-1820, carapace; MP-O-1821, carapace.

**Material.** 43 adult valves and 14 carapaces.

**Type locality and horizon.** Southern Brazilian continental shelf, sample GVI-325 (32°13'S, 51°46'W, depth 25 m). Recent.

**Description.** Elongate subrectangular in lateral view. Inflated, but parallel-sided in dorsal view. RV with rounded anterior margin and weak antero-dorsal projection; bluntly pointed posterior margin with long postero-dorsal slope and subventral apex; dorsal margin slightly convex, almost straight medianly and without posterior cardinal angle; ventral margin sinuous, slightly concave orally and upturned posteriorly. LV with anterior margin irregular and rather narrowly rounded and with weak antero-dorsal projection; posterior margin bluntly pointed and with apex slightly less ventral than RV; dorsal margin more convex than in the RV; ventral margin more strongly concave orally. Surface smooth with small antero-dorsal ribs. RV much larger than LV with strong overlap, especially dorsally. Internal characters as for genus.

**Dimensions (mm).** Holotype MP-O-1819: RV, length: 0.60;



height: 0.30; LV, length: 0.58; height: 0.26. Paratype MP-O-1820: RV, length: 0.60; height: 0.30; width: 0.28; LV, length: 0.60; height: 0.28. Paratype MP-O-1821: RV, length: 0.60; height: 0.30; width: 0.28; LV, length: 0.60; height: 0.28.

**Remarks.** This species is very similar to *Argilloecia robusta* Bonaduce *et al.*, 1975, from the Quaternary of the Adriatic Sea. It differs mainly in its larger size, in the posterior area of LV being more rounded ventrally, dorsally more arched and the vestibulum of the LV being smaller anteriorly. The present specimens are identical to those found on the Argentinean continental shelf by Whatley *et al.* (1998a), and southernmost Brazil by Drozinski *et al.* (2003).

**Distribution.** Recent sediments from Argentinean continental shelf at 52°15.8'S (Whatley *et al.*, 1998a) and the Brazilian continental shelf between 22°42.5'S and 33°50.5'S. Depth ranges from 42 m to 136 m, in sandy and muddy sediments.

*Argilloecia subacuta* sp. nov.

(Figure 3: 3, 6, 9, 10)

**Derivation of name.** *L.* with reference to the acute posterior margin.

**Diagnosis.** Elongate subrectangular. Anterior rather narrowly; posterior with acutely subventral apex. LV with long, straight antero-dorsal slope towards anterior margin; RV with this slope weakly convex.

**Holotype.** MP-O-1822, carapace.

**Paratype.** MP-O-1823, carapace.

**Material.** 70 adult valves and 31 juveniles.

**Type locality and horizon.** Southern Brazilian continental shelf, sample GVI-329 (32°36'S, 51°05'W, depth 62 m). Recent.

**Description.** Elongate subrectangular in lateral view. Rather flat-sided in dorsal view, with posterior only a little more acuminate than anterior. RV with the anterior margin rather narrowly rounded and rounded antero-cardinal angle; LV with a marked antero-cardinal angle. Posterior margin acutely pointed subventrally. Dorsal margin of LV with long, straight antero-dorsal slope towards anterior margin; RV with this slope weakly convex. Ventral margin with broad, shallow median concavity. Greatest length below mid-height; greatest height 2/3 of the distance from the anterior margin; greatest width equal between the cardinal angles. Surface almost smooth, slightly punctate anteriorly. Inner lamella narrow with large vestibulum especially anteriorly.

**Dimensions (mm).** Holotype MP-O-1822: RV, length: 0.54, height: 0.22; LV, length: 0.50, height: 0.22. Paratype MP-O-1823: RV, length: 0.56, height: 0.24; LV, length: 0.54, height: 0.24, width: 0.20.

