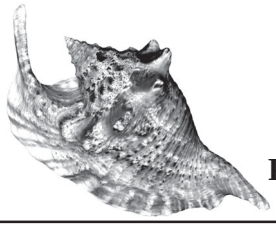

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NEW SPECIES OF CONIDAE FROM NORTHEASTERN BRAZIL (Mollusca:Gastropoda)

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ABSTRACT:

Eight new species of *Conus* found along the Northeast Brazilian Coast are described (type localities parenthetic) : *C. bodarti* sp. nov. (off Alcobaça, Bahia, Brazil); *C. henckesi* sp. nov.(Itaparica Island, Bahia, Brazil); *C.delucai* (off Alcobaça, Bahia, Brazil)*; C. schirrmeisteri* (off Alcobaça, Bahia, Brazil)*; C. baiano* (off Alcobaça, Bahia, Brazil)*; C. cargilei* (off Alcobaça, Bahia, Brazil)*; C. mauricioi* (off Rio do Fogo, Rio Grande do Norte, Brazil); *C. pseudocardinalis* (off Alcobaça, Bahia, Brazil)*.* Six species are found in the Abrolhos Bank area in Bahia State, the largest coral reef complex in Southern Atlantic; one is restricted to the Itaparica Island, also in Bahia; and the last one is found far north, along the coasts of Pernambuco to Rio Grande do Norte States. All new species are illustrated in color, as well as similar species found in the the same area of distribution.

KEYWORDS:

Gastropoda, Conidae, *Conus bodarti, Conus henckesi, Conus delucai, Conus schirrmeisteri, Conus baiano, Conus cargilei, Conus mauricioi, Conus pseudocardinalis*, Abrolhos Archipelago, Alcobaça, Itaparica Island, Mar Grande, Bahia State, Rio do Fogo, Rio Grande do Norte State, Pernambuco State.

INTRODUCTION:

During the recent years some new Conidae were found by expeditions along the Northeast Brazilian Coast. Most of those new species are restricted to coral reef banks around Abrolhos Archipelago. Those banks are geographically isolated and the local fauna is very particular. The reef complex in the southern Bahia State is the most outstanding formation in Southern Atlantic and it is so large (6,000 square kilometers) that can provide unique habitats for many endemic species. During the last past years, many *Conus* were found in that area showing a big diversity of species. Most of them have small ranges and their distributions are restricted to those reefs. *Conus bodarti*, *C.schirrmeisteri* and *C. pseudocardinalis* are restricted to the most far reefs, most of them located on top of seamountains. Petuch (1986) mentioned about the possibility of new findings for this area - what is corroborated in this work. These area is still open for new discoveries, and sure to yeld new species, as soon as material from deeper water is obtained. On this area Dr.E.Petuch had done many researches during the late 70's and found many new species, some on Conidae family (Petuch 1987, 1992a and b, 1993, 1997). Rios (1994) had reported 20 species and subspecies of Conidae to Brazilian Coast; he followed Vink´s (1987a, b, c) classification, and considered some of the forms described herein as new species as being just variations of Caribbean species. Since 2000, diver Alfredo Bodart has doing about 6 or 7 field trips per year to this area and many new species were found. The population for each reef is isolated and so peculiar that no intermediate specimens were found as yet. These Conus were always identified as forms of Caribbean species but never were deeply studied. From this area, six new Conidae are described.

The other two species, *Conus henckesi* and *Conus mauricioi*, are found in another area. *C.henckesi* is restricted to the outside reef on Itaparica Island and it is known since many years and always has been confused with *Conus*

selenae Van Mol, Tursch & Kempf, 1967. *Conus mauricioi* was found by Mr.Mauricio Lima and by A.Bodart on recently years along Pernambuco to Rio Grande do Norte Coast.

Map 1:
Conus mauricioi
Conus henckesi
Conus bodarti, Conus delucai, Conus baiano, Conus cargilei, Conus pseudocardinalis, Conus schirrmeisteri

ABBREVIATIONS:

MZUSP – Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil
MNRJ – Museu Nacional do Rio de Janeiro, Rio de Janeiro, Brazil
MORG – Museu Oceanográfico "Prof. Eliézer de Carvalho Rios", Rio Grande, Brazil
WPC – Willian P. Cargile Collection
CAH – Carlos Alberto Henckes Collection
ACL – André Cordeiro de Luca Collection
MAL – Maurício Andrade Lima Collection
ES – Eduardo Schirrmeister Collection

Family CONIDAE Rafinesque, 1815
Genus *Conus* Linnaeus, 1758

Conus mindanus complex

Conus bodarti sp.nov.
(Plate 1, Fig. A; Plate 8, Figs. H1, P1-P11)

Description: Length: 12 to 16 mm, with convex sides of the body whorl in adult specimens, weak deflection in 1/6 anterior body. Straight-sided spire. Shoulder roundly angulated and nodulose. Body whorl with 12-14 incised lines, starting near the siphonal canal up to middle of the body. Apex yellowish smooth with 2 to 2 1/5 whorls. Spire with 6 up 8 whorls, with medium deep suture, angle 80-85°.Color body red-brown with grey and white marks, 18-20 spiral cords with interrupted brown and white dots, purple mark on the siphonal canal. Some specimens have yellowish marks. White aperture.

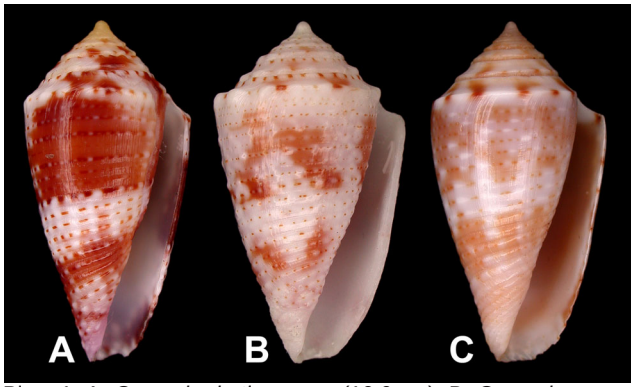

Plate 1: A. *Conus bodarti* sp.nov. (16.6mm); B. *Conus iansa* Petuch, 1979 (15.5mm) from Abrolhos, Bahia State; C. *Conus mindanus* Hwass, 1792 (19.2mm) from Guarapari, Espirito Santo State.

Type Material: All specimens from type locality. Holotype (16.6mm height x 8.0mm width) MZUSP 39.904 (Fig. H1); Patatype 1 (15.2mm height x 7.3mm width) MNRJ 10.186 (Fig.P1); Paratype 2 (14.7mm height x 7.2mm width) MORG 46.537 (Fig.P2); Paratype 3 (15.7mm height x 8.0mm width) MNRJ 10.187 (Fig.P3); Paratype 4 (16.0mm height x 7.8mm width) MZUSP 39.905 (Fig.P4); Paratype 5 (12.6mm height x 6.2mm width) MORG 46.538 (Fig.P5); Paratype 6 (13.1mm height x 6.0 mm width) WPC coll. (Fig.P6); Paratype 7 (12.0mm height x 6.0 mm width) WPC coll. (Fig.P7); Paratype 8 (14.0mm height x 6.6 mm width) WPC coll. (Fig.P8); Paratype 9 (13.9mm height x 7.1 mm width) WPC coll. (Fig.P9); Paratype 10 (15.0mm height x 7.7 mm width) WPC coll. (Fig.P10); Paratype 11 (12.9mm height x 6.3 mm width) WPC coll. (Fig.P11).
Type Locality: 125 km NE Abrolhos Archipelago, off Alcobaça, Bahia State, Brazil (15°50' S, 37°57' W).

