Comparison of some interesting molluscs, trawled by the Belgian fishery in the Bay of Biscay, with similar representatives from adjacent waters: part I

Frank Nolf [1] & Jean-Paul Kreps [2]

[1] Pr. Stefanieplein, 43/8 – B-8400 Oostende
frank.nolf@pandora.be

[2] Rode Kruisstraat, 5 – B-8300 Knokke-Heist
jpkreps@skynet.be

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Abstract: In this paper a number of interesting molluscs, trawled by the Belgian fishery in the Bay of Biscay during the last decade, are briefly described yet comprehensively figured. They are compared with similar specimens from North Atlantic waters, the Mediterranean Sea or West Africa.

Abbreviations:
FN: collection Frank Nolf.
H.: height.
JPK: collection Jean-Paul Kreps.
JV: collection Johan Verstraeten.
L.: length.
PEMARCO: Pêche Maritime du Congo.
RBINS: Royal Belgian Institute for Natural Sciences, Brussels, Belgium.

The Bay of Biscay
The Bay of Biscay (Spanish: Golfo de Vizcaya; French: Golfe de Gascogne; Basque: Bizkaiko Golkoa; Occitan: Golf de Gasconha) is a gulf of the North Atlantic Ocean. It is situated along the western coast of France from Brest south to the Spanish border, and the northern coast of Spain, and is named for the Spanish province of Biscay.
Parts of the continental shelf extend far into the bay, resulting in fairly shallow water in many areas which creates the rough seas the region is known for. The Bay of Biscay is home to some of the Atlantic Ocean's fiercest weathers. Large storms occur in the bay, especially during the winter months.
Many rivers end in the Bay of Biscay: the Loire, Charente, Garonne, Dordogne and the Adour in France and among others the Bidasoa, Oria, Urola, Pas, Deva and Sor in Spain. A lot of large cities and important harbours border the Bay of Biscay: Brest, Nantes, La Rochelle and Bordeaux in France and San Sebastian, Bilbao, Santander and Gijon in Spain.

The special situation of the Belgian fishery off West France
In the past century, the Belgian fishery was often operating off the shores of other continents and foreign waters, such as Portugal, Morocco, Labrador, Groenland, the White Sea, Iceland and also off Spain in the Bay of Biscay before World War II.
During the period 10 May – begin June 1940 an important part of the Belgian fishing fleet had gathered in the harbour of La Rochelle. Their families were scattered over the small villages Marsilly and Charron, at about 8 km from La Rochelle. Several ship owners tried to put up a maritime school in the hope that France would win World War II, but after the signing of the armistice on 22 June 1940 the Belgian refugees were obliged to return home (Falise, 2008).

In the second half of the 20th century Belgian fishermen were mainly present in the North Sea, the Channel and the Irish Sea, but since 1983 they are again operating from the harbour of La Pallice (La Rochelle, W. France). In the meantime, the European Community created new laws and regulations by which the freedom of fishermen is rather restricted. Nevertheless, the different countries of the European Community are allowed to exchange their quota, creating the ability to fish in foreign waters. The Belgian fleet (Oostende, Zeebrugge) is allowed to operate in the eastern part of the Bay of Biscay, off West France, in an area marked off by the straight lines between the geographic co-ordinates:

48°00' N., 06°00' W.
48°00' N., 07°00' W.
45°00' N., 02°00' W.
44°00' N., 02°00' W.

the points on the French coast at

44°00' N.,
45°30' N.
45°30' N., 02°00' W.
45°45' N., 02°00' W.
48°00' N., 06°00' W.

Fishing is prohibited in the 12 miles zone of the I.C.E.S. areas VIIIa and VIIIb. [1]

The I.C.E.S. applies by general regulation that beam trawling with 55-99 mm mesh is allowed, except for the shaded area north of 46°00' N. all year long and in the crosshatched area south of 46°00' N. from October to December and from January to May, because of the recovery plan for hake (Welvaert et al., 2003; Utterwulghe, pers. com.). However, fishing on sole and anglerfish is allowed for Belgian beam trawlers only from June 1st to September 30th in areas VIIIa and VIIIb with at least 70 mm mesh size. During any other period 100 mm is the minimum mesh measurement. These unfavourable arrangements reduce the presence of the Belgian fishery in the Bay of Biscay to a short period of only two months and a half (June to mid August).

In 2003 for instance 70% of the total catch of the Belgian fishery on sole originated from East Atlantic waters (mainly Irish Sea and the Bay of Biscay) (= 3,500 barrel).

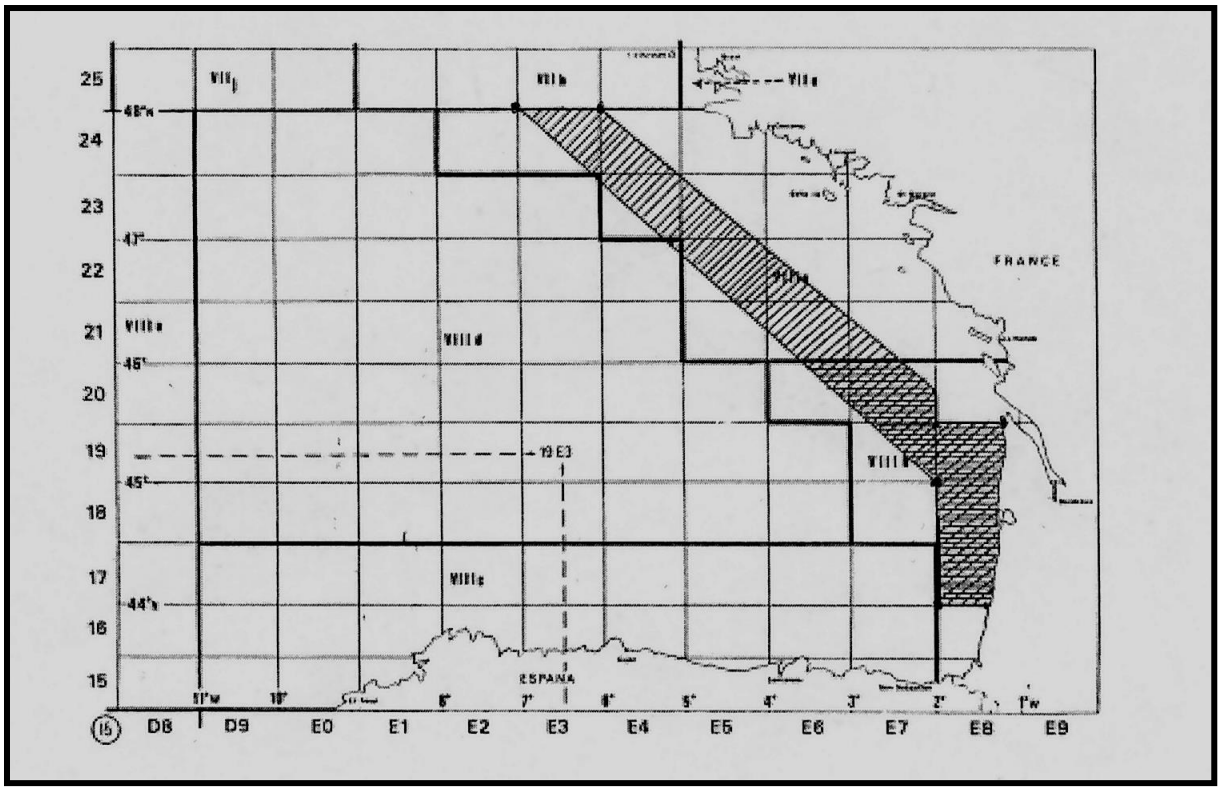
One or two fishing boats from Oostende and about twenty trawlers from Zeebrugge are involved in the fishery at 40-130 m. However, some of the Zeebrugge-trawlers are fishing at 160 m in the southern part of the Bay of Biscay. Each trip takes eight days and the crew is relieved after a period of three weeks. Fishing starts from the 1st of June and ends when the quotas are reached (about July-August). Fishing on sole starts off the Rochebonne Bank at a depth of about 90-100 m and continues southwards in deeper water about 160 m looking for large specimens of sole and especially anglerfish. Labels of shell-dealers often mention 'Rochebonne Bank' as a locality, which is beyond the legal I.C.E.S. fishing areas predestined for the Belgian fishery. Intensive search to obtain more data on the exact locality resulted in only a few exact records. Francis Goens (Veerle, Belgium) provided the precise geographic co-ordinates where *Semicassis saburon* (Bruguière, 1792) *Charonia lampas* (Linnaeus, 1758) and *Calliostoma granulatum* (Born, 1778) have been found: 45°18' N., 01°46' W. (1996). *Euspira pulchella* (Risso, 1826) and some other species have been trawled by the O.231 at 45°12' N., 02°06' W. According to ship owner E. Utterwulghe (Zeebrugge, Belgium) trawlers from Zeebrugge (e.g. the Z.510) operate fairly south in the Bay of Biscay beyond the 12 miles zone off the French coast (44°35' N., 01°47' W.). Yet, the rocky bottom at greater depths cause serious damage to the trawl nets. South of Arcachon, a few trawlers take very large soles and anglerfishes. This kind of fishery in the Bay of Biscay uses beam trawl nets, with a square mesh of 70 mm. The cod end of the trawl net consists of a board with larger meshes of at least 180 mm. In contrast to previous fishery, engine power of the boats is increased, which makes them much faster so beam trawl nets become more efficient. But since 2006 a number of trawlers from Zeebrugge decreased energy consumption by lowering the length of the bar on the beam trawl nets. As a consequence, normal by-catch of other fish species, juvenile and undersized specimens, especially of flatfish was again reduced. Yet, this can really be ignored because small fishes are rather rare.

Each dragging takes 6-7 hours and the haul mainly consists of sole, anglerfish, mullet, ray, gurnard and Norway lobster. The capture of different species of invertebrates is more important than the fraction commercialised. This last feature is interesting for shell collectors who become acquainted with many new species, which in the past were only sporadically available from other fishing grounds. Unfortunately, mortality of the by-catch is very high.

Many fishes are returned to the sea, from 50-100% of flatfish capture and 80-10% of the round fish. Moreover, the sea bottom becomes seriously disturbed. By-catch is the consequence of the TAC's (total allowable catch) and quota's as agreed by council regulations of the EC (European Committee). These measures are insufficient. They cause overfishing and the non-reporting of by-catch. Moreover, scientists and the advanced conchologists often stay unaware of the real locality and depth where certain shells have been found. This is very inconvenient for our knowledge about molluscs trawled for the first time in such a vast area as the Bay of Biscay where an increasing number of specific Mediterranean and mid-East Atlantic species are being found now.

The malacological fauna of the Bay of Biscay has already been thoroughly treated by zoologists such as Fischer, Jeffreys, Lafont, de Folin, de Boury and many others. Yet, most of the works concern dredges in deeper waters: Dautzenberg (1891) listed the species found by the yacht l' "*Hirondelle*'' in 1886 (from 19 to 510 m) and Dautzenberg (1927) again published a complete report of the shells found by the yachts l' "*Hirondelle*'' and the "*Princesse Alice*" in the Bay of Biscay. More recently, Laubier & Monniot (1985) presented an account of deep-sea biological work in the Bay of Biscay, while Bouchet & Warén (1993) studied the bathyal and abyssal molluscs.

[1] I.C.E.S.: International Council for the Exploration of the Sea: it regulates an international partition of European waters in different zones, established to limit fishing.



Map with the I.C.E.S. areas in the Bay of Biscay

Last year a report on shells obtained from the Belgian fishery in the eastern part of the Bay of Biscay was published by Vanwalleghem, Verhaeghe & Swinnen (2007). The results of about 500 days of fishing during a period of more than 10 years were presented in a list of species followed by a degree of 'rarity' and a few remarks. Many small shells found in the stomach of the starfish *Asterias irregularis* Pennant, 1777 were included. Moreover, many littoral species like *Gibbula magus* (Linnaeus, 1758), *Trivia arctica* (Pulteney, 1799), *Nucella lapillus* (Linnaeus, 1758), *Ocenebra erinaceus* (Linnaeus, 1758), *Nassarius reticulatus* (Linnaeus, 1758), *Acteon tornatilis* (Linnaeus, 1758), *Ensis arcuatus* (Jeffreys, 1865), *Ruditapes decussatus* (Linnaeus, 1758) and others were present in that list. The report for instance of *Ansates pellucida* forma *laevis* in *Laminaria* holdfasts suggests Belgian fishermen are operating in coastal waters of the 12 miles zone or very near the Rochebonne Bank, areas known as prohibited for Belgian fishery.

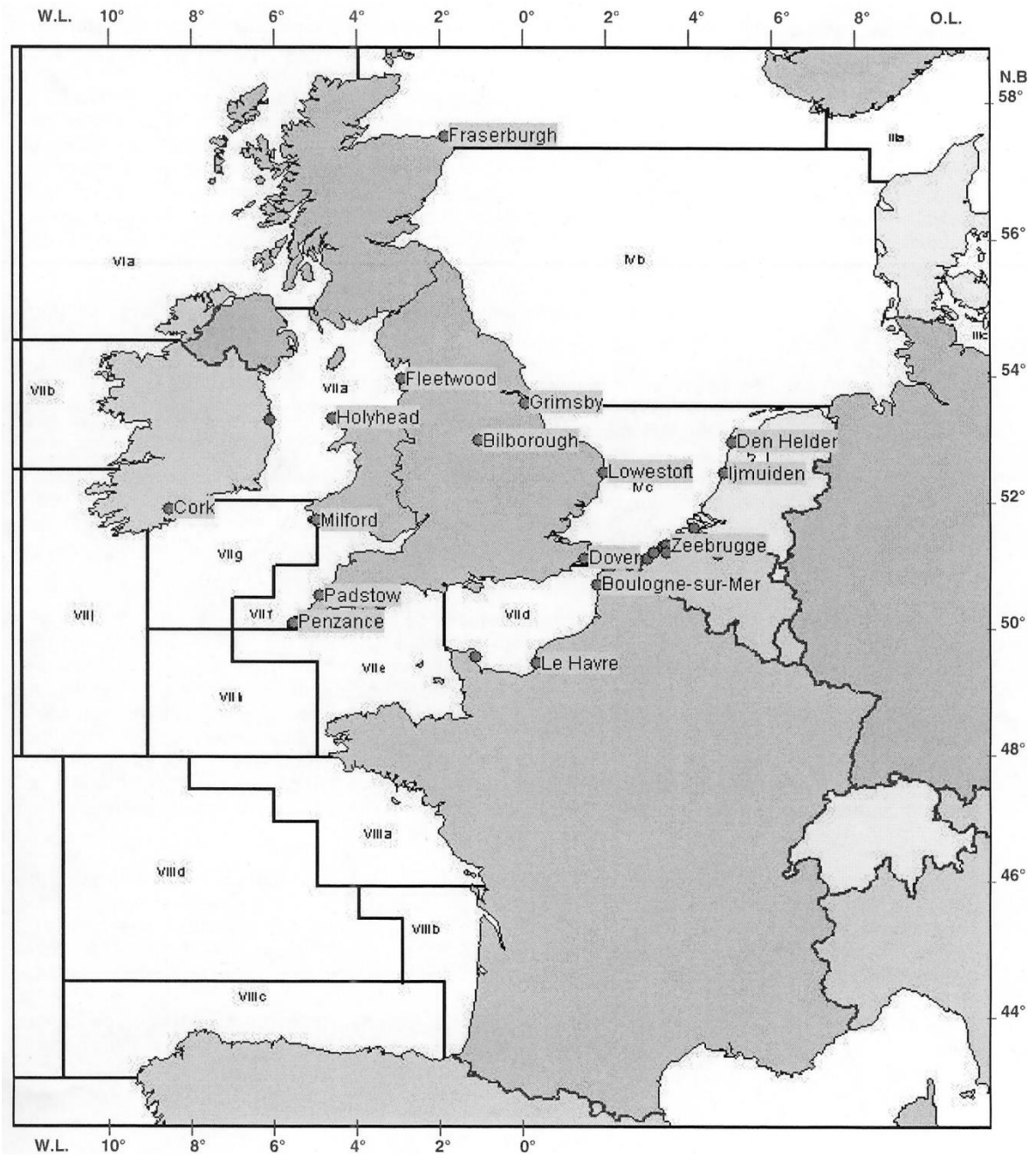
We will enumerate, describe and illustrate a large number of different species trawled by the Belgian fishery in the Bay of Biscay at depths from about 60 m to 160 m. It concerns the results of about ten years of trawling by fishermen from Zeebrugge. Our survey will contain the most important shells caught in this region, which is only a small part of the entire Bay of Biscay. In literature some of them have never or seldom been described from the waters off West France. We will take the opportunity to compare specimens described from the Bay of Biscay with similar representatives from other adjacent waters, such as the North Atlantic area, the North Sea, the British Channel, the Irish Sea, the Mediterranean Sea and even West Africa. This will result in an extensive study of the West European molluscan fauna and several instalments of this magazine will be needed to cover the whole of them. We hope readers will appreciate this special effort, knowing too few books and periodicals are dedicated to European shells. We want to emphasize this work is not a complete study of all the species ever found by fishermen nor is it a complete list of all the species which had to be found in the Bay of Biscay. Fishermen usually offer larger shells and only after obstinate asking for more different and especially smaller shells, they are so kind as to bring interesting material from detritus, weed, mud or stomachs of *Asterias sp.* and *Scaphander lignarius*. Often many years are needed to convince those people of the serious scientific value of their efforts. As more species are coming up from this fishery each year, we will probably make an extra paper dedicated to all new material and small species not yet identified till now.

