On an important collection of seashells from the Shetland Islands: part I

Frank Nolf [1] & Quinten Vandenberge [2]

[1] Pr. Stefanieplein, 43 B8 – B-8400 Oostende, Belgium
frank.nolf@pandora.be

[2] Euphrosina Beernaertstraat, 89 – B-8400 Oostende, Belgium

Key words: Shetland Islands, marine MOLLUSCA, scallop trawling.

Abstract: Several Belgian shell collectors visited the Shetland Islands at the end of the last century. A lot of interesting deeper-water shells was obtained from scallop trawlers operating off Mainland in the Shetland Islands. A few shells were dived at Basta Voe (Island of Yell). A listing of the species is given and all of them are illustrated. Part I of this paper deals with the SCAPHOPODA, the GASTROPODA and a lot of BIVALVIA.

Abbreviations:
H.: height
L.: length
LV: left valve
RV: right valve

Introduction:

- Geography: The Shetland Islands lies almost exactly at the centre of a triangle, with Norway, Faroe and Scotland. Occupying this maritime crossroads, it is at the hub of a great north Atlantic seaway and it forms part of the division between the Atlantic Ocean to the west and the North Sea to the east.
Shetland is one of the 32 council areas of Scotland. It is an archipelago to the north-east of Orkney and mainland Scotland, and 280 km from the Faroe Islands. The total area is approximately 1,466 km^2. The administrative centre and only burgh is Lerwick. Out of the approximately one hundred islands, only fifteen are inhabited. The main island of the group, known as Mainland, has an area of about 1,000 km^2, making it the third-largest Scottish island and the fifth-largest of the British isles. The other inhabited islands are: Bressay, Burra, Fetlar, Foula, Muckle Roe, Rapa Stour, Trondra, Vaila, Unst, Whalsay, Yell in the main Shetland group, plus Fair Isle to the south, and Housay and Bruray in the Outer Skerries to the east. Fair Isle lies approximately halfway between Shetland and Orkney, but it is administrated as part of Shetland and is often counted as part of the island group. The Outer Skerries lie east of the main group.

- **History:** Shetland has been populated since at least 3000 BC. The early people subsisted on cattle-farming and agriculture. During the Bronze Age, around 2000 BC, the climate and the population moved to the coast. During the Iron Age, many stones fortresses were erected, some ruins of which remain today. Around A.D. Roman sources describe a people known as the Picts who ruled much of north Scotland and Shetland eventually became part of the Pictish kingdom. Shetland was colonised by Norwegian Vikings in the 9th century, the existing indigenous population no doubt being wiped driven out. The colonisers gave it the name *'Hjaltland*' (Mainland) and established their laws and language. The latter evolved into the West Nordic language Norn, which survived into the 1800's. The Shetland Islands were Christianised in the tenth century. From 1195 they were directly ruled under the Norwegian king Sverre Sigurdsson. In the 14th century Norway still treated Orkney and Shetland as a Norwegian province, and in 1379 the Scottish earl Henry Sinclair took control on Orkney on behalf of the Norwegian king Hakon VI Magnusson. In 1469 king Christian I of Norway pawned Shetland to the Scottish king James III. In 1708 the capital moved from Scalloway to Lerwick and in 1975 the Lerwick Town Council and Zetland County Council merged to Shetland Islands Council.

- **Name:** The original Norse name for Shetland was '*Hjaltland*'. '*Hjalt*' in Old Norse meaning the hilt or crossguard of a sword. As the local language evolved the '*ja*' became '*je*'. Then the pronounciation of the combination of the letters '*hj*' changed to '*sh*'. Lastly the '*l*' before the '*t*' disappeared. As Norn was gradually replaced by Scots '*Shetland*' became '*Zetland*', the mispronounced form used to describe the pre-1975 county council.

- **Shetland today:** In the early 1970's, oil and gas was found off Scotland. The East Shetland Basin is one of the largest petroleum sedimentary basins in Europe and the oil extracted there is sent to the terminal at Sullom Voe. This terminal opened in 1978 and is the largest export harbour in Great Britain with a volume of 25 million tons per year. Income from oil, and the improved economic state that oil-

related development has brought, has resulted in reduced emigration and vastly improved infrastructure throughout Shetland, leading to higher quality of life.

- Climate: Shetland has a temperate Atlantic Ocean climate. Summers are relatively cool and dry. The sunniest months of the year are the period from April to August. There may be 19 hours of sunlight in June and there is no proper darkness. Winters are dark but fairly mil. Yearly precipitation is half that of the west coast of Scotland, three quarters falling during winter. The driest period is from April to August and fog is common in the east of the islands during summer.

- Flora: The landscape in Shetland is marked by the grazing of sheep and the rarity of trees. The flora is dominated by arctic-alpine plants, wild flowers, moss and lichen.

- Fauna: Shetland is the site of one of the largest bird colonies in the North Atlantic home more than one million birds. Some of the birds found on the islands are Atlantic Puffin, Storm-petrel, Northern Lapwing and Winter Wren. Many arctic birds spend the winter on Shetland and among those are Whooper Swan and Great Northern Diver.

- Notable places: Fort Charlotte, Jarlshof archaeological site, Muness Castle (the most northerly castle in the United Kingdom), Scalloway Castle, Selivoe, Sullom Voe oil terminal.

- Economy: The main revenue producers in Shetland are agriculture, aquaculture, fishing, renewable energy, the petroleum industry (crude oil and natural gas production), the creative industries and tourism. Fishing has always been an integral part of Shetland's economy. Fishing remains central to the islands' economy today, with a total catch being 75,767 tonnes in 2009. Mackerel makes up more than half of the catch by weight and value. In addition there are significant landings of haddock, cod, herring, whiting, monkfish, shellfish, scallops and whelks..

Farming is mostly connected to raising of Shetland sheep, known for their unusually fine wool, along with the Shetland Sheepdog as well as the Shetland pony. Crops raised include oats and barley. However, the cold, windswept islands make a harsh environment for most plants. Crofting, the farming of small plots of land on a legally restricted tenancy basis, is still practiced and viewed as a Shetland tradition as well as an important source of income.

More recently, oil reserves discovered in the 20th century out to sea provided a much needed alternative source of income for the islands. Taxes from the oil have increased spending on social welfare, art, sport, environmental measures and financial development. Even though oil makes up 15% of the islands' economy, the fish related industry generates twice as much income and employs three times as many workers. The last 25 years unemployment has been under 5%, but the fluctuations in the market for farmed salmon and trawled white fish leads to seasonal changes in unemployment. Most (85%) of the catch (67,000 tons) in Shetland is herring and mackerel which is 52% of the catch value. Haddock, cod and angler achieve higher prices and make up the rest of the catch value.

In January 2007, the Shetland Islands Council signed a partnership agreement with Scottish and Southern Energy for a 20 turbine wind farm and subsea cable. The renewable energy project would produce about 600 megawatts, but this plan is meeting significant opposition within the islands, primarily resulting from expected visual impact of the development.

- **Transport:** There are several daily flights from the UK mainland: Aberdeen, Edinburgh and Glasgow, all connecting London and other major European cities. Airplanes arrive at Sumburgh Airport, located at Sumburgh, 40 km south of Lerwick. However, transport between islands is primarily by ferry. Car ferries sail operates from Aberdeen seven nights a week, year-round, with large, comfortable, cruise-style ships. In summer there are weekly ferry connections to Norway, Denmark, Faroe and Iceland, and even Greenland and North America.

Materials and methods:

The harbour of Lerwick is situated in the western side of Mainland, the largest of the Shetland Islands. The local fishing fleet consisted of about ten scallop trawlers in 1996, fishing for *Pecten maximus*, and a few boats, fishing for *Buccinum undatum* with baited pots. These trawlers usually fish within a day reach of the harbour. Robert Coelus and Dirk Neyts, both collectors of north-east Atlantic marine shells, travelled through the Shetland Islands in May 1996. They were able to establish contacts with fishermen from the harbour of Lerwick (Mainland). Next to a number of large *Buccinum undatum* of unusual fine quality obtained from the whelk boats, a fairly large number of smaller shells were recovered in marine detritus that remained on the deck of a scallop trawler. Another shell collector, R. Van de Vyver (St.-Niklaas, Belgium) dived at Basta Voe (Island of Yell). All in all, no less than 69 different species have been identified. They now belong to the private collections of R. Coelus (De Haan, Belgium), D. Neyts (Knokke-Heist, Belgium), F. Nolf and J. Verstraeten (both from Oostende, Belgium).

List of shells recovered from local scallop trawlers, during a week stage in Lerwick, Mainland in the Shetland Islands, except those marked with an asterisk (*).

CLASS POLYPLACOPHORA

1. LEPTOCHITONIDAE
1.1. *Leptochiton asellus* (Gmelin, 1791)
(Pl. I, Figs 1-4)

CLASS GASTROPODA

2. PATELLIDAE
2.1. *Patella pellucida* Linnaeus, 1758
(Pl. II, Figs 5-10)
2.2. *Patella pellucida* var. *laevis* Pennant, 1777
(Pl. III, Figs 11-15; Pl. IV, Figs 16-21)

3. LOTTIIDAE
3.1. *Tectura virginea* (O.F. Müller, 1776)
(Pl. V, Figs 22-24)

4. LEPETIDAE
4.1. *Iothia fulva* (O.F. Müller, 1776)
(Pl. V, Figs 25-30)

5. FISSURELLIDAE
5.1. *Emarginula fissura* (Linnaeus, 1758)
(Pl. VI, Figs 31-33)
5.2. *Puncturella noachina* (Linnaeus, 1771)
(Pl. VI, Figs 34-36; Pl. VII, Figs 37-39)

5. TROCHIDAE
5.1. *Clelandella miliaris* (Brocchi, 1814)
(Pl. VII, Figs 40-41)
5.2. *Jujubinus montagui* (W. Wood, 1828)
(Pl. VIII, Figs 42-45)
5.3. *Gibbula tumida* (Montagu, 1803)
(Pl. VIII, Figs 46-47)
5.4. *Gibbula cineraria* (Linnaeus, 1758)
(Pl. VIII, Figs 48-49)

6. TURRITELLIDAE
6.1. *Turritella communis* Risso, 1826
(Pl. IX, Figs 50-51)

7. EULIMIDAE
7.1. *Melanella alba* (da Costa, 1778)
(Pl. IX, Figs 52-53)

8. CAPULIDAE
8.1. *Trichotropis borealis* Broderip & Sowerby, 1829
(Pl. IX, Figs 54-55)

9. VELUTINIDAE
9.1. *Limneria undata* Brown in Smith, 1839
(Pl. IX, Figs 56-57)

10.TRIVIIDAE
10.1. *Trivia arctica* (Pulteney, 1799)
(Pl. X, Figs 58-59)
10.2. *Erato voluta* (Montagu, 1803)
(Pl. X, Figs 60-63)

11. NATICIDAE
11.1. *Lunatia montagui* (Forbes, 1838)
(Pl. XI, Figs 64-69)

12. MURICIDAE
12.1. *Boreotrophon truncatus* (Strøm, 1768)
(Pl. XI, Figs 70-71)
12.2. *Ocinebrina aciculata* (Lamarck, 1822)
(Pl. XI, Fig. 72)
12.3 *Trophonopsis muricata* (Montagu, 1803)
(Pl. XI, Figs 73-75)

13. BUCCINIDAE
13.1. *Buccinum humphreysianum* Bennet, 1824
(Pl. XII, Figs 76-80)
13.2. *Buccinum undatum* Linnaeus, 1758
(Pl. XIII, Figs 81-84; Pl. XIV, Figs 85-88)

14. NASSARIIDAE
14.1. *Nassarius incrassatus* (Strøm, 1768)
(Pl. XV, Figs 89-90)

15. MANGELIIDAE
15.1. *Bela nebula* (Montagu, 1803)
(Pl. XV, Figs 91-93)
15.2. *Propebela rufa* (Montagu, 1803)
(Pl. XV, Figs 94-95)

16. RAPHITOMIDAE
16.1. *Raphitoma leufroyi* (Michaud, 1827)
(Pl. XV, Figs 96-97)

CLASS BIVALVIA

17. NUCULIDAE
17.1. *Nucula nucleus* (Linnaeus, 1758)
(Pl. XVI, Figs 98-101)
17.2. *Ennucula tenuis* (Montagu, 1808)
(Pl. XVI, Figs 102-103)

18. YOLDIIDAE
18.1. *Yoldiella philippiana* (Nyst, 1845)
(Pl. XVI, Figs 104-105)

19. MYTILIDAE
19.1. *Musculus subpictus* (Cantraine, 1835)
(Pl. XVII, Figs 106-111)
19.2. *Modiolula phaseolina* (Philippi, 1844)
(Pl. XVII, Figs 112-113; Pl. XVIII, Figs 114-119)

20. ARCIDAE

20.1. *Arca tetragona* Poli, 1795
(Pl. XIX, Figs 120-121)

21. ANOMIIDAE

21.1. *Monia patelliformis* (Linnaeus, 1767)
(Pl. XIX, Figs 122-125)

22. PECTINIDAE

22.1. *Pecten maximus* (Linnaeus, 1758)
(Pl. XX, Figs 126-127)

22.2. *Aequipecten opercularis*
(Linnaeus, 1758)
(*) Basta Voe Bay, Island of Yell, Shetland Islands, UK – in sand – dived at a depth of 17 m.
(Pl. XXI, Figs 128-130; Figs XXII, Figs 131-132)

Acknowledgements: We are very grateful to R. Coelus (De Haan, Belgium) and J. Verstraeten (Oostende, Belgium) for the loan of shells from Lerwick (Shetland Islands, UK). Marine biologist David W. McKay (Scotland, UK) was so kind to introduce the Belgian shell collectors among the local fishermen. We also wish to thank Dirk Neyts (Knokke-Heist, Belgium) for the use of his pictures of the scallop trawler fleet. Johan Verstraeten performed excellent preliminary research and provided interesting data.

