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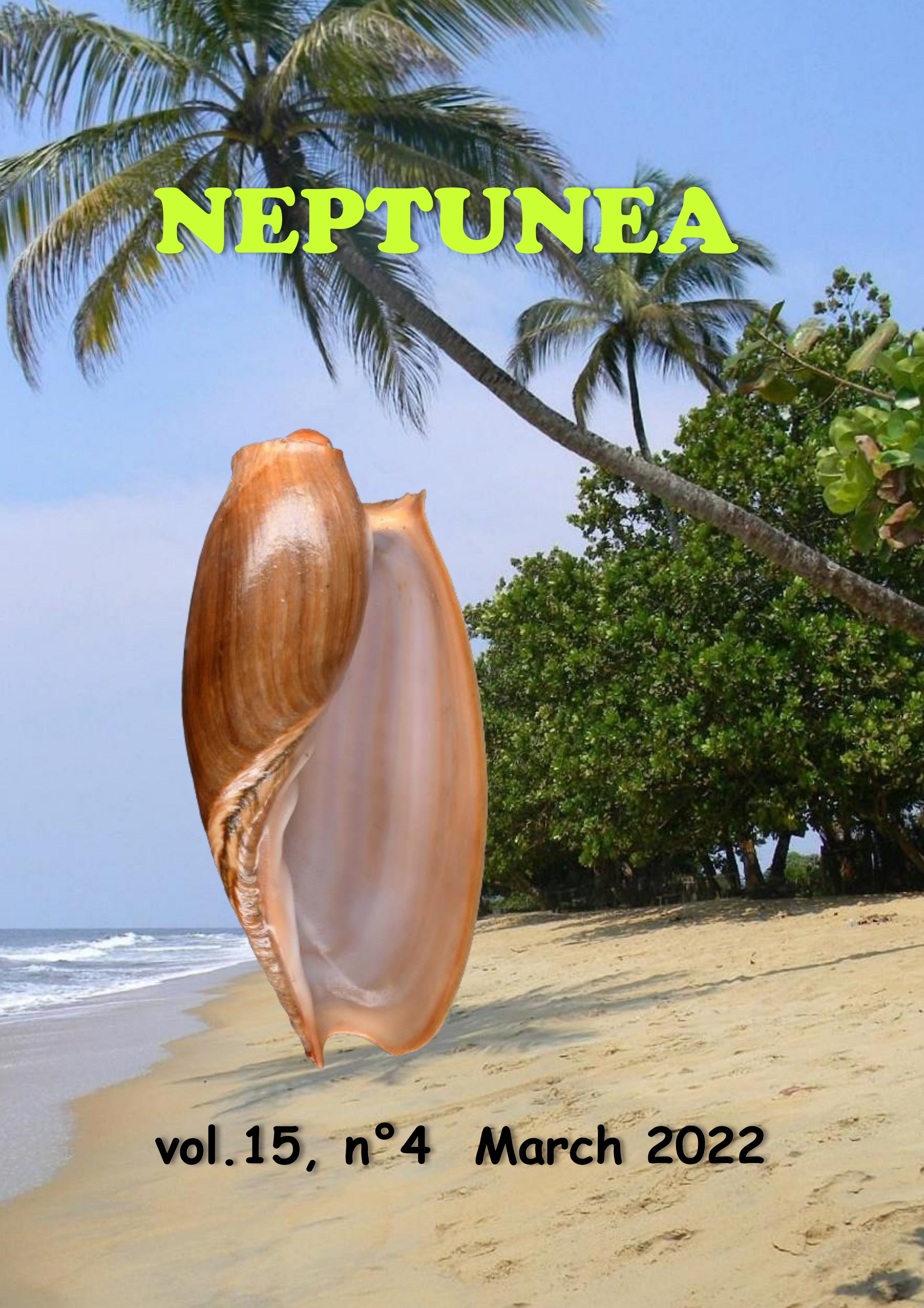

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Content:

Covers:
- Front cover: Holotype of *Cymbium ferranti* sp. nov. with the Plage de Grand Batanga (Cameroon) as background.
- Back cover: The Bay of Heist (Belgian coast) where the new non-indigenous bivalve *Mulinia lateralis* (Say, 1822) has settled now.

Layout: Frank Nolf

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Confirmation of the range extension of *Schilderina achatidea* (Gray, 1837) (Mollusca: Gastropoda: Cypraeidae) from Galicia (Spain) in the north towards northern Namibia in the south of the Eastern Atlantic

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Keywords: Mollusca, Gastropoda, Cypraeidae, *Schilderina achatidea*, Bay of Biscay, Namibia, subspecies, range extension.

Abstract: This paper confirms the presence of *Schilderina achatidea* (Gray, 1837) from Galicia (N Spain) to Cape Fria (Namibia). It turned out that it is not possible to differentiate specimens from the W Mediterranean Sea and localities along the West African coast. Except for *S. achatidea verdensis* Lorenz, 2017, there is no reason to recognize subspecies as *oranica* Crosse, 1896, *inopinata* Schilder, 1930 and *longinqua* Schilder & Schilder, 1938. These so-called subspecies refer to areas which are not separated from each other. Molecular analysis is needed to support this statement.

Abbreviations:

CFN: Private collection of Frank Nolf (Oostende, Belgium)
CJV: Private collection of Johan Verstraeten (Oostende, Belgium)
PEMARCO: Pêche Maritime du Congo

Material and methods: The following specimens of *Schilderina achatidea* (Gray, 1837) were examined:

- A Guarda, Ria de Pontevedra, northern Spain. Dredged by fishermen at a depth of 200 m. In mud. March 2015. 41.12 mm. CJV. (Pl. IV, figs 21-22).
- 3 km off A Guarda, Galicia, northern Spain. Trawled by fishermen at a depth of 70 m. December 2002. 38.46 mm. CJV. (Pl. IV, figs 23-24).
- Fuengirola, Málaga, southern Spain. Dredged by fishermen at a depth of 70 m. On rocks. June 1991. 36.56 mm, 39.60 mm. CFN. (Pl. IV, figs 19-20).
- Off Agadir, Morocco. Trawled by fishermen. 1976. 34.59 mm, 37.07 mm, 39.37 mm. CFN. (Pl. III, figs 13-18).
- Off Nouakchott, Mauritania. 18° N/ 17° W. Dredged by Spanish fishermen. 1962. 36.14 mm, 38.29 mm. CFN. (Pl. II, figs 9-12).
- Cape Fria, Namibia. Trawled by Belgian fishermen (PEMARCO) among seaweed at a depth of 25 m. 1970. 29.25 mm, 32.55 mm, 33.63 mm, 36.58 mm. (Pl. I, figs 1-6; Pl. II, figs 7-8).

Discussion: Already in 1917, Hidalgo mentioned in a general distribution list the presence of *S. achatidea* in E Atlantic waters of northern Spain, without any particular information.

F.A. Schilder (1930) described the subspecies *Schilderina achatidea inopinata* on a unique specimen '*'from West Africa (without exact locality)*' and F.A. Schilder & M. Schilder (1938) created the subspecies *S. achatidea longinqua*, also based on a unique specimen from '*Port Alexandre, S Angola*'.

Burgess (1970) didn't follow the opinion of Schilder (1930) and Schilder & Schilder (1938) who created subspecies names for specimens from W Africa. He judged that accurate locality data were not available because '*general or suspect, or both*' from the small number of samples studied. Moreover, examination of shells in several European museums failed to reveal '*any significant structural differences except degree of majority, no matter what region they were from*'.

Clover (1976) gave some comments about characteristics and distribution of the three subspecies described from W Africa.

Ramalho (1979) notified the presence of this cowrie in the western area of the Iberian Peninsula as far north as Vigo (N Spain).

Rolán (1983) reported live specimens in the vicinity of Ria de Vigo (Galicia, northern Spain) and Otero-Schmitt & Trigo (1987) wrote about a dead shell from the beach of Aquino, also in Galicia and live specimens that were found at the mouth of Ria de Arousa.

Delongueville & Scaillet (1992) obtained a live specimen of *S. achatidea*, measuring 36.0 x 22.8 mm, in an area close to Santander (northern Spain). The specimen was caught by a fisherman in his nets while fishing between 80 and 100 m north of Cape Ajo. This report appears to be very reliable as the fishermen went fishing only in the surrounding waters, returning to the harbour every afternoon.

Heiman (2007) tried to make a distinction between *S. achatidea achatidea* (Mediterranean Sea) and *S. achatidea inopinata* (Morocco, Mauritania) by comparing their width/length ratio (64% versus 61%). His study was not convincing because only minor differences were noticed and the W/L ratio was similar in both subspecies, in contrast with the opinion that the West African specimens are more elongate.

Lorenz & Hubert (2000) justified the West African "*longinqua*", not as different subspecies, but merely as a varietal name. In addition, they rejected the name "*inopinata*", earlier used for elongate specimens with pale tan margins and a rather coarse dorsal freckling, because such characteristics are found in all populations of *S. achatidea*.

Lorenz (2017) described the new subspecies *Schilderia achatidea verdensis*, from deep water surrounding the Cape Verde Islands. Duboc & Pineau (2008) already obtained a specimen, trawled from Sal Rei (Boa Vista Island). The holotype and the two paratypes are heavier, broader and less humped dorsally with strong marginal callus, narrower and with more pointed extremities. The basal callus is more developed. The fossula are more produced and more distinctly denticulate. A defined spire blotch could be a typical characteristic.

Felix Lorenz (2017) questioned the presence of *S. achatidea* as far north as the Bay of Biscay, though data in several serious papers and books refer to finds of living specimens. He was rather suspicious about the report by Delongueville & Scaillet (1992).

Trigo, J.E., et al. (2018) delineated a distribution area from the whole Galician area, the Iberian Peninsula to the Mediterranean Sea and the West African south to Angola.

On Pl. IV, figs 21-24 of the present paper, shells from Galicia (northern Spain) are illustrated and in spite of Lorenz' statement (2017) that finds from Angolan waters had to be confirmed, four specimens from Cape Fria (Namibia) trawled by Belgian fishermen (PEMARCO) are shown on Pl. I, figs 1-6 and Pl. II, figs 7-8.

Lorenz (2017) reintroduced the subspecies name '*inopinata*' for all shells from West African coasts, in contradiction to his earlier opinion, but he considered the subspecies name '*longinqua*' as synonym.

Conclusion: In fact, there are no distinct differences between specimens from the various localities along the whole of all West African coasts, from the south of the Iberian Peninsula to the north of Namibia. Half of the parameters mentioned by Lorenz to differentiate *S. achatidea* from *S. achatidea inopinata* refer to identical characteristics, the other half to minor differences which are not constant in the same area. It would be wise to distance ourselves from superfluous subspecies names like '*inopinata'*, '*longinqua'* and '*oranica'* and to regard them all as only one species, except *Schilderina achatidea verdensis* (Lorenz, 2017).

The so-called 'subspecies' from West Africa and the Mediterranean Sea do not belong to isolated waters and are not separated by geographic barriers. Slight differences regarding *'callus on base*', '*aperture*', '*orange band*' and '*transverse band*' are restricted to certain specimens in a population mainly depending on habitat, the kind of food and growth stage. Even the use of taxonomically invalid 'forms' or 'variations' shouldn't be an option.

Acknowledgements: I sincerely thank Johan Verstraeten for the loan of material from Galicia and Jan Libbrecht for a revision of the English text.

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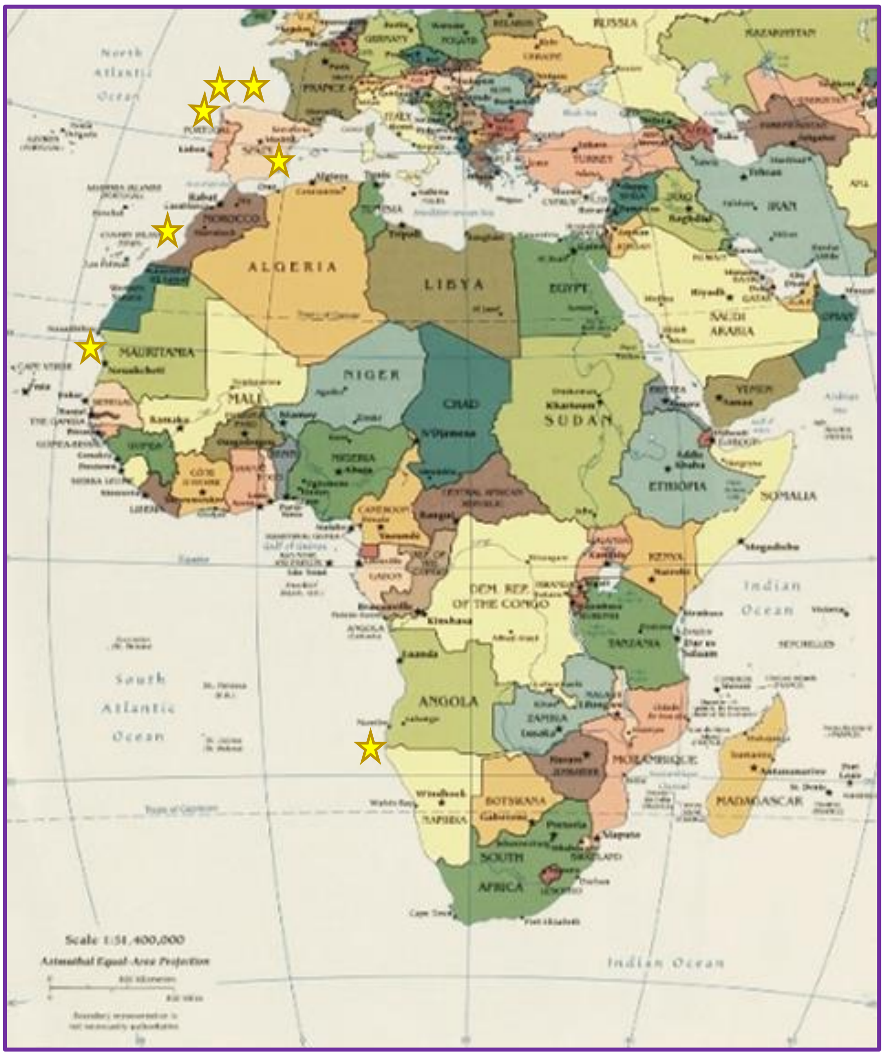

Localisation of samples of *Schilderina achatidea* (Gray, 1837) discussed in the present study (★)

