

A new name for a large *Phyllonotus* species from the Dominican Republic, Greater Antilles

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ABSTRACT A replacement name for *Murex asperrimus* Lamarck 1822 is provided as Lamarck did not realize that the name was preoccupied by *Murex asperrimus* Gmelin, 1791, and thus invalid. The replacement name, *Phyllonotus feliciae* Berschauer & Petuch n. sp., is endemic to the island of Hispaniola; a description and illustrations of recently collected specimens of this rare and distinctive species are provided.

KEY WORDS Muricidae, *Phyllonotus feliciae*, *Murex asperrimus*, Caribbean Molluscan Province, Antillean Subprovince, Hispaniolan Infraprovince, Hispaniola Island

INTRODUCTION

Murex asperrimus Lamarck, 1822, which was first illustrated by Kiener (1881), was originally thought by the senior author to be the same shell as the muricid which is the subject of this paper (Berschauer 2024). Like many mollusks named in that era, it was only given the general locality of “West Indies” in its description. The actual locality of this large and impressive taxon was never published, and it became a lost taxon. Since it was not commonly known, and recent specimens had not been found for study, Abbott synonymized Lamarck’s lost taxon with *Phyllonotus pomum* (Gmelin, 1791) (Abbott, 1974). Recently, ten specimens of this lost taxon were live collected in the Dominican Republic, island of Hispaniola. The senior author published a short article in an effort to remove the taxon from synonymy, and published a photograph of Lamarck’s syntype from MHNG No. 51826, together with Kiener’s

illustration, and a photograph of a recent specimen (Berschauer 2024).

However, shortly after publishing the article on the rediscovery of this lost taxon, the senior author was informed that the name *asperrimus* was a preoccupied name as it had previously been used to describe another muricid by Gmelin in 1791 (Roland Houart, personal communication). Additionally, the syntype chosen from the Lamarckian Collection in Geneva does not match the illustration of the taxon published by Kiener, which makes *Murex asperrimus* Lamarck, 1822 a *nomum dubium*. This large Caribbean muricid is presently without a name, thus the authors name this as a new species.

This West Indian muricid is the ninth *Phyllonotus* species found in the tropical western Atlantic (Petuch & Berschauer, 2021). The other eight species include: *Phyllonotus pomum* (Gmelin, 1791), a widespread species

that ranges from North Carolina to the northern Caribbean Sea (Plate 2, Figure A); *Phyllonotus oculatus* (Reeve, 1845), the most widespread western Atlantic species, ranging from Florida and the Gulf of Mexico south to central Brazil (it is the only *Phyllonotus* species in Brazil) (Plate 3, Figure D); *Phyllonotus margaritensis* (Abbott, 1958), confined to northern Colombia and the Gulf of Venezuela, the entire coast of Venezuela, and the Venezuelan offshore islands (erroneously referred to as *P. globosus*, which is a Pliocene fossil (Plate 3, Figure A); *Phyllonotus mexicanus* (Petit de la Saussaye, 1852), confined to the coastal lagoons of Yucatan, Mexico (Plate 2, Figure C); *Phyllonotus whymani* Petuch & Sargent, 2011, confined to the deep water areas off the Dry Tortugas, Florida and the outer edge of the western Florida continental shelf (Plate 2, Figure B); *Phyllonotus guyanensis* Garrigues & Lamy, 2016, confined to the areas off Guyana, Suriname, French Guiana, and Amapá State, Brazil (Plate 3, Figure B); *Phyllonotus salutensis* Garrigues & Lamy, 2016, confined to French Guiana (Plate 3, Figure C); and *Phyllonotus bellettii* Petuch, Berschauer, & Powell, 2024, confined to Martinique and Guadeloupe Islands of the French West Indies (the authors' review of a recent posting on WoRMS synonymizing this taxon with *Phyllototus pomum* shows that the synonymy is not based on a comparison with actual *P. pomum* specimens from the northern Caribbean, and therefore cannot be taken as scientifically valid - hence *P. bellettii* is considered the valid name for that species) (Plate 3, Figure E).

