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BRACHIOPODA COLLECTED BY CANCAP IV AND VI EXPEDITIONS TO THE SOUTH-EAST NORTH ATLANTIC. 1980-1982

Cancap-project, contributions to the zoology, botany and paleontology of the Canarian-Cape Verdean region of the North Atlantic ocean, no. 73

by

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Recent brachiopods collected by CANCAP IV and VI expeditions to the south-east North Atlantic, in the vicinity of the Canary and Cape Verde Islands, belonging to *Neocrania*, *Hispanirhynchia*, *Stenosarina*, *Terebratulina*, *Eucalathis*, *Argyrotheca*, *Megathiris*, *Phaneropora*, *Megerlia*, *Kraussina*, *Dallina*, *Thecidellina* and *Pajaudina* have been identified.

As with the brachiopods previously identified from the CANCAP I-III expeditions, the CANCAP IV and VI material is Mauritanian in affinity and shows a close relationship with Lusitanian brachiopods from the Gulf of Gascogne. There is a lesser affinity with Mediterranean brachiopods, with isolated Senegalian and Caribbean elements present in the Cape Verde Islands.

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INTRODUCTION

In a previous report 88 lots of Recent Brachiopoda collected by the CANCAP I-III expeditions to the south-east North Atlantic (off Morocco, western (Spanish) Sahara, Mauritania, Madeira Archipelago, Canary Islands and Salvage Islands) were described by the author (Logan, 1983). Subsequent CANCAP expeditions to the Canary and Salvage Islands in 1980 (CANCAP IV) ((fig. 1) and Cape Verde Islands in 1982 (CANCAP VI) (fig. 2) brought back 63 and 33 lots, respectively, mostly obtained with a Van Veen grab, and their description is the subject of this report. No brachiopods were obtained from the CANCAP V expedition to the Azores in 1981 and the CANCAP VII

expedition to the Cape Verde Islands in 1985.

As in the case of previous CANCAP collections of brachiopods, most specimens are dead shells, with soft parts missing. Fortunately, identification of brachiopods is based mainly on skeletal characteristics but occasional destruction of delicate internal structures by prolonged immersion or transportation precludes exact identification to species level. Depth ranges are given for each species but should be viewed within the context of possible transportation in many cases.

The CANCAP programme of expeditions from 1976 to 1985 has yielded an impressive collection of 184 lots of brachiopods, rivalling the collections made by "Travailleur" and "Talisman" in 1882-83 and subsequently described by Fischer & Oehlert (1891). Specimens from CANCAP I-IV are from the Mauritanian faunal province (Gibraltar to Cape Blanc, plus the Canary Islands) (table 1). Two additional records (*Hispanirhynchia cornea* (Fischer)

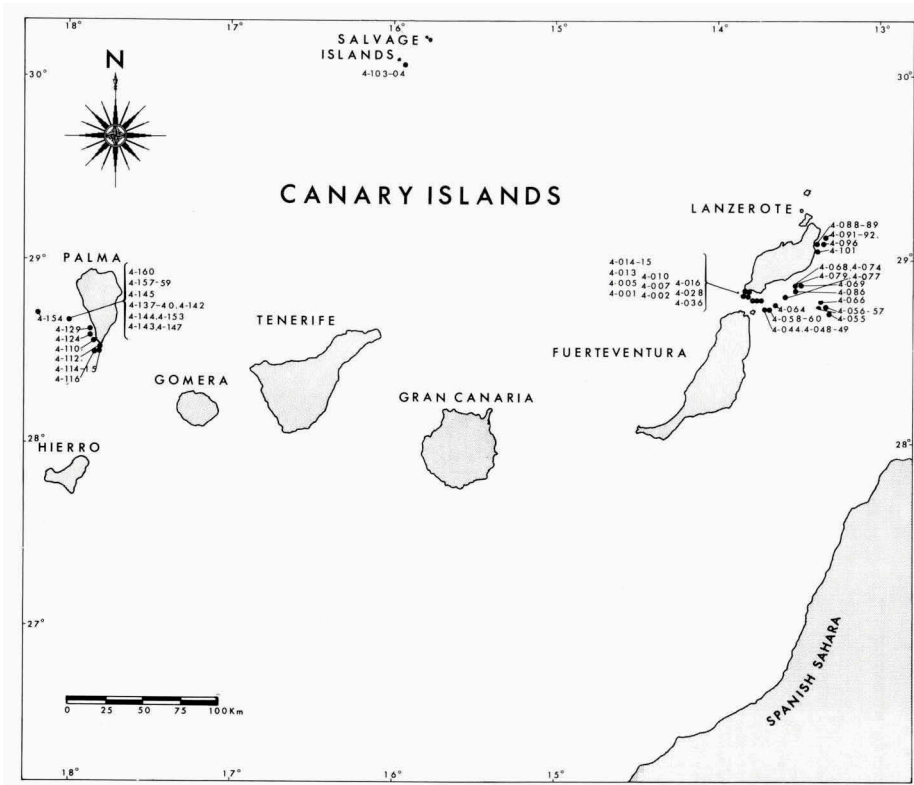


Fig. 1. Map of the Canary and Salvage Islands, showing location of CANCAP IV sampling stations yielding brachiopods.