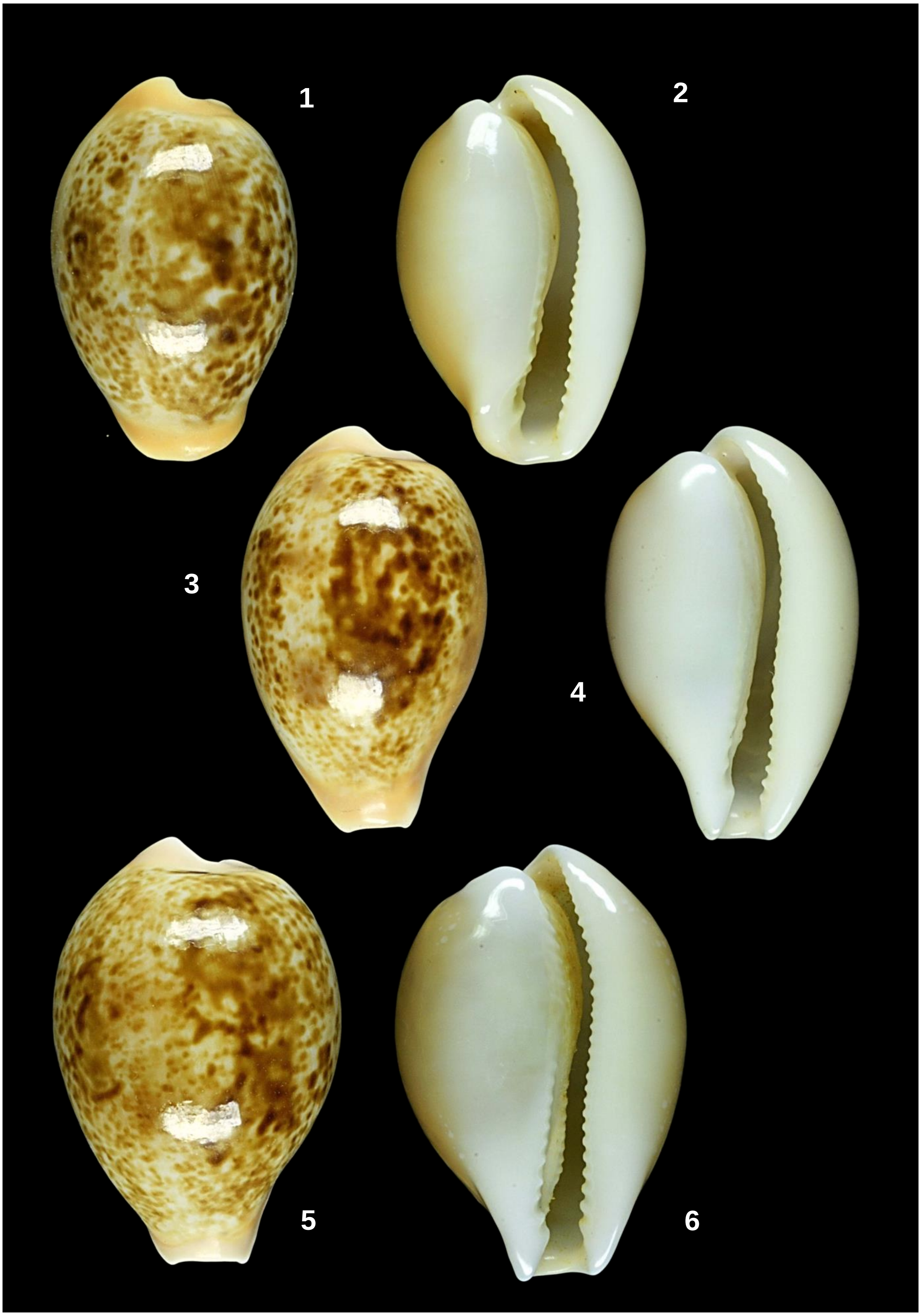

Plate I. Figs 1-6: *Schilderina achatidea* '*longinqua'* (Schilder & Schilder, 1938). Cape Fria, Namibia, SW Africa. Trawled by Belgian fishermen (PEMARCO). Living among seaweed at a depth of 25 m. 1970. CFN; 1-2: 29.25 mm; 3-4: 32.55 mm; 5-6: 33.63 mm.

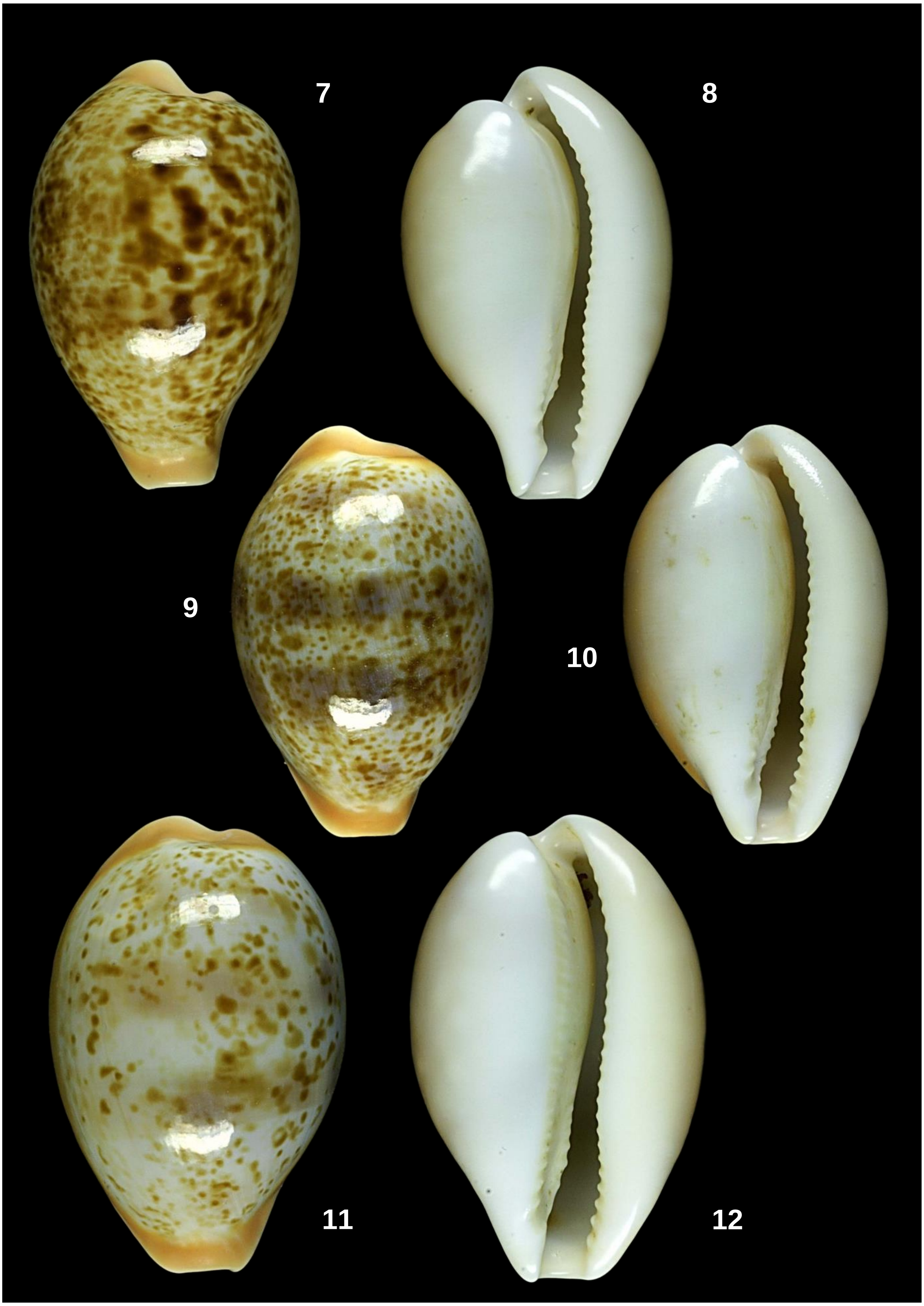

Plate II. Figs 7-12: *Schilderina achatidea* ‘*longinqua’* (Schilder & Schilder, 1938). CFN; 7-8: Cape Fria, Namibia, SW Africa. Trawled by Belgian fishermen (PEMARCO). Living among seaweed at a depth of 25 m. 1970. 36.58 mm; 9-12: Off Mauritania, NW Africa - 18° N/ 17° W. Dredged by Spanish fishermen. 1962; 9-10: 36.14 mm; 11-12: 38.29 mm.

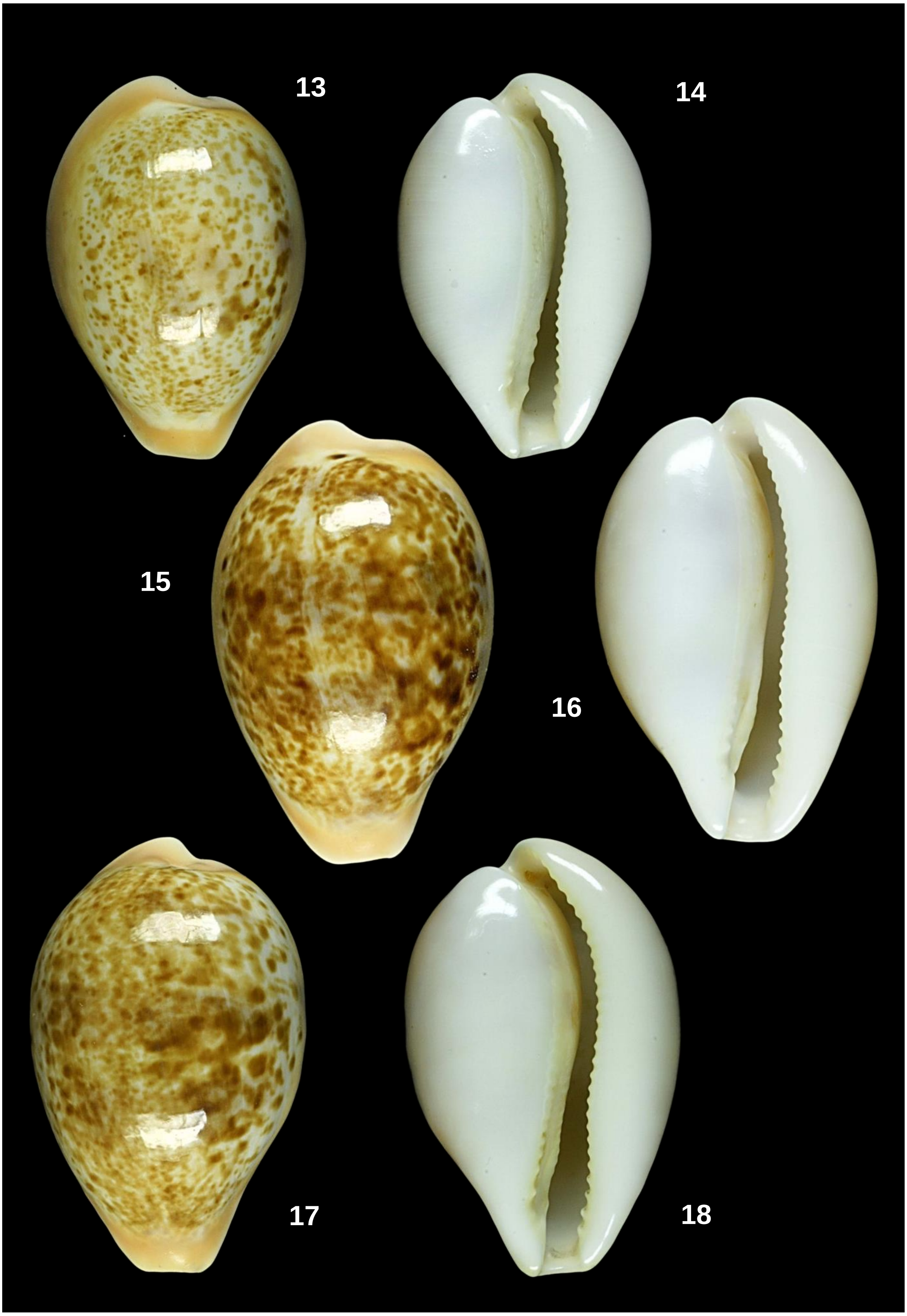

Plate III. Figs 13-18: *Schilderina achatidea* '*inopinata'* (Schilder, 1930). Off Agadir, Morocco, NW Africa. Trawled by fishermen. 1976. CFN; 13-14: 34.59 mm; 15-16: 37.07 mm; 17-18: 39.37 mm.

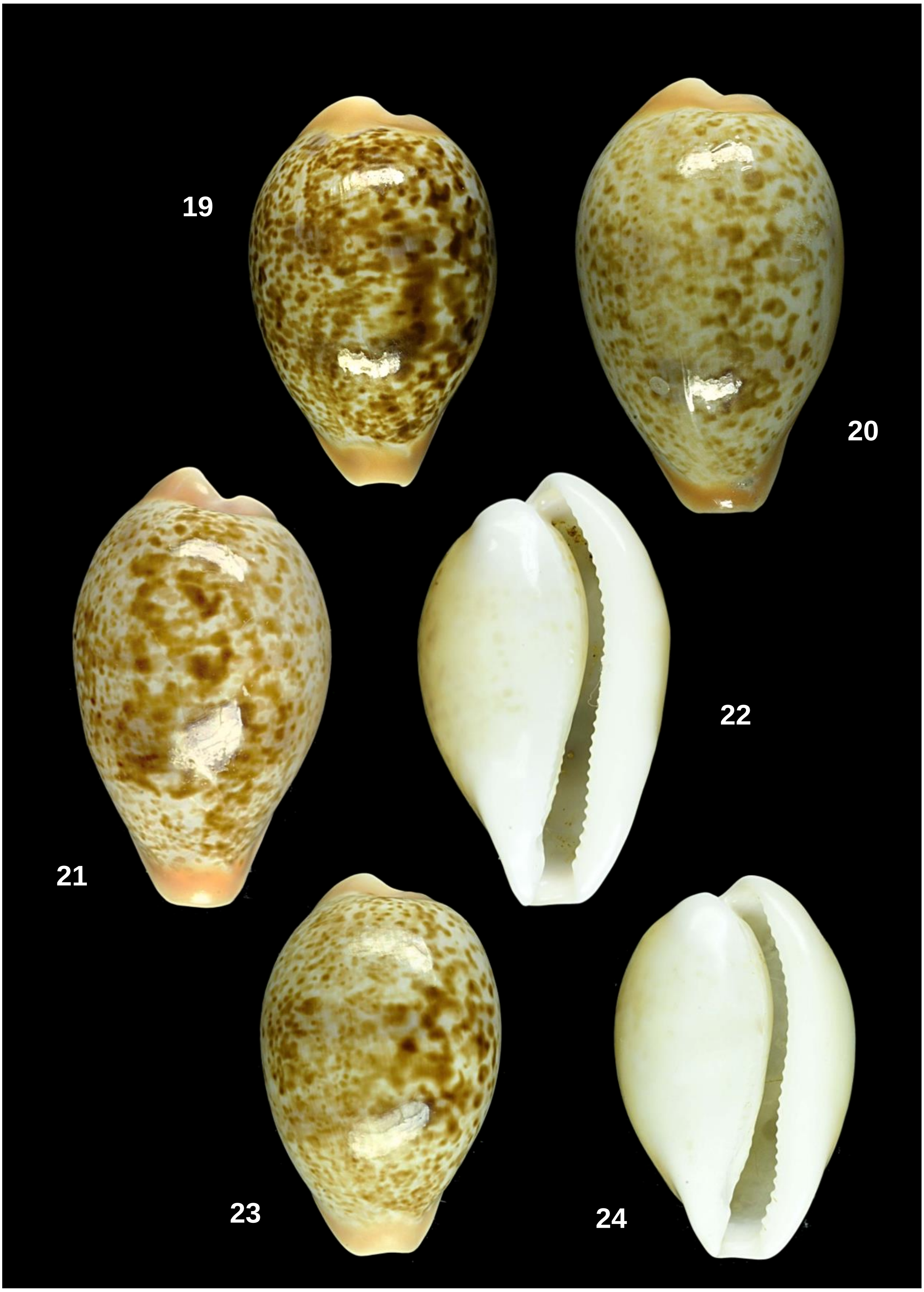

Plate IV. Figs 19-24: *Schilderina achatidea* (Gray,1837); 19-20: Fuengirola, Málaga, southern Spain. Dredged by fishermen at a depth of 70 m. On rocks. June 1991. CFN; 19: 36.56 mm; 20: 39.60 mm; 21-24: CJV; 21-22: Off A Guarda, Ria de Pontevedra, Spain. Trawled at a depth of 200 m. In mud. March 2015. 41.12 mm; 23-24: 3 km off A Guarda, Galicia, Spain. Trawled by fishermen at a depth of 70 m. December 2002. 38.46 mm.