Phyllonotus pomum and *P. margaritensis* are known to engage in communal spawning, with as many as 50 females laying eggs together in one large mass (Radwin & Chamberlin 1973;

Swanson 2004; Edward J. Petuch, personal observation). *Phyllonotus* in the Caribbean are known to have direct development, with an encapsulated veliger stage, which is unable to disperse until after metamorphosis into a crawl-away hatchling snail (D'Asaro 1970; Radwin & Chamberlin 1973). Accordingly, there are coastal species and isolated island species of *Phyllonotus* throughout the Caribbean. The systematics and biogeography of the genus *Phyllonotus* in the western Atlantic was discussed in detail in the excellent paper by Garrigues & Lamy (2016), which illustrates each species named to that date and discusses the variability within the various species of the complex. Biogeographically, this new species is endemic to the Hispaniolan Infraprovince (a localized "evolutionary hot-spot") of the Antillean Subprovince, in the Caribbean Molluscan Province (Petuch & Berschauer, 2021).

SYSTEMATICS

Class	Gastropoda Cuvier, 1795
Subclass	Caenogastropoda Cox, 1960
Order	Neogastropoda Wenz, 1938
Superfamily	Muricoidea Rafinesque, 1815
Family	Muricidae Rafinesque, 1815
Subfamily	Muricinae Rafinesque, 1815
Genus	<i>Phyllonotus</i> Swainsin, 1833

Phyllonotus feliciae Berschauer & Petuch,
new species
(Plate 1, Figures A-F; Plate 2, Figure D)

Description. Shell average size for genus averaging 80 mm in length, broad, inflated, with rounded shoulder and sloping subsutural area; body whorl highly inflated, broad, slightly rectangular in shape; protoconch consisting of two whorls, light-brown to light-gold in color;

spire proportionally high compared to congeners, subpyramidal; siphonal canal broad, recurved posteriorly; body whorl and spire whorls with 3 large, thick varices per whorl; varices recurved laterally; intravarical areas with 1 thick, prominent, knobbed longitudinal rib; varices ornamented with 14 to 17 low flattened spines with anterior 2 or 3 being largest in size; body whorl encircled with 10 to 12 heavy spiral cords, alternating with 1 smaller cord in-between larger cords, each smaller cord with 2 fine cords of slightly raised scales on either side, giving shell highly sculptured appearance; spiral cords strongly ornamented with microsculpture composed of elongated raised scales, giving shell rough texture; aperture almost round, average size for genus; edge of lip with 10 to 12 large pointed teeth along peristome; parietal shield proportionally average size for genus, recurved and attached, cream-yellow in color; columellar part of parietal shield with 7 to 8 low, rounded teeth; siphonal canal ornamented with large spiral threads terminating in 2 to 3 short flattened spines, which are slightly longer than varical spines; shell color of early whorls dark chocolate-brown, body whorl light fawn-brown overlaid with occasional darker brown splotches, varices white-cream; interior of aperture varying from pale lemon-yellow to pale yellow-orange.

Type Material. HOLOTYPE - length 79.8 mm, width 52.5 mm, from off Samana Peninsula, north Dominican Republic, island of Hispaniola, in the Molluscan Collection of the Santa Barbara Museum of Natural History ("SBMNH"), Santa Barbara, California, with the SBMNH catalog number 235868 (Plate 1, Figures A and B); PARATYPES No. 1 to 3, measuring 75.1, 81.8 and 88.6 mm in length, respectively, in the Berschauer Research Collection (Plate 1, Figures C, D, and E; Plate 2,

Figure D); PARATYPE No. 4, measuring 77.8 mm in length in the Petuch Research Collection (Plate 1, Figure F); PARATYPES No. 5 to 9 measuring 72.1, 76.7, 77.8, 78.8, and 79.8 mm in length respectively, in the Berschauer Research Collection.

Type Locality. Live taken in deep water by local fishermen in lobster traps off Samana Peninsula, north Dominican Republic, on the island of Hispaniola.

Range. As far as presently known, the new species is endemic to Hispaniola, but also may occur on the surrounding smaller islands.

Etymology. Named for Felicia Berschauer, wife of the senior author.

Discussion. Of the known species in the genus *Phyllonotus*, the new Dominican species is most similar in general shape, size and coloration to *Phyllonotus mexicanus* (Petit de la Saussaye, 1852). However, *P. mexicanus* is an endemic species confined to the coastal lagoons of Yucatan, Mexico. The new species, however, differs in that *P. mexicanus* has a less inflated body whorl, a white aperture, a thin white parietal shield which lays flat to the body whorl, the shell color of early whorls is tan to light brown, prominent dark brown bands on the varices, less prominent smaller spines, and substantially less microsculpture, giving the shell of *P. mexicanus* an overall smoother appearance.

