

# NEPTUNEA

vol.14, n°2      October 2017



**Kon.B.V.C. Section Coast**  
is a branch of the  
**'Koninklijke Belgische Vereniging voor Conchylologie' (Kon.B.V.C.)**  
**(Royal Belgian Society for Conchology)**

[www.neptunea.org](http://www.neptunea.org)

**The Square House**  
**Pr. Stefanieplein 43**  
**8400 Oostende**

**Secretary:** Frank Nolf  
Pr. Stefanieplein 43 B8  
B-8400 Oostende  
Belgium  
e-mail <[frank.nolf@pandora.be](mailto:frank.nolf@pandora.be)>

**Webmaster:** Delphine Clement  
Paasbloemlaan 8  
B-8400 Oostende  
e-mail <[delphine.clement@hotmail.com](mailto:delphine.clement@hotmail.com)>

Contact the **secretary** for subscription, delivery and payment (€ 12,0/issue + postage).

**Content:**

<b>Shelling on Saint Martin, the 'Friendly Island'. Part II: Shoreline shells - Polyplacophora, by Frank Nolf</b> .....	1-4
<i>Trigonostoma damaso</i> Cossignani, 2015 a junior synonym of <i>Trigonostoma gofasi</i> Verhecken, 2007 (Mollusca: Gastropoda: Cancellariidae), by Frank Nolf .....	15-19
Contribution to the knowledge of the Eratoidae. XII. A new <i>Alaerato</i> C.N. Cate, 1977 from South Madagascar, by Dirk Fehse .....	20-23
Contribution to the knowledge of the Eratoidae. XIII. New species from the Philippines, by Dirk Fehse .....	24-35

**Covers:**

- **Front cover:**

*Chiton tuberculatus* Linnaeus, 1758 and a view on Marigot (Saint Martin) before the devastation caused by hurricane Irma (6 September 2017).

- **Back cover:**

A cry for help to rebuild St Martin after the passage of hurricane Irma on 6 September 2017.

**Layout:** Frank Nolf

Authors of articles published in '*Neptuned*' state that new names and nomenclatural acts within their works are intended for permanent, public scientific record. '*Neptuned*' is produced in an edition containing simultaneous obtainable copies (ICZN, Fourth Edition, article 8.1.).

**'NEPTUNEA'** is a publication of the '*Neptunea*' group,  
issued four times in a volume on irregular basis

**Responsible editor:** Frank Nolf, Pr. Stefanieplein 43 B8, B-8400 Oostende, Belgium

Legal deposit: BD 52.109

# Shelling on Saint Martin, the 'Friendly Island': Part II: Shoreline shells - Polyplacophora

Frank Nolf <sup>1</sup>

<sup>1</sup> Pr. Stefanieplein 43 B8  
B-8400 Oostende  
[frank.nolf@pandora.be](mailto:frank.nolf@pandora.be)

**Keywords:** St. Martin, Polyplacophora, shoreline shelling.

**Abstract:** The present paper deals with the chitons collected by shoreline shelling along the coasts of St. Martin (Caribbean Sea) during several short trips in the past ten years.

**Material examined:**

**FAMILY:** CHITONIDAE

**SUBFAMILY:** CHITONINAE

***Chiton marmoratus* Gmelin, 1791**

**Plate I, figs 1-5; Plate II, figs 6-8; Plate VIII, fig. 33**

**Description:** Animal rather large, elongate oval, dorsal elevation variable. Besides non-carinated specimens that have the valves regularly arched, are others with a flat shell, decidedly carinated, with the slopes almost straight, valves hardly or not beaked.

The coloured surface (tegumentum) of the valves (if in perfect condition) is smooth, polished, except for very fine, concentric growth lines, ground colour light brownish, roseate or greenish, variously marked with longitudinal, broad chestnut bands or flames on the central and antemucronal areas, generally continuous across the lateral areas, always more or less diverging. Jugal area of one or more valves often marked with fine, dark, sometimes interrupted stripes or triangular blotches. In some specimens the ground colour is of a dark chestnut, the bands are still darker, hardly visible, or the whole shell is of a blackish brown, others are maculated with reddish brown or blackish.

Head valve somewhat less than semicircular, front slope slightly convex, posterior margin almost straight, minutely notched in the middle. Intermediate valves broadly rectangular, front margin almost straight, side margins weakly rounded, hind margin slightly concave at both sides of the clearly protruding pointed apex, lateral areas only slightly but distinctly raised. Tail valve less than semicircular, front margin slightly convex, mucro blunt, hind slope weakly concave directly behind the mucro, straight or convex towards the margin.

Girdle moderately wide, with alternating bands of pale greenish white and dark greenish brown, dorsally clothed with large, smooth, shining, imbricating scales. At the margin there are four alternating rows of calcareous spicules, tick at the base, tapering to a blunt point. Near their base one much smaller, cylindrical, blunt spicule is found, which is surrounded by 6-10 still smaller, pointed spicules. Ventral side of girdle paved with radiating, somewhat overlapping rows of rectangular, slightly curved, somewhat striate scales.

**Habitat:** on or under large rocks in the tidal zone. Pinel Island and Coralita Bay. Common.

**Measurements:** from 40 to 62 mm.

***Chiton squamosus* Linnaeus, 1764**

**Plate III, figs 9-13; Plate VIII, fig. 35**

**Description:** Elongate oval, moderately elevated animal, subcarinated to carinated, side slopes convex, valves not beaked.

Colour is rather constant, always dull, ground colour creamy yellowish, pale buff, greyish green or greenish brown. On the central areas marked with broad, longitudinal dark greenish, bluish grey or blackish stripes, those on either side of the carina mostly somewhat wider and darker. The stripes break up on end valves. In many specimens the dorsal ridge is also marked by a dark stripe, end valves and lateral areas with vague zigzag markings and 2-4 dark spots on either side along the posterior edge of valves I-VII. Many specimens are strongly eroded, due to the fact that they generally live on rocks exposed to heavy surf.

Head valve less than semicircular, front slope convex, posterior margin smooth, very widely V-shaped. Tegumentum sculptured with numerous radiating rows of small, roundish granules, interspaces minutely pitted, except for the posterior edge which is smooth.

Intermediate valves broadly rectangular, front and hind margins about straight, parallel-sided, side margins little rounded, lateral areas slightly raised, sculptured like head valve, 6-8 radiating

rows, central areas smooth, except for very fine and regular, close-set concentric growth lines.

Tail valve less than semicircular, about as wide as head valve, front margin weakly convex, mucro sharply pointed, back slope concave, at least directly behind the mucro.

Interior of valves dark turquoise.

Girdle of moderate width, coloured like tegmentum, in alternating lighter (cream) and darker (grey-green) bands, dorsally covered with large, smooth, imbricating scales, which are elongate-oval. Close to the outer margin there are 3 or 4 alternating rows of slightly striated, calcareous spicules, irregularly tapering to a sharp point, some of them more or less curved. Ventral side of girdle paved with radiating rows of elongate rectangular scales.

**Habitat:** on rocks in the surf zone of the intertidal area. Uncommon at Maho Beach (Philipsburg), Cay Bay, Coralita Bay and Little Bay.

**Measurements:** from 45 to 58 mm.

***Chiton tuberculatus* Linnaeus, 1758**  
**Plate IV, figs 14-18; Plate V, figs 19-23; Plate VIII, fig. 34**

**Description:** Animal of large size (max. 95 mm), elongate oval, moderately elevated, carinated, side slopes little convex, nearly straight, valves hardly or not beaked. Elongate nodules on raised lateral triangles, adjacent to which are flattened longitudinal ribs that reach almost to summit of intermediate valves.

Colour of surface rather variable, mostly dark olive-brown, blackish, sometimes bluish grey, olive-green, yellowish green or dark green, often with a black stripe on the dorsal ridge, the tubercles on end valves and lateral areas often lighter in colour, central areas sometimes clouded with dark brown or black. Jugum marked chocolate brown. Interior light blue.

Head valve semicircular, front slope weakly convex, posterior margin very widely V-shaped, finely dentate, shallowly notched in the middle. Surface strongly sculptured with numerous smooth, generally elongate tubercles, arranged in two crossing systems of rows, radiating from the mucro and curved in opposite directions, forming a more or less neat checkered pattern, sometimes two or three tubercles are fused, forming short, interrupted riblets.

Intermediate valves broadly rectangular, front margin slightly, somewhat angularly convex, side margins straight, hind margin concave at both sides of the more or less strongly protruding, shape-pointed apex (if not eroded). Lateral areas distinctly raised, clearly marked, sculptured like head valve, hind margin dentate. Pleural areas

with a variable number of strong, longitudinal, flattened ribs, forwardly curving towards the dorsal ridge, abruptly ending at both sides of the smooth jugum.

Tail valve less than semicircular, as wide as head valve, front margin evenly convex, mucro strongly anterior, weakly pointed, posterior slope almost straight, only slightly concave directly behind the mucro, antemucronal area very short, sculptured like central areas, postmucronal area like head valve.

Girdle of moderate width, with alternating bands of lighter and darker colour, dorsally clothed with large, imbricating, thickened, nearly smooth, strongly curved, weakly carinated, distally relatively pointed scales, the base diamond shaped. Marginal fringe composed of three types of spicules, large, medium and small ones. Ventral side of girdle paved with radiating rows of thick, translucent, elongate rectangular, slightly curved scales.

**Habitat:** common on flat rocks in the intertidal area of Pinel Island and Cay Bay.

**Measurements:** from 37 to 52 mm. Specimens may become larger in deeper water.

***Chiton viridis* Spengler, 1797**  
**Plate VI, fig. 24; Plate VIII, fig. 36**

**Description:** Elongate oval, moderately elevated, subcarinated, side slopes weakly to rather strongly convex, valves not beaked. Surface of valves often partly eroded.

End valves with nodulose radiating ribs. Similar ribs on raised lateral triangles. Smoother longitudinal ribs on adjacent area fade into irregular ripples that curl towards a light smooth jugum.

Colour varying from light greenish grey to dark-olive green or blackish brown, mostly with whitish longitudinal bands or stripes on the central areas. Many specimens have the lateral areas of some valves whitish, pale greenish or light mauve. Sometimes the valves might be stained with brown tinge on the lateral areas. The colour and pattern of juvenile specimens usually differ from adult ones.

Head valve semicircular, posterior margin finely dentate, very widely V-shaped, hardly notched in the middle. It has 11 slits and the surface is sculptured with 15-20 radiating granulose, pustulose or scaly ribs. Intermediate valves are broadly rectangular, front margin very weakly convex, side margins little rounded, hind margin slightly concave at both sides of the pointed apex (if not eroded). Sculptured like head valve but with 4-5 ribs.

Tail valve less than semicircular, as wide as the head valve. The mucro is antemedian and the postmucronal area is sculptured like the head valve, the antemucronal area like the central areas. Tail valve with 13 slits.

Girdle of moderate width with greenish border and alternating bars of cream and darker greenish brown bands, dorsally covered with large, convex, smooth, imbricating scales. The scales are crowded, smaller and rounder than those of *Chiton squamosus*. There is a marginal fringe of short, longitudinally ribbed, shortly stalked, conical spicules.

**Habitat:** on rocks. Snorkeled at a depth of 3 m. Very uncommon.

**Measurements:** 36.5 mm but some specimens can reach a length of 50 mm.

**SUBFAMILY: ACANTHOPLEURINAE**

***Acanthopleura granulata* (Gmelin, 1791)**

**Plate VI, figs 25-28; Plate VII, figs 29-32; Plate VIII, fig. 37**

**Description:** Animal of large size (max. length 102 mm), elongate oval and moderately elevated, obtusely carinated, side slopes a little convex, valves decidedly beaked.

Colour of tegmentum deep blackish brown, greyish brown or greyish green, with oblique white bands between the pleural and jugal parts of the valves, enclosing a reversed V-shaped blackish brown jugal mark. This appearance of a dark brown stripe at the summit bordered by white narrow lines is characteristic for this species.

Tegmentum practically always strongly eroded, the sculpture can only be observed in juvenile specimens and near the front and side margins of the valves in older ones. The central and antemucronal areas have a triangular, slightly raised jugal part which is transversely wrinkled, the wrinkles finely granulose, while the pleurae show a coarse network sculpture.

Head valves, lateral areas of intermediate valves and postmucronal area of tail valve sculptured with rather coarse, roundish, smooth granules. Nodules form coarse discontinuous longitudinal ribs on lateral areas of intermediate valves, although this alignment is sometimes less

pronounced. Lateral triangles bordered anteriorly by a weak ridge.

Head valve semicircular, front slope weakly convex, posterior margin generally slightly concave, sometime straight and exceptionally even somewhat beaked.

Intermediate valves with front margin deeply concave in a wide central part, convex at the pleurae, side margins rounded, hind margin V-shaped, straight to concave at both sides of the blunt apex (if not worn off), lateral areas hardly raised, indistinctly defined.

Tail valve small, less wide than head valve, the length less than half the width, front margin about straight, mucro blunt, slightly swollen, posterior slope steep, a little convex.

Girdle rather wide, muscular, whitish with irregularly disposed blotches of blackish brown, dorsally clothed with numerous white or black, pointed to blunt, straight to curved, calcareous spines, sparsely interspersed with needle-like, pointed, crystalline spicules. The whole gives the girdle an irregularly barred appearance. Marginal fringe composed of stout, stalked, longitudinally ribbed, blunt-topped spicules. Ventral side of girdle with radiating series of small calcareous scales, the base truncated, the top rounded, ornamented with 6-8 strong ribs, the scales becoming longer towards the outer margin. The interior is pale blue or blue-green with black-brown area at the center. A cleaned specimen with girdle removed reveals comb-like margins of valves and 10 slits on end valves.

**Habitat:** Widespread on the whole island and very common on more or less exposed places of the open shore, for instance at Pinel Island, Galion Beach at Orient Bay and Shell Island at Coralita Bay. It lives preferably in the surf zone and even at a height of a few metres above the sea level in rock crevices and rock cavities or at the top of rocks. As a result, this kind of chiton is very difficult to remove from situ. The meaty foot is used as an alternative to conch in salads. Consequently, gutted specimens or disarticulated valves are common along the shoreline.

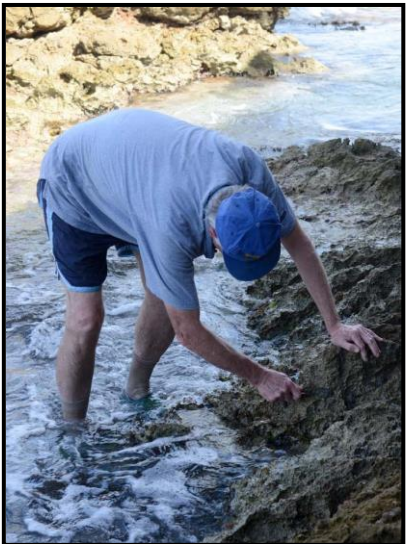
**Measurements:** average specimens up to 50 to 60 mm are usual, but individuals up to 66 mm have also been found.

**References:**

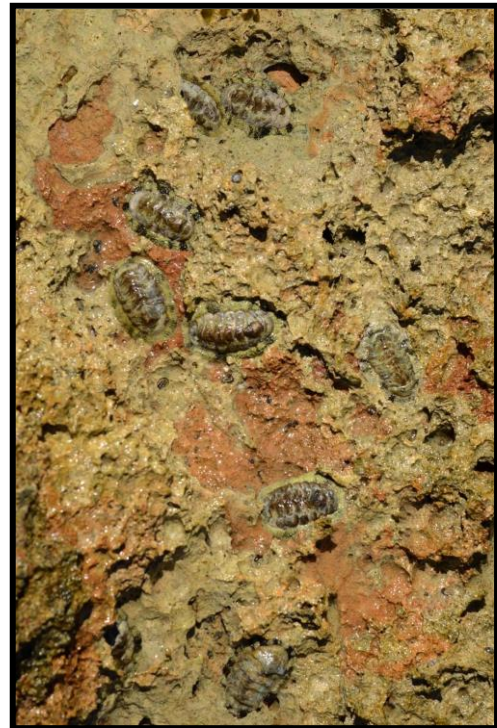
- Slieker, F.J.A., 2000. *Chitons of the world. An illustrated synopsis of recent Polyplacophora*. Mostra Mondiale Malacologica. Cupra Maritima. Ancona. 154 pp.
- Zhang, Deng Yan, 2011. *Antiguan Shallow-water Seashells*. MdM Publishing, Wellington, Florida. 210 pp.
- Kaas, P. & Van Belle, R.A., 1980. *Catalogue of the Living Chitons*. W. Backhuys. Rotterdam. 144 pp.
- Kaas, P., Van Belle, R.A. & Strack, H.L., 2006. *Monograph of Living Chitons. 6. Suborder Ischnochitonina (concluded): Schizochitonidae; Chitonidae. Additions to Volumes 1-5*. E.J. Brill. Leiden. 1-463, figs 1-167, maps 1-65.
- Redfern, C., 2013. *Bahamian Seashells: 1161 Species from Abaco, Bahamas*. Bahamianseashells.com, Inc. Boca Raton. 501 pp.