Bibliography:

Bouchet, Ph. & Rocroi, J.-P., Bieler, R., Carter, J.G. & Coan, E.V., 2010. Nomenclator of Bivalve Families with a Classification of Bivalve Families. *Malacologia*, **52**(2): 1-184.

Bucquoy, E., Dautzenberg, Ph. & Dollfus, G., 1887-1898. *Les Mollusques marins du Roussillon,* t. II*: Pélécypodes*. 884 pp., 99 plates.

CLEMAM. Check List of European Marine Molluscs. http://www.somali.asso.fr/clemam

Dautzenberg, Ph., 1891. Campagne scientifique du yacht l' «Hirondelle» en 1886: Contribution à la faune malacologique du Golfe de Gascogne. *Mémoires de la Société Zoologique de France*, IV, 604-619, pl. XVI-XVII.

Dautzenberg, Ph & Fischer, H., 1921. *Résultats des campagnes scientifiques accomplies sur son yacht par Albert Ier Prince Souverain de Monaco*. Mollusques provenant des campagnes de l'Hirondelle et de la Princess-Alice dans les Mers du Nord, Fascicule XXXVII : 1-629, 11 pls.

Dautzenberg, Ph., 1927. Mollusques provenant des campagnes scientifiques du Prince Albert Ier de Monaco dans l'Océan Atlantique et dans le Golfe de Gascogne. *Résultats des Campagnes Scientifiques accomplies sur son yacht par Albert Ier Prince Souverain de Monaco*, Fascicule LXXII: 1-400, 9 pls.

Dautzenberg, Ph. & Fischer, H., 1896. Campagnes scientifiques du Prince de Monaco. Dragages effectués par l' «Hirondelle» et la «Princesse Alice», 1888-1895. Gastéropodes. *Mémoires de la Société Zoologique de France*, IX, 395-498, pl. XV-XXII.

Dautzenberg, Ph. & Fischer, P.-H., 1925. Les Mollusques marins du Finistère et en particulier de la région de Roscoff. *Travaux de la Station Biologique de Roscoff*, fasc. 3, 180 pp. Paris.

Gofas, S., Le Renard, J. & Bouchet, P., 2001. Mollusca, ***in***: Costello, M.J. *et al*. (Ed.) (2001). *European register of marine species: a check-list of the marine species in Europe and a bibliography of guides to their identification*. *Collection Patrimoines Naturels*, **50**: 180-213.

Hayward, P.J. & Ryland, J.S., 1996. *Handbook of the Marine Fauna of North-West Europe*. *10. Molluscs*, 540-628. Oxford University Press (reprinted with corrections).

Huber, M., 2010. *Compendium of Bivalves*. ConchBooks. Hackenheim. 901 pp.

Locard, A., 1892. *Les Coquilles Marines des Côtes de France. Descriptions des familles, genres et espèces*. Librairie J.-B. Baillière et Fils. Paris. 384 pp.

McKay, D.W. & Smith, S.M., 1979. *Marine Mollusca of East Scotland*. The Royal Scottish Museum. Edinburgh. 185 pp.

Millard, V., 2008. *Classification of Mollusca. A classification of Worldwide Mollusca.* Vol. 2. Fourth Edition. Clareinch. 1140 pp.

Nolf, F. & Kreps, J.-P., 2008. Comparison of some interesting molluscs, trawled by the Belgian fishery in the Bay of Biscay, with similar representatives from adjacent waters: part I. *Neptunea*, **7**(3): 1-33.

Nolf, F. & Kreps, J.-P., 2009. Comparison of some interesting molluscs, trawled by the Belgian fishery in the Bay of Biscay, with similar representatives from adjacent waters: part II. *Neptunea*, **8**(3): 1-28.

Nolf, F. & Kreps, J.-P., 2010. Comparison of some interesting molluscs, trawled by the Belgian fishery in the Bay of Biscay, with similar representatives from adjacent waters: part III. *Neptunea*, **9**(1): 1-34.
Nolf, F. & Kreps, J.-P., 2011. Comparison of some interesting molluscs, trawled by the Belgian fishery in the Bay of Biscay, with similar representatives from adjacent waters: part IV. *Neptunea*, **10**(1): 1-32.
Nolf, F. & Kreps, J.-P., 2011. Comparison of some interesting molluscs, trawled by the Belgian fishery in the Bay of Biscay, with similar representatives from adjacent waters: part V. *Neptunea*, **10**(3): 1-32.
Poppe, G.T. & Goto, Y., 1991. *European Seashells* (vol. I). Verlag Christa Hemmen. Wiesbaden. 352 pp.
Poppe, G.T. & Goto, Y., 1993. *European Seashells* (vol. II). Verlag Christa Hemmen. Wiesbaden. 221 pp.
Shetland Islands Council. http://www.shetland.gov.uk/
Smith, S.M. & Heppell, D. , 1991. Checklist of British Marine Mollusca. *National Museum of Scotland Information Series*, n° 11. Edinburgh. 114 pp.
Sneli, J.-A., 1975. *Mollusca Prosobranchia*. Universtetsforlaget. 51 pp.
Sneli, J.-A., Schiøtte, T., Jensen, K.R., Wikander, P.B., Stokland, Ø. & Sørensen, J., 2005. The Marine Mollusca of the Faroes. *Annales Societatis Scientarium Færoensis*, Supplementum XXXXII. Tórshavn. 190 pp.
Tebble, N., 1976. *British Bivalve Seashells. A Handbook for Identification*. 2nd edition. Edinburgh. 212 pp., 12 plates.
Turton, W., 1822. *Conchylia Insularum Brittanicarum. The Shells of the British Islands.* Rodwell & Martin. London. 279 pp. + 20 pls.
Vaught, K.C., 1989. *A classification of the living Mollusca*. American Malacologists. Melbourne, Florida. xii + 189 pp.
Warén, A. 1980. Marine Mollusca described by John Gwyn Jeffreys, with the location of the type material. *Conchological Society of Great Britain and Ireland*. *Special publication*, n° 1: 1-60.
WoRMS. World Register of Marine Species. http://www.marinespecies.org

Lodberrie, Lerwick, Shetland Islands

The United Kingdom and the Shetland Islands

The Shetland Islands

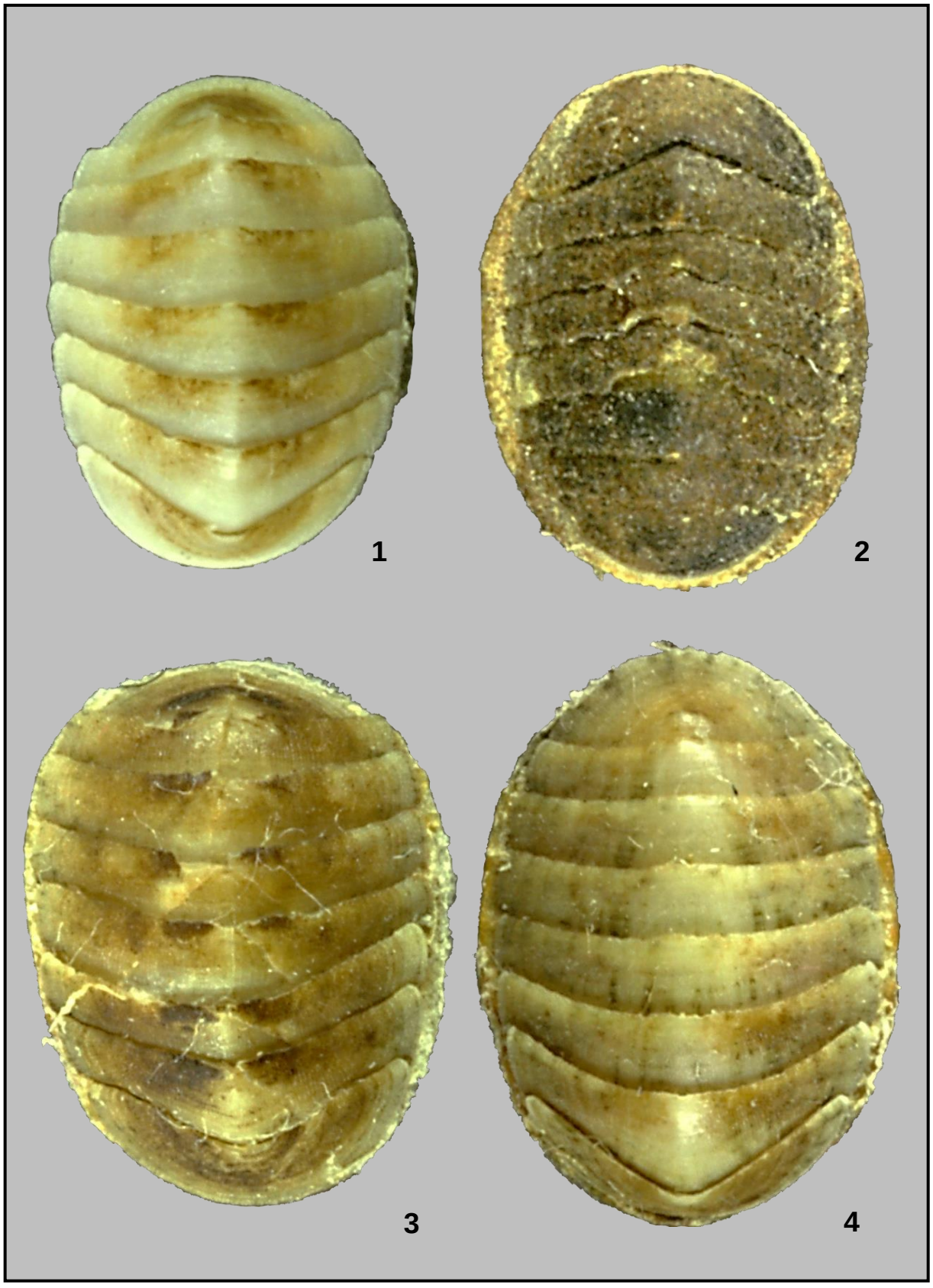


Plate I. Figs 1-4**.** ***Leptochiton asellus*** **(Gmelin, 1791)**; 1: 6.90 mm; 2: 7.45 mm; 3: 8.95 mm; 4: 9.18 mm.