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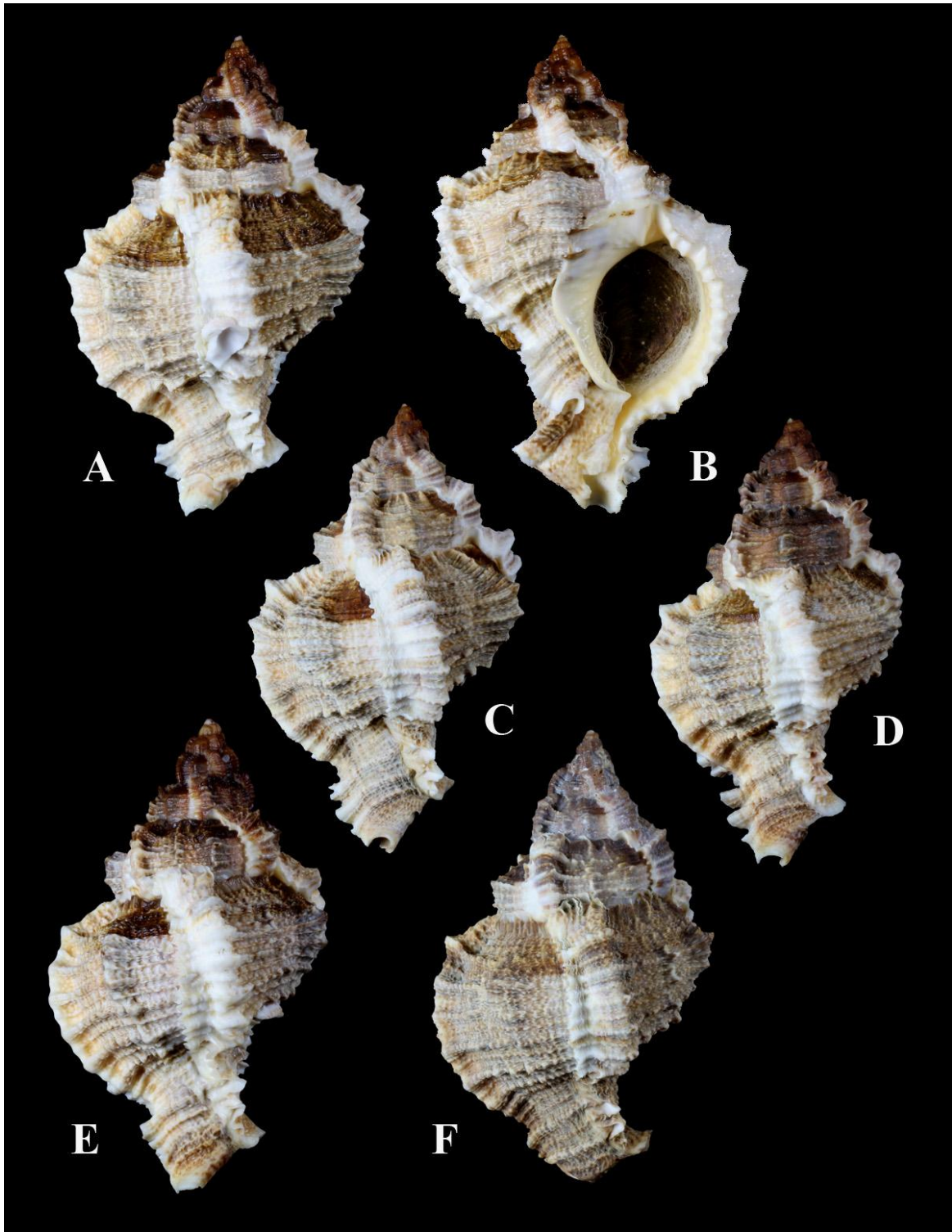


Plate 1. *Phyllonotus feliciae*, Berschauer & Petuch, new species. **A, B** = *Phyllonotus feliciae*, holotype, length 79.8 mm, Dominican Republic, Hispaniola Island; **C** = *Phyllonotus feliciae*, paratype 1, length 75.1 mm, in the Berschauer Collection; **D** = *Phyllonotus feliciae*, paratype 2, length 81.8 mm, in the Berschauer Collection; **E** = *Phyllonotus feliciae*, paratype 3, length 88.6 mm, in the Berschauer Collection; **F** = *Phyllonotus feliciae*, paratype 4, length 77.8 mm, in the Petuch Collection.