Shell Island, Coralita Bay, Saint Martin



The author looking for chitons at Maho Beach, Philipsburg, St. Martin

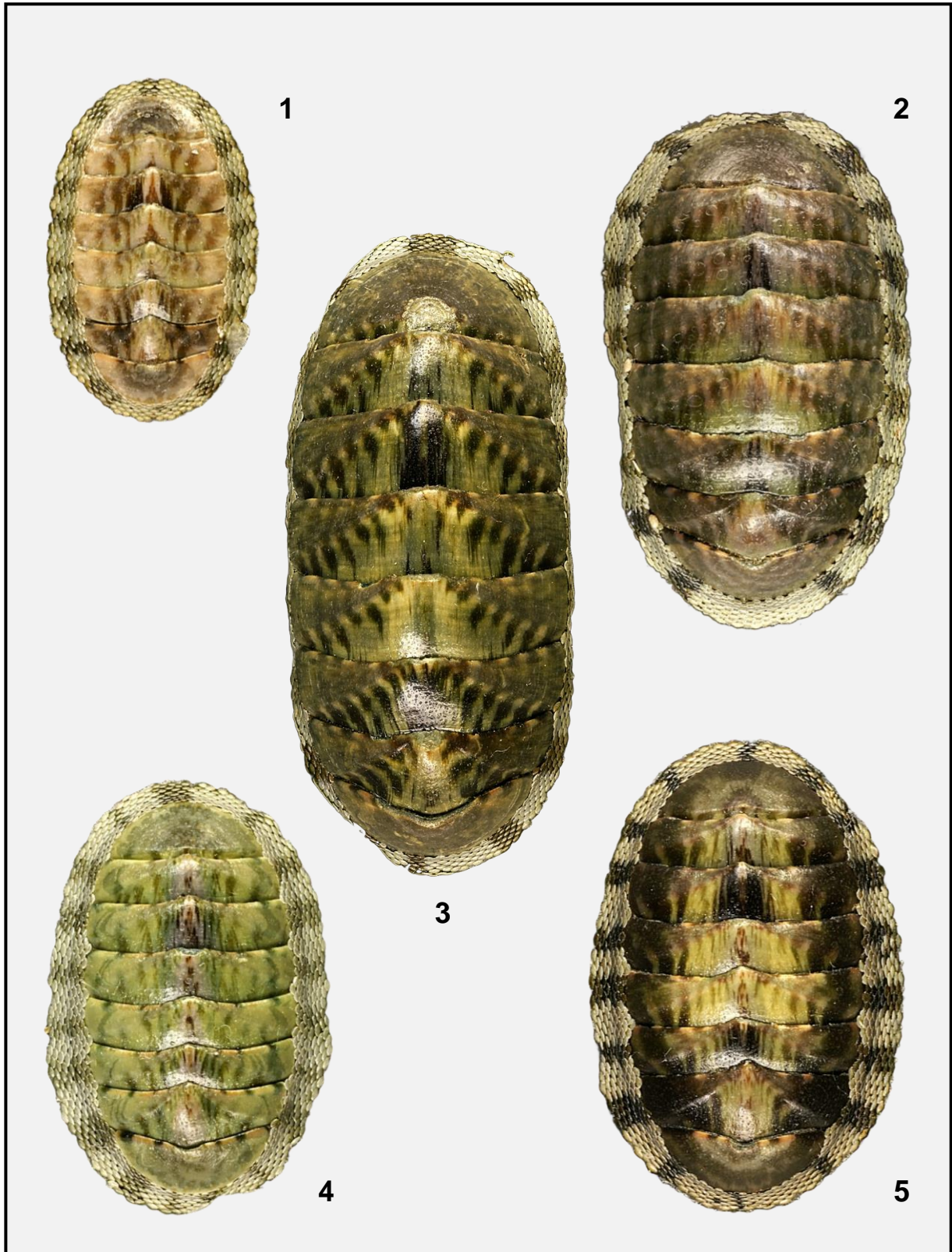


Main habitat of *Acanthopleura granulata* at St. Martin



**Preparation and conservation of the chitons**

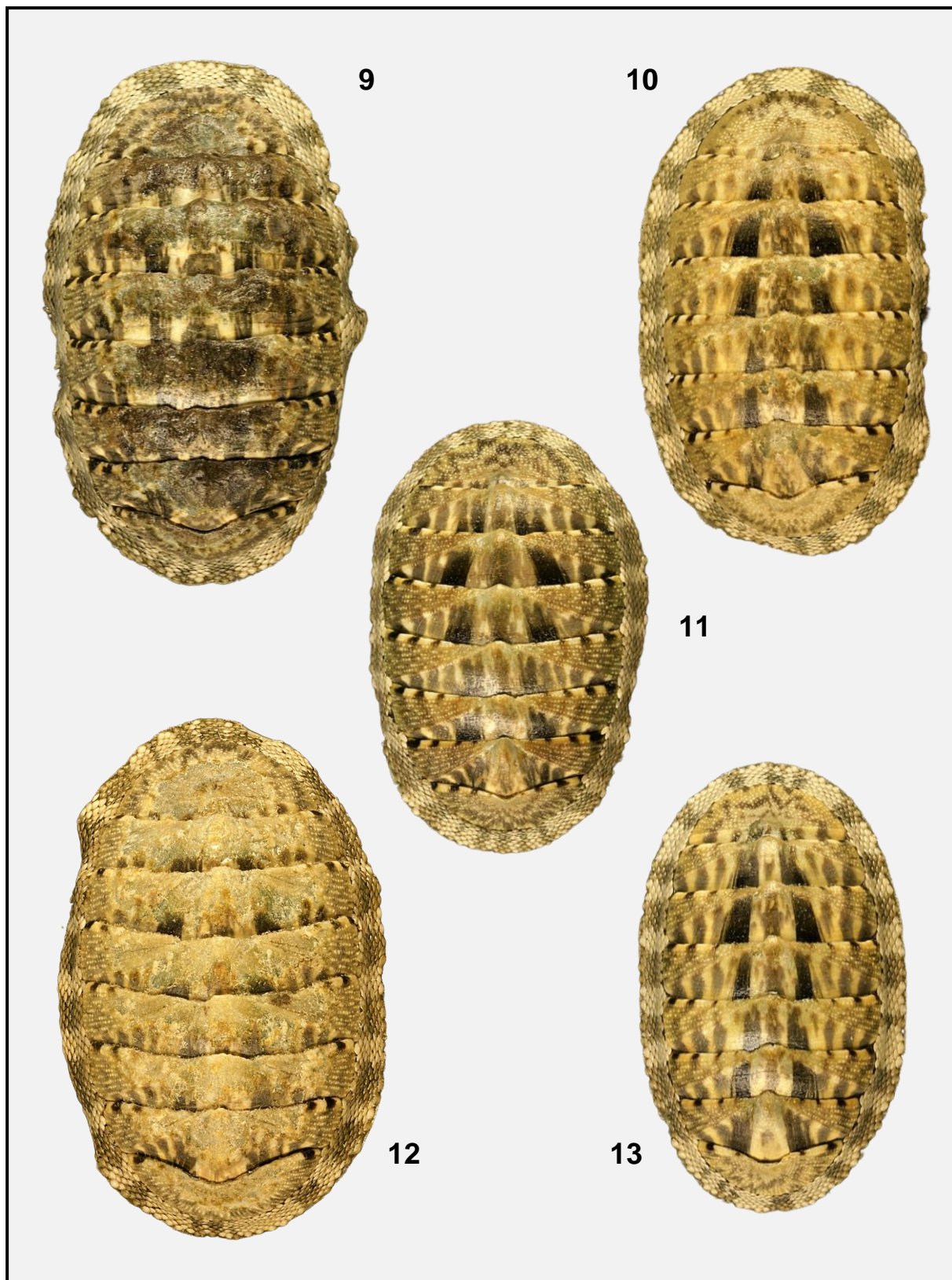




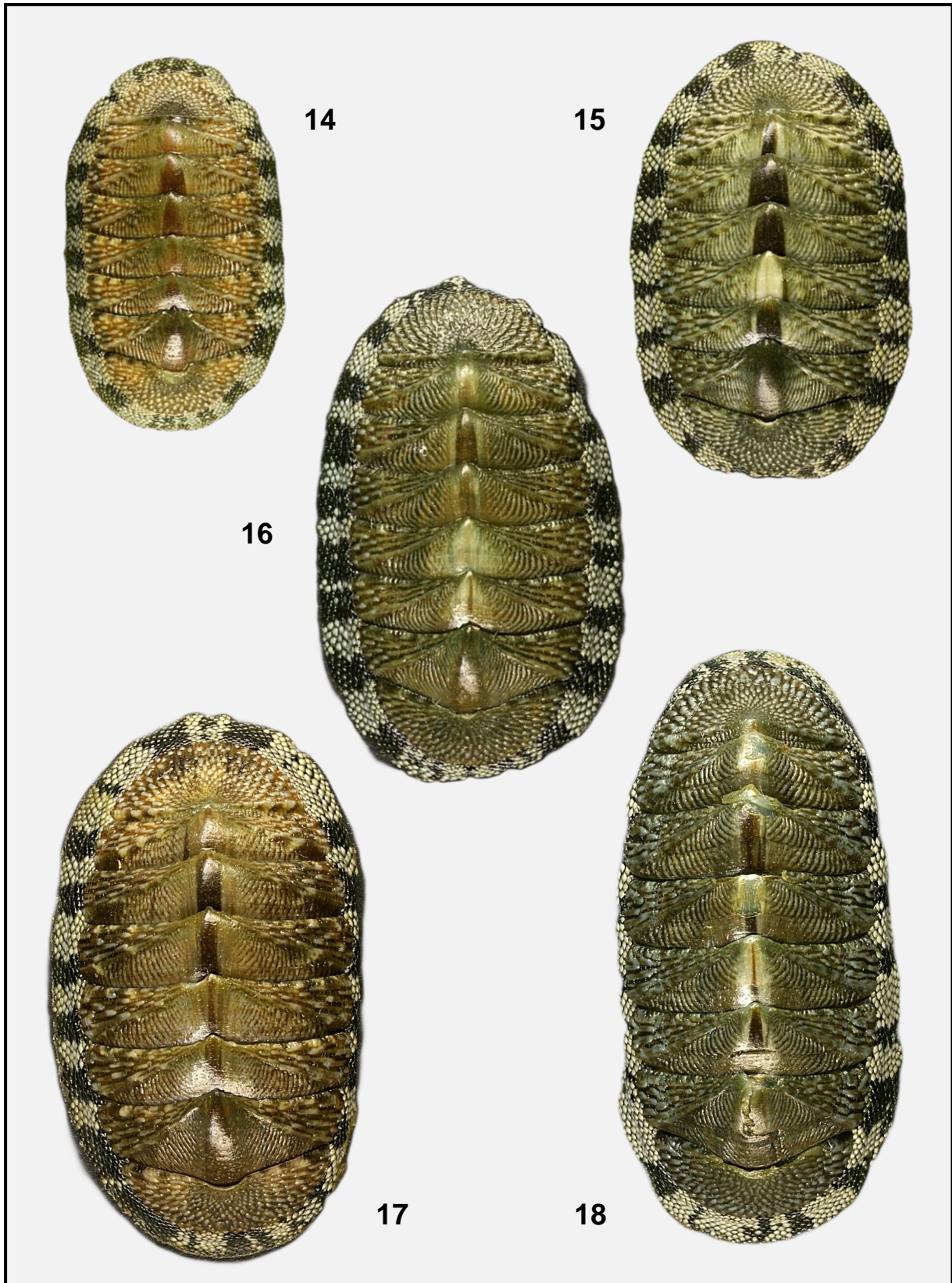
**Plate I.** Figs 1-5. *Chiton marmoratus* Gmelin, 1791; 1-3: Pinel Island, St Martin. Under rocks at a depth of 1 m. 6 November 2015; 1: 15.78 mm; 2: 42.31 mm; 3: 61.62 mm; 4-5: Shell Island, Coralita Bay, and St Martin. Under rocks at a depth of 0.50 m. 1 November 2015; 4: 28.12 mm; 5: 31.81 mm.



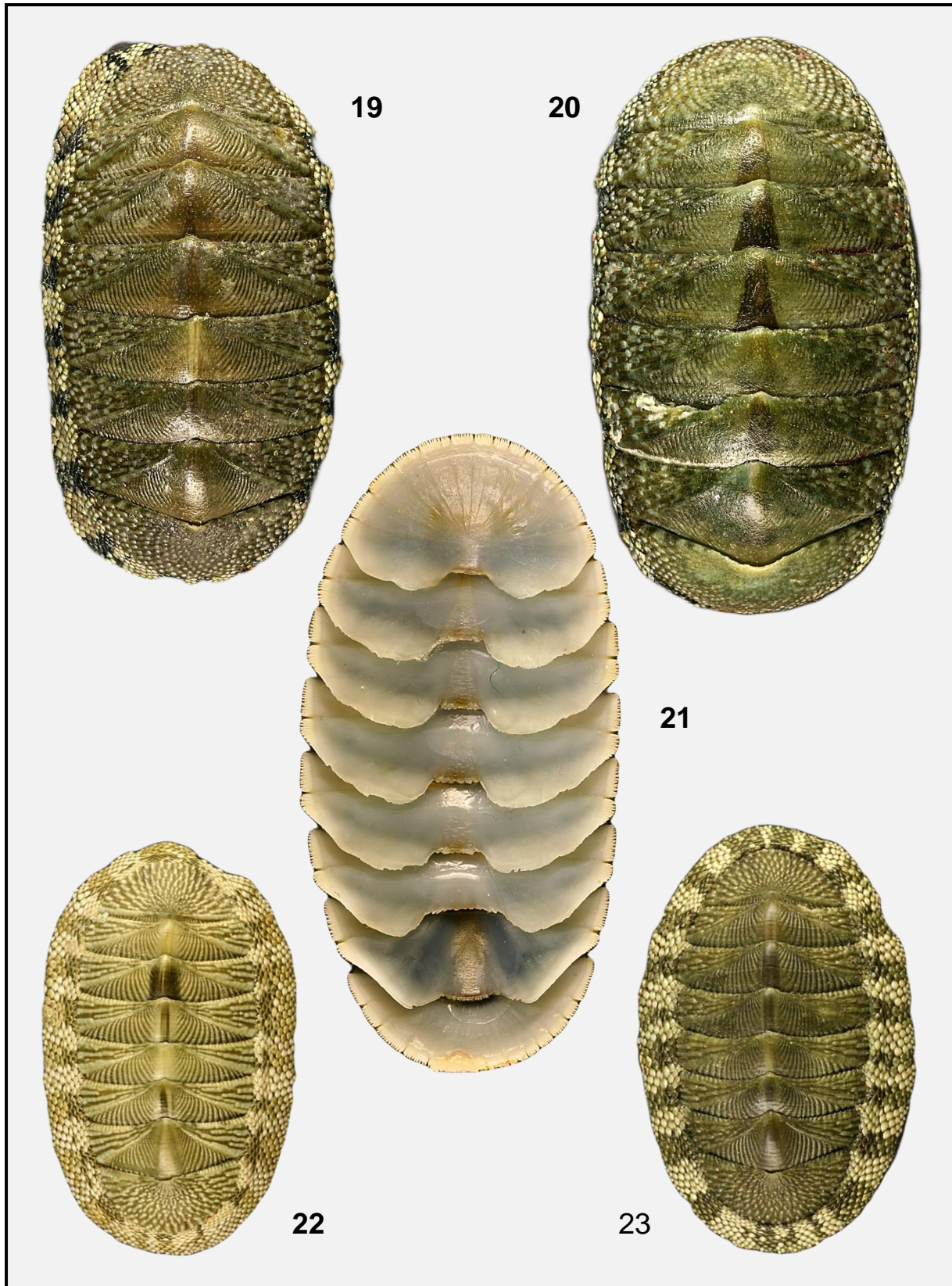
**Plate II.** Figs 6-8. *Chiton marmoratus* Gmelin, 1791. Shell Island, Coralita Bay, St Martin. Under rocks at a depth of 0.50 m. 1 November 2015; 6: 42.18 mm; 7: 44.94 mm; 8: 53.43 mm.



