

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

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**Keywords:** Bay of Biscay, W France, Belgian fishery, Mollusca, Bivalvia.

**Abstract:** In the sixth part of the report on the molluscs collected by the Belgian fishery in the Bay of Biscay during the previous decade, a fourth series of bivalves is briefly described, figured and compared with similar specimens from North Atlantic waters, the Mediterranean Sea or West Africa.

## Abbreviations:

BMNH: The Natural History Museum, London – formerly: British Museum (Natural History)

FN: private collection Frank Nolf.

H.: height.

JPK: private collection Jean-Paul Kreps.

JV: private collection Johan Verstraeten.

L.: length.

LV: left valve.

PEMARCO: Pêche Maritime du Congo.

RBINS: Royal Belgian Institute for Natural Sciences, Brussels, Belgium.

RV: right valve

## Description of species:

### CARDIIDAE

#### *Laevicardium crassum* (Gmelin, 1791)

Plate CXVIII, Figs 675-676; Plate CXIX, Figs 679-684; Plate CXX, Figs 685-688; Plate CXXI, Figs 689-694; Plate CXXII, Figs 695-700; Plate CXXIII, Figs 701-706; Plate CXXIV, Figs 707-712; Plate CXXV, Figs 713-716

= *Cardium crassum* Gmelin, 1791  
= *Cardium norvegicum* Spengler, 1799  
= *Cardium politum* Spengler, 1799  
= *Cardium pennantii* Reeve, 1844  
= *Cardium vitellinum* Reeve, 1844  
= *Cardium norvegicum* var. *gibba* Jeffreys, 1864

= *Cardium norvegicum* var. *pallida* Jeffreys, 1864

= *Cardium norvegicum* var. *rotunda* Jeffreys, 1864

= *Cardium norvegicum* var. *senegalensis* Dautzenberg, 1891

= *Cardium crassum* var. *devians* Bucquoy, Dautzenberg & Dollfus, 1892

= *Cardium crassum* var. *lineolata* Bucquoy, Dautzenberg & Dollfus, 1892

= *Cardium crassum* var. *marmorata* Bucquoy, Dautzenberg & Dollfus, 1892

= *Cardium crassum* var. *mediterranea* Bucquoy, Dautzenberg & Dollfus, 1892

= *Cardium crassum* var. *ponderosa* Bucquoy, Dautzenberg & Dollfus, 1892

Range: From the Lofoten, the Norwegian Sea, the British Isles (Pl. CXIX, Figs 681-682; Pl. CXXI, Figs 689-692; Pl. CXXIII, Figs 701-706), the North Sea (Pl. CXIX, Figs 683-684; Pl. CXX, Figs 685-686), the English Channel (Pl. CXXI, Figs 693-694; Pl. CXXII, Figs 695-696), the Bay of Biscay (Pl. CXVIII, Figs 675-676; Pl. CXIX, Figs 679-680; Pl. CXX, Figs 687-688; Pl. CXXII, Figs 697-700) south to the Iberian Peninsula into the Mediterranean Sea from the Alboran Sea eastwards to the Sea of Marmara (Pl. CXXIV, Figs 707-709) and along the coast of West Africa (Pl. CXXIV, Figs 710-711), the Canaries and the Cape Verde Islands up to Angola (Pl. CXXIV, Fig. 712; Pl. CXXV, Figs 713-716). Also known from the Azores.

It lives on bottoms of gravel, broken shells, muddy sand or fine sand from just offshore to about 200 m.

Conventionally, two species are recognized: *L. oblongum* (Gmelin, 1791) which is elongate and costate and *L. crassum* (Gmelin, 1791) which is round, oval or more triangular in outline and less strongly ribbed or nearly smooth and rather glossy.

Both *L. crassum* and *L. oblongum* are extremely variable species, in shape and size as well as in colour. Specimens of *L. crassum* from the Mediterranean Sea tend to be smaller, glossier and more colourful than their Atlantic relatives. Some authors consider the Mediterranean form distinct from the Atlantic form and they use the name *L. crassum mediterranea* Bucquoy, Dautzenberg & Dollfus, 1892 or *L. crassum* var. *mediterranea* B.D.D., 1892. However, samples from different localities in the Mediterranean Sea contain specimens of both extreme forms, as well as intermediates between them.

Vidal (2005) published a revision of the European *Laevicardium*. He indicated the presence of five subspecies - and not 'species' as stated by Huber (2010) - in opposition to the concept conventionally accepted by most authors.

The five different subspecies are described as forms of one polytypic species, namely *Laevicardium oblongum*:

- *Laevicardium oblongum oblongum* (Gmelin, 1791): restricted to the Mediterranean Sea. Large, elongate shells, clearly ribbed with a pale colour. In fact, typical *L. oblongum* have already been reported from the East Atlantic coasts of the Iberian Peninsula in earlier publications (Rolán *et al.*, 1989; Rolán & Otero-Schmitt, 1996). Moreover, Belgian fishermen trawling in the Bay of Biscay at a latitude of about 47° N caught several shells of *L. crassum* and one living specimen of typical *L. oblongum* at the same locality and the same depth. The shell figured on Pl. CXVIII, Figs 677-678 is probably one of the very few specimens of *L. oblongum* ever trawled at this latitude. Martin (2010) also reports this species from the same area. This means a serious range extension to the north and it eliminates the supposition that both are subspecies of the same species.
- *Laevicardium oblongum crassum* (Gmelin, 1791): from the Lofoten and the Norwegian Sea, the British Isles, the North Sea, the English Channel through the Bay of Biscay south to the Iberian Peninsula and into the western Mediterranean Sea. Slightly elongate, mostly oblique and large, smooth and weakly ribbed with variable colour.
- *Laevicardium oblongum gibba* (Jeffreys, 1863): the Celtic Sea (South Ireland and SW England, UK), and from

the coasts of Brittany (France) through the Bay of Biscay up to Vigo (Galicia, North Spain).

This form refers to shells which are of medium size, rather elongate and globose, oblique and oval in outline with deeper grooves between the ribs compared with *L. oblongum*. Therefore, this form is most similar to *L. oblongum* (Gmelin, 1791), but samples show a lot of variability and intermediate forms with *L. crassum* are not uncommon. Moreover, juvenile shells show the typical characteristics of *L. crassum*. As *L. oblongum* is very uncommon or even absent in the abovementioned range (SW England and East Atlantic), we cannot believe 'gibba' is a form of *L. oblongum* and it looks rather impossible to be the product of interbreeding.

The 'gibba'-form is the most remarkable intermediate form between *L. crassum* and *L. oblongum*. It is present off the coasts of W France and particularly common off SW England, UK (Pl. CXXIII, Figs 701-706). So far no real *L. oblongum* has been found in the northern waters of the Celtic Sea and it is rarely collected in the East Atlantic compared to the overall presence of *L. crassum*. Therefore, we provisionally merely consider the 'gibba'-form as a form of *L. crassum*: *L. crassum* var. *gibba* (Jeffreys, 1864). However, it is clear that more research has to be done before this can be settled for sure.

- *Laevicardium oblongum senegalense* (Dautzenberg, 1891), originally described as *L. norvegicum* var. *senegalensis* Dautzenberg, 1891: in the Mediterranean Sea from Israel to the Alboran Sea and the coasts of West Africa from Morocco towards Angola. Shells are rather small to medium sized, not elongate, equilateral, smooth with faint ribbing and pale colour. Generally provided with a pattern of blotches and brown flammules. Some older specimens may have darker coloured ribs in the adult part of the shell. Mostly equilateral in outline. Most of these characteristics can be attributed to other forms of *L. crassum* in the Mediterranean Sea and W Africa. So, this form can merely be considered as a variety of *L. crassum*.
- *Laevicardium oblongum castanea* Vidal, 2005: locally living in Portugal, in the Mediterranean from Spain to Italy, Madeira, the Canary Islands and from

Mauritania and Western Sahara towards Senegal.

This subspecies refers to smaller, elongate and inequilateral shells with a brilliant brown interior surface. As shells with a brown coloured interior surface can be found at most localities (Vidal, 2005) and as they are not restricted to the range mentioned by Vidal (2005) (Pl. CXX, Figs 687-688: W France), we assume this subspecies is merely a form of *L. crassum* or *L. oblongum*.

Other forms with rather constant appearance linked to some areas could also have been accepted by Vidal (2005) while he was splitting the complex *L. crassum* - *L. oblongum*: *L. crassum* var. *ponderosa* Bucquoy, Dautzenberg & Dollfus, 1892 (Pl. CXXI, Figs 691-692) for heavy and thick shells which are wider than high, *L. crassum* var. *devians* B.D.D., 1892 (Pl. CXXI, Figs 689-690) for shells which are very oblique and *L. crassum* var. *rotunda* (Jeffreys, 1864) (Pl. CXXII, Figs 695-700) for bulbous shells which are more circular in outline, without forgetting the existence of some other colour and pattern forms.

Vidal (2005) uses no concrete arguments for the separation of the different subspecies. He wriggles himself in all kinds of suppositions and even contradictions through terms as types, species, subspecies, forms, varieties, phenotypic subspecies and ecophenotypes without presenting a definitive solution. As could be predicted he expects much from genetic research. His remarkable work can only be regarded as an interesting starting point for later investigators, but his opinion is not shared by CLEMAM and WoRMS. Nevertheless, the study of Vidal teaches us a lot about the variability of European *Laevicardium* and could be useful when definitive conclusions upon molecular and DNA-studies can be made later on. We think the conservative splitting in two species is the best solution as yet. A similar problem regarding *Cerastoderma edule* and *C. glaucum* has been solved in the same way. According to Voskuil & Onverwagt (1989) it is not impossible that *L. oblongum* and *L. crassum* interbreed in some areas (the East Atlantic coasts of the Iberian Peninsula and the Bay of Biscay) which would be an argument for considering them subspecies of one valid species without supposing the presence of more subspecies. The presence of the 'gibba'-form which has characteristics of both *L. oblongum* and *L. crassum* supports the supposition that only one species of *Laevicardium* lives in European

waters. As complete different forms are found in the same area and at the same depth we do not share the opinion that the existence of different subspecies has to be considered.

#### ***Laevicardium oblongum* (Gmelin, 1791)**

Plate CXVIII, Figs 677-678; Plate CXXV, Figs 717-718; Plate CXXVI, Figs 719-724

= *Cardium oblongum* Gmelin, 1791  
= *Cardium obsoletum* Spengler, 1799  
= *Cardium sulcatum* Lamarck, 1819  
= *Laevicardium oblongum castaneum* Vidal, 2005

Range: From the Bay of Biscay (Pl. CXVIII, Figs 677-678), Galicia (N Spain) south to the Iberian Peninsula and into the Mediterranean Sea from Gibraltar to Syria (Pl. CXXV, Figs 717-718; Pl. CXXVI, Figs 719-724). Also on the Canary Islands, the Madeira Archipelago and western Morocco.

In muddy sand from the subtidal zone down to 250 m.

The shell is solid and higher than long, oviform and rounded. There are 25 to 29 ribs on the central part of the shell. The reddish brown periostracum is more prominent than the olive-brown periostracum in *L. crassum*. Juveniles of both species are very close.

For more comments about the real status of this species we refer to *L. crassum* (Gmelin, 1791).

### **TELLINIDAE**

#### ***Tellina compressa* Brocchi, 1814**

Plate CXXVII, Figs 725-730

= *Tellina oudardi* Payraudeau, 1826  
= *Tellina unicostalis* Deshayes, 1835  
= *Tellina striatula* Calcara, 1840 [non *Tellina striatula* Sowerby, 1824; *Tellina striatula* Lamarck, 1818; *Tellina striatula* Olivi, 1792]  
= *Tellina strigilata* Philippi, 1844

Range: From W France in the Bay of Biscay (Pl. CXXVII, Figs 725-726) and from Gibraltar area into the western Mediterranean Sea (Pl. CXXVII, Figs 727-730). It lives along the West African coast from the Gibraltar area, Madeira and the Canaries south to Angola. Specimens from West Africa known as *Tellina compressa* in the older literature were often confused with *Tellina densestriata* von Cosel, 1995 or other related species. *T. densestriata* (Pl. CXXVII, Figs 731-733) has a more elongate shell.

It is distinguished by the less truncated posterior end and the denser oblique incisions with a special transformation into a sculpture with ridges or even faint lamellae on the posterior part of the right valve not observed in similar species.

As far as we know the find of the single specimen by Belgian fishermen south of La Rochelle in the Bay of Biscay signifies the most northern report of this species and therefore it is an important extension of the geographic distribution.

It lives in mud or sandy mud bottoms from 15 m to a depth of 200 m.

The shells are variable in colour, but they usually are orange and often patterned with radiating zones.

#### ***Tellina donacina* Linnaeus, 1758**

Plate CXXVIII, Figs 734-739; Plate CXXIX, Figs 740-747; Pl. CXXX, Figs 748-752; Pl. CXXXI, Figs 753-760

= *Tellina trifasciata* Pennant, 1777

= *Tellina lantiviyi* Payraudeau, 1826

Range: From the Shetland Islands (UK), the Orkneys (UK), along the British Isles, the North Sea (Pl. CXXVIII, Figs 736-739), the English Channel (Pl. CXXIX, Figs 740-745), the East Atlantic coast of France (Pl. CXXIX, Figs 746-747; Pl. CXXX, Figs 748-750), the Bay of Biscay (Pl. CXXVIII, Figs 734-735), the Azores, Madeira and Ghana up to Angola. Also in the Mediterranean (Pl. CXXX, Figs 751-752; Pl. CXXXI, Figs 753-758) and the Black Sea.

It lives in sand, mud and gravel bottoms of the intertidal zone to 200 m deep.

White shells are sometimes called *T. donacina* var. *lantiviyi* Payraudeau, 1826 in literature (Pl. CXXXI, Figs 759-760).

#### ***Tellina pygmaea* Lovén, 1846**

Plate CXXXII, Figs 761-765; Plate CXXXIII, Figs 766-771

= *Tellina pusilla* Philippi, 1836

Range: From northern Norway south to the British Isles (Pl. CXXXII, Fig. 765), the southern North Sea (Pl. CXXXIII, Figs 766-771), the Bay of Biscay (Pl. CXXXII, Figs 761-763), the East Atlantic coasts of France (Pl. CXXXII, Figs 764) and the Iberian Peninsula, southwards to Morocco, the Cape Verde Islands, the Republic of Guinea and Ivory

Coast (West Africa). Also in the Mediterranean Sea.

The exact distributional range is not clearly known as it is often confused with *Tellina donacina*.

This species lives in coarse sand and shell-gravel from just offshore to a depth of about 150 m.

Shells may be white, yellow or pink coloured.

#### ***Tellina serrata* Brocchi, 1814**

Plate CXXXIV, Figs 772-777; Plate CXXXV, Figs 778-782; Plate CXXXVI, Figs 783-789

= *Tellina denticulata* Brusina, 1870

Range: In the Mediterranean Sea (Pl. CXXXV, Figs 778-782; Pl. CXXXVI, Figs 783-785) and from the Bay of Biscay (Pl. CXXXIV, Figs 772-777) southwards to Angola (Pl. CXXXVI, Figs 786-789).

It lives in sand and mud from the infralittoral zone to 300 m deep.

Often placed in the genus *Quadrans* but as the taxonomy of TELLINIDAE is rather problematic we prefer to use the genus-name *Tellina*.

This is a rather solid shell with a creamy white colour under a strong olive-brown periostracum.

#### ***Arcopagia balaustina* (Linnaeus, 1758)**

Plate CXXXVII, Figs 790-795; Plate CXXXVIII, Figs 796-801

= *Tellina balaustina* Linnaeus, 1758

= *Tellina serratula* Brusina, 1870

= *Tellina brittanica* Tomlin, 1934

Range: From Scotland (UK), the British Isles through the Bay of Biscay (Pl. CXXXVII, Figs 790-795; Pl. CXXXVIII, Figs 796-797) to the Iberian Peninsula, Madeira, the Canary Islands, along the coasts of West Africa southwards to Angola. It can be found from the West Mediterranean (Pl. CXXXVIII, Figs 798-801) up to the Black Sea.

It lives in sand, mud or gravel bottoms from 10 m to a depth of 750 m. Never found in large quantities.

### **PSAMMOBIIDAE**

#### ***Gari costulata* (Turton, 1822)**

Plate CXXXIX, Figs 802-805; Plate CXL, Figs 806-812

= *Psammobia costulata* Turton, 1822

= *Psammobia discors* Philippi, 1836

= *Psammobia vatovai* Coen, 1933

Range: From Iceland, Norway and the Faroe Islands, the British Isles and the English Channel (Pl. CXL, Figs 806-807), the East Atlantic coasts of France (Pl. CXXXIX, Figs 802-805) and the Iberian Peninsula, along the West African continent (Morocco, Western Sahara, Mauritania, Senegal, Guinea south to Angola), towards the coasts of South Africa (False Bay and KwaZulu-Natal). Also recorded from the Azores, Madeira and the Canary Islands. It occurs in the Mediterranean from Gibraltar, the Alboran Sea towards Croatia and Turkey (Pl. CXL, Figs 808-812).

Living in muddy sand and gravel bottoms from a few meters deep down to 220 m. It is most common at about 55 m but rarely abundant. Sometimes found among *Posidonia*.

This is a small shell, readily recognized by the radial ribs at the posterior part.