Habitat: Lives on rubble and coral sand bottom at 20-35 meters, limited to offshore reefs on southern Bahia State, Brazil, and it is very uncommon.

Etymology: Named after Alfredo Bodart, from Guarapari, Espirito Santo State, who found this and others new species.

Remarks: The shell differs from *C. mindanus* Hwass, 1792 (Plate 1, Fig. c) and *Conus iansa* Petuch, 1979 (Plate 1, Fig. b) in shape, spire angle, aperture and color apex. *Conus iansa* is more wide, has more spiral cords (22 up to 25), and the aperture is widely open near the siphonal canal. *Conus mindanus* is more slender and smoother, with

fewer incised lines near the siphonal canal. Both species live near the continental area, and have not been found on the offshore reefs.

Conus henckesi sp.nov.
(Plate 2, Fig. A; Plate 9, Figs. H1, P1-P11)

Description: Length: 15 to 18 mm, biconical, slightly concave-sided, rather high, stepped spire (about 1/4 of total length), with 6-7 whorls, white with orange nodules, with numerous weak and curved axial threads. Top of the whorls are rather flat. Apex white with 2 whorls. Shoulder angulated and nodulose (about 14-18 nodules). Slightly convex body whorl, with heavy granules placed on 16-18 broad spiral cords. Color shell yellow-orange to red-orange (especially in live specimens), sometimes with pale brown marks. Aperture light yellow-orange.

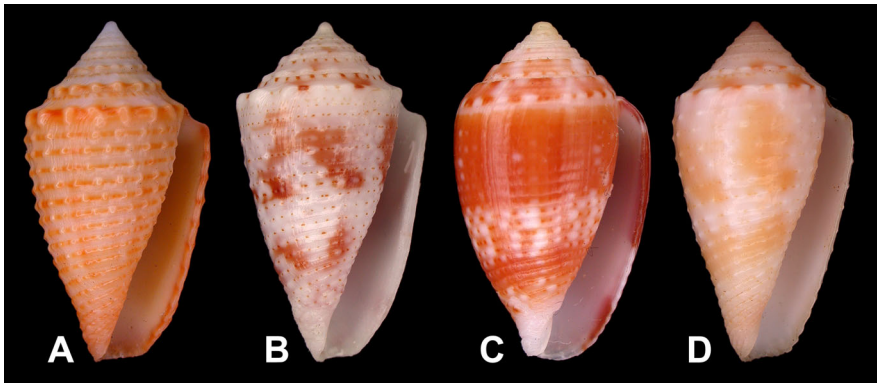

Plate 2: *A. Conus henckes*i sp.nov. (15.6mm); B. *Conus iansa* Petuch, 1986 (15.5mm) from Abrolhos, Bahia State; C. *Conus selenae* Van Mol, Tursch & Kempf, 1967 (13.3mm) from north Natal, Rio Grande do Norte State; D. *Conus jaspideus* Gmelin, 1791 (19.9mm) from Cartagena area, Colombia.

Type Material: All specimens from type locality. Holotype (15.6mm height x 8.5mm width) MZUSP 39.913 (Fig.H1); Patatype 1 (16.4mm height x 9.4mm width) MNRJ 10.188 (Fig.P1); Paratype 2 (15.0mm height x 8.4mm width) MORG 46.544 (Fig.P2); Paratype 3 (15.4mm height x 8.3mm width) MNRJ 10.189 (Fig.P3); Paratype 4 (16.6mm height x 9.5mm width) MZUSP 39.914 (Fig.P4); Paratype 5 (16.8mm height x 9.1mm width) CAH Coll. (Fig.P5); Paratype 6 (16.3mm height x 9.0 mm width) WPC coll. (Fig.P6); Paratype 7 (15.2mm height x 9.0 mm width) WPC coll. (Fig.P7); Paratype 8 (16.0mm height x 8.5 mm width) WPC coll. (Fig.P8); Paratype 9 (16.7mm height x 9.2 mm width) WPC coll. (Fig.P9); Paratype 10 (15.6mm height x 8.0 mm width) WPC coll. (Fig.P10); Paratype 11 (17.3mm height x 9.3 mm width) WPC coll. (Fig.P11).

Type Locality: Mar Grande, Itaparica Island, Bahia State, Brazil

Habitat: Lives on coral sand bottom at 1-2 meters on outside reefs on open sea area of Itaparica Island, Bahia State, Brazil, where it is endemic.

Etymology: Named after Mr.Carlos Alberto Henckes, a collector from São Paulo, Brazil.

Remarks: In some collections, this new species is found misidentified as a nodulose form of *Conus selenae* Van Mol *et al*., 1967. However, some differences are easily found: *C.selenae* has a flat apex with 1 1/2 whorls, more smooth body, ovoid shape, aperture white and, furthermore, 2-3 distinct spiral ridges crossed by axial ridges, absent in the new species. *Conus henckesi* shares with *C. mindanus* Hwass, 1792 (Plate 2, Fig. C), *C. iansa* Petuch, 1979 (Plate 2, Fig. B) and *C. jaspideus* Gmelin, 1791 (Plate 2, Fig. D) the spire with numerous weak and curved axial threads, but is easily distinguished by body and spire shape. *Conus iansa* has a mamillated protoconch and variable body shape, most inflated and variable color, while *C.henckesi* is more cylindric and uniform color. *Conus henckesi* is a curious species living in a very restrict habitat along the beach reefs of Itaparica Island, Bahia State. Its geographic distribution is so restricted that could be an endagered species due the human occupation on island.

Conus delucai sp.nov.
(Plate 3, Fig. A; Plate 10, Figs. H1, P1-P11)

Description: Length: 12 to 15 mm, elongated body with a medium deflection in 1/4 near the siphonal canal, low nodulose spire (about 1/6 of total length) with 6-7 whorls, with many weak and curved axial threads. About 10 white to cream nodules on the shoulder, extending to the suture. Body with 9-11 incised lines near the siphonal canal, sometimes extending to entire body in juvenile specimens. Wide pink-red aperture. Apex strong pink-red with 2 1/5 whorls. Color body from red-orange to dark blood red, with or without irregular white blotches, in some specimens forming a transverse band.

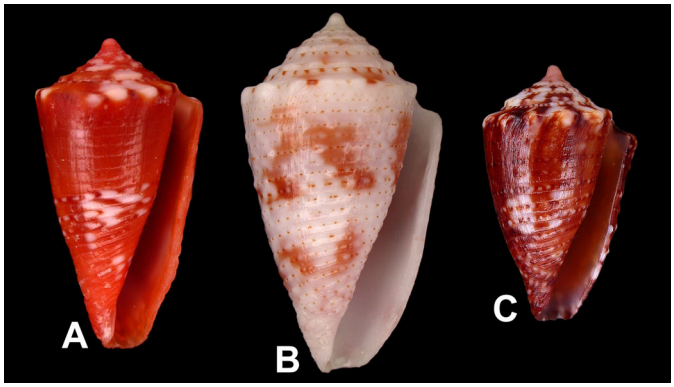

Plate 3: A. *Conus delucai* sp.nov. (13.0mm); B. *Conus iansa* Petuch, 1986 (15.5mm) from Abrolhos, Bahia State; C. *Conus schirrmeisteri* sp.nov. (9.9mm).