We have only added small shells from the stomach of *Asterias irregularis* Pennant, 1777 and the opistobranch mollusc *Scaphander lignarius* (Linnaeus, 1758) if we were sure these catches were not obtained from the Celtic Sea off SW England (UK) during the return trip of the Belgian fishermen. We refused to include all littoral seashells, such as *Ocenebra erinaceus* (Linnaeus, 1758), *Nucella lapillus* (Linnaeus, 1758), *Ensis arcuatus* (Jeffreys, 1865) and many others, only sporadically found and not living at the depths involved. A separate list of these species will be added at the end of our survey, following the complete list of species caught in the area and the depths involved.

Nomenclature and systematics are based upon Vaught (1989), Bouchet & Rocroi (2005) and the checklist of European Marine Molluscs (CLEMAM), but if a different name was needed, short remarks are added to support our opinion.

Distribution:

I.C.E.S.-areas



Discussion:

FISSURELLIDAE

***Emarginula fissura* (Linnaeus, 1758)**
Plate I, Figs 1-7; Plate II, Figs 8-12; Plate III, Figs 13-18

= *Patella fissura* Linnaeus, 1758
= *Emarginula conica* Lamarck, 1801
= *Emarginula reticulata* J. Sowerby, 1813
= *Emarginula laevis* Recluz, 1843
= ? *Emarginula tenuis* Recluz, 1843
= *Emarginula mülleri* Forbes & Hanley, 1849
= *Emarginula elata* Libassi, 1859
= *Emarginula emendata* A. Adams & G.B. Sowerby II in G.B. Sowerby II, 1863
= *Emarginula fissura* var. *elata* Jeffreys, 1865
= *Emarginula fissura* var. *incurva* Jeffreys, 1865
= *Emarginula fissura* var. *subdepressa* Jeffreys, 1865
= *Emarginula fissurata* Locard, 1886
= *Emarginula intervecta* Locard, 1898

Often known as *E. reticulata* J. Sowerby, 1813 this species can be confused with the smaller *Emarginula rosea* Bell, 1824, a sublittoral animal dredged on rough stony or shelly bottoms at a depth of 10-30 m. As both are sponge eaters they probably have the same mode of life. In *E. rosea* the strongly curved beak lies further below the highest point of the shell, whereas in *E. fissura* it never extends beyond the posterior margin of the shell. The sculpture of the shell is like that of *E. fissura* though the regular alternation of larger and smaller ridges is often not apparent in the anterior half of the shell.

E. fissura lives from Iceland (Pl. II, Figs 8-9), the Faroes, Scandinavia (Norway and the western coast of Sweden) (Pl. I, Figs 6-7) on all British, Irish and French coasts (Pl. I, Figs 3-5; Pl. III, Figs, 14-17), the Bay of Biscay (Pl. I, Figs 1-2) extending south to the Canary Islands and into the Mediterranean Sea (Pl. II, Figs 10-12) from the sublittoral area to even deeper waters (500-700 m).

As this species is rather variable, some names without taxonomic value were introduced:
var. *elata* Jeffreys, 1865 for higher solid shells (Pl. III, Figs 13-18);
var. *incurva* Jeffreys, 1865 for recurved shells in which the apex is bent backwards a little more than usual;
var. *subdepressa* Jeffreys, 1865 for more flattened shells.

TROCHIDAE

***Jujubinus montagui* (W. Wood, 1828)**
Plate IV, Figs 19-28

= *Trochus montagui* W. Wood, 1828
= *Trochus montacuti* W. Wood, 1828
= *Trochus parvulus* Philippi, 1844
= *Trochus abanteus* Nardo, 1847
= *Trochus tumidulus* Nardo, 1847 [non *Trochus tumidulus* Aradas, 1846]
= ? *Trochus cyrnaeus* Réquien, 1848
= *Trochus montacuti* var. *nana* Jeffreys, 1883

J. montagui can be confused with other *Jujubinus spp.* living in the same area, like *J. exasperatus* (Pennant, 1777) and the larger *J. striatus* (Linnaeus, 1767). However, the 6-7 whorls are slightly tumid (the first two in particular) while the sutures are more pronounced than those of *J. exasperatus* and *J. striatus*. The sculpture consists of extremely fine, very close-set parallel lamellae. The peripheral ridge is a little enlarged, subdivided by small grooves and forms a keel, both less marked and less angular than in *J. striatus* and *J. exasperatus*. A small umbilicus is present in young specimens, but fully adult shells are usually imperforate.
Colours are more constant than in other *Jujubinus spp.*: cream to pale brown, green and biscuit. The spiral ridges are marked with blotches of reddish brown.

This is not a littoral animal, but it is found on stony or gravely bottoms, at depths of 10-200 m. Little is known about its exact way of life. It appears to be very local in distribution and it probably feeds as a detrital scraper like other *Jujubinus spp*. It is often found in the stomach of *Asterias irregularis* Pennant, 1777.

J. montagui occurs in the Atlantic, north to the Orkneys (UK), the NE English coasts and the Dogger Bank, the English Channel (Pl. IV, Figs 21-22), W. France (Pl. IV, Figs 19-20) south into the Mediterranean (Pl. IV, Figs 23-28).

***Clelandella miliaris* (Brocchi, 1814)**
Plate V, Figs 29-37

= *Trochus miliaris* Brocchi, 1814
= *Trochus clelandi* Gray in W. Wood, 1829
= *Trochus millegranus* Philippi, 1836
= *Trochus martini* J. Smith, 1839
= *Trochus millegranus* var. *pyramidata* Jeffreys, 1865
Following Cretella et al. (1990) we prefer to place this species in the genus *Clelandella* Winckworth, 1932 and not in *Calliostoma* Swainson, 1840 nor in *Jujubinus* Monterosato, 1884.

The decision is based upon the study of the morphology of shells, the radulae, the jaws and soft parts as well as gene-enzyme systems.

This species occurs off all European coasts, northwards to the Faroes, the Norwegian coast (south to the Lofoten Islands) and Sweden (Pl. V, Fig. 35; Pl. V, Figs 36-37), extending into the Kattegat, the North Sea (except the German and Danish coasts), the English Channel and the British Isles (Pl. V, Fig. 34), the Bay of Biscay (Pl. V, Figs 29-31) into the Mediterranean Sea (Pl. V, Figs 32-33) and even off the Cape Verde Islands (de Rochebrune, 1881; problematic record fide Rolán, 2005).
It is never littoral and is trawled from about 35 m to 800 m on stony or gravel bottoms, sporadically in sand or muddy sand.
We remarked that specimens from the Bay of Biscay and particularly those from Brittany (west and north coasts) are smaller and mostly white. (= *C. miliaris* var. *candida* Dautzenberg, 1927) The same feature occurs in *Calliostoma zizyphinum* (Linnaeus, 1758) and *Calliostoma granulatum* (Born, 1778), sometimes resulting in problematic identification of juvenile specimens.

The name *Trochus millegranus* was introduced by Philippi (1836) for larger shells with a single suprasutural row of granulations, but later on, this was merely considered as a form by Scacchi (1836) and Monterosato (1878). The same opinion was shared by B.D.D. (1885), as it appears *C. miliaris* is rather variable, particularly when it concerns the number of suprasutural granulated rows, ranging from one to even three.
The name *C. miliaris* var. *pyramidata* Jeffreys, 1865 – without taxonomic value – can be applied to specimens which are a little higher than average.
Another prohibited name, *C. miliaris* var. *clelandi* Gray in W. Wood, 1829, was applied to specimens with reddish punctuations on the decurrent granulated rows (Dautzenberg, 1927).

***Gibbula tumida* (Montagu, 1803)**
Plate VI, Figs 38-47

= *Trochus tumidus* Montagu, 1803
= *Trochus patholatus* Dillwyn, 1817

G. tumida can easily be distinguished from similar species in the same area by the angular shape and its smaller size.
The shape is constant, but shells from the northern part of the range tend to be larger and darker coloured such as specimens from Iceland (Pl. VI, Fig 42) which possess a pattern in which large blue-grey streaks predominate, whereas those from the English Channel, Brittany and the Gulf of Biscay have a fine pattern with olive green and light brown as most important colours, usually with a greenish-blue iridescence. This is a northern species extending from Iceland, the Faroes and North Norway to the North Sea (Pl. VI, Figs 46-47), the English Channel, the British (Pl. VI, Fig 43), French (Pl. VI, Fig. 38-41 & 44) and Iberian (Pl. VI, Fig 45) coasts reaching the Gibraltar area in the south. Absent from the Mediterranean.
It is not a littoral species and lives on gravel bottoms along rocky shores, from 10 m to a depth of 1200 m. Like many other species in this genus it lives on detritus.

CALLIOSTOMATIDAE

***Calliostoma granulatum* (Born, 1778)**
Plate VII, Figs 48-51; Plate VIII, Figs 52-55; Plate IX, Figs 56-61; Plate X, Figs 62-73

= *Trochus granulatus* Born, 1778
= *Trochus papillosus* da Costa, 1778
= *Trochus fragilis* Pulteney, 1799
= *Trochus tenuis* Montagu, 1803
= *Trochus granulatus* var*. conoidea* Jeffreys, 1865
= *Trochus granulatus* var. *lactea* Jeffreys, 1865
= *Trochus granulatus* var. *laevis* Brugnone, 1873
= *Zizyphinus granulatus* var. *nobilis* Monterosato, 1884
= *Trochus granulatus* var. *maculata* Bucquoy, Dautzenberg & Dolffus, 1885
= ? *Ampullotrochus brugnonei* Monterosato, 1890

Specimens from the Bay of Biscay (Pl. VII, Figs 48-51; Pl. VIII, Figs 52-55) are usually heavier and more elevated than those from adjacent waters. They can easily be distinguished from the large specimens with convex whorls living off SW England and in the Irish Sea (Pl. IX, Figs 60-61; Pl. X, Figs 62-64). Vanwalleghem et al. (2007) mentioned the presence of two different forms: the typical high spired, heavy variety and the larger light form similar to those from the Irish Sea. However, we fear samples from both areas had been mixed up by fishermen after returning via the Celtic Sea. Shells from the Mediterranean Sea (Pl. X, Figs 65-69) are slenderer and slightly smaller compared to the Atlantic representatives, so juveniles can be confused with *Calliostoma gubbiolii* Nofroni, 1984. Yet, the latter is slenderer and the aperture is much smaller, whereas it is extremely large in young *C. granulatum*.
Occasionally albino specimens can be found (Pl. IX, figs 60-61; Pl. X, Fig. 65).

This species does not occur N. of the Shetland Islands (North Atlantic) but lives southwards along the western coast of the British Isles (Pl. X, Fig. 73), the English Channel, the Bay of Biscay and the Mediterranean Sea. Also found off the Canaries and Madeira. It does not enter the North Sea nor reach Scandinavia. It appears that this species also lives off the West African Coast. In this paper we figure a deep-water form trawled off Senegal (Pl. XII, Fig. 70), characterized by its fragile shell. A population of small shells was dredged by Belgian fishermen (PEMARCO) at Moita Seca (North Angola), in front of the mouth of the Congo-river in 1966 (Pl. X, Figs 71-72).
Further study is needed to confirm the true identity of these specimens, which never exceed 25 mm.
C. granulatum is never littoral and is dredged between 10 and 300 m. In the Gulf of Biscay it is trawled between 100 and 160 m, mainly on soft bottoms.

TURRITELLIDAE

Turritella communis Risso, 1826
Plate XI, Figs 74-82; Plate XII, Figs 83-93

= *Turritella terebra* (Pennant, 1777) [non Linnaeus, 1758]
= ? *Turritella sabauda* Risso, 1826
= *T. linnaei* Deshayes, 1832
= *T. terebra* var. *gracilis* Jeffreys, 1867
= *T. terebra* var. *nivea* Jeffreys, 1867
= *Turritella communis* var. *soluta* Bucquoy, Dautzenberg & Dollfus, 1882
= *T. brittanica* Monterosato, 1890

Shells from the Atlantic (Pl. XI, Figs 74-79) are generally larger and have more convex whorls than those from the Mediterranean (Pl. XI, Figs 80-82).
T. communis ranges from northern Norway (Lofoten Islands) south into the Mediterranean and off North Africa (Pl. XI, Fig 82). It extends into Scandinavian waters as far as the Sound but does not enter the Baltic. Less common in the North Sea (Pl. XII, Figs 83-86 & 90) and the English Channel (Pl. XI, Fig. 87). It lives in colonies and inhabits soft bottoms between 10 and 200 m on mud or sandy mud. *T. communis* acts as intermediate host for many species such as the sipunculid *Phascolion strombi* (Montagu, 1804) associated with *Montacuta phascolionis* (Dautzenberg & H. Fischer, 1925)) [= *Mioerycina coarctata* (S.V. Wood, 1851)] (see the arrows in Pl. XI, Figs 74-75) and it is often parasitized by *Odostomia eulimoides* Hanley, 1844 and *Capulus ungaricus* (Linnaeus, 1758).
The name *Turritella communis* var. *gracilis* (Jeffreys, 1867) – without taxonomic value – applies to forms which are smaller, more elongate and narrower with more rounded whorls than usual.
The name *T. communis* var. *nivea* (Jeffreys, 1867) is based upon completely white forms (Pl. XII, Figs 88-90).
T. communis var. *soluta* B.D.D. 1882 applies to freak specimens which have the last whorls separated resulting in a very deep suture. As a consequence the aperture is nearly round and the shell seems umbilicate (Pl. XII, Figs 91-93).

APORRHAIDAE

***Aporrhais pespelecani* (Linnaeus, 1758)**
Plate XIII, Figs 94-101; Plate XIV, Figs 102-110; Plate XV, Figs 111-112

Principal synonyms, without the numerous forms:
= *Strombus pepelecani* Linnaeus, 1758
= *Aporrhais quadrifidus* da Costa, 1778
= *Rostellaria aladraconis* Perry, 1811
= *Murex gracilis* Brocchi, 1814
= *Fusus gracilis* Risso, 1826
= *Aporrhais aldrovandi* Capellini, 1860
= *Aporrhais bilobatus* Locard, 1886
= *Aporrhais peslecanopus* Locard, 1886
= *Aporrhais conemenosi* Monterosato, 1890
= *Aporrhais michaudi* Locard, 1890
= *Aporrhais pelecanipes* Locard, 1892

This species is extremely variable in shape, especially concerning the shape and number of digitations. Yet, specimens from eastern Atlantic waters have the second and third digit linked together. These digits are very much broadened and hardly elongated, giving the impression of one broad flaring outer lip. This form can be considered as a clinal variant, whose shells are called *Aporrhais pespelecani* var. *bilobatus* Clément, 1875 or as a subspecies *A. pespelecani bilobatus* Clément, 1875. The ground colour is cream-white with a yellow or fulvous tinge, especially on the expanded outer lip. It is often tinged with brown between the nodules. The aperture may be variously coloured with creamish yellow, brown, lilac or even green shades. Many specimens have the protoconch broken off. Often a septum is formed there, so we can assume that breaking off is a normal phenomenon within this species. In a later paper we will demonstrate the variability in the family APORRHAIDAE with hundreds of illustrations.

This species lives from the Faroes, N. Norway and Iceland in the north (Pl. XIV, Figs 105-107), along the coasts of Western Europe (Pl. XIII, Figs 94-101; Pl. XIV, Figs 102-104 & 108-110), to the Mediterranean (Pl. XV, Figs 112-112) and the Black Sea.

It is rather uncommon in the Isles of Scilly, the Channel and central parts of the North Sea. It does not occur off the W. coast of Denmark nor in its fjords. It extends through the Kattegat to the Sound but is not found in the Baltic. The southern limit seems to be Banc d'Arguin (Mauritania, NW Africa) (Kronenberg, 1991). *A. pespelecani* is always sublittoral. It prefers mud or muddy sand at depths to 250 m, where it feeds on detritus. Where it lives it is not uncommon. In the Bay of Biscay it is one of the most frequent species.

Most of the specimens trawled in the Bay of Biscay (Pl. XIII, Figs 94-95) are covered with the sea anemone *Calliactis parasitica* (Couch, 1842). This member of the Cnidaria is typically attached on shells with hermit crabs such as *Pagurus bernhardus*.

Calliactis parasitica is found from SW England, SW Europe and southwards into the Mediterranean Sea. It is rarely intertidal but locally common offshore to depths of about 60-80 m. Its column is taller than wide, firm and stiff. It possess slender tentacles, up to 700 in number, of moderate length. Small blister-like pores (cinclides) are present at the base of the animal in a zone just above the limbus, one on each endocoel. Long thread-like acontia can readily be emitted through the cinclides when the anemone is disturbed. The base is cream or buff coloured, spotted and streaked with reddish or greyish brown. These markings usually form vertical stripes, often with black, red or purple in addition. The disc and tentacles are cream, rarely pink or orange, the tentacles usually with inconspicuous broken brown lines. When specimens are covered with a sea anemone they are housing one or two specimens of the montacutid bivalve *Montacuta phascolionis* (Dautzenberg & H. Fischer, 1925) [= *Mioerycina coarctata* (S.V. Wood, 1851)] associated with the sipunculid *Phascolion strombi* (Montagu, 1804). Occasionally the pyramidellid gastropod *Ondina diaphana* (Jeffreys, 1848) (= *Odontostomia perezi* Dautzenberg & H. Fischer, 1925) is also found associated with the sipunculid. We refer to the section on the bivalves found by the Belgian fishery in the Bay of Biscay for further information on these guest-molluscs.

