Acesta arnaudi (LIMIDAE): a new species from the southwestern Indian Ocean

a presentation by F. Nolf

About 1981 the French biologist Patrick Arnaud made a description of a new species from the Crozet Islands in a manuscript under the name ***Acesta subantarctica***, but his paper has never been published for unknown reasons.

The French marine biologist Patrick Arnaud

Patrick Arnaud (1939-2016)

After obtaining his undergraduate studies at the Faculty of Sciences of the Sorbonne, Arnaud started his doctoral studies in biological oceanography in 1960. His fieldwork as marine biologist started in the 1961-1963 wintering at Adélie Island in Antarctica.

In 1964 he obtained his Doctor of Science degree. He later took part at other oceanographic missions by the **N.O. *'Marion Dufresne'***, a French ship that was built to supply the bases of the **sub-Antarctic islands**, but also to explore the continental shelves of the Kerguelen, Crozet and other islands from 1973 to 1995.

As a specialist of benthic fauna, his research focused on the Mollusca in the sub-Antarctic and Antarctic waters and he was author of nearly 200 publications.

His sudden death at the age of 77 prevented him from achieving many projects. One of these papers was the description of a new species of *Acesta* from the Crozet islands.

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ORIGINAL PAPER

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Species diversity and assemblages of macrobenthic Mollusca from the South Shetland Islands and Bransfield Strait (Antarctica)

Accepted: 18 July 2000

Abstract During the research program BENTART 95, carried out from 16 January to 4 February 1995 on board RV *Hesperides*, a semi-quantitative Agassiz trawl and quantitative Van-Veen grabs were used at 31 subtidal stations between 40 and 850 m depth around Livingston Island, at Deception Island and in the Bransfield Strait. These data were used to search for and analyse the malacological assemblages. Among the molluscs sampled were 1,786 individuals belonging to 70 species of Solenogastres, Gastropoda Prosobranchia and Opisthobranchia, Scaphopoda and Bivalvia. The values of Shannon-Wiener diversity index ranged between 0.00 (one specimen) and 3.95, while Pielou's evenness index varied between 0.0 and 1.00. The bivalve *Thyasira* cf. *dearborni* was the most abundant species (227 specimens). Species richness varied from 1 to 19 species. Diversity showed great variations at different stations. The clustering analysis applying the Bray-Curtis coefficient allowed species classification according to constancy and fidelity, and distinguished four groups of stations: one that gathers clearly the stations of the inner bay of Deception Island, excepting station 1, and the other three fitting the remaining stations, located north and south of Livingston Island and in the Bransfield Strait, and correlated with environmental factors (granulometric composition, organic matter and carbonates).

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Introduction

Benthic molluscs have a particularly wide ecological and ethological spectrum. So the evidencing and analysis of their assemblages is likely to contribute to a better understanding of the structure and interactions inside the more complex assemblages in which they live and interact with other bottom organisms.

Nevertheless, apart from many faunistic studies about Antarctic benthic molluscs, very few studies have dealt with molluscan assemblages and ecology in the Southern Ocean. Until now, the only molluscan fauna (shelled gastropods and bivalves) analysed in this way is that of the Weddell Sea, 200–2,000 m (Arnaud and Hain 1992). A similar study, but limited to prosobranch gastropods, was made at Kerguelen and Crozet Islands, 0-deeper than 2,000 m (Cantera and Arnaud 1985).

During the BENTART 95 cruise, from 16 January to 4 February 1995, an integrated study of the benthic ecosystem was carried out on board RV *Hesperides*, which has provided a good opportunity to extend the search and analysis of malacological assemblages to the South Shetland Island/Bransfield Strait area. All molluscan groups (Polyplacophora, Gastropoda Prosobranchia and Opisthobranchia, Scaphopoda and Bivalvia) were present in this region (Arnaud et al. 1998), the Bivalvia being the second most abundant taxon in macrobenthic soft-bottom communities, especially in the stations characterised by an ascidian dominance (Sáiz-Salinas et al. 1997). Based on the data obtained during the survey, we try to answer the following questions: how many molluscan assemblages are living there between 40 and 850 m? What are their species diversity and dominant species? Do they have species in common? What are their main ecological characteristics or requirements?

Materials and methods

During BENTART 95, molluscs were collected, together with other benthic invertebrates, at 31 stations at Deception Island (Port

Origin of the material

Specimens were obtained by the **N.O. '*Marion Dufresne*'**, an oceanographic research vessel chartered by the shipping company of the **French Southern and Antarctic Territories.**

This vessel provided most of the rotations and regular supply of scientists and all kinds of goods. It disposed of cables to take samples at a depth of 3,000 m as part of a study of the benthos fauna.

N.O. 'Marion Dufresne'

During two oceanographic expeditions (**April 1976** and **September 1980**) by the N.O. '*Marion Dufresne*' several live and dead specimens of a **new *Acesta*** were collected at depths between 730 and 1500 m between the Lena shoals and the Crozet Islands, and one specimen off the Prince Edward Islands.

Part of the Arnaud collection was transferred to the Malacological department of MNHN by **Helmut Zibrowius**, who remarked another specimen from Kerguelen and several fragments of possibly another species from Amsterdam Island and St Paul Island. The current study has shown that it eventually may concern samples of ***Acesta saginata*** **Marshall, 2001** a species hitherto only known from New Zealand.

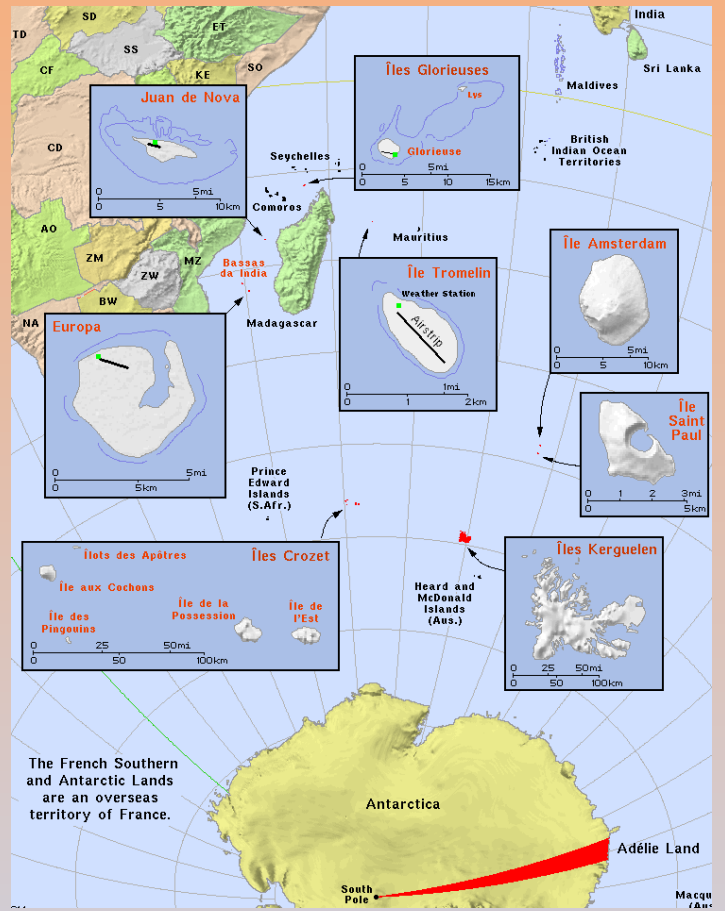
Later on, Helmut Zibrowius made contact with Philippe Bouchet, who transferred the manuscript and the study material of the MNHN to F. Nolf with the suggestion to describe the new *Acesta* species, originally named by P. Arnaud, as ***Acesta subantarctica*** in his manuscript.