**Remarks.** *Argilloecia subacuta* sp. nov. resembles *Argilloecia* sp. 5 Whatley & Coles (1987) from the North Atlantic, but the latter differs in its more ventral posterior apex and in its concave antero-dorsal slope. The present species is also similar to *Aglaiia* (?) *pusilla* Brady (1880) (Brady Collection, lectotype BM 81.5.2), but differs in being larger, in that the LV that is more pointed, the dorsum is more arched and the ventral margin more concave. Also, the RV of the latter species is more rounded postero-dorsally and more pointed medianly. It differs from *Argilloecia eburnea* Brady

(1880) (Brady Collection, lectotype B.M 80.38.9) in its smaller size and narrower anterior end.

**Distribution.** South Brazilian continental shelf between 32°57' and 22°46'S. Depth range from 25 m to 156 m. It occurs on sandy and muddy substrates.

Genus *Pontocypris* Sars, 1866

*Pontocypris*? *punctatus* sp. nov.

(Figure 3: 11, 12, 15)

**Derivation of name.** *L.* with reference to its punctate ornament.

**Diagnosis.** Carapace subtriangular elongate, with widely rounded anteriorly and very acuminate and convergent posteriorly. Surface finely punctate.

**Holotype.** MP-O-1824, carapace.

**Paratypes.** MP-O-1825, carapace; MP-O-1826, VE; MP-O-1827, VD.

**Material.** 22 adult valves and 10 juveniles.

**Type locality and horizon.** Southern Brazilian continental shelf, sample Leg 2-3134 (28°23'S, 47°34'W, depth 153 m). Recent.

**Description.** Very subtriangular elongate in lateral view and strongly convergent posteriorly. Anterior margin broadly rounded. Posterior margin very strongly pointed below mid-height. Dorsal margin slightly arched in the LV and almost straight in the RV, very strongly sloping towards the posterior. Ventral margin strongly concave medianly. Surface finely punctate. Internal features as for genus.

**Dimensions (mm).** Holotype MP-O-1824: RV, length: 0.70; height: 0.30; LV, length: 0.72; height: 0.30. Paratype MP-O-1825: RV, length: 0.72; height: 0.30; LV, length: 0.74; height: 0.30. Paratype MP-O-1826: LV, length: 0.72; height: 0.30.

**Remarks.** *Pontocypris*? *punctatus* sp. nov. lacks the serrated postero-ventral margin of the RV, as described by Maddocks (1969, p.43) in her diagnosis of the genus. However, this species is considered as *Pontocypris* because of its internal characteristics and the design of the carapace. It is similar to *Pontocypris*? sp. 6 Maddocks, 1969, which also lacks the postero-ventral serrated margin. *Pontocypris*? *punctatus* sp. nov. differs from *Pontocypris*? sp. 6 Maddocks, 1969 by its more prominent antero-dorsal angle; the posterior of the LV is upturned and the dorsal margin is straighter.

**Distribution.** Southern Brazilian continental shelf between 32°57'S and 24°20.5'S; depth range from 47 m to 153 m. It occurs on muddy and sandy biotrititic sediments.