***Aporrhais serresianus* (Michaud, 1828)**
Plate XV, Figs 113-114; Plate XVI, Figs 115-121

= *Aporrhais pescarbonis* Brongniart, 1823 (an Italian Eocene fossil from Ronca) (fide Bouchet & Warén, 1993)
= *Rostellaria serresiana* Michaud, 1828
= *Aporrhais macandreae* Jeffreys, 1867
= *Aporrhais sarsii* Kobelt, 1908

This species is also extremely variable in the number and the length of the digitations on the outer lip. Unfortunately we are not able to demonstrate this high variability in specimens of the Bay of Biscay, because specimens are only sporadically brought up by fishermen (Pl. XV, Figs 113-114).
A. serresianus may resemble some forms of *A. pespelecani*, but may be distinguished by its finer sculpture and less solid shell. It differs from the shells of *A. pespelecani* because the expansion of the outer lip is thinner and less arched, its lobs are finer and separated by deeper bays. Generally the shell is more glossy.
A. serresianus prefers deeper waters where it lives on extremely fine mud. Its light shell avoids sinking in the bottom. We have figured shells from the North Sea (Pl. XVI, Figs 115-117) and Spain (Pl. XVI, figs 118-121). Specimens from W. France are intermediate between the very slender shells from the Mediterranean Sea (Pl. XVI, Figs 118-121) and those from N. Europe or the North Sea (Pl. XVI, Figs 115-117).

A. serresianus occurs from northern Norway, the Lofoten and Iceland southwards in the eastern Atlantic into the Mediterranean and also off north-western Morocco. Though common in N. Europe it is absent from the Skagerrak and all Danish seas. In the British Isles it is only found off the W. coast of Ireland and off Scotland and around the northern isles. It is rarely found in the North Sea and the English Channel as it mainly lives in deeper water, usually at 200-2300 m.
The name *A. macandreae* Jeffreys, 1867 was applied to specimens from the Shetland Islands, characterized by the smaller size, the shorter digitations and the prominent interdigital extensions. Later, in 1885, the English scientist reduced this form to a variety of *A. serresianus*.

We also possess specimens from Cardigan Bay (UK), the Faroe Islands and the Dogger Bank (North Sea) (Pl. XVI, Figs 115-117). More specimens will be figured in a later paper, showing the variability within this species.

CAPULIDAE

***Capulus ungaricus* (Linnaeus, 1758)**
Plate XVII, Figs 122-125; Plate XVIII, Figs 126-131
Remark: the name is often misspelled as '*hungaricus*', but the true identity is '*ungaricus*' as the latter was the spelling used by Linnaeus.

= *Patella ungarica* Linnaeus, 1758
= *Patella militaris* Linnaeus, 1771 (name used by Montagu for juvenile specimens of *C. ungaricus*).
= *Amalthea maxima* Schumacher, 1817
= *Protomedea ornata* O.G. Costa, 1861 (name used for an embryonic shell of *C. ungaricus*).

Shells are only sporadically obtained by the Belgian fishery in the Bay of Biscay and they are often found in bad condition, without the thick but fragile periostracum, which is straw or yellow-green coloured. We compare a large specimen (Pl. XVII, Figs 122-125: 62 mm!) with samples from the Mediterranean Sea (Pl. XVII, Figs 124-125; Pl. XVIII, Figs 130-131) and the Irish Sea (Pl. XVIII, Figs 126-129). Dimensions range from 15 to 60 mm, and the average size is about 30 mm. The colour inside the shell is usually white, but some specimens may occasionally be pink, the so called *Capulus ungaricus* var. *rosea* Daniel, 1883 (Pl. XVIII, Figs 130-131).
Capulus ungaricus lives from the Faroes, northern Norway and southern Iceland, west of the Azores and south to the Gulf of Guinea and the Mediterranean, the Canaries and Madeira. It extends into the Skagerrak and Kattegat, becoming rare in the south and in the North Sea. Sublittorally in shallow water to considerable depths (850 m), attached to stones but mostly to other shells, such as *Modiolus modiolus* (Linnaeus, 1758), *Atrina fragilis* (Pennant, 1777), *Pinna nobilis* Linnaeus, 1758, *Pecten jacobaeus* (Linnaeus, 1758) and *Pecten maximus* (Linnaeus, 1758).
Although *C. ungaricus* is listed by American authors from the western Atlantic, Bouchet & Warén (1993) state that these specimens probably belong to an undescribed species after careful examination of numerous specimens from Martha's Vineyard south to southeastern Florida.

OVULIDAE

***Pseudosimnia carnea* (Poiret, 1789)**
Plate XIX, Figs 132-138

= *Bulla carnea* Poiret, 1789
= *Ovula dentata* Fischer von Waldheim, 1807
= *Ovula cepula* Schumacher, 1817
= *Bulla lepida* Dillwyn, 1817
= *Bulla nucleus* Dillwyn, 1817
= *Ovulum rufulum* Mollerat, 1890
= ? *Pseudosimnia vanhyningi* M. Smith, 1940

Pseudosimnia carnea is only known in recent literature from the Mediterranean, the Azores, the Canaries (Pl. XIX, Fig. 135), Madeira and the W. coast of N. Africa (Pl. XIX, Fig. 134). However, it was already reported from the Bay of Biscay by Dautzenberg (1927). Only one specimen (Pl. XIX, Figs 132-133) was live caught by fishermen from Zeebrugge (Belgium) at a depth of 150 m. It concerns a superb shell compared to those gathered from southern areas, such as Spain and Italy, where relatively large numbers of this small but attractive shell are gathered by coral fishermen.
The colour is pale orange, shaded with lilac, outer lip ivory-cream, terminals and funicular tinged brown and deep orange. We have compared the unique specimen from the Bay of Biscay with some other representatives from Savona (Italy) found on red coral at a depth of 40 m (Plate XIX, Figs 136-138). The latter are rather pinkish in colour, not as vivid orange as the specimen from the Bay of Biscay, but generally all shades between white and dark red can be found.
In the Mediterranean *P. carnea* lives between 20 and 120 m deep in association with *Corallium rubrum*, but sometimes specimens, are found on gorgonians such as *Lophorgorgia sarmentosa*.

NATICIDAE

***Euspira fusca* (de Blainville, 1825)**
Plate XX, Figs 139-144; Plate XXI, Figs 145-147

= *Nerita laevida* Laskey, 1811
= *Natica fusca* de Blainville, 1825
= *Natica sordida* Philippi, 1844
= *Natica brocchiana* Philippi, 1851
= *Natica plicatula* Reeve, 1855
= *Natica angulata* Jeffreys, 1885
= *Natica compacta* Jeffreys, 1885

A rather uncommon species ranging from off the Faroes, Scotland and the Hebrides, the British Isles (Pl. XXI, Figs 154-157), south into the Mediterranean Sea (Pl. XXII, Fig. 158). Specimens from the Bay of Biscay (Pl. XXI, Figs 152-153) are not as large as those from adjacent waters. *E. fusca* also occurs off the coasts of Mauritania, Senegal and even Angola.

Rarely found in northern parts of the North Sea and never from Scandinavia.
In Pl. XXI, Fig. 146 we illustrate a specimen of a light deep-water shell from Senegal and on Pl. XXI, Fig. 147 we show a representative of a small form dredged off Cape Morro, North Angola. No specimens in a sample of more than thirty shells were larger than 20 mm.
E. fusca usually lives on detritus on the continental plates at 100-1000 m, usually to 240 m deep and is never intertidal. Not known from Scandinavia or Iceland.

***Euspira pulchella* (Risso, 1826)**
Plate XXI, Figs 148-160

= *Natica nitida* Donovan, 1804 (based on a West Indian shell)
= *Natica pulchella* Risso, 1826
= *Natica poliana* delle Chiaje, 1827
= *Natica intermedia* Philippi, 1836 [non *N. intermedia* Deshayes, 1832]
= *Natica alderi* Forbes, 1838
= *Natica parvula* Tapparone-Canefri, 1869
= *Natica complanata* Locard, 1886

This is one of the most common European *Euspira*, and it is only mentioned here to be rather exhaustive concerning the catches by the Belgian fishery. The specimens living in the Bay of Biscay (Pl. XXI, Figs 148-149) are not different from those elsewhere, but generally intertidal shells are larger, more brilliant and colourful. We have compared them with specimens from Brittany (Pl. XXI, Figs 150-151 & Figs 157-160) and Belgium (Pl. XXI, Fig. 152). Sometimes albino specimens can be found (*E. pulchella* var. *lactea* Jeffreys, 1867). This carnivore gastropod, eating bivalves particularly tellinaceans, lives from Iceland (Pl. XXI, Fig. 153), northern Norway and the Barentz Sea (Pl. XXI, Fig. 154), through the English Channel and the North Sea, Skagerrak and Kattegat (but not in Danish fjords) to the Sound and the Atlantic waters (Pl. XXI, Fig. 155) into the Mediterranean Sea (Pl. XXI, Fig. 156). It lives on sandy shores, usually of clean or muddy sand. It also occurs on gravel in the littoral and sublittoral zone between 10 and 50 m, exceptionally extending to 2000 m.

As this species is rather variable, some names without taxonomic value were introduced. We here illustrate:
var. *lactea* Jeffreys, 1867 for uniform white shells (Pl. XXI, Fig. 157);
var. *vittata* Dautzenberg & Durouchoux, 1900 for shells with 3-4 grey zones alternating with paler bands on the last whorl and a brown blotch on the umbilical area (Pl**.** XXI, Figs 158-160).

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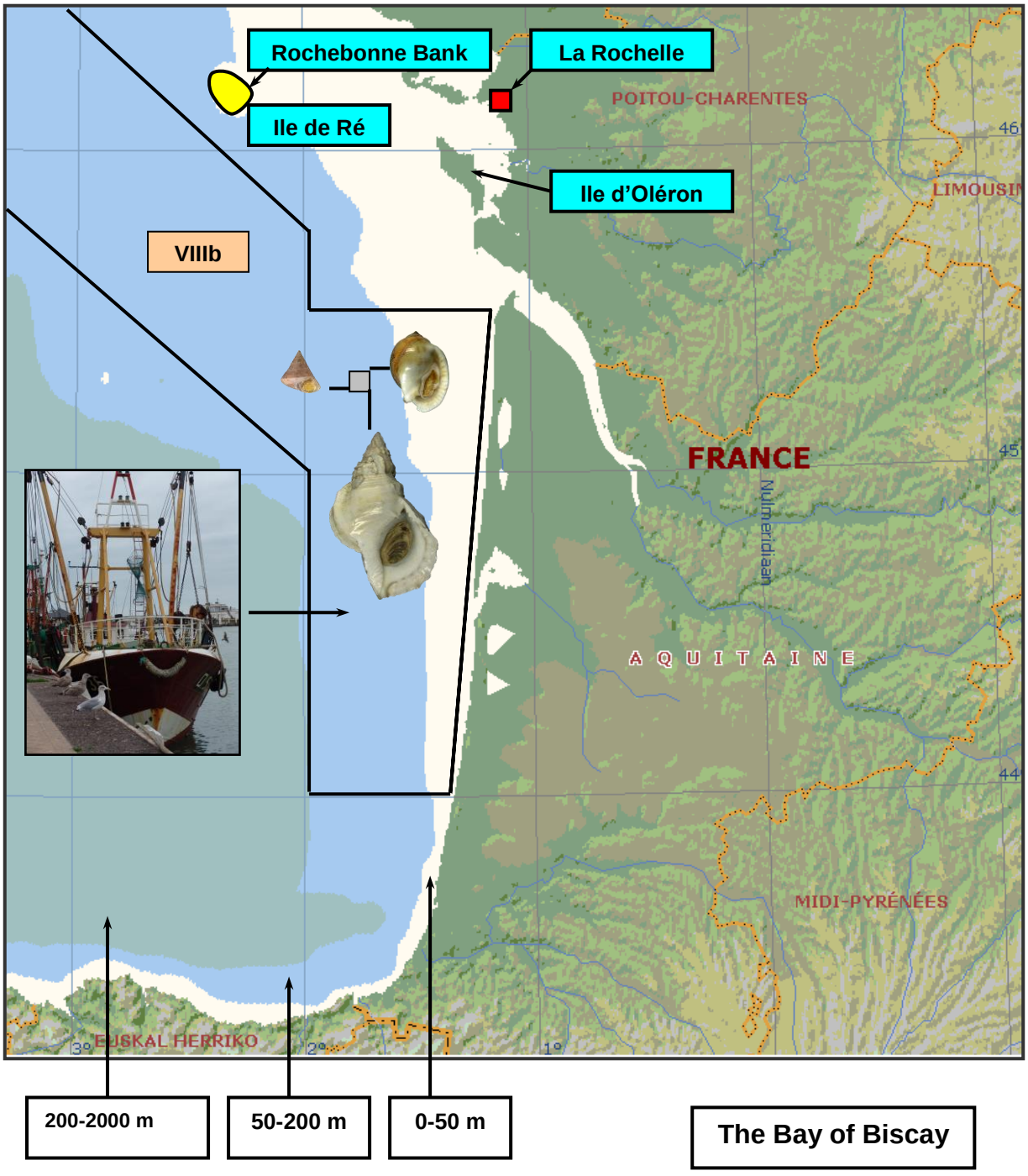

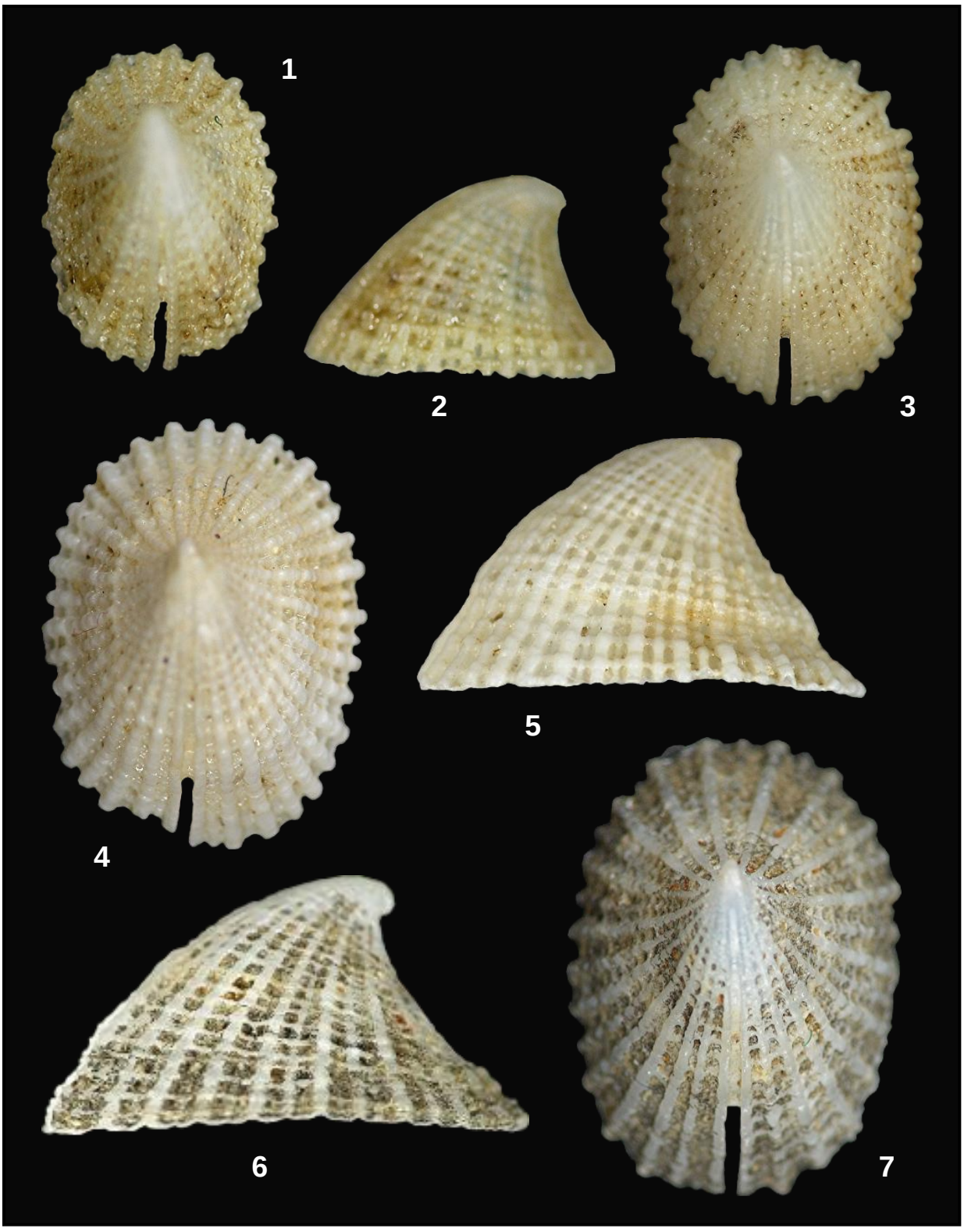

Plate I: Figs 1-7: *Emarginula fissura* (Linnaeus, 1758). Coll. FN; 1-2: Off La Rochelle, Bay of Biscay, W. France. Trawled by Belgian fishermen at a depth of 40 m. July 1996. H. 2.83 mm L. 4.37 mm; 3: St. George's Channel, SW England, UK. Trawled by Belgian fishermen, attached to an aircraft screw. 1975. H. 3.92 mm L. 7.30 mm; 4-5: Trébeurden, Brittany, France. 17 June 1970. H. 5.21 mm L. 9.09 mm; 6-7: Bergen, Norway. H. 4.90 mm L. 9.42 mm.