#### SEMELIDAE

##### ***Abra alba* (W. Wood, 1802)**

Plate CXXI, Figs 813-820; Plate CXXII, Figs 821-826

- = *Mactra alba* W. Wood, 1802
- = *Mactra boysii* Montagu, 1803
- = *Tellina apelina* Renier, 1804 [non *Tellina apelina* Gmelin, 1791]
- = *Tellina pellucida* Brocchi, 1814 [non Spengler, 1798]
- = *Tellina semidentata* Scacchi, 1833
- = *Erycina renieri* Philippi, 1836 [non Bronn, 1831]
- = *Syndesmya occitanica* Recluz in Chenu, 1843
- = *Amphidesma boysiana* Leach in Gray, 1852
- = *Erycina tumida* Brusina, 1865

Range: From Norway, the British Isles, the southern North Sea (Pl. CXXI, Figs 817-820; Pl. CXXII, Figs 821-823), the English Channel (Pl. CXXII, Fig. 824) and the Baltic Sea, the Bay of Biscay (Pl. CXXI, Figs 813-816), south to the Iberian Peninsula into the Mediterranean Sea from Gibraltar towards Israel and the Black Sea (Pl. CXXII, Figs 825-826). Also occurring in the Azores and along the East Atlantic coasts of Morocco, Western Sahara, Mauritania and Senegal.

It inhabits muddy sand, silty sand and soft muddy gravel from the infralittoral zone to a depth of about 65 m. Particularly abundant down to about 20 m.

Rather variable in shape. It becomes larger in the northern part of its range.

##### ***Abra longicallus* (Scacchi, 1835)**

Plate CXXII, Figs 827-828; Plate CXXIII, Figs 829-836

- = *Tellina longicallus* Scacchi, 1835
- = *Erycina longicallis* Philippi, 1844
- = *Ligula profundissima* Forbes, 1844
- = *Syndesmya tellinella* G. Seguenza, 1876

Range: From Norway, the British Isles, Sweden, the Bay of Biscay (Pl. CXXII, Figs 827-828) south along the Atlantic coasts of the Iberian Peninsula to Morocco, the Azores, the Canary Islands, the Cape Verde Islands and into the Mediterranean Sea, from Gibraltar and the Alboran Sea to the Sea of Marmara and Israel (Pl. CXXIII, Figs 829-836). Even known from the Atlantic coasts of America (from Canada to North Carolina), the Caribbean Sea (from Florida, St. Kitts, Tobago and Colombia up to Brazil).

Rather a deep-water species reported from as far as 3600 m deep.

##### ***Abra prismatica* (Montagu, 1808)**

Plate CXXIV, Figs 837-845

- = *Ligula prismatica* Montagu, 1808
- = *Tellina angulosa* Renier, 1804 [non *Tellina angulosa* Gmelin, 1791]
- = *Abra fragilis* Risso, 1826
- = *Psammotaea striata* O.G. Costa, 1829
- = *Erycina aradae* Biondi, 1859
- = *Syndesmya fragilis* Milaschewitsch, 1916 [non *Abra fragilis* Risso, 1826]

Range: From southwestern Iceland (Pl. CXXIV, Figs 841-842), the Faroes, the British Isles (Pl. CXXIV, Figs 843-845), northern Norway and the Baltic Sea, the southern North Sea, the English Channel, the Bay of Biscay (Pl. CXXIV, Figs 837-840), the Iberian Peninsula, south to Morocco and eastwards into the Mediterranean from Gibraltar towards Israel and the Black Sea.

It lives in clean, fine and muddy sand from the low-tide mark to about 55 m.

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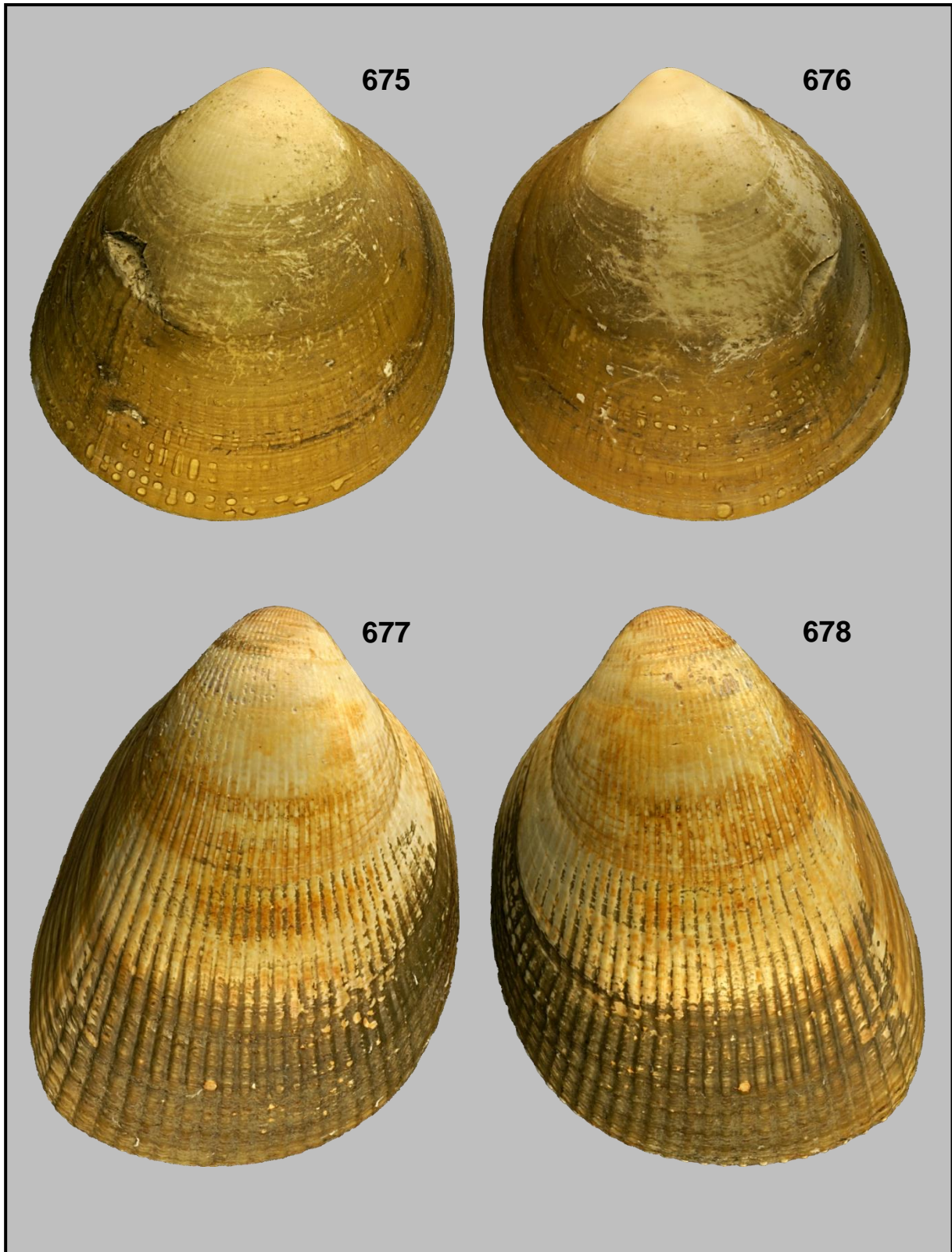
information about the Belgian fishery in the Bay of Biscay. David Monsecour (Aarschot, Belgium) carefully verified the English text and Johan Verstraeten (Oostende, Belgium) provided useful comments and remarks.

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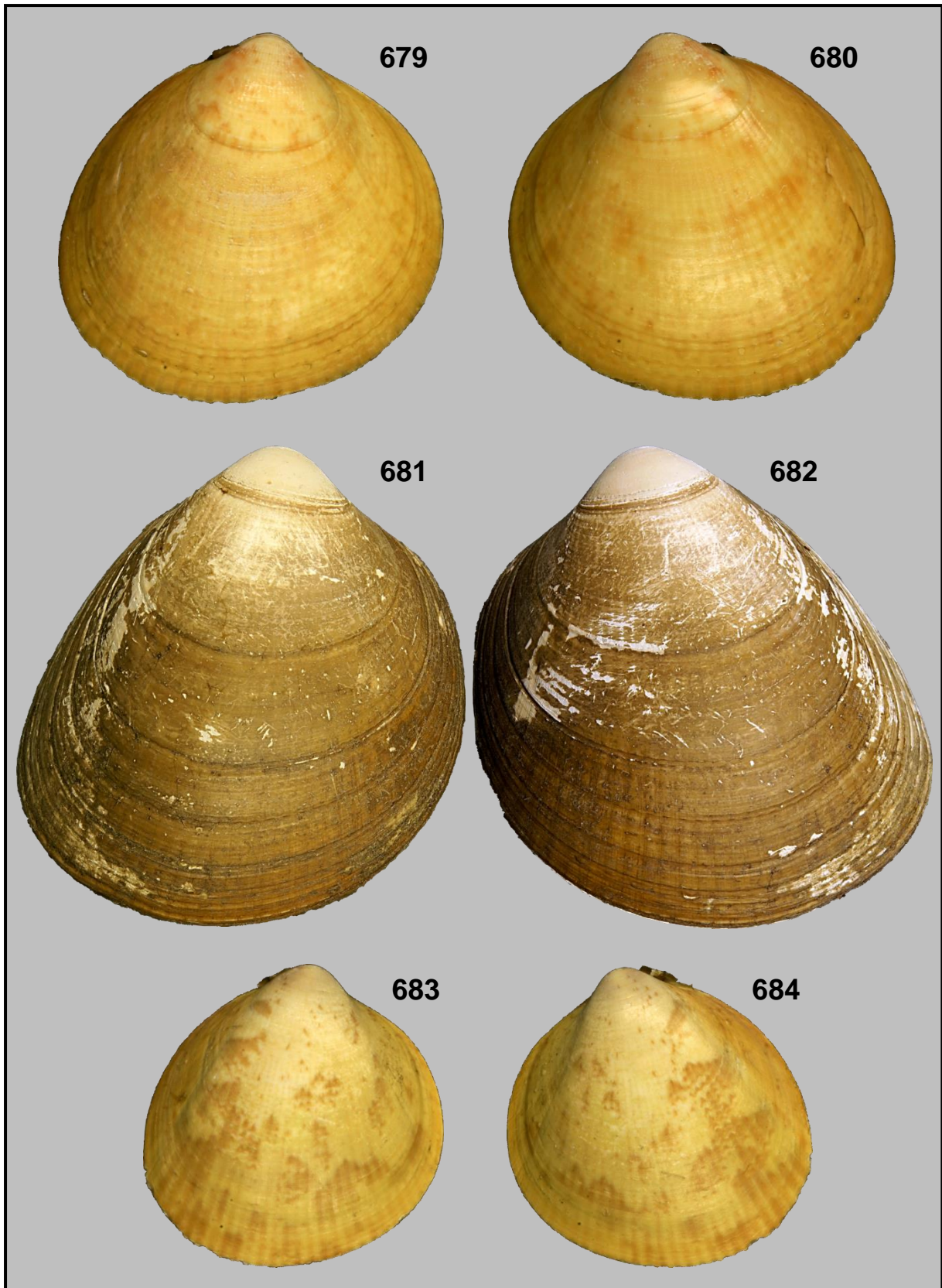
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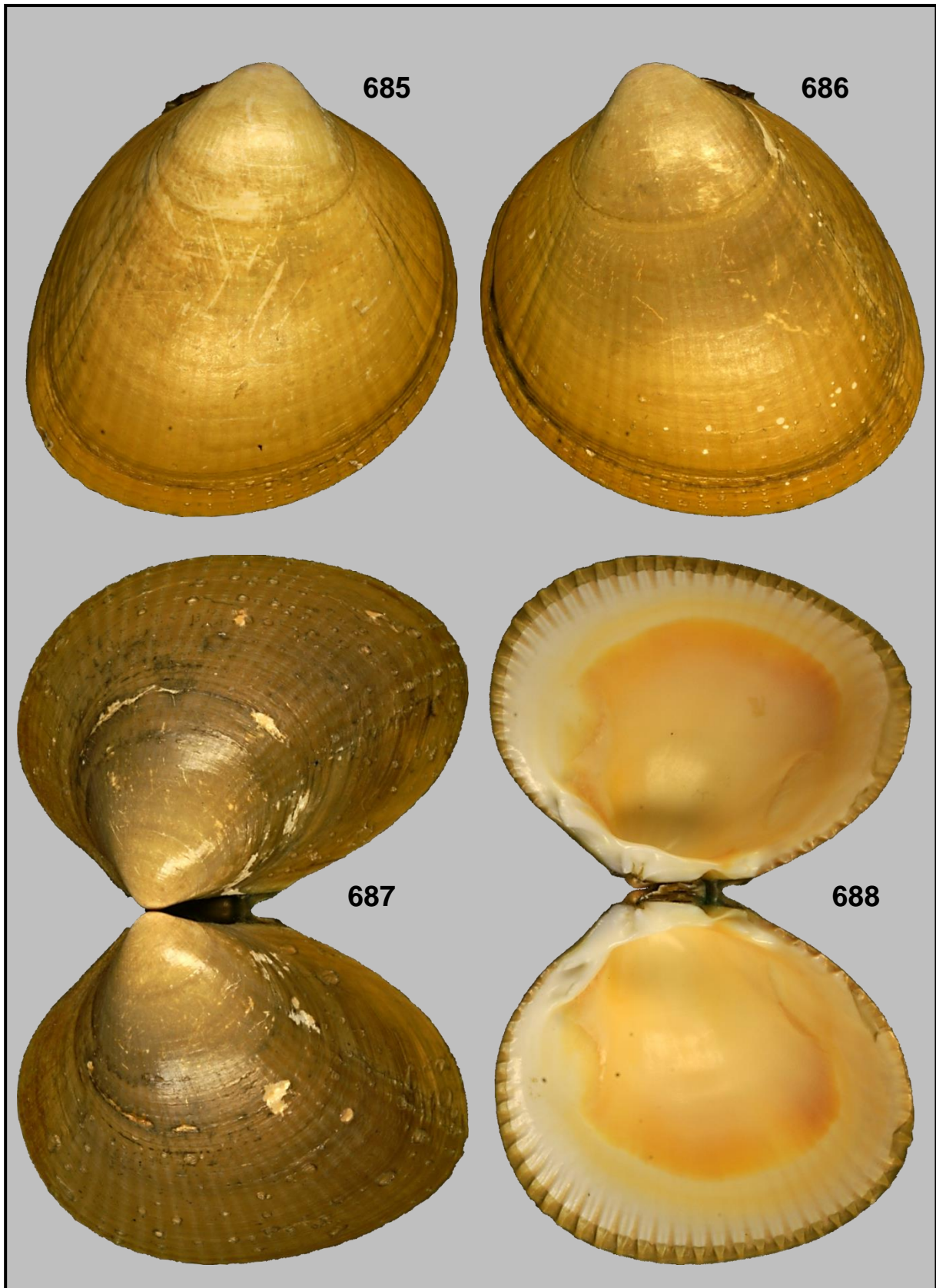


**Plate CXVIII.** Figs 675-676: *Laevicardium crassum* (Gmelin, 1791). South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 130 m. August 2009. H. 61.71 mm L. 58.25 mm. JPK; 675: RV; 676: LV; 677-678: *Laevicardium oblongum* (Gmelin, 1791). South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 130 m. August 2009. H. 63.37 mm L. 47.66 mm. JPK; 677: RV; 678: LV.