Superfamily BAIRDIACEA Sars, 1888

Family BAIRDIIDAE Sars, 1888

Subfamily BAIRDIINAE Sars, 1888

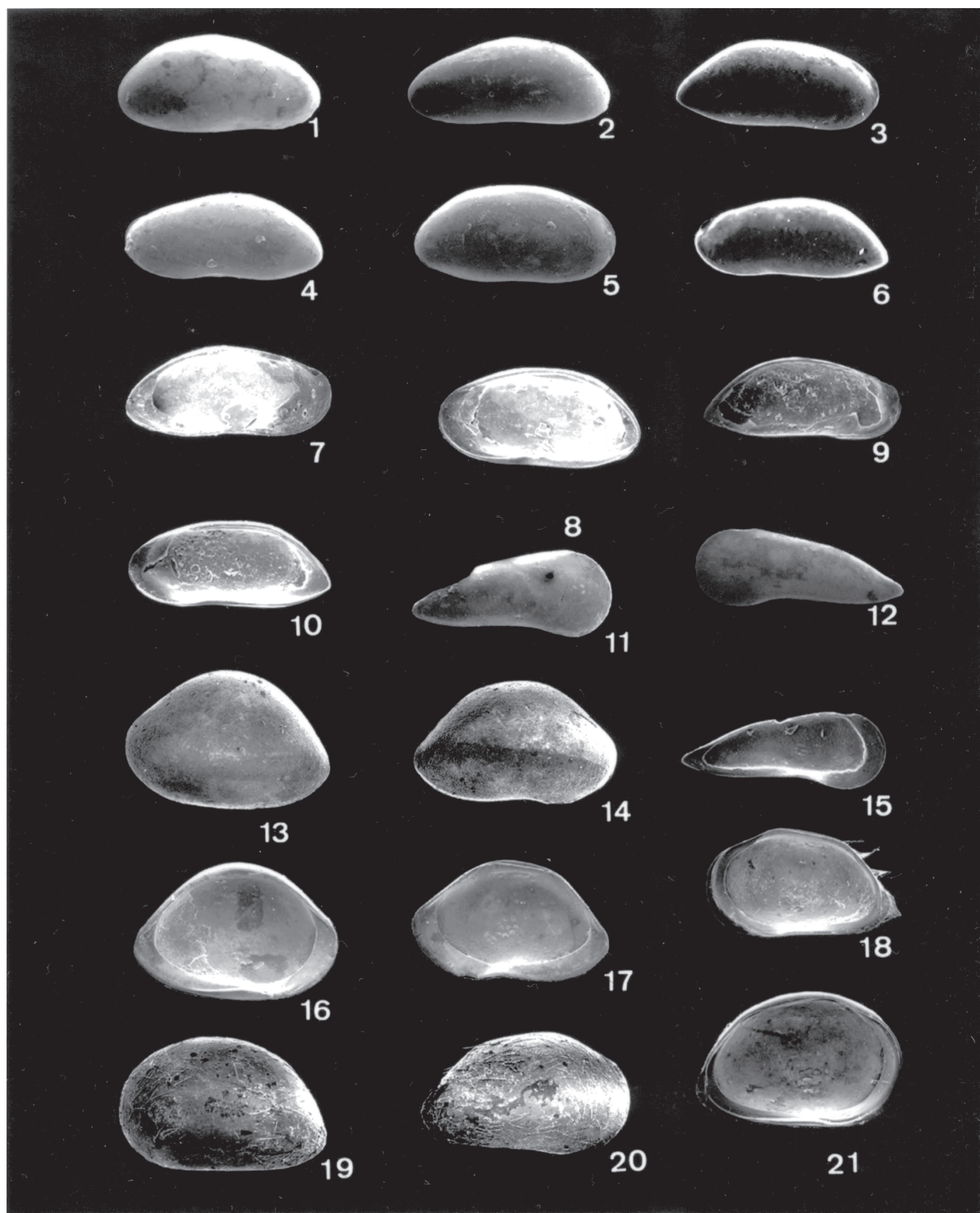
Genus *Bairdoppilata* Coryell, Sample & Jennings, 1935

*Bairdoppilata sudbrasilensis* sp. nov.

(Figure 3: 13, 14, 16, 17)

*Bairdoppilata* sp. Drozinski *et al.*, 2003, tab. 2, fig. 4m.