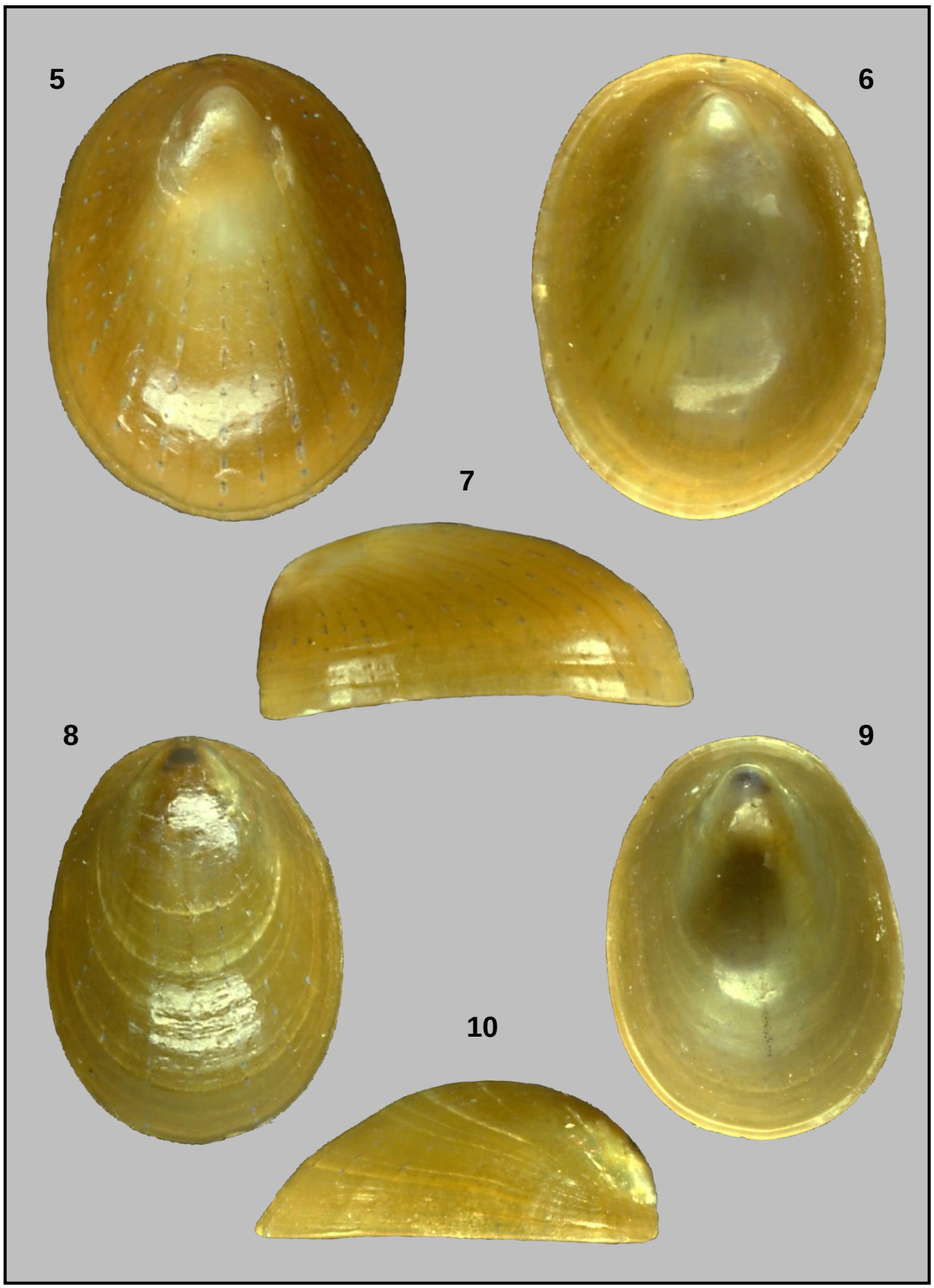


Plate II. Figs 5-10. ***Patella pellucida* Linnaeus, 1758**; 5-7: H. 5.52 mm L. 12.57 mm; 8-10: H. 5.09 mm L. 12.40 mm.

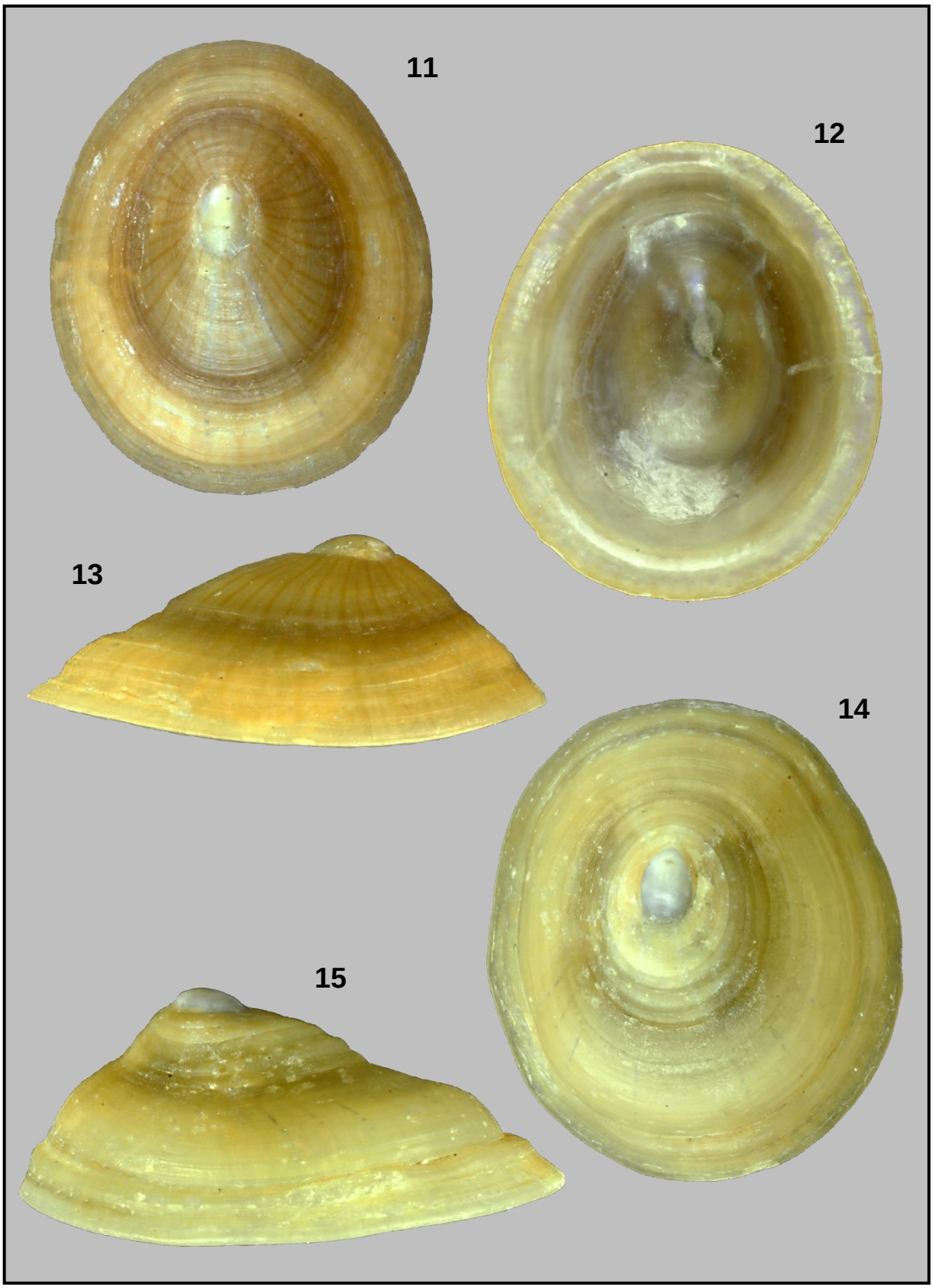


Plate III. Figs 11-15. ***Patella pellucida* var. laevis Pennant, 1777**; 11-13: H. 8.22 mm L. 20.82 mm; 14-15: 10.67 mm L. 25.24 mm.

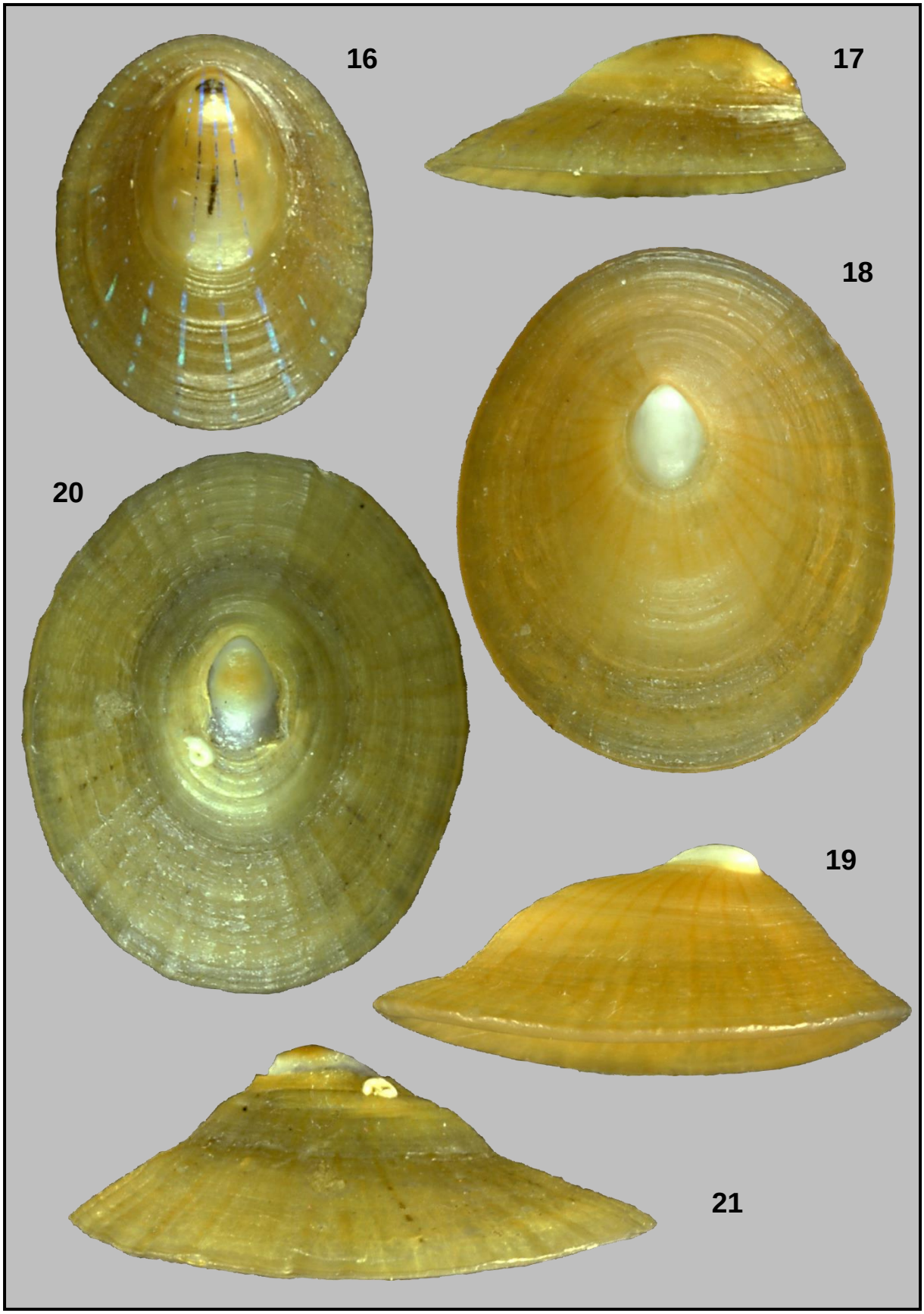


Plate IV. Figs 16-21. ***Patella pellucida* var. laevis Pennant, 1777**; 16-17: H. 3.73 mm L. 10.89 mm; 18-19: H. 7.01 mm L. 18.74 mm; 20-21: H. 6.97 mm L. 19.36 mm.