H. Zibrowius proposed the name ***Acesta arnaudi*** in honour of the French biologist. The name ***Acesta subantarctica*** should vaguely refer to the latitude and not to the SW area of the Indian Ocean, where the species has been found. This is less suitable as there are no records from the other subantarctic oceans.

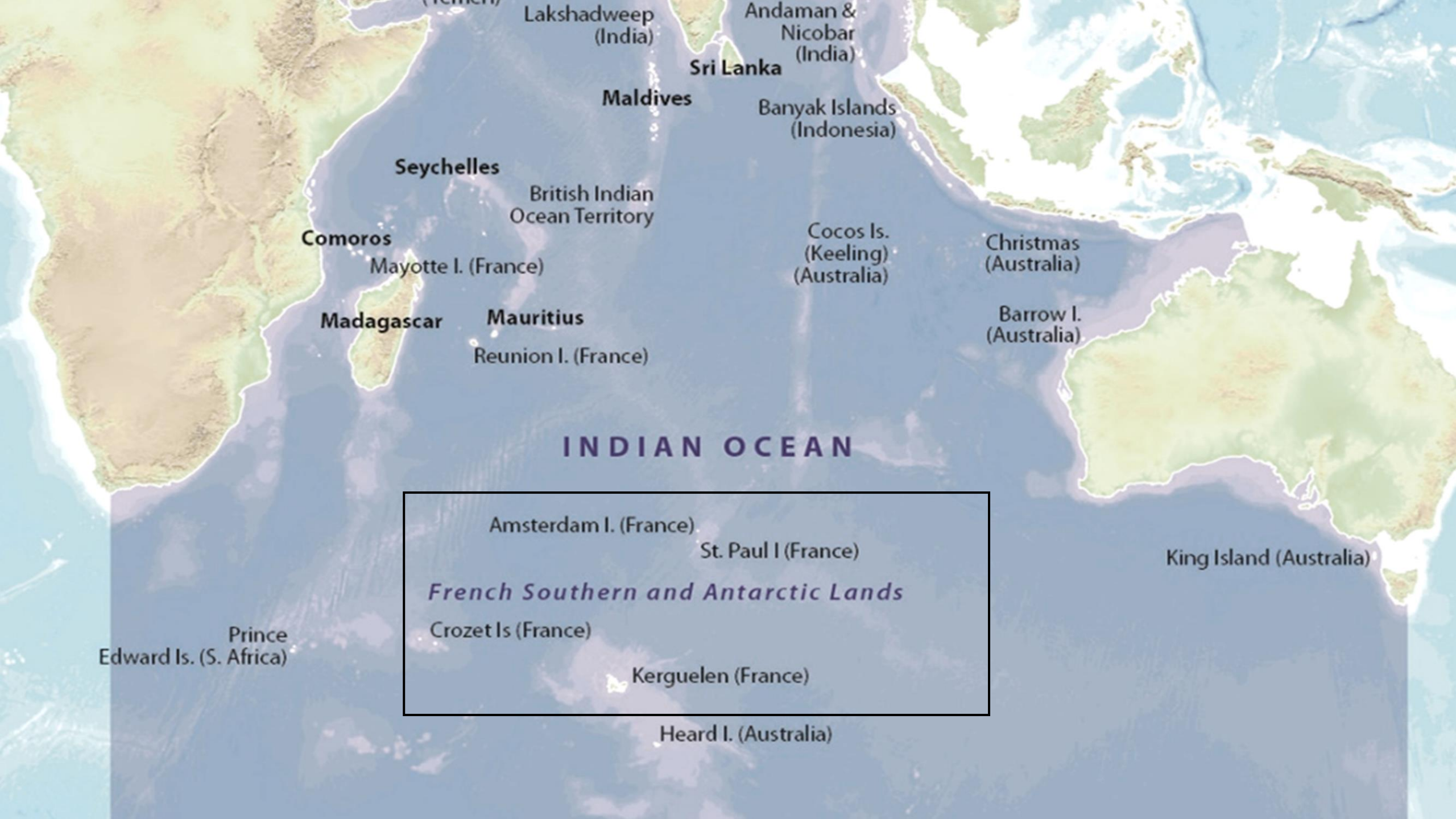
Study material

Except of a few live taken specimens, several samples were restricted to single valves and fragments. The **holotype** was live taken and conserved in alcohol with animal. However, it measured 101 mm instead of ‘111 mm’ (Arnaud, ms), a size used by the author to make (wrong!) calculations of H/L and to compare this value in other specimens. Further on, Arnaud mentioned ‘*90 mm*’ as the maximum size [(‘*la hauteur maxima (sic) observée (90 mm, chez l’holotype)*].

Crozet Islands and Marion Island: history



The Crozet Islands are part of a sub-Antarctic Archipelago in the southern Indian Ocean.
They form one of the five administrative districts of the **French Southern and Antarctic Lands**. They consists of several small uninhabited islands of volcanic origin, discovered by the French explorer **Captain Marc-Joseph Marion du Fresne** in 1772, aboard '*Le Mascarin*'.


Lakshadweep
(India)
Andaman &
Nicobar
(India)
Sri Lanka
Maldives
Banyak Islands
(Indonesia)
Seychelles
British Indian
Ocean Territory
Comoros
Mayotte I. (France)
Cocos Is.
(Keeling)
(Australia)
Christmas
(Australia)
Madagascar
Mauritius
Reunion I. (France)
Barrow I.
(Australia)
INDIAN OCEAN
Amsterdam I. (France)
St. Paul I (France)
King Island (Australia)
French Southern and Antarctic Lands
Crozet Is (France)
Prince
Edward Is. (S. Africa)
Kerguelen (France)
Heard I. (Australia)

ÎLES CROZET

TERRES AUSTRALES ET ANTARCTIQUES FRANÇAISES

0 5 10 15 20 25 30 35 40 45 km

Îlots des Apôtres

Rocher Nord

Petite Île

Grande Île

Chenal du Nord

Baie de l'Aiguille

Pointe de la Houle

Île aux Cochons

Chenal du Sud

Rocher de l'Arche

Île des Pingouins

Cap de la Mouffe

Pointe des Mutins

Baie Américaine

Île de la Possession

Base Alfred-Faure

Cap du Gouss

Canal des Orques

Cap Nord

Cap du Marquis de Castries

Île de l'Est

50°30'