and *Stenosarina sphenoidea* (Jeffreys) (not Philippi) from CANCAP IV bring the total number of brachiopod species obtained by CANCAP I-IV to 18, of which 11 were also identified from the same region by Fischer & Oehlert (1891). These authors recognized a total of 21 species; thus ten species collected by them were not obtained by CANCAP I-IV, however, several of these can be accounted for by changes in the taxonomic treatment of some forms since that time.

The Mauritanian brachiopods show a close affinity with those from the Lusitanian faunal province to the north, as indicated by Logan (1983), and a lesser affinity with forms from the Mediterranean and sub-tropical Atlantic provinces. Specimens identified as *Lacazella mediterranea* by Logan (1983) from CANCAP I-III specimens are now assigned to *Pajaudina atlantica*, recently described by Logan (1988), based on the discovery of large numbers



Fig. 2. Map of the Cape Verde Islands, showing location of CANCAP VI sampling stations yielding brachiopods.

of excellently-preserved specimens from the CANCAP IV expedition to the Canaries.

Of the eight species identified from the CANCAP VI expedition to the Cape Verde Islands, six are also known from the Mauritanian region but the other two appear to the sub-tropical elements. *Kraussina mercatori* Helmke is a Senegalian species previously reported from the Gulf of Guinea; its common occurrence off the Cape Verde Islands is the northernmost record of both genus and species so far reported. *Thecidellina barretti* (Davidson) was previously known only from the Caribbean area; the genus is also known from the Indo-Pacific but no representatives have been found in the Mediterranean and this is the first reported occurrence from eastern Atlantic waters. If this species is regarded as typically Caribbean, then its presence in the Cape Verde Islands but not in Bermuda or the Azores is puzzling, in view of the postulated relatively recent northern migration route of other benthos, such as corals (Laborel, 1974).

As previously reported (Logan, 1983) the CANCAP brachiopods can be divided into two groups in terms of depth range. The shallow group comprises members of the Megathyrididae (species of *Argyrotheca* and *Megathiris*), *Thecidellina*, *Lacazella*, *Kraussina*, and possibly *Neocrania*, while the deeper water group consists of species of the genera *Pelagodiscus*, *Hispanirhynchia*, *Dyscolia*, *Acrobelesia*, *Stenosarina*, *Terebratulina*, *Eucalathis*, *Platidia*, *Phaneropora*, *Megerlia*, *Dallina* and *Macandrevia*.

SYSTEMATIC SECTION

The terminology and supra-generic classification of Williams & Rowell (1965) have been used in this section. Since all species have been fully described elsewhere, only brief notes and a citation to a reliable description, preferably recent, have been given in this report.