Type Material: Holotype (13.0mm height x 6.7mm width) MZUSP 39.910 (Fig.H1); Patatype 1 (12.6mm height x 6.4mm width) MNRJ 10.190 (Fig.P1); Paratype 2 (13.3mm height x 7.4mm width) MORG 46.542 (Fig.P2); Paratype 3 (12.7mm height x 6.7mm width) MNRJ 10.191 (Fig.P3); Paratype 4 (12.2mm height x 6.4mm width) MZUSP 39.911 (Fig.P4); Paratype 5 (12.2mm height x 6.7mm width) ACL Coll. (Fig.P5); Paratype 6 (12.8mm height x 6.9 mm width) WPC coll. (Fig.P6); Paratype 7 (12.1mm height x 6.7 mm width) WPC coll. (Fig.P7); Paratype 8 (13.2mm height x 6.8 mm width) WPC coll. (Fig.P8); Paratype 9 (14.7mm height x 7.8 mm width) WPC coll. (Fig.P9); Paratype 10 (14.1mm height x 7.5 mm width) WPC coll. (Fig.P10); Paratype 11 (12.0mm height x 6.5 mm width) WPC coll. (Fig.P11).

Type Locality: 75 km E Abrolhos Archipelago, off Alcobaça, Bahia State, Brazil (15°57' S, 38°01' W).

Habitat: Lives on rubble and coral sand bottom at 15-25 meters on offshore reefs on southern Bahia State, Brazil. It is a very uncommon to rare species living in colonies of 4 or 5 specimens.

Etymology: Named after André Cordeiro de Luca, from São Paulo, Brazil.

Remarks: This is the most outstanding species of this work. It is so unusual species that it is hard to compare with any other Western Atlantic species. The shell resembles *Conus iansa* Petuch, 1979 and *Conus schirrmeisteri* sp.nov. regarding the nodulose spire and deflection of body near siphonal canal.

Conus schirrmeisteri sp.nov.
(Plate 3, Fig. C; Plate 11, Figs.H1, P1-P11)

Description: Length: 8 to 11 mm, solid body with a strong deflection in 1/6 near the siphonal canal, medium nodulose spire (about 1/6 of total length) with 5-6 whorls, irregular, with a sub-sutural cord. About 10 irregular white or brown nodules on the shoulder, suture with white and brown cord. Body with 10-13 incised lines covering almost 3/4 of entire body, due the lines the body looks slighty nodulose. Wide dark red-orange aperture with a fine white margin. Apex large pink with 3 1/4 whorls. Color body from dark brown to dark red-brown, irregular white blotches and dots.

Type Material: All specimens from type locality. Holotype (9.9mm height x 5.8mm width) MZUSP 39.906 (Fig.H1); Patatype 1 (10.0mm height x 6.0mm width) MNRJ 10.192 (Fig.P1); Paratype 2 (9.2mm height x 5.3mm width) MORG 46.539 (Fig.P2); Paratype 3 (9.5mm height x 4.6mm width) MNRJ 10.193 (Fig.P3); Paratype 4 (9.5mm height x 4.9mm width) MZUSP 39.907 (Fig.P4); Paratype 5 (10.3mm height x 5.7mm width) ES Coll. (Fig.P5); Paratype 6 (10.0mm height x 5.6 mm width) WPC coll. (Fig.P6); Paratype 7 (9.8mm height x 5.6 mm width) WPC coll. (Fig.P7); Paratype 8 (9.0mm height x 4.8 mm width) WPC coll. (Fig.P8); Paratype 9 (9.0mm height x 4.6 mm width) WPC coll. (Fig.P9); Paratype 10 (8.8mm height x 4.8 mm width) WPC coll. (Fig.P10); Paratype 11 (9.0mm height x 5.0 mm width) WPC coll. (Fig.P11).

Type Locality: Sulfur Bank, 125 km NE Abrolhos Archipelago, off Alcobaça, Bahia State, Brazil (15°50' S, 37°57'W)

Habitat: Lives on rubble and coral sand bottom at 20-35 meters on offshore reefs on central Bahia State, Brazil.

Etymology: Named after Eduardo Schirrmeister, shell collector from São Paulo, Brazil.

Remarks: This new species resembles *C.iansa* Petuch, 1979 (plate 3, Fig. B). The body shape is very similar and the most important differences are the deflection, more abrupt in *C.schirrmeisteri*; the incised lines deeper and very pronuncied on *C. schirrmeisteri*; and a wide aperture on *C.iansa*. The body of *C.iansa* is very nodulose, while in *C.schirrmeisteri* is almost smooth. *Conus schirrmeisteri* lives in a seamountain top, isolated of main land by a distance of about 130 km and by depths up to 4,000 meters. *Conus schirrmeisteri* and *C.bodarti* seem to be closely related to *C.iansa,* but while *C.iansa* is an Abrolhos Archipelago species, *C.schirrmeisteri* and *C.bodarti* ranges far north, in a very offshore reef.

Conus archetypus complex

Conus baiano sp.nov.
(Plate 4, Fig.A; Plate 12, Figs.H1, P1-P11; Plate 16, Fig. F)

Description: Length: 23 to 30 m, concave-sided moderately elevated spire (1/8 of length). Shoulder of the body whorl smooth. Body whorl slightly convex with 6-8 incised lines on the base. Apex pink-white to white, nucleus with 1 1/2 to 2 whorls, fine ribs on the first whorls. Spire with 5 up 7 whorls, with medium deep suture with white and brown dots, each whorl with 3-5 distinct spiral ridges crossed by many fine curved axial threads. Color body bright red with white marks and brown dots lines, sometimes dark purple-brown and white (Plate 12, Fig. P8 -Paratype 8). Pink red aperture on red specimens or purple aperture on the purple specimens.

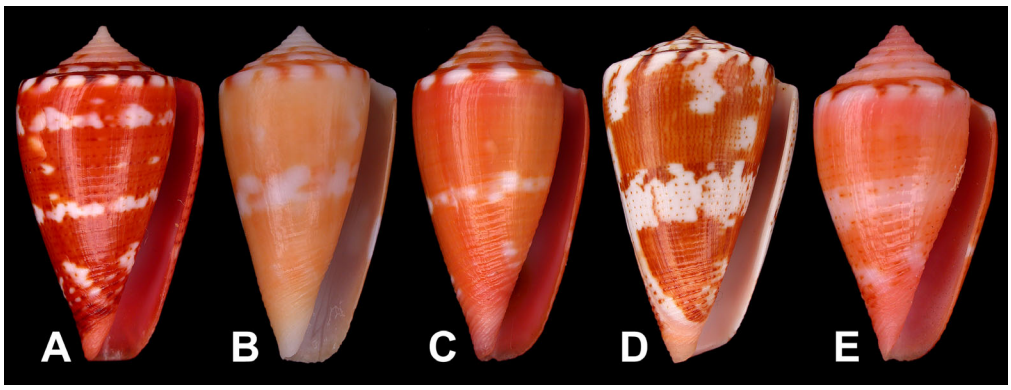

Plate 4: A. *Conus bahiano* sp.nov. (25.0mm); B. *Conus beddomei* Sowerby, 1901 (21.0mm), from Guadeloupe; C. *Conus bertarollae* Costa & Simone, 1997 (22.8mm), from Abrolhos, Bahia State; D. *Conus archetypus* Crosse, 1865 (38.5mm), from off Vitória, Espirito Santo State; E. *Conus abrolhosensis* Petuch, 1986 (18.2mm), from Abrolhos, Bahia State.