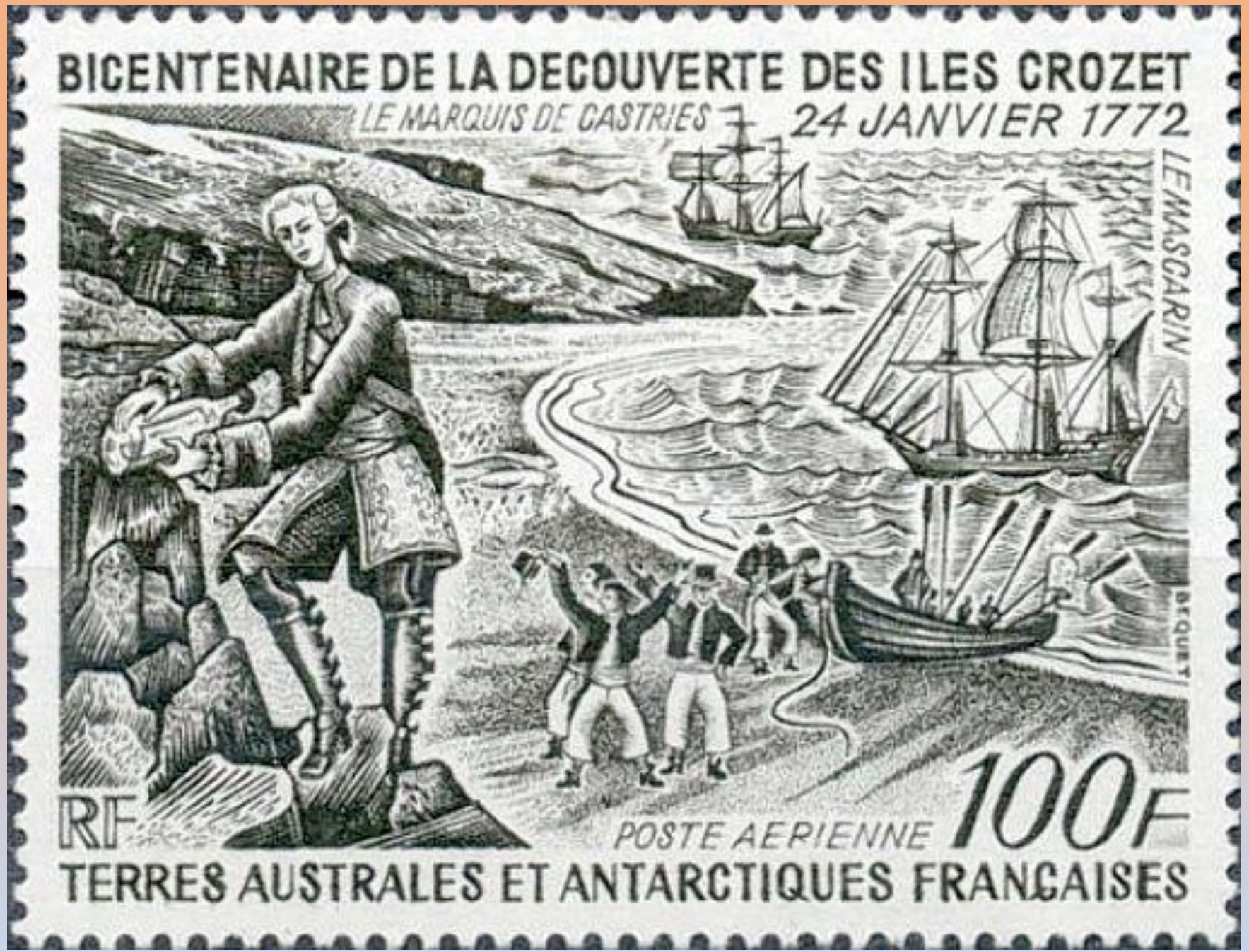
51°

51°30'

52°

The French captain and explorer Marie-Joseph Marion du Fresne

Second-in-command **Jules Crozet** landed on Île de la Possession, claiming the archipelago for France.
The expedition continued eastwards and landed in New Zealand, where captain Marion and much of his crew were killed and cannibalised by Maori. Crozet survived the disaster and went back to Mauritius.
Crozet stopped at the archipelago, naming the eastern group **Crozet** and the western group **Marion**.
Later on, **Marion Island** became the name of the larger of the two Prince Edward Islands, which had been discovered by Captain Marion on the same expedition.


BICENTENAIRE DE LA DECOUVERTE DES ILES CROZET
LE MARQUIS DE CASTRIES
24 JANVIER 1772
LE MASCARIN
RF
POSTE AERIENNE
100F
TERRES AUSTRALES ET ANTARCTIQUES FRANCAISES

In 1961, a first **research station** was set up and a permanent station Alfred Faure opened at Port Alfred on Île de la Possession. The scientific crew performs meteorological, biological and geological research.

The Crozet Islands

Crozet Islands and Marion Island: geology

The islands lie on the Antarctic Plate, between the Kerguelen and Madagascar.

No volcanic activity has been observed until today on any of the islands.

Crozet Islands and Marion Island: geology

The islands cover an area of 352 square km:

- the **Western** Group includes: Pig Island, Penguin Island and the Apostle Islets: Big and Little Island
- the **Eastern** Group includes Possession Island and East Island
- the islands are **uninhabited**, **except** for the **research station**, continuously staffed since 1963

- rising to 1,090 m (Mont Marion Dufresne) on the Possession Island, the islands are rugged, with steep cliffs, and have been the scene of many shipwrecks
- they have been designated as a **national conservation area** with unique and fragile ecosystems in one of the most difficult to reach places in the world
- the marine protected area has been extended to about 673,000 square kilometres.

Crozet Islands and Marion Island: climate

- the Crozet Islands have a maritime-influenced tundra climate
- monthly **temperatures** vary between 3°C and 8°C in winter and summer, respectively. They may rise to 18°C in summer and rarely go below minus 5°C in winter
- it **rains** on average 300 days a year, and **winds** which exceed 100km/h occur on 100 days a year.

Crozet Islands and Marion Island: fauna and flora

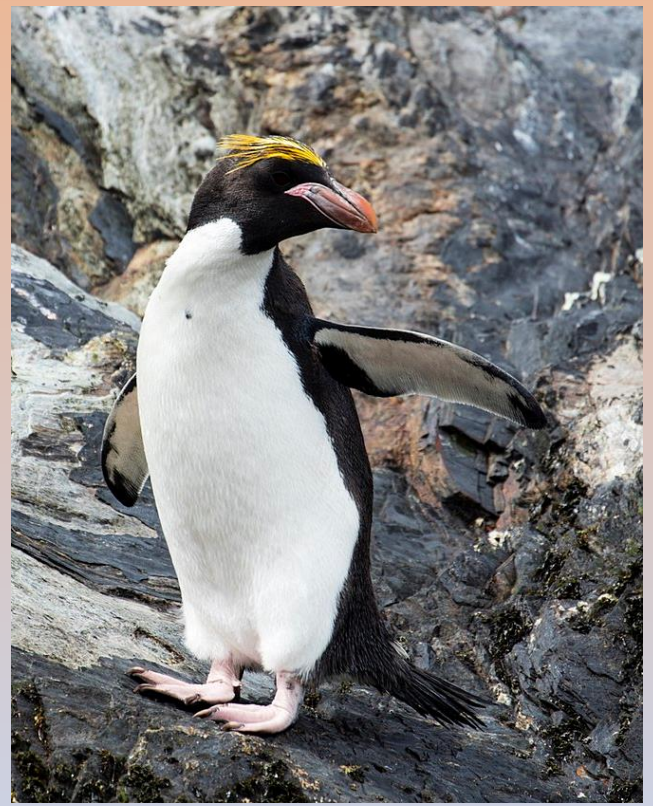
Plant life is mainly limited to grasses, mosses and lichens, while the main **animals** are insects and large populations of seals, penguins and seabirds like the black-faced sheatbills, the petrels and albatross.