Class INARTICULATA Huxley, 1869

Order ACROTRETIDA Kuhn, 1949; suborder CRANIIDINA Waagen
1895

Superfamily CRANIACEA Menke 1828; family CRANIIDAE Menke 1828

SPECIES	MAURITANIAN BRACHIOPODS		Lusitanian Brachiopods (d'Hondt 1976; Cooper 1981)	Mediterranean Brachiopods (Logan, 1979)	Sub-Tropical Atlantic Brachiopods (Cooper, 1977)	
	CANCAP					
	Logan 1983; (this report)	Fischer & Oehlert (1891)				
	1-IV	VI				
<i>Pelagodiscus atlanticus</i>	+	-	+	+	-	+
<i>Neocrania anomala</i>	-	+	+	+	+	-
<i>Cryptopora gnomon</i>	-	-	+	+	-	-
<i>Hispanirhynchia cornea</i>	+	-	+	+	-	-
<i>Dyscolia aff. D. subquadrata</i>	+	-	-	-	-	-
<i>Dyscolia wyvillei</i>	-	-	+	+	-	+
<i>Gryphus vitreus</i>	-	-	+	+	+	-
<i>Acrobelesia cooperi</i>	+	-	-	+	-	-
<i>Stenosarina sphenoides</i>	+	+	+	+	-	-
<i>Terebratulina retusa</i>	+	+	+	+	+	-
<i>Eucalathis tuberosa</i>	+	-	+	+	-	-
<i>Eucalathis ergastica</i>	+	-	+	+	-	-
<i>Argyrotheca cuneata</i>	+	+	-	-	+	-
<i>Argyrotheca cordata</i>	+	-	-	-	+	-
<i>Argyrotheca grandicostata</i>	+	-	-	-	-	-
<i>Argyrotheca cistellula</i>	-	-	+	-	+	-
<i>Megathiris detruncata</i>	+	+	+	+	+	+
<i>Platidia anomioides</i>	+	-	+	+	+	+
<i>Platidia davidsoni</i>	-	-	+	-	+	+
<i>Phaneropora incerta</i>	+	+	+	-	-	+
<i>Megerlia truncata</i>	+	-	+	+	+	-
<i>Megerlia echinata</i>	-	-	+	+	-	+
<i>Kraussina mercatorii</i>	-	+	-	+	-	-
<i>Pantellaria monstrosa</i>	-	-	+	+	?	-
<i>Dallina septigera</i>	+	-	+	+	-	-
<i>Macandrevia cranium</i>	+	-	+	+	-	-
<i>Thecidellina barretti</i>	-	+	-	-	-	+
<i>Pajaudina atlantica</i>	+	-	-	-	-	-
<i>Gwynia capsula</i>	-	-	+	-	-	-

Table 1. List of Mauritanian brachiopod species from CANCAP I-IV and VI and their occurrence in other faunal provinces.

Neocrania Lee & Brunton, 1986
Neocrania anomala (Muller, 1776)

Crania anomala Logan, 1979: 27, figs. 4, 5, pl. 1 figs. 1-10.

Remarks. — This species is represented from the Cape Verde Islands by a single well-preserved brachial valve. *N. anomala* is typically an eastern Atlantic species, but is also common in the Mediterranean (Logan, 1979).

Localities. — CANCAP VI: 6-040 (RMNH 793)

Depth Range. — 38-55 m.

Class ARTICULATA Huxley, 1869
 Order RHYNCHONELLIDA Kuhn, 1949; superfamily
 RHYNCHONELLACEA Gray, 1848
 Family FRIELEIIDAE Cooper, 1959

Hispanirhynchia Thomson, 1927
Hispanirhynchia cornea (Fischer, 1887)

Hispanirhynchia cornea. Cooper, 1981: 10, pl. 1 figs. 31-38.

Remarks. — This rhynchonellid is distinguished by its impunctate shell, dorsally-coiled spiroloph, rudimentary crura and distinctively triangular shell. It was recorded under the name of *Rhynchonella cornea* by Fischer & Oehlert (1891) from the Canary Islands and was found there by CANCAP IV, but not from the Cape Verde Islands by CANCAP VI. The species has been recorded from the eastern Atlantic by several authors (Brunton & Curry, 1979; Cooper, 1981).

Localities. — CANCAP IV: 4-053, 4-055 to 4-058, inclusive (RMNH 705, 708-711).

Depth Range. — 509-1345 m.

Order TEREBRATULIDA Waagen, 1883; suborder
 TEREBRATULIDINA Waagen, 1883
 Superfamily TEREBRATULACEA Gray, 1840; family
 TEREBRATULIDAE Gray, 1840; subfamily TEREBRATULINAE Gray,
 1840

Stenosarina Cooper, 1977
Stenosarina sphenoidea (Jeffreys, 1878, not Philippi, 1844)

Terebratula (Liothyrina) sphenoidea. Fischer & Oehlert, 1891: 58, pl. 3 figs. 8a-m.

Remarks. — This species, formerly assigned to *Dallithyris*, was erroneously identified by Jeffreys (1878) with a Pliocene form described by Philippi (1844) from Sicily. Both Muir-Wood (1959) and Cooper (1981, 1983) have remarked on the differences between the fossil and modern form and Cooper has recently (1983) assigned the latter to *Stenosarina*. The Recent species is

typically an eastern Atlantic form (Fischer & Oehlert, 1891; Muir-Wood, 1959; Cooper, 1981) but does not occur in the Mediterranean (Logan, 1979).

This species was collected from both the Canary Islands and Cape Verde Islands by CANCAP IV and VI, where the preservation of the loop allows a close comparison with the excellent illustrations of Fischer & Oehlert (1891).

Localities. — CANCAP IV: 4-066; CANCAP VI: 6-055, 6-093, 6-095, 6-116 (RMNH 715, 797, 800, 805, 815).

Depth Range. — 312-2220 m.