Mulinia lateralis (Say, 1822) (Mollusca: Bivalvia: Mactridae): comparison between native and introduced populations, and differences with *Spisula subtruncata* (da Costa, 1788)

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Keywords: Mollusca, Bivalvia, MACTRIDAE, *Mulinia lateralis*, W Atlantic, North Sea, non-indigenous species.

Abstract: This paper reports finds of *Mulinia lateralis* (Say, 1822) from its native area, which is the western Atlantic Ocean, ranging from the Gulf of St Lawrence to the Gulf of Mexico and also from the North Sea, more specific from The Netherlands and the Belgian coast. Since June 2017 the presence of the dwarf surf clam has often been reported in the Dutch coast waters (a.o. Craeymeersch et al., 2019) and since January 2019 also on the Belgian beaches between Bredene and Knokke (Kerckhof, 2019; Vansteenkiste, 2021; Bauwens, 2021). A comparison between representatives from the W Atlantic and those found in Belgian coastal waters has been made and differences between *Mulinia lateralis* (Say, 1822) and *Spisula subtruncata* (da Costa, 1778) are commented and figured.

Abbreviations:
CFN: Private collection of Frank Nolf (Oostende, Belgium)
CSH: Private collection of Steve Hubrecht (Koksijde, Belgium)
LV: left valve.
pv: pair of valves
RV: right valve.

Introduction: Many non-indigenous mollusc species have been introduced in NW European waters in the last decades. This invasion is due to intensive shipping in the harbours of Rotterdam, Antwerp and Zeebrugge and the aquaculture activities in the Oosterschelde estuary and the North Sea region. *Mulinia lateralis* (Say, 1822) is a new non-indigenous bivalve species, first detected in the SW Dutch coastal zone (the Voordelta) in September 2017, and again in June 2018. In the period between March and June 2018 specimens were also found in the Wadden Sea and the Ems estuary (northern Netherlands), and in the Westerschelde estuary (Craeymeersch, 2019). Since January 2019 small samples have also been reported from the Belgian beaches between Bredene and Knokke (Kerckhof, 2019; Vansteenkiste, 2021; Bauwens, 2021).

Material and methods: The following specimens of *Mulinia lateralis* (Say, 1822) were examined:

- Cumberland Island, Georgia, USA. In sand on the beach. 4 February 1989. 2 pv. 11.63 mm; 12.25 mm. CSH. (Pl. I, figs 1-4).
- Whitfield, Sarasota Bay, Florida, USA. On sandbar at low tide. 7 February 1982. 1 pv. 11.60 mm. CSH. (Pl. II, fig 5).
- Quintana Beach, Brazoria County, Texas, USA. In drift at low tide. 2 December 1981. 2 pv. 15.03 mm; 16.17 mm. CSH. (Pl. II, figs 6-9).
- Sea Isle City, New Jersey, USA. In sand at low tide. October 1966. 1 pv. H. 10.37 mm L. 13.59 mm. CFN. (Pl. III, figs 10-12).
- De Haan, Belgium, North Sea. In sand at low tide. 4 June 2020. CFN. (Pl. III, figs 13-16).
- Bredene, Belgium, North Sea. Alive in sand after storm "*Odette*". 29 September 2020. 10 pv. Largest specimen: H. 16.38 mm L. 20.47 mm. CFN. (Pl. IV, figs 17-22).
- Bay of Heist, Belgium, North Sea. In grit at low tide. 27 March 2022. 11 pv. Largest specimen: H. 16.45 mm L. 21.67 mm. CFN.

Shell morphology: The family MACTRIDAE is characterised by two cardinal teeth in the left valve fused in the shape of a 'Λ' (Signorelli and Pastorino, 2011). In the several genera within the subfamily MACTRINAE the external ligament has been reduced to a varying degree (Signorelli & Carter, 2016). According to Gardner (1928) the genus *Mulinia* Gray, 1837 represents the final stage in the reduction of the external ligament to a remnant below the hinge line. An important character of this genus is the absence of an externally visible ligament.
The genus *Mulinia* has a large variability in shell morphology and is characteristic for brackish water areas. It consists of ten recognized species (WoRMS, MolluscaBase). The shells of six *Mulinia* species have an oval outline, and four species have shells with a more triangular outline, the anterior and posterior margins being

more angular and less rounded, a.o. *Mulinia lateralis.*

Most **important characteristics** of *Mulinia lateralis*:

- triangular outline, with a curved ventral margin
- shell distinctly convex and rather globose
- distinct radial ridge along the posterior end of valves.
- ligament internal
- anterior lateral teeth in right valve of different size, the ventral one longer; two posterior lateral teeth similar in size
- shell surface smooth with very fine concentric growth lines
- shell colour whitish to cream with a thin, yellowish periostracum

Size: From 12 to 16 mm (W Atlantic), specimens in the Wadden Sea larger (21 mm) than in the Westerschelde (up to 7 mm, maybe juvenile specimens), east Belgian coast (from 5 mm to 21 mm), larger in the Bay of Heist. No differences in shell morphology between W and E Atlantic representatives were observed.

Juvenile specimens of *Spisula subtruncata* (da Costa, 1778) without periostracum can be confused with small *M. lateralis* specimens during beach field work, but the presence of the radial ridge along the posterior end of the valves and the bulbous appearance of *M. lateralis* are decisive in identification. Because juvenile specimens of both species are difficult to distinguish, the finds of *S. subtruncata* from the Belgian coast should be carefully re-examined, to check wether *M. lateralis* has not been found before 2019. Moreover, it appears that *M. lateralis* is more variable in outline than *S. subtruncata* (da Costa, 1778).

Differences between the two species are summarized in **Table I**.

	Mulinia lateralis	***Spisula subtruncata***
Shell outline	triangular, with curved ventral margin	less triangular, broader and more inequilateral, straight ventral margin
Radial ridge along the posterior end of valves	distinct	absent
Lunule and escutcheon	faint ridges or completely absent	presence of distinct parallel ridges
Ligament	completely internal	ligament visible from outside
Shell surface	smooth with very fine concentric threads	dull with distinct concentric grooves over the whole disc
Shell colour	whitish to cream with a thin yellowish periostracum	yellowish to dirty white with a ‘Isabelline’ periostracum
Shell convexity	distinctly globose in the adult stage, but flatter specimens may occur in the juvenile stage	generally less convex
Cardinal area between beaks	broad in adult specimens	narrow in adult specimens
Size	less than 23 mm	12-35 mm

Discussion: *Mulinia lateralis* is widely reported from its native geographic distribution area, from the Gulf of Lawrence to the Gulf of Mexico on Atlantic and Gulf coasts of the U.S., in a broad range of salinities. Actually, it prefers estuarine situations with a freshwater influence. Montagna & Kalke (1995) and McKeon et al., (2015) observed that *M. lateralis* has a most variable occurrence due to the result of 'windows of opportunity' for the larvae to colonize polyhaline sites. The Voordelta (The Netherlands) is mostly saline just like the Belgian east coast between Oostende and Knokke. The Westerschelde and the Wadden Sea (The Netherlands) can be characterised as estuarine environments and the eastern part of the Westerschelde is brackish.

Apparently, *M. lateralis* seems to be very adaptive to different environmental conditions.

The question is whether the new non-indigenous mollusc will be invasive or not and will have negative ecological and/or economic impact. Several molluscs have been introduced from W Atlantic and Pacific waters in the past century: *Mya arenaria* Linnaeus, 1758; *Petricolaria pholadiformis* (Lamarck, 1818); *Rangia cuneata* (G.B. Sowerby I, 1832); *Ruditapes philippinarum* (A. Adams & Reeve, 1850) either from oyster cultures [for instance *Magallana gigas* (Thunberg, 1793)] or by ballast water discharge. Particularly, *E. leei* Hubert, 2015 has been an invasive species occupying West European coasts from the German Bight to the beaches of Brittany, in less than a few decades.

Much will depend on factors such as generation lifetime, lifespan, fecundity and degree of salinity.

Mulinia lateralis has a very short generation time, individuals can spawn at a length of 3 mm and at an age of 60 days, probably more than once a year. It has a short life span of maximum 2 years and a high fecundity. It has a tolerance for muddy waters and it is most abundant at sites with poor water quality.

In The Netherlands, *M. lateralis* seems to have found the perfect conditions to become a real invasive species and to suppress eventually the development of other sand dwellers, a.o. *Abra alba* (W. Wood, 1802), *Cerastoderma edule* (Linnaeus, 1758), *Macoma balthica* (Linnaeus, 1758), *Mactra stultorum* (Linnaeus, 1758), *Spisula solida* (Linnaeus, 1758) and above all *Spisula subtruncata* (da Costa, 1778).

Success will also depend on predation, available habitats and the presence of starfish, native shellfish and seabirds like the oystercatcher, sanderling and red knot and seaducks such as the common scoter, the common eider and the greater scaup. Predation by crabs and fish seems to be the major factor to control adult population size.

Filter feeding non-native bivalves may compete for space and food with native bivalves, especially if the non-native species can easily spread into all available habitats at high population densities. Fifty years ago, for instance, *Ruditapes philippinarum* was introduced in the Venice lagoon and it has now completely suppressed the native species *Ruditapes decussatus* (Linnaeus, 1758). For several decades, the coasts of Normandy and Brittany (France) became also predominated by the non-native Manila clam at the disadvantage of the native *R. decussatus. R. philippinarum* has become now a common visitor of Belgian beaches from De Panne to Knokke, and very large specimens can be found on the beach between the embankment and the picket fence at Oostende. The muddy habitat has apparently created a very ideal situation for the development of the Manila clam together with a large population of *Cerastoderma edule*.

Mulinia lateralis is found in high salinity waters from Jersey to Texas (USA), the North Sea waters of the Voordelta (The Netherlands) together with *Spisula subtruncata*, and in low-salinity environment of the Westerschelde together with *Cerastoderma edule*. On the Belgian coast it can be found together with *Macoma balthica* and *Spisula subtruncata* after storms. A population of a dozen specimens was found living in pure sand at mid-tide level at Bredene.

Because *M. lateralis* prefers brackish waters with muddy bottoms, low in oxygen (Shumway, 1983) - in contrast with *S. subtruncata* which lives in sandy areas with higher salinity - it could be expected that both are not real competitors in their habitats.

Conclusion: *Mulinia lateralis* has established large populations in waters with different salinity in The Netherlands, sometimes in huge quantities. However, the dispersion in Belgian coastal waters is going much slower and above all at a much lower degree. Specimens are only sporadically found during field work, except in the vicinity of the harbour of Zeebrugge, where a larger population may be introduced by ballast water discharge. This species has the potential to become a permanent resident on the Belgian coast. As yet, *M. lateralis* seems not to compete with the native *S. subtruncata* (Pl. V, figs 23-28) and not to become invasive at the disadvantage of other sand/mud dwellers on the Belgian coast.

Comparison between North American specimens and North Sea representatives revealed no differences in shell morphology. In each population the same variations were observed and are only due to specific environmental conditions. There is no reason to suppose that a new subspecies is present at the other side of the Atlantic Ocean.

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Finds of *Mulinia lateralis* between Oostende and Knokke-Heist (Belgium)

Bredene (Belgium)

Among millions of *Macoma balthica*, *Ensis leei*, dozens of *Donax vittatus*, *Mytilus edulis*, *Spisula subtruncata* … a few ***Mulinia lateralis*** can be found at low tide

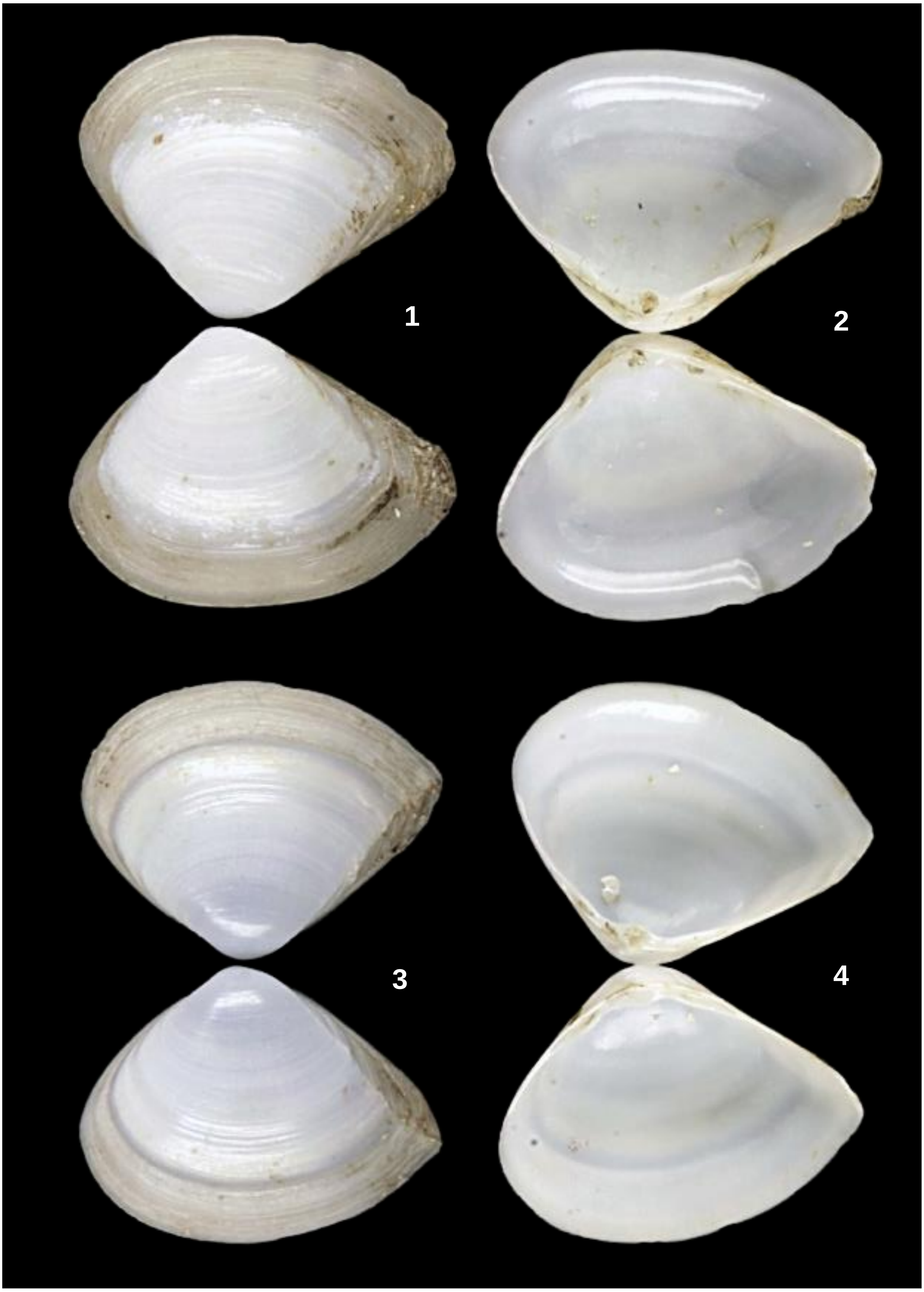

Plate I. Figs 1-4: *Mulinia lateralis* (Say, 1822); Cumberland Island, Georgia, USA. On the beach at low tide. 4 February 1989. CSH; 1-2: 12.25 mm; 3-4: 11.63 mm.