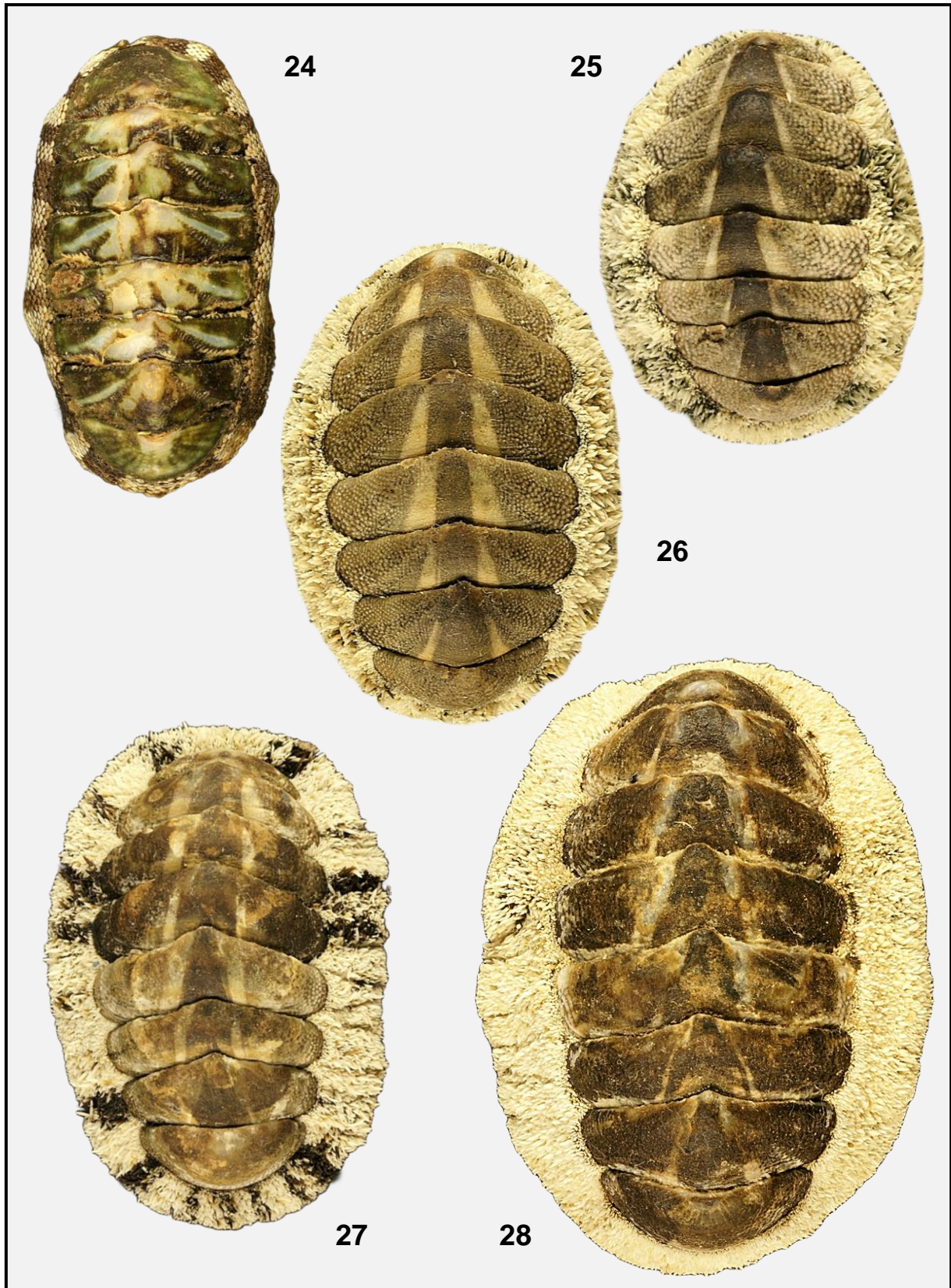
**Plate III.** Figs 9-13. *Chiton squamosus* Linnaeus, 1764; 9: Maho Beach, Philipsburg, St Martin. Under rocks at a depth of 0.50 m. 3 November 2015. 48.17 mm; 10: Cay Bay, St Martin. Under rocks at a depth of 0.50 m. 5 November 2015. 46.50 mm; 11-12: Shell Island, Coralita Bay, St Martin. Under rocks at a depth of 0.50 m; 11: 39.75 mm; 12: 48.12 mm; 13: Little Bay, St Martin. Under rocks. 5 November 2015. 39.49 mm



**Plate IV.** Figs 14-18. *Chiton tuberculatus* Linnaeus, 1758. Cay Bay, St Martin. Under rocks at a depth of 0.50 m. 5 November 2015; 14: 25.44 mm; 15: 32.24 mm; 16: 36.16 mm; 17: 39.15 mm; 18: 42.43 mm.

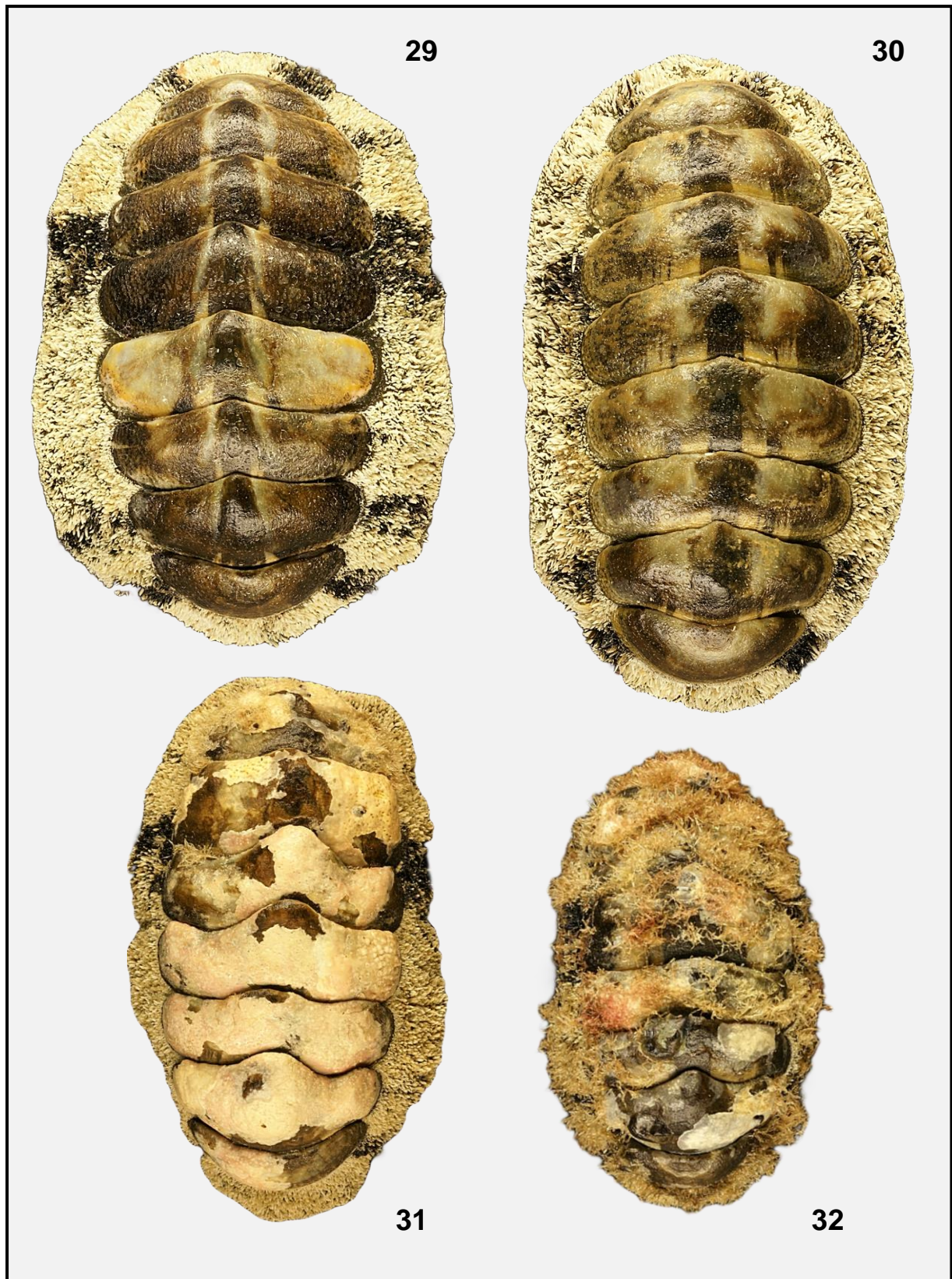


**Plate V.** Figs 19-23. *Chiton tuberculatus* Linnaeus, 1758. Pinel Island, St Martin. Under rocks at a depth of 1 m. 6 November 2015; 19: 44.04 mm; 20: 46.80 mm; 21-23: Iles des Saintes, Guadeloupe. Dived at a depth of 5 m. 1 March 1972; 21: 49.78 mm; 22: 33.17 mm; 23: 33.23 mm.

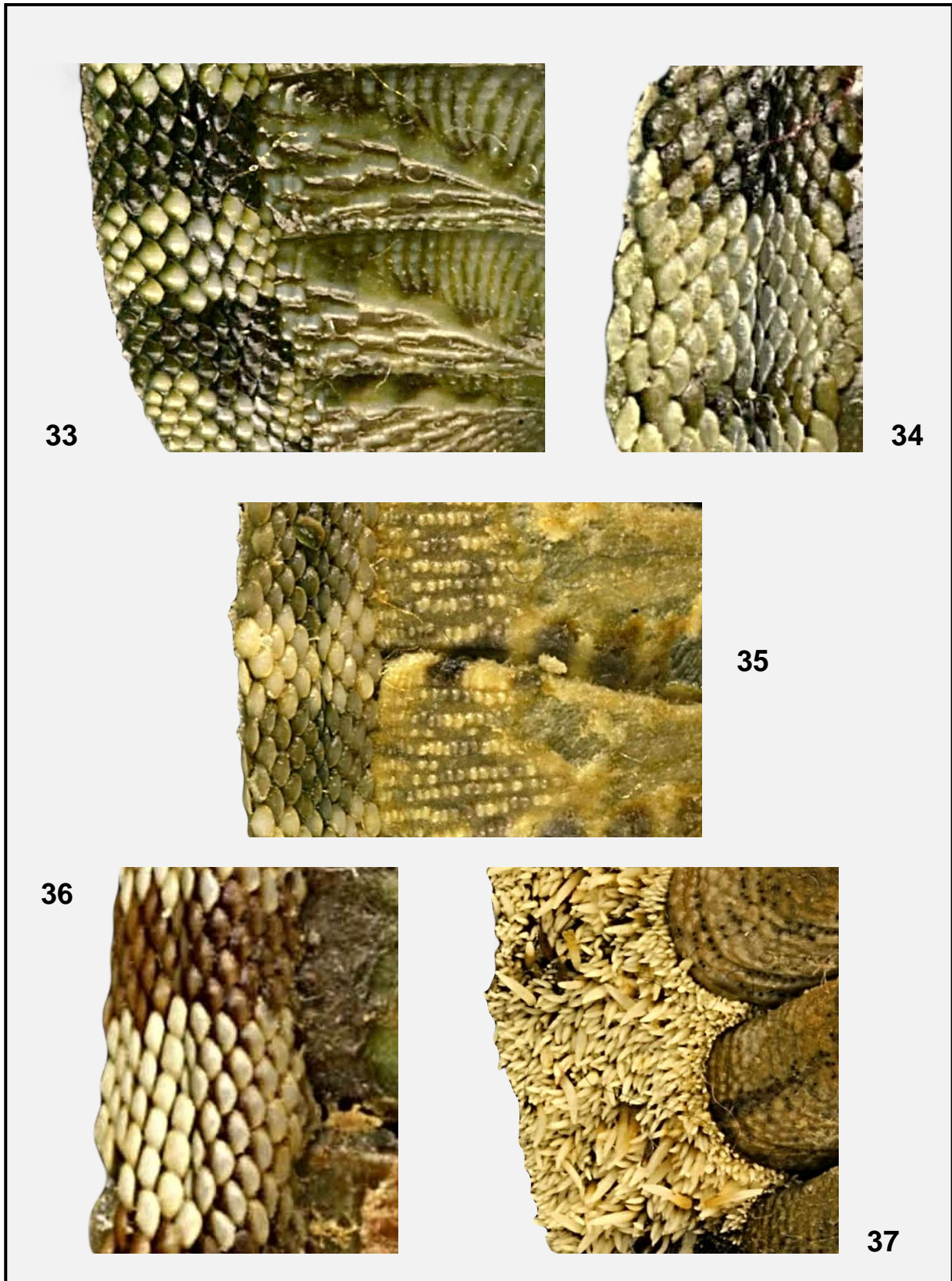


**Plate VI.** Fig. 24. *Chiton viridis* Spengler, 1797. Maho Beach, Philipsburg, St Martin. Under rocks. Dived at a depth of 3 m. August 2008.

Figs 25-28: *Acanthopleura granulata* (Gmelin, 1791). Gallion Beach, Orient Bay, St Martin. In rock crevices in the surf zone. November 2010; 25: 31.17 mm; 26: 40.22 mm; 27: 42.72 mm; 28: 48.31 mm.



**Plate VII.** Figs 29-32: *Acanthopleura granulata* (Gmelin, 1791). Shell Island, Coralita Bay, St Martin. In rock crevices in the surf zone. 1 November 2015; 29: 55.23 mm; 30: 63.29 mm; 31: 53.92 mm; 32: 42.58 mm.



**Plate VIII.** Figs 33-37: Details of the girdle; 33: *Chiton marmoratus* Linnaeus, 1758; 34: *Chiton tuberculatus* Linnaeus, 1758; 35: *Chiton squamosus* Linnaeus, 1764; 36: *Chiton viridis* Spengler, 1797; 37: *Acanthopleura granulata* (Gmelin, 1791).



***Trigonostoma damasoi* Cossignani, 2015 a junior synonym of  
*Trigonostoma gofasi* Verhecken, 2007  
(Mollusca: Gastropoda: Cancellariidae)**

**Frank Nolf**<sup>1</sup>

<sup>1</sup> Pr. Stefanieplein, 43/8  
B-8400 Oostende, Belgium  
[frank.nolf@pandora.be](mailto:frank.nolf@pandora.be)

**Keywords:** *Trigonostoma*, CANCELLARIIDAE, Gastropoda, Mollusca, Angola, junior synonym.

**Abstract:** Recently, *Trigonostoma damasoi* (Cossignani, 2015) was described as a new species from Angola. Comparison with specimens of *T. gofasi* of the same type locality resulted in the decision that both refer to the same species. So, *T. damasoi* has to be regarded as a junior synonym of *T. gofasi* Verhecken, 2007.

**Abbreviations:**

**CFN:** Private collection of Frank Nolf (Oostende, Belgium)

**CSH:** Private collection of Steve Hubrecht (Heverlee, Belgium)

**KBIN:** Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels

**Description:** The protoconch with 2¼ whorls is multispiral, vaguely delimited by the start of the teleoconch spiral sculpture. The teleoconch has 41/8 whorls. The sculpture on the first teleoconch is mainly spiral and the axial sculpture is hardly visible. From the second teleoconch whorl on, an axial sculpture of broadly rounded ribs is present, forming pointed coronations on the shoulder of early whorls. These axial ribs on the body whorl have a squamous aspect because of the existence of multiple lamellae. The sutural ramp is bordered on the shoulder by a raised spiral ridge. The axial ribs, by crossing the sutural ramp, form broad ridges composed of several lamellae reflected adapically on the upper part of the ridges. Only an extremely narrow groove is left between the ridge and the sutural line. The spiral sculpture on the later whorls consists of three broad bands, with three secondary spirals in between. The second main spiral forms a small carina.

The last whorl has a very broad spiral band at the shoulder and six primary spirals separated by three or four secondary spirals.

The aperture is rounded trigonal. The columellar side is smooth and provided with two folds, the posterior one being the strongest and a third very faint one at the rim of the siphonal canal. The

outer lip has seven inner lirae and three small parietal teeth on the truncated posterior side of the aperture.

The umbilicus is very deep and widely open almost to the top of the shell.

**Type locality:** Ilha de Luanda, Angola, 40-60 m, on gravel among rocks.

**Bathymetry:** between 12 and 60 m.

**Measurements:** between 12 and 22 mm.

**Geographic distribution:** Known from Senegal to Mauritania, from Liberia to Ghana and from Angola.

**Discussion:** This is a species already known since 1910 (Dautzenberg, 1910: 78) (Text figs 2a & 2b) by some of the type specimens (paratypes 5-7, 10) and until the description by A. Verhecken (2007) never has been recognized as a distinct species. In his discussion about *Cancellaria rigida* G.B. Sowerby, 1932 Dautzenberg remarked the confusion about the western African trigonostomids. He illustrated a specimen on Plate I, figs 19-20 (paratype 5) as *C. rigida* but commented it as different from other specimens in the collection of Petit de la Saussaye with a more closed umbilicus. The same shell was represented by Nicklès (1950: 116, fig. 212) (Text fig. 1) as *C. rigida*. Most probably confusion has arisen by the presence of eroded older shells. Petit (1976: 40) referred to it as a species different from the newly described *Trigonostoma withrowi* Petit, 1976 which on its turn has to be recognized as a junior synonym of *Trigonostoma scala* (Gmelin, 1791) as well as *Cancellaria rigida* Sowerby, 1832.