Family CANCELLOTHYRIDIDAE Thomson, 1926; subfamily
CANCELLOTHYRIDINAE Thomson, 1926

Terebratulina D'Orbigny, 1847
Terebratulina retusa (Linnaeus, 1758)

Terebratulina retusa emarginata. Cooper, 1981: 11, pl. 1 figs. 13-21.

Terebratulina retusa. — Logan, 1983: 172.

Remarks. — This species is one of the best-known brachiopods in the eastern Atlantic and has been recorded by many authors. It is said to be the commonest brachiopod around the British Isles (Brunton & Curry, 1979) and is abundant in the western Mediterranean (Logan, 1979). It was previously recorded by Fischer & Oehlert under the name of *T. caputserpentis* from both the Canary and Cape Verde Islands. Juvenile specimens definitely assignable to this species were obtained by CANCAP VI from the Cape Verde Islands, mostly as the form *emarginata* of Risso, characterized by strongly-beaded costellae. Cooper (1981) described this form as a subspecies of *T. retusa* from the Gulf of Gascogne.

Localities. — CANCAP VI: 6-010, 6-012, 6-093, 6-095, 6-116, 6-122 (RMNH 781, 783, 801, 806, 813, 816, 818).

Depth Range. — 310-930 m.

Subfamily EUCALATHINAE Muir-Wood, 1965

Eucalathis Fischer & Oehlert, 1890
Eucalathis tuberata (Jeffreys, 1878)

Eucalathis tuberata. Cooper, 1981: 12, pl. 1 figs. 9-12.

Eucalathis tuberata. — Logan, 1983: 172.

Remarks. — CANCAP expeditions to the Canary Islands have obtained this species (Logan, 1983) from a limited number of localities. It is present further north (Fischer & Oehlert, 1891; Brunton & Curry, 1979; Cooper, 1981) but not in the Mediterranean (Logan, 1979). Both Cooper (1981) and Logan (1983) have pointed out the differences between this species and its congener *E. ergastica* Fischer & Oehlert.

Localities. — CANCAP IV: 4-064, 4-086 (RMNH 714, 724).

Depth Range. — 785-1030 m.

Suborder TERBRATELLIDINA Muir-Wood, 1955; superfamily
TEREBRATELLACEA King, 1850; family MEGATHYRIDIDAE Dall,
1870

Argyrotheca Dall, 1900

Argyrotheca cuneata (Risso, 1826)

Argyrotheca cuneata. Logan, 1979: 45, figs. 11, 12, pl. 4 figs 1-12.

Argyrotheca cuneata. — Logan, 1983: 173.

Remarks. — This distinctive species is immediately recognizable by its pink intercostal stripes and is common around the Canary Islands (Logan, 1983) but less common off the Cape Verde Islands. *A. cuneata* is abundant throughout the Mediterranean and has been fully re-described by the author (Logan, 1979).

Localities. — CANCAP IV: 4-001-2, 4-005, 4-007, 4-010, 4-013-16, 4-028, 4-036, 4-088-89; CANCAP VI: 6-101, 6-109 (RMNH 679, 680, 682, 683, 685, 686, 688, 691, 695, 698, 699, 725, 727, 807, 809).

Depth Range. — 20-80 m.

Argyrotheca cordata (Risso, 1826)

Argyrotheca cordata. Logan, 1979: 50, figs. 13, 14, pl. 5 figs. 1-12.

Argyrotheca cordata. — Logan, 1983: 174.

Remarks. — This heart-shaped little species is also common in the waters around the Canary Islands (CANCAP II, IV) but was not recorded from the Cape Verde Islands (CANCAP VI). This species is the commonest of the three Mediterranean species of *Argyrotheca* and has been fully re-described by the author (Logan, 1979).

Localities. — CANCAP IV: 4-005, 4-010, 4-013-16, 4-089, 4-092, 4-110, 4-159 (RMNH 681, 684, 687, 689, 693, 696, 726, 730, 739, 768).

Depth Range. — 20-400 m.

***Argyrotheca grandicostata* Logan, 1983**

Argyrotheca grandicostata Logan, 1983: 174, pl. 1 figs. 1-10.

Remarks. — The species was first described by the author (Logan, 1983) for *Argyrotheca* with few but prominent costae; all the existing material was from CANCAP II to the Canary Islands. The CANCAP IV expedition to the same region has yielded two more specimens referable to this species.

Locality. — CANCAP IV: 4-086 (RMNH 722).

Depth. — 785 m.

***Megathiris* D'Orbigny, 1847**

***Megathiris detruncata* (Gmelin, 1790)**

Megathiris detruncata Logan, 1979: 55, figs. 15, 16, pl. 6, figs. 1-13.