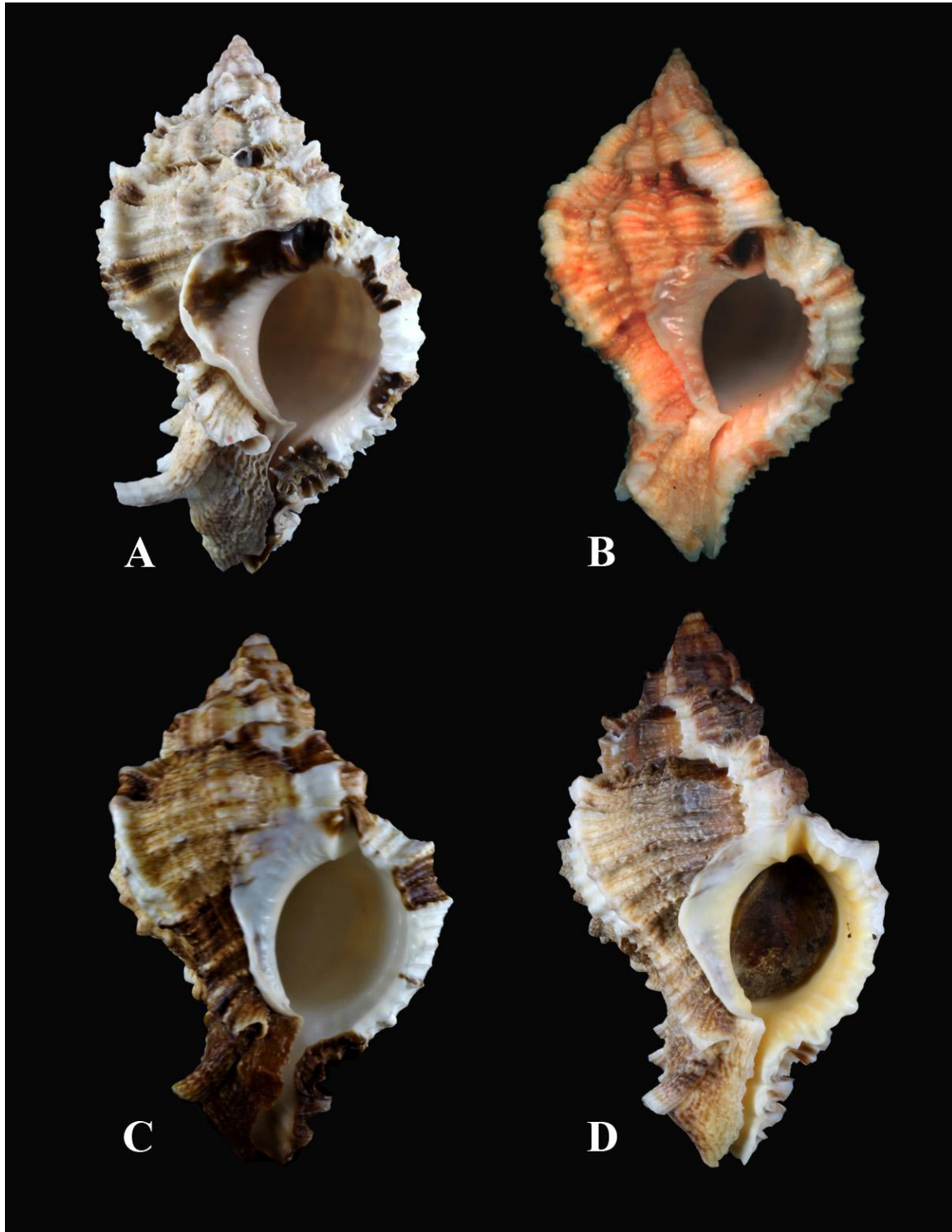


Plate 2. Apertural views of *Phyllonotus feliciae* compared to similar taxa.

A= *Phyllonotus pomum* (Gmelin, 1791), length 84.0 mm, Florida Keys; B= *Phyllonotus whymani* Petuch & Sargent, 2011, holotype, length 43.4 mm, deep water off the Dry Tortugas, Florida; C= *Phyllonotus mexicanus* (Petit de la Saussaye, 1852), length 70.0 mm, Laguna de Yalahau, Yucatan, Mexico; D= *Phyllonotus feliciae* Berschauer & Petuch, new species, paratype 2, length 81.8 mm, in the Berschauer Collection.