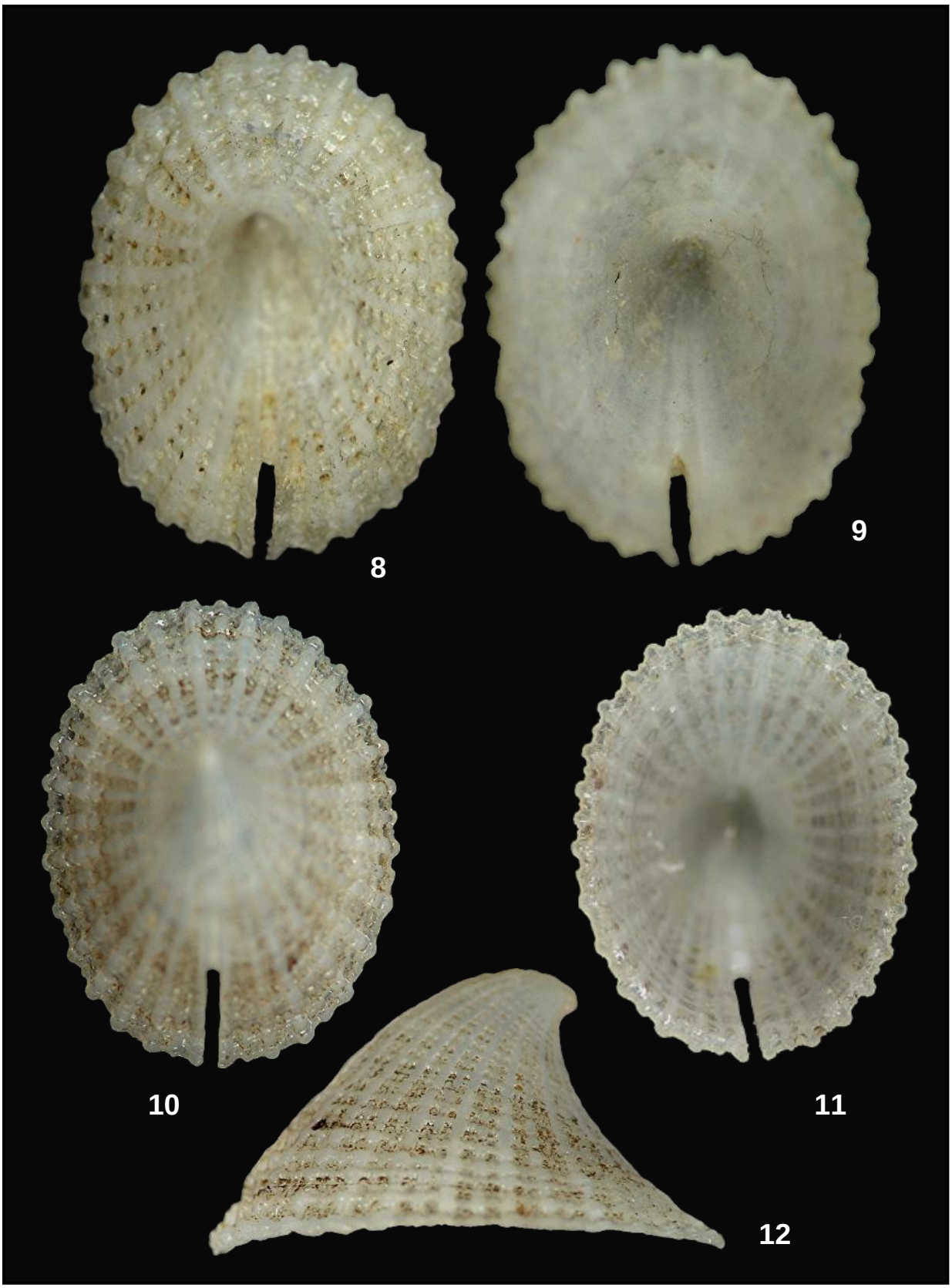

Plate II: Figs 8-12: *Emarginula fissura* (Linnaeus, 1758). Coll. FN; 8-9: South Iceland. Trawled by Belgian fishermen, on Gorgonia. August 1971. H. 5.62 mm L. 10.58 mm; 10-12: Capraia Island, Livorno, Italy. Dredged by fishermen among shellgrit at a depth of 180 m. H. 5.05 mm L. 9.12 mm.
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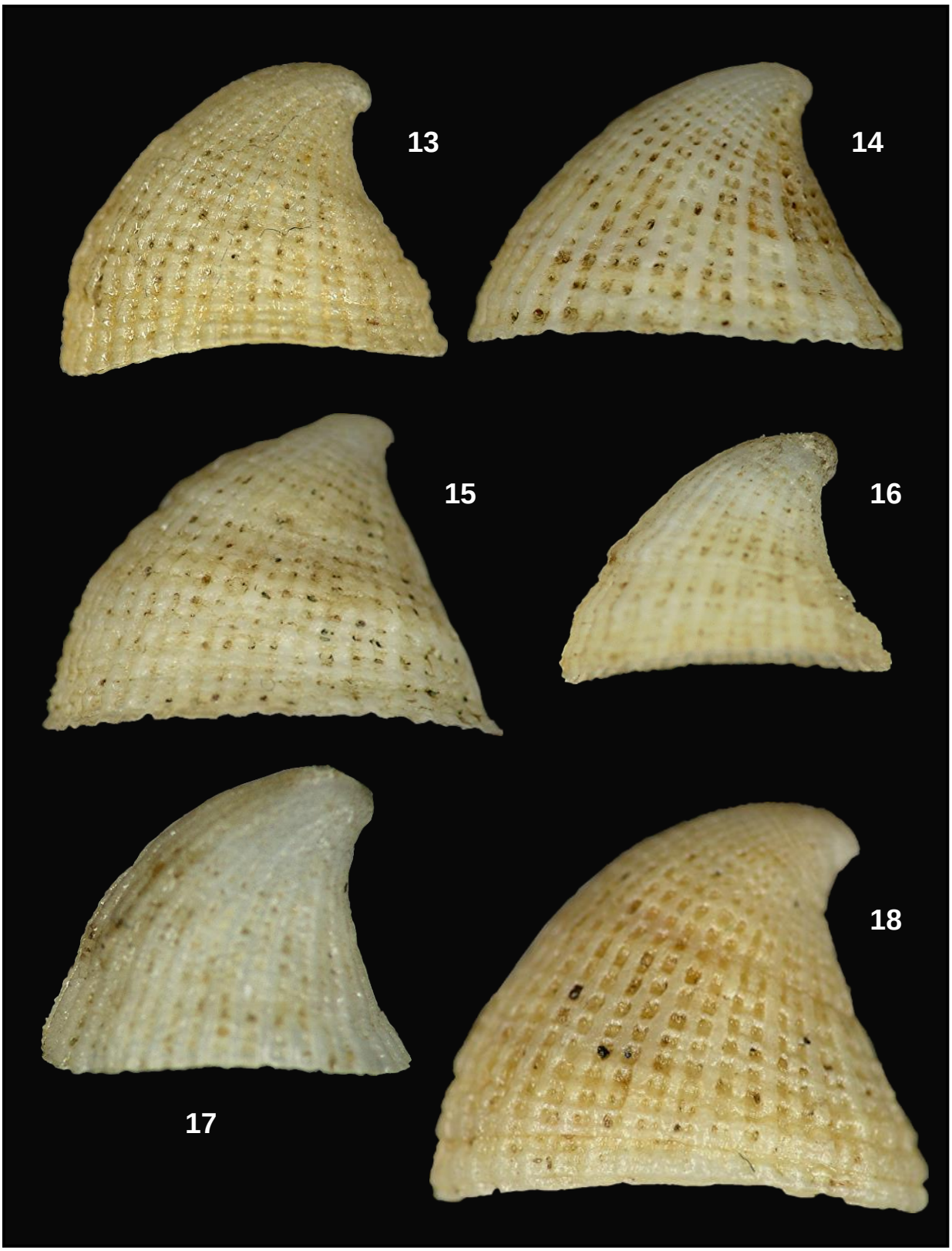

Plate III: Figs 13-18: *Emarginula fissura* var. *elata* Jeffreys, 1865. Coll. FN; 13: South Iceland. Trawled by Belgian fishermen, on Gorgonia. August 1971. H. 5.30 mm L. 6.91 mm; 14: St. George's Channel, SW England, UK. Trawled by Belgian fishermen, attached to an aircraft screw. 1975. H. 5.71 mm L. 8.48 mm; 15, 18: Shelly Beach, Herm, Channel Islands. Among grit. March 1990; 15: H. 6.32 mm L. 8.93 mm; 18: H. 8.28 mm L. 10.13 mm; 16-17: Trébeurden, Brittany, France. Trawled by fishermen. July 1975. Coll. FN; 16: H. 4.43 mm L. 5.59 mm; 17: H. 5.02 mm L. 6.00 mm.

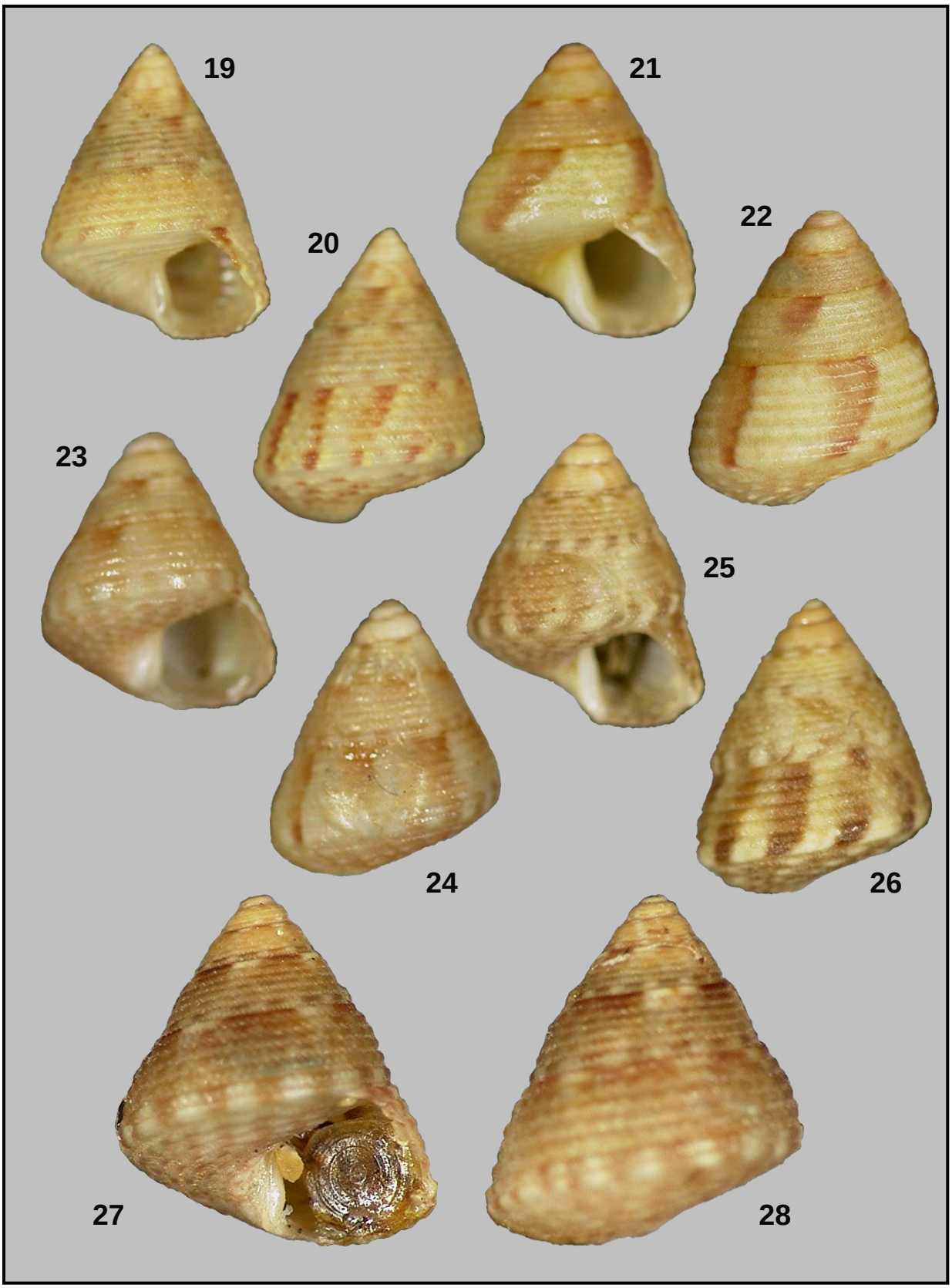

Plate IV: Figs 19-28: *Jujubinus montagui* (W. Wood, 1828). Coll. FN; 19-20: South of La Rochelle, Bay of Biscay. Trawled by Belgian fishermen. 1997. H. 5.64 mm L. 4.23 mm; 21-22: St. Lunaire, Brittany, France. 20 June 1970. H. 5.48 mm L. 4.59 mm; 23-26: Vilassar de Mar, Spain. Trawled by fishermen at a depth of 40 m. August 1987; 23-24: H. 4.71 mm L. 3.84 mm; 25-26: H. 4.93 mm L. 3.96 mm; 27-28: Chioggia, Italy. H. 4.62 mm L. 3.91 mm.

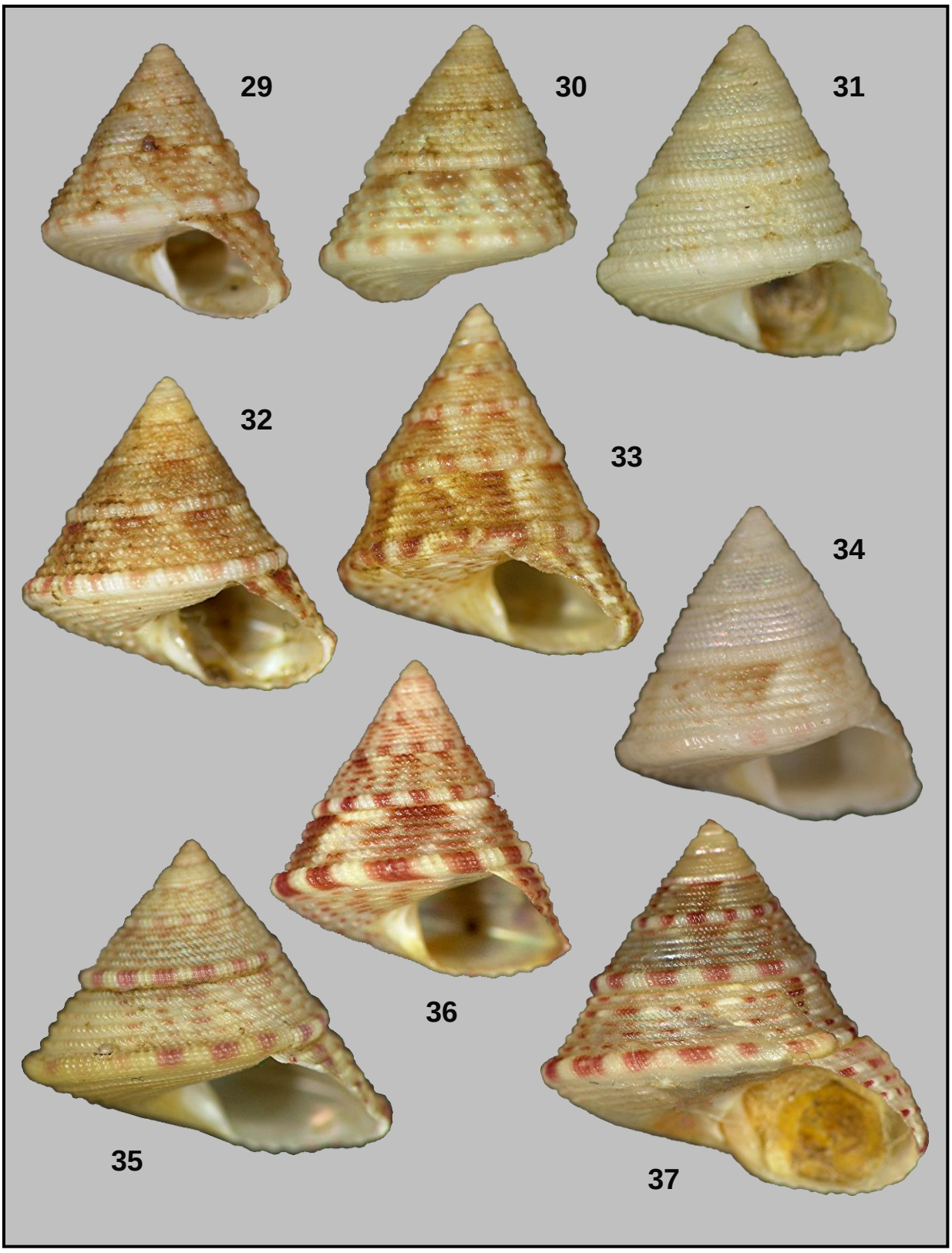

Plate V: Figs 29-37: *Clelandella miliaris* (Brocchi, 1814). Coll. FN; 29-31: South of La Rochelle, Bay of Biscay. Trawled by Belgian fishermen. July 1996; 29-30: H. 5.99 mm L. 5.54 mm; 31: H. 7.45 mm L. 7.02 mm; 32-33: Llansá, Spain In harbour. July 1974; 32: H. 7.15 mm L. 7.13 mm; 33: H. 10.05 mm L. 8.71 mm; 34: St. George's Channel, SW England, UK. Trawled by Belgian fishermen, in stomach of plaice. 1975. H. 10.43 mm L. 9.72 mm; 35: Off Lerwick, Shetland Islands, UK. Trawled by local fishermen. 1996. H. 10.78 mm L. 12.22 mm; 36-37: Gullmarsfjord, Sweden. Trawled by fishermen at a depth of 85 m; 36: H. 10.56 mm L. 10.07 mm; 37: H. 11.47 mm L. 11.18 mm.