Megathiris detruncata Logan, 1983: 176.

Remarks. — *M. detruncata* was rarely encountered in the collections from CANCAP IV and VI. This brachiopod is common throughout the Mediterranean (Logan, 1979) and also occurs in the eastern North Atlantic, as far north as the Western Approaches to the English Channel (Brunton & Curry, 1979). The discovery of the species from the Cape Verde Islands extends its southern range in the eastern North Atlantic.

Localities. — CANCAP IV: 4-D17, 4-069, 4-093, 4-112, 4-116, 4-175-176; CANCAP VI: 6-016, 6-043, 6-147 (RMNH 697, 718, 732, 742, 747, 772, 773, 786, 795, 826).

Depth Range. — 5-420 m.

Family PHANEROPORIDAE Zezina, 1981

***Phaneropora* Zezina, 1981**

***Phaneropora incerta* (Davidson, 1880)**

Phaneropora incerta Logan, 1983: 177, pl. 1 figs. 11-17.

Remarks. — Examples of this species were obtained from both CANCAP

IV and VI expeditions, to add to the specimens already collected from the Canary and Salvage Islands and the Madeira Archipelago by CANCAP II and III (Logan, 1983). Fischer & Oehlert (1891) also encountered this species from the eastern North Atlantic but assigned it to *Platidia*. The species was re-illustrated by Logan (1983).

Localities. — CANCAP IV: 4-055, 4-059, 4-086; CANCAP VI: 6-116 (RMNH 706, 712, 723, 814).

Depth Range. — 312-1338 m.

Family KRAUSSINIDAE Dall, 1870

Megerlia King, 1850

Megerlia truncata (Linnaeus, 1767)

Megerlia truncata Logan, 1979: 68, fig. 21, pl. 9 figs. 1-23.

Megerlia truncata Cooper, 1981: 16, pl. 3 figs. 5-11.

Remarks. — This species was recorded in brachiopod collections from 26 of the 63 CANCAP IV stations, to add to the 19 CANCAP II stations, also from the Canary Islands, from which this species was identified (Logan, 1983). It thus ranks as one of the most abundant brachiopod species obtained from the eastern North Atlantic, as well as the Mediterranean (Logan, 1979). The species rarely occurs below 600 m, but a single worn brachial valve was collected at CANCAP station 4-147 from a depth of 2900-3000 m. The species was not represented in the CANCAP VI collections from the Cape Verde Islands.

Localities. — CANCAP IV: 4-014, 4-044, 4-048-49, 4-068-69, 4-074, 4-079, 4-091-93, 4-096, 4-101, 4-110, 4-112, 4-114-116, 4-139, 4-144-145, 4-147, 4-153, 4-157, 4-159, 4-160 (RMNH 690, 701-703, 716, 717, 719, 721, 728, 729, 733, 734, 737, 741, 743, 744, 746, 753, 757, 760-762, 766, 769, 771).

Depth Range. — 46-500 m, with a single depth record of 2900-3000 m.

Kraussina Davidson, 1859

Kraussina mercator Helmke, 1939

Kraussina mercator Helmke, 1939: 138, figs. 1-4.

Kraussina mercator Cooper, 1975: 915, pl. 1 figs. 1-13.

Remarks. — *Kraussina mercator* was first described by Helmke (1939) from Annobon Island and the Bay of Elephants, Gulf of Guinea and subse-

quently by Cooper (1975) from north-northwest of São Tomé, Gulf of Guinea, all from very shallow water. Specimens of this species from Annobon collected by J. Laborel in 1971 were available to the author for comparison with the CANCAP VI material and there is little doubt of the identity of the Cape Verde brachiopods with those from the type locality. The species is characterized by its small size (for the genus) and smooth shell, with variable pink coloration. *Kraussina* is typically a southern hemisphere Indian Ocean genus and *K. mercatori* is the only representative known from the Atlantic Ocean.

Localities. — CANCAP VI: 6-004, 6-006-8, 6-0015-16, 6-019-20, 6-040, 6-043, 6-062, 6-093, 6-095, 6-101, 6-109-111, 6-122, 6-124, 6-132, 6-146-48, 6-164, 6-174, 6-D03 (RMNH 775, 777, 778, 780, 785, 787, 789, 790, 792, 794, 798, 802, 803, 808, 810-812, 817, 821, 822, 824, 825, 827, 829, 830, 831).

Depth Range. — 20-930 m.

Family DALLINIDAE Beecher, 1893; subfamily DALLININAE Beecher, 1893

Dallina Beecher, 1893

Dallina septigera (Loven, 1846)

Dallina septigera Cooper, 1981: 23, pl. 2 figs. 41-43.