Type Material: All the specimens from type locality, except Paratype 8 (17°26' S, 38°21' W). Holotype (25.0mm height x 14.9mm width) MZUSP 39.908 (figure Y); Patatype 1 (26.7mm height x 15.2mm width) MNRJ 10.194 (figure Ya); Paratype 2 (24.2mm height x 14.0mm width) MORG 46.540 (figure W); Paratype 3 (26.3mm height x 14.7mm width) MNRJ 10.195 (figure Wa); Paratype 4 (22.7mm height x 12.9mm width) MZUSP 39.909 (figure Z); Paratype 5 (24.8mm height x 13.8mm width) MORG 46.541.; Paratype 6 (25.9mm height x 14.8 mm width) WPC coll. (figure Z1); Paratype 7 (27.5mm height x 14.8 mm width) WPC coll. (figure Z1); Paratype 8 (27.0mm height x 15.2 mm width) WPC coll. (figure Z1); Paratype 9 (25.0mm height x 13.6 mm width) WPC coll. (figure Z1); Paratype 10 (24.9mm height x 13.3 mm width) WPC coll. (figure Z1); Paratype 11 (28.6mm height x 15.3 mm width) WPC coll. (figure Z1).
Type Locality: 25 km SW Abrolhos Archipelago, off Alcobaça, Bahia State, Brazil (17°24' S, 38°20' W).

Habitat: Lives on rubble and coral sand bottom at 10-25 meters on offshore reefs on southern Bahia State, Brazil.

Etymology: *Baiano* means from Bahia State.

Remarks: *Conus baiano* seems to belong to the *C.archetypus* Crosse, 1865 complex (Plate 16, Fig. F; Plate 4, Fig. A). The shell of the new species resembles the shells of *C. bertarollae* Costa & Simone, 1997 (Plate 4, Fig. C) and *C. abrolhosensis* Petuch, 1986 (Plate 4, Fig. E) on regard to spire ridges, color and patterns. However, the shell of *C.baiano* has a spire comparatively more elevated and a brighter coloration. *Conus bertarollae* and *C. abrolhosensis* have variable white and red spire, while *C. baiano* has white and brown marks in red background spire. *Conus baiano* is restricted to a single reef complex, with the red population distributed on the north part of the reef and the purple (and more rare) in the southern part of the reef. Besides some species as *Conus bertarollae* and *C. baiano* may be closer, *C.bertatollae* and *C.abrolhosensis* are found together but *C.baiano* is found far south, has an allopatric distribution and no intermediate specimens were found between them, even checking some large quantities of shells from this area.

Conus cargilei sp.nov.
(Plate 5, Fig. A; Plate 13, Figs. H1, P1-P11; Plate 16. Fig. H)

Description: Length: 16 to 25 mm, concave-sided moderately elevated spire (1/6 of length). Shoulder of the body whorl smooth with a sharp angle. Body whorl elongated, straight to slightly convex with 8-9 incised lines on the base on adult specimens. Juvenile specimens have entire body covered by incised lines. Apex pink or pink-orange, nucleus 2 to 2 1/2 whorls, smooth. Spire with 5 up 7 whorls, with two or three (light) weak spiral ridges, white and brown dots.Color body extremely variable, from completely black, to dark brown with lines, grey and green, red-brown, etc. The black or black and white specimens are colorful when juveniles. Deep purple aperture with shell color margin.

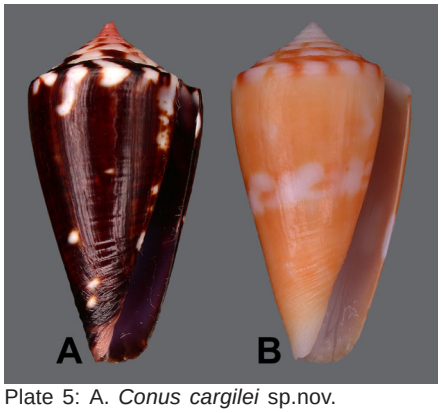

Plate 5: A. *Conus cargilei* sp.nov. (20.8mm); B. *Conus beddomei* Sowerby, 1901 (21.0mm), from Guadeloupe.

Type Material: All specimens from type locality. Holotype (20.8mm height x 10.6mm width) MZUSP 39.912 (Fig.H1); Patatype 1 (19.6mm height x 10.6mm width) MNRJ 10.196 (Fig.P1); Paratype 2 (21.5mm height x 10.8mm width) MORG 46.543 (Fig.P2); Paratype 3 (21.6mm height x 10.7mm width) MNRJ 10.197 (Fig.P3); Paratype 4 (19.2mm height x 10.2mm width) WPC Coll. (Fig.P4); Paratype 5 (21.4mm height x 11.2mm width) WPC Coll. (Fig.P5);
Paratype 6 (24.5mm height x 12.8 mm width) WPC coll. (Fig.P6); Paratype 7 (18.4mm height x 9.6 mm width) WPC coll. (Fig.P7); Paratype 8 (17.6mm height x 9.6mm width) WPC coll. (Fig.P8); Paratype 9 (17.8mm height x 9.7 mm

width) WPC coll. (Fig.P9); Paratype 10 (17.7mm height x 9.7 mm width) WPC coll. (Fig.P10); Paratype 11 (16.6mm height x 9.0 mm width) WPC coll. (Fig.P11).

Type Locality: 75 km NNE Abrolhos Archipelago, off Alcobaça, Bahia State, Brazil (15°57' S, 38°01' W).

Habitat: Lives on rubble and coral sand bottom at 20-35 meters on offshore reefs on southern Bahia State, Brazil.

Etymology: Named after the Conidae expert Mr. William P. Cargile, from Woodside, California, USA.
Remarks: The most variable shell from the Abrolho Archipelago, it is probably related to the *Conus archetypus* Crosse complex of species. As most of the other related species, has an ornamented top and an extremely variation of patterns and colors. The new species could be confused with the very similar *C. beddomei* (Plate 5, Fig. B) and C. brasilensis, but *C. cargilei* is more elongated and has straighter sides than *C. beddomei* and *C. brasiliensis,* or even any other species from the complex. The shape and proportions of the shell are very characteristic, and I have not found intermediates between *C. cargilei* and any other species that belong to the same complex. The new species lives in two offshore reefs and no specimens were found outside these localities yet.

Conus mauricioi sp.nov.
(Plate 6, Fig. A; Plate 14, Figs. H1, P1-P11; Plate 16, Fig. E)

Description: Length: 17 to 22 mm, concave-sided, almost straight moderately elevated spire (1/5 of length). Shoulder of the body whorl smooth. Body whorl slightly convex with 6-8 light incised lines on the base. Apex pink, nucleus with 2 to 2 1/2 whorls. Spire with 6 up 8 whorls. A medium deep suture between the whorls. Color body extremely variable, from bright yellow or pink-red to brown, green, purple and even bluish-grey.
Always with white blotches or marks. Spiral cord bands are present on 90% of the examined specimens. Top with white and brown marks on shell color background. Pink white aperture, colored inner margin.