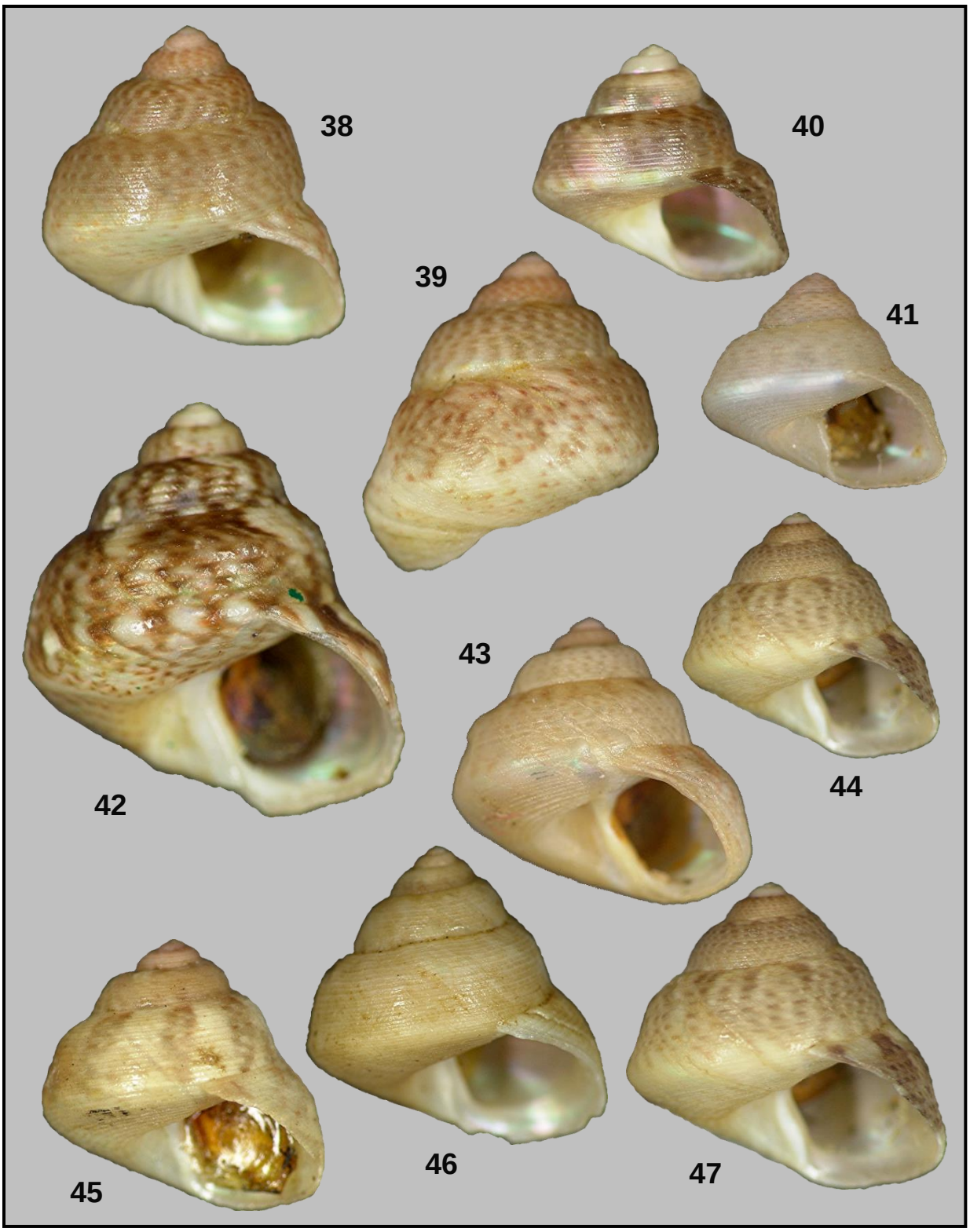

Plate VI: Figs 38-47: *Gibbula tumida* (Montagu, 1803). Coll. FN; 38-41: South of La Rochelle, Bay of Biscay. Trawled by Belgian fishermen. July 1996; 38-39: H. 7.20 mm L. 7.01 mm; 40: H. 4.71 mm L. 5.59 mm; 41: H. 4.44 mm L. 5.37 mm; 42: Reykjavik, Iceland. Trawled by fishermen at a depth of 10 m. 4 July 1994. H. 10.66 mm L. 9.84 mm; 43: Liverpool Bay, W. England, UK. Trawled by Belgian fishermen. In stomach of squids. 1974. H. 8.86 mm L. 8.68 mm; 44: Erquy, Brittany, France. Trawled by fishermen. On seaweed. April 1993. H. 7.30 mm L. 7.55 mm; 45: Vigo, Spain. Trawled by fishermen. 1975. H. 5.50 mm L. 6.51 mm; 46-47: Westhinder Bank, North Sea. Trawled by Belgian fishermen. 1974; 46: 8.83 mm L. 8.68 mm; 47: H. 8.29 mm L. 9.00 mm.

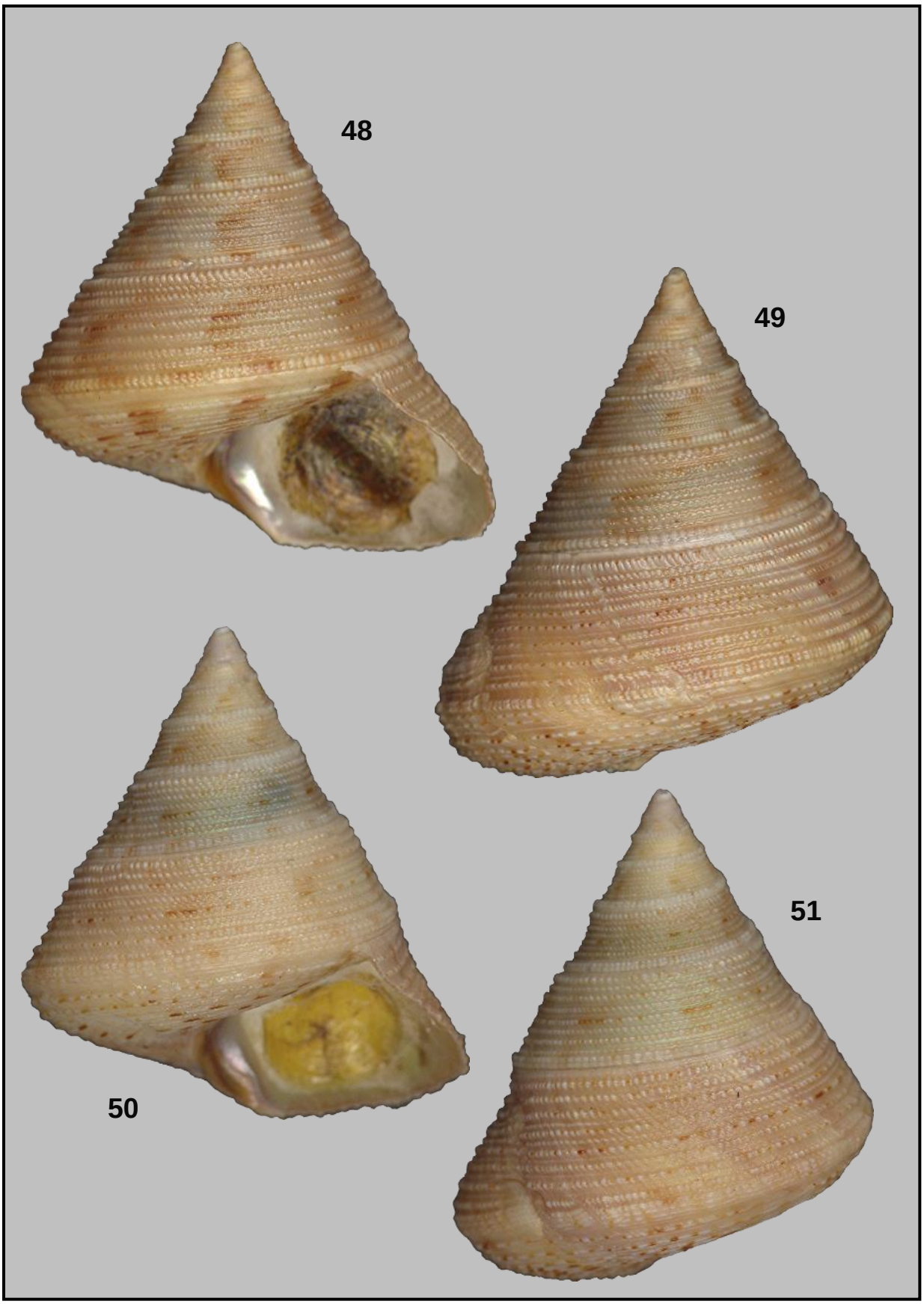

Plate VII: Figs 48-51: *Calliostoma granulatum* (Born, 1778). Trawled by Belgian fishermen off La Rochelle, Bay of Biscay, W. France at a depth of 80 m. July 2000. Coll. JPK; 48-49: H. 34.18 mm L. 32.01 mm; 50-51: H. 33.87 mm L. 29.93 mm.

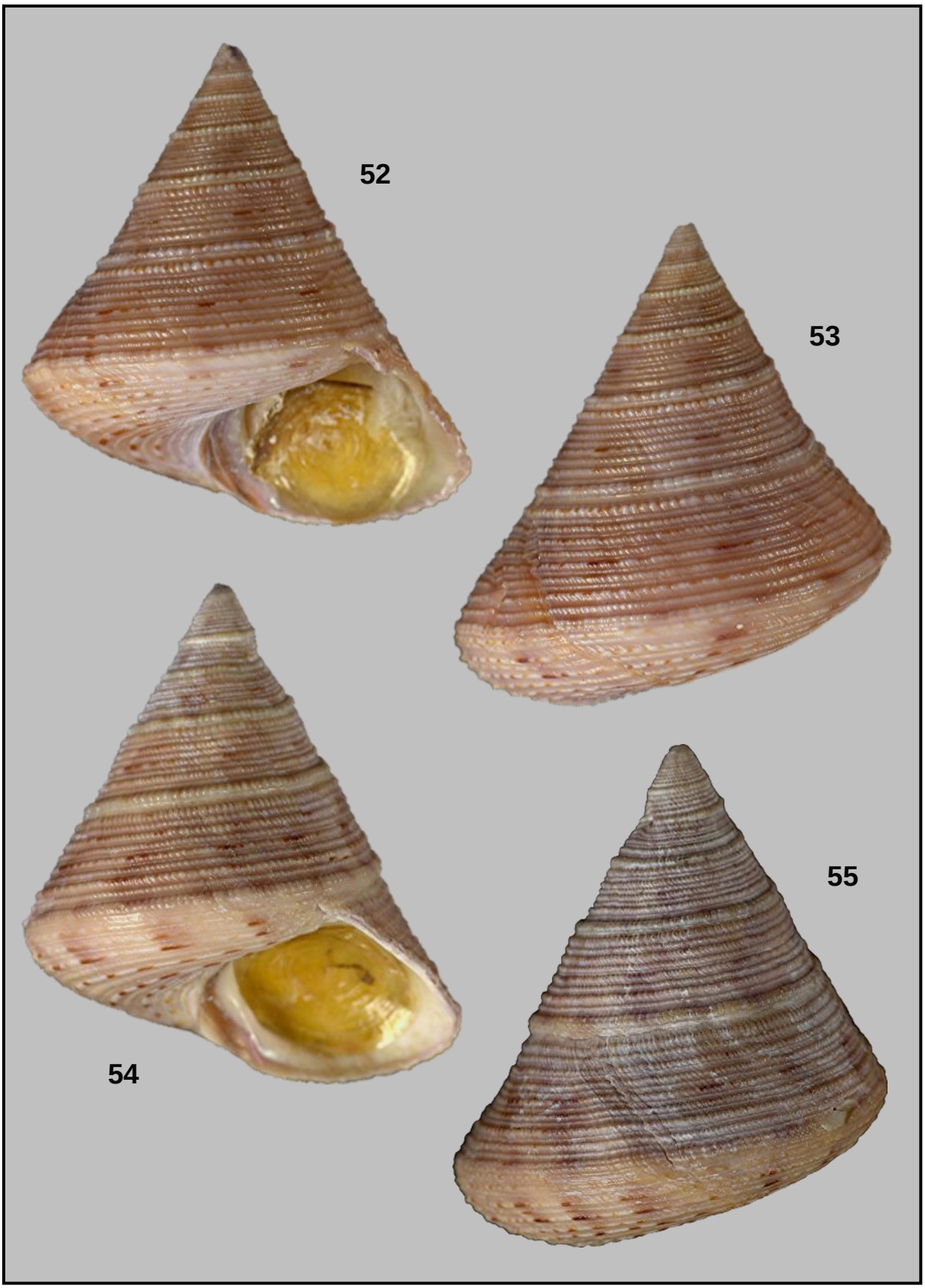

Plate VIII: Figs 52-55: *Calliostoma granulatum* (Born, 1778). Bay of Biscay, W. France. 45°18' N. 1°46' W. Trawled by Belgian fishermen. Coll. JV (ex coll. Francis Goens); 52-53: H. 30.75 mm L. 28.41 mm; 54-55: H. 33.93 mm L. 28.84 mm.

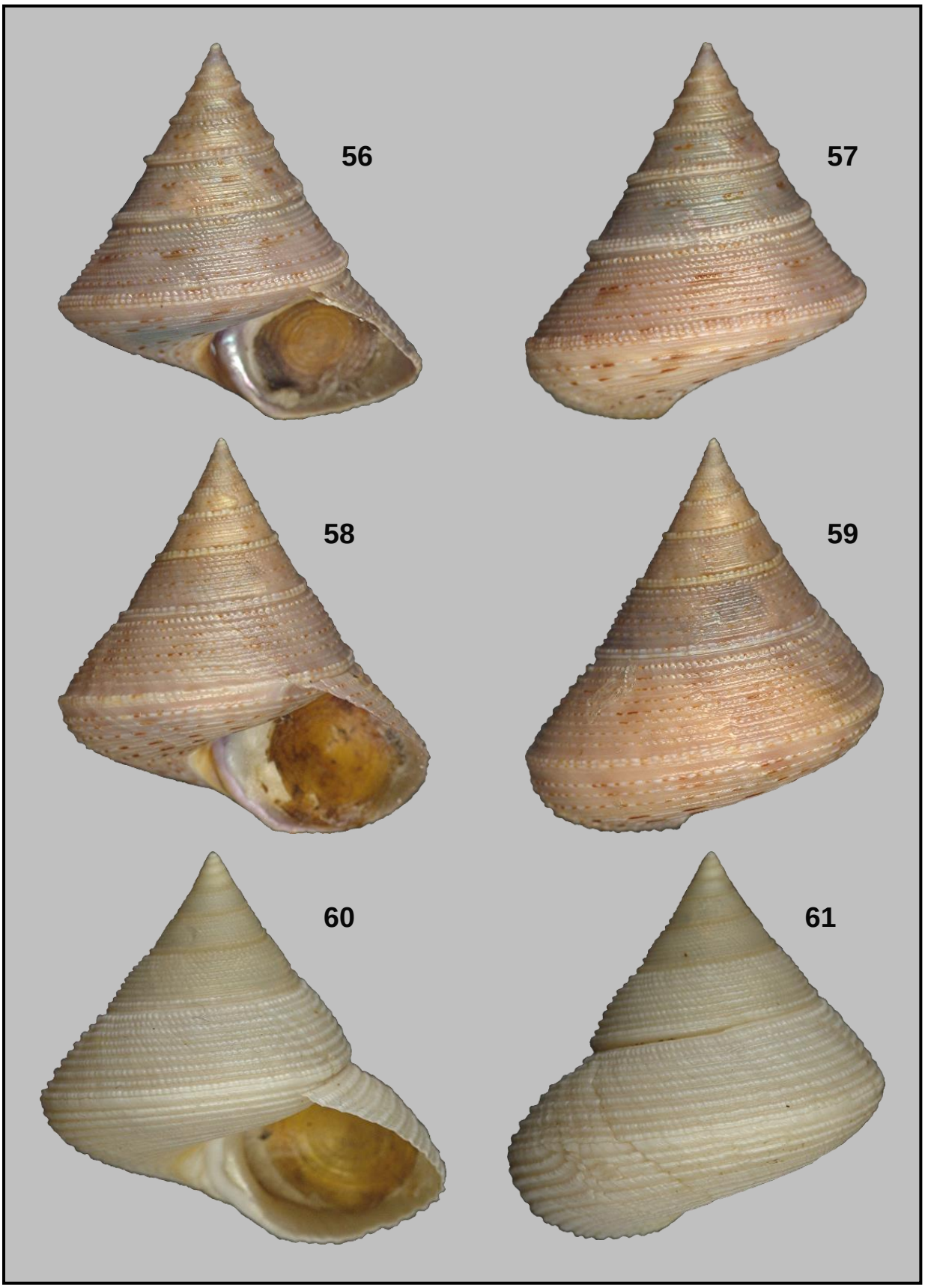

Plate IX: Figs 56-61: *Calliostoma granulatum* (Born, 1778); 56-59: Taken by ships from Burela Port, NW Spain. 44° N. ('O Cantil' area) at about 100-200 m; 56-57: H. 30.61 mm L. 29.45 mm. Coll. FN; 58-59: H. 30.04 mm L. 28.10 mm. Coll. JV; 60-61: St. George's Channel, Irish Sea, UK. Trawled by Belgian fishermen. 1975. H. 33.31 mm L. 33.12 mm. Coll. FN.