Dallina septigera Logan, 1983: 179.

Remarks. — Only a single example of this species was obtained by CANCAP II (Logan, 1983) but about 25 living specimens were obtained from a single locality from the Canary Islands, associated with an equal number of living *Hispanirynchia cornea*, to which they are superficially similar in outline. *D. septigera* is a common Atlantic species (Fischer & Oehlert, 1891; d'Hondt, 1976; Brunton & Curry, 1979; Cooper, 1981) but has not been recorded from the Mediterranean (Logan, 1979).

Locality. — CANCAP IV: 4-055 (RMNH 708).

Depth. — 1209-1338 m.

Order SPIRIFERIDA Waagen, 1883; Suborder THECIDEIDINA Elliot, 1965; superfamily THECIDEACEA Gray, 1840; family THECIDELLINIDAE Elliot, 1958

Thecidellina Thomson, 1915

Thecidellina barretti (Davidson)

Thecidium barretti Davidson, 1887: 162, pl. 23 figs. 9-11.

Thecidellina barretti Cooper, 1977: 132, pl. 3, figs. 19-21, 22-26.

Remarks. — Prior records of this species, both fossil and Recent, have always been from the Caribbean region, although other species of *Thecidellina* are known from the Pacific and Indian oceans. The discovery of this species at seven CANCAP VI localities from the Cape Verde Islands is the first record of *T. barretti* from the eastern Atlantic, extending the geographic range of this species eastwards. As noted earlier, one would expect its presence around islands between the Cape Verdes and the Caribbean area, particularly Bermuda, but this has not been so.

Localities. — CANCAP VI: 6-004, 6-006, 6-008, 6-015, 6-019, 6-085, 6-124 (RMNH 774, 776, 779, 784, 788, 799, 820).

Depth Range. — 58-800 m.

Family THECIDEIDAE Gray, 1840; subfamily LACAZELLINAE
Backhaus 1959

Pajaudina Logan, 1988
Pajaudina atlantica Logan, 1988

Lacazella mediterranea Logan, 1983: 179.

Pajaudina atlantica Logan, 1988: 546, figs. 1-4.

Remarks. — Specimens from CANCAP II and III expeditions, identified as *Lacazella mediterranea* by the author (Logan, 1983), are here assigned to *Pajaudina atlantica*, following the discovery of unworn and more mature specimens from the CANCAP IV expedition to the Canary Islands. *P. atlantica*, the type species of the genus *Pajaudina*, was described by the author (1988) for thecideids in which the central part of the ascending apparatus of the brachial skeleton, known as the median ramus (Pajaud, 1970) or median ridge (Cooper, 1977), is upraised, lobed and complexly interdigitated with branches of the much produced minor interbrachial lobes (descending processes at mid-valve). This unique internal feature, plus the large size and elongate outline of the adult shell, distinguishes this form from species of *Lacazella*, such as *L. mediterranea* and its congeners *L. caribbeanensis* and *L. mauritiana*, and warrants its inclusion in a separate genus.

Localities. — CANCAP IV: 4-015, 4-049, 4-103-4, 4-110, 4-112, 4-116, 4-124, 4-129, 4-137-140, 4-142-145, 4-153, 4-157-159 (RMNH 692, 704, 735, 736, 738, 740, 745, 748-752, 754-756, 758, 759, 763, 765, 767, 770; RMNH 667-677 are holo- and paratypes).

Depth Range. — 5-1000 m.

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CANCAP BRACHIOPOD STATIONS

(see Van der Land, 1987 for details of each station)