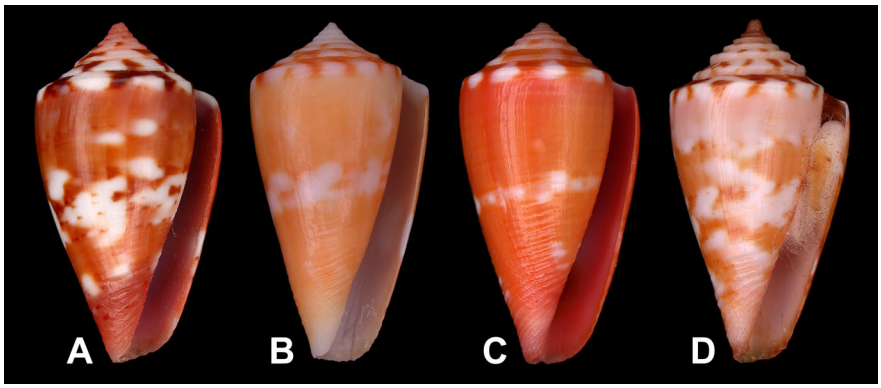

Plate 6: A. *Conus mauricioi* sp.nov. (18.9mm); B. *Conus beddomei* Sowerby, 1901 (21.0mm), from Guadeloupe; C. *Conus bertarollae* Costa & Simone, 1997 (22.8mm), from Abrolhos, Bahia State; D. *Conus brasiliensis* Clench, 1942 (26.7mm), from Guarapari, Espirito Santo.

Type Material: All specimens from type locality. Holotype (18.9mm height x 10.1mm width) MZUSP 39.915 (Fig.H1); Patatype 1 (18.0mm height x 10.1mm width) MNRJ 10.220 (Fig.P1); Paratype 2 (19.8mm height x 10.8mm width) MORG 46.545 (Fig.P2); Paratype 3 (20.0mm height x 11.0mm width) MNRJ 10.221 (Fig.P3); Paratype 4 (20.7mm height x 11.7mm width) MZUSP 39.916 (Fig.P4); Paratype 5 (18.8mm height x 10.0mm width) MAL Coll. (Fig.P5); Paratype 6 (18.7mm height x 10.5 mm width) WPC coll. (Fig.P6); Paratype 7 (18.5mm height x 10.3 mm width) WPC coll. (Fig.P7); Paratype 8 (20.7mm height x 11.8 mm width) WPC coll. (Fig.P8); Paratype 9 (17.5mm height x 9.5 mm width) WPC coll. (Fig.P9); Paratype 10 (20.5mm height x 11.0 mm width) WPC coll. (Fig.P10); Paratype 11 (19.9mm height x 10.5 mm width) WPC coll. (Fig.P11).

Type Locality: off Rio do Fogo, Rio Grande do Norte State, Brazil

Habitat: Lives on coral sand bottom at 10-25 meters on offshore reefs, called “Parracho” from north Pernambuco State up to Touros, Rio Grande do Norte State, Brazil.

Etymology: Named after Mr. Mauricio Andrade Lima, who first found the species.

Remarks: During many years this species was confused with the Caribbean species *Conus beddomei* Sowerby, 1901 (Plate 6, Fig. B). *Conus mauricioi* is very variable in color and patterns, the body whorl is comparatively shorter and wider than in *C. beddomei* and even in the others species of the C. archetypus complex which occur in Brazil. Both species probably belongs to the same *C.archetypus* Crosse complex, as well as *C. brasiliensis* Clench, 1942 (Plate 6, Fig. D), *C. baiano* sp.nov., *C. cargilei* sp.nov., *C. bertarollae* Costa & Simone, 1997, *C. abrolhosensis* Petuch, 1986, and *C. hennequini* Petuch, 1992, due the “cylindrical” shape, great color variation, short and well

ornamented spire . One of the most interesting aspects of *C. mauricioi* is its geographical distribution. The species lives along a large area, ranging on costal reefs along more than 600 km. Although very similar to the Caribbean *C. beddomei*, there is 3,000 km separating both species.

Conus cardinalis complex

Conus pseudocardinalis sp.nov.
(Plate 7, Fig.A; Plate 15, Figs. H1, P1-P3)

Description: Length: 14 to 24 mm, concave-sided, variable spire from almost flat (1/8 of size) to medium high (1/5 of size). Spire irregular, almost smooth with a low deep suture between the whorls. Shoulder of the body whorl irregular to smooth. Body whorl slightly cylindrical covered by 15-18 widely spaced weak spiral ridges. Apex pink, nucleus with 1 1/2 to 2 whorls. Spire with 5 up 7 whorls, with medium deep suture. Color body variable from dark green to red-brown, with a central irregular white and brown band. Top with white and brown irregular marks covering up to shoulder border. Deep purple aperture, colored inner margin.

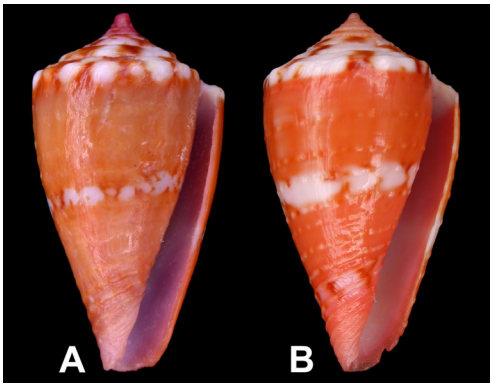

Plate 7: A. *Conus pseudocardinalis* sp.nov. (15.7 mm); B. *Conus cardinalis* Hwass, 1792 (18.8mm), from north coast Domincan Republic (type locality).

Type Material: All specimens from type locality. Holotype (15.7 mm height x 8.3mm width) MZUSP 39.917 (Fig.H1); Patatype 1 (19.1mm height x 9.8mm width) MNRJ 10.222 (Fig.P1); Paratype 2 (14.2mm height x 7.3mm width) MORG 46.546 (Fig.P2); Paratype 3 (15.2mm height x 8.5mm width) WPC Coll. (Fig.P3); Paratype 4 (23.5 mm height x 12.4mm width) WPC Coll.; Paratype 5 (15.5 mm height x 8.5mm width) WPC Coll.; Paratype 6 (18.3 mm height x 9.6mm width) WPC Coll.

Type Locality: 125 km NE Abrolhos Archipelago, off Alcobaça, Bahia State, Brazil (15°57' S, 38°01' W).

Habitat: Lives on rubble and coral sand bottom at 20-35 meters on offshore reefs on southern Bahia State, Brazil.

Etymology: Related to *C. cardinalis* Hwass, 1972 from Caribbean Sea.

Remarks: Similar to *C. cardinalis* Hwass, 1792 (Plate 7, Fig.B), *C. pseudocardinalis* is more slender and has no nodules on the shoulder or in the body spiral ridges. It is the rarest of all the species described and very few specimens were found, most in W.P.Cargile collection. Regarding *C. pseudocardinalis,* it is quite impossible to consider this species as a form of the Caribbean *C. cardinalis*. The geographic distributions of the two populations are largely disjunct, the differences cited above are consistent, and no intermediate specimens have been found in more than 5,000 km! The species lives in a very offshore reef.