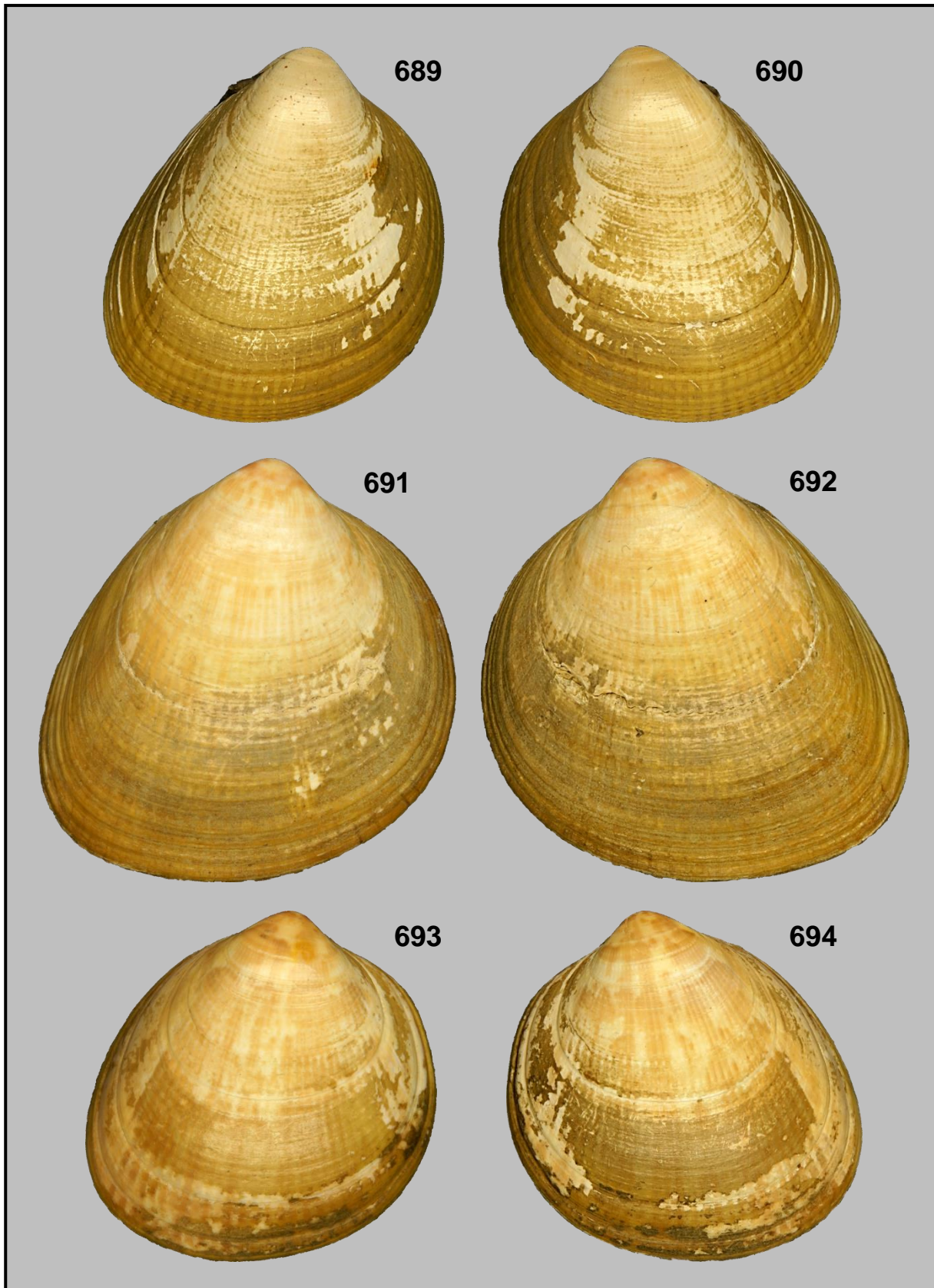




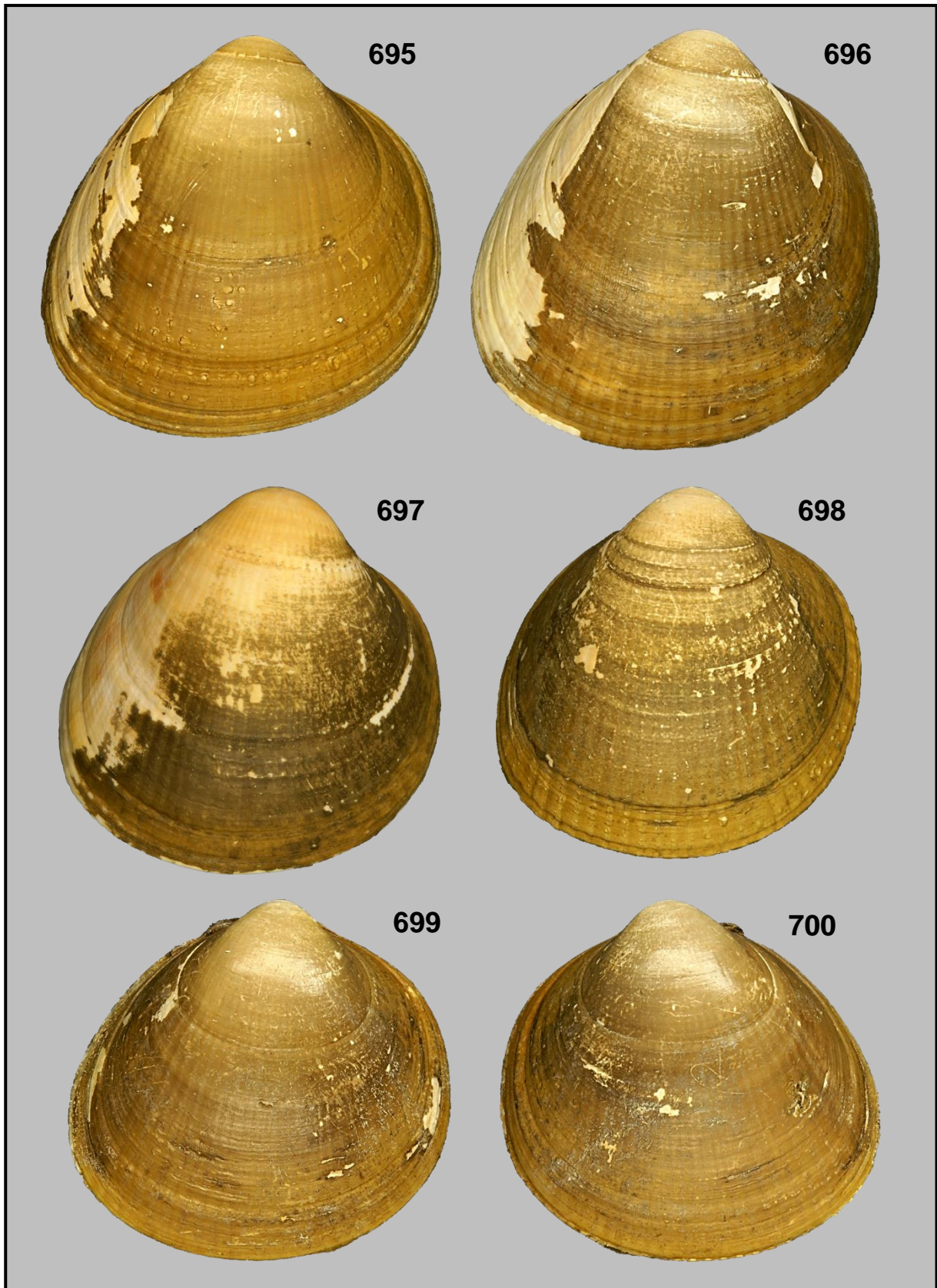
**Plate CXIX.** Figs 679-684: *Laevicardium crassum* (Gmelin, 1791). FN; 679-680: South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 130 m. August 2009. H. 61.71 mm L. 58.25 mm. JPK; 679: RV; 680: LV; 681-682: Bay of Liverpool, Irish Sea, UK. Trawled by Belgian fishermen at a depth of 36 m. April 1970. H. 78.64 mm L. 72.66 mm; 681: RV; 682: LV; 683-684: Buiten Ratel, off Koksijde, Belgium, North Sea. Pumped up on the beach of Oostende. April 2008. H. 28.65 mm L. 29.41 mm; 683: RV; 684: LV.



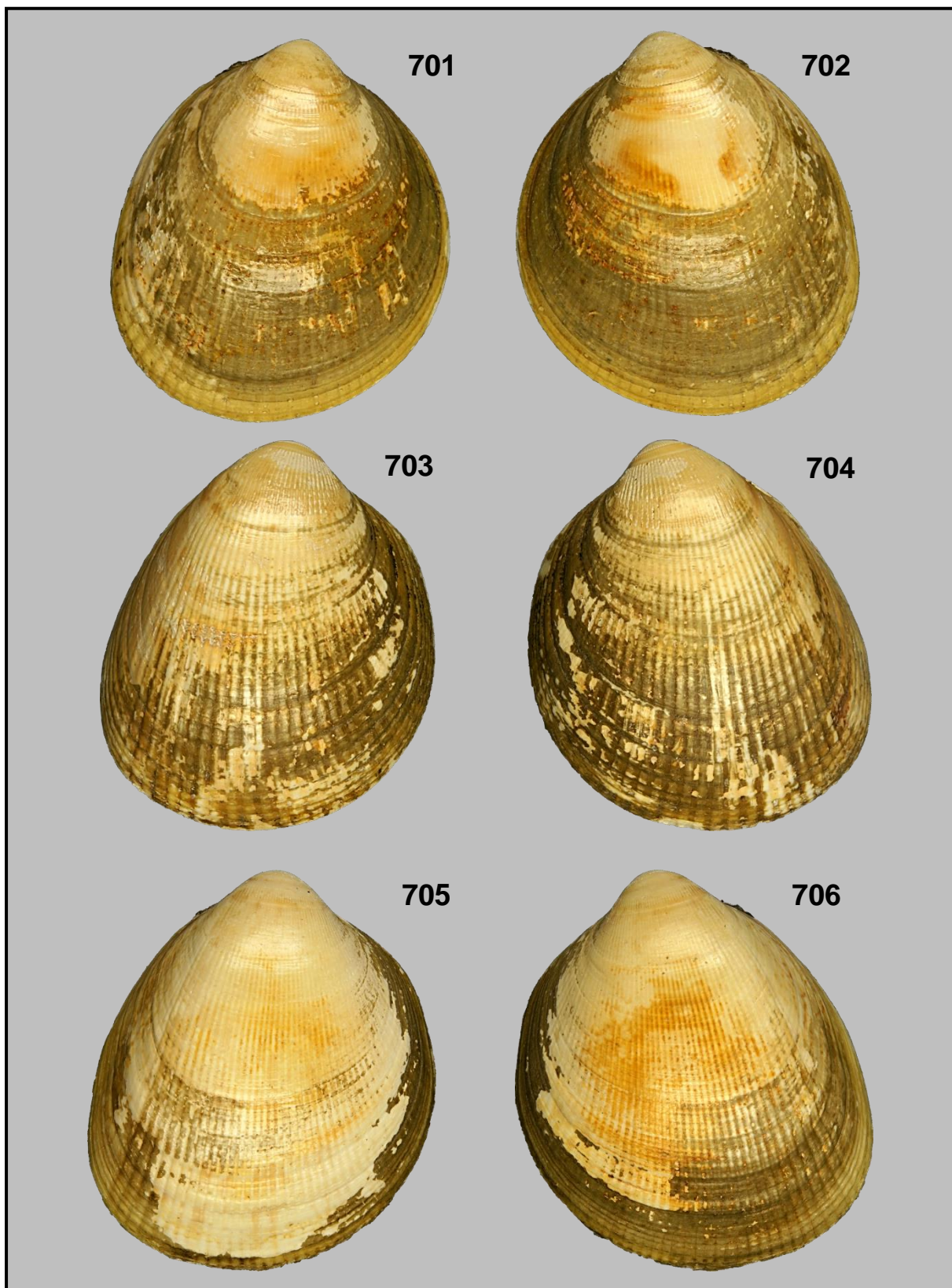
**Plate CXX.** Figs 685-688: *Laevicardium crassum* (Gmelin, 1791). FN; 685-686: off Nieuwpoort, Belgium, North Sea. Trawled by local fishermen. In sand. 1977. H. 50.18 mm L. 48.98 mm; 685: RV; 686: LV; 687-688: Carnac-Plage, Morbihan, Brittany, W France. In sand at extreme low tide. 26 September 2007. H. 42.54 mm L. 43.75 mm; 687: view of the outside; 688: view of the inside.



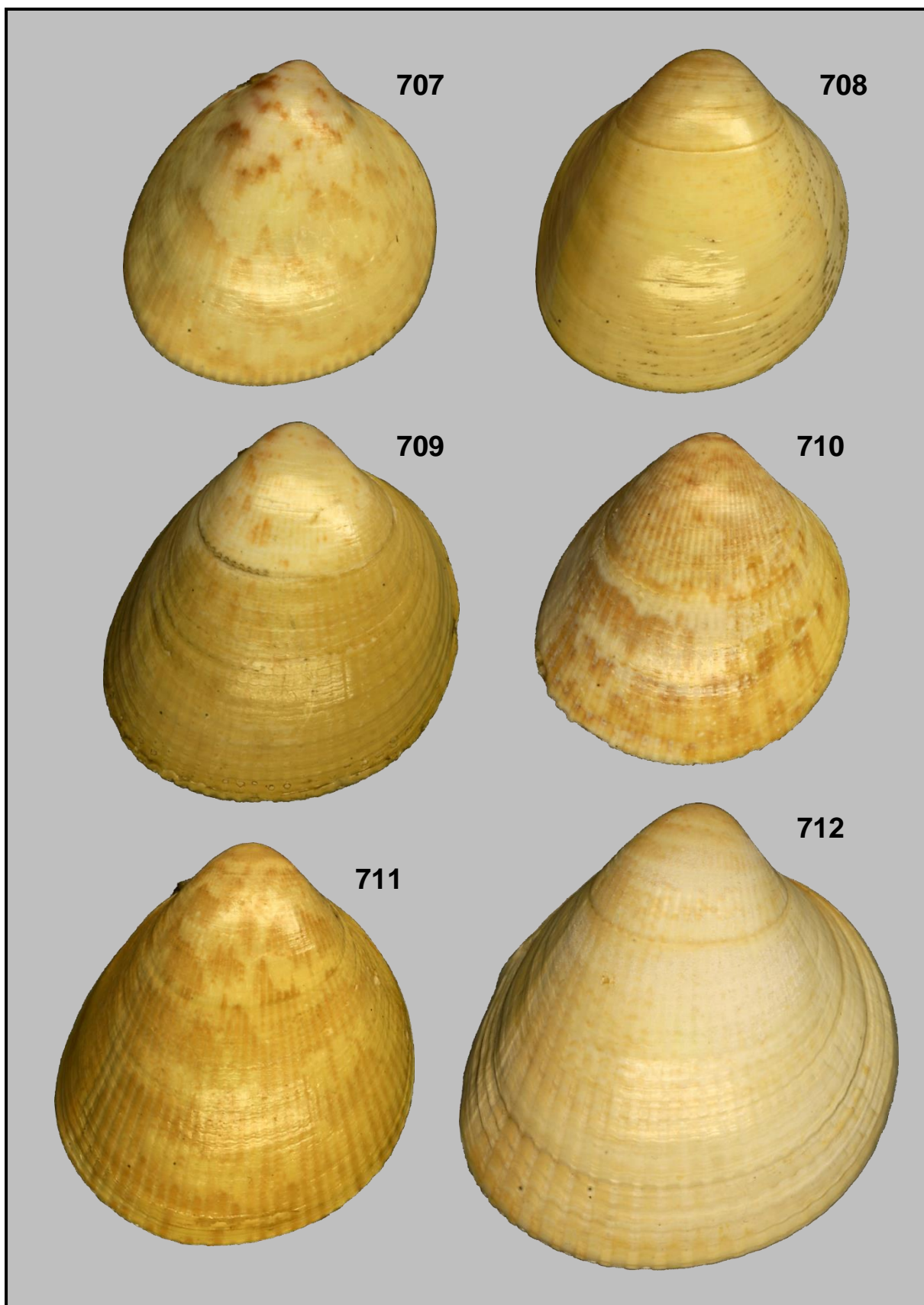
**Plate CXXI.** Figs 689-690: *Laevicardium crassum* var. *devians* Bucquoy, Dautzenberg & Dollfus, 1892. Cardigan Bay, Irish Sea, UK. Trawled by Belgian fishermen at a depth of 36 m. 1968. H. 62.76 mm L. 57.43 mm. FN; 689: RV; 690: LV; Figs 691-694: *Laevicardium crassum* var. *ponderosa* Bucquoy, Dautzenberg & Dollfus, 1892. FN; 691-692: SW England, UK. Trawled by Belgian fishermen at a depth of 35 m. H. 68.48 mm L. 69.73 mm; 691: RV; 692: LV; 693-694: Trédrez-Locquémeau, Brittany, France. Trawled by local fishermen. July 1990. H. 54.70 mm L. 55.68 mm. FN; 693: RV; 694: LV.



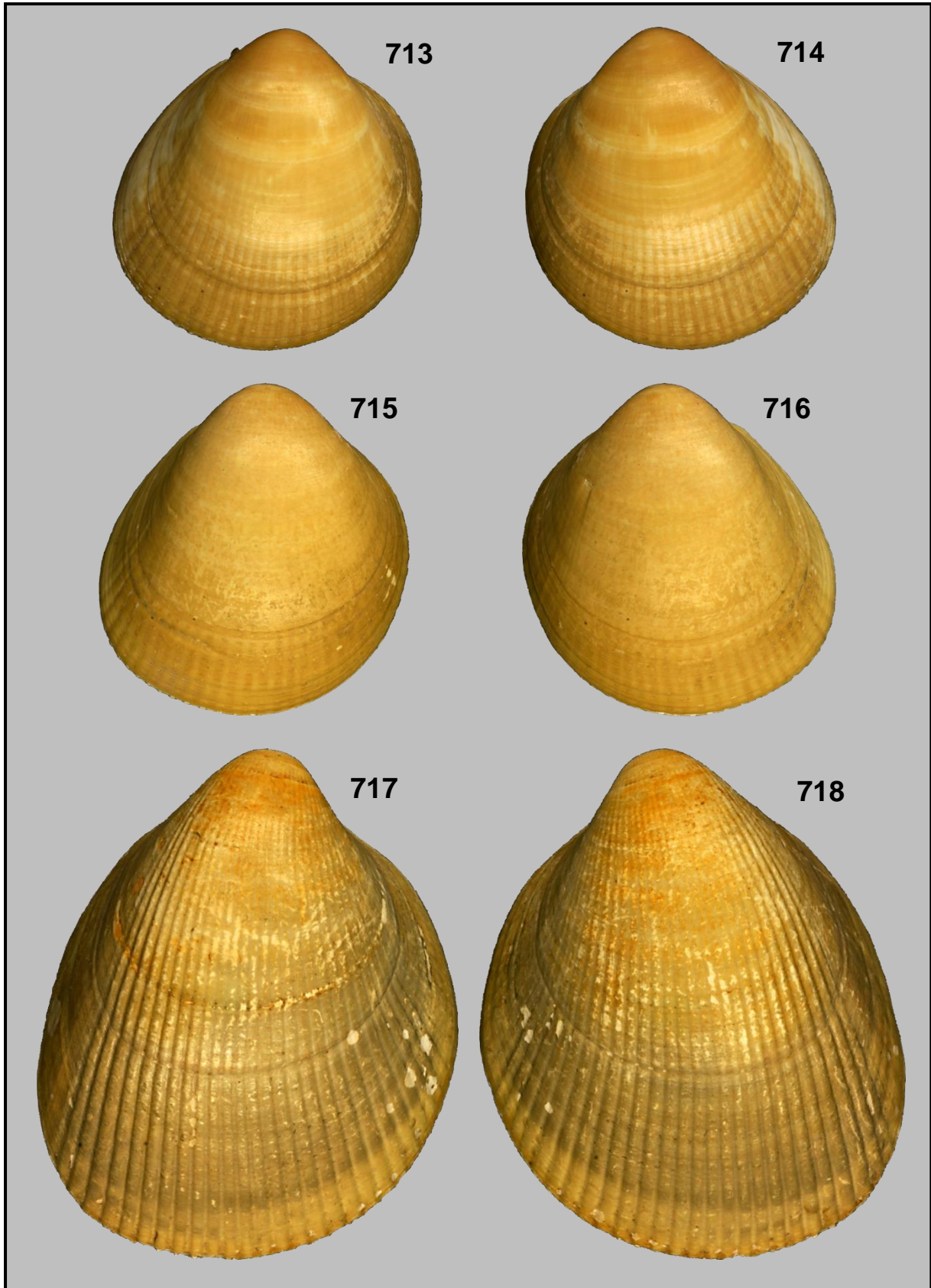
**Plate CXXII.** Figs 695-700: *Laevicardium crassum* var. *rotunda* (Jeffreys, 1864). FN; 695-696: Plage de Goas Trez, Trébeurden, Brittany, France. In sand at extreme low tide. 30 March 2002. RV; 695: H. 62.86 mm L. 63.10 mm; 696: H. 65.19 mm L. 64.87 mm; 697-700: Ile Tudy, Finistère, Brittany, W France. In sand at extreme low tide. 9 April 1997; 697: H. 58.53 mm L. 57.60 mm. RV; 698: H. 54.26 mm L. 53.90 mm. RV; 699: H. 52.28 mm L. 55.44 mm; 699: RV; 700: LV.