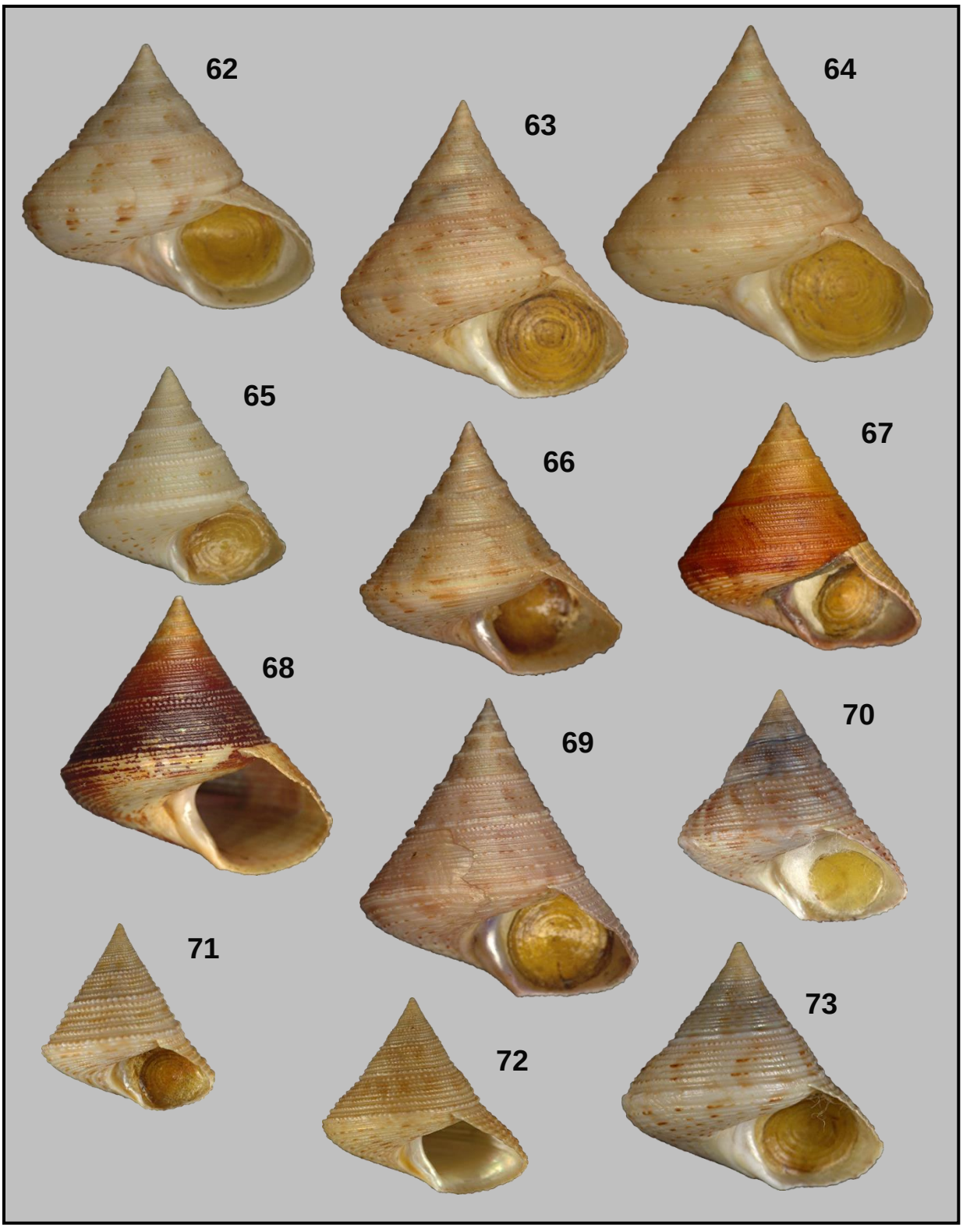

Plate X: Figs 62-73: *Calliostoma granulatum* (Born, 1778). Coll. FN; 62-64: St. George's Channel, Irish Sea, UK. Trawled by Belgian fishermen at a depth of 50 m. 1972; 62: H. 35.33 mm L. 37.93 mm; 63: H. 38.98 mm L. 37.34 mm; 64: H. 40.15 mm L. 38.96 mm; 65: Mallorca, Balearic Islands, Spain. Trawled by fishermen. 1958. H. 19.84 mm L. 18.56 mm ; 66: Trawled by fishermen off Torrevieja, Spain. July 1975. H. 31.26 mm L. 31.51 mm; 67-69: Trawled by fishermen off Malaga, Spain. 1998; 67: H. 27.27 mm L. 26.46 mm; 68: H. 35.05 mm L. 34.10 mm; 69: H. 36.09 mm L. 33.29 mm; 70: Senegal, W. Africa. Trawled by fishermen. H. 23.57 mm L. 23.88 mm; 71-72: Moita Seca, Angola. Trawled by Belgian fishermen at a depth of 73 m. 1966; 71: H. 17.90 mm L. 16.66 mm; 72: H. 23.45 mm L. 23.93 mm; 73: Loch Sunart, Scotland, UK. Trawled by fishermen. H. 25.51 mm L. 26.46 mm.

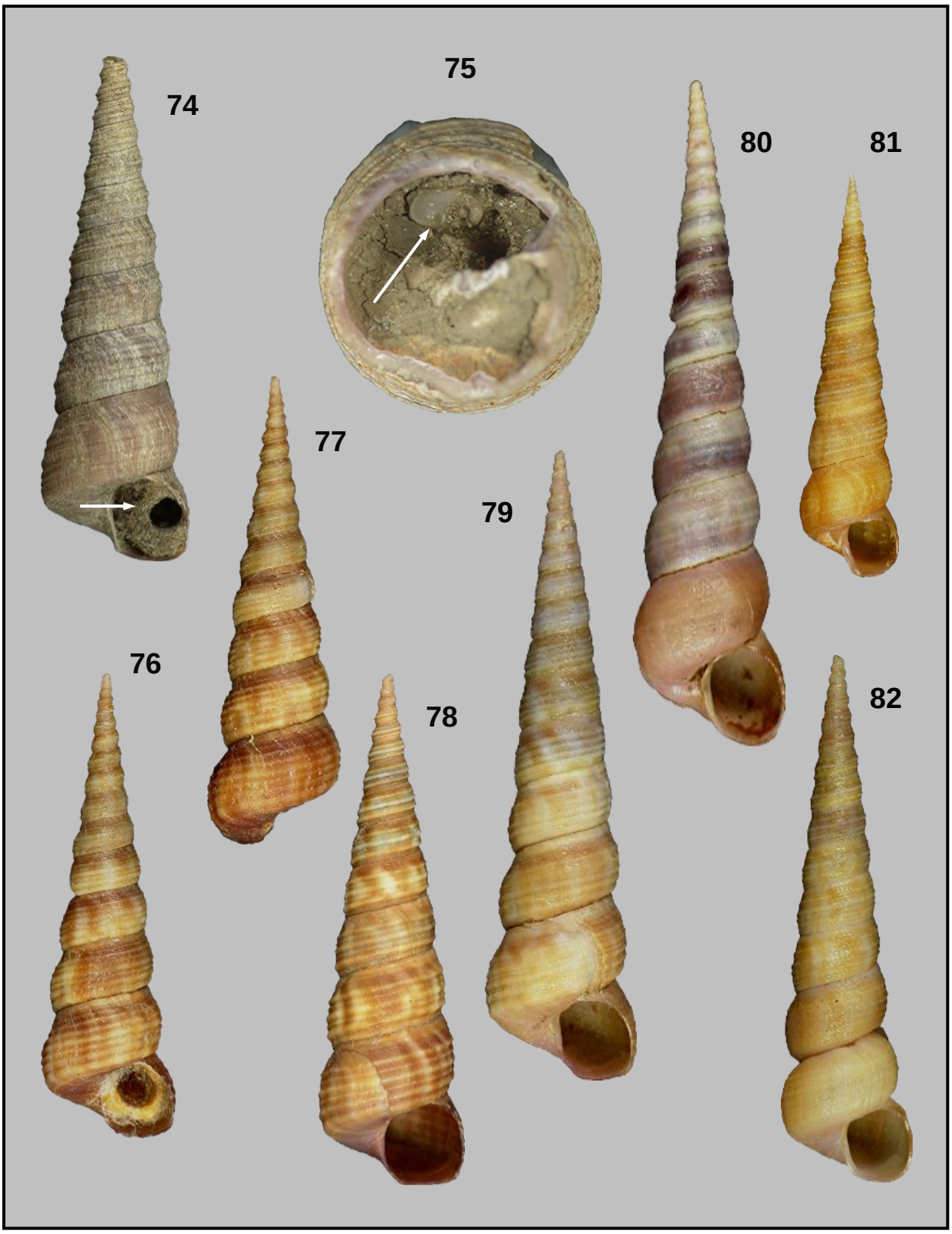

Plate XI: Figs 74-82: *Turritella communis* Risso, 1826. Coll. FN; 74-75: South of La Rochelle, Bay of Biscay. Trawled by Belgian fishermen. July 2006. Occupied by *Montacuta phascolionis* (Dautzenberg in Fischer, 1925) (arrows). 34.21 mm; 76-79: le Pô, Plouharnel, Morbihan, Brittany, W. France. In oysterfarm. 5 April 1997; 76-77: 34.43 mm; 78: 39.20 mm; 79: 48.10 mm; 80: Trawled by local fishermen off Torrevieja, South Spain. 1973. 52.03 mm; 81: Fomm ir-Rih Bay, Malta. Dredged at a depth of 70 m. June 1988. 29.24 mm; 82: Trawled by fishermen off Gibraltar, South Spain. 1975. 40.85 mm.

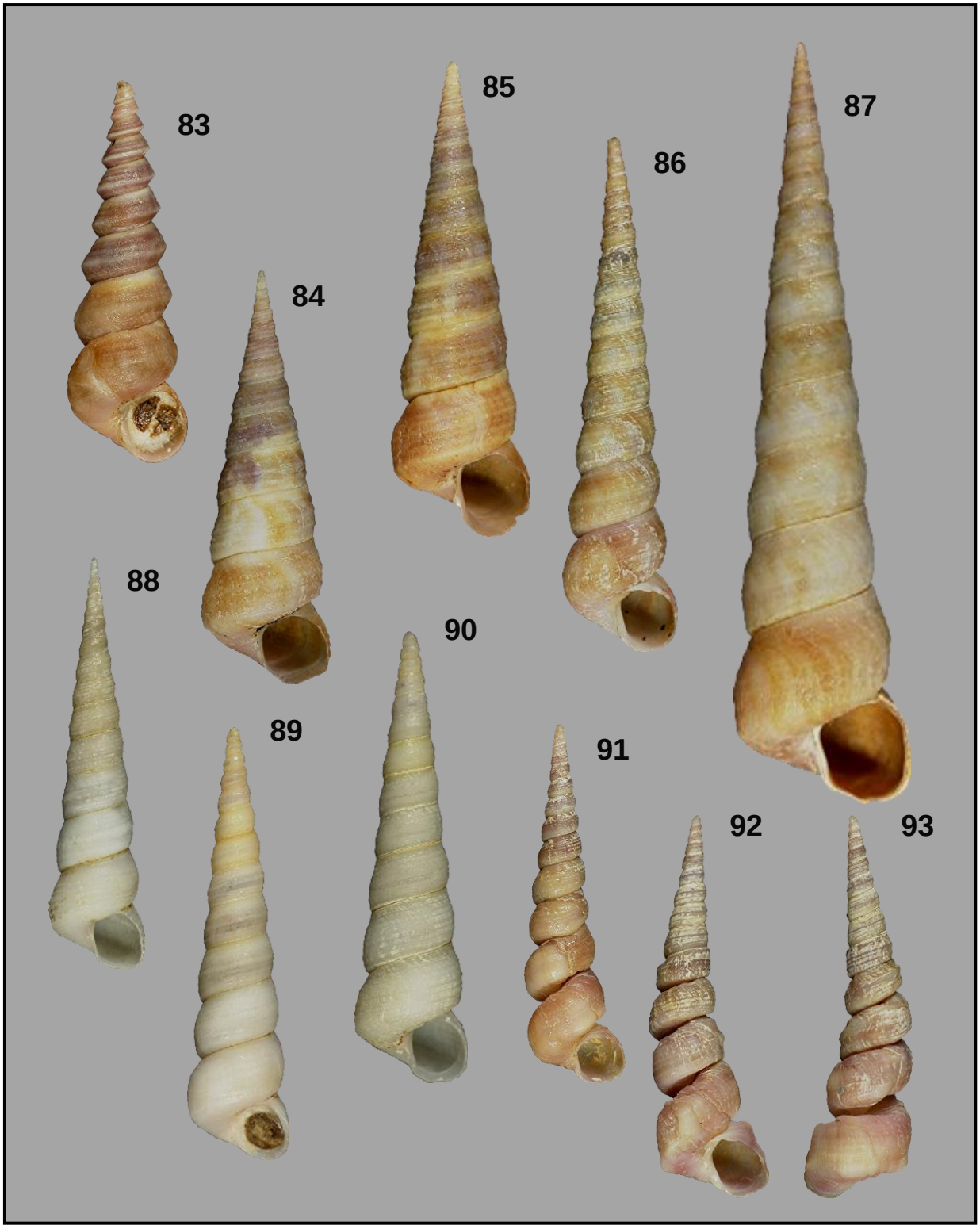

Plate XII: Figs 83-93: *Turritella communis* Risso, 1826. Coll. FN; 83: Trawled by Belgian fishermen off Dogger Bank, North Sea. 1973. 30.84 mm (angulated form); 84: South of Botney Cut, Silver Pit area, North Sea. 1963. 34.85 mm; 85-86: Trawled by Belgian fishermen off Dogger Bank, south of Botney Cut, Silver Pit area, North Sea. 1963; 85: 40.06 mm; 86: 43.76 mm; 87: Trébeurden, Brittany, France. Trawled by fishermen. July 1968. 70.99 mm; Figs 88-90: *Turritella communis* var. *nivea* Jeffreys, 1867; 88-89: Rimini, Adriatic Sea, Italy; 88: 34.76 mm; 89: 39.80 mm; 90: Trawled by Belgian fishermen south of Botney Cut, Silver Pit, Dogger Bank, North Sea. 38.37 mm; Figs 91-93: *Turritella communis* var. *soluta* B.D.D., 1892. Tarragona, Spain. Trawled by fishermen. 1990; 91: 30.10 mm; 92-93: 30.95 mm.