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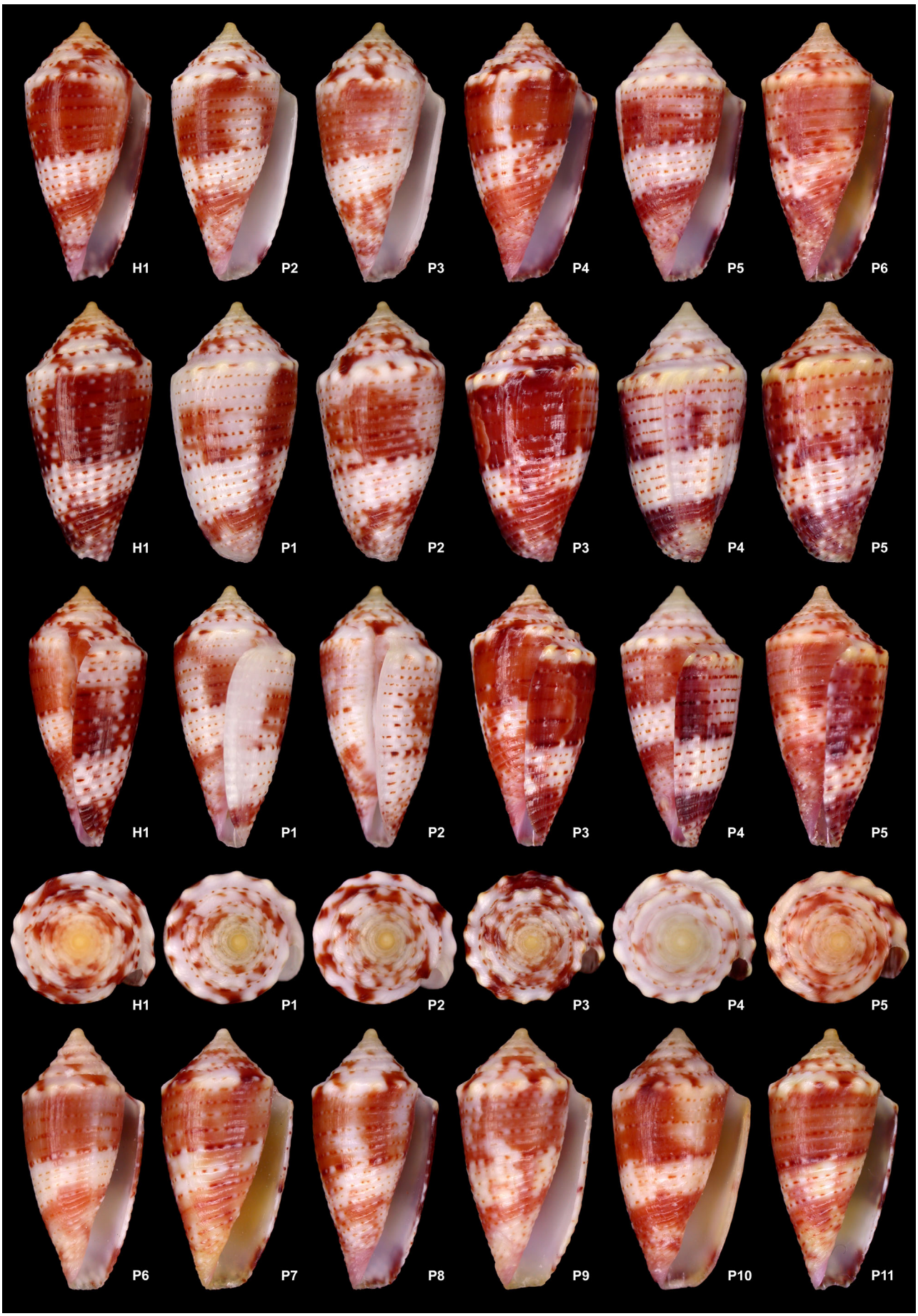

Plate 8: ***Conus bodarti*** **n.sp. - H1-** Holotype (16.6mm height x 8.0mm width); **P1**- Patatype 1 (15.2mm height x 7.3mm width); **P2** - Paratype 2 (14.7mm height x 7.2mm width); **P3** - Paratype 3 (15.7mm height x 8.0mm width); **P4** - Paratype 4 (16.0mm height x 7.8mm width); **P5** - Paratype 5 (12.6mm height x 6.2mm width); **P6** - Paratype 6 (13.1mm height x 6.0 mm width); **P7** - Paratype 7 (12.0mm height x 6.0 mm width); **P8** - Paratype 8 (14.0mm height x 6.6 mm width); **P9** - Paratype 9 (13.9mm height x 7.1 mm width); **P10** - Paratype 10 (15.0mm height x 7.7 mm width); **P11** - Paratype 11 (12.9mm height x 6.3 mm width).

Plate 9: ***Conus henckesi*** **n.sp. - H1** - Holotype (15.6mm height x 8.5mm width); **P1** - Patatype 1 (16.4mm height x 9.4mm width); **P2** - Paratype 2 (15.0mm height x 8.4mm width); **P3** - Paratype 3 (15.4mm height x 8.3mm width); **P4** - Paratype 4 (16.6mm height x 9.5mm width); **P5** - Paratype 5 (16.8mm height x 9.1mm width); **P6** - Paratype 6 (16.3mm height x 9.0 mm width); **P7** - Paratype 7 (15.2mm height x 9.0 mm width); **P8** - Paratype 8 (16.0mm height x 8.5 mm width); **P9** - Paratype 9 (16.7mm height x 9.2 mm width); **P10** - Paratype 10 (15.6mm height x 8.0 mm width); **P11** - Paratype 11 (17.3mm height x 9.3 mm width).