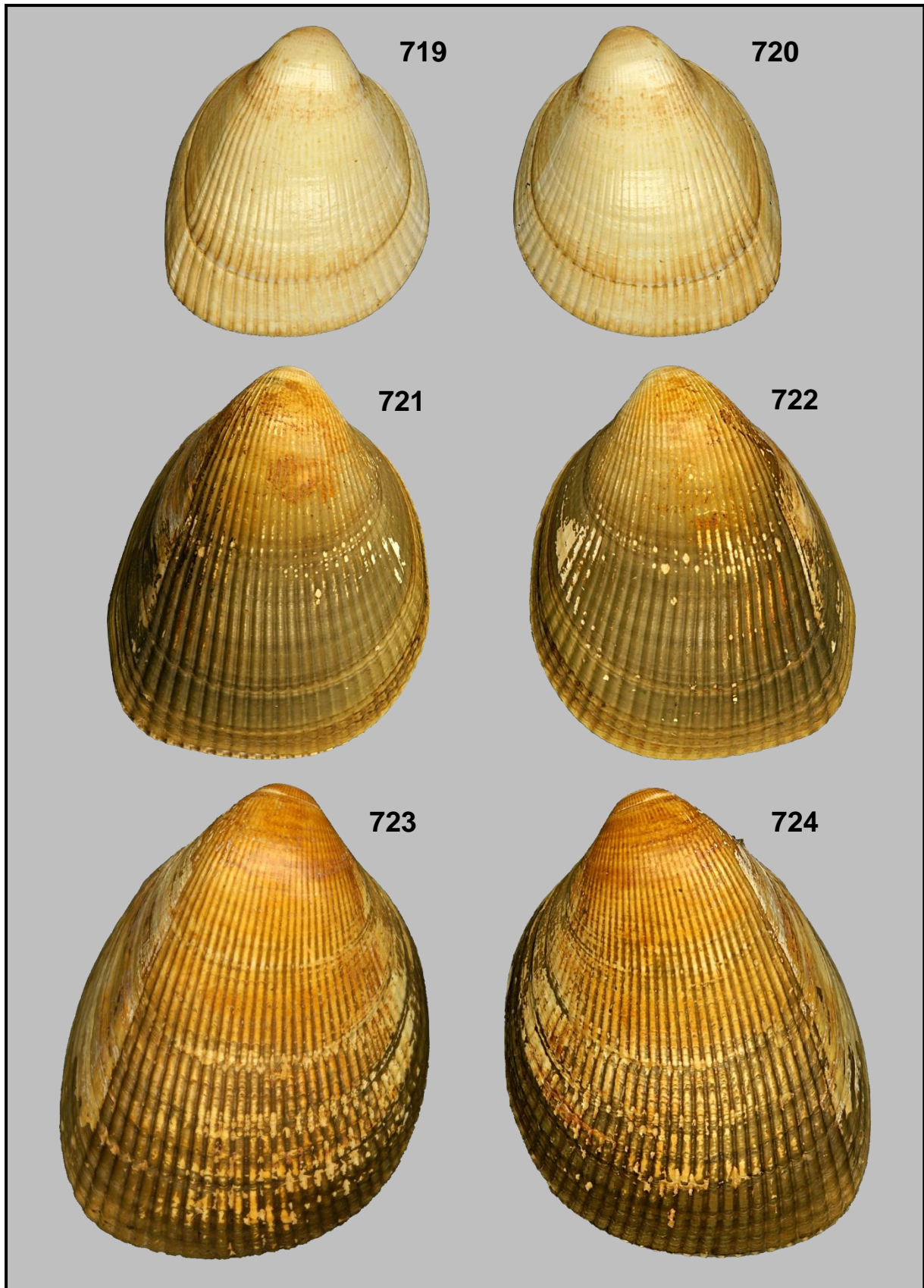
**Plate CXXIII.** Figs 701-706: *Laevicardium crassum* var. *gibba* (Jeffreys, 1864). Start Point, Devon, SW England, UK. Trawled by Belgian fishermen. March 1971. FN; 701-702: H. 47.66 mm L. 42.28 mm; 701: RV; 702: LV; 703-704: H. 56.21 mm L. 47.16 mm; 703: RV; 704: LV; 705-706: H. 56.92 mm L. 49.64 mm; 705: RV; 706: LV.



**Plate CXXIV.** Figs 707-712: *Laevicardium crassum* (Gmelin, 1791). RV. FN; 707-709: Barcelona, Spain. Trawled by fishermen; 707: H. 27.78 mm L. 27.06 mm; 708: H. 32.76 mm L. 30.16 mm; 709: H. 37.58 mm L. 35.36 mm; 710-711: Dakar, Senegal, W Africa. H. 29.13 mm L. 27.75 mm; 711: H. 41.65 mm L. 37.76 mm; 712: Sumbe, Angola. H. 50.54 mm L. 47.01 mm.

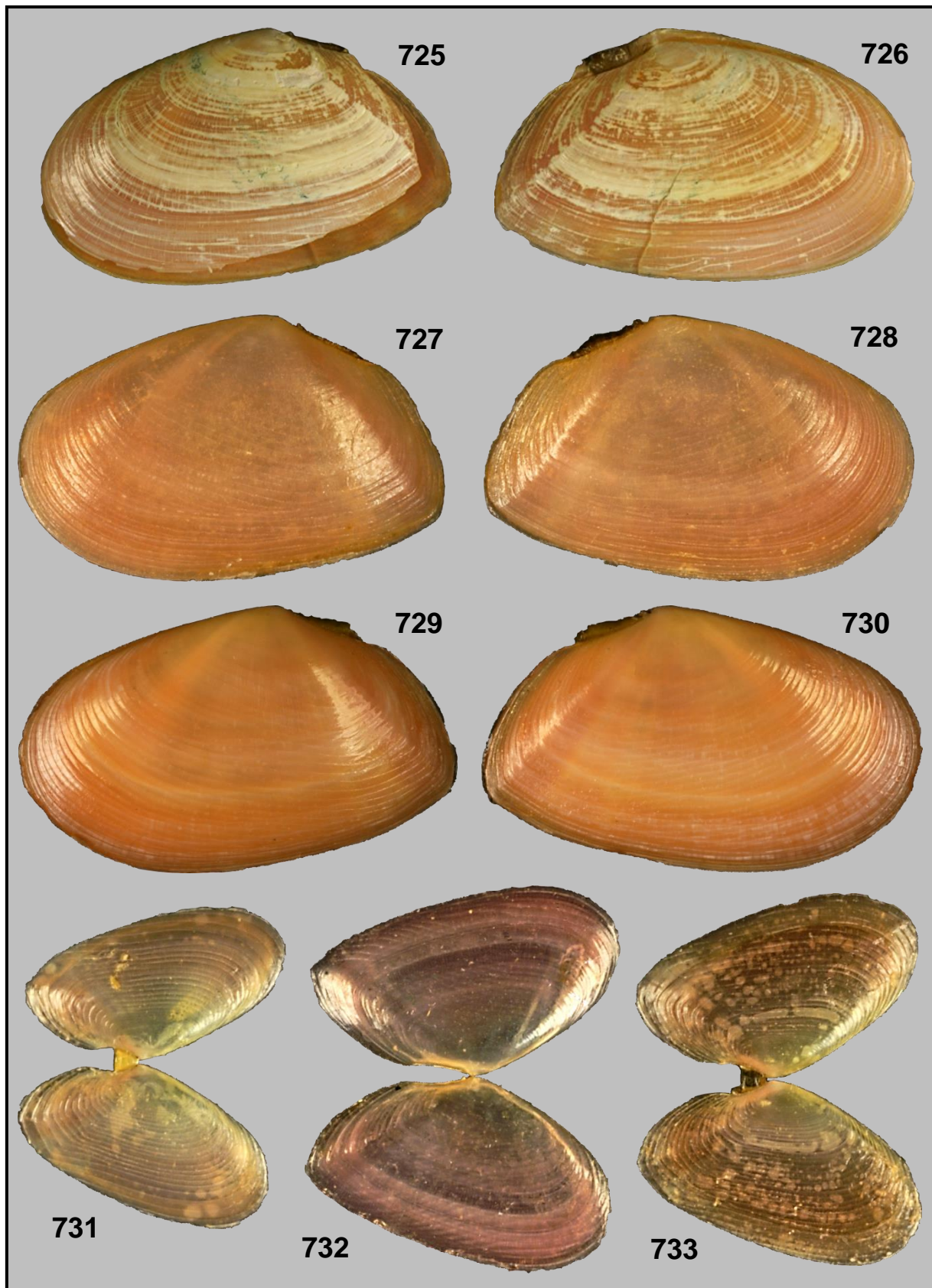


**Plate CXXV.** Figs 713-716: *Laevicardium crassum* (Gmelin, 1791). Luanda Bay, Angola. Dredged at a depth of 30 m. 1967. FN; 713-714: H. 42.57 mm L. 41.29 mm; 713: RV; 714: LV; 715-716: H. 43.77 mm L. 41.52 mm; 715: RV; 716: LV; Figs 717-718: *Laevicardium oblongum* (Gmelin, 1791). Cabo Tres Forcas, Melilla, Spain, Alboran Sea. Trawled by fishermen. 1968. H. 58.01 mm L. 47.82 mm. FN; 717: RV; 718: LV.

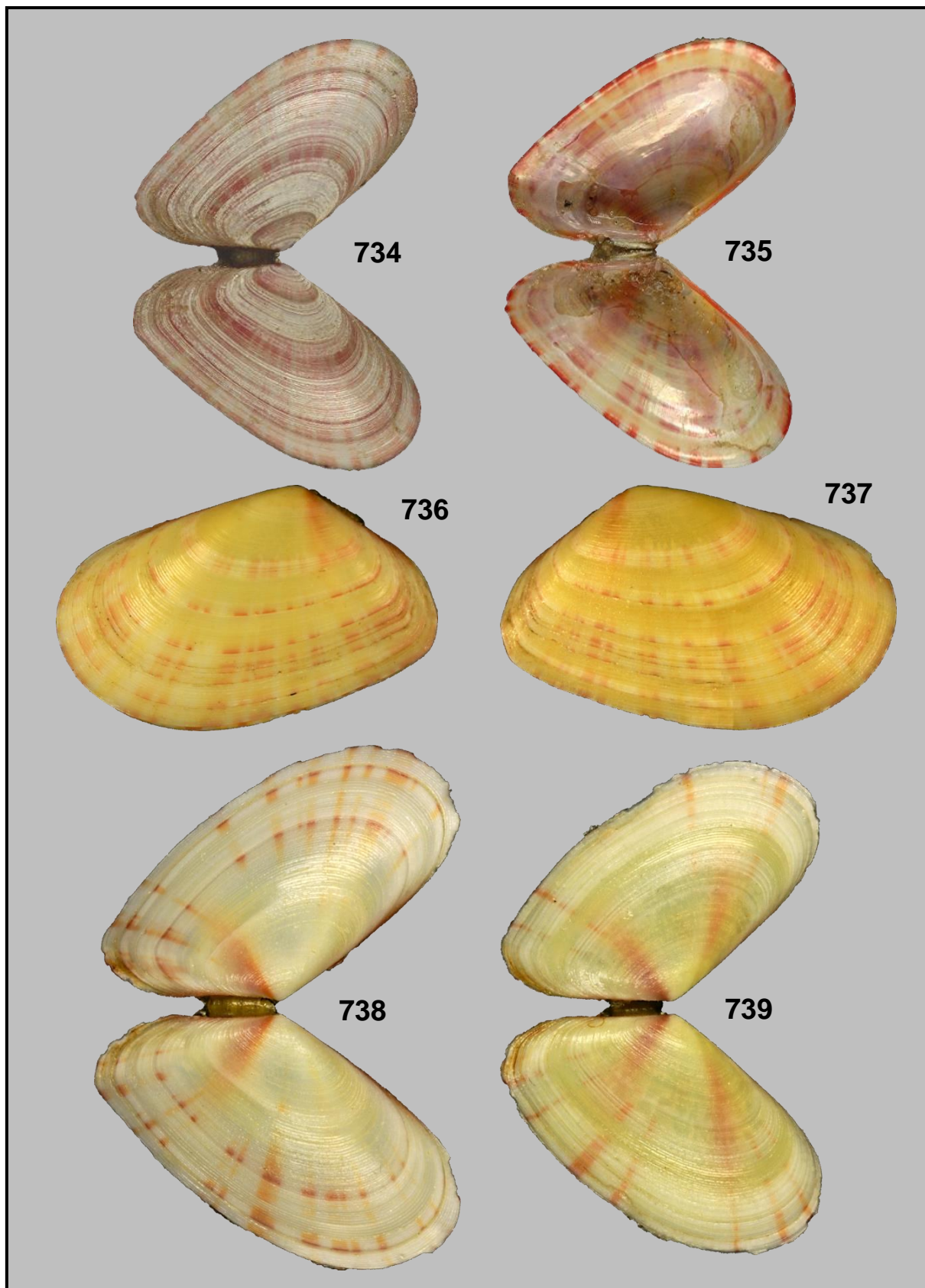


**Plate CXXVI.** Figs 719-724: *Laevicardium oblongum* (Gmelin, 1791). FN; 719-720: off Malaga, Spain. Trawled by fishermen. H. 63.18 mm L. 54.77 mm; 719: RV; 720: LV; 721-724: Port-Vendres, S France. Dredged. 1960; 721-722: H. 73.66 mm L. 61.21 mm; 721: RV; 722: LV; 723-724: H. 79.50 mm L. 61.06 mm; 723: RV; 724: LV.