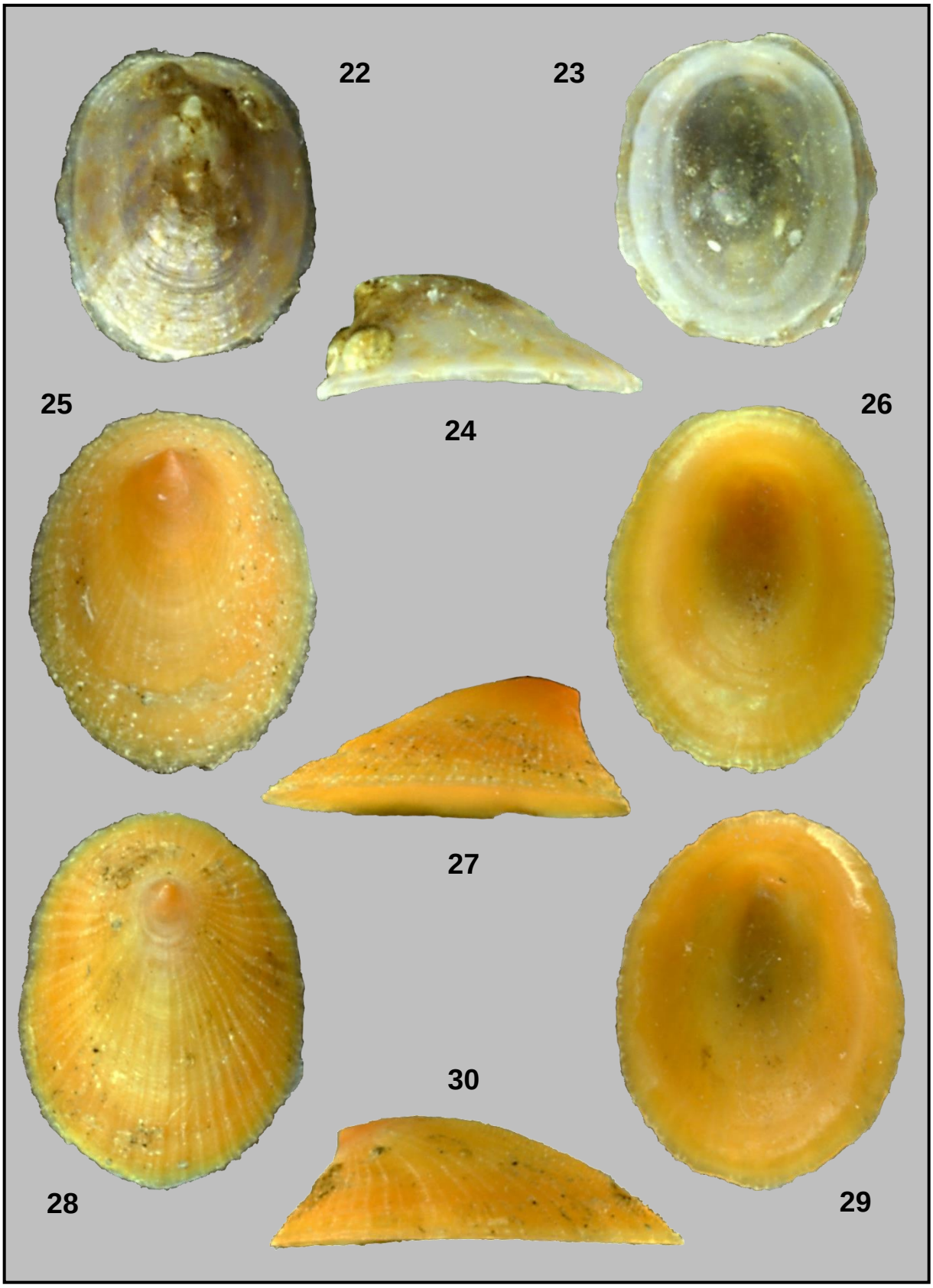


Plate V. Figs 22-24. ***Tectura virginea* (O.F. Müller, 1776)**; 22-24: H. 1.86 mm L. 4.56 mm. Figs 25-30: ***Iothia fulva* (O.F. Müller, 1776**); 25-27: H. 2.26 mm L. 6.49 mm; 28-30: H. 2.40 mm L. 6.69 mm.

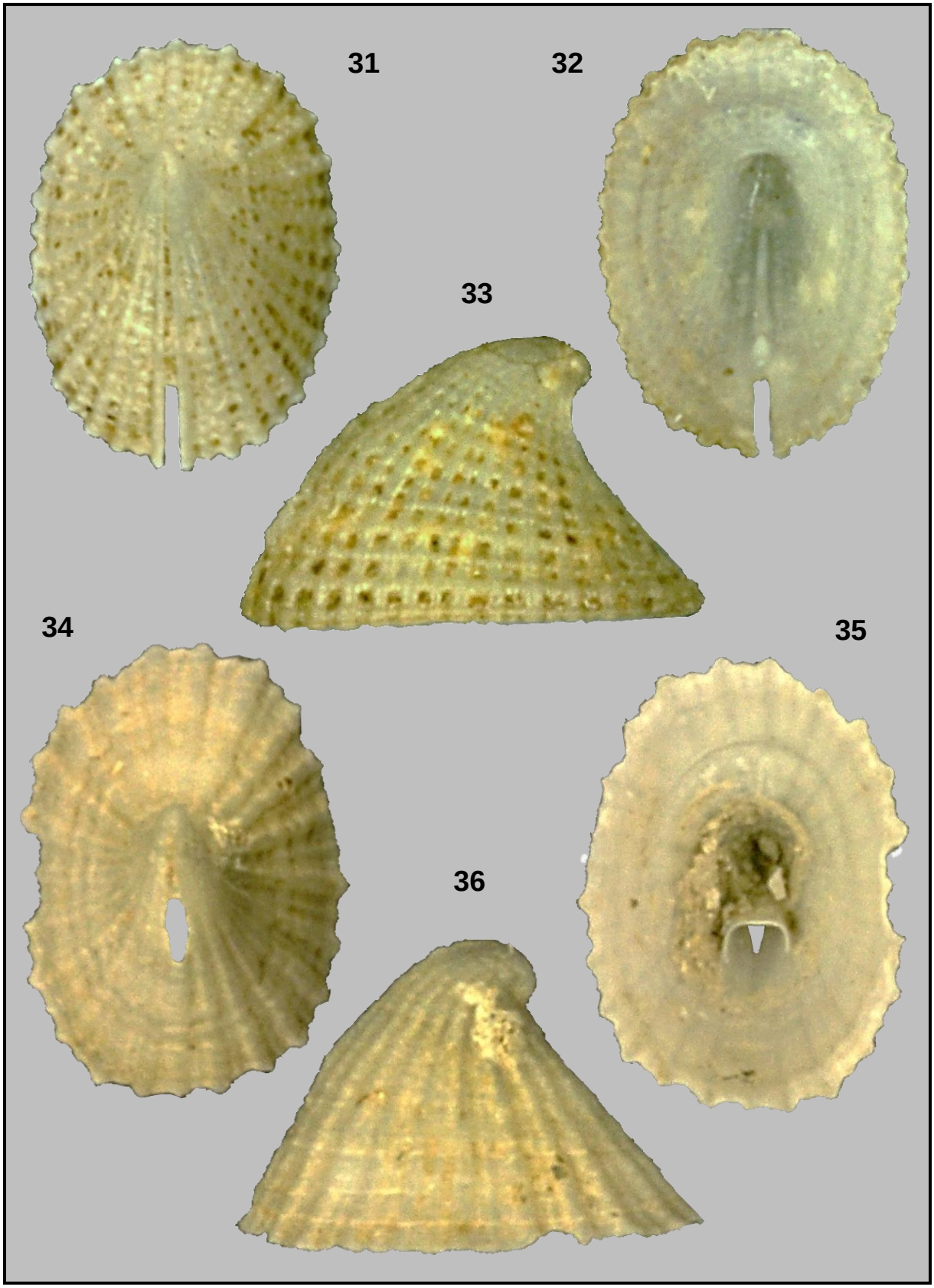


Plate VI. Figs 31-33. ***Emarginula fissura* (Linnaeus, 1758)**. H. 3.45 mm L. 6.21 mm;
Figs 34-36. ***Puncturella noachina* (Linnaeus, 1771)**. H. 4.17 mm L. 7.49 mm.

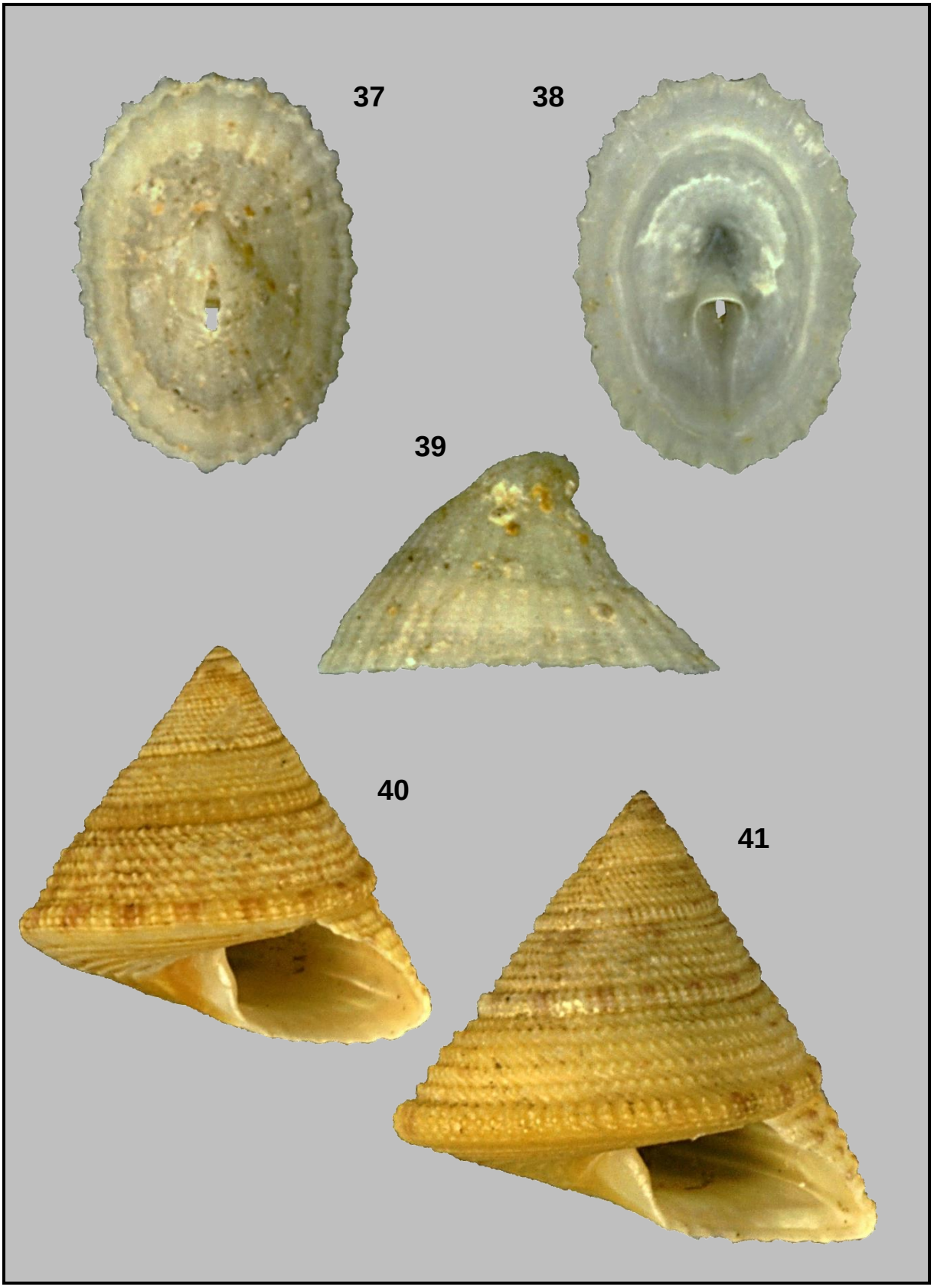


Plate VII. Figs 37-39. ***Puncturella noachina* (Linnaeus, 1771)**. H. 3.94 mm L. 6.33 mm;
Figs 40-41. ***Clelandella miliaris* (Brocchi, 1814)**. 40: H. 9.53 mm L. 10.07 mm; 41: H. 10.66 mm L. 11.13 mm.