Plate II. Figs 5-9: *Mulinia lateralis* (Say, 1822). CSH; 5: Whitfield, Sarasota Bay, Florida, USA. On sandbar at low tide. 7 February 1982. 11.60 mm; 6-9: Quintana Beach, Brazoria County, Texas, USA. In drift at low tide. 2 December 1981; 6-7: 16.17 mm; 8-9: 15.03 mm.

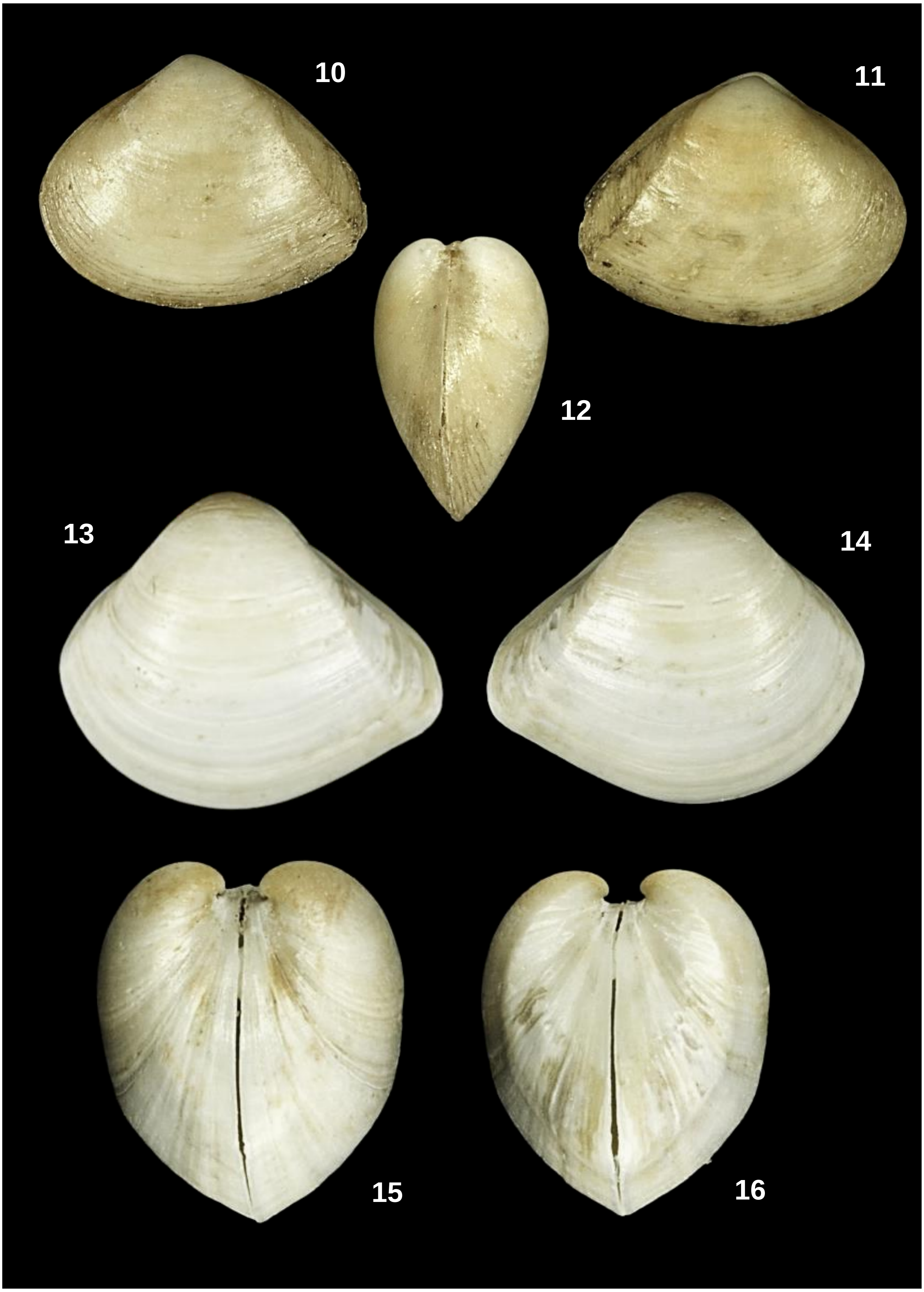

Plate III. Figs 10-16: *Mulinia lateralis* (Say, 1822). CFN; 10-12: Sea Isle City, New Jersey, USA. In sand at low tide. October 1966. H. 10.37 mm L. 13.59 mm; 13-16: De Haan, Belgium. On the beach at low tide. H. 12.23 mm L. 14.69 mm.

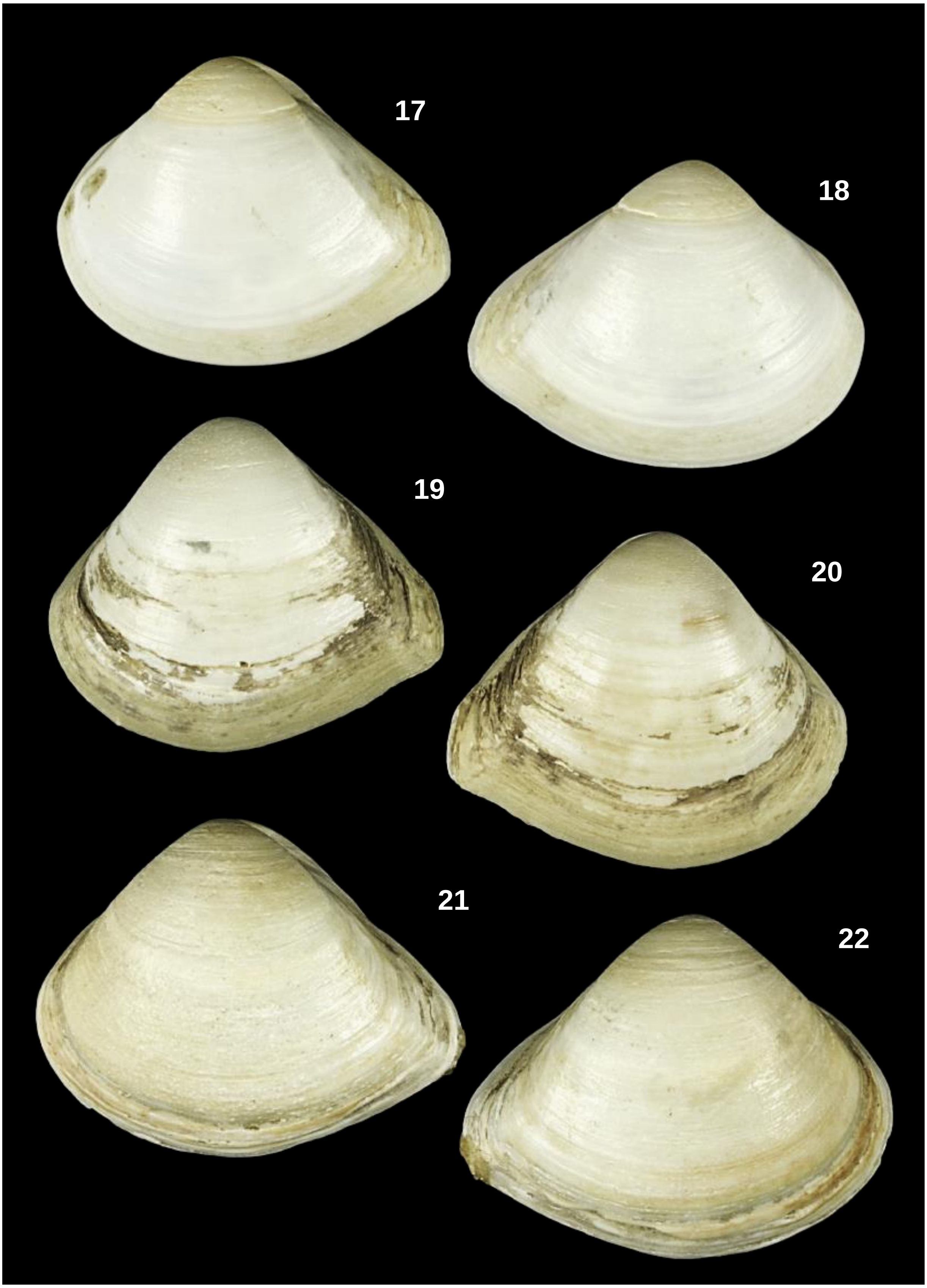

Plate IV. Figs 17-22: *Mulinia lateralis* (Say, 1822). CFN; Bredene, Belgium. Alive on the beach at low tide after storm “*Odette*”. 29 September 2020; 17-18: H. 13.24 mm L. 15.99 mm; 19-20: H. 14.91 mm L. 17.78 mm; 21-22: H. 16.38 mm L. 20.47 mm.

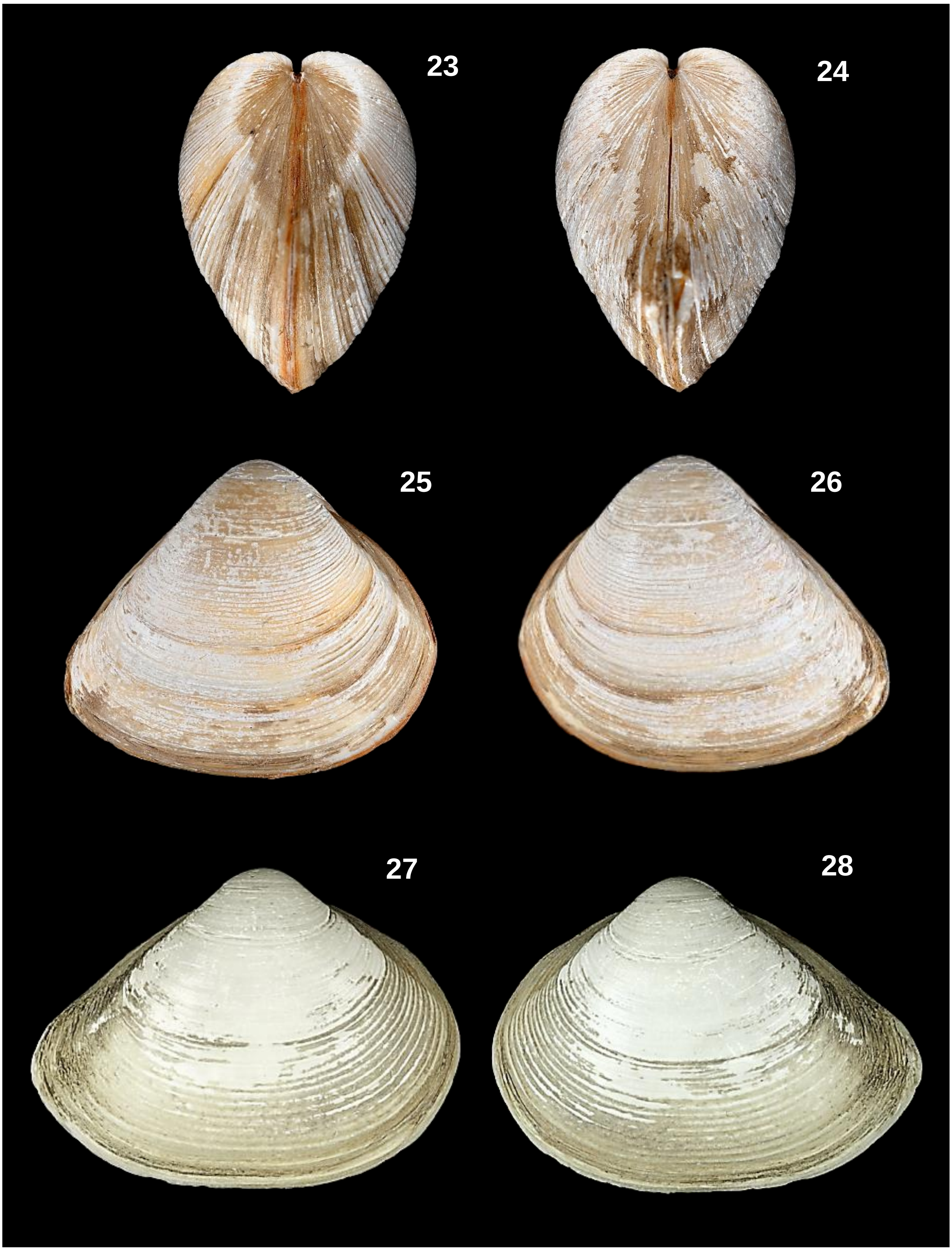

Plate V. Figs 23-28: *Spisula subtruncata* (da Costa, 1778). CFN; Bredene, Belgium. Alive on the beach at low tide after storm “Odette”. 29 September 2020; 23-26: H. 21.46 mm L. 25.54 mm; 23: anterior region; 24: posterior region; 25: RV; 26: LV; 27-28: H. 19.99 mm L. 27.07 mm; 27: RV: 28: LV.

Description of a new species in the genus *Cymbium* (Mollusca: Gastropoda: Volutidae) from Cameroon

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Keywords: *Cymbium,* VOLUTIDAE, Gastropoda, Mollusca, new species, Cameroon.

Abstract: The present paper deals with the description of a new species within the genus *Cymbium* (Gastropoda: VOLUTIDAE) from Cameroon. A comparison is made with other species living in the same and adjacent waters.

Abbreviations:
CFN: Private collection of Frank Nolf (Oostende, Belgium)
CSH: Private collection Steve Hubrecht (Koksijde, Belgium)
MNHN: Museum national d'Histoire naturelle (Paris)
PEMARCO: Pêche maritime du Congo
RBINS: Royal Belgian Institute for Natural Science (Brussels, Belgium)

Introduction: The fourteen known species - and the added new one, described in this paper - in the genus *Cymbium* are geographically distributed from the western end of the Mediterranean Sea and the coast of Portugal and then southward to West Africa, ending at the border of Angola and Namibia. In contrast to what is generally believed, the presence of *Cymbium* species on the Canary Islands is very doubtful.
Cymbium species have a bathymetric range from the littoral to about 50 m, but a few species also occur in deeper waters from 100 to 180 m.
Animals of *Cymbium* are voracious predators on other molluscs, enveloping their victims with their giant foot before consumption.
They are ovoviviparous: the extremely small eggs are kept in a pedal gland, which assumes the role of an incubation pocket. The embryos develop and become the exact replicas of their parents. They attain a shell length of 30-55 mm and are then expulsed via the foot of the mother. Most *Cymbium* animals prefer a habitat of mud and sand bottoms in quiet bays or lagoons from the littoral to about 50-75 m.
In spite of their relatively large dimensions and solid appearance, the West African species of the genus *Cymbium* belong to a taxonomically not fully defined group within the family VOLUTIDAE.
The genus *Cymbium* has often been subject of a thorough study in ancient and recent literature: Broderip (1830), Pallary (1930), Weaver & DuPont (1970), Tripodi (1972), Bruynseels (1975), Marche-Marchad (1977), Marche-Marchad & Rosso (1978), Fittkau & Stürmer (1980 & 1985), Poppe & Goto (1992) and Nolf (2017).