Specimens from Mauritania-Senegal and Liberia and especially those taken by the Gruvel Mission (Dautzenberg collection, KBIN) are larger than the Angolan shells and more eroded, resulting in a more rounded outline and a different colour (whitish to brown banded). Angolan specimens have a more triangular cross-section and a whitish shoulder carina. Shells from Ivory Coast and Ghana, studied by Verhecken (2007), are

juveniles – except on a paratype from Ghana - with an aberrant sculpture, but the teleoconch shows any important difference to that of Angolan and NW African waters.

*Trigonostoma gofasi* (Pl. I, figs 2-3; Pl. II, figs 6-12) differs from *T. scala* (Pl. III, figs 13-21) by the following characters: a multispiral protoconch instead of paucispiral, the smooth collumellar callus versus granulated, the wide and deep umbilicus instead of narrow and less deep and the absence of a siphonal fasciole. The axial ribs on the sutural ramp are broad and reflected and they do not reach the suture compared to the sharp axial ribs reaching the suture in *T. scala*. The latter has a more elevated spire compared to the depressed shell of *T. gofasi*. *T. scala* shows a range of many colours: cream, orange, brown or grey variously marked with blotches or bands of a different colour.

#### References:

- Ar dovini, R. & Cossignani, T., 2004. *West African Seashells*. Ancona. 319 pp.  
 Cossignani, T., 2015. *Trigonostoma damaso* sp. nov. *Malacologia*, **88**: 15-16.  
 Dautzenberg, Ph, 1910. Contribution à la faune malacologique de l'Afrique occidentale. *Acte de la Société linnéenne de Bordeaux*, **64**: 47-220.  
 Hemmen, J., 2007. *Annotated and Illustrated Catalogue of Recent Cancellariidae*. Wiesbaden. 428 pp.  
 Nicklès, M., 1950. *Mollusques testacés marins de la côte occidentale d'Afrique*. Lechevalier, Paris. 269 pp.  
 Petit, R.E., 1976. Notes on Cancellariidae. III. *Tulane Studies in Geology and Paleontology*, **8**: 83-88.  
 Verhecken, A., 2007. Revision of the Cancellariidae (Mollusca, Neogastropoda, Cancellarioidea) of the eastern Atlantic (40°N-40°S) and the Mediterranean. *ZOOSYSTEMA*: **29**(2): 281-364.

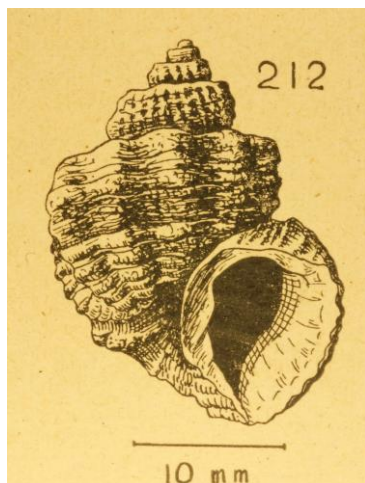
The shells described and figured by Cossignani (2004) are completely comparable with *T. gofasi* Verhecken, 2007 and in addition are coming from the same type locality (Luanda, Angola).

There was no reason to create a new species, certainly as the essential literature has not been consulted and no comparison has been made with *T. gofasi* Verhecken, 2007. Moreover the captions accompanying the figures erroneously state '*Cancellaria*' instead of '*Trigonostoma*'.

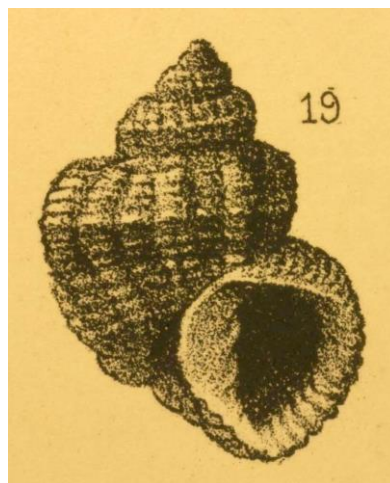
Finally, *T. damaso* has to be recognized as a junior synonym of *T. gofasi*.

#### Acknowledgements:

Steve Hubrecht (Heverlee, Belgium) was so kind to loan some specimens of the treated species and Johan Verstraeten (Oostende, Belgium) made some critical notes.



**Text fig. 1**



**Text fig. 2a**

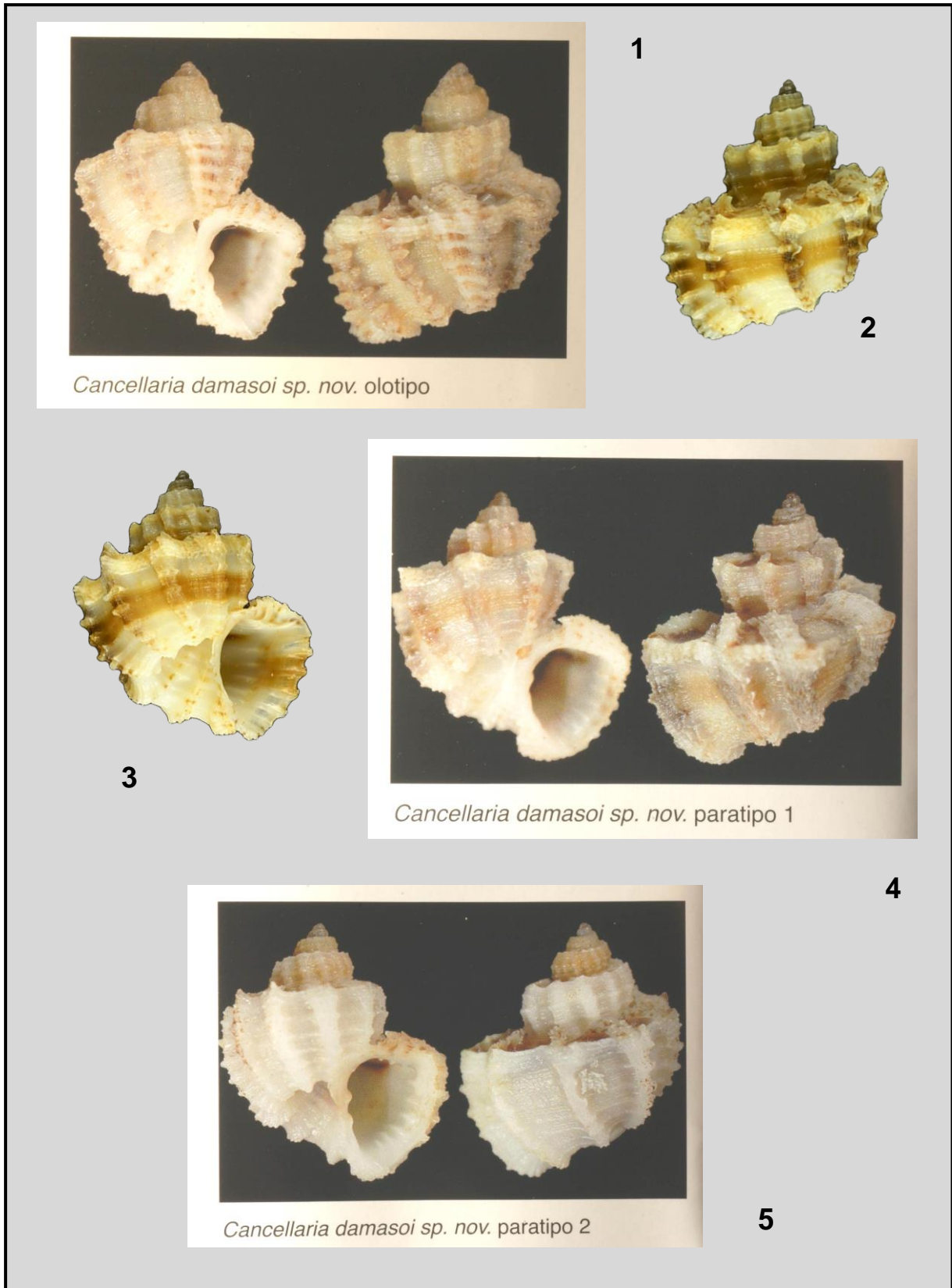


**Text fig. 2b**

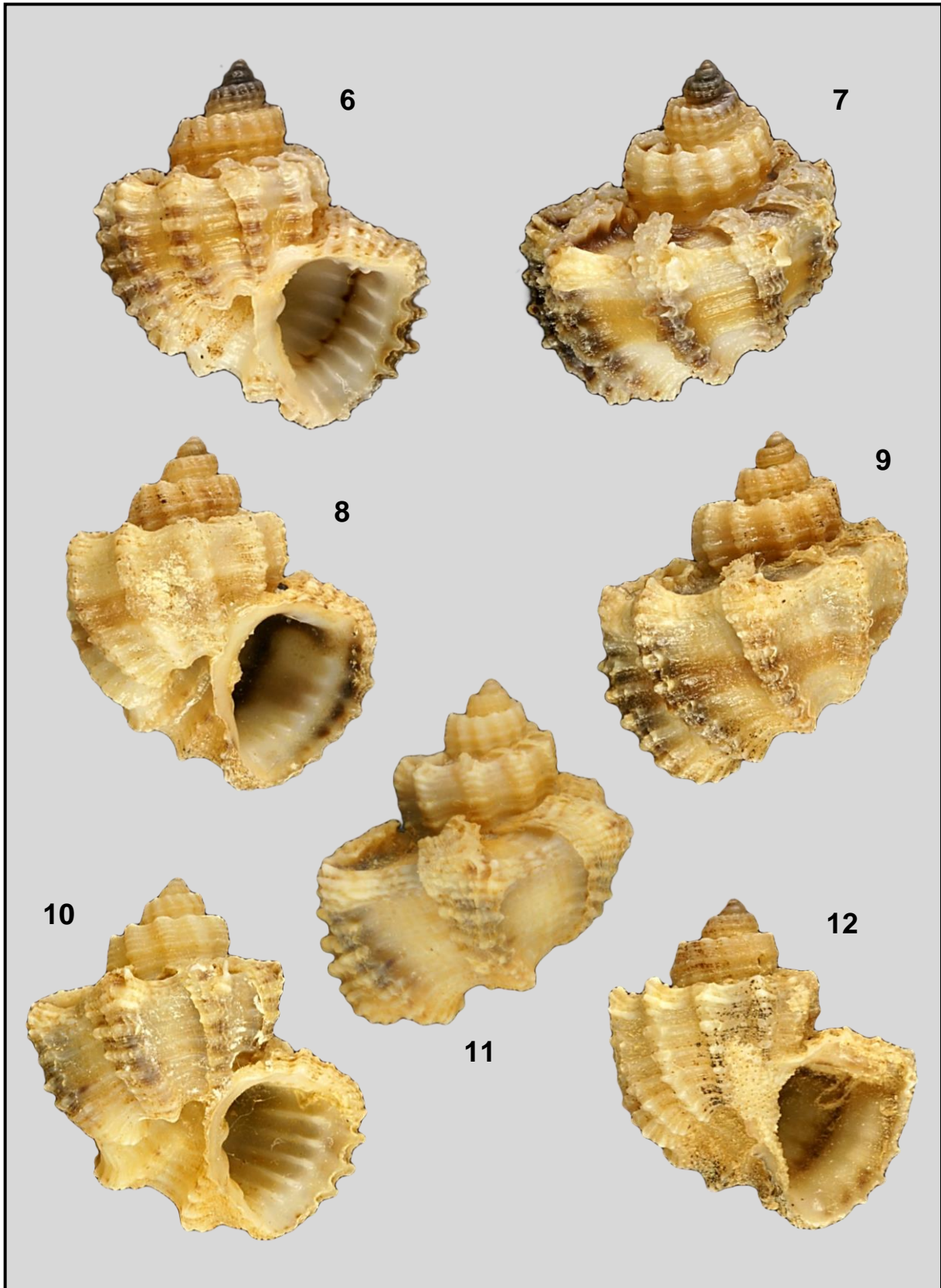
Text fig.1: Nicklès, M., 1950. *Mollusques testacés marins de la côte occidentale d'Afrique*. Lechevalier, Paris. p.116, fig. 212. ('*Cancellaria rigida* Sowerby, 1832')

Text fig. 2a: Dautzenberg, Ph, 1910. Contribution à la faune malacologique de l'Afrique occidentale. *Acte de la Société linnéenne de Bordeaux*, **64**: 47-220. Pl. I, fig. 19. ('*Cancellaria rigida* Sowerby, 1832')

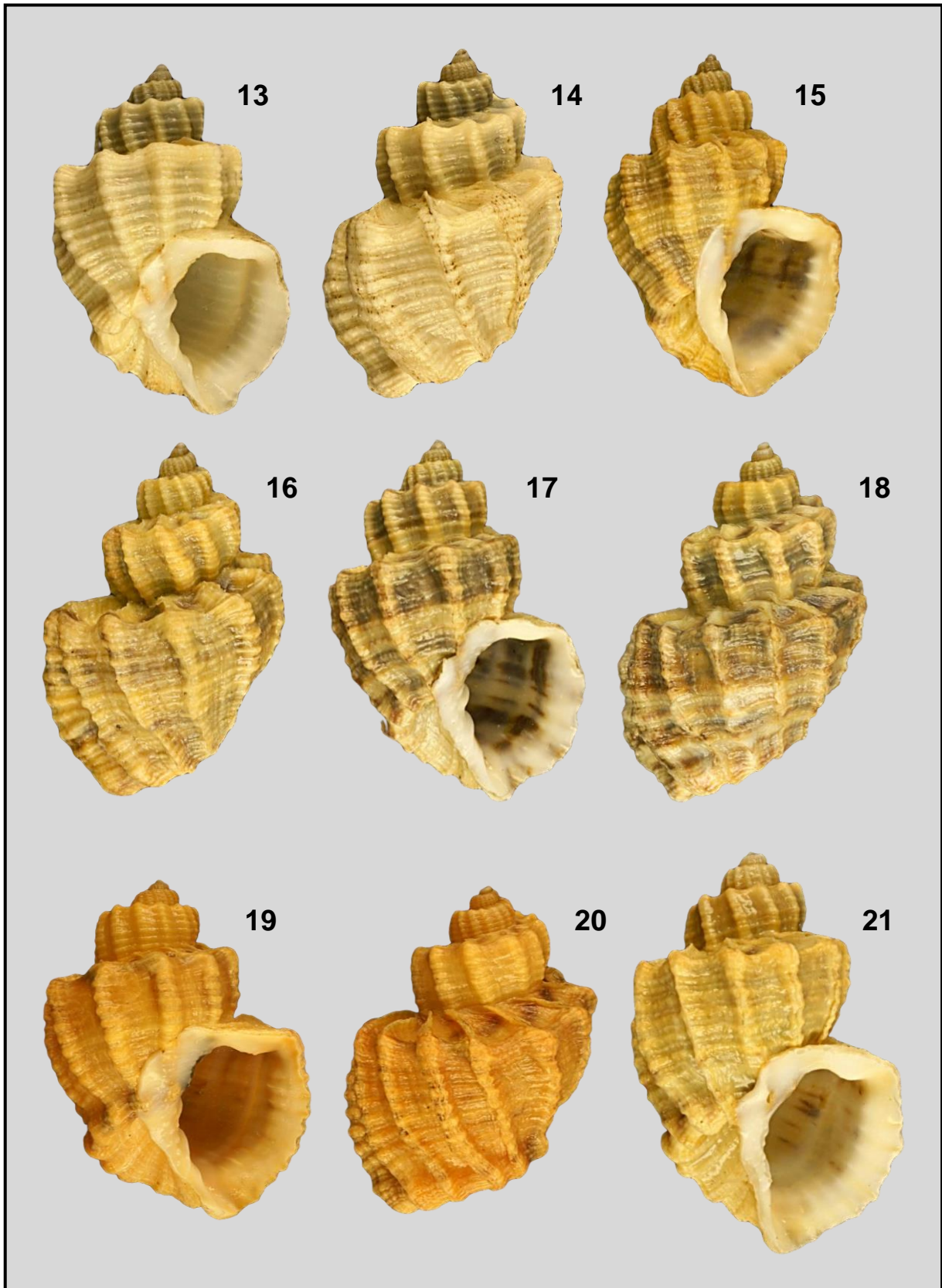
Text fig. 2b: Dautzenberg, Ph, 1910. Contribution à la faune malacologique de l'Afrique occidentale. *Acte de la Société linnéenne de Bordeaux*, **64**: 47-220. Pl. I, fig. 20. ('*Cancellaria rigida* Sowerby, 1832').