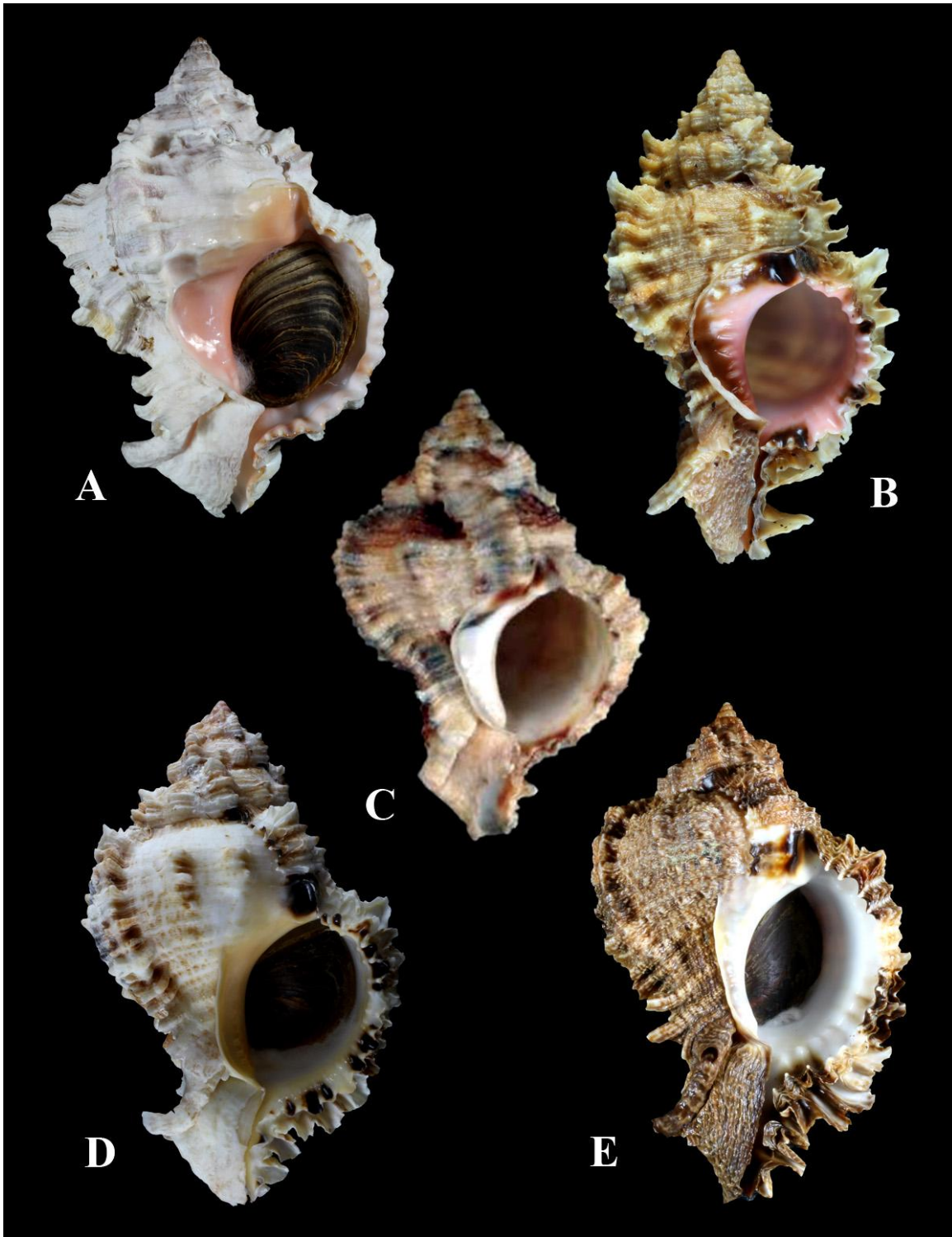


Plate 3. Apertural views of other *Phyllonotus* taxa.

A= *Phyllonotus margaritensis* (Abbott, 1958), length 91.7 mm, Amuay Bay, Venezuela; **B**= *Phyllonotus guyanensis* Garrigues & Lamy, 2016, length 112 mm, off Cayenne, French Guiana; **C**= *Phyllonotus salutensis* Garrigues & Lamy, 2016, holotype, length 53.0 mm, off French Guiana; **D**= *Phyllonotus oculatus* (Reeve, 1845), length 83.0 mm, Salvador, Brazil; **E**= *Phyllonotus bellettii* Petuch, Berschauer, & Powell, 2024, holotype, length 92.0 mm, Guadeloupe Island, French West Indies.