In this paper the following conchological characteristics are taken into consideration: outline of shells, condition of the sutural ramp, protoconch and its possible callus, adapical siphonal notch, number of columellar folds, extension of the shoulder, internal and external colour of shell, aspects of enamelled layer and the eventual presence of a periostracum. In a preliminary step, it is very important to use at least three parameters to decide if a species can be separated from similar species in a conchological way. A final diagnosis can appear later on, after comparison of the shell characteristics with the shape of the radula, the aspect and the colour of the newborn larva, the number of larvae per birth, the pigmentation or pattern of the soft parts and finally the results of DNA barcoding research.

Genus *Cymbium* Röding, 1798

Type taxon: *Cymbium cymbium* (Linnaeus, 1758) (type by absolute tautonomy)
Synonyms: *Cymba* Broderip, 1826; *Yetus* Bowdich, 1822.

Cymbium ferranti sp. nov.

Pl. I, Figs 1-4; Pl. II, figs 5-9; Pl. III, figs 10-13

Type material: 4 specimens.
Holotype: Kribi, Cameroon. Dived on muddy sand. December 1975. 119.22 mm. MNHN-IM-2000-38232.
Paratypes: All from the type locality.
Paratype 1: 143.72 mm. CFN.
Paratype 2: 198.61 mm. CFN.
Paratype 3: 96.8 mm. CSH.

Type locality: Kribi, Cameroon.

Description: Shell heavy and solid. Slender and elongate in outline, tapering and becoming very narrow towards the sutural ramp. Aperture with a curved outer lip, slightly globose in adult specimens. Protoconch raised above the sutural ramp and nearly completely covered by a brown callus. No traces of a sutural incision. Sutural ramp moderately small to rather broad towards the adapical notch, weakly hollowed out.

Posterior shoulder ridge of the body whorl slightly carinated, even obscure but distinct. Columella with 3 folds, occasionally a very obscure fourth plait, all variably creamy white or light brown coloured. The adapical part is very narrow and small, with a bluish grey tinge just below the adapical notch.

Siphonal notch rather wide, slightly flattened and not as deepened as in *C. coenyei* Nolf, 2017 *or Cymbium patulum* (Broderip, 1830).

The interior of the aperture is light brown coloured with streaks of bluish-grey with a brown border near the aperture's edge, the outer surface is pinkish-brown to brown coloured. Periostracum extremely thin and dark brown coloured, usually for 3/4 covered by an enamelled layer in adult specimens.

Animal: Unknown.

Etymology: The name *Cymbium ferranti* refers to a member of our team, Alain Ferrant, who lived in South Africa for many years. He was an ardent beachcomber who brought many interesting shells at home where he built up a large collection of South and East African shells. Alain passed away after a lenghty illness, but we will never forget his positive attitude during our meetings, which he attended regularly as much as possible.

Habitat: On a muddy-sand bottom.

Measurements: from 90 to 200 mm.

Geographic distribution: At present, specimens are only known from the type locality, but it is quite possible that more specimens will turn up from adjacent areas.

Discussion: The present new species has certainly been overlooked in the past. For instance, Nolf (2017) figured a specimen of this species on Plate XX, figs 77-79 with the caption '*Cymbium pachyus* (Pallary, 1930)'. It is now introduced here as the holotype of *Cymbium ferranti* sp.nov. The same mistake was made by Ardovini & Cossignani (2004), who identified a specimen of this species from Conakry (Guinea) as *Cymbium patulum* (Broderip, 1830) (p.181), a species restricted to Angolan waters and never reported from that latitude (Conakry).

In this paper, comparison is only made with similar species which occur in the waters off Cameroon and adjacent countries:

- ***Cymbium glans*** **(Gmelin, 1791)** is a much larger shell (170 to max. 365 mm). Elongate and not as tapered towards the sutural ramp, which is broader. Posterior end more curled outwards and carinated. Protoconch well covered with a brown callus, but not raised above the sutural ramp. Body whorl completely covered up to the margin with an enamelled layer. Broad, shallow siphonal notch. Colour pale brown.
  Geographic distribution: From Mauritania to the Gulf of Guinea.
  (Pl. IV, figs 14-17; Pl. V, figs 18-21: only specimens from Cameroon are depicted for reason of comparison with *C. ferranti*).

- ***Cymbium pachyus*** **(Pallary, 1930)** can be distinguished from *C. ferranti* by the nearly flat sutural ramp, the presence of a glazy callus all over the surface of the body whorl, the shoulder ridge extending above the protoconch in most specimens, and the uniform brown colour of the aperture. It possesses a constant number of 4 columellar folds (instead of 3, rarely 4 in *C. ferranti*).
  Geographic distribution: From Benin, Togo, Nigeria to the coasts of Cameroon.
  (Pl. VI, figs 22-29; Pl. VII, figs 30-33; Pl. VIII, figs 34-37; Pl. IX, figs 38-41).

- ***Cymbium coenyei*** **Nolf, 2017** has a more fragile shell. The protoconch is sunken and completely covered by a thick brown callus, compared to the protruding protoconch of *C. ferranti*. The bluish-grey adapical area is broader and not tapered.
  Geographic distribution: Mouth of the Congo River, Democratic Republic of the Congo.
  (Pl. XI, figs 46-49).

- ***Cymbium fragile*** **Fittkau & Stürmer, 1985** has a thin, fragile shell. Slender with an oval outline. Microsculpture of the outer surface shows fine growth marks and is still partially visible under the periostracum. Sometimes the body whorl is crossed by a series of more than fifty dark brown parallel lines. The protoconch is elevated and clearly visible like in *C. ferranti*, but not covered by a callus. The parietal area from the umbilicus to the shoulder is covered with a glazy callus for 1/3 of the surface of the last whorl. The shoulder is strongly curved over the narrow deep slope of the sutural platform. No callus visible at the interior side of the very narrow sutural platform.
  The edge of the mouth is sharp and thin, except in older specimens. Number of columellar plaits: 3-4, sometimes 5. Siphonal notch broad and not deeply incised.
  Periostracum thin, sometimes brown with a weak olive-green tint, darker in the siphonal

region. Inside of the shell is orange-cream or reddish-brown coloured.

Geographic distribution: Ivory Coast, Ghana, Togo, Benin, Nigeria, Gabon, Angola.

(Pl. XII, figs 50-53)

- ***Cymbium patulum* (Broderip, 1830)** has a lighter and more globose shell, the sutural incision over a distance of 450° to 540° compared to the absence of it in *C. ferranti*. It has a creamy white to salmon-orange coloured mouth, the wider adapical notch and the broader adapical area. Protoconch not extending above the sutural ramp and not covered with an enamelled layer.

  Geographic distribution: From northern Angola to the border between southern Angola and Namibia.

  (Pl. X, figs 42-45).

Conclusion: It may be surprising that two new *Cymbium* species have been described in the past five years from the Gulf of Guinea - southern Angola area. The reason is that it concerns a very overlooked region inhabited by a mollusc fauna, not always easily accessible to shell collectors or scientists. We depend too often on the local fishery who has no or poor interest for accurate information about exact locality, depth and habitat of their catches. Most specimens obtained from fishermen are intended for food purposes or processed as utensils.

An important problem when studying the shells of the genus *Cymbium* is the individual variability and above all the scarce number of morphological characteristics that can be used in the diagnosis, due to the standardised shape and the absence of sculpture in this kind of shells, the relative small differences in colour and general outline between most species, and the possible influence of habitat conditions and sexual dimorphism, creating a more bulbous last whorl and a wider aperture in female specimens.

A few new species were described in the last decades, other species redescribed because they were confused with similar species or forgotten by lack of recently collected material, despite the limited number of species. Many authors have tried to revise the genus *Cymbium*, but most attempts failed since the material studied was obtained from unreliable sources and often data or conclusions were copied from each other. Descriptions often refer to wrong figures or pictures that are accompanied by incorrect captions.

Cymbium ferranti is an example of these ‘neglected-confused’ species. Finds of some rare specimens of it, among populations of *Cymbium glans* and especially of *C. pachyus*, were considered in the past as aberrant forms and always received the label of one of both. Nevertheless, *C. ferranti* shows constant characteristics and is distinctly different from its related species. The combination of the protruding protoconch, the very slightly curled shoulder and especially the narrowing last whorl towards the sutural slope makes it special among others.

Acknowledgments: Many thanks are owed to Steve Hubrecht for the loan of a specimen of *Cymbium ferranti*, to Johan Verstraeten for critical remarks about the contents of the manuscript and to Jan Libbrecht for reading and correcting the English text.

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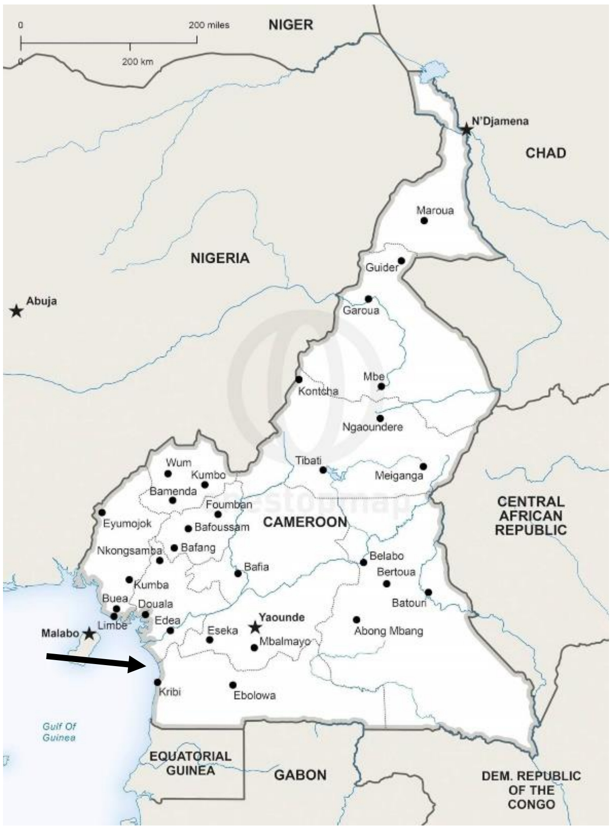

Geographic distribution of *Cymbium ferranti* sp. nov.

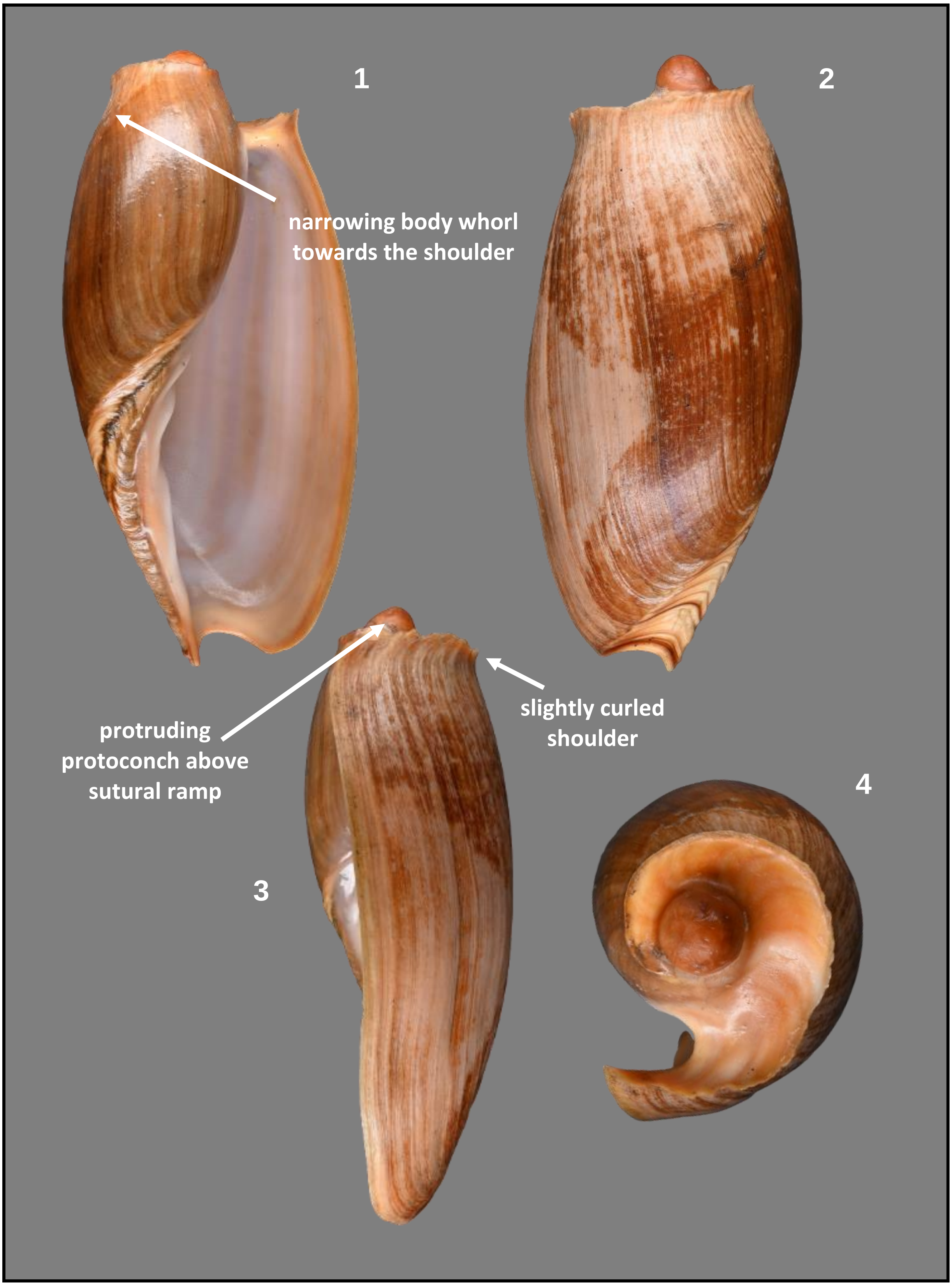

Plate I. Figs 1-4: *Cymbium ferranti* sp. nov. Off Kribi, Cameroon, W Africa. Dived. December 1975. 119.22 mm. Holotype. MNHN.

Plate II. Figs 5-9: *Cymbium ferranti* sp. nov. Off Kribi, Cameroon, W Africa. Trawled by fishermen on muddy sand. March 2018; 5-7: 143.72 mm. Paratype 1. CFN; 8-9: juvenile specimen. 96.8 mm. Paratype 3. CSH.