**Plate I.** Fig. 1: Holotype of *Cancellaria damasoi* Cossignani, 2015, *Malacologia*, **88**: 18; Figs 2-3: *Trigonostoma gofasi* Verhecken, 2007. Farol das Lagostas, Luanda, Angola. June 2001. 18.01 mm; Fig. 4: Paratype 1 of *Cancellaria damasoi*, *Malacologia*, **88**: 18; Fig. 5: Paratype 2 of *Cancellaria damasoi*, *Malacologia*, **88**: 18.



**Plate II.** Figs 6-12: *Trigonostoma gofasi* Verhecken, 2007; 6-7: off Isla Luanda, Angola. Dredged at a depth of 55 m. August 1996. 14.92 mm; 8-9: Farol das Lagostas, Luanda, Angola. Trawled at a depth of 25-30 m; 10-12: Corimba, Angola; 10-11: 13.94 mm; 12: 12.78 mm



**Plate III.** Figs 13-21: *Trigonostoma scala* (Gmelin, 1791). Off Yoff, Dakar, Senegal. Dived at a depth of 4 m, in mud. February 1977; 13-14: 23.88 mm; 15-16: 24.74 mm; 17-18: 26.50; 19-20: 25.97 mm; 21: 28.32 mm.

# Contributions to the knowledge of the Eratoidea.

## XII. A new *Alaerato* C.N. Cate, 1977 from South Madagascar

Dirk Fehse

Zoological State Collection Munich (ZSM), Dep. Mollusca  
Muenchhausenstrasse 21, D-81247 Muenchen, Germany  
<http://www.zsm.mwn.de/mol/staff.htm>; [triviidae@gmail.com](mailto:triviidae@gmail.com)

**Keywords:** MOLLUSCA, GASTROPODA, ERATOIDEA, recent, new species, Madagascar.

**Abstract:** Recently available dredging material from South Madagascar reveals in the discovery of a further new *Alaerato* C.N. Cate, 1977. *Alaerato rafamatanantsoai* is briefly discussed with similar species.

**Introduction:** Our knowledge of the marine biodiversity of Madagascar is to a very large extent based on research carried in the regions of Nosy Be and Tuléar [Toliara], both located in the “Western and Northern Madagascar” marine ecoregion (Spalding et al., 2007) and characterized by extensive coral reefs ecosystems. By contrast, the “Deep South” of Madagascar is an oceanic region of fierce promontories, open bays and extensive algal belts. The lack of infrastructures has arguably made it the least visited and least known coastline in the country. The marine hydroclimate is characterized by a coastal upwelling with cold surface water and high concentrations of chlorophyll-a (Lutjeharms & Machu, 2000), with winter sea surface temperatures as low as 21.5°C, vs 24-25°C or more elsewhere around Madagascar (Piton & Laroche, 1993). From the late 1990’s, new species of molluscs started to be discovered on the coastline of the regions Anosy and Androy, first serendipitously as a by-product of the local lobster fishery (e.g. Bouchet, 1999), and later specifically attracting shell collectors and amateur taxonomists (e.g. Bozzetti, 2006, 2008). These scattered findings and the unique oceanographic background together suggested that the “Deep South” of Madagascar had a potential for more discoveries, and this was what motivated a large-scale exploring expedition that sampled the benthos of the region in April to June 2010. The name of the expedition, *Atimo Vatae*, means “Deep South” in the regional Antandroy language. For baseline information on the project, see <http://laplaneterevisitee.org/en/87/accueil>. In result of the Atimo Vatae expedition several new mollusks could be described (Cecalupo, A. & I. Perugia, 2014; Houart & Héros, 2013; Vilvens, 2014). Fehse (2013) has already revised the Eratoidea from Mozambique and Madagascar. Seven taxa could be identified. Three of them – *Eratoena rosadoi* Fehse, 2013, *Alaerato elizabethae* Fehse, 2013 and *Alaerato virginiae* Fehse, 2013 – were described as new to science. Additional material became recently available to the senior author. Surprisingly, a further new *Alaerato* could be discovered and described herein as *A. rafamatanantsoai* n. sp. All type specimens of the new species were dead collected.

### Abbreviations:

MNHN - Muséum national d’Histoire naturelle, Paris, France.

LT - number of labral teeth

CT - number of columellar teeth

**SUPERFAMILY:** TRIVIOIDEA Troschel, 1863

**FAMILY:** ERATOIDEA F.A. Schilder, 1925

**SUBFAMILY:** ERATOINAE F.A. Schilder, 1925

**GENUS:** *Alaerato* C.N. Cate, 1977

Type species: *Lachryma bisinventa* Iredale, 1931, by monotypy

***Alaerato rafamatanantsoai* n. sp.**

(Plate 1, Figs 1a-c, 3a-c)

**Type material:** Holotype: MNHN IM-2000-33176. Length: 5.1 mm; width: 3.1 mm; height: 2.6 mm; LT 21; CT 20.

From type locality:

Paratype 1: MNHN IM-2000-33177. Length: 4.1 mm; width: 2.8 mm; height: 2.3 mm; LT 20; CT 20.

Paratype 2: MNHN IM-2000-33178. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm; LT 21; CT 20.

From Expedition *Atimo Vatae* 02MAY2010: MNHN loc. #DW3532: N Saint Luce, Chalutier 'Nosy Be 11', 24° 39.4' S – 47° 31.7' E, South Madagascar; dredged at 86 to 87 m.

Paratype 3: MNHN IM-2000-33179. Length: 4.9 mm; width: 3.2 mm; height: 2.5 mm; LT 19; CT 22.

**Type locality:** Expedition *Atimo Vatae* 30APR2010: MNHN loc. #DW3519: Between Lokaro and Saint Luce, Chalutier 'Nosy Be 11', 24° 51.9' S – 47° 28.0' E, South Madagascar; dredged at 80 to 83 m.

**Distribution:** Only known from the Saint Luce area of South Madagascar in depths of 80 to 90 m.

**Description:** Shell length between 4 to 6 mm, pear-shaped, smooth, with a pointed, elevated spire. Protoconch and subsequent whorls completely covered by callus. Suture visible. Junction with teleoconch distinct. Body whorl almost 90% of total height, slightly shouldered adapically, with the maximum diameter one quarter from the adapical suture, evenly tapered below and only slightly constricted at the ventrum. Dorsum rounded, constricted towards anterior terminal collar. Dorsal sulcus absent represented by a dimple behind anterior extremity in fully adult specimens. Whole shell surface covered by glossy callus. Aperture comprises about 85% of total height, slightly sinuous and narrow. Labrum thickened, smooth, flattened, declivous anteriorly, outer margin roundly callused, edged at inner margin, with somewhat coarse, irregular denticles. Denticles extended as coarse folds onto the labrum. Siphonal canal short, rounded and indented. Anal canal funnel-like widened, indented. Columella flattened, narrow with a slightly developed inner carinal ridge and a less developed parietal lip. Columellar denticles coarse, slightly irregular and somewhat indistinct, anterior most denticles extended as folds onto ventrum. Ventral folds coarse, obscured, six to eight in number. Fossula concave, obsolete, not delimited from the columella. Terminal ridge obscured. Shell color unknown because of subfossil condition of the type specimen.

**Variation:** The height of the spire varies. The spire is pointed but the spire is smoothed down in the paratypes because of the subfossil character of the shells. The ventral folds are quite irregular. The parietal lip and the carinal ridge are more or less developed.

**External morphology and radula:** No information is available on external morphology and radula.

**Comparison:** *Alaerato rafamatanantsoai* n. sp. is in first sight similar to its congener *Alaerato elizabethae* Fehse, 2013. However, the new species is generally larger (length 3 to 4 mm in *elizabethae* vs. 4 to 6 mm in *rafamatanantsoai*). The spire is pointed in *A. rafamatanantsoai* whereas it is blunt, knob-like in *A. elizabethae*. The anterior terminal collar is more elongated in the new species. The maximum diameter is one third away of the adapical suture in *A. elizabethae* whereas it is one quarter away in *A. rafamatanantsoai*.

The new taxon differs in the same way from all other known species of the genus by the missing 'wing-like extension' of the posterior portion of the labrum as *A. elizabethae*.

**Etymology:** At the request of Philippe Bouchet, the species is named after Sylvestre Rafamatanantsoa, of the Direction Régionale des Ressources Halieutiques et de la Pêche in Fort-Dauphin (Tolagnaro), and a participant of the offshore survey on board F/V Nossi Bé 11 during the 'Atimo Vatae' expedition which discovered this new species.

**Acknowledgements:** The *Atimo Vatae* expedition to South Madagascar (Principal Investigator, Philippe Bouchet) was part of a cluster of Mozambique-Madagascar expeditions funded by the Total Foundation, Prince Albert II of Monaco Foundation, Stavros Niarchos Foundation, and additional support from the Richard Lounsbery Foundation and Triballat, under "*Our Planet Reviewed*", a joint initiative of Muséum National d'Histoire Naturelle (MNHN) and Pro Natura International (PNI) in partnership with Institut d'Halieutique et des Sciences Marines, University of Toliara (IH.SM) and the Madagascar bureau of Wildlife Conservation Society (WCS). Institut de Recherche pour le Développement (IRD) deployed its research catamaran *Antéa*.

## Bibliography:

- Bouchet, P., 1999. A new *Lyria* (Gastropoda, Volutidae) from southeastern Madagascar. *The Nautilus*, **113**(1): 1-3.
- Bozzetti, L., 2006. A new species of *Fusinus* (Mollusca: Neogastropoda: Fascioliariidae) from Southern Madagascar. *Visaya*, **1**(6): 51-53.
- Bozzetti, L., 2008. *Pleuroploca manuelae* (Gastropoda: Neogastropoda: Fascioliariidae) a new species from Southern Madagascar. *Malacologia Mostra Mondiale*, **58**: 8-11.
- Cate, C.N., 1977. A Review of the Eratoidae (Mollusca: Gastropoda). *The Veliger*, **19**(3): 341-366, 366a + 366b.
- Cecalupo, A. & I. Perugia, 2014. The Cerithiopsidae (Caenogastropoda: Triphoroidea) of South Madagascar (Indian Ocean). *Bollettino Malacologico*, **50**: 75-126.
- Fehse, D., 2013. Contributions to the knowledge of the Eratoidae. VIII. Eratoidae of Mozambique and Madagascar. *Neptunea*, **12**(1): 10-21, pls. 1-4, text figs 1-2.
- Lutjeharms, J. R. E. & Machu, e., 2000. An upwelling cell inshore of the East Madagascar Current. *Deep-Sea Research I*, **47**: 2405-2411.
- Houart, R. & Héros, S V., 2013. - Description of new Muricidae (Mollusca: Gastropoda) collected during the Atimo Vatae expedition to Madagascar "Deep South". *Zoosystema*, **35**(4): 503-523.
- Piton B. & J. Laroche, 1993. Quelques caractéristiques hydroclimatiques du sud de Madagascar. *Bulletin Océanographie et Pêches* [La Réunion], **37**: 46-54.
- Spalding, M.D., Fox, H. E., Allen, G.R., Davidson, N., Ferdaña, Z.A., Finlayson, M., Halpern, B.S., Jorge, M.A., Lombana, A., Lourie, S.A., Martin, K.D., McManus, E., Molnar, J., Recchia, C.A., & Robertson, J., 2007. Marine ecoregions of the world: A bioregionalization of coastal and shelf areas. *BioScience*, **57**(7): 573-583.
- Vilvens, C., 2014. New species and new records of Calliostomatidae (Gastropoda: Trochoidea) from Madagascar. *Novapex*, **15**(HS 9): 1-29.

## Plate 1

a – dorsal view, b – lateral view, c – ventral view

### ***Alaerato rafamatanantsoai* n. sp.**

- 1a-c. Holotype. Length: 5.1 mm; width: 3.1 mm; height: 2.6 mm. Coll. MNHN IM-2000-33176.
- 3a-c. Paratype 3. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. Coll. MNHN IM-2000-33179.

### ***Alaerato elizabethae* Fehse, 2013**

- 2a-c. Enlarged. 2d = same scale as figures 1 and 3. Length: 3.5 mm; width: 2.3 mm; height: 1.9 mm. Expedition *Atimo Vatae* 15MAY2010, MNHN loc. #CP3624, SE Faux-Cap, Chalutier 'Nosy Be 11', 25° 38.1' S – 45° 57.0' E, S Madagascar; dredged at 63 m. Coll. MNHN.



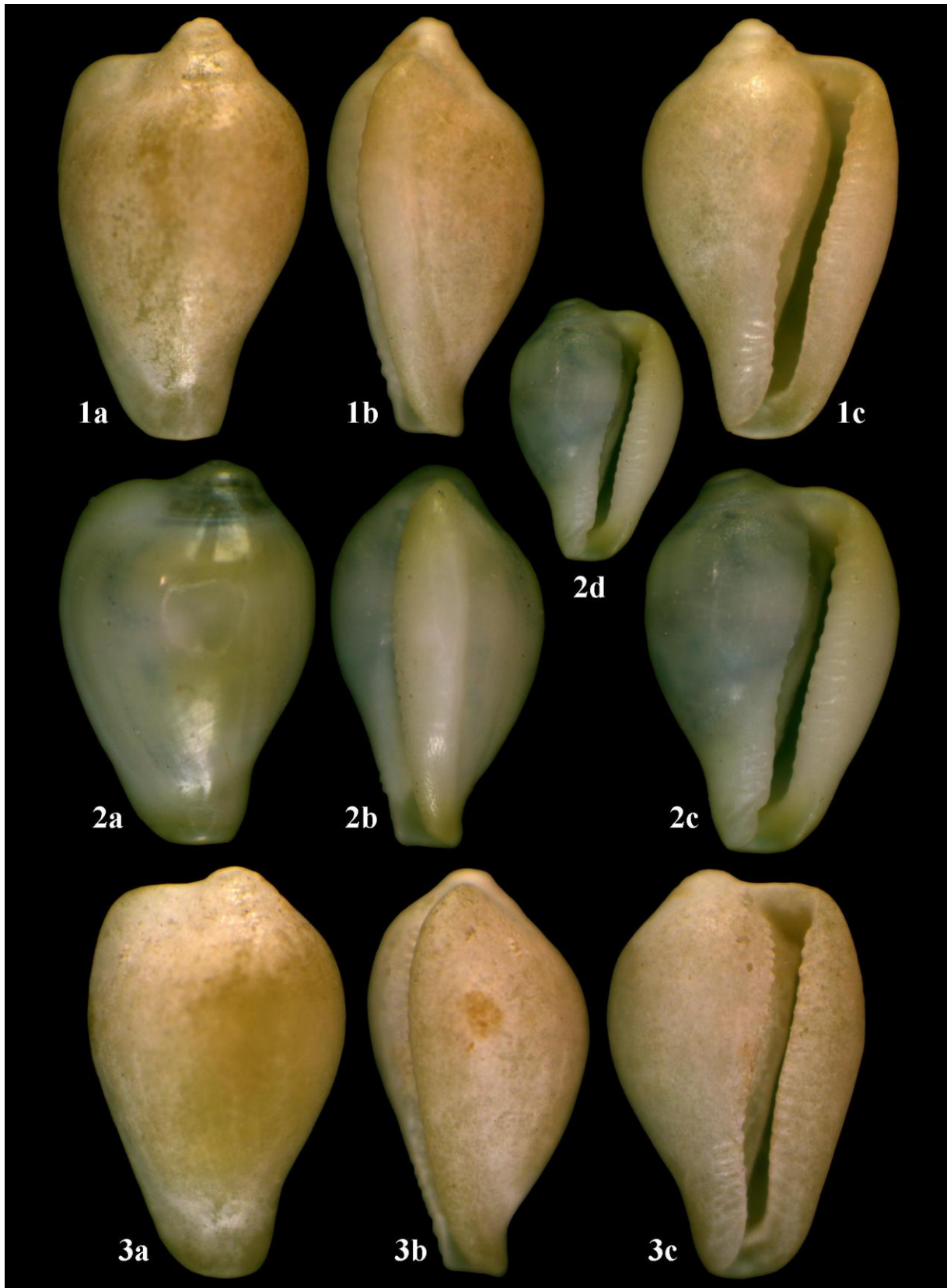


Plate 1

# Contributions to the knowledge of the Eratoidae. XIII. New species from the Philippines

Dirk Fehse

Zoological State Collection Munich (ZSM), Dep. Mollusca  
Muenchhausenstrasse 21, D-81247 Muenchen, Germany  
<http://www.zsm.mwn.de/mol/staff.htm>; [triviidae@gmail.com](mailto:triviidae@gmail.com)

**Keywords:** MOLLUSCA, GASTROPODA, ERATOIDAE, recent, new species, Philippines.

**Abstract:** The Panglao Marine Biodiversity Project of the MNHN has resulted in the discovery of three new spectacular ERATOIDAE of the genera *Alaerato* C.N. Cate, 1977 and *Cypraeerato* F.A. Schilder, 1933. The new taxa are briefly discussed and compared with similar species.