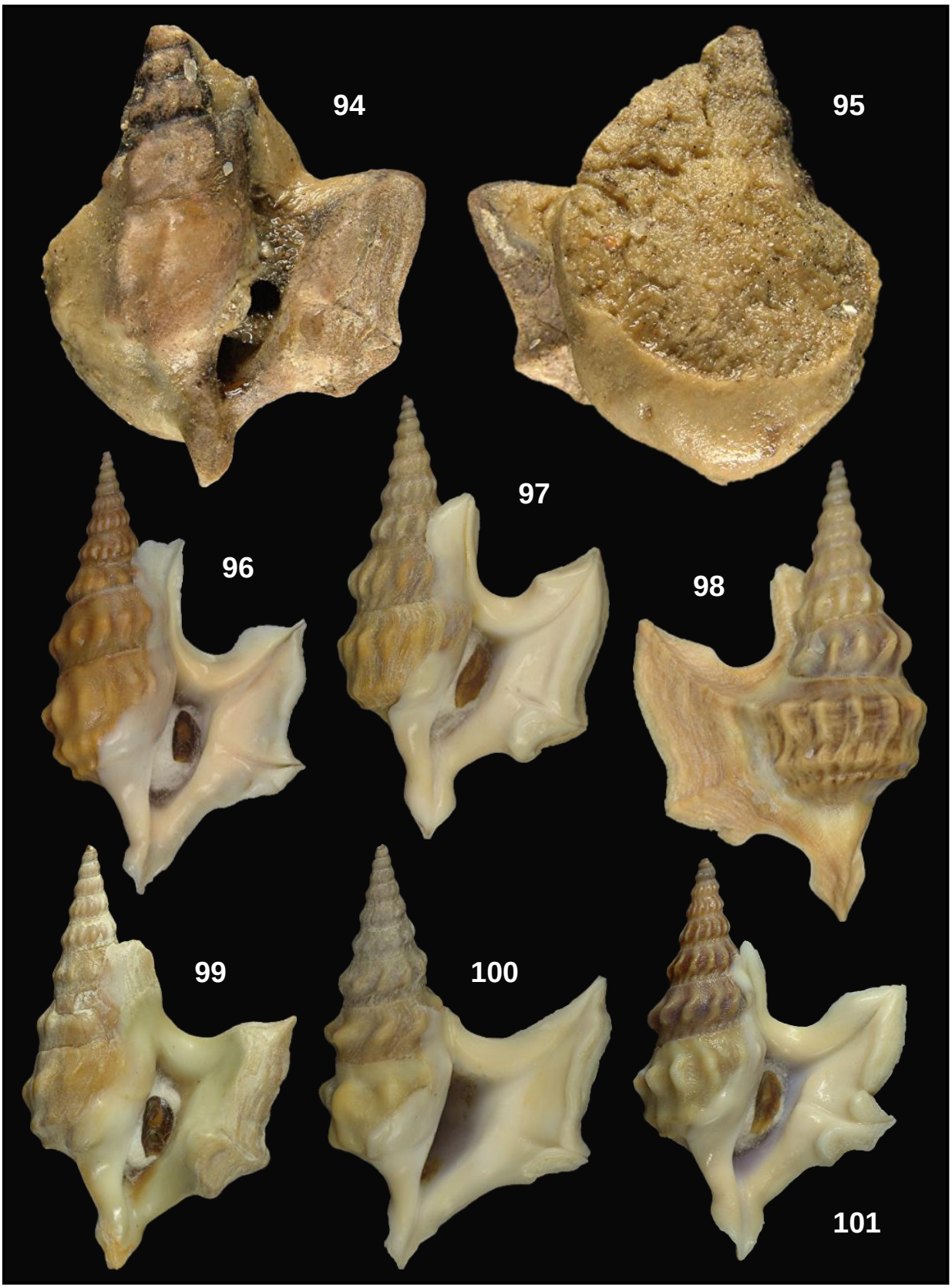

Plate XIII: Figs 94-101: *Aporrhais pespelecani* var. *bilobatus* Clément, 1875. Coll. FN; 94-95: Bay of Biscay. Trawled by Belgian fishermen. July 2007. Specimen covered by the sea anemome *Calliactis parasitica* (Couch, 1842); 96-101: Dredged off Locmiquel, Morbihan, Brittany, W. France. In oysterfarm. August 2006; 96: 49.01 mm; 97-98: 50.96 mm; 99: 46.57 mm; 100: 48.77 mm; 101: 44.96 mm.

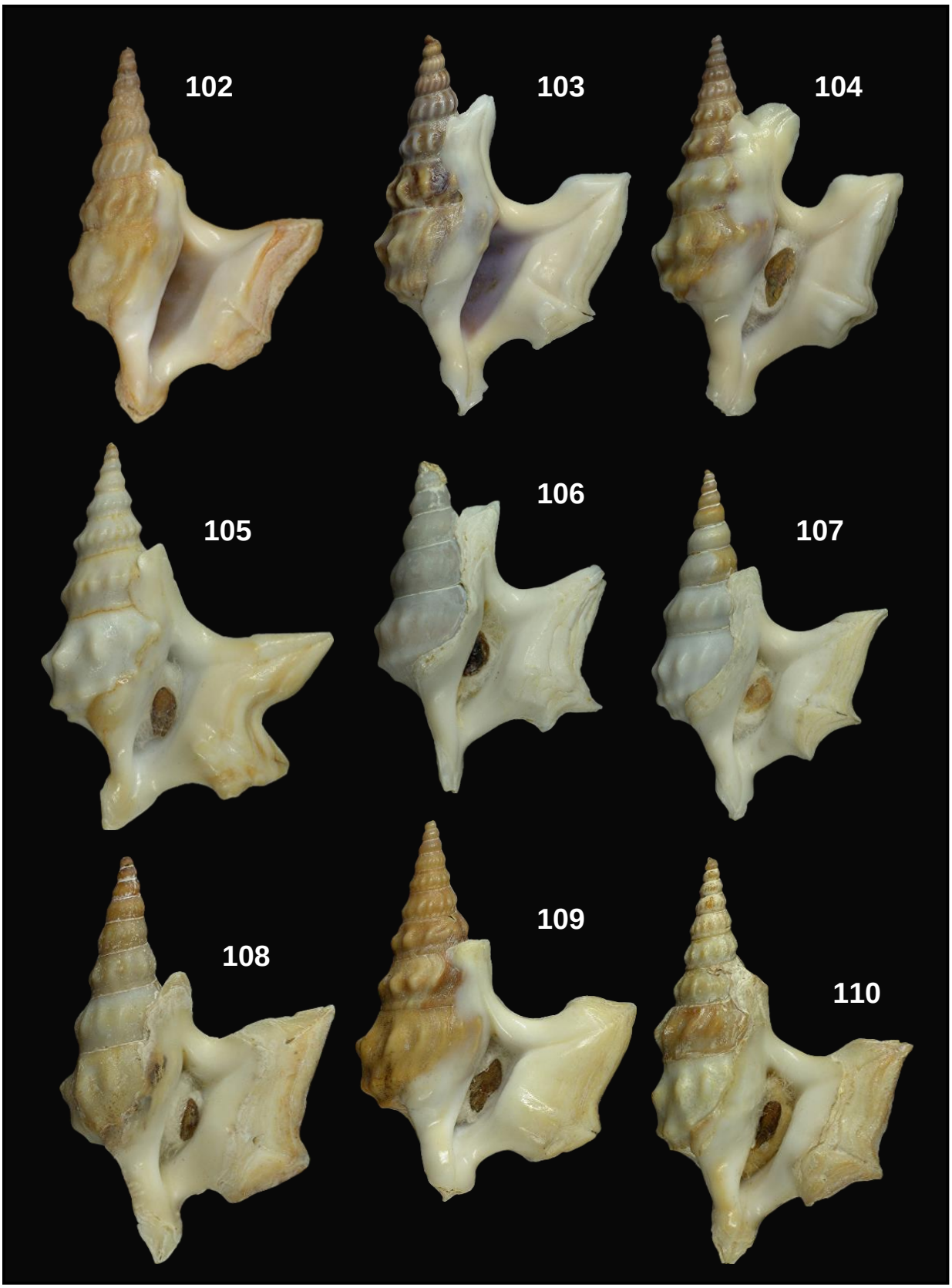

Plate XIV: Figs 102-110: *Aporrhais pespelecani* var. *bilobatus* Clément, 1875. Coll. FN; 102-104: Dredged off le Pô, Plouharnel, Morbihan, Brittany, W. France. In oysterfarm. 5 April 1997; 102: 43.92 mm; 103: 44.40 mm; 104: 45.84 mm; 105: Trawled by fishermen off Bergen, Norway. 1957. 44.82 mm; 106-107: Trawled by Belgian fishermen off South Iceland. July 1971; 106: 34.51 mm; 107: 38.61 mm; 108-109: Trawled by Belgian fishermen off Waterford, Irish Sea, UK, at a depth of 40 m. July 1985; 108: 49.32 mm; 109: 42.99 mm; 110: Trawled by Belgian fishermen off Dogger Bank, North Sea. 1971. 47.85 mm.

Plate XV: Figs 111-112: *Aporrhais pespelecani* (Linnaeus, 1758). Trawled by fishermen off Torrevieja, South Spain. 1972. 52.30 mm. Coll. FN;
Figs 113-114: *Aporrhais serresianus* (Michaud, 1828). Bay of Biscay, W. France. Trawled by Belgian fishermen. July 2007. 50.1 mm. Coll. JPK.

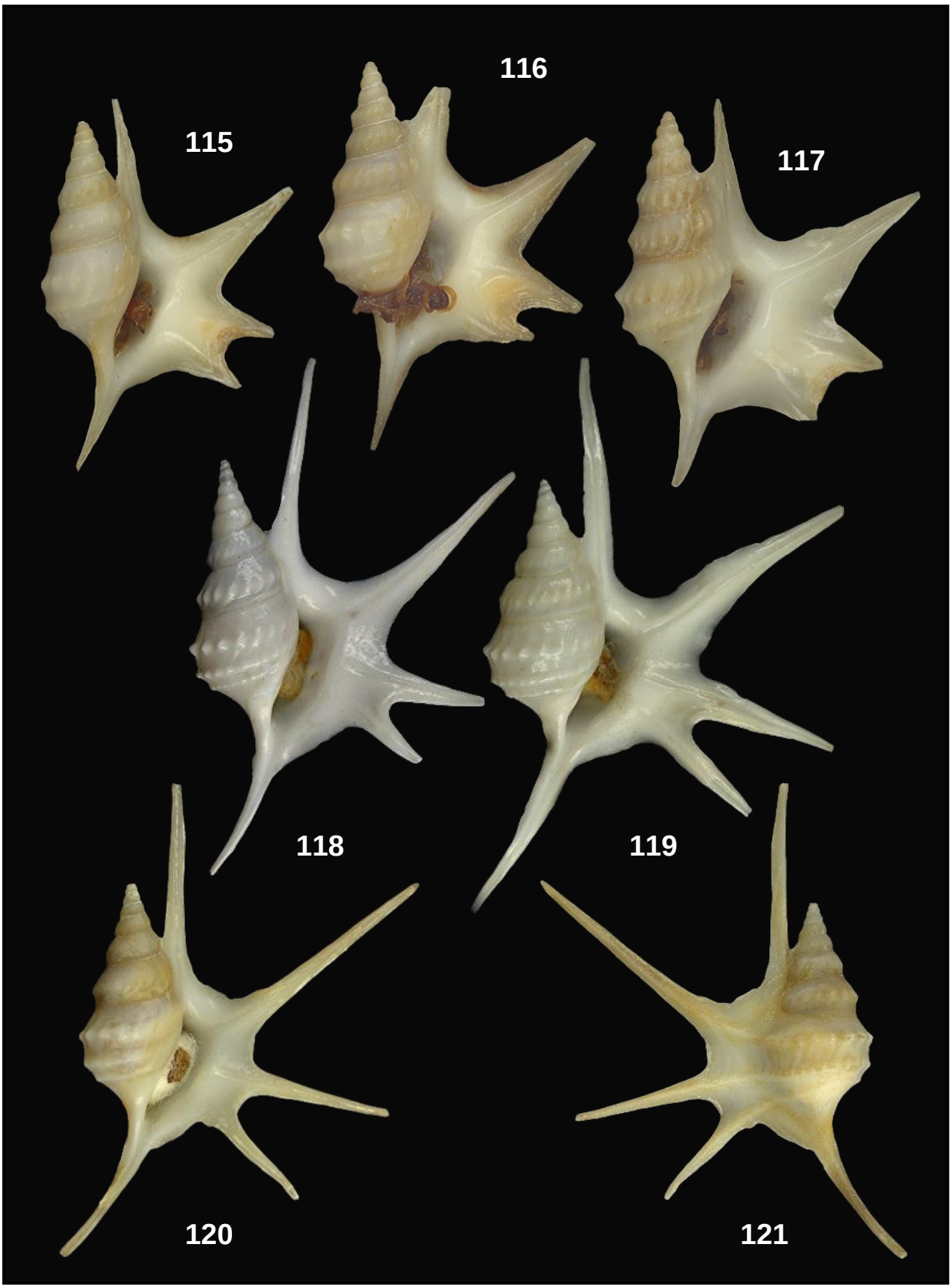

Plate XVI: Figs 115-117: *Aporrhais serresianus* var. *macandreae* Jeffreys, 1867. Trawled by Belgian fishermen off Dogger Bank, North Sea. 1970. Coll. FN; 115: 41.87 mm; 116: 44.61 mm; 117: 44.90 mm.
Figs 118-121: *Aporrhais serresianus* (Michaud, 1828). Trawled by fishermen off Torrevieja, Spain. July 1973. Coll. FN; 118: 58.29 mm; 119: 64.10 mm; 120-121: 56.54 mm.

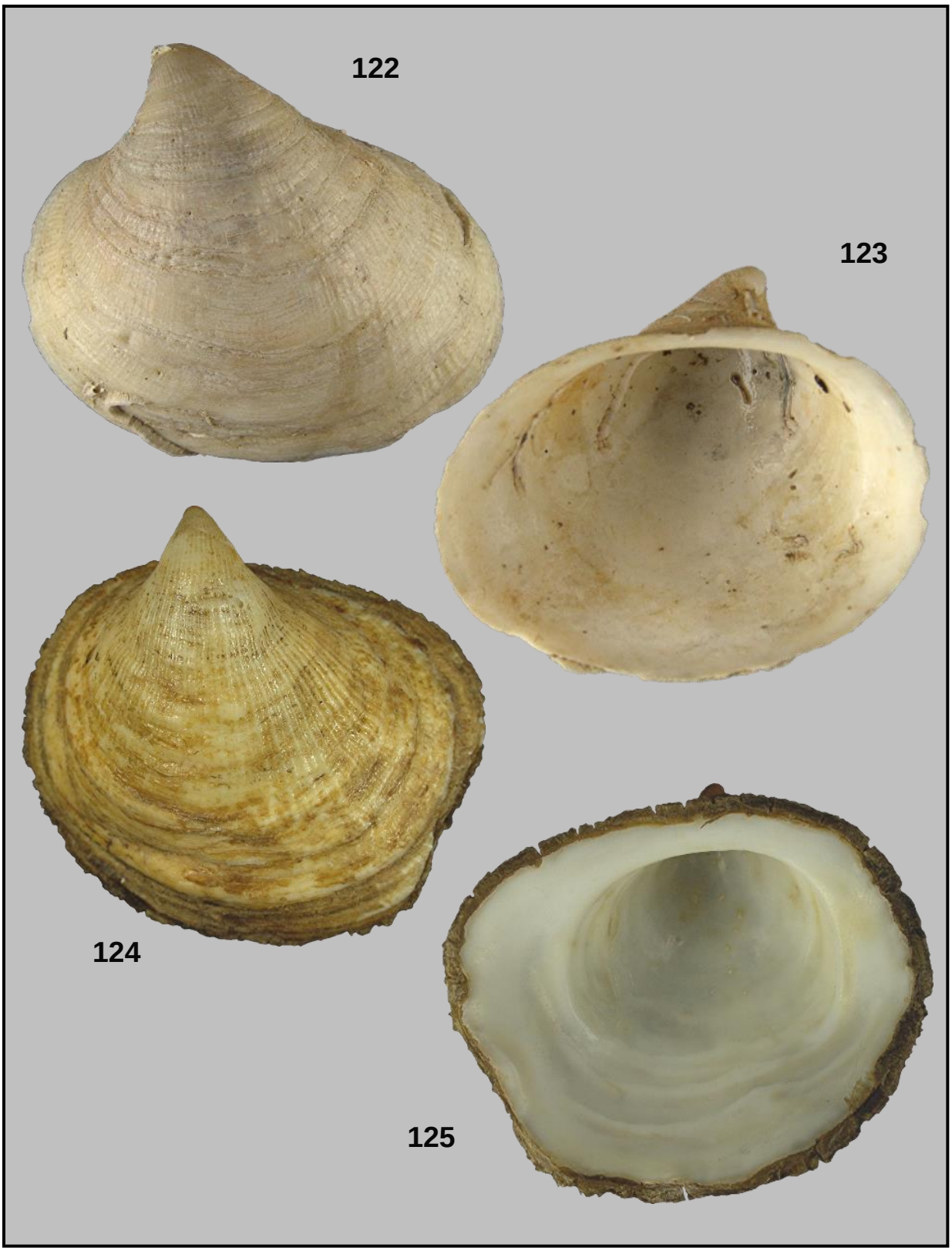

Plate XVII: Figs 122-125: *Capulus ungaricus* (Linnaeus, 1758); 122-123: Trawled by Belgian fishermen south of La Rochebonne, Bay of Biscay, W. France. July 2005. H. 29.5 mm L. 62.1 mm. Coll. JPK (RBINS); 124-125: Costa Brava, Spain. Trawled by fishermen. H. 21.84 mm L. 52.66 mm. Coll. FN.