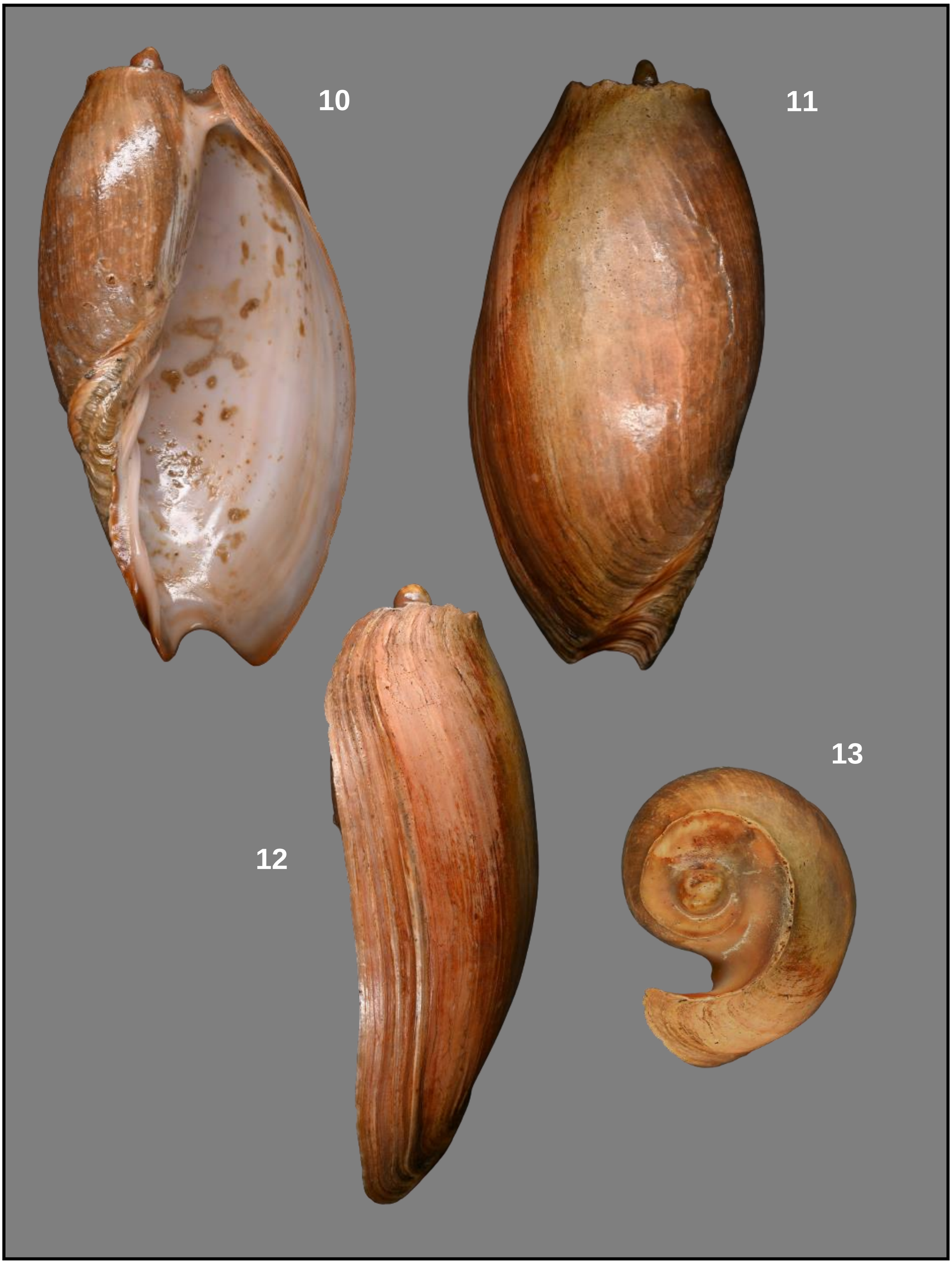

Plate III. Figs 10-13: *Cymbium ferranti* sp. nov. Off Kribi, Cameroon, W Africa. Trawled by fishermen on muddy sand. March 2018. 198.60 mm. Paratype 2. CFN.

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Plate IV. Figs 14-17: *Cymbium glans* (Gmelin, 1791). Off Kribi, Cameroon, W Africa. Trawled by fishermen on muddy sand. 2018. 144.95 mm. CFN.

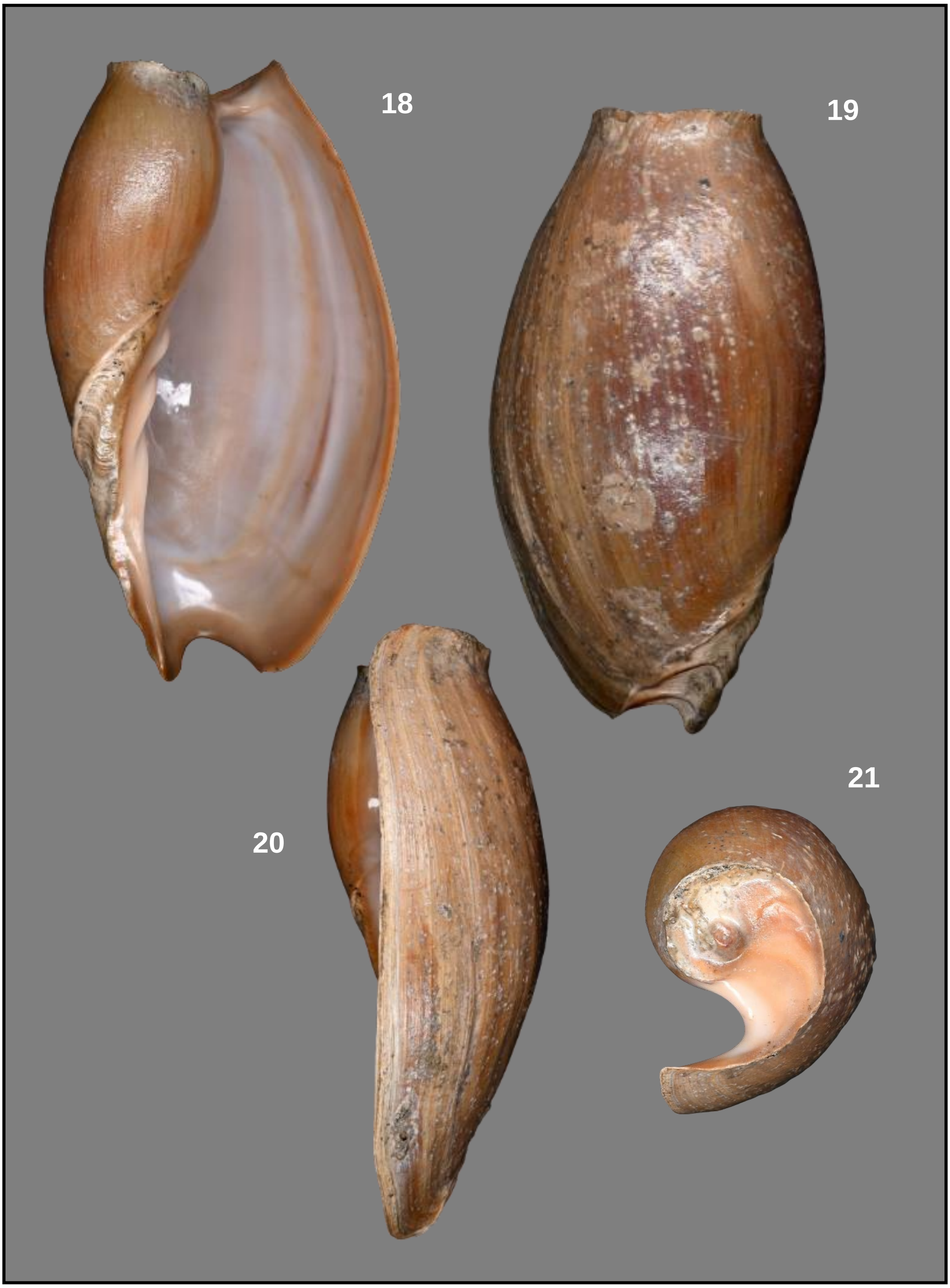


Plate V. Figs 18-21: *Cymbium glans* (Gmelin, 1791). Off Kribi, Cameroon, W Africa. Trawled by fishermen on muddy sand. 2018. 200.77 mm. CFN.

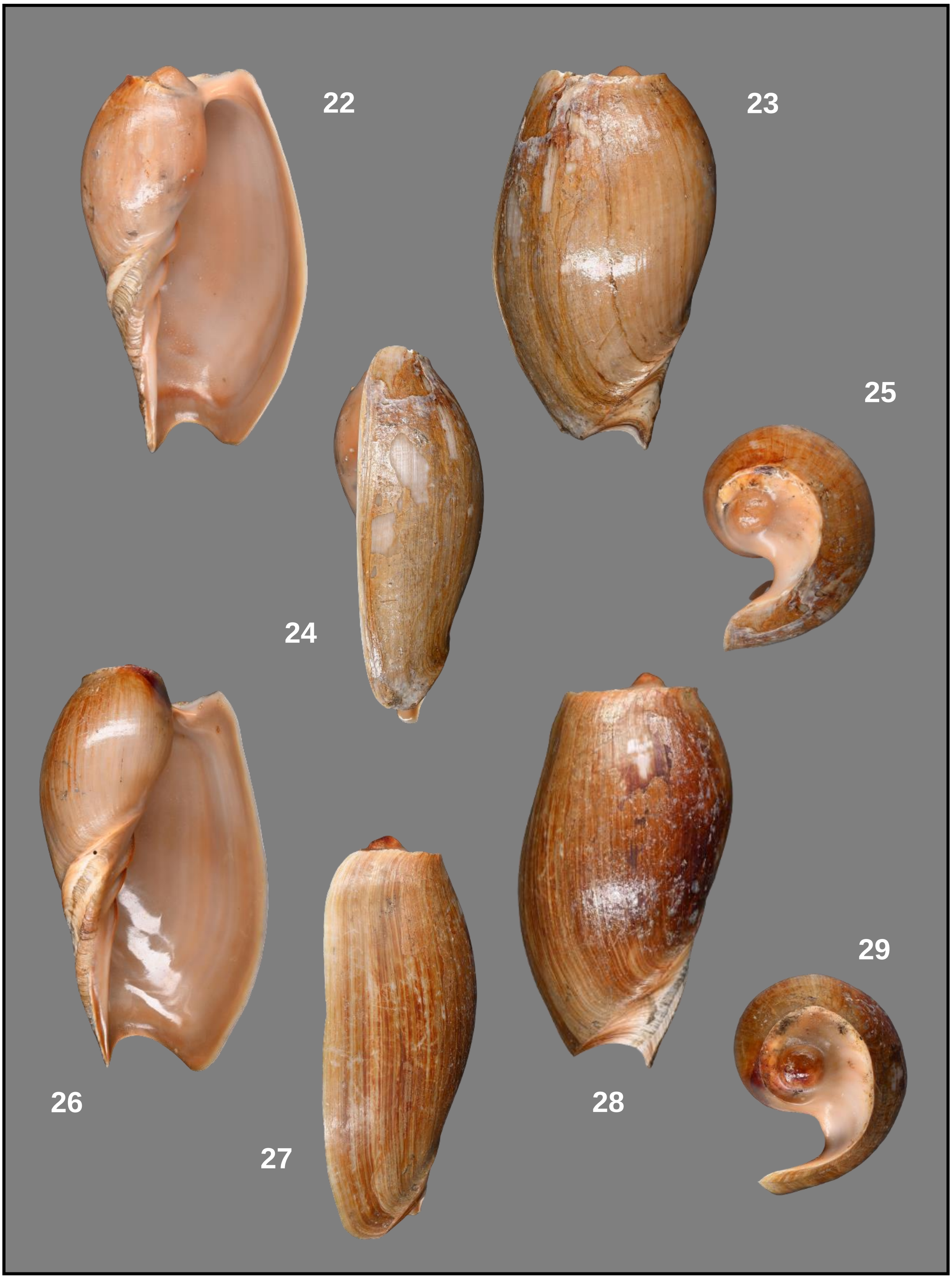


Plate VI. Figs 22-29: *Cymbium pachyus* (Pallary, 1930). Off Kribi, Cameroon, W Africa. Trawled by fishermen on muddy sand. December 1975. CFN; 22-25: 84.39 mm; 26-29: 112.83 mm.