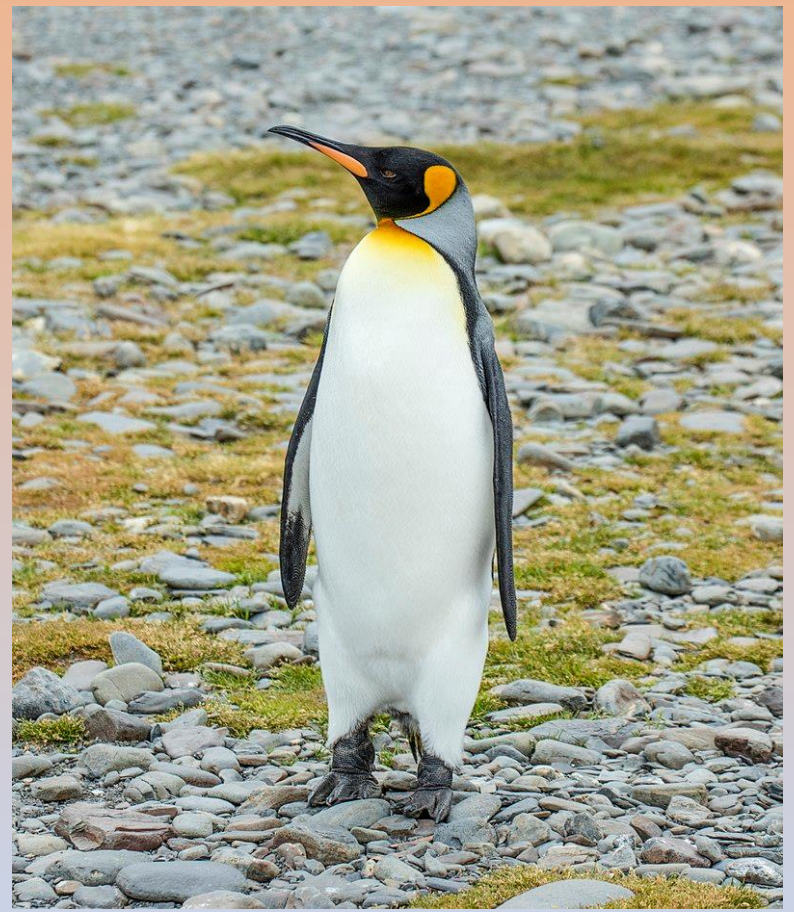
black-faced sheatbills

petrel

albatross

Most abundant are the **macaroni penguin** and above all the **king penguin**. Nearly half of the world‘s birds population of fifteen different species is breeding on the islands. The **ichtyofauna** is well studied, but the deep-sea fishes are still poorly known. The waters abroad are patrolled by the French government and are housed by **seals**, and **killer whales**.





seal

killer whale or orca

Crozet Islands and the king penguins

Acesta arnaudi Nolf, 2022

Holotype: Crozet Islands, between Pig Island and Possession Island. 46°18'-16' S/ 51°14-13' E. Collected by the N.O. '*Marion Dufresne*' at a depth of 1500 m. Expedition MD08 (BENTHOS) Stn 44 – CP199. 15 April 1976. Preserved in alcohol (lv). H. 101.28 mm L. 82.98 mm D. 48.67 mm. MNHN-IM-2018-2002.

Paratype 1: Shoals of Crozet Islands. Collected by the N.O. '*Marion Dufresne*' at a depth of 860 m. Expedition MD24 (BIOMASS). Stn DC48. 52°18' S/ 41°44' E. 1 September 1980. dd. MNHN-IM-2018-2001. H. 90.07 mm L. 69.40 mm D. 40.55 mm.

Paratypes 2-4: Crozet Islands, between Pig Island and Possession Island. 46°18'-16' S/ 51°14-13' E. Collected by the N.O. '*Marion Dufresne*' at a depth of 1500 m. Expedition MD08 (BENTHOS) Stn 44 – CP199. 15 April 1976.

Additional material: several empty shells**,** single valves and fragments.

Abbreviations

CFN: private collection Frank Nolf (Oostende, Belgium)
CSH: private collection Steve Hubrecht (Koksijde, Belgium)
D.: Diameter
H.: Height
L.: Length
LV: Left valve
MNHN: Muséum national d'Histoire naturelle, Paris
RV: Right valve

***Acesta arnaudi* nov. sp.**

Crozet Islands, between Possession Island and Pig Island. 46°18-16’ S/ 51°14-13’ E. Collected by the N.O. ‘*Marion Dufresne*’. Expedition MD08 (BENTHOS). Stn 44 CP199. Depth: 1500 m. 15 April 1976.
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Crozet Islands, between Pig Island and Possession Island. 46°18'-16' S/ 51°14-13' E. Collected by the N.O. '*Marion Dufresne*' at a depth of 1500 m. Expedition MD08 (BENTHOS) Stn 44 – CP199. 15 April 1976. Paratype 2 MNHN-IM-2012-25446. H. 85.34 mm L. 70.40 mm D. 43.71 mm.

***Acesta arnaudi* nov. sp.**

Crozet Islands, between Pig Island and Possession Island. 46°18'-16' S/ 51°14-13' E. Collected by the N.O. '*Marion Dufresne*' at a depth of 1500 m. Expedition MD08 (BENTHOS) Stn 44 – CP199. 15 April 1976. Paratype 3 MNHN-IM-2012-25445. H. 83.61 mm L. 66.64 mm. D. 39.20 mm.