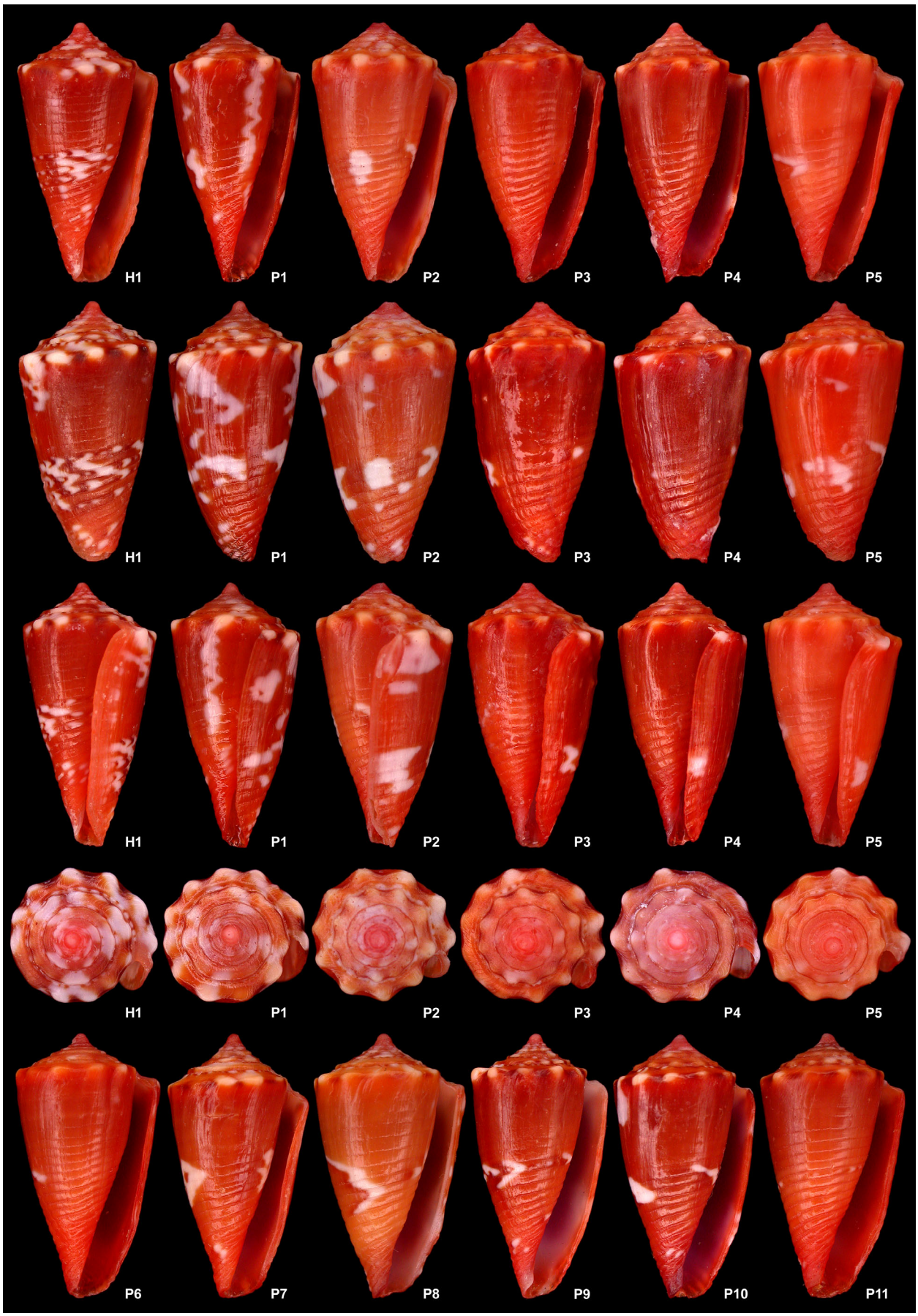

Plate 10: *Conus delucai* sp.nov. - H1 - Holotype (13.0mm height x 6.7mm width); P1 - Patatype 1 (12.6mm height x 6.4mm width); P2 - Paratype 2 (13.3mm height x 7.4mm width); P3 - Paratype 3 (12.7mm height x 6.7mm width); P4 - Paratype 4 (12.2mm height x 6.4mm width); P5 - Paratype 5 (12.2mm height x 6.7mm width); P6 - Paratype 6 (12.8mm height x 6.9 mm width); P7 - Paratype 7 (12.1mm height x 6.7 mm width); P8 - Paratype 8 (13.2mm height x 6.8 mm width); P9 - Paratype 9 (14.7mm height x 7.8 mm width); P10 - Paratype 10 (14.1mm height x 7.5 mm width); P11 -Paratype 11 (12.0mm height x 6.5 mm width).

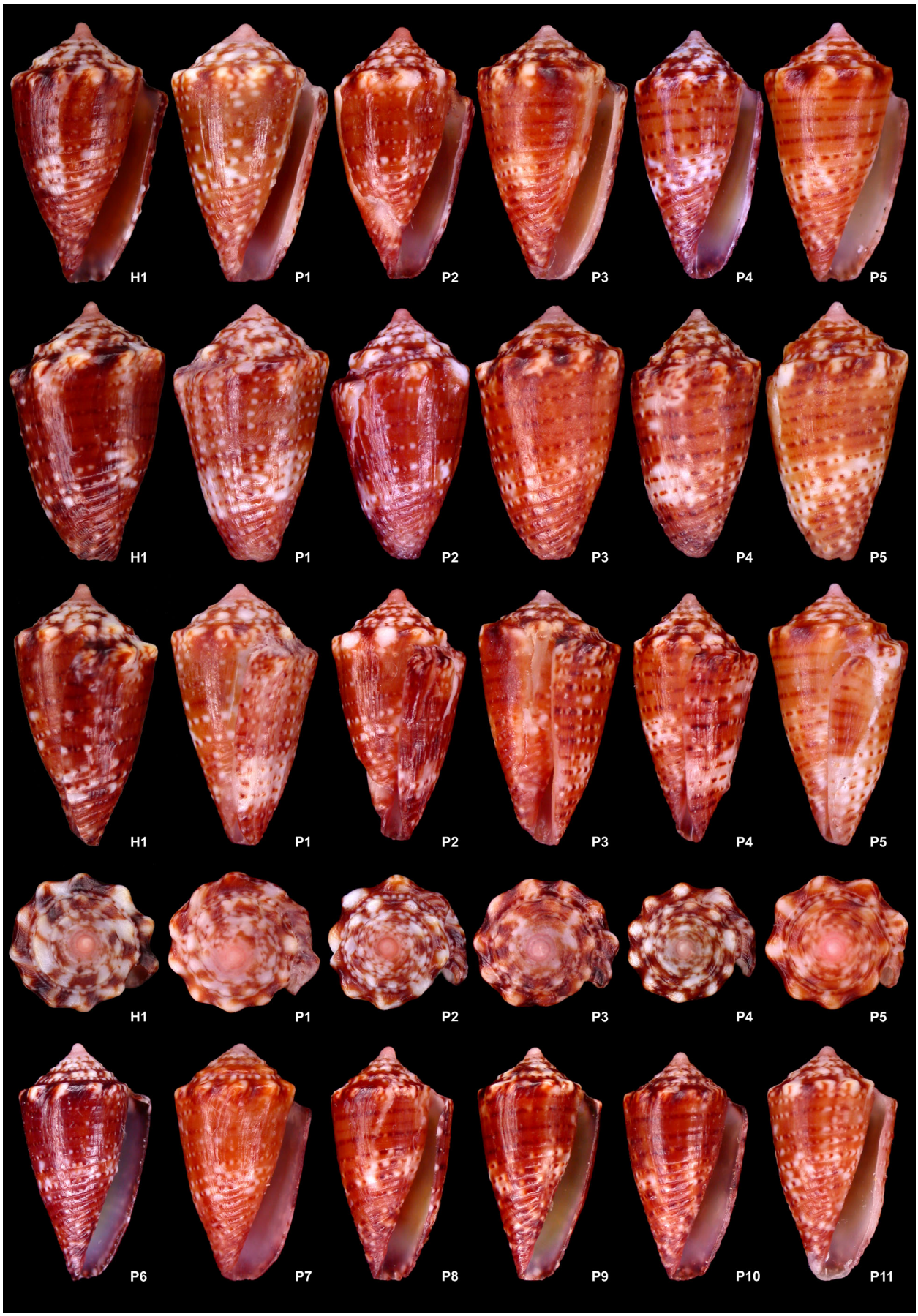

Plate 11: *Conus schirrmeiteri* sp.nov. - H1 - Holotype (9.9mm height x 5.8mm width); P1 - Patatype 1 (10.0mm height x 6.0mm width); P2 - Paratype 2 (9.2mm height x 5.3mm width); P3 - Paratype 3 (9.5mm height x 4.6mm width); P4 - Paratype 4 (9.5mm height x 4.9mm width); P5 - Paratype 5 (10.3mm height x 5.7mm width); P6 - Paratype 6 (10.0mm height x 5.6 mm width); P7 - Paratype 7 (9.8mm height x 5.6 mm width); P8 - Paratype 8 (9.0mm height x 4.8 mm width): P9 - Paratype 9 (9.0mm height x 4.6 mm width); P10 - Paratype 10 (8.8mm height x 4.8 mm width); P11 Paratype 11 (9.0mm height x 5.0 mm width).