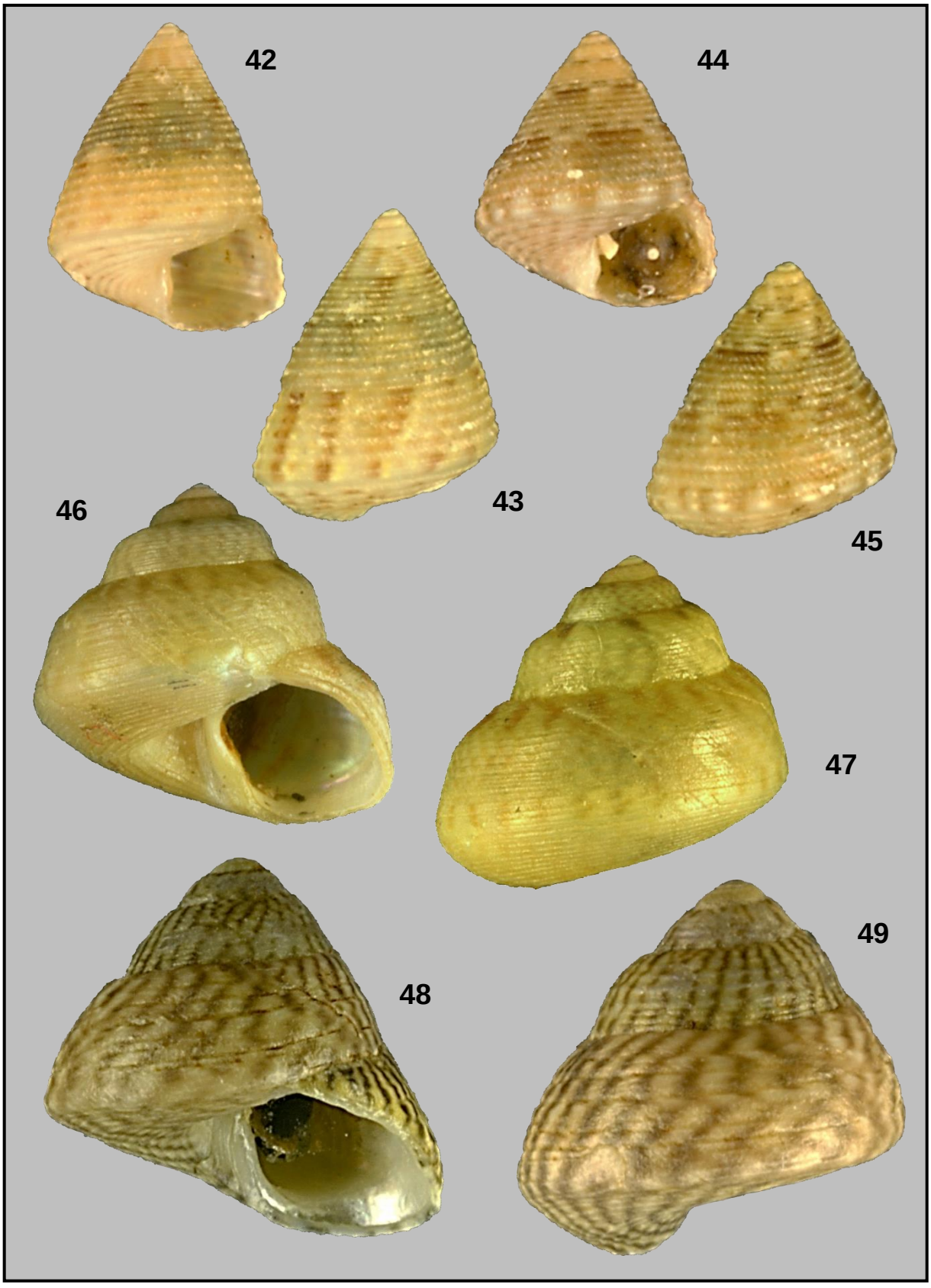


Plate VIII. Figs 42-45. ***Jujubinus montagui* (W. Wood, 1828)**; 42-43: H. 5.26 mm L. 4.63 mm; 44-45: H. 4.49 mm L. 4.14 mm;
Figs 46-47: ***Gibbula tumida* (Montagu, 1803)**. H. 8.74 mm L. 8.98 mm;
Figs 48-49: ***Gibbula cineraria* (Linnaeus, 1758)**. H. 10.10 mm L. 11.25 mm.

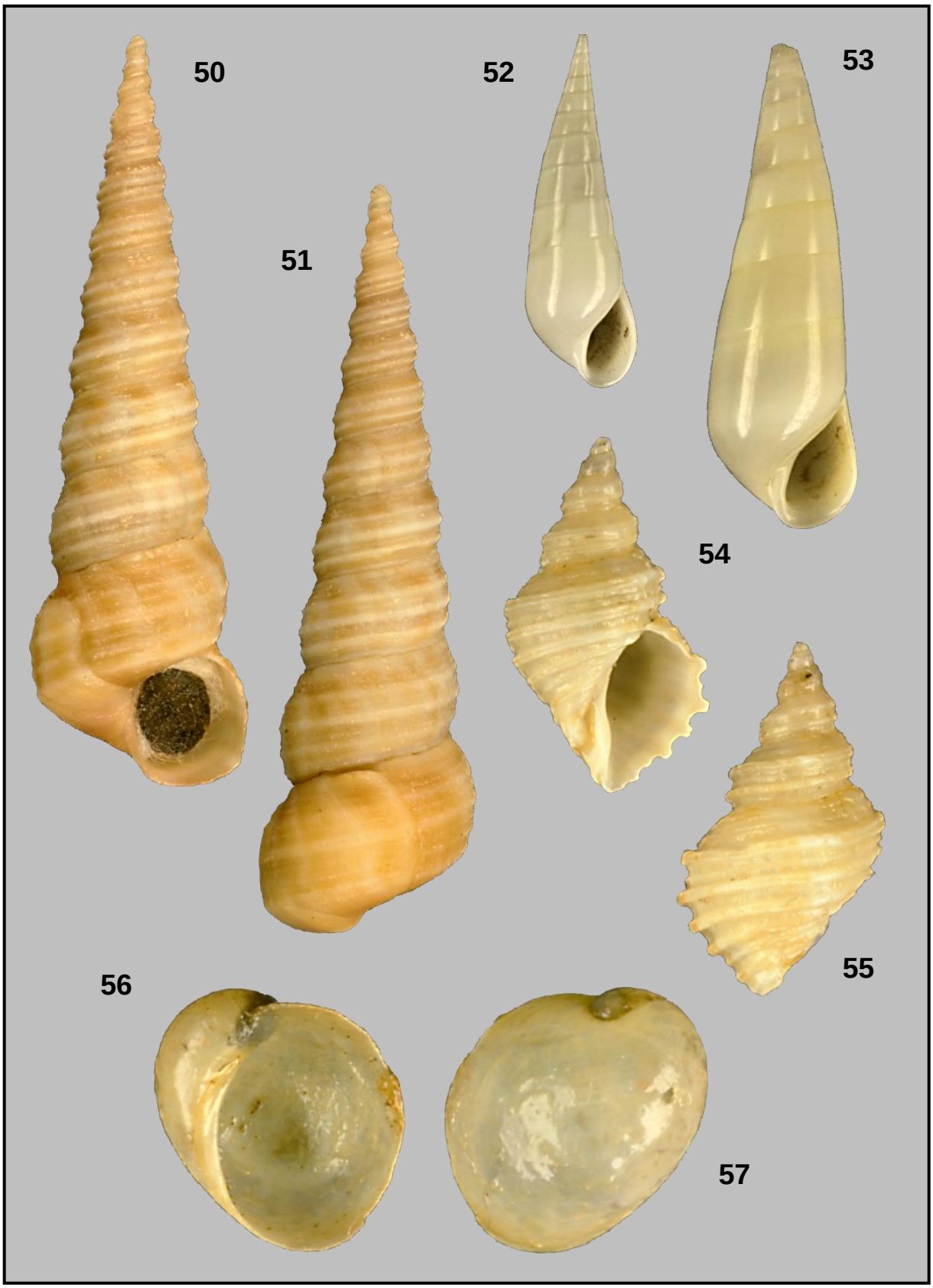


Plate IX. Figs 50-51. ***Turritella communis* Risso, 1826.** 33.51 mm;
Figs 52-53. ***Melanella alba* (da Costa, 1778)**; 52: 13.70 mm; 53: 17.65 mm;
Figs 54-55. ***Trichotropis borealis* Broderip & Sowerby, 1829**. 9.57 mm;
Figs 56-57. ***Limneria undata* Brown in Smith, 1839**. H. 6.07 mm L. 5.14 mm.

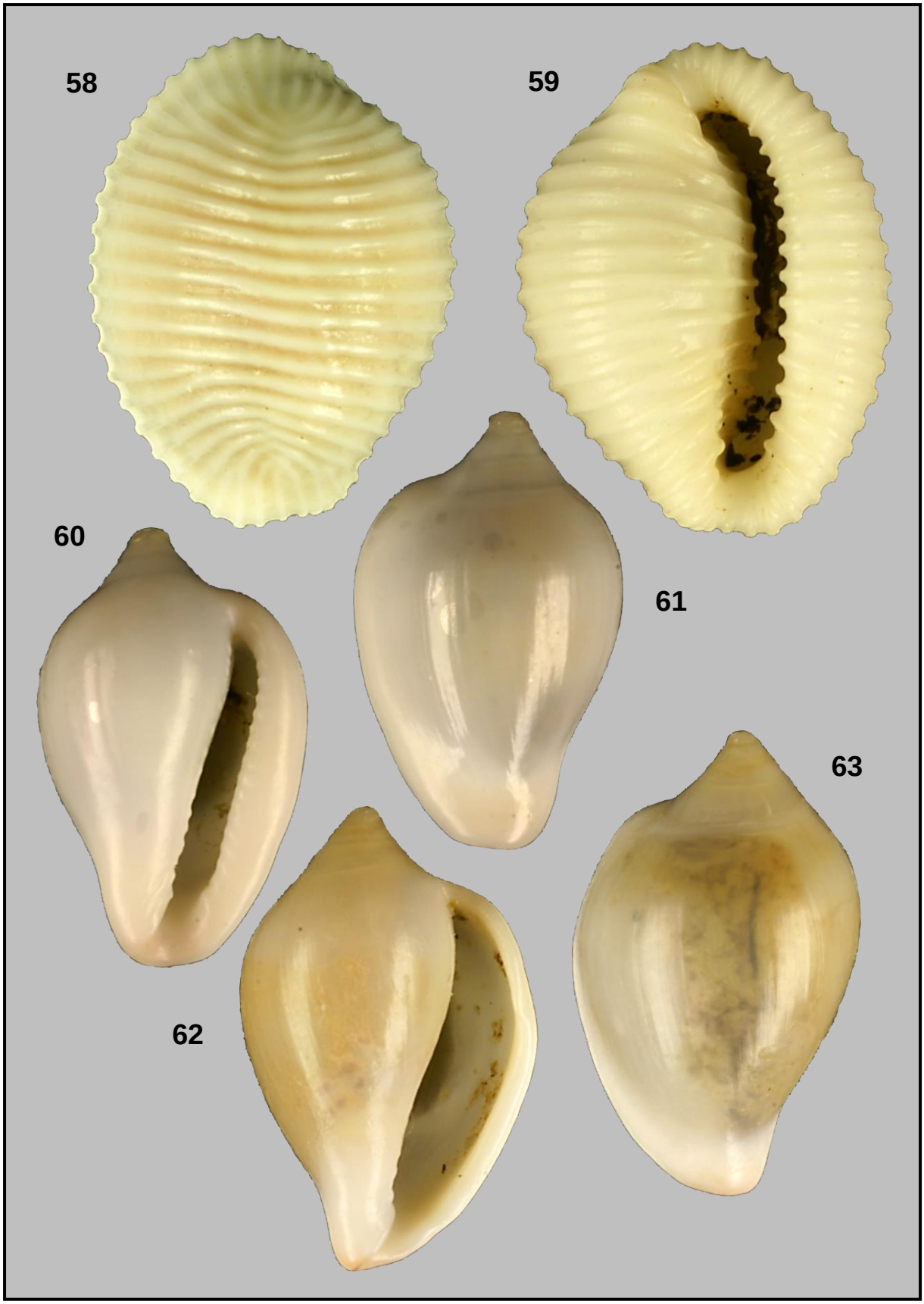


Plate X. Figs 58-59. ***Trivia arctica* (Pulteney, 1799)**. 12.25 mm;
Figs 60-63. ***Erato voluta* (Montagu, 1803)**; 60-61: 9.48 mm; 62-63: 10.21 mm.