**Derivation of name.** With reference to the type locality.



**Figure 3.** Sub-Recent pontocypridids and bairdiids from the southern Brazilian continental shelf. **1-2** *Argilloecia parameridionalis*: **1**. Homotype, carapace, RV, external view, MP-O-1817, x 63,3; **2**. Homotype, carapace, LV, external view, MP-O-1817, x 63,3. **3, 6, 9, 10** *Argilloecia subacuta* sp. nov.: **3**. Holotype, carapace, RV, external view, MP-O-1819, x 70,4; **6**. Holotype, carapace, LV, external view, MP-O-1819, x 72; **9**. Holotype, carapace, LV, internal view, MP-O-1819, x 74; **10**. Holotype, carapace, RV, internal view, MP-O-1819, x 70,4. **4, 5, 7, 8** *Argilloecia inflata* sp. nov.: **4**. Holotype, carapace, LV, external view, MP-O-1822, x 63,8; **5**. Holotype, carapace, RV, external view, MP-O-1822, x 70,4; **7**. Holotype, carapace, LV, internal view, MP-O-1822, x 65,5; **8**. Holotype, carapace, RV, internal view, MP-O-1822, x 70,4. **11,12,15** *Pontocypris? punctatus* sp. nov.: **11**. Holotype, carapace, RV, external view, MP-O-1824, x 54,3; **12**. Holotype, carapace, LV, external view, MP-O-1824, x 52,7; **15**. Paratype, carapace, LV, internal view, MP-O-1825, x 54. **13,14,16,17** *Bairdoppilata sudbrasilensis* sp. nov.: **13**. Holotype, carapace, LV, external view, MP-O-1828, x 32,5; **14**. Holotype, carapace, RV, external view, MP-O-1828, x 33; **16**. Holotype, carapace, LV, internal view, MP-O-1828, x 32,5; **17**. Holotype, carapace, RV, internal view, MP-O-1828, x 32,2. **18-21**. *Neonesidea? rotunda* sp. nov.: **18**. Holotype, carapace, RV, internal view, MP-O-1834, x 34,9; **19**. Holotype, carapace, LV, external view, MP-O-1834, x 36,8; **20**. Holotype, carapace, RV, external view, MP-O-1834, x 37,7; **21**. Holotype, carapace, LV, internal view, MP-O-1834, x 36,8.

**Diagnosis.** Typically bairdioid in lateral view. Almost perfectly fusiform in dorsal view, with greatest width medianly and equal attenuation towards each end margin. Thick-shelled. Carapace surface finely punctate.

**Holotype.** MP-O-1828, carapace.

**Paratypes.** MP-O-1829, carapace; MP-O-1830, carapace; MP-O-1831, VE; MP-O-1832, juvenile carapace; MP-O-1833, VE.

**Material.** 123 adult valves, 21 carapaces and 336 juveniles.

**Type locality and horizon.** Southern Brazilian continental shelf, sample Leg 2-3194 (24°51'S, 45°14'W, depth 104 m). Recent.

**Description.** Typically bairdioid in lateral view, with the usual different shape and outline of the two valves. Almost perfectly fusiform in dorsal view, with greatest width medianly and equal attenuation towards each end margin. Not strongly inflated laterally. Greatest height antero-medianly in RV; medianly in LV. Surface finely punctate. Internal features as for genus. Central muscle scars with a circle of seven rounded scars and one central adductor scar. There is a vertically disposed anterior scar, a number of dorsal scars and an elongate antero-ventral mandibular scar.

**Dimensions (mm).** Holotype MP-O-1828: RV, length: 1.18; height: 0.70; LV, length: 1.20; height: 0.84. Paratype MP-O-1829: RV, length: 1.16; height: 0.68; LV, length: 0.16; height: 0.72; width: 0.44. Paratype MP-O-1830: RV, length: 1.10; height: 0.62; LV, length: 1.12; height: 0.78. Paratype MP-O-1831: VE, length: 1.06; height: 0.68. Paratype MP-O-1832: RV, juvenile, length: 0.94; height: 0.56; LV, length: 0.94; height: 0.62.

**Remarks.** *Bairdoppilata sudbrasiliensis* sp. nov. is similar to *Bairdia villosa* Brady (1880) but is smaller, less elongate, more arched dorsally, has a less punctate surface and lacks the small mid antero-dorsal protuberance of the LV present in *B. villosa*. The present species is also similar to *Bairdia simplex* Brady (1880), but differs in being more dorsally arched, especially in the LV and has the postero-median area more angulate and the antero-ventral angle more prominent in the RV. *Bairdia simplex* is also more elongate and less high. The comparison of these species was facilitated by study of the lectotypes B.M. 81.5.13 and B.M. 80.38.44 of the Brady (1880) Collection, Natural History Museum, London.

**Distribution.** South Brazilian continental shelf between 31°48,3' and 22°08'S. Depth range from 27 m to 164 m, in sandy biotrititic sediments.