Plate 12: *Conus baiano* sp.nov. - H1 - Holotype (25.0mm height x 14.9mm width); P1 - Patatype 1 (26.7mm height x 15.2mm width); P2 - Paratype 2 (24.2mm height x 14.0mm width); P3 - Paratype 3 (26.3mm height x 14.7mm width); P4 - Paratype 4 (22.7mm height x 12.9mm width); P5 - Paratype 5 (24.8mm height x 13.8mm width); P6 - Paratype 6 (25.9mm height x 14.8 mm width); P7 - Paratype 7 (27.5mm height x 14.8 mm width); P8 - Paratype 8 (27.0mm height x 15.2 mm width); P9 - Paratype 9 (25.0mm height x 13.6 mm width); P10 - Paratype 10 (24.9mm height x 13.3 mm width); P11 - Paratype 11 (28.6mm height x 15.3 mm width).

Plate 13: *Conus cargilei* sp.nov. - H1 - Holotype (20.8mm height x 10.6mm width); P1 - Patatype 1 (19.6mm height x 10.6mm width); P2 - Paratype 2 (21.5mm height x 10.8mm width); P3 - Paratype 3 (21.6mm height x 10.7mm width); P4 - Paratype 4 (19.2mm height x 10.2mm width); P5 - Paratype 5 (21.4mm height x 11.2mm width); P6 - Paratype 6 (24.5mm height x 12.8 mm width); P7 - Paratype 7 (18.4mm height x 9.6 mm width); P8 - Paratype 8 (17.6mm height x 9.6mm width); P9 - Paratype 9 (17.8mm height x 9.7 mm width); P10 - Paratype 10 (17.7mm height x 9.7 mm width); P11 - Paratype 11 (16.6mm height x 9.0 mm width).

Plate 14: *Conus mauricioi* sp.nov. - H1- Holotype (18.9mm height x 10.1mm width); P1 - Patatype 1 (18.0mm height x 10.1mm width); P2 - Paratype 2 (19.8mm height x 10.8mm width); P3 - Paratype 3 (20.0mm height x 11.0mm width); P4 - Paratype 4 (20.7mm height x 11.7mm width); P5 - Paratype 5 (18.8mm height x 10.0mm width); P6 - Paratype 6 (18.7mm height x 10.5 mm width); P7 - Paratype 7 (18.5mm height x 10.3 mm width); P8 - Paratype 8 (20.7mm height x 11.8 mm width); P9 - Paratype 9 (17.5mm height x 9.5 mm width); P10 - Paratype 10 (20.5mm height x 11.0 mm width); P11 - Paratype 11 (19.9mm height x 10.5 mm width).

Plate 15: *Conus pseudocardinalis* sp.nov. - H1 - Holotype (15.7 mm height x 8.3mm width); P1 - Patatype 1 (19.1mm height x 9.8mm width); P2 - Paratype 2 (14.2mm height x 7.3mm width); P3 - Paratype 3 (15.2mm height x 8.5mm width); P4 - Paratype (23.5 mm height x 12.4mm width); P5 (15.5 mm height x 8.5mm width); P6 (18.3 mm height x 9.6mm width).

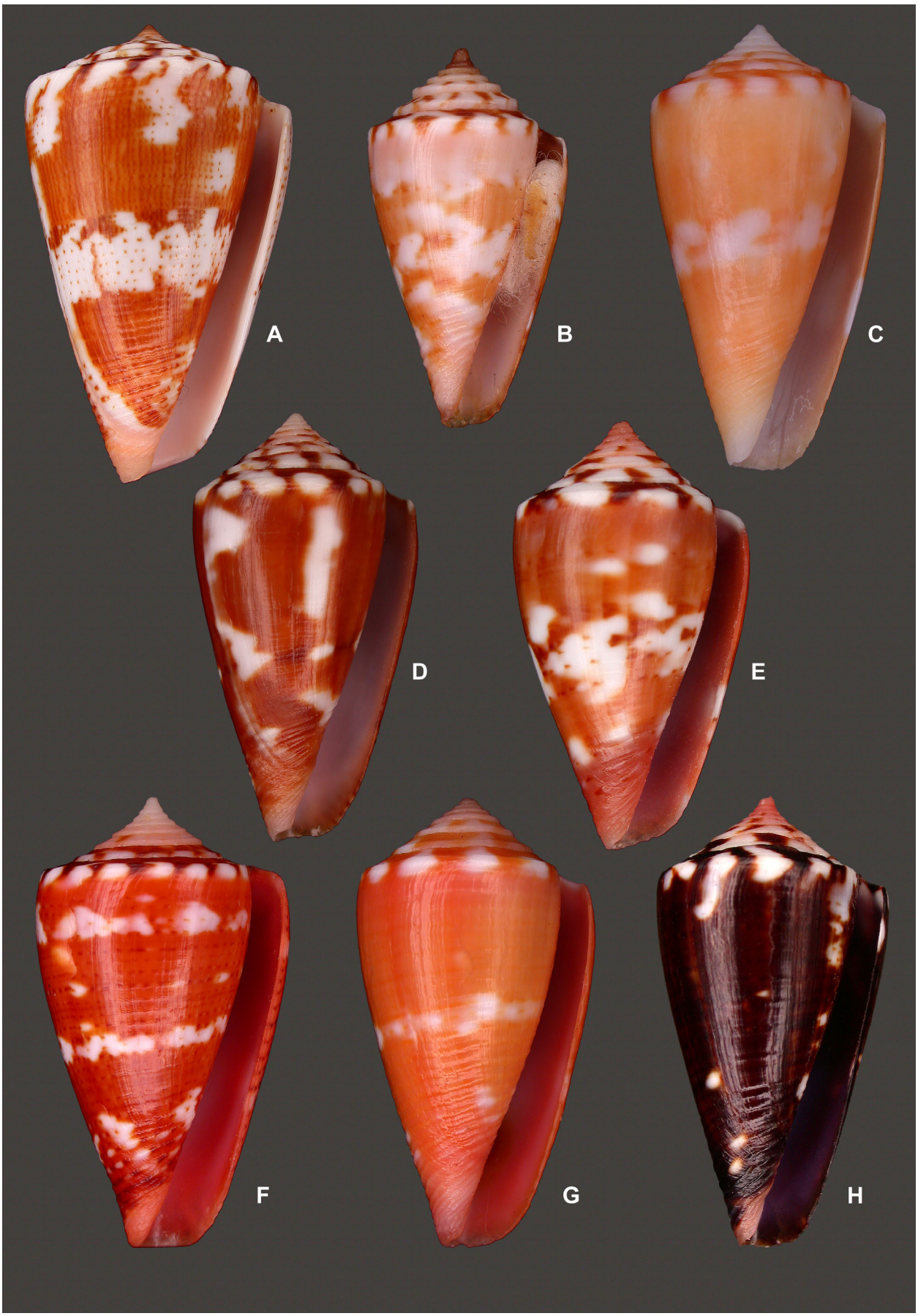

Plate 16: *Conus archetypus* complex - A. *Conus archetypus* Crosse, 1865 (38.5mm), from off Vitória, Espirito Santo State; B. *Conus brasiliensis* Clench, 1942 (26.7mm), from Guarapari, Espirito Santo; C. *Conus beddomei* Sowerby, 1901 (21.0mm), from Guadeloupe; D. *Conus coudertii Bernard, 1860* (24.5mm) from Grenada; E. *Conus mauricioi* sp.Nov. (18.9mm); F. *Conus bahiano* sp.nov. (25.0mm); G. *Conus bertarollae* Costa & Simone, 1997 (22.8mm), from Abrolhos, Bahia State; H. *Conus cargilei* sp.nov. (20.8mm).