**Introduction:** The Molluscan fauna of the Philippines is one of the most well-known and in-depth studied fauna of the world (see Poppe: Philippine Marine Mollusks; [www.conchology.be](http://www.conchology.be)). Still it has ready many surprises over the last recent years (compare e.g. the issues of VISAYA, [www.conchology.be](http://www.conchology.be)). Several new bathyal Triviidae were discovered (Beals, 2001; Rosenberg & Finley, 2001; Fehse, 2015; Fehse & Grego, 2009). Two new triviid genera were described: *Novatrivia* Fehse, 2015 and *Gregoia* Fehse, 2015. Four Eratoidae were published within the last six years (Fehse, 2011, 2015, 2016). However, further new and spectacular Eratoidae wait for their description but often only one specimen was available. A single shell is not enough to erect a new taxon because the intraspecific variability cannot be defined. Therefore, the policy of the editors of the famous magazine 'La Conchiglia' was that a new species should be based on at least five fully matured type specimens. Up to now I follow their practice whenever possible and abstain from a description until I could obtain at least five specimens. This applied to the three Eratoidae introduced herein. Thanks to Dr. Philippe Bouchet who supplied the huge MNHN expedition material of their Panglao Marine Biodiversity Project to the author for sorting and identification these taxa can now be described as: *Alaerato arbastoi* n. sp., *Alaerato atomaria* n. sp. and *Cypraeerato splendida* n. sp. For the context and achievements of the project, see Bouchet (2009) and Bouchet et al. (2009). In station numbers, the prefix B refers to SCUBA-operated brushing baskets, L to lumun-lumun, P to tangle nets (pamo nets), and T to a small beam trawl.

## Abbreviations:

DFB - collection Dirk Fehse, Berlin, Germany  
MNHN - Muséum national d'Histoire naturelle, Paris, France.

LT - number of labral teeth  
CT - number of columellar teeth

**SUPERFAMILY:** TRIVIOIDEA Troschel, 1863

**FAMILY:** ERATOIDAE F.A. Schilder, 1925

**SUBFAMILY:** ERATOINAE F.A. Schilder, 1925

**GENUS:** *Alaerato* C.N. Cate, 1977

Type species: *Lachryma bisinventa* Iredale, 1931, by original designation

## *Alaerato atomaria* n. sp.

(Plate 1, Figs 1a-c to 3a-c; Plate 2, Figs 1a-c, 2a-c)

**Type material:** Holotype: MNHN IM-2000-33147. Length: 2.8 mm; width: 1.9 mm; height: 1.7 mm; LT 27; CT –.

From type locality:

Paratype 1: MNHN IM-2000-33148. Length: 3.2 mm; width: 2.2 mm; height: 2.0 mm; LT 26; CT –.

Paratype 2: MNHN IM-2000-33149. Length: 3.1 mm; width: 2.1 mm; height: 1.9 mm; LT 27; CT –.

Paratype 3: MNHN IM-2000-33150. Length: 2.5 mm; width: 1.7 mm; height: 1.5 mm; LT 24; CT –.

Paratype 4: MNHN IM-2000-33151. Length: 3.4 mm; width: 2.2 mm; height: 2.0 mm; LT 28; CT –.

**Type locality:** Panglao Marine Biodiversity Project 2005-2006, sta. P4: Momo Beach, 09° 36.5' N – 123° 45.3' E, Panglao Island, Philippines; tangle nets in 80 to 120 m.

18 further paratypes from the Philippines: 3 in MNHN IM-2000-33152, from type locality; 1 in MNHN IM-2000-33153, , from MNHN sta. L50; 3 in MNHN IM-2000-33154, from MNHN sta. L51-60; 2 in MNHN IM-2000-33155, from MNHN sta. L65-68; 3 in MNHN IM-2000-33156, from MNHN sta. L76; 1 in MNHN IM-2000-33157, from MNHN sta. T4; 1 in coll. DFB, No. 7748, from Tubod, Siquijor Island, Philippines, dredged offshore in 52 m, 2004; 3 in coll. DFB, No. 10132, Off Balicasag Island, Philippines; collected by lumen-lumen nets at 30 to 100 m, 2009; 1 in coll. DFB, No. 10918, Balicasag Island, Philippines; in lumen-lumen nets at 30 to 100 m, 2009.

49 additional paratypes from 23 various localities off Vanuatu in the MNHN collection.

**Distribution:**

MNHN sta. L50: Panglao Marine Biodiversity Project 06JUL2004, Off Momo Beach, 09° 36.9' N – 123° 45.8' E, Panglao Island, Philippines; dredged at 120 m.

MNHN sta. L51-60: Panglao Marine Biodiversity Project 19/22OCT03, Bingag/Tabalong, 09° 37.7' N – 123° 47.9/48.1' E, Philippines; dredged at -82 m.

MNHN sta. L65-68: Panglao Marine Biodiversity Project 27OCT2003, Pamilacan Island, 09° 29.9' N – 123° 55.1' E, Philippines; dredged at 55-81 m.

MNHN sta. L76: Panglao Marine Biodiversity Project 2004-05, Off Momo Beach, 09° 36.5' N – 123° 45.3' E, Panglao Island, Philippines; dredged at app. 80 m.

MNHN sta. T4: Panglao Marine Biodiversity Project 01JUN2004, Bolod, 09° 33.0' N – 123° 48.5' E, Panglao Island, Philippines; trawled at 82 m, many large sponges.

Also from Tubod, Siquijor Island and from Balicasag Island, Philippines.

**Description:** Shell length between 2 to 4 mm, obliquely pear-shaped, inflated, smooth, with a blunt, knob-like spire. Protoconch and subsequent whorls covered by thin, translucent callus. Suture visible. Junction with teleoconch distinct. Body whorl almost 95% of total height, roundly shouldered adapically, with the maximum diameter one third from the adapical suture, abruptly tapered below and only slightly constricted at the ventrum. Dorsum roundly and highly elevated, constricted towards anterior terminal collar. Dorsal sulcus or dimples absent. Dorsal shell surface covered by glossy, thin, translucent callus. Ventral callus thick, opaque, porous. Aperture defines total shell length, straight, posteriorly curved and quite narrow. Posterior terminal tip indented, anterior blunt. Labrum thickened, smooth, left half flattened and slightly sloping slightly into aperture, right half rounded, outer margin roundly callused, edged at labral shoulder, ridged at inner margin, with fine, partly coarse, sometimes fused, irregular denticles. Denticles extended as fine folds onto the labrum. Outer labral margin anteriorly ridged. Siphonal canal short, tubular. Anal canal funnel-like widened, indented, framed by walls formed by callus. Columella concave, widened with a developed inner carinal ridge and a callused and edged parietal lip. Columellar denticles anteriorly coarse, close-set, slightly irregular and posteriorly obscured. Almost all anterior columellar denticles extended as folds onto ventrum. Ventral folds coarse, short, eight to nine in number. Fossula concave, obsolete, not delimited from the columella. Terminal ridge obscured.

Shell colour and terminal tips light yellow-brown. Callosities white.

**Variation:** Spire more or less elevated, defines occasionally the shell length. The shell inflation varies considerably. Shell color varies from light yellow-brown to white. Otherwise the shells appear rather uniform.

**External morphology:** The mantle lobes are unknown because they were retracted during the photo session. The foot was translucent with small white patches and few orange-red dots. The cephalic tentacles were of the same colouration as the foot. The siphon was also translucent but densely covered with small patches and orange-red dots.

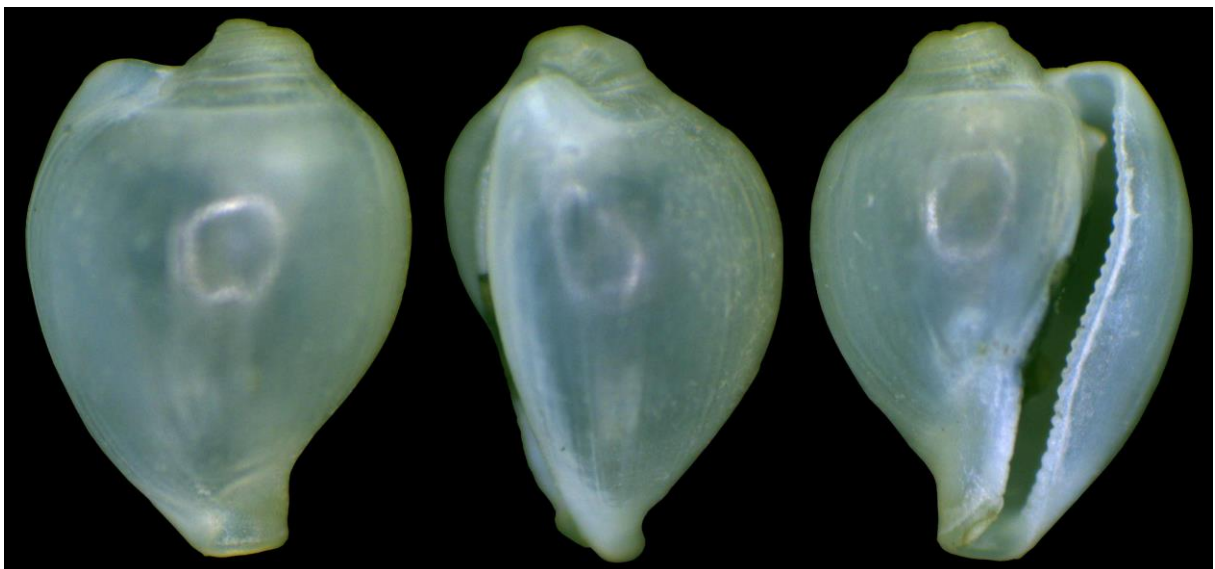
**Radula:** No information is available on radula.

**Comparison:** The shape of the anal canal reminds the triviid genus *Trivellona* Iredale, 1931 (Fehse & Grego, 2009). This feature is unique among the Eratoidea and distinguishes *A. atomaria* immediately from any fossil and recent taxa. The shape of the aperture, labrum and parietal lip differs from any known species of the genus *Alaerato*. Any detailed comparison appears superfluously.

**Etymology:** From the Latin noun, *atomus*, meaning indivisible for the minute shell size.



**Text fig. 1:** *Alaerato atomaria* n.sp. Paratype. Juvenile. MNHN sta. FS54: Santo Marine Biodiversity Survey, Segond Channel, Coolidge wreck, 15°31.4' S – 167°14.1' E, Vanuatu; dredged at 20 to 31 m. (Photo: © MNHN-PNI-IRD/Our Planet Reviewed/Delphine Brabant).



**Text fig. 2:** Same shell as in text fig. 1. *Alaerato atomaria* n.sp. Paratype. Juvenile. Length: 2.5 mm, width: 1.8 mm, height: 1.6 mm, MNHN sta. FS54: Santo Marine Biodiversity Survey, Segond Channel, Coolidge wreck, 15°31.4' S – 167°14.1' E, Vanuatu; dredged at 20 to 31 m.

***Alaerato arbastoi* n. sp.**

(Plate 4, Figs 1a-c, 3a-c; Plate 5, Figs 1a-c to 3a-c)

**Type material:** Holotype: MNHN IM-2000-33158. Length: 3.9 mm; width: 2.6 mm; height: 2.3 mm; LT 26; CT 23.

From type locality:

Paratype 1: MNHN IM-2000-33159. Length: 4.2 mm; width: 2.8 mm; height: 2.3 mm; LT 27; CT 24.

Paratype 2: MNHN IM-2000-33160. Length: 3.5 mm; width: 2.3 mm; height: 1.9 mm; LT 23; CT 23.

Paratype 3: MNHN IM-2000-33161. Length: 3.4 mm; width: 2.2 mm; height: 1.9 mm; LT 22; CT 21.

Paratype 4: MNHN IM-2000-33162. Length: 3.9 mm; width: 2.3 mm; height: 2.1 mm; LT 22; CT 24.

**Type locality:** Expedition Panglao Marine Biodiversity Project 2004-2005, sta. L76-L77, Panglao Island, Momo Beach, 9°36.5'N-9°36.9'N, 123°45.3-45.8'E, 80-120 m.

110 further paratypes: 3 in MNHN IM-2000-33163, from type locality; 1 in MNHN IM-2000-33164, from MNHN sta. B39; 2 in MNHN IM-2000-33165, from MNHN sta. L49; 18 in MNHN IM-2000-33166, from MNHN sta. L51-60; 76 in MNHN IM-2000-33167, from MNHN sta. L76; 4 in MNHN IM-2000-33168, from MNHN sta. L87; 3 in coll. DFB, No. 5624, from off Punta Engano, Mactan Island, Philippines, in lumun-lumun nets at 10 to 35 m, 2001; 2 in coll. DFB, No. 5625, from off Punta Engano, Mactan Island, Philippines, in lumun-lumun nets at about 60 m, 2006; 2 in coll. DFB, No. 10204, from Taizhou, Hainan Island, S China Sea; 2 in coll. DFB, No. 11347, from off Balicasag Island, Philippines; in lumun-lumun nets 100 to 150 m, 2005.

**Distribution:**

MNHN sta. B39: Panglao Marine Biodiversity Project 02JUL2004, Pontod Lagoon 1, 09° 32.8' N – 123° 42.1' E, Philippines; dredged at 17-25 m, reef wall with small caves.

MNHN sta. L49: Panglao Marine Biodiversity Project 06JUL2004, Off Momo Beach, 09° 36.5' N – 123° 45.3' E, Panglao Island, Philippines; dredged at 90 m.

MNHN sta. L51-60: Panglao Marine Biodiversity Project 19/22OCT03, Bingag/Tabalong, 09° 37.7' N – 123° 47.9/48.1' E, Philippines; dredged at -82 m.

MNHN sta. L87: leg. Arbasto J.; FEB2008, Momo Beach, 09° 31' N – 123° 41' E, Panglao Island Philippines; dredged at "40 to 80" m.

MNHN sta. L76: Panglao Marine Biodiversity Project 2004-05, Off Momo Beach, 09° 36.5' N – 123° 45.3' E, Panglao Island, Philippines; dredged at app. 80 m.

Also from Mactan Island and from Balicasag Island, Philippines as well as from Hainan Island, S China Sea.

**Description:** Shell length between 3 to 5 mm, obliquely pear-shaped, inflated, posteriorly pustulated otherwise smooth, with a blunt, knob-like spire. Protoconch and subsequent whorls covered by thin, translucent callus. Suture visible. Junction with teleoconch distinct. Body whorl almost 90% of total height, roundly shouldered adapically, with the maximum diameter one third from the adapical suture, abruptly tapered below and only slightly constricted at the ventrum. Dorsum roundly and highly elevated, roundly shouldered, constricted towards anterior terminal collar. Dorsal sulcus obscured represented by obsolete dimples behind spire and anterior extremity in fully adult specimens. Ventral callus thick, opaque, porous. Aperture comprises at least 95% of total height, slightly sinuous and narrow. Posterior terminal tip indented, anterior blunt. Labrum thickened, smooth, left half flattened and slightly sloping slightly into aperture, right half rounded, outer margin roundly callused, ridged at inner margin, with fine, regular denticles. Denticles extended as fine folds onto the labrum. Outer labral margin anteriorly edged. Siphonal canal short, indented, funnel-like widened. Anal canal funnel-like widened, indented. Columella concave, curved, widened with a developed inner carinal ridge and a callused and edged parietal lip. Columellar denticles fine, almost obscured, close-set, occasionally fused. Anterior most columellar denticles extended as folds onto ventrum. Ventral folds fine, short, seven to nine in number. Fossula concave, obsolete, not delimited from the columella. Terminal ridge obscured.

Dorsum and dorsal part of labrum light greenish-brown. Protoconch and first whorls olive-brown. Anterior tip dark greenish-brown. Ventrums, ventral part of labrum, concave, fossula and suture line white.

**Variation:** The shell inflation varies. The dorsal dimples are more or less developed. The dorsal coloration varies from light yellow (paratype 4) to any shades of light brown to light red-beige.

**External morphology and radula:** No information is available on external morphology and radula.

**Comparison:** The new species resembles *Alaerato mactanica* (T. Cossignani & V. Cossignani, 1997) somewhat but *A. arbastoi* differs immediately from the latter by the short, blunt, knob-like spire, by the wider columella and the in general smaller shell (3 to 5 mm in *arbastoi* vs. 5 to 7 mm in *mactanica*).

**Etymology:** Named after Jo Arbasto, fisherman on the island of Panglao, who took part in the Panglao Marine Biodiversity Project, deployed tangle nets in the area between Panglao and Balicasag, and collected most of the type specimens.

**GENUS:** *Cypraeerato* F.A. Schilder, 1933  
Type species: *Erato bimaculata* Tate, 1878, by monotypy

***Cypraeerato splendida* n. sp.**  
(Plate 2, Figs 3a-c; Plate 3, Figs 1a-c to 3a-c)

**Type material:** Holotype: MNHN IM-2000-33169. Length: 5.2 mm; width: 3.0 mm; height: 2.2 mm; LT 18; CT 20.

From type locality:

Paratype 1: MNHN IM-2000-33170. Length: 4.9 mm; width: 3.2 mm; height: 2.7 mm; LT 17; CT 21.