***Acesta arnaudi* nov. sp.**

Crozet Islands, between Pig Island and Possession Island. 46°18’-16’ S/ 51°14-13’ E. Collected by the N.O. ‘*Marion Dufresne*’ at a depth of 1500 m. Expedition MD08 (BENTHOS) Stn 44 – CP199. 15 April 1976. Paratype 4 MNHN-IM-2012-25444. H. 74.68 mm L. 58.99 mm D. 38.30 mm;

Description

- size: up to 100 mm
- thin and fragile, **rather glossy**, translucent and strongly inequilateral
- oval in outline, slightly oblique and **rather swollen**
- **umbones** (prodissoconch-2) very anteriorly and beaks (prodissoconch-1) slightly protruding at a distance of about 6 mm from each other
- **chondrophore** triangular and strongly curved over a distance of 10 mm, a third of the total length of the hinge plate

- **anterior auricle** is extremely reduced and invisible by a lateral view
- **posterior auricle** larger and rounded, gradually fused with the posterior margin of the valves
- **lunule** well marked and contains on each valve two longitudinal zones weakly excavated and separated by a rounded ridge starting from the anterior auricle, comparable with the lunule of ***A. angolensis*** (Adam & Knudsen, 1955)

- the structure of these two areas is different:
    * the **central inner part** is covered by interlacing growth lines forming real cords near the hinge plate
    * in the **exterior area** of the lunule the cords are granulated in the lower part: this ornamentation is crossed by 4-5 ribs, more spaced and distinct than those on the remaining part of the valves
- **valves white**, with a shiny appearance, **periostracum** very thin and **yellowish grey** (‘Isabelline colour’)
- fine growth lines in the juvenile growth stage but very distinct tile-wise in the older stages of larger specimens

- **radial structure** inconspicuous, more prominent in the anterior and posterior parts
- **costulation** attenuates from the margins towards the center part of the valves where only fine striae are present, sometimes waved or bifurcating and so inducing new striae
- costulation shows **very small nodules** by intersection with the parallel growth lines
- **outer margins** of the valves are not or only faintly crenulated
- shell is white, **thin** (0.6-1mm) and **translucent** and the living animals can be observed through the valves

- **interior** of the valves is white, glossy and not influenced by the external costulation
- **animal** rather small compared to the size of the shell like in similar *Acesta* species
- **pallial line** is faintly marked at about 15 mm off the ventral margin in the holotype
- **anterior adductor scar** small and oval (18 x 13 mm in the holotype), nearby the pallial line in the posterior part of the shell
- **foot** is remarkably small and provided with a byssus, sparse but with thick fibres

Habitat

- in **fine sediment** (green mud or calcareous mud)
- fixed by their **byssus** on small rocky blocks or probably on ***Scleractinia*** or other calcareous organisms of sufficient size like large gorgonia (family ISIDAE)
- this type of association may result from trophic, ecological and mechanical factors: ***Scleractinia*** are often the only organisms to provide support for fixation in very deep water.
- there is a very interesting **similarity** in habitat between ***Acesta excavata*** and ***A. arnaudi***, each living in high and middle latitudes of one of the two hemispheres (Arnaud, ms).

Discussion:

P. Arnaud calculated the **ratio's H/L, D/H and D/L** in the holotypes and paratypes and **compared** with those obtained from **similar *Acesta* species** described and mentioned in literature. The average value of **D/H** measures **0.50**, a much higher value as calculated from values mentioned in literature in related *Acesta* species, varying from **0.21** (*A. philippinensis* Bartsch, 1913) and **0.27** (*A. celebensis* Bartsch, 1913) to an equivalent maximum of **0.50** (*A. bullisi* Vokes, 1963).

Solely based on this data we could decide *A. arnaudi* is really a new species, taking into account that the four similar species occur in total different waters.

	H	L	D	H/L	D/H	D/L
holotype	101.28	82.98	48.67	1.22	0.48	0.59
paratype 1	90.07	69.40	40.55	1.30	0.45	0.58
paratype 2	85.34	70.40	43.70	1.21	0.51	0.62
paratype 3	83.61	66.64	39.20	1.25	0.47	0.59
paratype 4	74.68	58.99	38.30	1.27	0.51	0.65
additional specimen	85.62	68.72	45.41	1.25	0.53	0.66
average value				1.25	0.49	0.62

Table 1: Measurements (mm) of holotype and paratype specimens of *A. arnaudi* nov. sp.

species	H/L	D/H	D/L	number of specimens	origin of data
A. agassizii	1.28	0.38	0.47	1	Dall, 1902
A. angolensis	1.28	0.37	0.47	32	Adam & Knudsen, 1955; Boss, 1965; Nolf & Verstraeten, 2005
A. arnaudi	1.25	0.49	0.62	6	See Table 1
A. borneensis	1.19	0.41	0.40	1	Bartsch, 1913
A. bullisi	1.20	0.50	0.60	1	Vokes, 1963
A. celebensis	1.34	0.27	0.36	4	Prashad, 1932
A. diomedeae	1.09	0.40	0.43	1	Dall, 1908

Table 2: Dimensional ratios of most *Acesta* species, of which data are available in literature and manuscript of P. Arnaud

A. excavata	**1.34**	**0.43**	**0.58**	**61**	**Verkrüzen, 1872; Dall, 1902; Bartsch, 1913; Grieg, 1914; Boss, 1965; Bourcier & Zibrowius, 1969; Nolf & Verstraeten, 2005**
A. goliath	1.35	0.35	0.48	4	Dall, 1902; Bartsch, 1913; Hirase, 1951; CSH
A. indica	1.23	0.45	0.56	1	E.A. Smith, 1899
A. maui	1.38	0.37	0.51	3	CSH
A. niasensis	1.36	0.34	0.46	1	Thiele, 1918
A. patagonica	1.39	0.43	0.59	23	Dall, 1902; Carcelles, 1947; Osorio, 1968; coll. Arnaud

A. philippinensis	1.59	0.21	0.33	1	Bartsch, 1913
A. rathbuni	1.36	0.30	0.40	3	Bartsch, 1913; Prashad, 1932
A. smithi	1.31	0.43	0.54	8	G.B. Sowerby III, 1888; CSH
A. sphoni	1.25	0.49	0.62	1	Hertlein, 1963
A. verdensis	1.19	0.45	0.53	1	Bartsch, 1913
A. virgo	1.20	0.30	0.40	1	Habe & Okutani, 1968

The D/H ratio is useful to make a difference with all the other *Acesta* species, except:

- ***A. bullisi* (Vokes, 1963) (W Atlantic)**
- ***A. indica* (E.A. Smith, 1899) (India)**
- ***A. sphoni* (Hertlein, 1963) (E Pacific)**
- and to a lesser extent ***Acesta excavata* (Fabricius, 1779)** (Arctic area, E Atlantic and Mediterranean Sea).

Acesta sphoni* (Hertlein, 1963)** has to be excluded because it belongs to the subgenus ***Plicacesta wherein the radial costulation consists of an alternating and variable number of strong and weaker radiating ribs which becomes more evident towards the middle of the valves.

***A. bullisi* (Vokes, 1963)** is the species closest to the new species, but *A. arnaudi* differs from it on the basis of the larger number of finer radial ribs (12-18 costulated ribs instead of 8-9 ribs) and also of the deeper hollowed lunule.