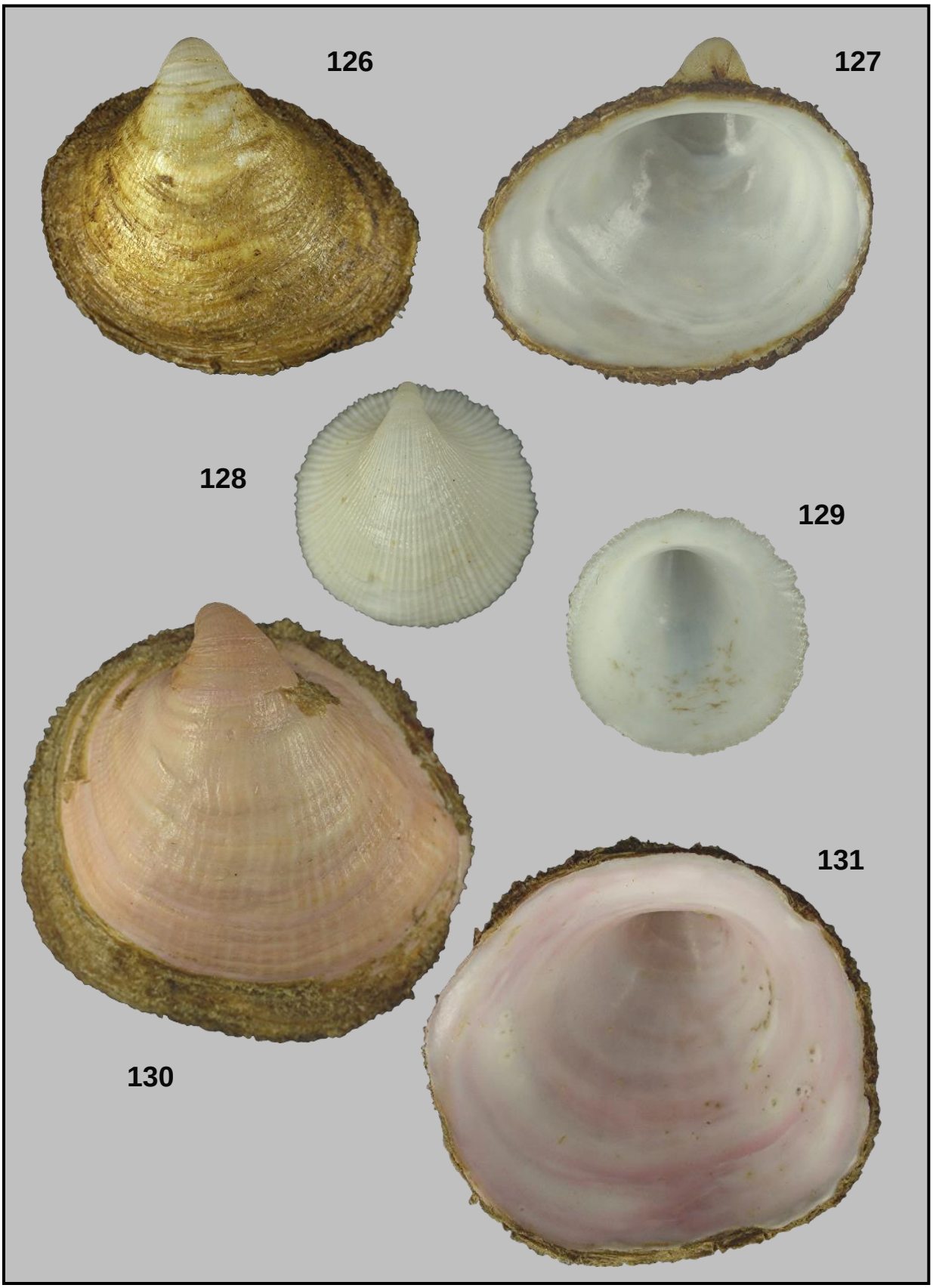

Plate XVIII: Figs 126-129: *Capulus ungaricus* (Born, 1778). Trawled by Belgian fishermen in the Irish Sea (UK). Coll. FN; 126-127: H. 17.95 mm L. 37.11 mm; 128-129: H. 11.32 mm L. 20.21 mm.
Figs 130-131: *Capulus ungaricus* var. *rosea* Daniel, 1883. Trawled by fishermen off Malaga, Spain at a depth of 20 m. Attached to bivalve. 1999. H. 26.63 mm L. 53.46 mm. Coll. FN.

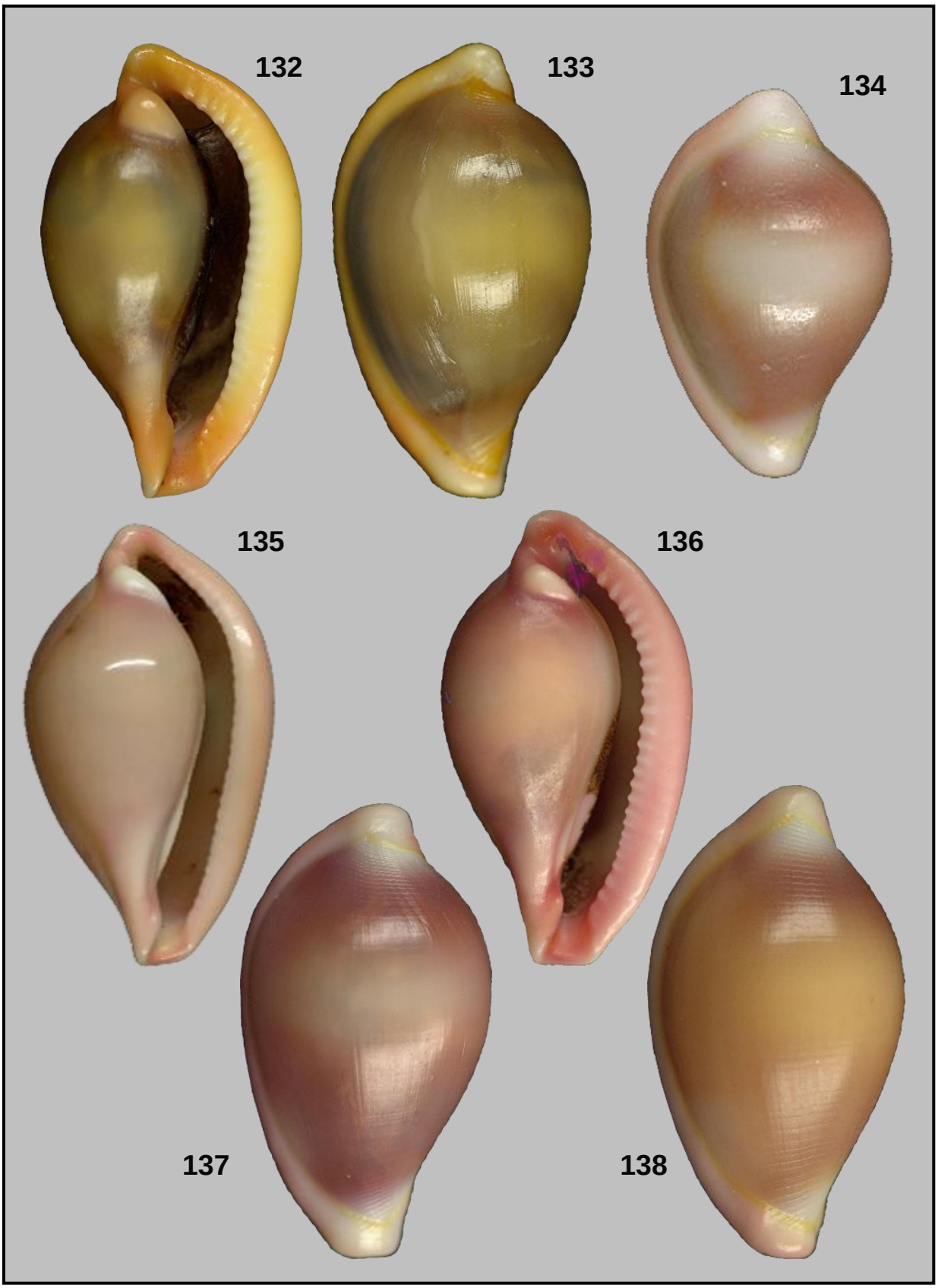

Plate XIX: Figs 132-138: *Pseudosimnia carnea* (Poiret, 1789); 132-133: Bay of Biscay, W. France. Trawled by Belgian fishermen. On coral. August 2007. 14.25 mm. Coll. JPK; 134: Tanger, Morocco. Trawled at a depth of 80 m. 10.43 mm. Coll. FN; 135: Candelaria, Tenerife, Canary Islands. 14.72 mm. Coll. JV; 136-138: Cabo Nola, near Savona, Italy. By SCUBA-diver on red corals at a depth of 40 m. 1991. Coll. FN; 136, 137: 14.79 mm; 138: 15.63 mm.

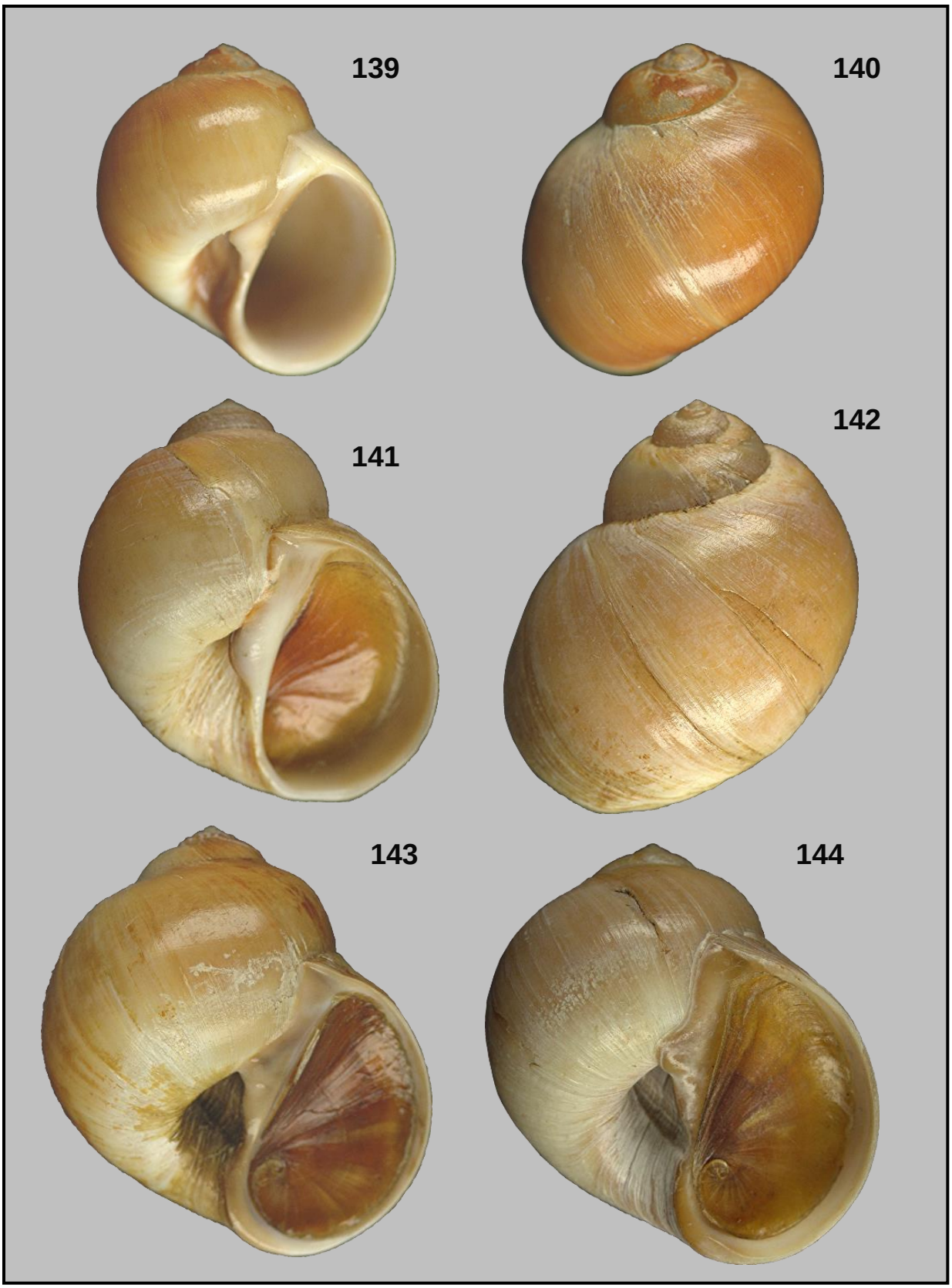

Plate XX: Figs 139-144: *Euspira fusca* (de Blainville, 1825). Coll. FN; 139-140: Bay of Biscay, W. France. Trawled by Belgian fishermen at a depth of 90-160 m. July 2006. H. 14.93 mm L. 14.18 mm; 141-143: Trawled by Belgian fishermen between Cork and Waterford in the Irish Sea (UK), at a depth of 40 m; 141-142: H. 31.05 mm L. 27.89 mm; 143-144: H. 36.30 mm L. 32.95 mm; 144: Trawled by fishermen off Malaga, Spain. 1998. H. 36.49 mm L. 34.01 mm.

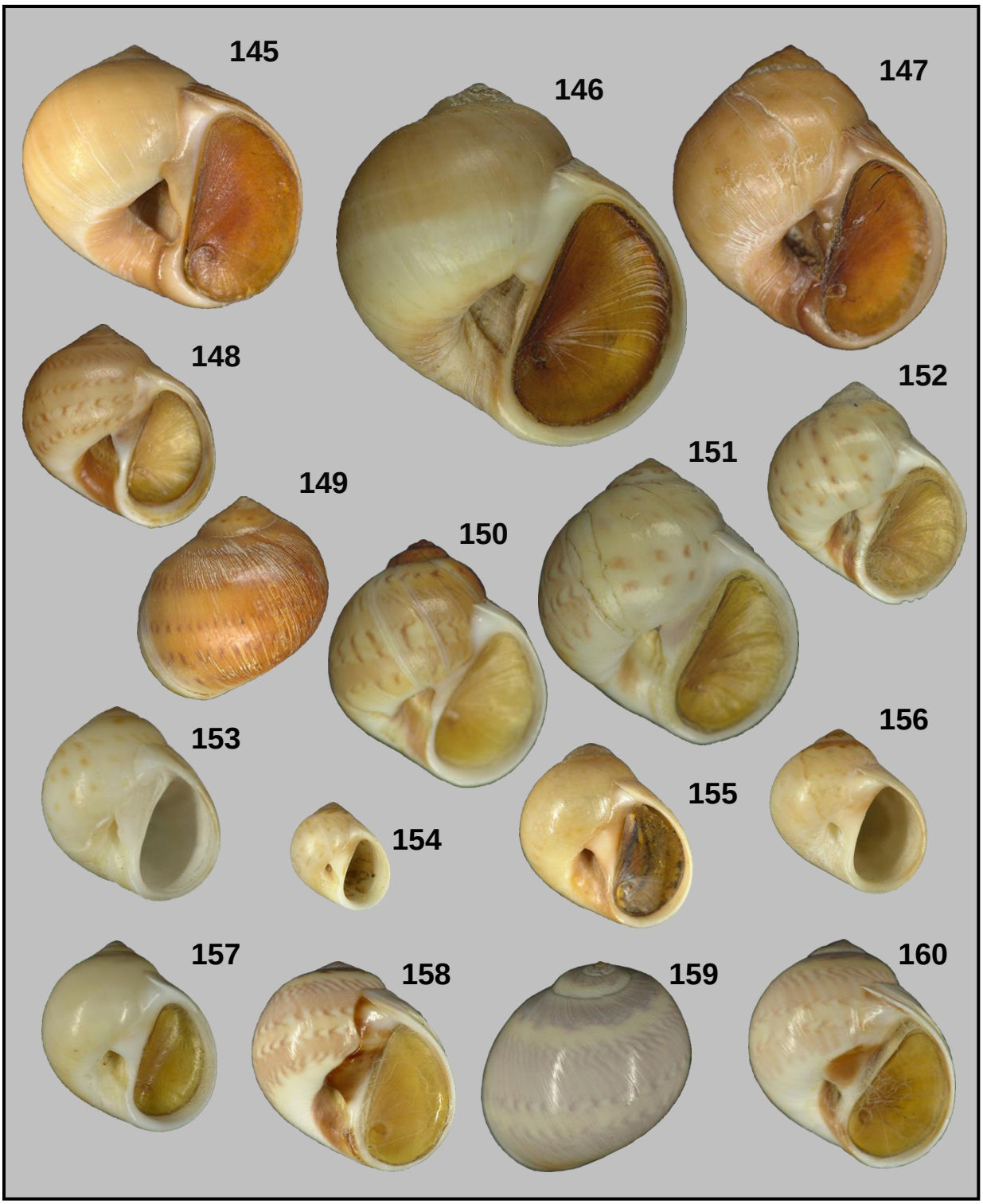

Plate XXI: Figs 145-147: *Euspira fusca* (de Blainville, 1825). Coll. FN; 145: Mauritania, NW Africa. Trawled at a depth of 80 m. 1979. H. 16.91 mm L. 17.51 mm; 146: Senegal, W. Africa. Dredged at a depth of 300 m. 1981. H. 29.21 mm L. 28.30 mm; 147: Cape Morro, Angola. Trawled by Belgian fishermen (PEMARCO) in mud at a depth of 100 m. 1972. H. 19.24 mm L. 18.23 mm.
Figs 148-152: *Euspira pulchella* (Risso, 1826). Coll. FN; 148-149: Bay of Biscay, W. France. 45°12' N. 2°06' W. Trawled by Belgian fishermen at a depth of 105 m. June 2006. H. 11.53 mm L. 12.41 mm; 150-151: Le Val-André, Brittany, France. In sand at extreme low tide. 28 March 1971; 150: H. 15.16 mm L. 13.78 mm; 151: H. 18.88 mm L. 17.27 mm; 152: Trawled by shrimper off Nieuwpoort, Belgium, in sand at a depth of 10 m. March 1977. H. 14.82mm L. 13.85 mm; 153: Dredged off Gufunes, Iceland at a depth of 25 m. August 1977. H. 12.52 mm L. 11.79 mm; 154: Barentz Sea. Trawled by Belgian fishermen. 1974. H. 7.11 mm L. 6.77 mm; 155: Vigo, Spain. H. 11.96 mm L. 11.45 mm; 156: Elba, Italy. H. 9.91 mm L. 9.94 mm.
Fig. 157: *Euspira pulchella* var. *lactea* Jeffreys, 1867. Le Val-André, Brittany, France. In sand at extreme low tide. 28 March 1971. Coll. FN. H. 11.58 mm L. 11.53 mm.
Figs 158-160: *Euspira pulchella* var. *vittata* Dautzenberg & Durouchoux, 1900. Trébeurden, Brittany, France. In sand at extreme low tide. 28 August 1996. Coll. FN; 158-159: H. 12.83 mm L. 13.11 mm; 160: 14.16 mm L. 13.99 mm.