From MNHN sta. L76:

Paratype 2: MNHN IM-2000-33171. Length: 5.5 mm; width: 3.3 mm; height: 2.7 mm; LT 18; CT 23.

From MNHN sta. L42:

Paratype 3: MNHN IM-2000-33172. Length: 4.4 mm; width: 2.9 mm; height: 2.4 mm; LT 19; CT – (subadult).

Off Mactan Island, Cebu, Philippines; trawled at 200 m:

Paratype 4: DFB, No. 11799. Length: 5.0 mm; width: 3.1 mm; height: 2.7 mm; LT 20; CT 20.

**Type locality:** Expedition Panglao Marine Biodiversity Project 2005-06: MNHN loc. #P4: Momo Beach, 09° 36.5' N – 123° 45.3' E, Panglao Island, Philippines; tangle nets in 80 to 120 m.

**Distribution:**

MNHN sta. L42: Panglao Marine Biodiversity Project 02JUL2004, Balicasag Island, 09° 31.2' N – 123° 40.7' E, Philippines; dredged at 80 to 90 m.

MNHN sta. L76: Panglao Marine Biodiversity Project 2004-05, Off Momo Beach, 09° 36.5' N – 123° 45.3' E, Panglao Island, Philippines; dredged at app. 80 m.

Also from Mactan Island, Cebu, Philippines.

**Description:** Shell length between 4 to 6 mm, obliquely pear-shaped, posteriorly pustulated, with a blunt spire. Protoconch and subsequent whorls covered by thin callus. Suture visible. Junction with teleoconch distinct. Body whorl almost 90% of total height, roundly shouldered adapically, with the maximum diameter one third from the adapical suture, evenly tapered below and only slightly constricted at the ventrum. Dorsum roundly elevated, constricted towards anterior terminal collar. Dorsal sulcus obscured represented by obsolete dimples behind spire and anterior extremity in fully adult specimens. Shell surface covered by glossy, thin, translucent callus. Aperture comprises at least 90% of total height, straight and narrow. Posterior terminal tip protruded, anterior indented. Labrum thickened, smooth, left half flattened and slightly sloping slightly into aperture, right half rounded, outer margin roundly callused, roundly edged at labral shoulder, ridged at inner margin, with coarse denticles. Denticles extended as short, coarse folds onto the labrum. Siphonal canal short, funnel-like widened. Anal canal simple. Columella convex, rounded, with a developed inner carinal ridge and a posteriorly obscured parietal lip. Parietal lip anteriorly ridged, projected. Columellar denticles coarse, slightly irregular and rather obscured. Anterior most columellar denticles extended as onto ventrum.

Ventral folds coarse, short, three to five in number. Fossula concave, obsolete, not delimited from the columella. Terminal ridge obscured.

Dorsum rich beige. Spire olive. Anterior terminal and siphonal canal brown. Last whorl of spire, labrum, columella, anal canal and posterior ventrum blood-red. Anterior ventrum, labral suture line, suture of teleoconch and labral denticles white.

**Variation:** Spire more or less elevated, defines occasionally the shell length. Labral denticles sometimes obscured anteriorly. Coloration of labrum, ventrum and columella varies.

**External morphology:** Paratype 4 consists of the dried animal. One part of the mantle lobe is preserved on the columella. The mantle seems to be translucent speckled with black, small dots, with a black margin.

**Radula:** No information is available.

**Comparison:** This eratoid is again an outstanding species and there are no similar taxa to be compared with. The only other red colored species is *Hespererato rubra* Fehse, 2016 but the whole shell morphology distinguishes both.

**Etymology:** From the Latin adjective, *splendidus*, -a, meaning magnificent, splendid.

**Acknowledgements:** The organizers of the Panglao Marine Biodiversity Project would like to thank the various agencies of the Government of Philippines for their vision to embrace and approve the execution of this massive expedition. In particular, we would like to thank the Department of Agriculture for granting the necessary permits to conduct the expedition; the Total Foundation for their generous support of the expedition; and the administration and staff at the University of San Carlos, Cebu, for offering their full support.

#### **Bibliography:**

- Beals, M.N., 2001. A new species of *Robertotrivium* from the Philippines. *La Conchiglia*, **33**(298): 20-22, text figs 1-6, 1 tab.
- Beals, M.N., 2002. A new species of *Blasicrura* Iredale, 1930 (Gastropoda: Cypraeidae) from the Philippines. *La Conchiglia*, **34**(303): 15-17, text figs 1-10, tab. 1.
- Bouchet, P., 2009. From specimens to data, and from seashells to molluscs: the Panglao Marine Biodiversity Project. *Vita Malacologica*, **8**: 1-8.
- Bouchet, P., P.K.L. Ng, D. Largo & S.H. Tan, 2009. Panglao 2004 - Investigations of the marine species richness in the Philippines. *The Raffles Bulletin of Zoology*, suppl. 20: 1-19.
- Cate, C.N., 1977. A Review of the Eratoidae (Mollusca: Gastropoda). *The Veliger*, **19**(3): 341-366, 366a + 366b.
- Cossignani, T., & Cossignani, V., 1997. Descrizione di tre nuove *Erato* (Gastropoda: Prosobranchia, Eratoidae). *Malacologia Mostra Mondiale*, **24**: 17-18, 1 pl.
- Fehse, D., 2011. Contributions to the knowledge of the Eratoidae. VI. A new species of *Alaerato* Cate, 1977 from Palawan, Philippines. *Spixiana*, **34**(2): 147-152, pls 1-2, text fig. 1, tabs 1-2.
- Fehse, D., 2015. Contributions to the knowledge of the Eratoidae. X. New species in the genus *Proterato* F.A. Schilder, 1925. *Neptunea*, **13**(3): 27-31, pls 1-2.
- Fehse, D., 2015. Contributions to the knowledge of Triviidae. XXIX-B. New Triviidae from the Philippines. *VISAYA*, Suppl. 5: 17-47, pls 1-10, text figs 1-2 + 12 unnumb., 1 tab.
- Fehse, D., 2016. Contributions to the knowledge of the Eratoidae. XI. New species in the genus *Hespererato* F.A. Schilder, 1925. *Neptunea*, **14**(1): 30-36, text figs 1-6.
- Fehse, D., & Grego, J., 2004. *Contributions to the knowledge of the Triviidae (Mollusca: Gastropoda). IX. Revision of the genus Trivellona Iredale, 1931*. Berlin-Banska Bystrica (privately publ.): 122 pp, 31 pls, 8 text figs, 33 maps [CD-ROM]
- Fehse, D., & Grego, J., 2009. *Revision of the genus Trivellona Iredale, 1931. (Mollusca: Gastropoda: Triviidae). Allied Cowries. Contribution to the knowledge of Triviidae*. Grafon (Nagykovácsi, Hungary): 160 pp, 31 + 5 pls, 9 text figs, 33 maps.
- Rosenberg, G. & Finley, C.C., 2001. New species of Triviidae (Mollusca: Gastropoda) from South Africa, Namibia and the Philippines. *Proceedings of the Academy of Natural Sciences of Philadelphia*, **151**: 23-30, text figs 1-30.

## Plate 1

a – dorsal view, b – lateral view, c – ventral view

### ***Alaerato atomaria* n. sp.**

- 1a-c. Holotype. Length: 5.1 mm; width: 3.1 mm; height: 2.6 mm. MNHN IM-2000-33147.  
2a-c. Paratype 1. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33148.  
3a-c. Paratype 2. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33149.

## Plate 2

a – dorsal view, b – lateral view, c – ventral view

### ***Alaerato atomaria* n. sp.**

- 1a-c. Holotype. Length: 5.1 mm; width: 3.1 mm; height: 2.6 mm. MNHN IM-2000-33147.  
2a-c. Paratype 1. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33148.

### ***Cypraeerato splendida* n. sp.**

- 3a-c. Paratype 3. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33172.

## Plate 3

a – dorsal view, b – lateral view, c – ventral view

### ***Cypraeerato splendida* n. sp.**

- 1a-c. Holotype. Length: 5.1 mm; width: 3.1 mm; height: 2.6 mm. MNHN IM-2000-33169.  
2a-c. Paratype 1. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33170.  
3a-c. Paratype 2. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33171.

## Plate 4

a – dorsal view, b – lateral view, c – ventral view

### ***Alaerato arbastoi* n. sp.**

- 1a-c. Holotype. Length: 5.1 mm; width: 3.1 mm; height: 2.6 mm. MNHN IM-2000-33158.  
3a-c. Paratype 1. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33159.

### ***Alaerato mactanica* (T. Cossignani & V. Cossignani, 1997)**

- 2a, c. Holotype. Length: 5.1 mm; width: 3.1 mm; height: 2.6 mm. Coll. MMP (After Cossignani & Cossignani, 1997: 17, text figs).

## Plate 5

a – dorsal view, b – lateral view, c – ventral view

### ***Alaerato arbastoi* n. sp.**

- 1a-c. Paratype 2. Length: 5.1 mm; width: 3.1 mm; height: 2.6 mm. MNHN IM-2000-33160  
2a-c. Paratype 3. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33161.  
3a-c. Paratype 4. Length: 4.8 mm; width: 3.0 mm; height: 2.6 mm. MNHN IM-2000-33162.