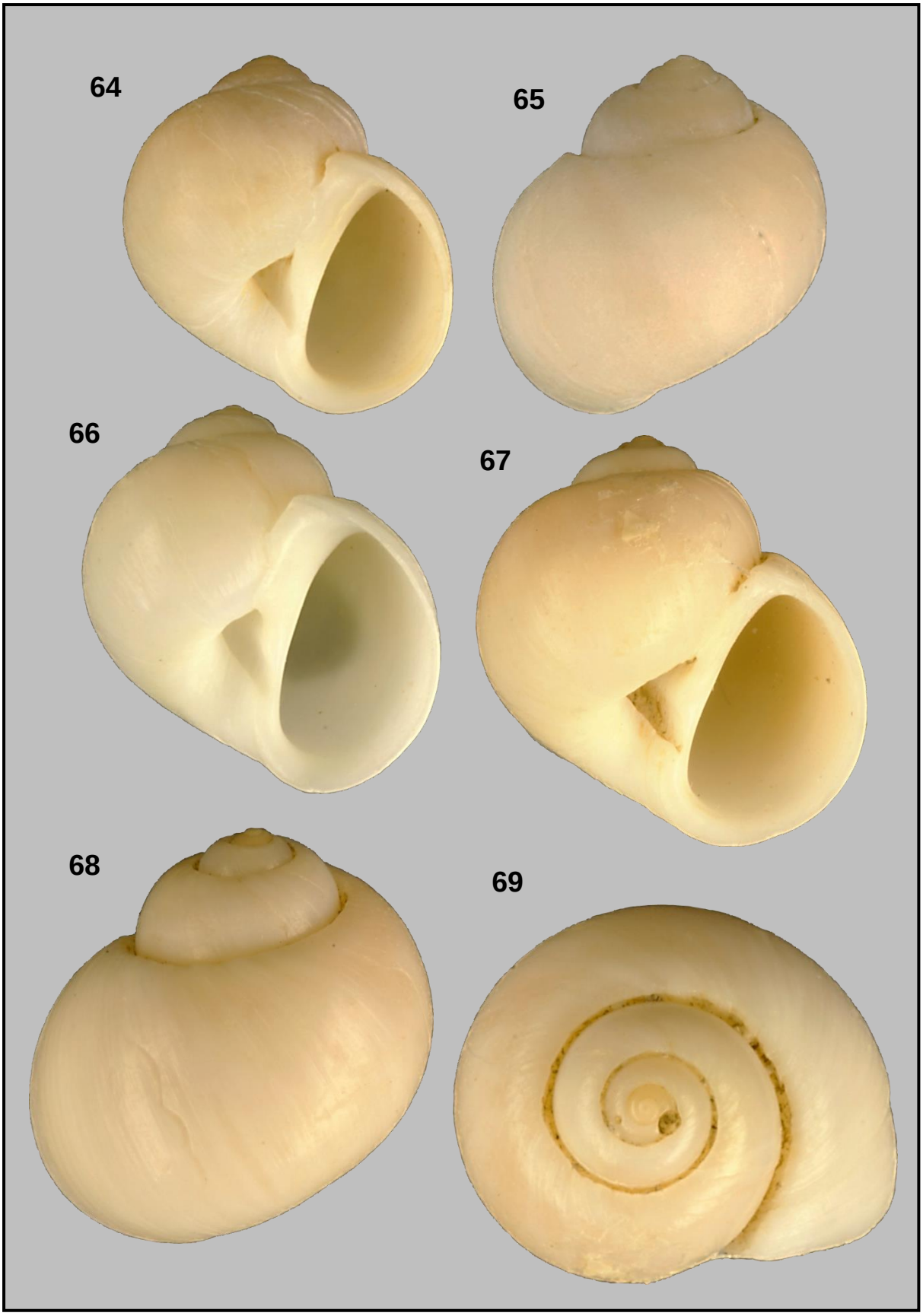


Plate XI. Figs 64-69. ***Lunatia montagui* (Forbes, 1838)**; 64-65: H. 8.95 mm L. 8.35 mm; 66: H. 10.15 mm L. 9.14 mm; 67-69: H. 12.30 mm L. 11.42 mm.

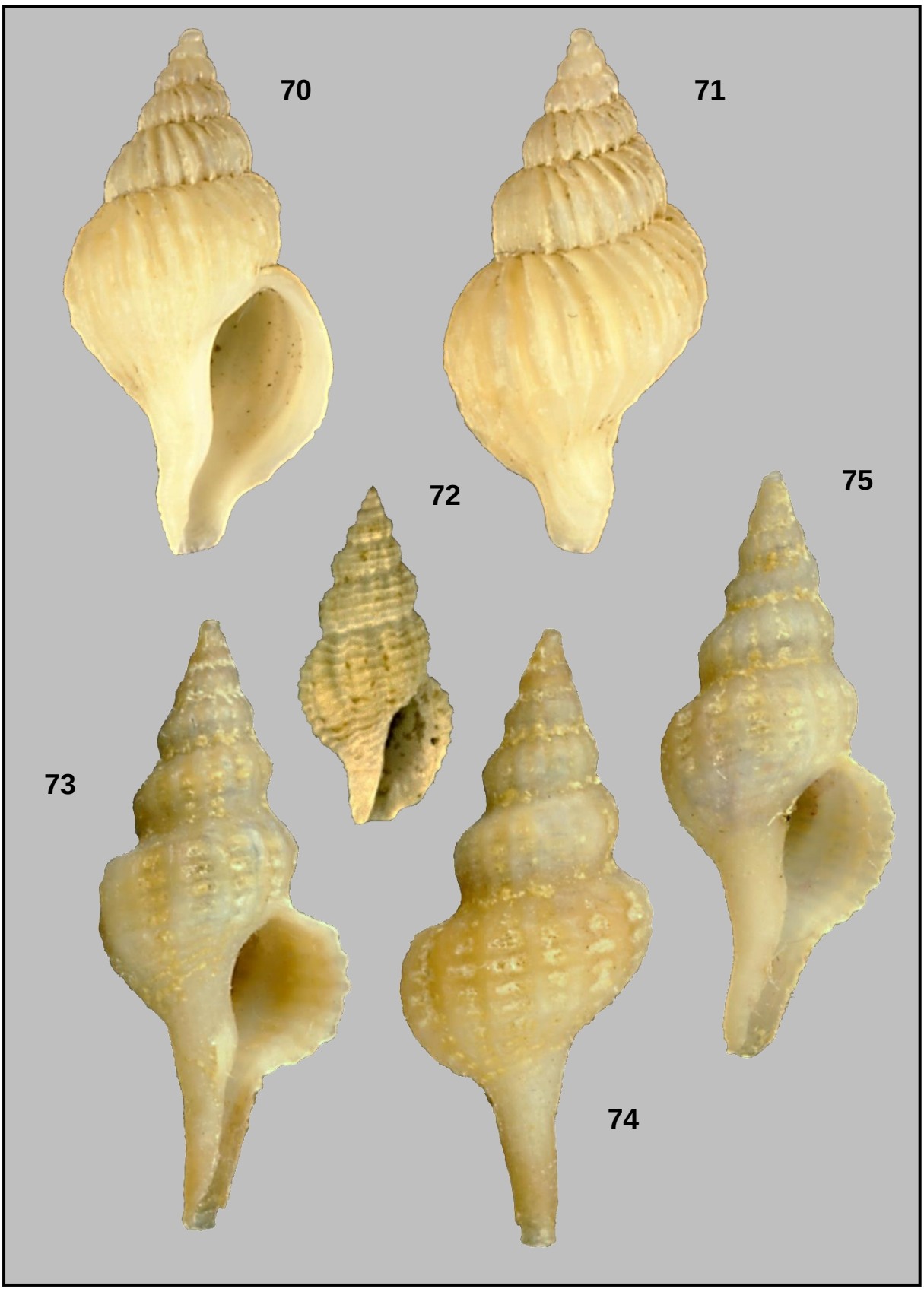


Plate XI. Figs 70-71. ***Boreotrophon truncatus* (Strøm, 1768)**. 12.59 mm;
Fig. 72. ***Ocinebrina aciculata* (Lamarck, 1822)**. 6.90 mm;
Figs 73-75. ***Trophonopsis muricata* (Montagu, 1803)**; 73-74: 15.48 mm; 75: 14.77 mm.