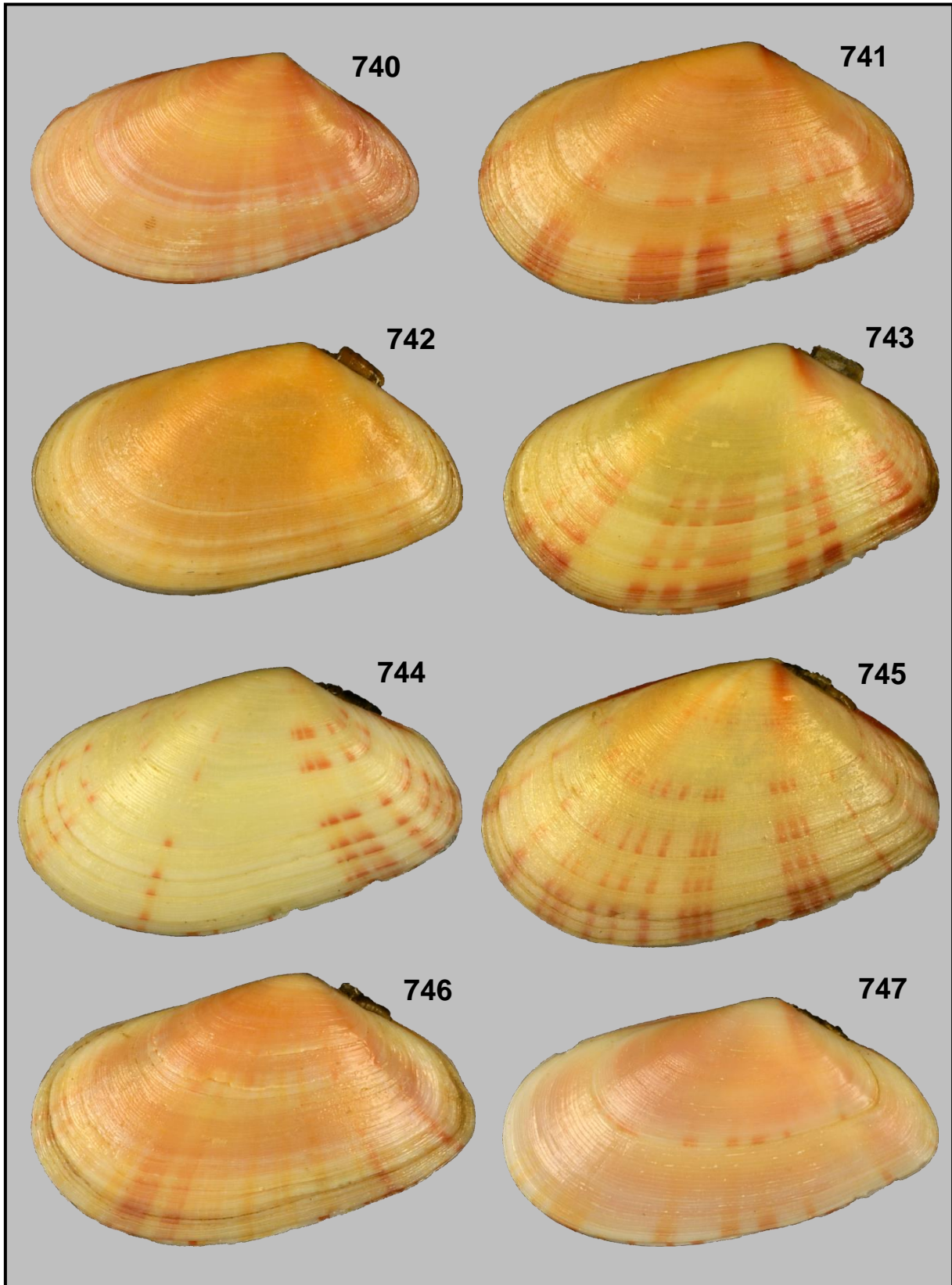




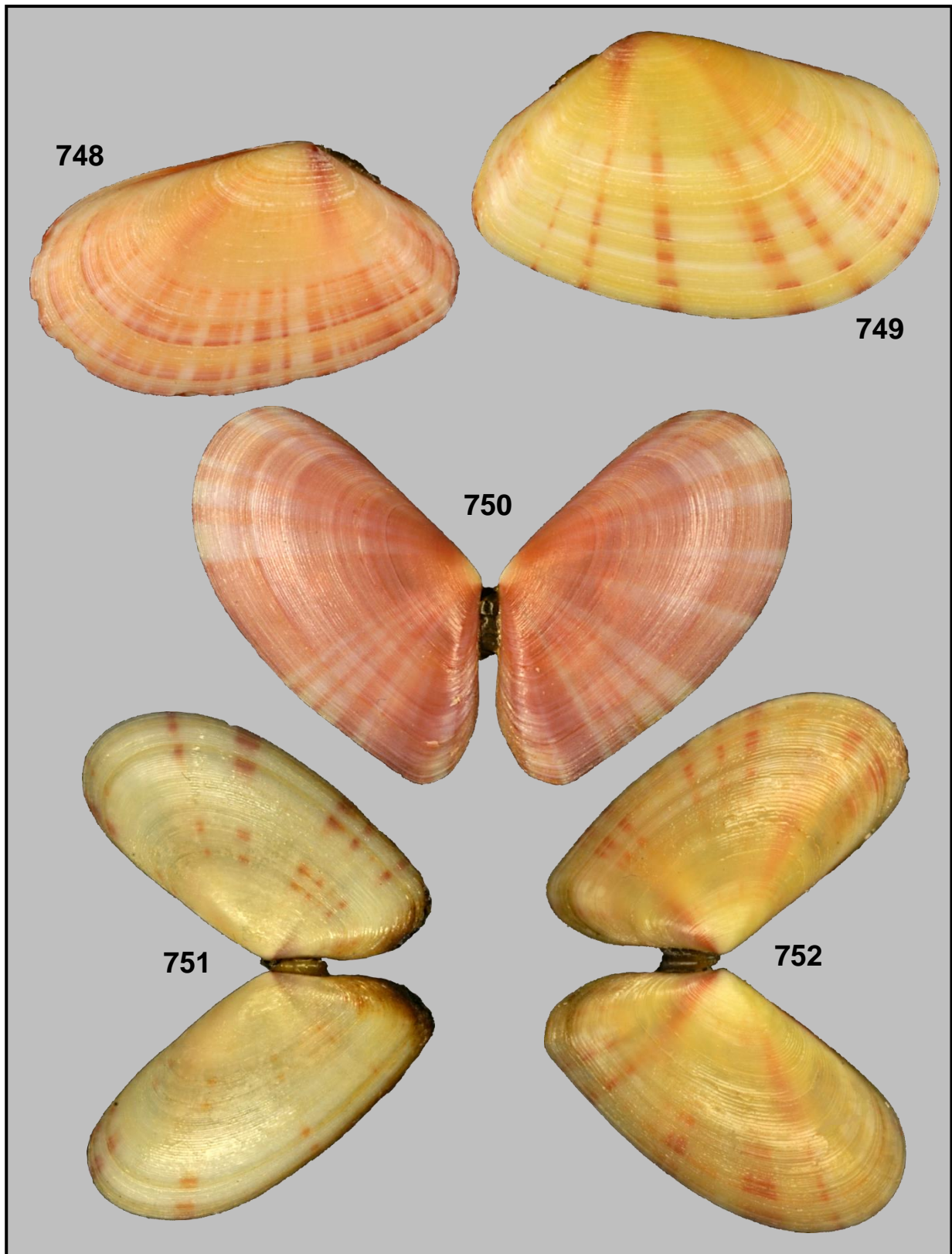
**Plate CXXVII.** Figs 725-730: *Tellina compressa* Brocchi, 1814; 725-726: South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 120 m. July 2010. H. 9.26 mm L. 15.11 mm. JPK; 725: LV; 726: RV; 727-730: Fuengirola, Spain. 1977. FN; 727-728: H. 11.45 mm L. 17.99 mm; 727: LV; 728: RV; 729-730: H. 11.80 mm L. 19.11 mm; 729: LV; 730: RV; 731-733: *Tellina densestriata* von Cosel, 1995. FN; 731-732: Dredged off Abidjan, Ivory Coast, W Africa. Depth: 600 m; 731: H. 4.55 mm L. 8.59 mm; 732: H. 6.70 mm L. 11.48 mm; 733: Baie de Gorée, Dakar, Senegal, W Africa. H. 5.93 mm L. 10.09 mm.



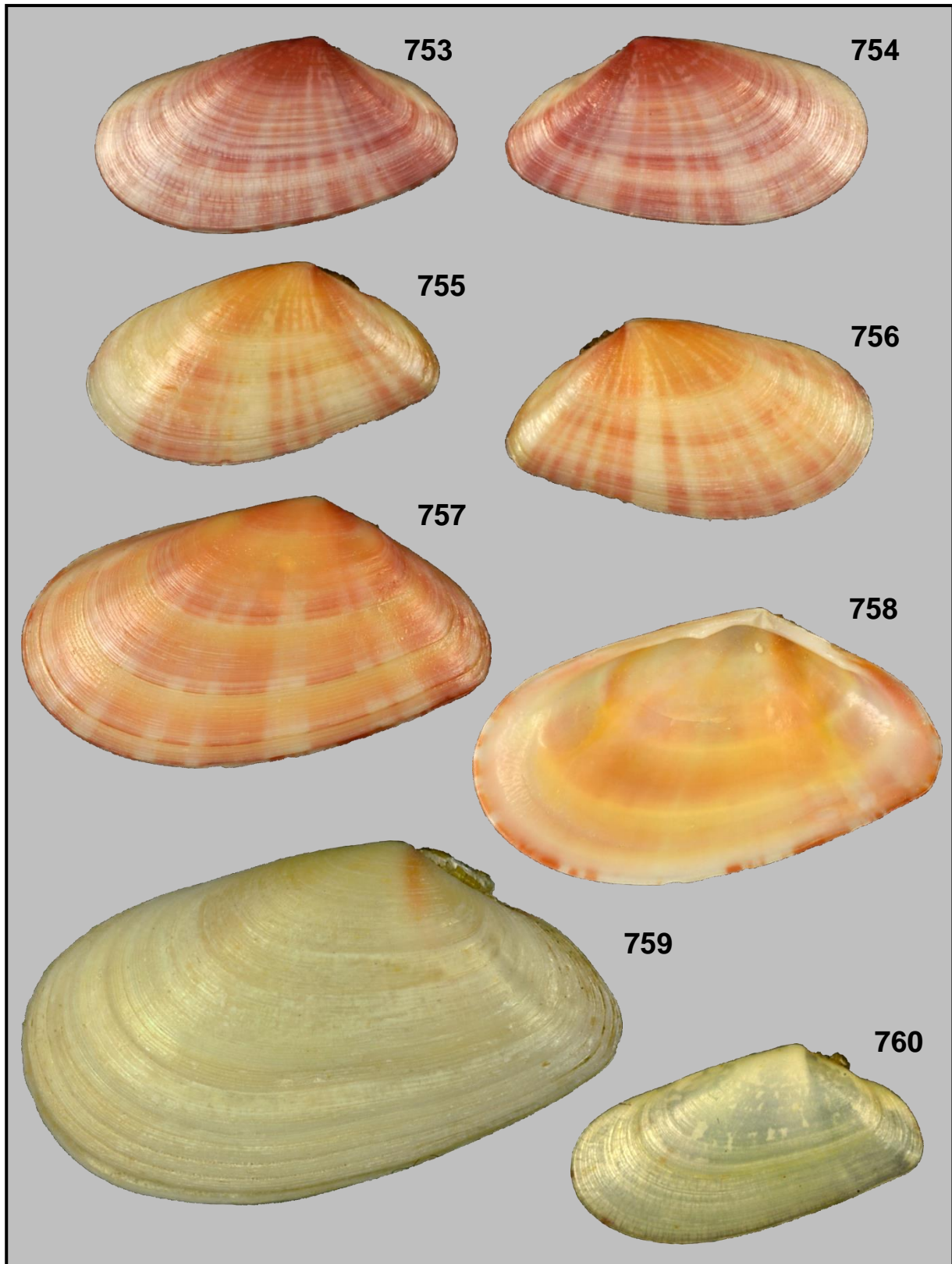
**Plate CXXVIII.** Figs 734-739: *Tellina donacina* Linnaeus, 1758; 734-735 South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 110 m. In sand. July 2007. H. 10.9 mm L. 17.8 mm. JPK; 734: view of the outside; 735: view of the inside; 736-737: Trawled by fishermen, off the Belgian coast, North Sea. 1956. H. 13.34 mm L. 21.92 mm. FN; 736: LV; 737: RV; 738-739: Buiten Ratel, off Koksijde, Belgium. From sand pumped up on the beach. October 2011. FN; 738: H. 12.33 mm L. 20.58 mm; 739: H. 12.02 mm L. 18.52 mm.



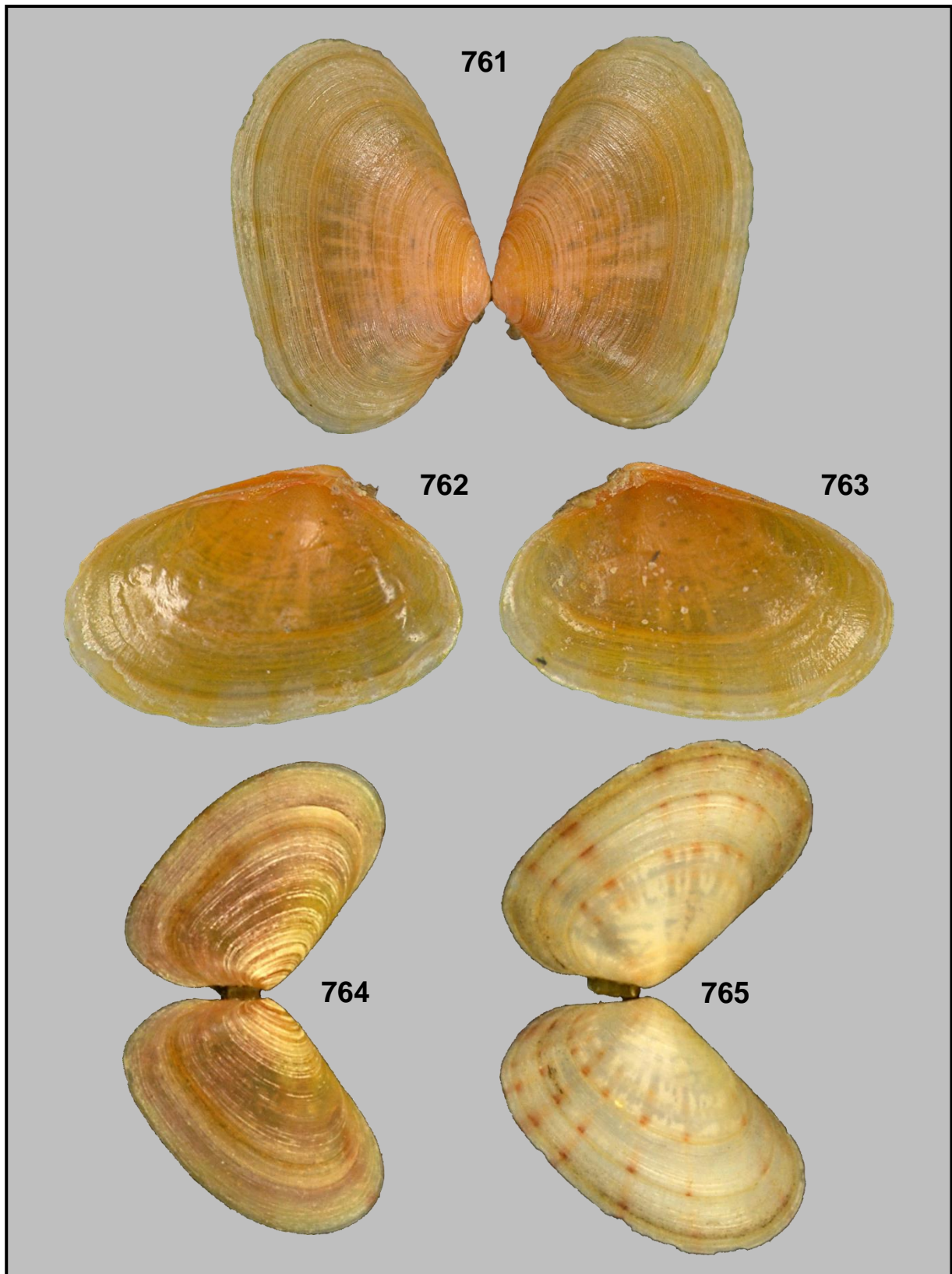
**Plate CXXIX.** Figs 740-747: *Tellina donacina* Linnaeus, 1758. LV. FN; 740-745: Plage Goas Trez, Trébeurden, Brittany, France. In sand at extreme low tide. July 1968; 740: H. 13.06 mm L. 21.38 mm; 741: H. 14.13 mm L. 24.52 mm; 742: H. 15.01 mm L. 24.73 mm; 743: H. 15.20 mm L. 25.67 mm; 744: 13.66 mm L. 23.28 mm; 745: H. 15.81 mm L. 26.55 mm; 746-747: Kérity, Finistère, Brittany, W France. In sand at extreme low tide. 7 April 1997; 746: H. 14.26 mm L. 23.87 mm; 747: H. 12.60 mm L. 22.38 m



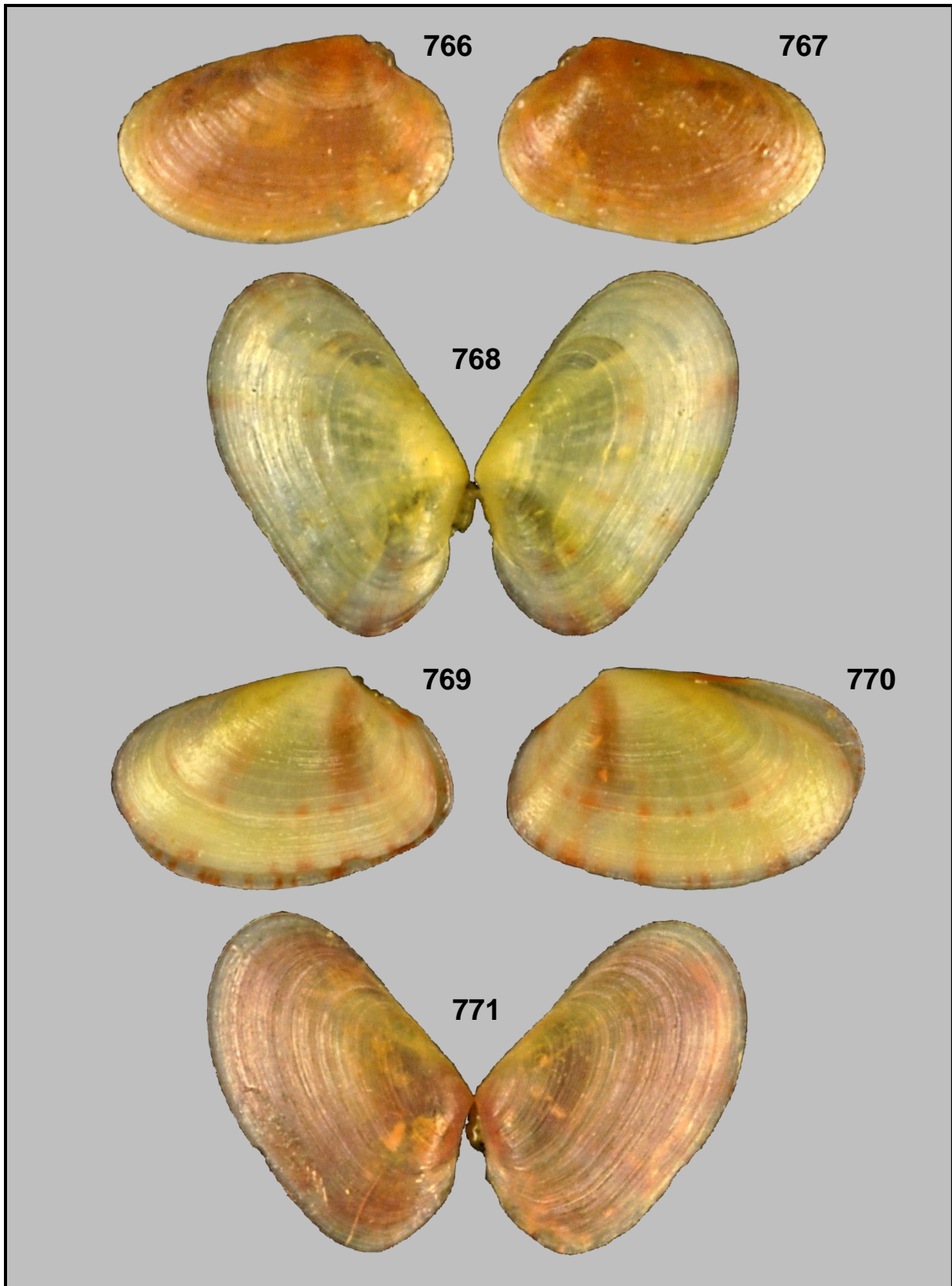
**Plate CXXX.** Figs 748-752: *Tellina donacina* Linnaeus, 1758. FN; 748-749: Carnac-Plage, Morbihan, Brittany, W France. In sand at extreme low tide. 4 April 1996; 748: H. 12.14 mm L. 20.60 mm. LV; 749: H. 13.62 mm L. 22.20 mm. RV; 750: Kerhostin, Morbihan, Brittany, W France. In sand at extreme low tide. 11 August 2006. H. 11.21 mm L. 18.79 mm; 751-752: Punta Cesareo, Italy, Adriatic Sea. In sand. Dived at a depth of 2 m. July 1990; 751: H. 8.79 mm L. 15.54 mm; 752: H. 10.80 mm L. 16.97 mm.