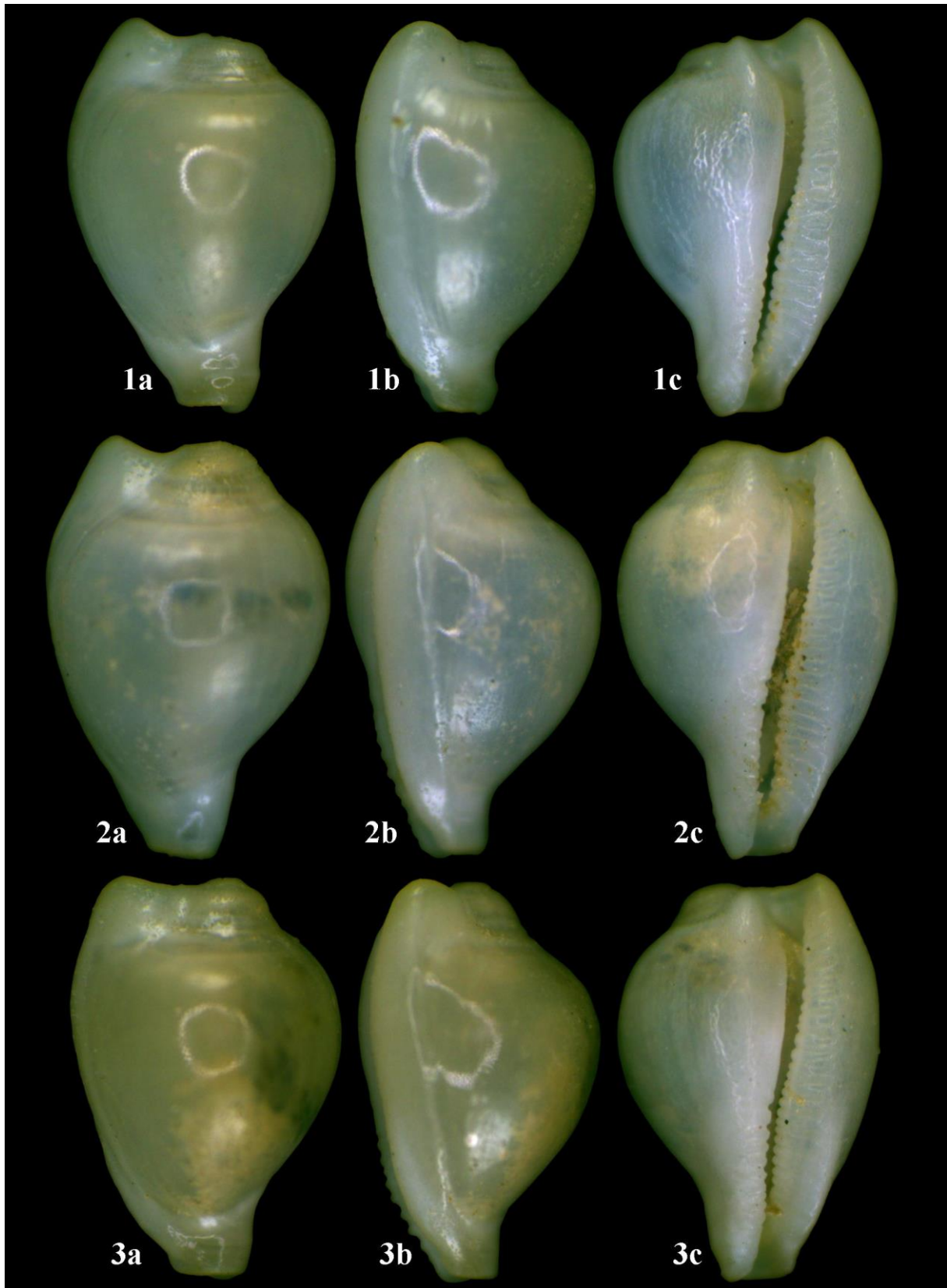


Plate 1

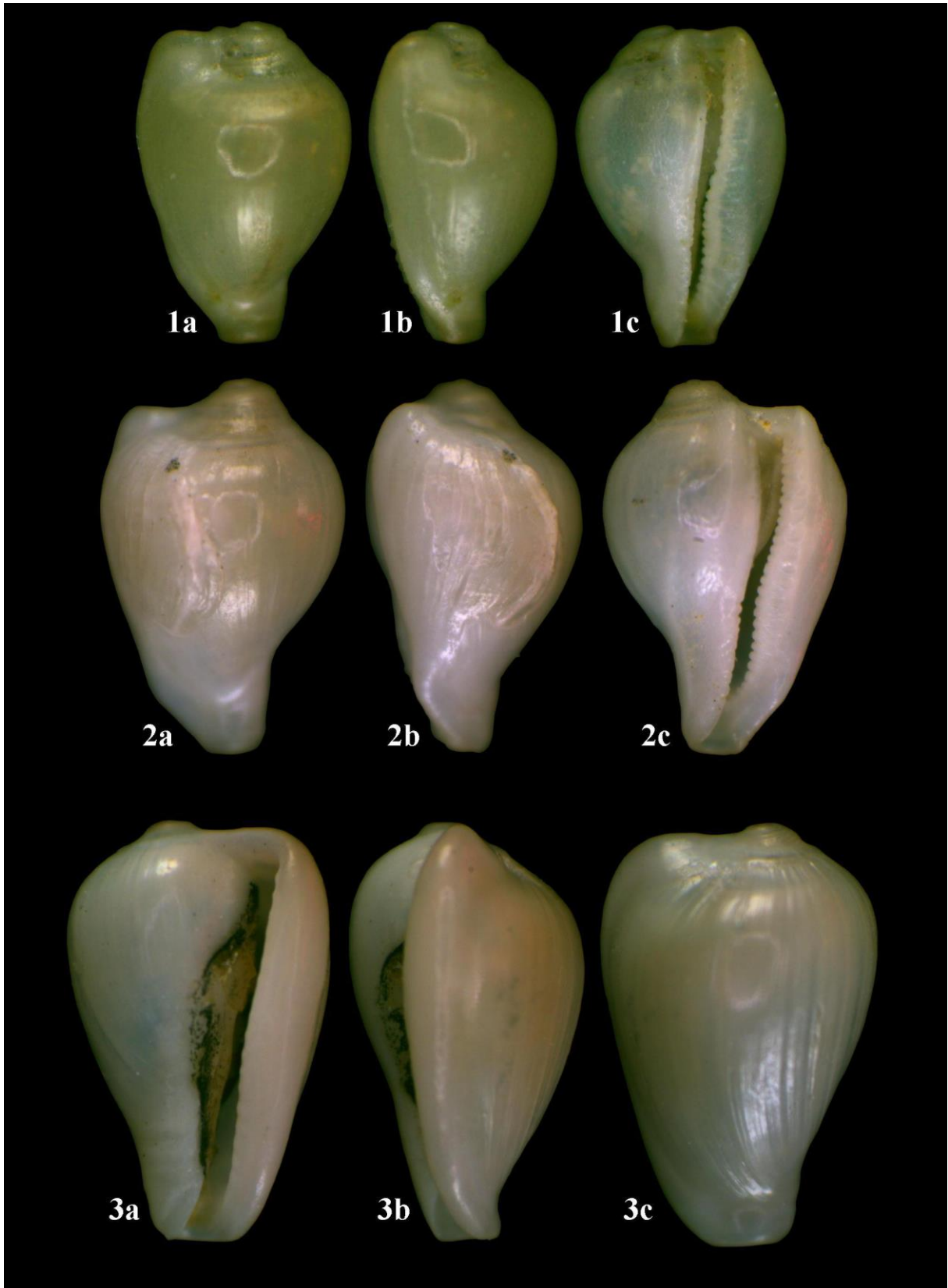


Plate 2

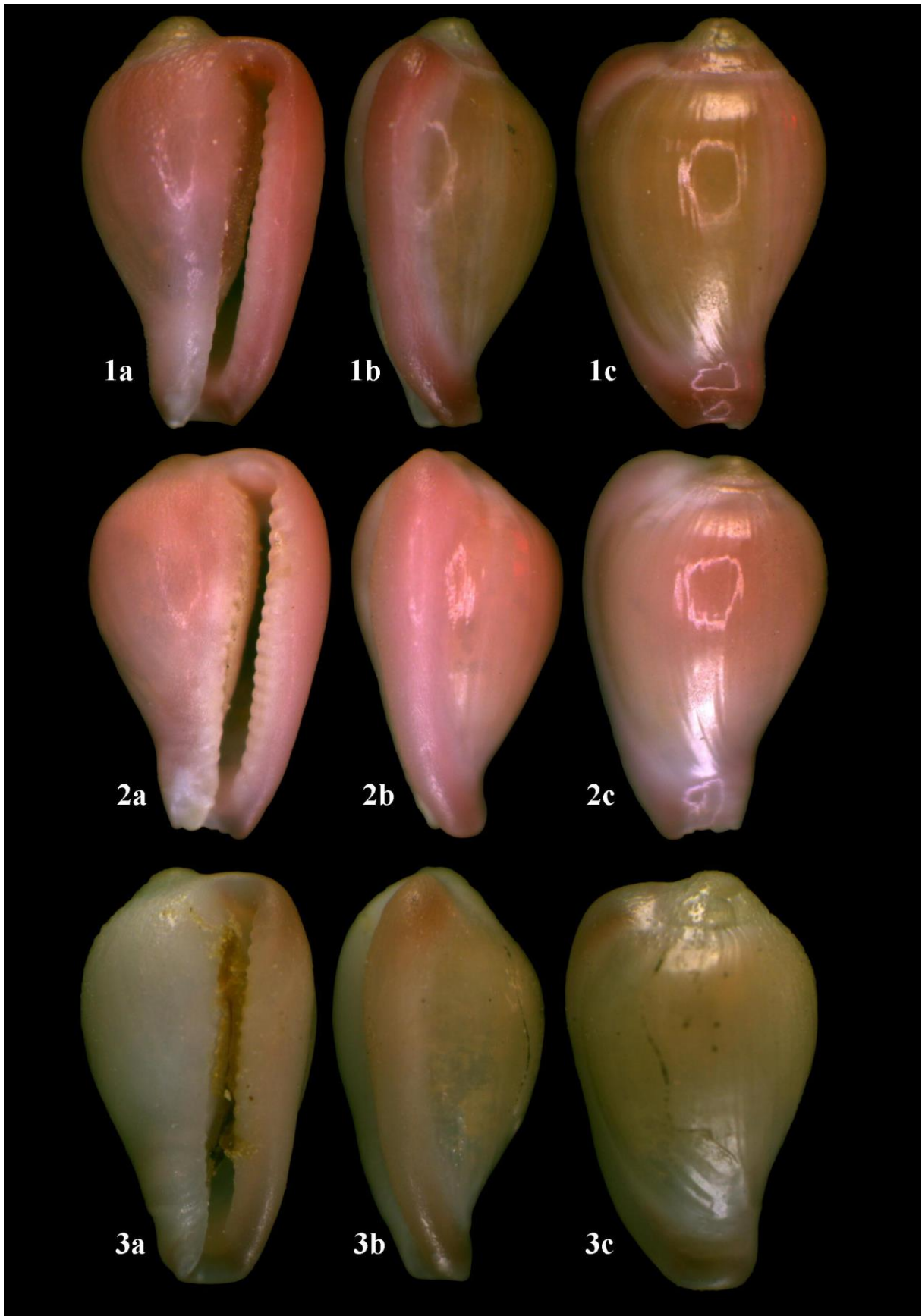


Plate 3

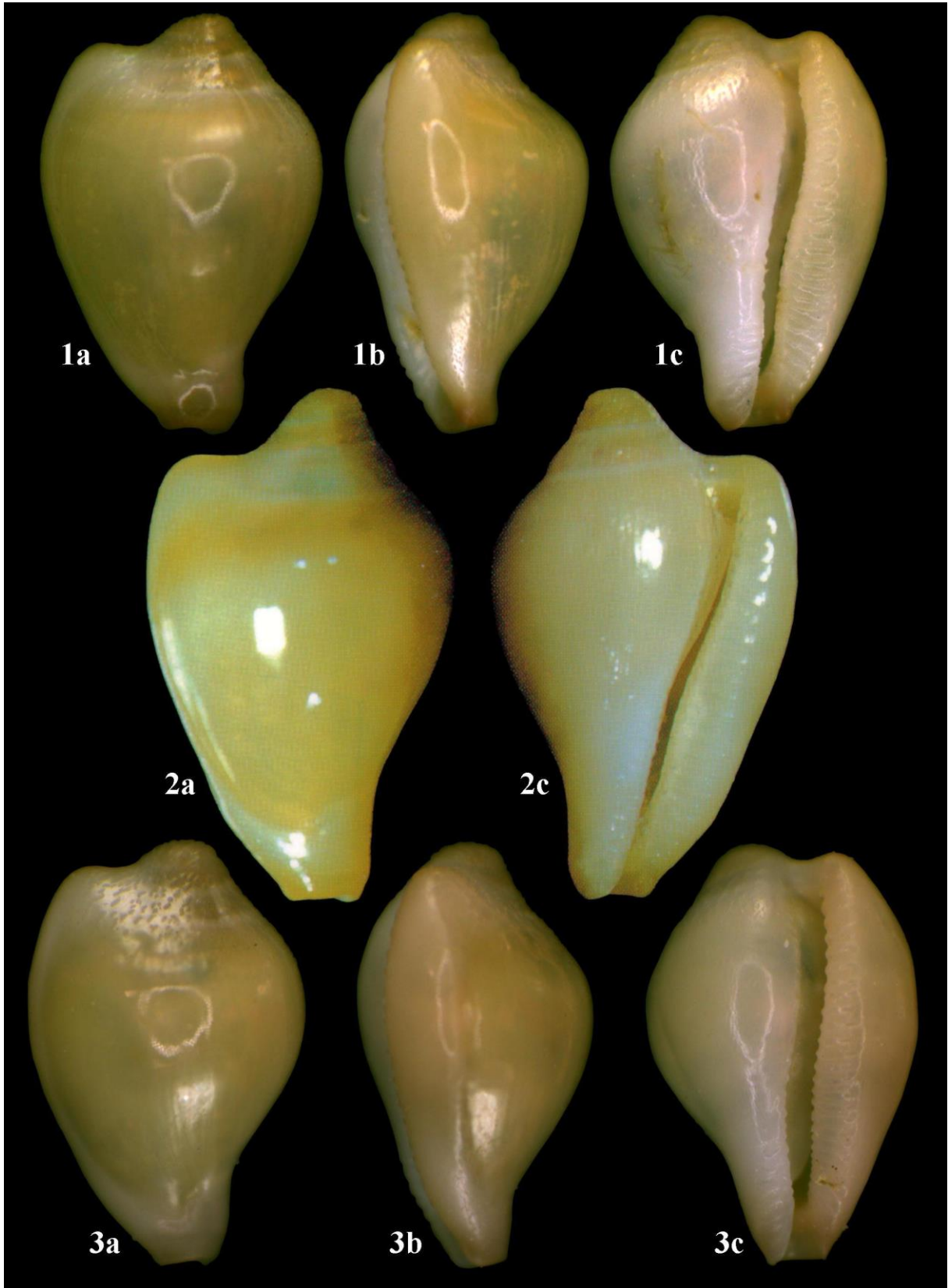


Plate 4

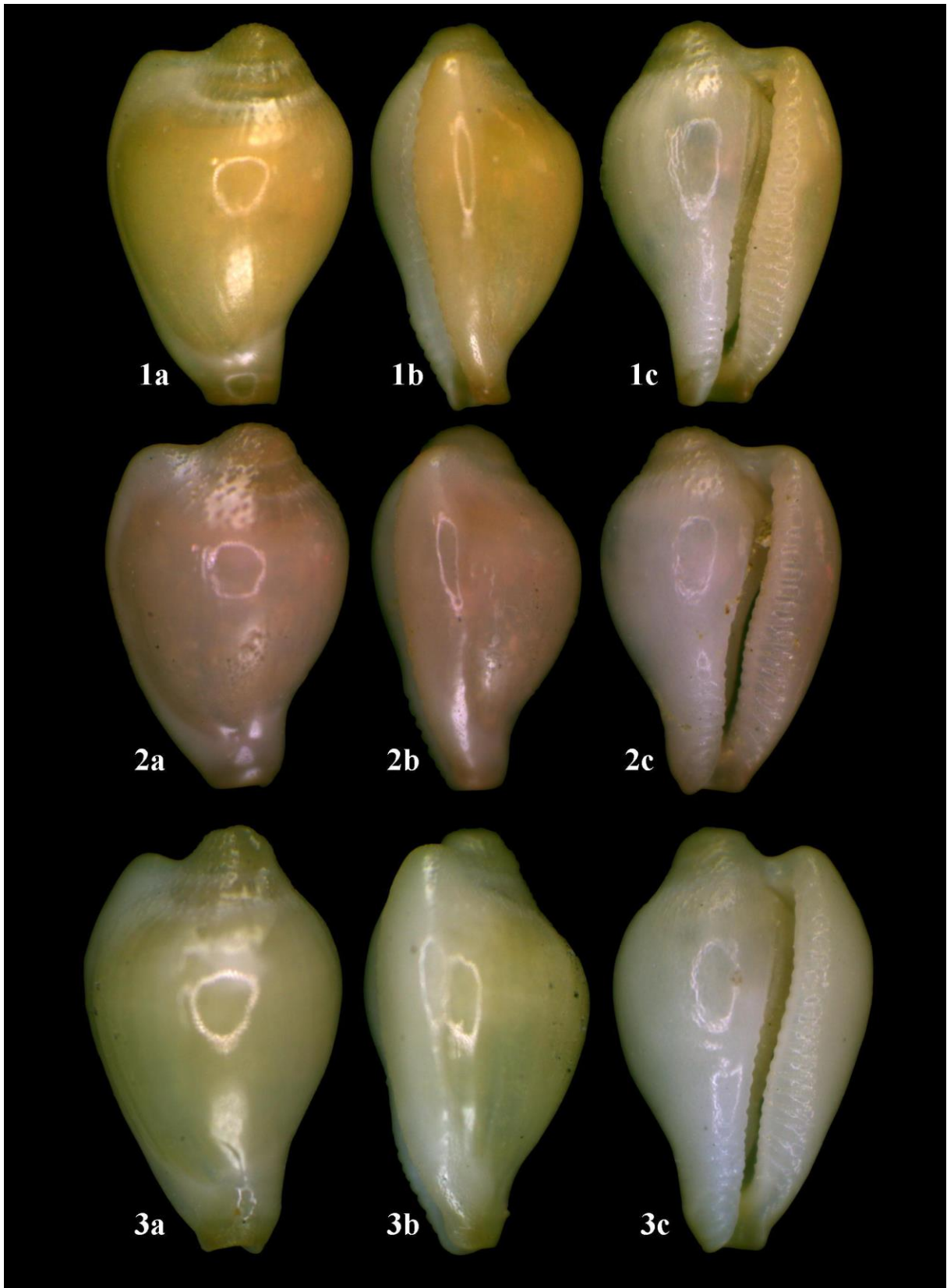


Plate 5



## Instructions to authors

We invite any author to publish articles with a taxonomical and nomenclatural content about Mollusca in our magazine 'Neptunea'. Yet, all conchological and malacological articles with serious content such as book reviews, announcements, short notes or reports of shelling expeditions are also accepted. Well-illustrated articles have priority over pure text. There is no limitation on the number of colour figures or photographs. Membership is not mandatory for authors. Publishing is totally free, independent of the number of pages or photographs.

Taxonomic papers must be in agreement with the recommendations of the International Code of Zoological Nomenclature (4<sup>th</sup> edition). Papers describing new species (subspecies) will be accepted only if primary types are deposited in a recognized public Museum or scientific Institution.

**Manuscripts** can be submitted in Dutch, French or English, either by e-mail, CD-ROM/DVD (as \*.doc documents in Arial 10pt., preferably in Word – PC or Macintosh) or even in readable hand written or typed form on plain paper. Text must be typed in one column. The sequence of sections will respect the following order: **title, name of author(s), address(es) of author(s), a list of key words** (no more than ten) under which the article should be indexed and a brief **summary (abstract)** in **English**, not exceeding 200 words. Generic and (sub)specific names should be typed in *italics*. Names of levels higher than genus-rank should not be typed in upper case letters. The first mention in the text of any taxon must be followed by its author including the year.

The following pages should be divided into sections under short headings. Whenever possible the text should be arranged as follows: **Abbreviations** (grouped in alphabetical sequence), **Introduction, Type material, Type locality, Measurements, Materials and Methods, Description, Derivation of name, Habitat, Geographic range, Results, Discussion, Conclusions, Acknowledgements** and **References**. Please, refer to a recent issue of 'Neptunea' for the lay out. All articles should be aimed at a general audience and authors should include definitions for technical terms or abbreviations.

**Illustrations:** We prefer colour plates or figures, black and white figures are accepted too. Photographs must be of a high quality, printed on glossy paper and submitted in the final version (max. A4: 210 x 297 mm). However, we prefer illustrations as digital files in jpg- or png-format taken by a high resolution digital camera (at least 8 M pixels) and submitted by e-mail or CD/DVD. Please make sure that photographs are in sharp focus throughout. Avoid making cutouts. Layout suggestions from authors are welcomed. It is recommended to print figures with their legend below, so authors are asked to take this into account when preparing full page figures.

Plates are numbered with consecutive Roman numbers (I, II, III, ...) and figures with separate consecutive Arabic numbers (1, 2, 3, ...), for instance: Plate I. Figs 1, 2, 3 & 4; Plate II. Figs 5, 6 & 7 or Plate IV. Figs 1-10 if more than five illustrations. Tables must be numbered with Roman characters. Measurements of shells should be in metric units (0.1 mm or 0.01 mm).

**References in the text** should be given as follows: Monsecour & Kreipl (2003) or (Monsecour & Kreipl, 2003). The first mention in the text of a paper with more than two authors must include all of them, thereafter use 'et al'. If an author has published more than one paper per year, refer to them with letters, for instance: Bozzetti, 2002a; Bozzetti, 2002b). The statements in the reference list should be in alphabetical order and must include all the publications cited in the text but only these. All the authors of a paper, written in small letters, have to be included. The references need not be given when the author and date are mentioned only as authority for a taxonomic name. Titles of **periodicals** (*italics*) are written in full, not abbreviated, numbers of volumes reproduced in bold characters. For **books**, give the author, year, title (*italics*), name of publisher, place of publication, indication of edition if not the first and total numbers of pages. Keep references to **doctoral theses** or any other unpublished documents to an absolute minimum.

**References**, in alphabetical order, should be given in the following form (please note the punctuations):

Aartsen, J.J. van, 2002. Indo-Pacific migrants into the Mediterranean. 1. *Gibborissoa virgata* (Philippi, 1849). *La Conchiglia*, **34**(303): 56-58.

Alf, A. & Kreipl, K., 2004. A new *Bolma* from Madagascar (Mollusca, Gastropoda, Turbinidae). *Spixiana*, **27**(2): 183-184.

CLEMAM, 2003. Check List of European Marine Mollusca, <http://www.somali.asso.fr/clemam/index.clemam.html>.

Dautzenberg, P. & Fischer, H., 1906. Mollusques provenant des dragages effectués à l'ouest de l'Afrique pendant les campagnes de S.A.S. le Prince de Monaco. In: Richard, M.J. (Ed.): *Résultats des Campagnes Scientifiques accomplies sur son yacht par Albert 1<sup>er</sup> Prince Souverain de Monaco*. Imprimerie de Monaco, Monaco, **32**: 1-125, pls 1-5.

Okutani, T., 2000. *Marine Mollusks in Japan*. Tokai University Press. Tokyo. 1173 pp.

**Processing of manuscripts:** After reading and considering the manuscript, proofs of the text will be returned to the author(s) for reviewing or correcting errors. When a paper has a joint authorship, one author must accept responsibility for all correspondence and each contributor is responsible for the content of the paper.

After publication each author will receive five free copies of his article. If number of pages exceeds eight, each author receives one copy of the complete issue. More copies can be obtained at a reduced price.

For any questions, kindly contact the responsible editor: [frank.nolf@pandora.be](mailto:frank.nolf@pandora.be).



**We are resilient,  
We are strong,  
We will rebuild,  
Every brick & stone!**

**Hurricane Irma  
6 September 2017**

**#REBUILD SXM**