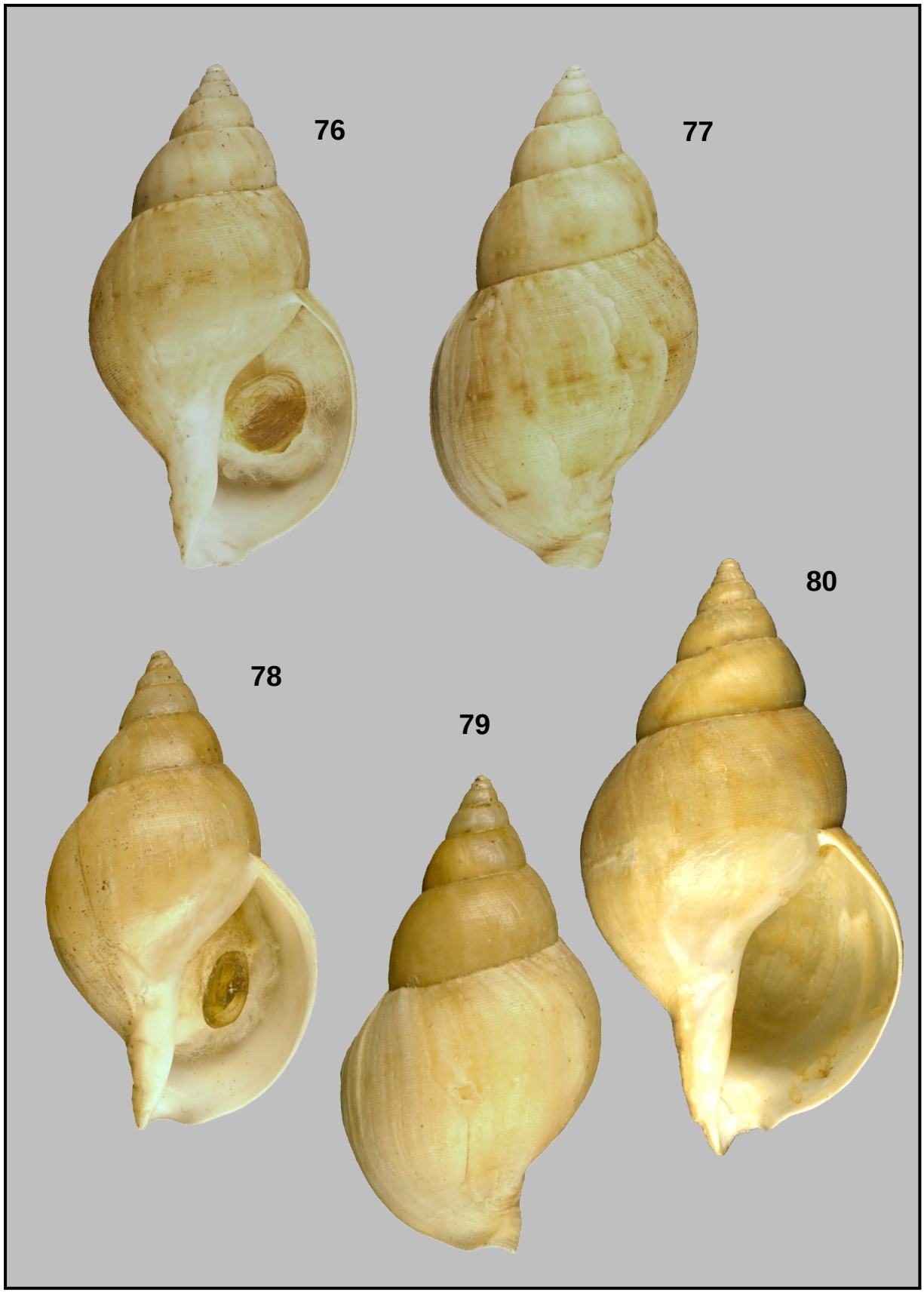
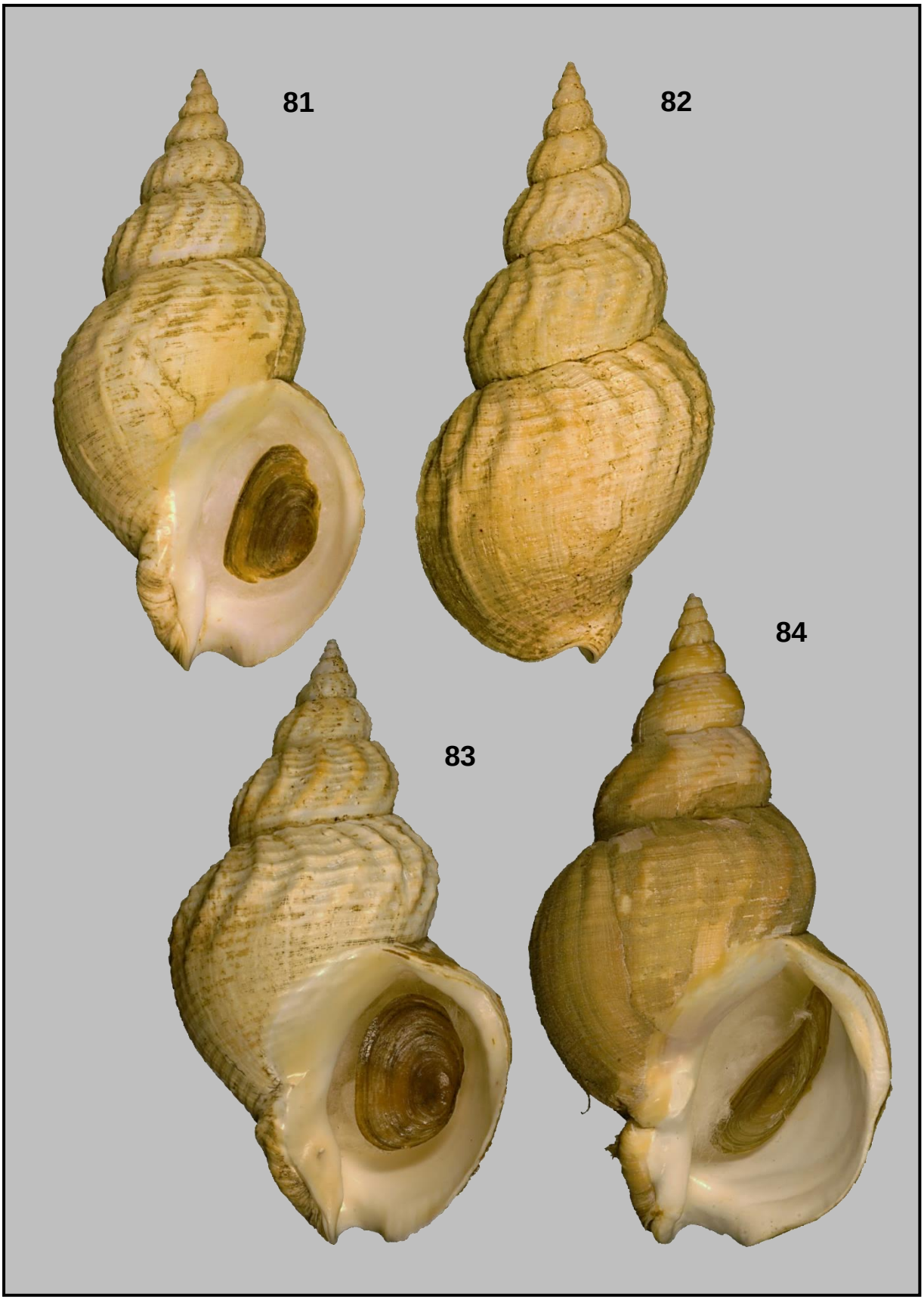
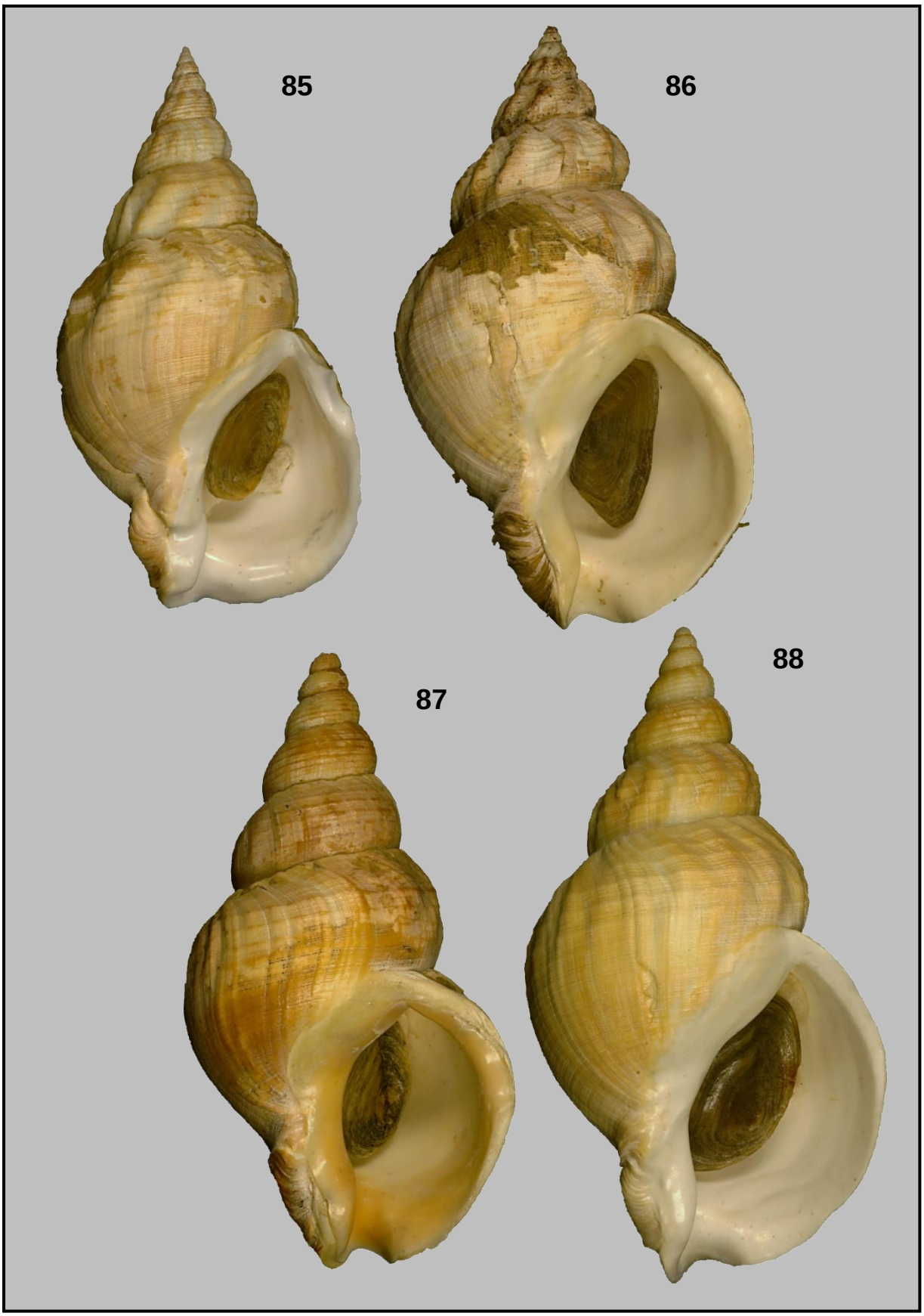


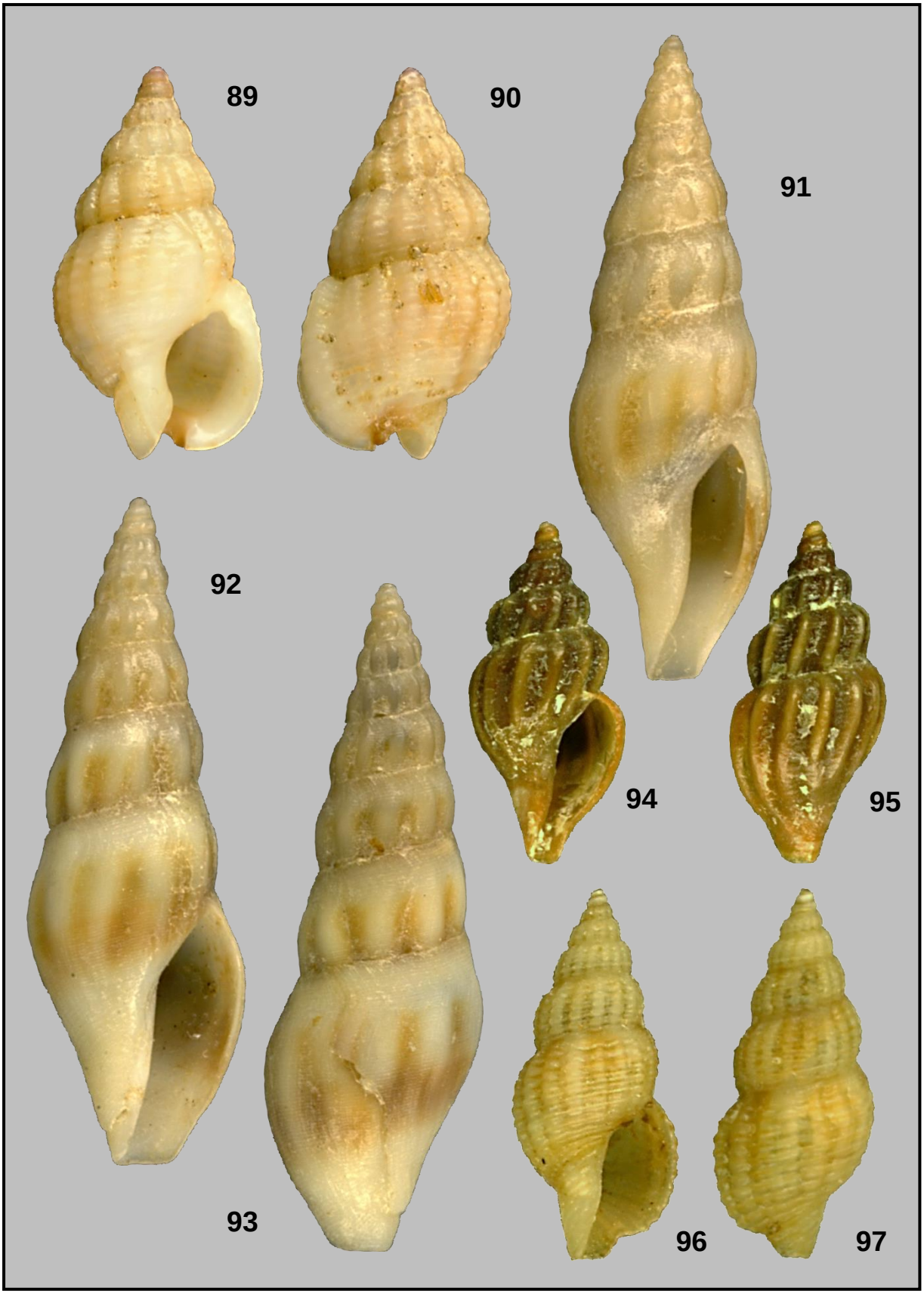
Plate XII. Figs 76-80. ***Buccinum humphreysianum*** **Bennet, 1824**; 76-77: 46.81 mm; 78-79: 45.70 mm; 80: 53.14 mm



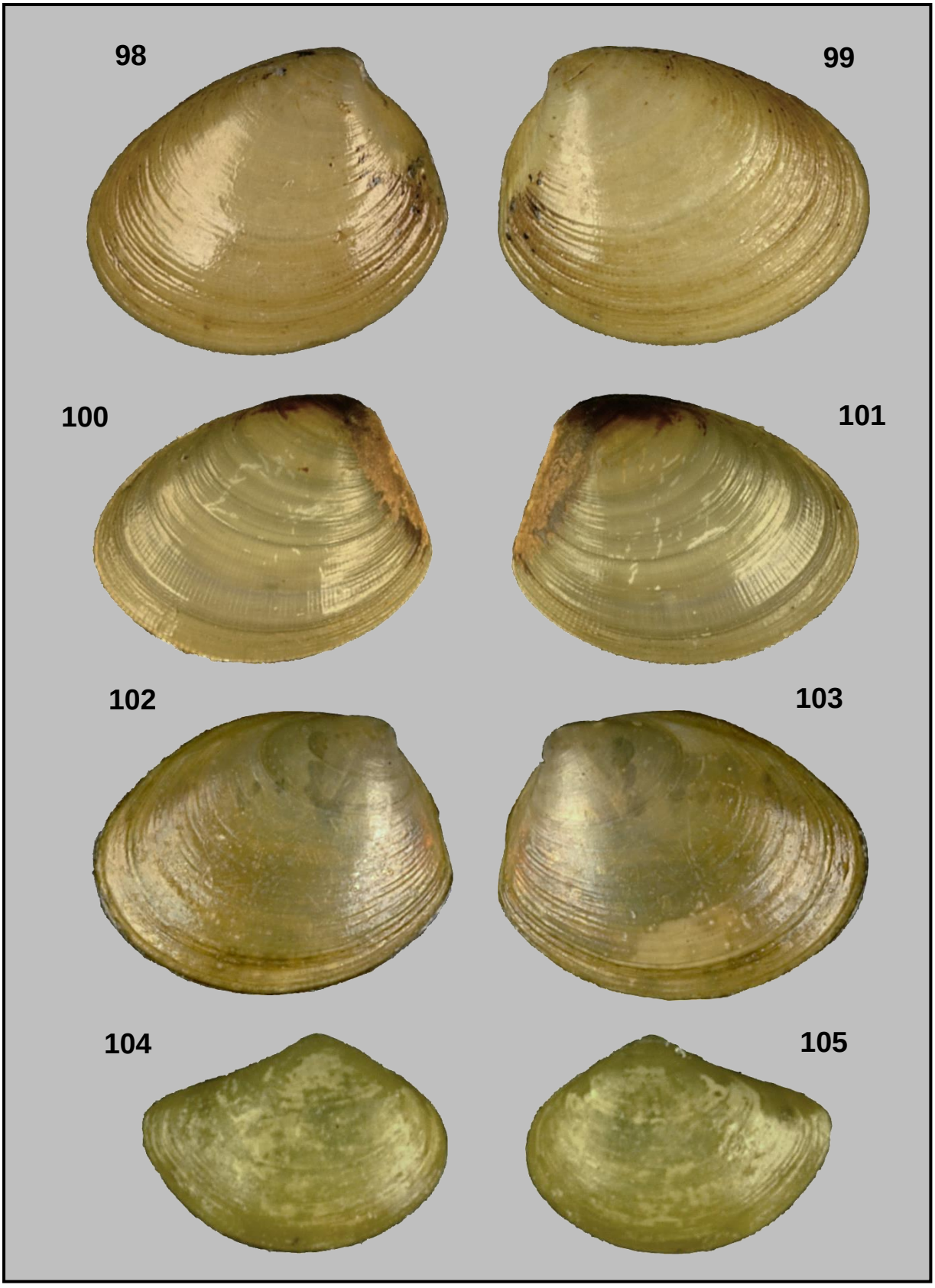
Pl. XIII. Figs 81-84. ***Buccinum undatum*** **Linnaeus, 1758**; 81-82: 102.93 mm; 83: 105.91 mm; 84: 117.19 mm.