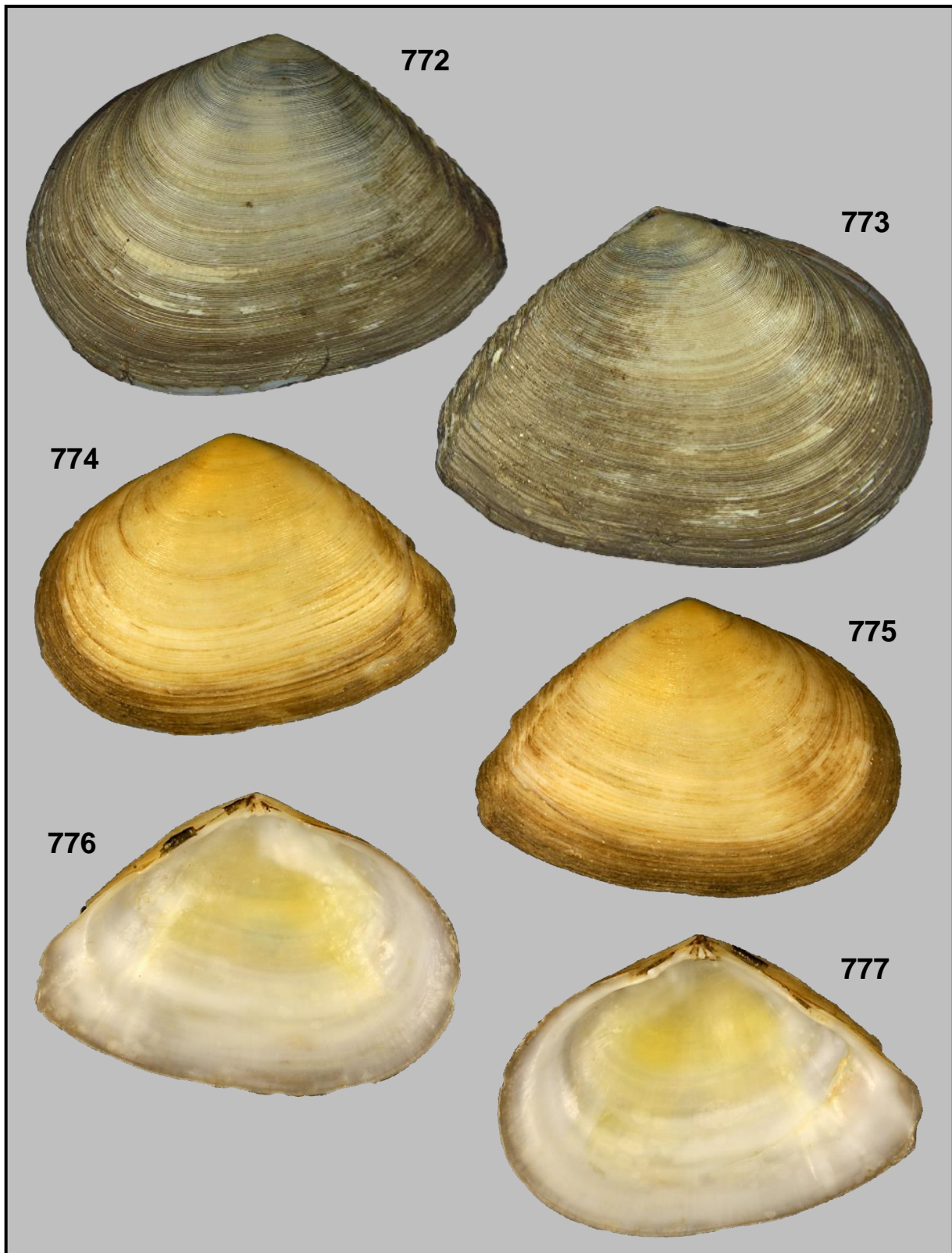
**Plate CXXXI.** Figs 753-760: *Tellina donacina* Linnaeus, 1758. FN; 753-756: Rimini, Italy, Adriatic Sea. In nets of fishermen. October 1963; 753-754: H. 7.89 mm L. 13.71 mm; 753: LV, 754: RV; 755-756: H. 7.45 mm L. 13.04 mm; 755: LV; 756: RV; 757-758: Fethiye, Turkey. In sand. Dived. May 1998. H. 13.60 mm L. 22.86 mm; 757: LV; 758: view of the inside of the RV; 759-760: *Tellina donacina* var. *lantivyi* Payraudeau, 1826. LV. FN; 759: Plage Goas Trez, Trébeurden, Brittany, France. In sand at extreme low tide. July 1968. H. 15.62 mm L. 26.44 mm; 760: Salina Bay, Malta. Dived at a depth of 5 m. August 1988. H. 6.18 mm L. 11.13 mm.



**Plate CXXXII.** Figs 761-765: *Tellina pygmaea* Lovén, 1846; 761-763: South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 100 m. July 2002. H. 5.90 mm L. 9.05 mm. JPK; 761: view of the outside; 762: view of the inside of RV; 763: view of the inside of the LV; 764: Kerhostin, Morbihan, Brittany, W France. In sand at extreme low tide. August 2006. H. 5.48 mm L. 7.18 mm. FN; 765: Hannafore Cove, Cornwall, England, UK. In sand at low tide. September 2006. H. 6.11 mm L. 9.28 mm. FN.

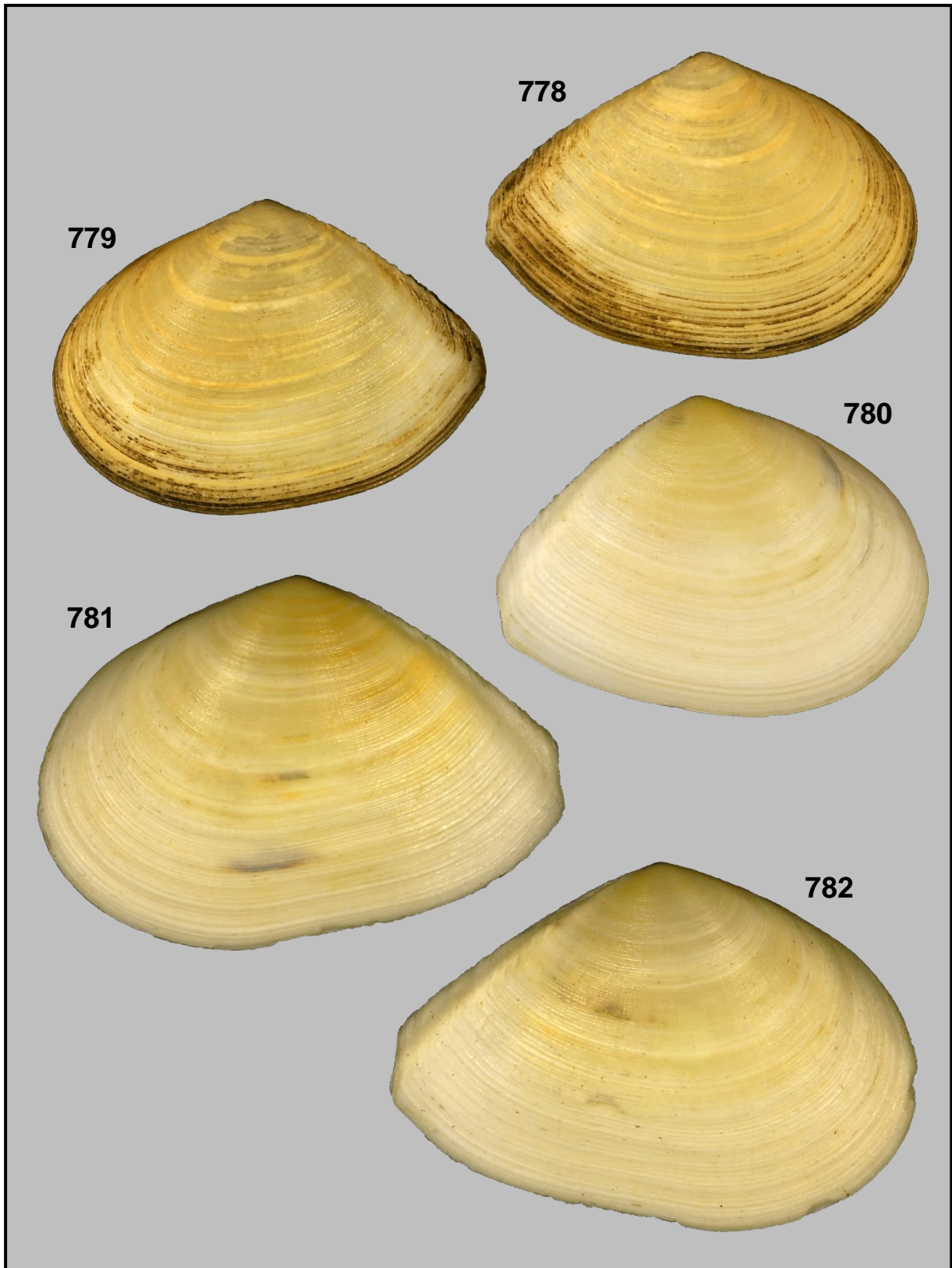


**Plate CXXXIII.** Figs 766-771: *Tellina pygmaea* Lovén, 1846. Buiten Ratel, off Koksijde, Belgium, North Sea. In sand pumped up on the beach. October 2011. FN; 766-767: H. 3.37 mm L. 5.08 mm; 766: LV; 767: RV; 768: H. 4.62 mm L. 7.07 mm; 769-770: H. 4.51 mm L. 7.72 mm; 769: LV; 770: RV; 771: H. 4.28 mm L. 7.37 mm.

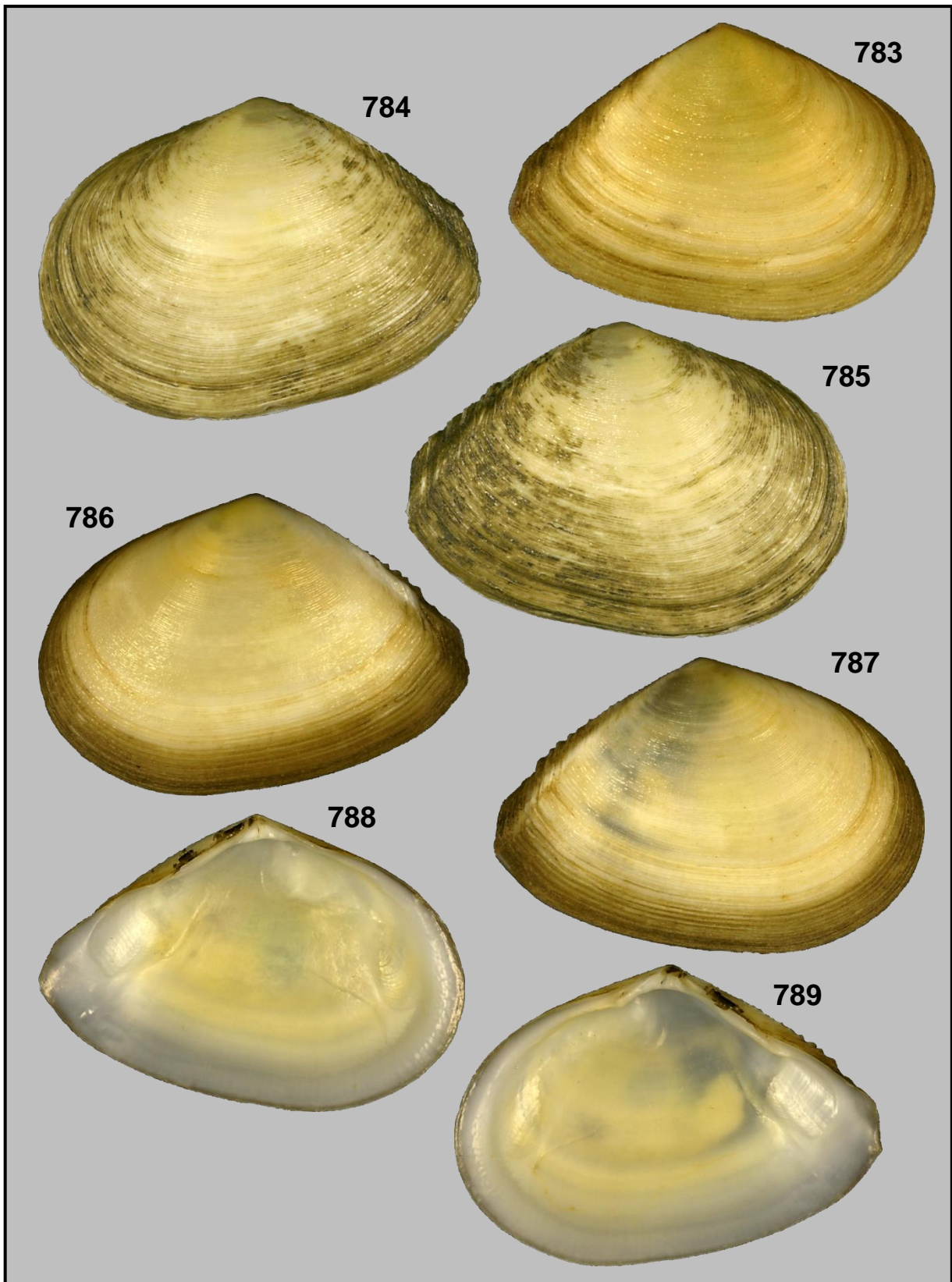


**Plate CXXXIV.** Figs 772-777: *Tellina serrata* Brocchi, 1814. South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 100 m. July 2002; 772-773: H. 33.54 mm L. 44.80 mm. JPK; 772: LV; 773: RV; 774-777: H. 24.46 mm L. 34.09 mm. FN; 774: LV; 775: RV; 776: view of the inside of the LV; 777: view of the inside of the RV.