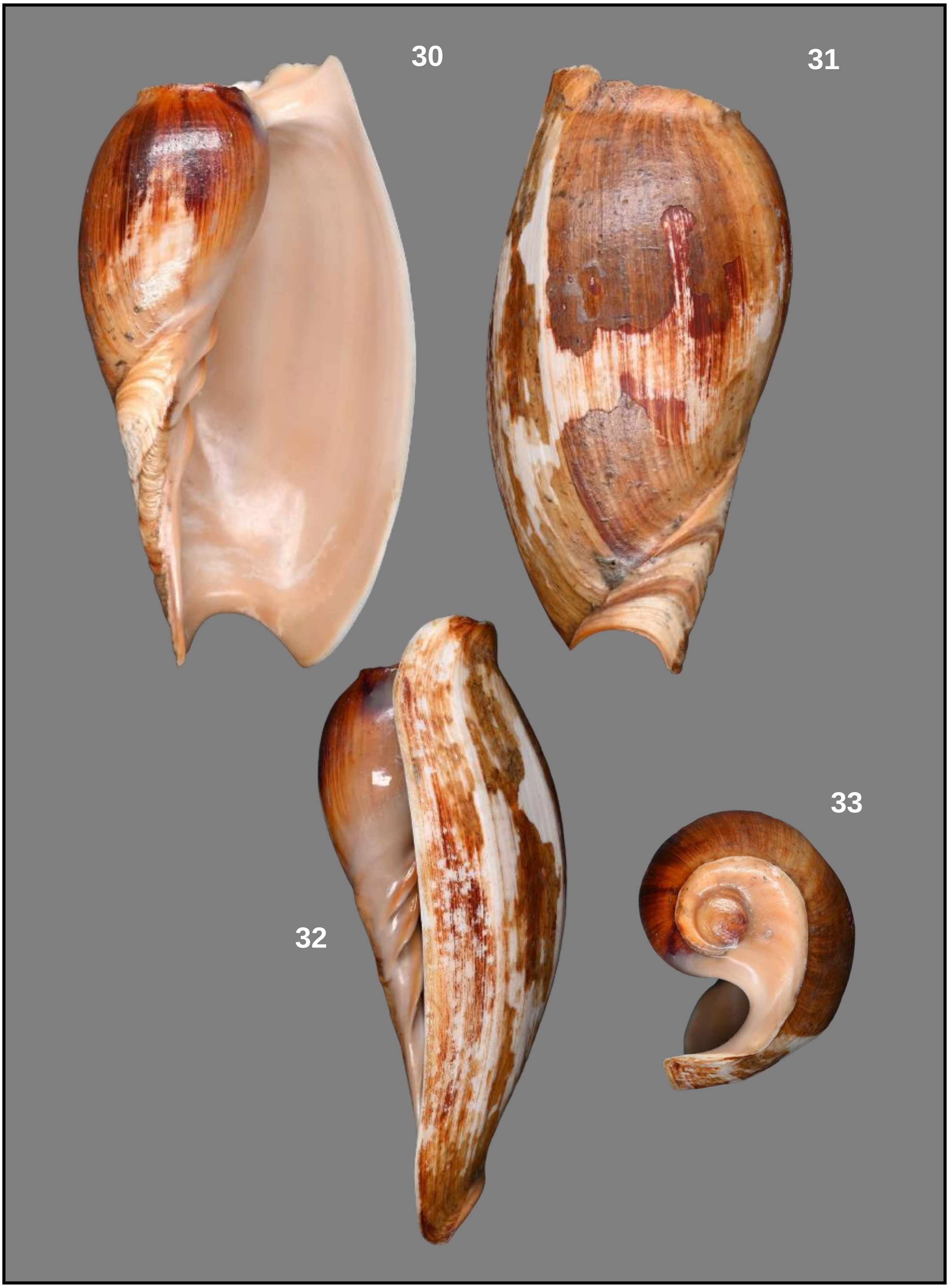
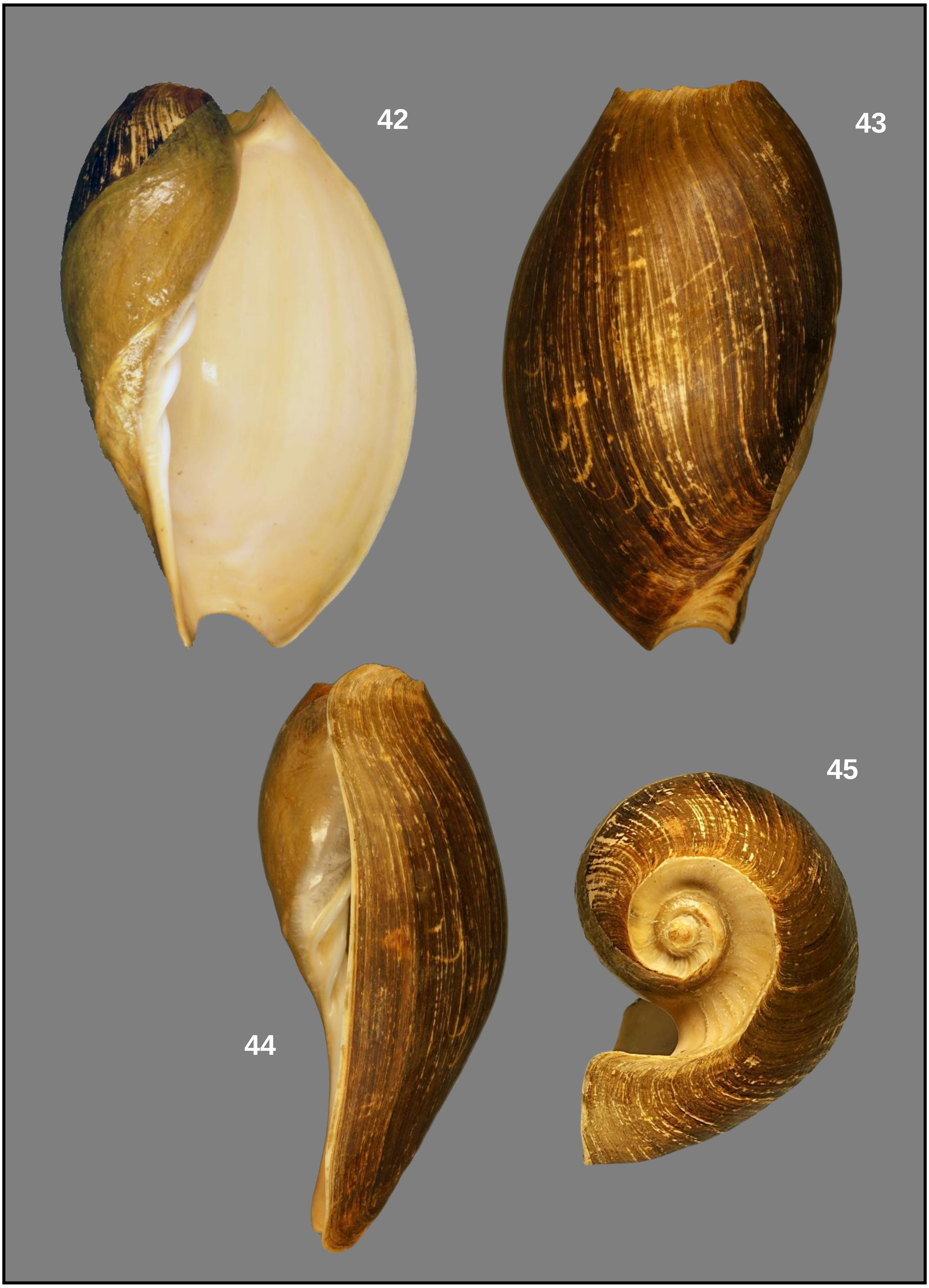


Plate VII. Figs 30-33: *Cymbium pachyus* (Pallary, 1930). Off Kribi, Cameroon, W Africa. Trawled by fishermen on muddy sand. December 1975. 112.29 mm. CFN.

Plate VIII. Figs 34-37: *Cymbium pachyus* (Pallary, 1930). Off Kribi, Cameroon, W Africa. Trawled by fishermen on muddy sand. December 1975. 125.94 mm. CFN.

Plate IX. Figs 38-41: *Cymbium pachyus* (Pallary, 1930). Off Kribi, Cameroon, W Africa. Trawled by fishermen on muddy sand. December 1975. 133.98 mm. CFN.



Pl. X. Figs 42-45. *Cymbium patulum* (Broderip, 1830). Ambriz, Angola. 07°51’ S/ 13°08’ E. Trawled by Belgian fishermen (PEMARCO) at a depth of 100 m. 1967. 168.13 mm. CFN.

Pl. XI. Figs 46-49. *Cymbium coenyei* Nolf, 2017. **Holotype**. Off the mouth of the Congo River, near the lighthouse between Banana and Cabinda, Democratic Republic of the Congo. 05°59’ S/ 12°21’ E. Trawled by Belgian fishermen (PEMARCO) on a muddy bottom at a depth of ca 20 m. 1967. RBINS (IG 33588, MT 3618). 121.23 mm.

Pl. XII. Figs 50-53. *Cymbium fragile* Fittkau & Stürmer, 1985. Off Luanda, Angola. 08°45’ S/13°20’ E. Trawled by Belgian fishermen (PEMARCO) 60 km offshore on a muddy bottom at a depth of 183 m. 1973. 142.13 mm.

Two new species of Terebridae from Ecuador

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Correspondence: yves@naturalart.be

Keywords: TEREBRIDAE, *Neoterebra*, *Neoterebra salangoensis* sp. nov., *N. bonardi* sp. nov., *N. elata* (Hinds, 1844), *N. guayaquilensis* (E. A. Smith, 1880), *N. ira* (Pilsbry & H. N. Lowe, 1932), *N. montijoensis* (Pilsbry & H. N. Lowe, 1932), *N. panamensis* (Dall, 1908), *N. polygonia* (Reeve, 1860), *N. sanjuanensis* (Pilsbry & H. N. Lowe, 1932), *N. shyana* (Bratcher & Burch, 1970)

Abstract: *Neoterebra salangoensis* sp. nov. and *Neoterebra bonardi* sp. nov. are described from Ecuador and compared to their morphological allies.

Introduction: The Panamic (and the W Atlantic for that matter) terebrid fauna remains relatively under-sampled and understudied in comparison to the Indo-Pacific region. Most known species are found intertidally or in rather shallow depths, with only about a dozen known from depths beyond the reach of classic scuba-diving and from a shortlist of localities such as Baja California and the Gulf of California (Mexico) and the wider Chiriqui and Panama Bay area (Panama). Huge stretches of coasts along the tropical and subtropical W American seaboard, a vast interval of bathymetry and habitats/biotopes remain to this moment under-investigated or completely unknown in terms of terebrid fauna alone. The shallow water fauna is rather well-known, represented by relatively large species, while material from deeper than 20-40 m remains rare in collections and in research in general.

A recent trip undertaken by Andrès R. Bonard to Ecuador (Manabi Province) yielded several Terebridae species, mostly in juvenile or subadult state, offering valuable information on protoconch and early development of several species. Among the studied specimens were two species that could not be allocated to any known taxon and are here below described as new. Additionally, *N. polygonia* was rediscovered, being a W American species and not an Indian Ocean species as earlier believed.

Abbreviations:

AB:	Private collection of Andrés Rustam Bonard, Argentina
ANSP:	Academy of Natural Sciences of Drexel University, USA
MM:	Private collection of Max Marrow, Australia
MNHN:	Muséum national d'Histoire naturelle, Paris, France
NHMLAC:	Natural History Museum of Los Angeles County, USA
NHMUK:	Natural History Museum, London, UK
TK:	Private collection Terrence Kutolowski, USA
YT:	Private collection of Yves Terryn, Belgium

Systematics: The systematics for the species described and discussed in the present paper follows the systematics as proposed in Fedosov et al. (2020). For information on the types held in the NHMUK, see Salvador & Pickering (2017). The anatomy of the soft part is unknown, the description is based solely on shell morphology.

Superfamily **CONOIDEA** Fleming, 1822
Family **TEREBRIDAE** Mörch, 1852
Subfamily **TEREBRINAE** Mörch 1852
Genus ***Neoterebra*** Fedosov, Malcolm & Terryn, 2020

During the study and descriptive part, the need for a revision of several allied taxa arose. They are here shortly discussed in alphabetical order, pending a complete taxonomic revision of the Panamic TEREBRIDAE:

N*. *elata (Hinds, 1844)
Pl. 1, Fig. 16

Synonymy:
Terebra elata Hinds, 1844.

Discussion: The lectotype and two paralectotypes concern shells with eroded surfaces, but in all specimens a dense spirally incised structure on the remainder of the whorl can be discerned. The elongated whorls with almost straight outline resemble more the general structure of *N. sanjuanensis* (Pilsbry & Lowe, 1932). Bratcher & Cernohorsky (1987: 151) included *T. montijoensis* Pilsbry & Lowe, 1932 in its synonymy, an opinion that is not followed here. The latter is treated as a separate valid species, based on rather obvious morphological differences of the shell (see below).

N. guayaquilensis (E. A. Smith, 1880)
Pl. 1, Figs 1-2

Synonymy:
Myurella belcheri E. A. Smith, 1873 (a junior subjective homonym of *Terebra belcheri* Philippi, 1851).
Terebra guayaquilensis E. A. Smith, 1880 (nom. nov. pro *Terebra belcheri* E. A. Smith, 1873).

Discussion: Bratcher & Cernohorsky (1987: 151) included *T. ira* Pilsbry & Lowe, 1932 in its synonymy, an opinion that is not followed here. The latter is treated as a separate valid species, based on primarily obvious morphological differences of the shells and protoconchs (see below).

N. ira (Pilsbry & H. N. Lowe, 1932)
Pl. 1, Figs 3-4

Synonymy: *Terebra ira* Pilsbry & Lowe, 1932.

Discussion: *N. ira* can be distinguished from *N. guayaquilensis* by its more discrete sculpture, characteristic pattern and colouration and possesses a slender protoconch of about 2.5-3.0 whorls, while *N. guayaquilensis* has a larger, somewhat mamillate protoconch of about 1.5-2.0 whorls.

N. montijoensis (Pilsbry & H. N. Lowe, 1932)
Pl. 1, Figs 5-6

Synonymy: *Terebra montijoensis* Pilsbry & H. N. Lowe, 1932.

Discussion: *N. montijoensis* is considered separate here from *N. elata*, based already on a few obvious differences in shell morphology lacking in the latter: convex whorls and a suprasutural spiral incision.

N. panamensis (Dall, 1908)
Pl. 1, Fig. 7

Synonymy: *Terebra (Strioterebrum) panamensis* Dall, 1908.

Discussion: For a discussion on the protoconch, see Bratcher & Cernohorsky (1987: 150); number of protoconch whorls unknown.

N. polygonia (Reeve, 1860)
Pl. 1, Figs 13-15

Synonymy: *Terebra polygonia* Reeve, 1860.

Discussion: For discussion, see Terryn & Gori (2022: 19). *N. bonardi* sp. nov. was collected sympatrically with *N. polygonia* but is easily distinguished by differences in protoconch shape and size (see below).

N. sanjuanensis (Pilsbry & H. N. Lowe, 1932)
Pl. 1, Figs 17-18

Synonymy: *Terebra sanjuanensis* Pilsbry & H. N. Lowe, 1932.

Discussion: A small brown shell with slender and straight outline, with discrete spiralling incised pattern.

N. shyana (Bratcher & Burch, 1970)
Pl. 1, Figs 8-12

Synonymy:
Terebra shyana Bratcher & Burch, 1970a.
Terebra purdyae Bratcher & Burch, 1970b.

Discussion: *T. shyana* and *T. purdyae* were published only months apart, Bratcher & Cernohorsky (1987: 150) synonymised *T. purdyae* (Pl. 1, Fig. 10) with *T. shyana* (Pl. 1 Fig. 9), stating that the first concerns a mere juvenile of the latter. Their opinion is followed here, pending further investigation. Some confusion surrounds the type of *T. shyana*: the specimen currently curated as the holotype of *T. shyana* (Pl. 1 Fig. 8) does not match the description nor the original figure (Pl. 1 Fig. 9) or subsequent figuration (Bratcher & Cernohorsky, 1987: pl. 44, fig. 169a-c). Only the figures in the original description and subsequently in Bratcher & Cernohorsky (1987) must be regarded as of the type of *T. shyana* as intended by the authors, which must be considered lost (pers. comm. Lindsey T. Groves, NHMLAC). At some point it may become opportune to designate a neotype.

Neoterebra salangoensis sp. nov.
Pl. 1, Figs 25-29

Holotype: MNHN-IM-2000-38194, 8.8 mm, don. YT.
Paratypes: - *all from the type locality* – **paratypes 1-2:** YT, 8.9-14.3 mm; **paratype 3:** AB, 9.9 mm; **paratype 4:** TK, 8.3 mm; **paratype 5:** SG, 25.5 mm; **paratype 6:** MK, 22.9 mm; **paratype 7:** YT, 23.9 mm.

Type Locality: Ecuador. Manabi Province. Off Salango Island. 30-40 m.

Description *(holotype)***:** Shell colour whitish with irregularly dispersed brown blotches of different intensities, covering the width of whorls; uniformly brown below the periphery, columella paler. Protoconch of about 3.5-4.0 whorls with a small nucleus; transition to teleoconch calcified. Outline of whorls convex, indented suturally and below the subsutural band. Outline of lower abapical third of the whorl more convex to obese. Suture sharp and deep. Subsutural band ornamented with widely spaced axial ribs, interspaces with 2-3 spiral riblets not crossing the axials. Subsutural band bordered by a shallow concave furrow indenting the axial ribs. Remainder of the whorl with widely spaced axial ribs, with 5 spiral rows of riblets in between, which are coarser and more widely spaced than on the subsutural band. Aperture quadrate, columella curved.

Distribution: Only known from the type locality.

Discussion and remarks: Largest specimen known 25.5 mm. The studied specimens show no intraspecific variability; the sculpture on the last whorls of larger specimens appears more spirally elongated reticulate. All specimens were found sympatrically with specimens of adult *N. polygonia* (Reeve, 1860) and juvenile and subadult *N. armillata* (Hinds, 1844). The studied specimens are presumably subadult shells; the colour on the early teleoconch whorls is often pinkish brown. *N. salangoensis* sp. nov. resembles *N. guayaquilensis* (E. A. Smith, 1880), *N. ira* (Pilsbry & H. N. Lowe, 1932), *N. montijoensis* (Pilsbry & H. N. Lowe, 1932), *N. panamensis* (Dall, 1908) and *N. shyana* (Bratcher & Burch, 1970) in general outline, colour composition and whorl ornamentation.