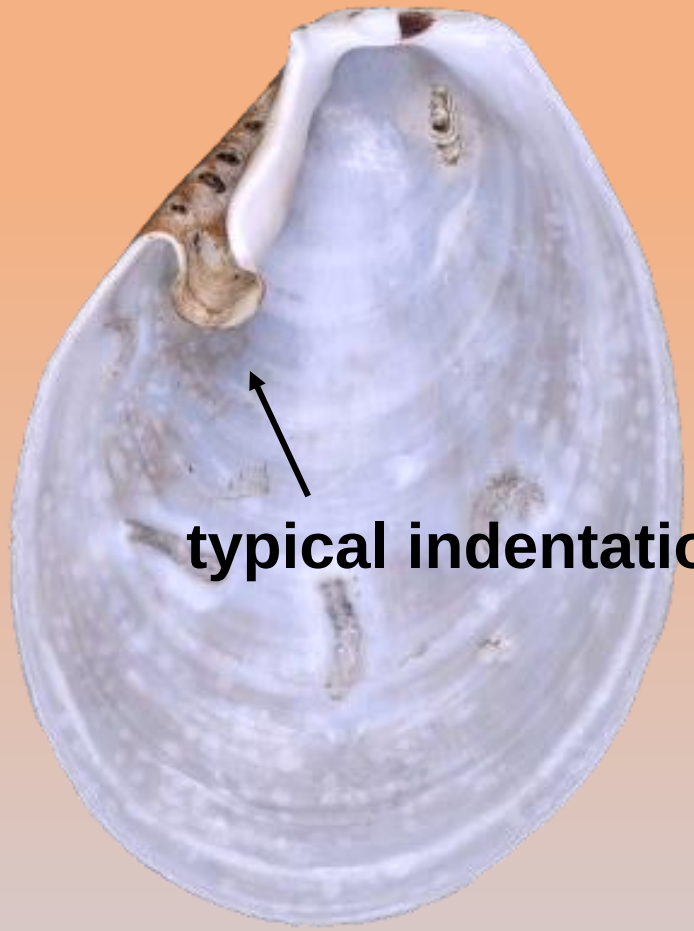
***Acesta excavata* (Fabricius, 1799**) is more elongate and oblique, the lunule is relatively flattened and the ornamentation of the shell surface consists of a lesser number of radiating ribs (10-12/cm).

***Acesta indica* (E.A. Smith, 1899)** is more oblique than the new species and it has more evident radiating costulations.

***Acesta patagonica* (Dall, 1902)** is restriced to East Pacific waters of South America.
It has a very narrow hinge plate, it is more glossy, and the lunule on the right valve of many specimens has often a typical indentation.

***Acesta patagonica* (Dall, 1902).**

Off Los Vilos, Chile. In mud. Trawled at a depth of 400 m.
October 1986. H. 86.52 mm L. 63.31 mm D. 36.24 mm. CFN.
Left: exterior of LV; right: interior of LV.



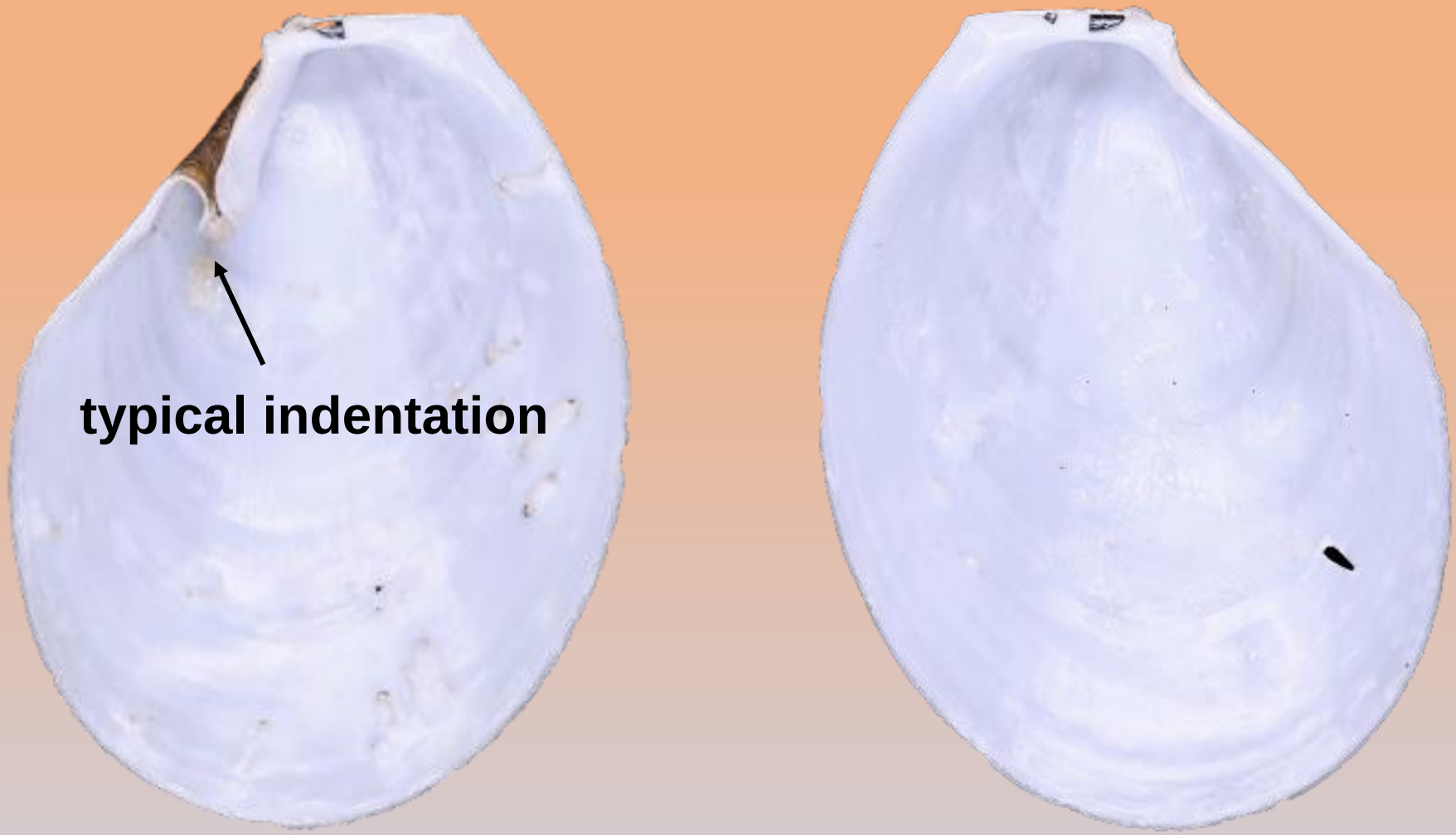
***Acesta patagonica* (Dall, 1902)**

Left: off Los Vilos, Chile. In mud. Trawled at a depth of 400 m. October 1986. CFN.
Right: off Zapallar, Chile. Trawled at a depth of 350 m. 27 September 1977. MNHN.

***Acesta patagonica* (Dall, 1902)**

Off Quintero, Chile. Dredged at a depth of 350-400 m.

H. 90.5 mm L. 68.0 mm. CSH; left: exterior of LV; right: exterior of RV.



***Acesta patagonica* (Dall, 1902)**

Off Quintero, Chile. Dredged at a depth of 350-400 m.

H. 90.5 mm L. 68.0 mm. CSH; left: interior of LV; right: interior of RV.

***Acesta patagonica* (Dall, 1902)**

Bahia Parry, Strait of Magellan, Chile. Trawled at a depth of 80 m.
H. 83.7 mm L. 66.3 mm. CSH; left: exterior of LV; right: interior of RV.