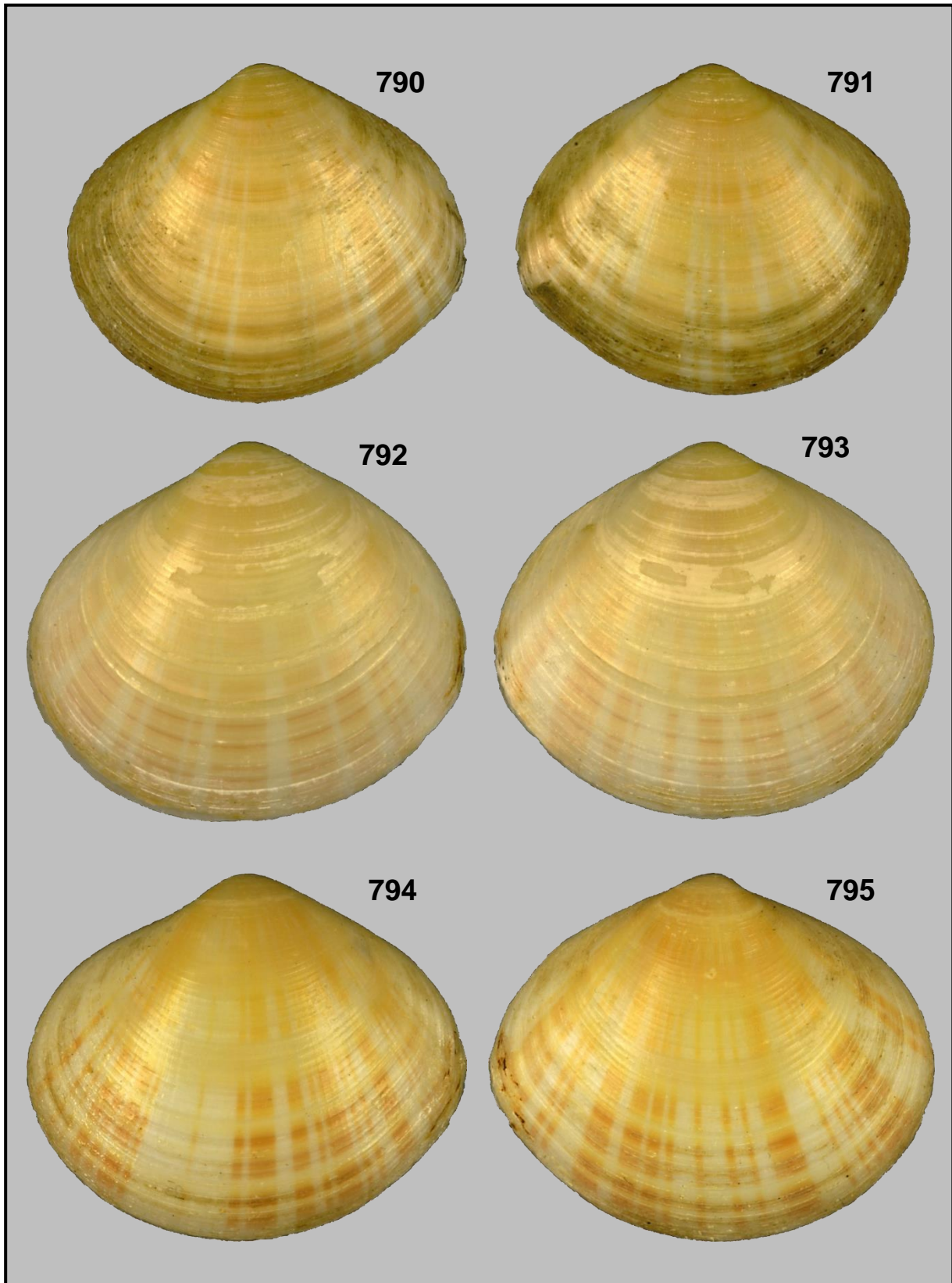




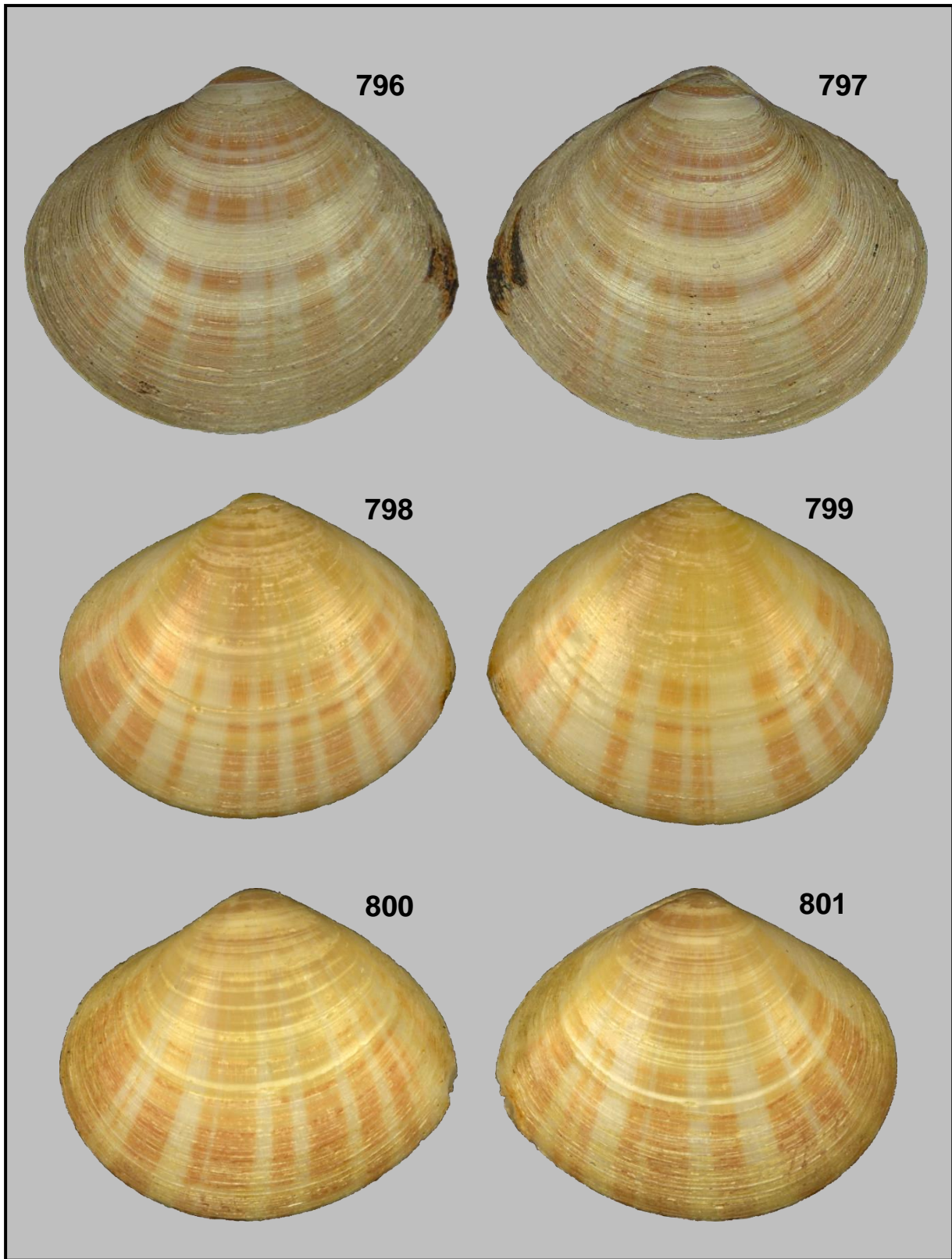
**Plate CXXXV.** Figs 778-782: *Tellina serrata* Brocchi, 1814. Malaga, Spain. Trawled by local fishermen. 1999. FN; 778-779: H. 27.42 mm L. 38.11 mm; 778: RV; 779: LV; 780: H. 28.88 mm L. 38.04 mm. RV; 781-782: H. 33.22 mm L. 47.57 mm; 781: LV; 782: RV.



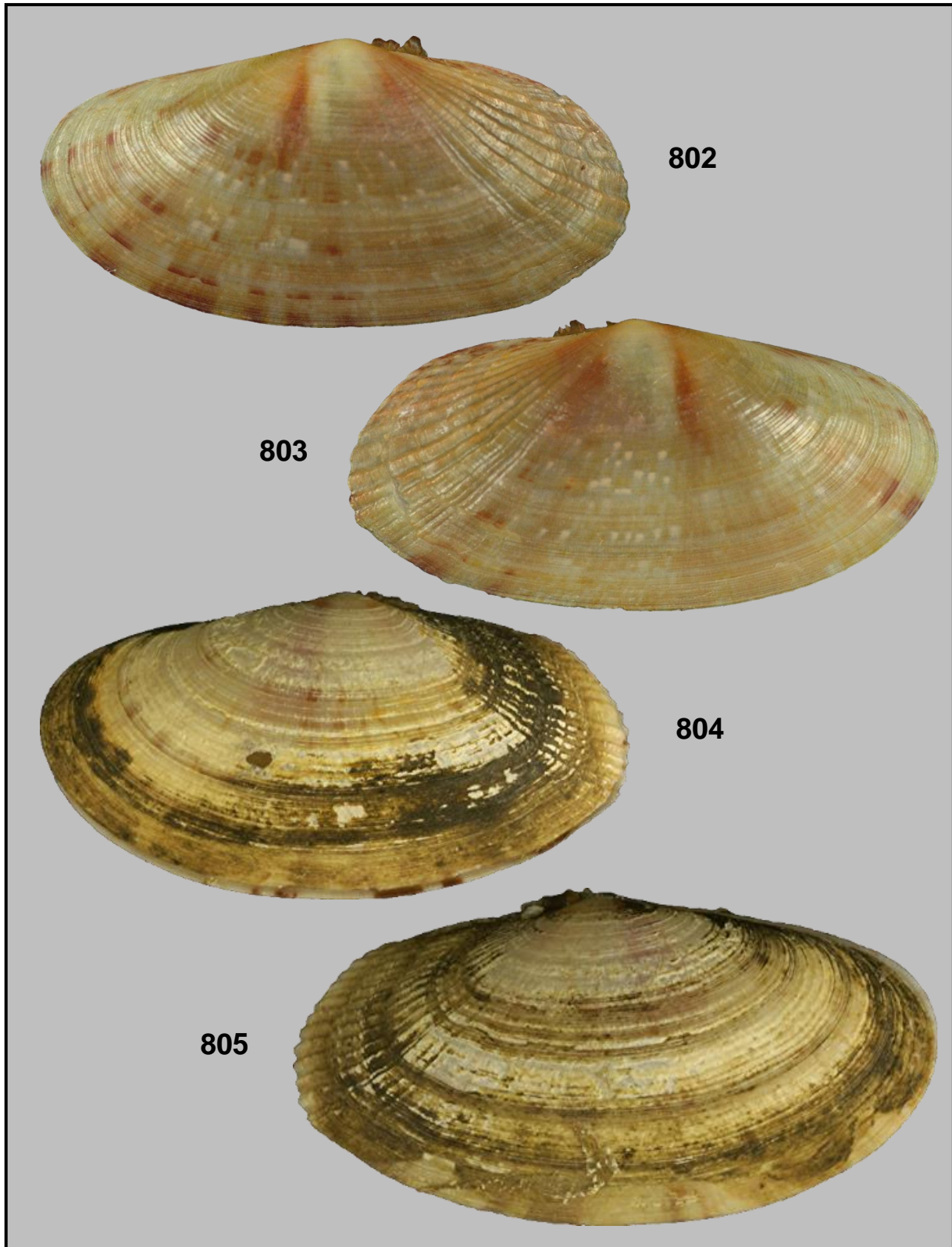
**Plate CXXXVI.** Figs 783-789: *Tellina serrata* Brocchi, 1814. FN; 783-785: Capraia Island, Italy. Trawled by fishermen. 1997; 783: H. 24.21 mm L. 34.37 mm. RV; 784-785: H. 27.32 mm L. 37.40 mm; 784: LV; 785: RV; 786-789: Ambriz, Angola. Trawled by Belgian fishermen (PEMARCO) at a depth of 73 m. 1968. H. 26.01 mm L. 37.29 mm; 786: LV; 787: RV; 788: view of the inside of the LV; 789: view of the inside of the RV.



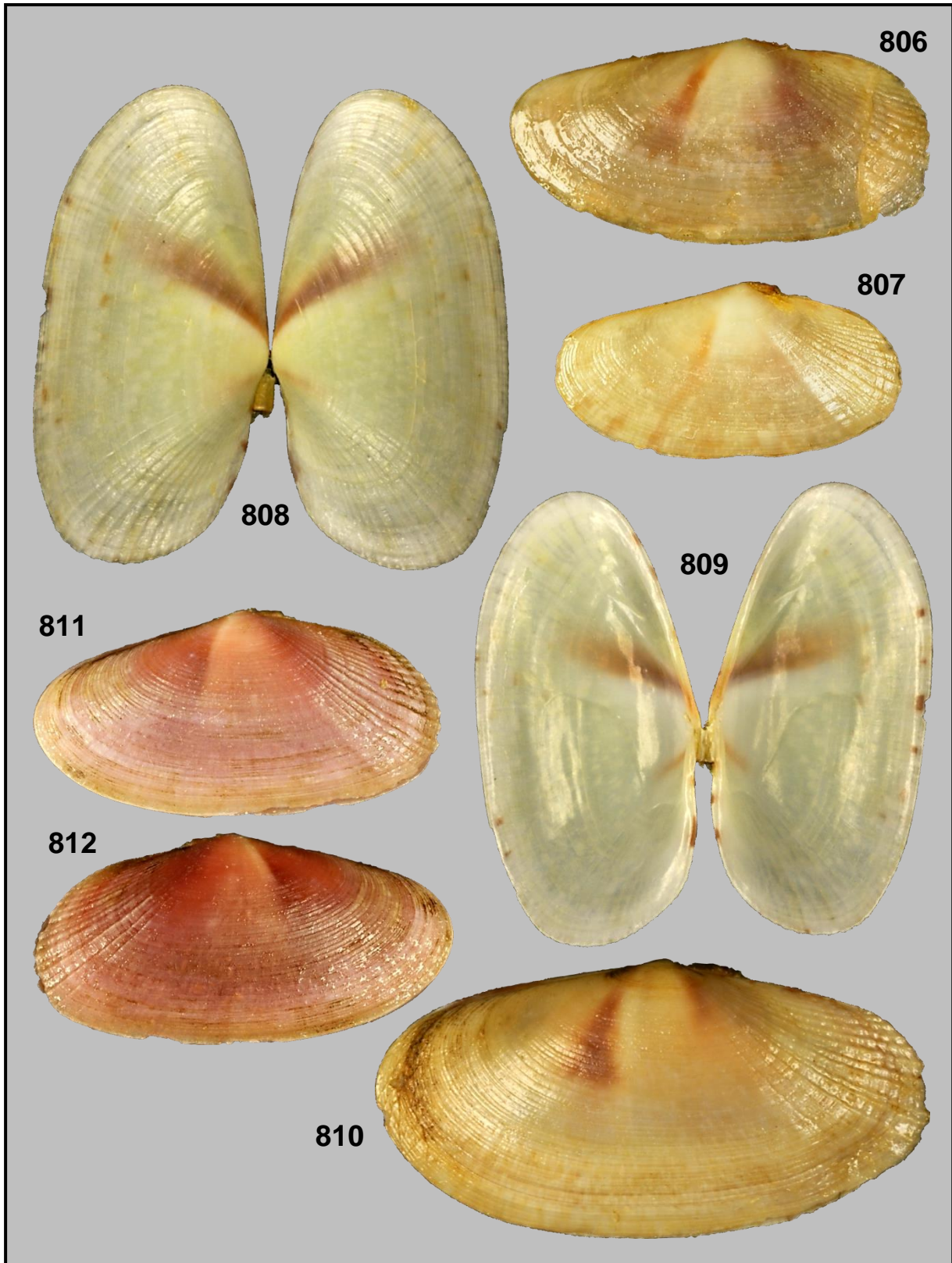
**Plate CXXXVII.** Figs 790-795: *Arcopagia balaustina* (Linnaeus, 1758). South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 130 m. June 2004. FN; 790-791: H. 15.08 mm L. 18.22 mm; 790: LV; 791: RV; 792-793: H. 18.15 mm L. 21.30 mm; 792: LV; 793: RV; 794-795: H. 18.23 mm L. 22.29 mm; 794: LV; 795: RV.



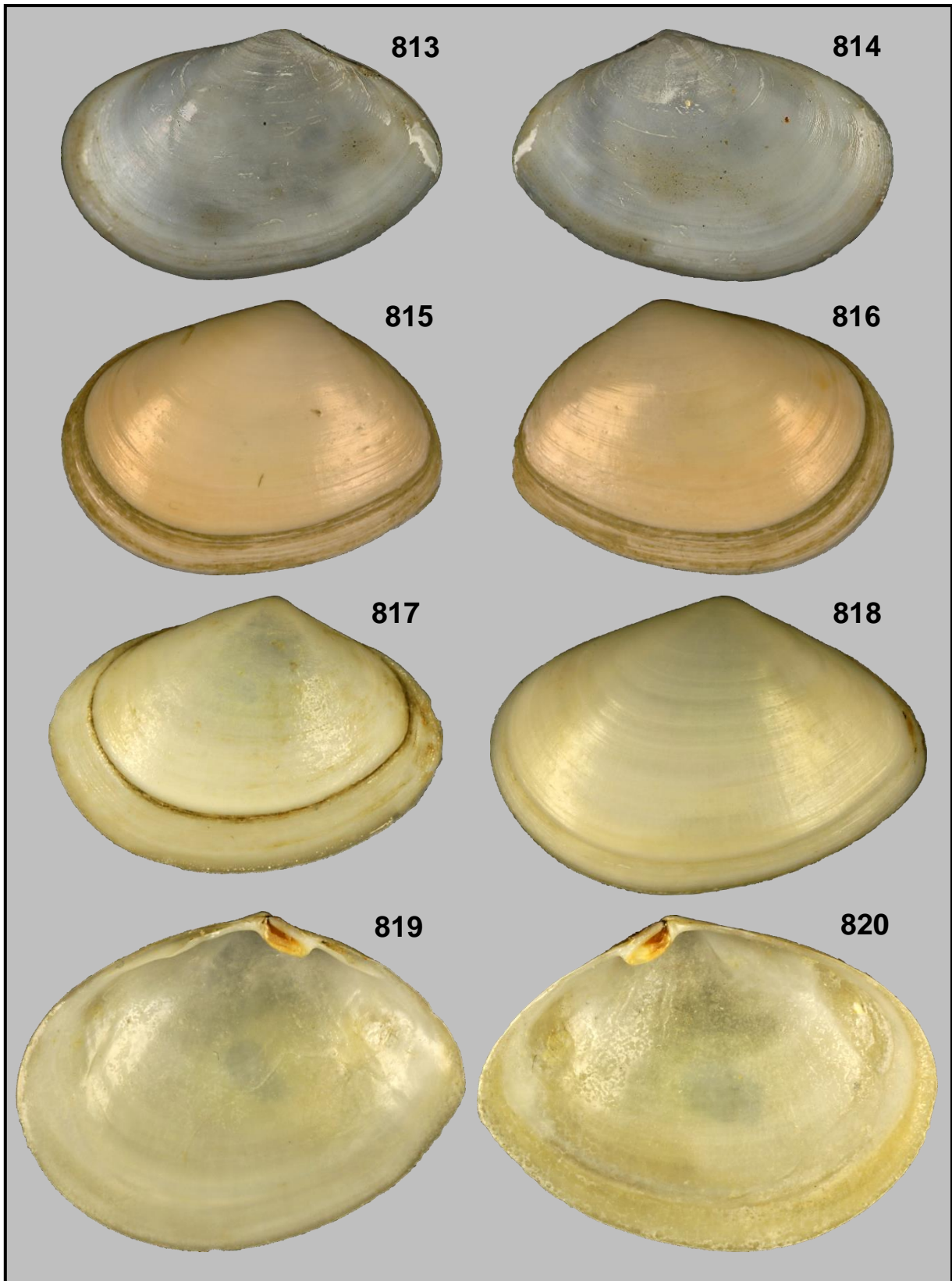
**Plate CXXXVIII.** Figs 796-801: *Arcopagia balaustina* (Linnaeus, 1758); 796-797: South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 100 m. July 2002. H. 19.23 mm L. 22.64 mm. JPK; 796: LV; 797: RV; 798-801: Malaga, Spain. Trawled by local fishermen at a depth of 40 m. 1998. FN; 798-799: H. 15.87 mm L. 19.51 mm; 798: LV; 799: RV; 800-801: H. 16.14 mm L. 19.59 mm; 800: LV; 801: RV.