Genus *Neonesidea* Maddocks, 1969

*Neonesidea? rotunda* sp. nov.

(Figure 3: 18-21)

*Neonesidea* sp. cf. *N. australis* Chapman. Whatley *et al.*, 1998a: 92, pl. 1: 12-15.

*Neonesidea* sp. Drozinski *et al.*, 2003, tab. 2, figs. 4n-o.

**Derivation of name.** L. With reference to the rounded to ovate carapace of this species.

**Diagnosis.** In lateral view, LV strongly subovate, RV more acuminate posteriorly. Strongly inflated laterally. Ornament a delicate open reticulation with concentric component dominant.

**Holotype.** MP-O-1834, carapace.

**Paratypes.** MP-O-1835, carapace; MP-O-1836, VE; MP-O-1837, juvenile carapace.

**Material.** 98 adult valves, 2 carapaces and 737 juveniles.

**Type locality and horizon.** Southern Brazilian continental shelf, sample Leg 3-3231 (25°30'S, 45°57'W, depth 130 m). Recent.

**Description.** Carapace strongly inflated in dorsal view. In lateral view, LV strongly subovate, RV more acuminate posteriorly. Anterior margin broadly rounded in LV but with distinct antero-dorsal angle in RV, above which the antero-dorsal slope is slightly concave. Posterior margin more attenuated in LV than RV, apex blunt, subdorsal. Postero-dorsal slope slightly convex in LV, straight, slightly longer in RV and bearing three prominent spines. Dorsal margin straight and inclined towards the posterior in RV; gently convex in LV. Ventral margin slightly concave in the median area, more so in RV than LV. Ornament a delicate open reticulation with concentric components dominant. Internal characters as for genus. Central muscle scars comprise seven circular scars disposed about a central scar.

**Dimensions (mm).** Holotype MP-O-1834: RV, length: 1.06; height: 0.60; LV, length: 1.06; height: 0.68. Paratype MP-O-1835: RV, length: 1.10; height: 0.64; LV length: 1.08; height: 0.70. Paratype MP-O-1836: LV, length: 1.08; height: 0.68. Paratype MP-O-1837: RV, juvenile, length: 0.86; height: 0.52; LV, length: 0.86; height: 0.56.

**Remarks.** The generic position of this species is in doubt. Its muscle scars are similar to *Paranesidea* Maddocks. However, the species lacks the denticles on the anterior and posterior margins and other characters of *Paranesidea* as defined by Maddocks (1969). This species is similar to *Bairdia ovata* Brady (1880) but differs in that the dorsal margin of the RV is less rounded. *Neonesidea? rotunda* sp. nov. is also similar to *Bairdia australis* Chapman, 1914. However, the present species is convex antero-dorsally and has a less accentuated postero-dorsal angle. The specimens recorded by Whatley *et al.* (1998a) from the southernmost Brazilian coast were all juvenile.

**Distribution.** Southern Brazilian continental shelf between 31°30.9'S and 31°32.2'S, depth range from 22 m to 120 m, on sandy sediments (Whatley *et al.*, 1998a). In the present study it occurs between 32°57'S and 22°50'S in a depth range from 64 m to 158 m, predominately on muddy sediments.

## CONCLUSIONS

The study of the families Pontocyprididae and Bairdiidae from the southern Brazilian continental shelf resulted in the description of five new species: *Argilloecia inflata*, *A. subacuta*, *Pontocypris? punctatus*, *Bairdoppilata sudbrasiliensis* and *Neonesidea? rotunda*, and in the register of *Argilloecia parameridionalis* Whatley *et al.*, 1998a. The generic position of *Pontocypris? punctatus* sp. nov. and *Neonesidea? rotunda* sp. nov. remains doubtful due to the problematic diagnostic character of these genera. The zoogeographical distribution of the studied species characterized them as endemic to the south Brazil, with



exception of *Argilloecia inflata* and *A. parameridionalis* which also reach the Argentinean coast (52°S).

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