Pl. XIV. Figs 85-88. **Buccinum undatum Linnaeus, 1758**; 85: 113.29 mm; 86: 122.67 mm; 87: 121.96 mm; 88: 130.26 mm.



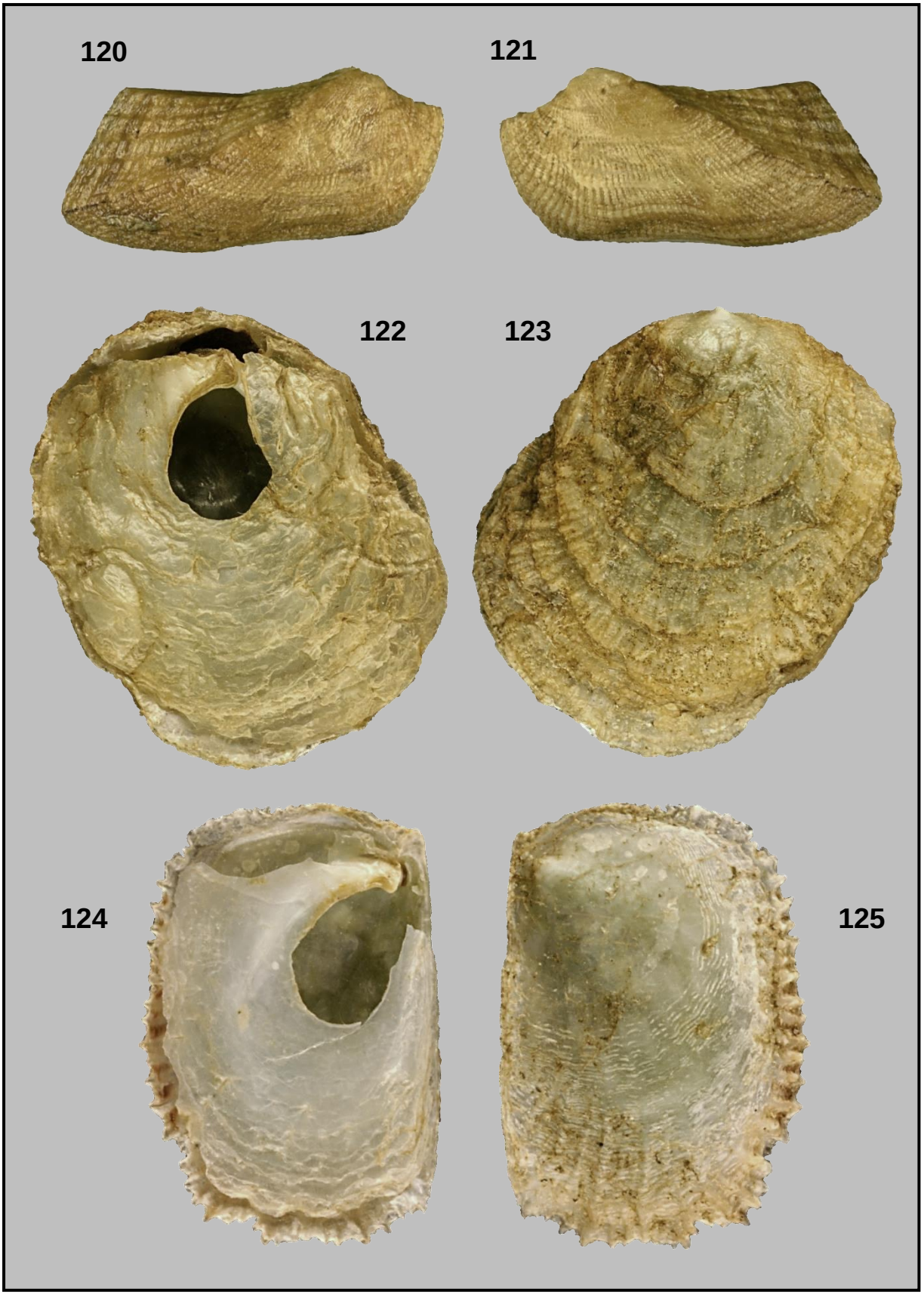
Pl. XV. Figs 89-90. ***Nassarius incrassatus* (Strøm, 1768).** 11.57 mm;
Figs 91-93. ***Bela nebula* (Montagu, 1803)**; 91: 16.18 mm; 92-93: 16.74 mm;
Figs 94-95. ***Propebela rufa* (Montagu, 1803)**. 8.19 mm;
Fig. 96-97. ***Raphitoma leufroyi* (Michaud, 1827)**. 9.66 mm.



Pl. XVI. Figs 98-101. ***Nucula nucleus* (Linnaeus, 1758)**; 98-99: H. 7.79 mm L. 9.58 mm; 98: LV; 99: RV; 100-101: H. 6.45 mm L. 7.72 mm; 100: LV; 101: RV.
Figs 102-103. ***Ennucula tenuis* (Montagu, 1808)**. H. 7.54 mm L. 9.33 mm; 102: LV; 103: RV.
Figs 104-105. ***Yoldiella philippiana* (Nyst, 1845)**. H. 3.79 mm L. 5.24 mm; 104: RV; 105: LV.

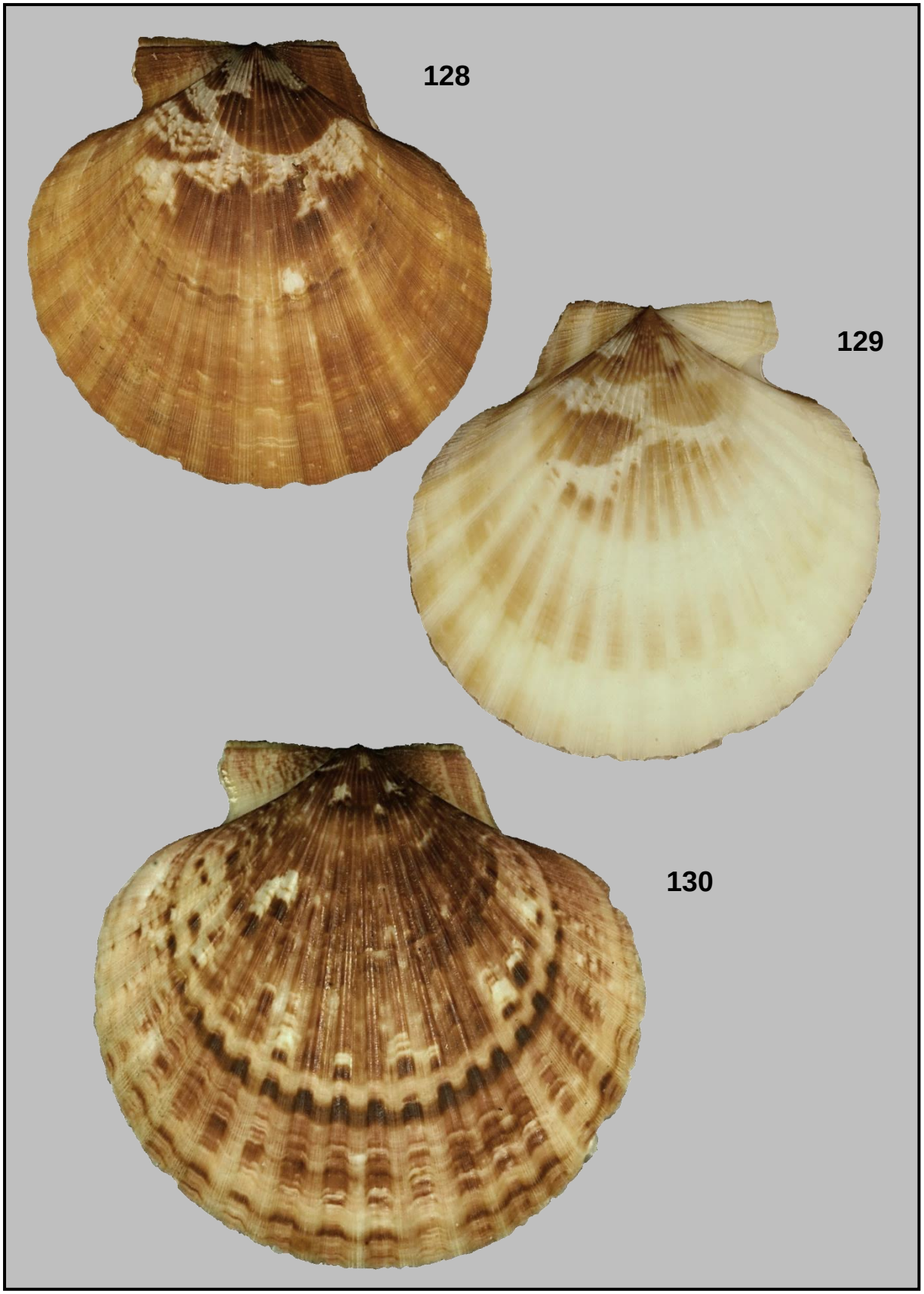
Pl. XVII. Figs 106-111. ***Musculus subpictus* (Cantraine, 1835)**; 106-109: H. 6.85 mm L. 10.30 mm; 106: RV; 107: LV; 108: view of the inside of the LV; 109: view of the inside of the RV; 110-111: H. 6.79 mm L. 10.82 mm; 110: RV; 111: LV;
Figs 112-113. ***Modiolula phaseolina* (Philippi, 1844)**. H. 7.11 mm L. 11.47 mm; 112: RV; 113: LV.

Pl. XVIII. Figs 114-119. ***Modiolula phaseolina* (Philippi, 1844)**; 114-115: H. 7.11 mm L. 11.47 mm; 114: RV; 115: LV; 116-119: H. 8.68 mm L. 14.37 mm; 116: RV; 117: LV; 118: inside view of the LV; 119: inside view of the RV.



Pl. XIX. Figs 120-121. ***Arca tetragona* Poli, 1795**. H. 12.11 mm L. 22.23 mm; 120: RV; 121: LV; Figs 122-125. ***Monia patelliformis* (Linnaeus, 1767)**; 122-123: H. 38.12 mm L. 34.14 mm; 122: RV; 123: LV; 124-125: H. 17.04 mm L. 24.33 mm; 124: RV; 125: LV.

Pl. XX. Figs 126-127. ***Pecten maximus* (Linnaeus, 1758)**. H. 138.66 mm L. 162.79 mm; 126: LV; 127: RV.



Pl. XXI. Figs 128-130. ***Aequipecten opercularis* (Linnaeus, 1758)**; 128-129: H. 72.53 mm L. 73.99 mm; 128: LV; 129: RV; 130: H. 81.71 mm L. 85.32 mm. LV.

Pl. XXII. Figs 131-132. ***Aequipecten opercularis* (Linnaeus, 1758)**; 131: 95.87 mm L. 103.90 mm. LV; 132: H. 94.15 mm L. 98.99 mm. LV.