A. CANCAP IV (Canary Islands – Salvage Islands) 1980

- Sta. 4-001: *Argyrotheca cuneata* (RMNH 679)
Sta. 4-002: *Argyrotheca cuneata* (RMNH 680)
Sta. 4-005: *Argyrotheca cordata* (RMNH 681)
Argyrotheca cuneata (RMNH 682)
Sta. 4-007: *Argyrotheca cuneata* (RMNH 683)
Sta. 4-010: *Argyrotheca cordata* (RMNH 684)
Argyrotheca cuneata (RMNH 685)
Sta. 4-013: *Argyrotheca cuneata* (RMNH 686)
Argyrotheca cordata (RMNH 687)
Sta. 4-014: *Argyrotheca cuneata* (RMNH 688)
Argyrotheca cordata (RMNH 689)
Megerlia truncata (RMNH 690)
Sta. 4-015: *Argyrotheca cuneata* (RMNH 691)
Pajaudina atlantica (RMNH 692)
Argyrotheca cordata (RMNH 693)
Sta. 4-016: *Argyrotheca* sp. indet (RMNH 694)
Argyrotheca cuneata (RMNH 695)
Argyrotheca cordata (RMNH 696)
Sta. 4-D17: *Megathiris detruncata* (RMNH 697)
Sta. 4-028: *Argyrotheca cuneata* (RMNH 698)
Sta. 4-036: *Argyrotheca cuneata* (RMNH 699)
Argyrotheca sp. indet. (RMNH 700)
Sta. 4-044: *Megerlia truncata* (RMNH 701)
Sta. 4-048: *Megerlia truncata* (RMNH 702)
Sta. 4-049: *Megerlia truncata* (RMNH 703)
Pajaudina atlantica (RMNH 704)
Sta. 4-053: *Hispanirhynchia cornea* (RMNH 705)
Sta. 4-055: *Phaneropora incerta* (RMNH 706)
Dallina septigera (RMNH 707)
Hispanirhynchia cornea (RMNH 708)
Sta. 4-056: *Hispanirhynchia cornea* (RMNH 709)
Sta. 4-057: *Hispanirhynchia cornea* (RMNH 710)
Sta. 4-058: *Hispanirhynchia cornea* (RMNH 711)
Sta. 4-059: *Phaneropora incerta* (RMNH 712)
Sta. 4-060: ? *Terebratulina* sp. indet (RMNH 713)
Sta. 4-064: *Eucalathis tuberata* (RMNH 714)
Sta. 4-066: *Stenosarina? sphenoidea* (RMNH 715)
Sta. 4-068: *Megerlia truncata* (RMNH 716)
Sta. 4-069: *Megerlia truncata* (RMNH 717)
Megathiris detruncata (RMNH 718)
Sta. 4-074: *Megerlia truncata* (RMNH 719)
Sta. 4-077: *Eucalathis tuberata* (RMNH 720)
Sta. 4-079: *Megerlia truncata* (RMNH 721)
Sta. 4-086: *Argyrotheca grandicostata* (RMNH 722)
Phaneropora incerta (RMNH 723)
Eucalathis tuberata (RMNH 724)
Sta. 4-088: *Argyrotheca cuneata* (RMNH 725)
Sta. 4-089: *Argyrotheca cordata* (RMNH 726)
Argyrotheca cuneata (RMNH 727)

- Sta. 4-091: *Megerlia truncata* (RMNH 728)
 Sta. 4-092: *Megerlia truncata* (RMNH 729)
 Argyrotheca cordata (RMNH 730)
 Sta. 4-093: *Megerlia truncata* (RMNH 731)
 Megathiris detruncata (RMNH 732)
 Sta. 4-096: *Megerlia truncata* (RMNH 733)
 Sta. 4-101: *Megerlia truncata* (RMNH 734)
 Sta. 4-103: *Pajaudina atlantica* (RMNH 735)
 Sta. 4-104: *Pajaudina atlantica* (RMNH 736)
 Sta. 4-110: *Megerlia truncata* (RMNH 737)
 Pajaudina atlantica (RMNH 738)
 Argyrotheca cordata (RMNH 739)
 Sta. 4-112: *Pajaudina atlantica* (RMNH 740)
 Megerlia truncata (RMNH 741)
 Megathiris detruncata (RMNH 742)
 Sta. 4-114: *Megerlia truncata* (RMNH 743)
 Sta. 4-115: *Megerlia truncata* (RMNH 744)
 Sta. 4-116: *Pajaudina atlantica* (RMNH 745)
 Megerlia truncata (RMNH 746)
 Megathiris detruncata (RMNH 747)
 Sta. 4-124: *Pajaudina atlantica* (RMNH 748)
 Sta. 4-129: *Pajaudina atlantica* (RMNH 749)
 Sta. 4-137: *Pajaudina atlantica* (RMNH 750)
 Sta. 4-138: *Pajaudina atlantica* (RMNH 751)
 Sta. 4-139: *Pajaudina atlantica* (RMNH 752)
 Megerlia truncata (RMNH 753)
 Sta. 4-140: *Pajaudina atlantica* (RMNH 754)
 Sta. 4-142: *Pajaudina atlantica* (RMNH 755)
 Sta. 4-143: *Pajaudina atlantica* (RMNH 756)
 Sta. 4-144: *Megerlia truncata* (RMNH 757)
 Pajaudina atlantica (RMNH 758)
 Sta. 4-145: *Pajaudina atlantica* (RMNH 759)
 Megerlia truncata (RMNH 760)
 Sta. 4-147: *Megerlia truncata* (RMNH 761)
 Sta. 4-153: *Megerlia truncata* (RMNH 762)
 Pajaudina atlantica (RMNH 763)
 Sta. 4-154: Kraussinid, genus and species indet (RMNH 764)
 Sta. 4-157: *Pajaudina atlantica* (RMNH 765)
 Megerlia truncata (RMNH 766)
 Sta. 4-158: *Pajaudina atlantica* (RMNH 767)
 Sta. 4-159: *Argyrotheca cordata* (RMNH 768)
 Megerlia truncata (RMNH 769)
 Pajaudina atlantica (RMNH 770)
 Sta. 4-160: *Megerlia truncata* (RMNH 771)
 Sta. 4-175: *Megathiris detruncata* (RMNH 772)
 Sta. 4-176: *Megathiris detruncata* (RMNH 773)