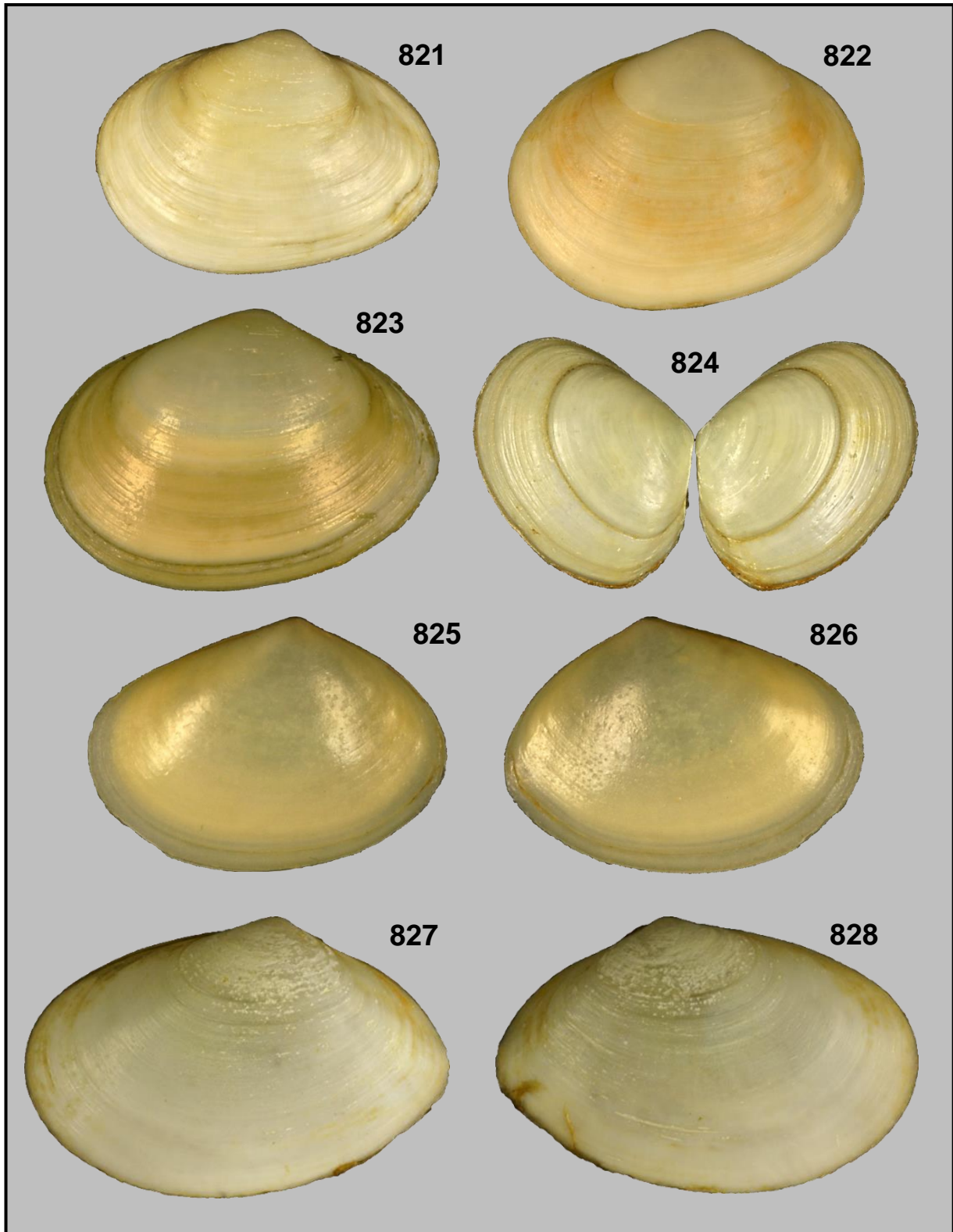
**Plate CXXXIX.** Figs 802-805: *Gari costulata* (Turton, 1822). South of La Rochelle, Bay of Biscay, W France. JPK; 802-803: H. 10.53 mm L. 21.25 mm; 802: LV; 803: RV; 804-805: Trawled by Belgian fishermen at a depth of 120 m. July 2010. H. 10.83 mm L. 20.31 mm; 804: LV; 805: RV.



**Plate CXL.** Figs 806-812: *Gari costulata* (Turton, 1822). FN; 806-807: Trébeurden, Brittany, France. Trawled by local fishermen. In sand. 1968. LV; 806: H. 6.04 mm L. 12.71 mm; 807: H. 4.98 mm L. 9.88 mm; 808-810: Palau, North Sardinia, Italy. Dredged at a depth of 80 m. 1991; 808-809: H. 9.19 mm L. 18.17 mm; 808: view of the outside; 809: view of the inside; 810: H. 9.86 mm L. 19.83 mm. LV; 811-812: Ladispoli, Italy. Dredged at a depth of 23 m. July 1981. H. 6.78 mm L. 12.86 mm; 811: LV; 812: RV.

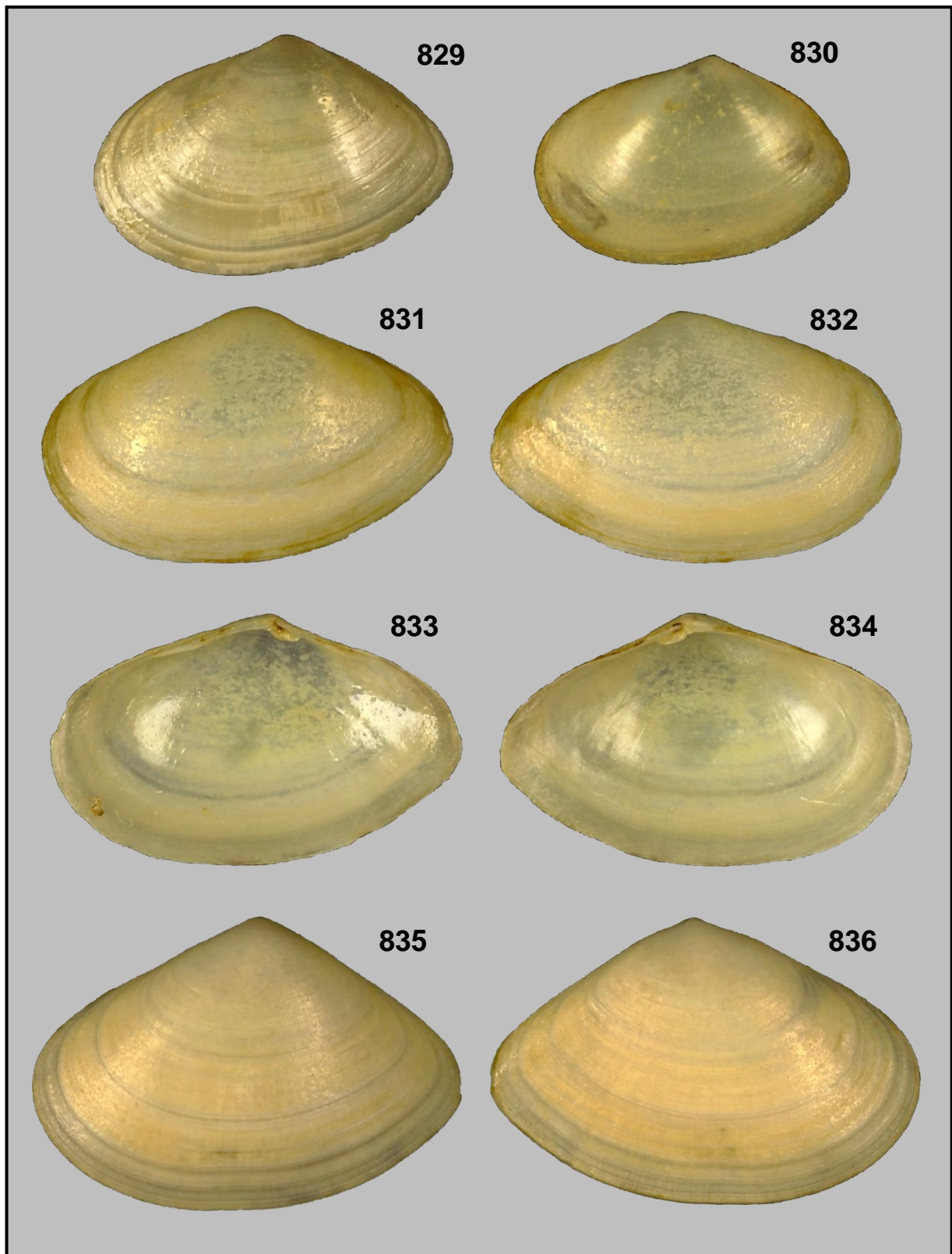


**Plate CXLI.** Figs 813-820: *Abra alba* (W. Wood, 1802); 813-814: South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 110 m. July 2003. H. 13.4 mm L. 20.3 mm. JPK; 813: LV; 814: RV; 815-816: Off Rochebonne Bank, Bay of Biscay. Trawled at a depth of 140 m. July 1997. H. 14.79 mm L. 20.74 mm. FN; 815: LV; 816: RV; 817-818: Oostduinkerke, Belgium, North Sea. Live collected among shell grit near tidal pool. 24 January 1971. FN; 817: H. 13.09 mm L. 18.90 mm. LV; 818: H. 14.51 mm L. 21.63 mm. LV; 819-820: Bredene, Belgium, North Sea. Live collected on the beach after storm. 1968. H. 17.25 mm L. 22.88 mm. FN; 819: view of the inside of the RV; 820: view of the inside of the LV.

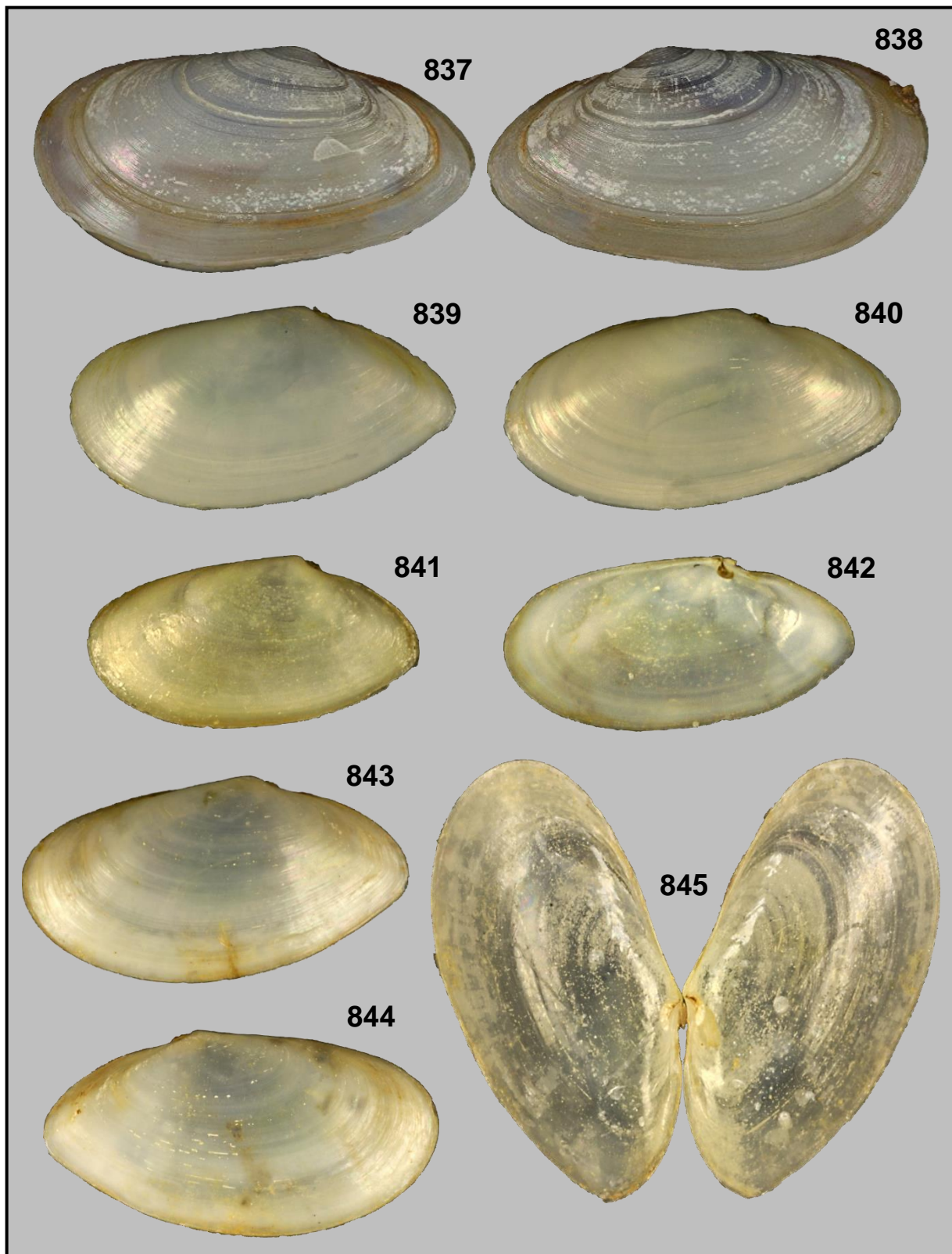


**Plate CXLII.** Figs 821-826: *Abra alba* (W. Wood, 1802). FN; 821-823: Oostduinkerke, Belgium, North Sea. In sand among shell grit at low tide. October 1971. LV; 821: H. 9.72 mm L. 13.87 mm; 822: H. 13.01 mm L. 16.62 mm; 823: 13.57 mm L. 19.21 mm; 824: Agon-Coutainville, Normandy, France. In sand at low tide. September 2010. H. 11.94 mm L. 14.96 mm; 825-826: Civitanove Marche, Italy. Collected on the beach. 1996. H. 10.60 mm L. 14.37 mm; 825: LV; 826: RV; Figs 827-828: *Abra longicallus* (Scacchi, 1835). South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 120 m. July 2010. H. 11.39 mm L. 17.23 mm. JPK; 827: LV; 828: RV.





**Plate CXLIII.** Figs 829-836: *Abra longicallus* (Scacchi, 1835). FN; 829: Sant Carles de la Ràpita, Spain. Trawled by fishermen. 1994. H. 9.73 mm L. 15.02 mm. LV; 830: Tuscan Archipelago, Capraia, Italy. Trawled by fishermen. 1991. H. 7.57 mm L. 11.14 mm. LV; 831-834: Corsica, France. Dredged at a depth of 900 m. H. 11.42 mm L. 18.53 mm; 831: LV; 832: RV; 833: view of the inside of the RV; 834: view of the inside of the LV; 835-836: Sicily, Italy. H. 13.98 mm L. 20.85 mm; 835: LV; 836: RV.



**Plate CXLIV.** Figs 837-845: *Abra prismatica* (Montagu, 1808); 837-838: South of La Rochelle, Bay of Biscay, W France. Trawled by Belgian fishermen at a depth of 100 m. July 2002. H. 9.36 mm L. 18.22 mm. JPK; 837: LV; 838: RV; 839-840: Off Rochebonne Bank, Bay of Biscay. In detritus. Trawled by Belgian fishermen at a depth of 130 m. July 2003. LV. FN; 839: H. 8.97 mm L. 16.65 mm; 840: H. 8.63 mm L. 17.35 mm; 841-842: Faxaflói, Iceland. Trawled by local fishermen at a depth of 92 m. LV. FN; 841: H. 6.03 mm L. 12.21 mm; 842: H. 5.76 mm L. 11.60 mm; 843-845: South Ireland, Celtic Sea, UK. Trawled by Belgian fishermen at a depth of 80 m. May 2004; 843-844: H. 8.86 mm L. 16.35 mm; 843: LV; 844: RV; 845: H. 9.58 mm L. 18.09 mm. View of the inside.