***Acesta maui* Marshall, 2001 (New Zealand)** has a very glossy surface with similar radiating ribs varying from nearly invisible in the median area of the shell to strong ribbing in one of the two syntypes, a very narrow hinge plate and anterior auricles slightly more protruding. The lunule is deeply excavated. Periostracum yellowish brown. Maybe *A. maui* and *A. patagonica* are only one species (Huber, 2005).

***Acesta maui* Marshall, 2001**

Chatham Rise, New Zealand. Dredged at a depth of 450 m.
December 2002. H. 165.8 mm L. 119.1 mm. CSH.
Left: exterior of RV; right: exterior of LV.

***Acesta maui* Marshall, 2001**

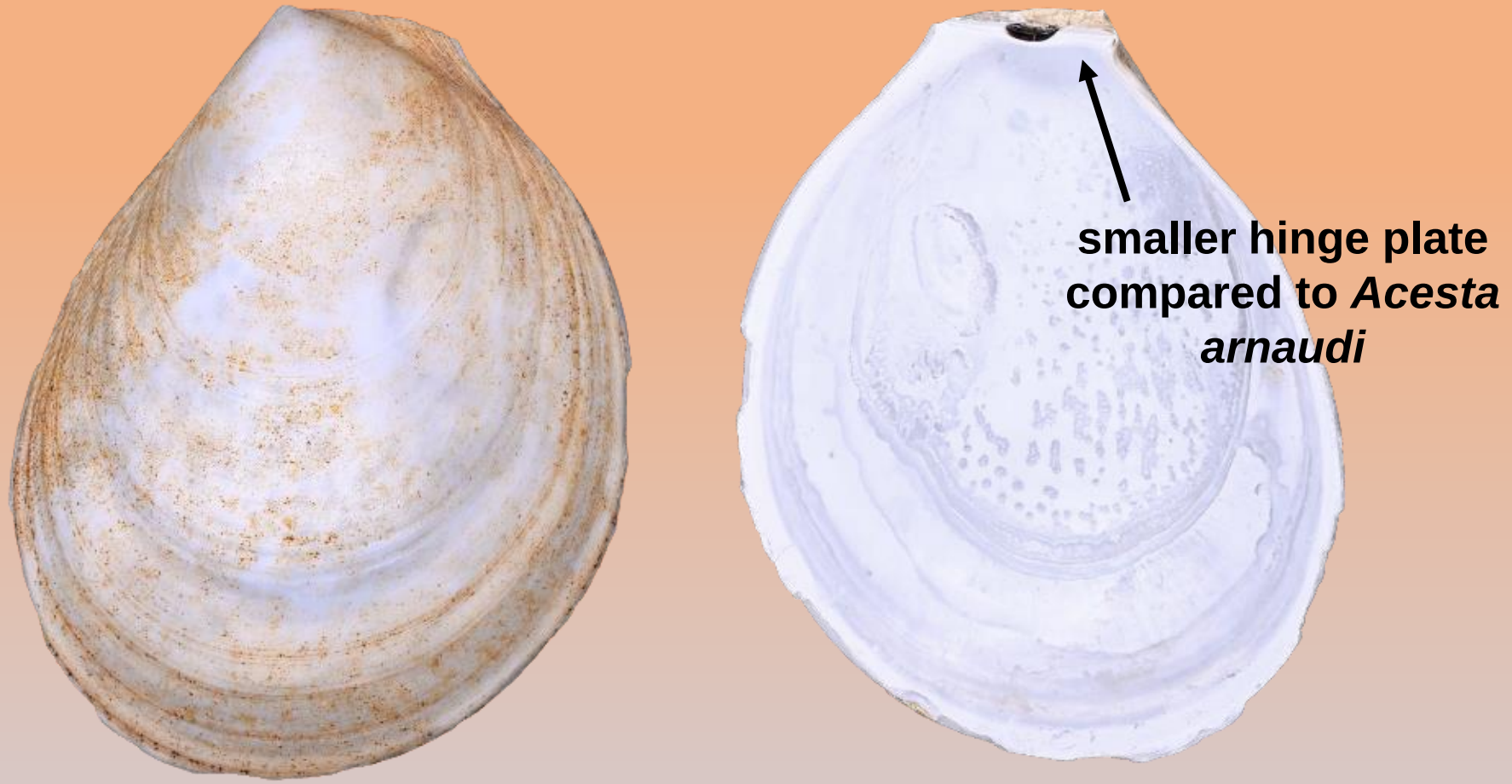
Chatham Rise, New Zealand. Dredged at a depth of 450 m.
December 2002. H. 165.8 mm L. 119.1 mm. CSH.
Left: interior of LV; right: interior of RV.

***Acesta maui* Marshall, 2001**

Chatham Rise, New Zealand. Dredged at a depth of 500 m.

H. 100.8 mm L. 69.6 mm. CSH.

Left: exterior of LV; middle: interior of LV; 50: exterior of RV.



***Acesta maui* Marshall, 2001**

Dredged of Beachport, South Australia at a depth of 120 m. In sand.
H. 121.7 mm L. 86.7 mm. CSH. Left: exterior of LV; right: interior of LV.

***Acesta saginata* Marshall, 2001** (mainly between New Caledonia and New Zealand) is more close to *A. celebensis* (Bartsch, 1913).
It is less bulbous and has a narrower hinge plate with broader and stronger radial riblets across the whole surface of the shell.

***Acesta saginata* Marshall, 2001**

Chatham Rise, New Zealand. Dredged at a depth of 1000 m.