B. CANCAP VI (Cape Verde Islands) 1982

- Sta. 6-004: *Thecidellina barretti* (RMNH 774)
 Kraussina mercatori (RMNH 775)
 Sta. 6-006: *Thecidellina barretti* (RMNH 776)
 Kraussina mercatori (RMNH 777)

- Sta. 6-007: *Kraussina mercatori* (RMNH 778)
Sta. 6-008: *Thecidellina barretti* (RMNH 779)
Kraussina mercatori (RMNH 780)
Sta. 6-010: *Terebratulina retusa* (RMNH 781)
Sta. 6-012: Terebratulacean genus and species indet (RMNH 782)
Terebratulina retusa emarginata (RMNH 783)
Sta. 6-015: *Thecidellina barretti* (RMNH 784)
Kraussina mercatori (RMNH 785)
Sta. 6-016: *Megathiris detruncata* (RMNH 786)
Kraussina mercatori (RMNH 787)
Sta. 6-019: *Thecidellina barretti* (RMNH 788)
Kraussina mercatori (RMNH 789)
Sta. 6-020: *Kraussina mercatori* (RMNH 790)
Sta. 6-026: *Argyrotheca* sp. indet (RMNH 791)
Sta. 6-040: *Kraussina mercatori* (RMNH 792)
Neocrania anomala (RMNH 793)
Sta. 6-043: *Kraussina mercatori* (RMNH 794)
Megathiris detruncata (RMNH 795)
Sta. 6-047: Terebratulacean genus and species indet (RMNH 796)
Sta. 6-055: *Stenosarina? sphenoidea* (RMNH 797)
Sta. 6-062: *Kraussina mercatori* (RMNH 798)
Sta. 6-085: *Thecidellina barretti* (RMNH 799)
Sta. 6-093: *Stenosarina? sphenoidea* (RMNH 800)
Terebratulina retusa emarginata (RMNH 801)
Kraussina mercatori (RMNH 802)
Sta. 6-095: *Kraussina mercatori* (RMNH 803)
Argyrotheca sp. indet (RMNH 804)
Stenosarina? sphenoidea (RMNH 805)
Terebratulina retusa emarginata (RMNH 806)
Sta. 6-101: *Argyrotheca cuneata* (RMNH 807)
Kraussina mercatori (RMNH 808)
Sta. 6-109: *Argyrotheca cuneata* (RMNH 809)
Kraussina mercatori (RMNH 810)
Sta. 6-110: *Kraussina mercatori* (RMNH 811)
Sta. 6-111: *Kraussina mercatori* (RMNH 812)
Sta. 6-116: *Terebratulina retusa emarginata* (RMNH 813)
Phaneropora incerta (RMNH 814)
Stenosarina? sphenoidea (RMNH 815)
Terebratulina retusa emarginata (RMNH 816)
Sta. 6-122: *Kraussina mercatori* (RMNH 817)
Terebratulina retusa emarginata (RMNH 818)
Argyrotheca sp. indet (RMNH 819)
Sta. 6-124: *Thecidellina barretti* (RMNH 820)
Kraussina mercatori (RMNH 821)
Sta. 6-132: *Kraussina mercatori* (RMNH 822)
Sta. 6-146: *Argyrotheca* sp. indet (RMNH 823)
Kraussina mercatori (RMNH 824)
Sta. 6-147: *Kraussina mercatori* (RMNH 825)
Megathiris detruncata (RMNH 826)
Sta. 6-148: *Kraussina mercatori* (RMNH 827)
Sta. 6-164: *Argyrotheca* sp. indet (RMNH 828)
Kraussina mercatori (RMNH 829)
Sta. 6-174: *Kraussina mercatori* (RMNH 830)
Sta. 6-D03: *Kraussina mercatori* (RMNH 831)