N. guayaquilensis possesses a relatively large protoconch of about 1.5 whorls only and unindented convex whorls, ornamented with slenderer axial ribs; although the general ornamentation is quite similar to that of *N. salangoensis* sp. nov., *N. ira* has a similar number of whorls of the protoconch and its general volume is only about a half of that of *N. guayaquilensis*. Moreover, its spiral features are fine, with almost flared axial ribs which are hardly indented by the subsutural furrow; its apical angle is considerably smaller than that of *N. salangoensis* sp. nov. An additional feature distinguishing it from all other morphological allies is the typical colour/pattern. *N. montijoensis* possesses a more elongated, slenderer conical protoconch of about 4.0 whorls with a small nucleus, while this is more obese and flatter in *N. salangoensis* sp. nov. The outline of the whorls of *N. montijoensis* is flatter, the apical angle narrower and possesses much denser-set sculptural features. A striking feature is the spiral incision apically from the sutural incision, which is divided from one another by a continuous riblet, a feature easily observable at the intersection between the aperture and the periphery.

N. shyana on the other hand possesses beading at the intersections of the axial and spiral ribs, which are of similar width and coarseness. *N. panamensis* is characterised by a similar sculpture as *N. shyana*, yet coarser and more widely spaced and with an almost angular outline of whorls. The protoconch of *N. panamensis* could not be studied yet, but remnants suggest a rather large and wide one.

Derivatio nominis: The species is named after the type locality, Salango Island (Manabi Province, Ecuador).

Neoterebra bonardi sp. nov.

Pl. 1 Figs 19-24

Holotype: MNHN-IM-2000-38195, 8.8 mm, don. YT.

Paratypes: - *all from the type locality* **– paratypes 1-3:** YT, 9.9-11.5 mm; **paratype 4:** AB, 10.6 mm; **paratype 5:** TK, 9.6 mm; **paratype 6:** MM645B, 10.3 mm.

Type Locality: Ecuador. Manabi Province. Off Salango Island. 30-40 m.

Description *(holotype)***:** Shell colour uniformly shiny orangish brown, becoming slightly darker greyish tinged in later whorls. Bulbous and rounded protoconch of about 2.0 whorls with a bulging nucleus; transition to teleoconch gradual with the appearance of axial riblets. Outline of whorls slightly convex. Overall sculpture dominated by broad, flattened axial ribs from suture to suture. Subsutural band additionally has 3-4 microscopic spiral riblets, reaching the crest of the ribs. Subsutural furrow deep and broad, cutting into the axial ribs, appearing almost continuous. Microscopic spiral incisions visible on the last whorl cut into the axial ribs, giving the impression of a general beaded structure; incisions not evident on early whorls hence axials are uninterrupted and uniform. Aperture elongate, columella about straight.

Distribution: Only known from the type locality.

Discussion and remarks: Largest specimen known 11.5 mm. The studied specimens show some sculptural variability, on the same shell and/or between specimens. While the beaded general sculpture is not present on the early whorls of the holotype, this is sometimes present on other specimens giving the impression of 4-5 spiralling bands of spirally elongated beads (e.g. Pl. 1, fig. 24). All specimens were found sympatrically with specimens of *N. polygonia* (Reeve, 1860) and *N. armillata* (Hinds, 1844). In both cases, although of small size, both species were collected as adult specimens. The species portrays some variability in number of axial and spiral ribs. *N. bonardi* sp. nov. is first compared to *N. polygonia* (Reeve, 1860) with which it is easily mistaken because of the similar colouration and size. *N. polygonia* possesses a slender protoconch of about 3.5-4.0 whorls with a minute and flattened nucleus. Although somewhat similar in sculptural features, those of *N. polygonia* are more discrete and never portray the noded structure as evident in *N. bonardi* sp. nov. *N. sanjuanensis* (Pilsbry & H. N. Lowe, 1932) has a similar apical angle, but its sculpture is characterized by spiral incisions rather than ribs and its protoconch of about 2.5 whorls is less wide and more elongate than that of *N. bonardi* sp. nov. Finally, it can be compared to *N. elata* (Hinds, 1844) of which little is known in fact but is characterised by a higher number of spiral riblets, which are less coarse than its axials and the shell never portrays an overall beaded structure.

Derivatio nominis: The species honours Argentinian biologist and conchologist Andrés R. Bonard, who found the species in nets of fishermen’s boats. Andrés is often present on European shell shows to share his passion for South American shells, sea urchins and starfish with other collectors.

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CAPTIONS

PLATE 1

1-2. *Neoterebra guayaquilensis* (E. A. Smith, 1880)
1. *Terebra belcheri* E. A. Smith, 1873, holotype, NHMUK 1844.6.7.77, Ecuador, Guayaquil, 38 mm. (©The Trustees of the Natural History Museum, London)
2. YT, W Panama, Chiriqui Bay, Canal de Afuera Island, dredged at 80 m, 25.0 mm.

3-4. *Neoterebra ira* (Pilsbry & H. N. Lowe, 1932) n. stat., n. comb.
3. YT, Costa Rica, off Puntarenas, dredged at 180 m, 16.7 mm.
4. *Terebra ira* Pilsbry & H. N. Lowe, 1932, holotype, ANSP 155280, 20.3 mm.

5-6. *Neoterebra montijoensis* (Pilsbry & H. N. Lowe, 1932) n. stat., n. comb.
5. *Terebra montijoensis* Pilsbry & H. N. Lowe, 1932, holotype, ANSP 155285, Panama, Montijo Gulf, 14.8 mm.
6. YT, W Panama, Cebaco Island, dived at 15 m, 19.0 mm.

7. *Neoterebra panamensis* (Dall, 1908), YT, W Panama, Chiriqui Bay, Canal de Afuera Island, dredged at 280 m, 14.1 mm.

8-12. *Neoterebra shyana* (Bratcher & Burch, 1970)
8. Specimen currently curated as the holotype of *Terebra shyana* Bratcher & Burch, 1970.
9. Original figure of *Terebra shyana* Bratcher & Burch, 1970a.
10. Original figure of *Terebra purdyae* Bratcher & Burch, 1970b.
11. YT, W Panama, Gorbernadora Island, by shrimpers at 30-50 m, 16.3 mm.
12. YT, W Panama, off Nayarit, 20.9 mm.

13-15. *Neoterebra polygonia* (Reeve, 1860)
13. *Terebra polygonia* Reeve, 1860, lectotype, NHMUK 1874.12.11.302, no type locality given, 10.7 mm. (©The Trustees of the Natural History Museum, London)
14. YT, Ecuador, Manabi, off Salango Island, at 30-40 m, 10.1 mm.
15. YT, Ecuador, Manabi, off Salango Island, at 30-40 m, 10.3 mm.

16. *Neoterebra elata* (Hinds, 1844), lectotype, NHMUK 1968240, Panama, Montijo Gulf, 26.6 mm. (©The Trustees of the Natural History Museum, London)

17-18. *Neoterebra sanjuanensis* (Pilsbry & H. N. Lowe, 1932)
17. *Terebra sanjuanensis* Pilsbry & H. N. Lowe, 1932, holotype, ANSP 155286, Costa Rica, San Juan,16 mm.
18. YT, W Panama, Chiriqui Bay, off Coiba, dredged at 70 m, 13.9 mm.

19-24. *Neoterebra bonardi* sp. nov., all from Ecuador, Manabi Province, off Salango Island, at 30-40 m.
19. YT, 10.7 mm.
20. Holotype, MNHN-IM-2000-38195, 8.8 mm.
21. Paratype 4, AB, 10.6 mm.
22. Paratype 1, YT, 11.5 mm.
23. Paratype 5, TK, 9.6 mm.
24. Paratype 3, YT, 9.9 mm.

25-29. *Neoterebra salangoensis* sp. nov., all from Ecuador, Manabi Province, off Salango Island, at 30-40 m.
25. Holotype, MNHN-IM-2000-38194, 8.8 mm.
26. Paratype 2, YT, 14.3 mm.
27. Paratype 3, AB, 9.9 mm.
28. Paratype 1, YT, 8.9 mm.
29. Paratype 4, TK, 8.3 mm.

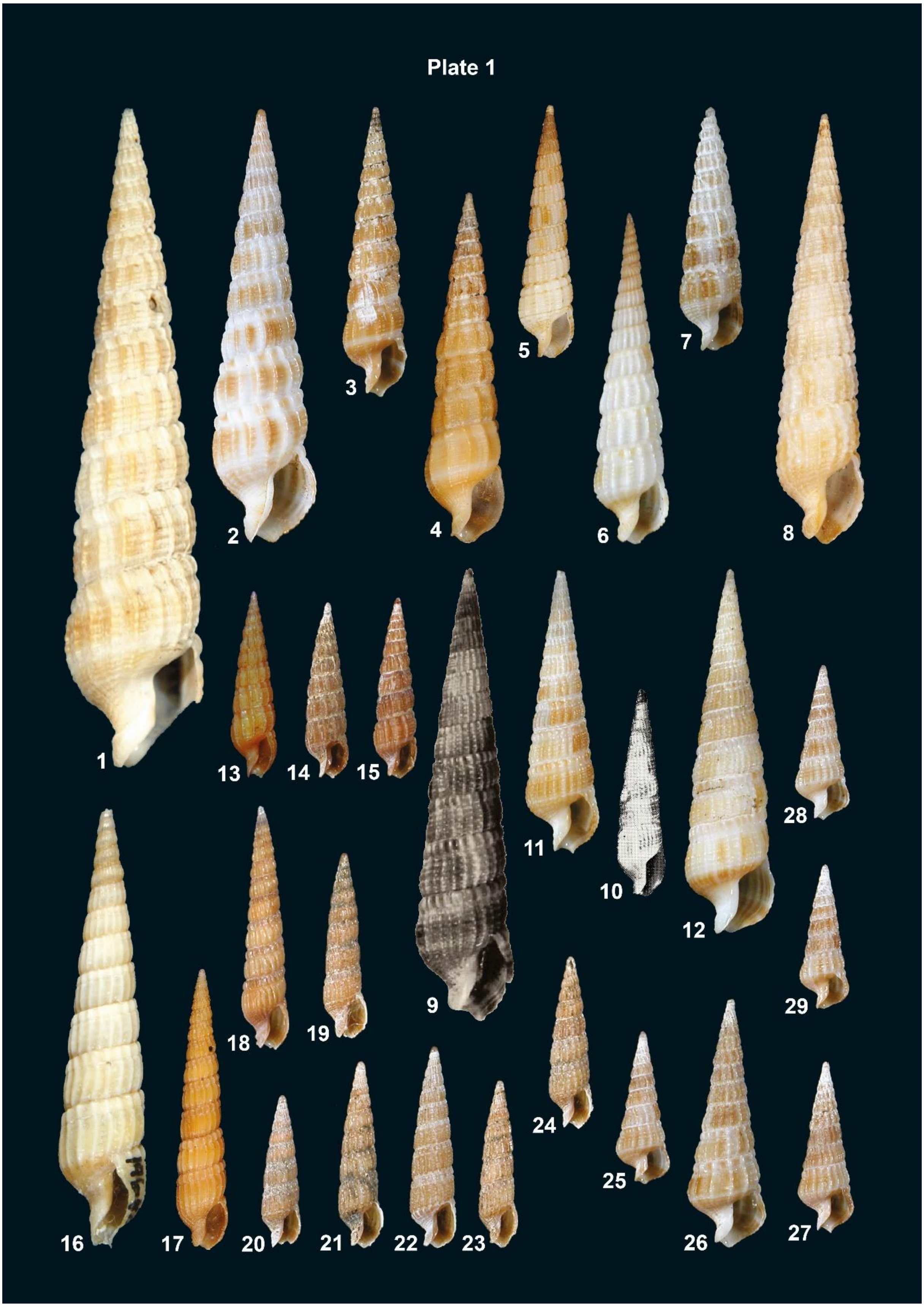
Plate 1

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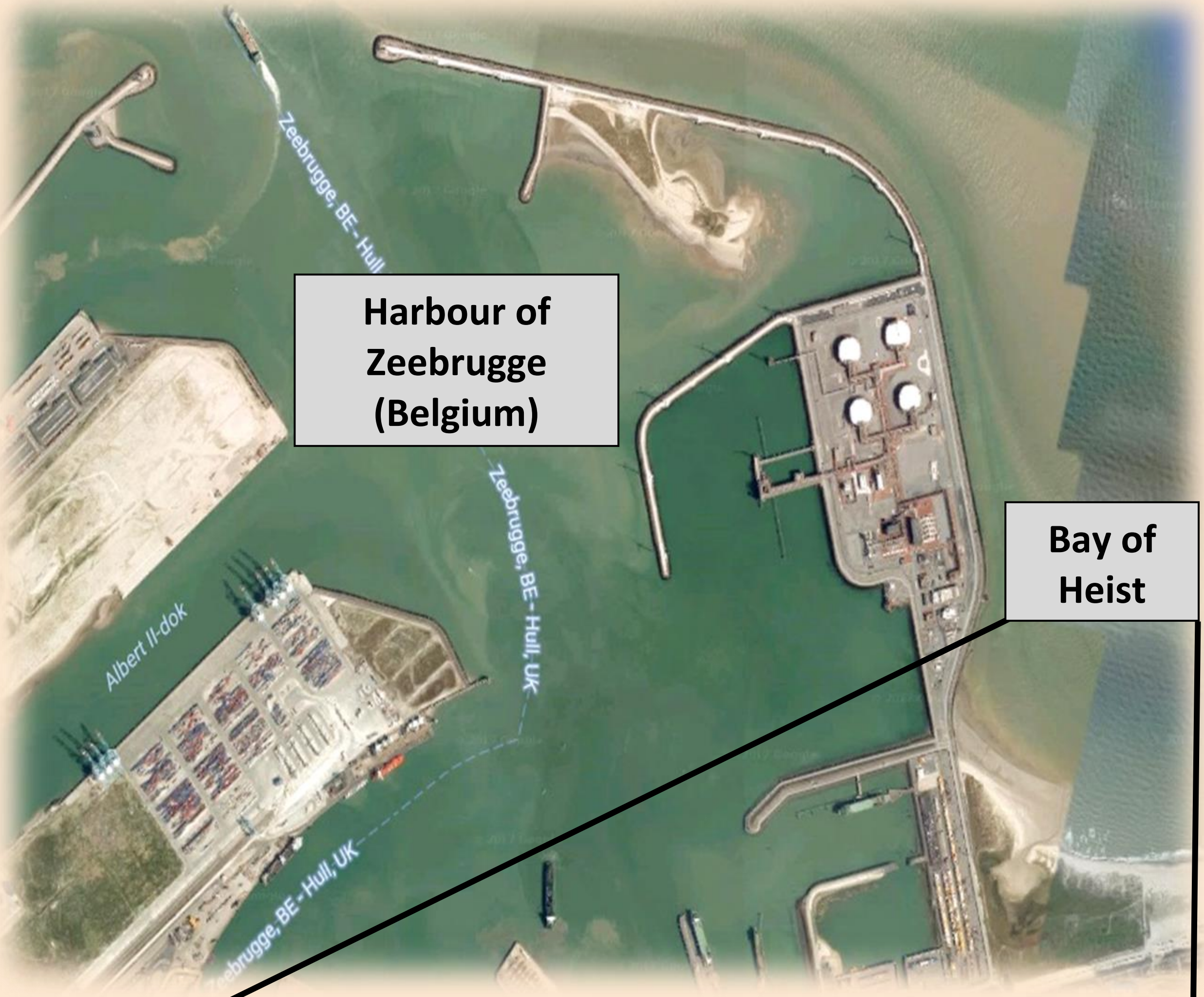
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