H. 65.7 mm L. 50.8 mm. CSH.

left: exterior of LV; right: exterior of RV

***Acesta saginata* Marshall, 2001**

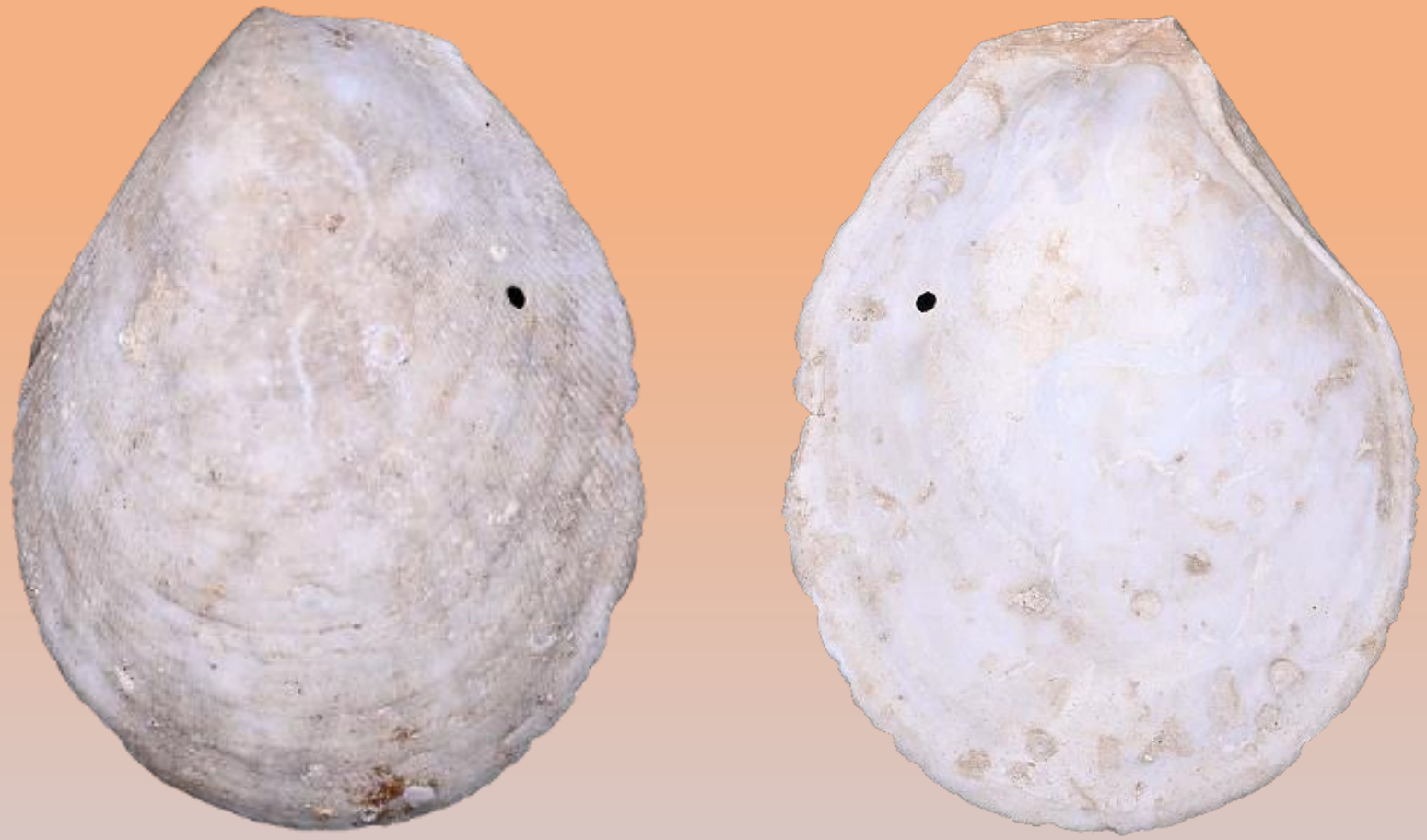
Chatham Rise, New Zealand. Dredged at a depth of 1000 m. H. 65.7 mm L. 50.8 mm. CSH.

left: exterior of LV; right: exterior of RV.

Remark: several broken shells and small fragments were collected from Amsterdam Island at 37°55’ S/ 77°39’ E. Expedition MD50 (JASUS). Stn DC64. N/O ‘Marion Dufresne’. Depth: 1000-1200 m.

Characteristics: valves covered by many radiating riblets of equal thickness over the whole surface and hinge plate extremely narrow with prodissoconch-2 and prodissoconch-1 located at the extreme end of the anterior part of the shells, resulting in a very elongated resilifer.

The samples from Saint-Paul and Amsterdam Islands eventually belong to ***Acesta saginata* Marshall, 2001**.
This would be the first record of this species in the SW Indian Ocean, hitherto only known from New Zealand waters and erroneously reported from New Caledonia.



***Acesta* cf. *saginata* Marshall, 2001**

Off Crozet Islands. Kara Dad shoals. 46°20’ S/ 42°28’ E. N.O. ‘*Marion Dufresne*’. Expedition MD24 (BIOMASS). Stn DC71. 08/09/1980. H. 88.51 mm L. 68.39 mm. MNHN.

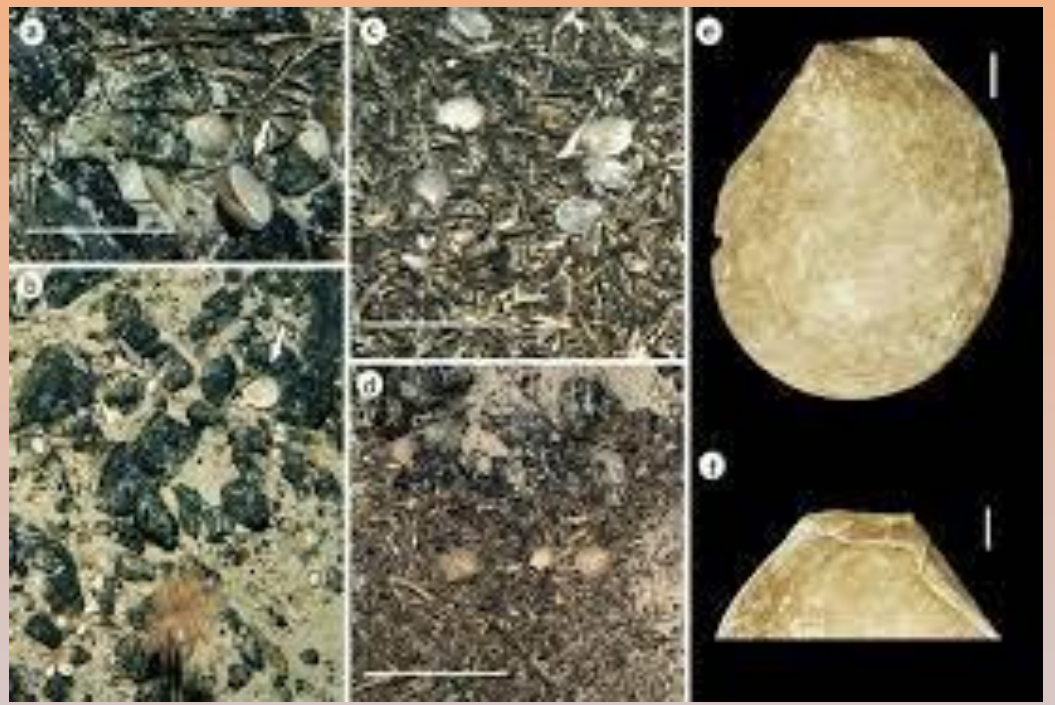
***Acesta* cf. *saginata* Marshall, 2001**
Amsterdam Island. 37°55’ S/ 77°39’ E.
Stn DC64. 15 July 1986. MNHN.

***Acesta* sp.**

Amsterdam Island. 37°55’ S/ 77°39’ E.

Stn DC64. 15 July 1986. MNHN.

Acesta arnaudi is also present in Antarctic waters, south of the Polar Front, at 67-68°S



Piazza, P. et al., 2016: First record of living *Acesta* (Mollusca: Bivalvia) from an Antarctic seamount, Mar Biodiv 46: 529-530

CONCLUSION

Acesta arnaudi is without doubt a **new species** from the **subantarctic waters of the SW Indian Ocean**. It differs from similar species by its rather glossy surface, the rather bulbous character, the microsculpture of the radiating rib and the structure of the lunule and the resilifer.

The present study has also demonstrated the possible presence of another ***Acesta*** in the same sub-antarctic waters.