

Four New Cone Shells from Northern and Central Brazil

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ABSTRACT Four new cone shells are described from the Brazilian Molluscan Province. These include: *Jaspidiconus tibauensis* new species, from the Cearaian Subprovince of northern Brazil; and three species from the Bahian Subprovince of central Brazil, including *Jaspidiconus barragrandensis* new species, *Dauciconus luizcoutoi* new species, and *Poremskiconus guarapari* new species.

KEY WORDS Conidae, *Jaspidiconus*, *Dauciconus*, *Poremskiconus*, Brazil, Rio Grande do Norte State, Bahia State, Espirito Santo State, Brazilian Molluscan Province, Cearaian Subprovince, Bahian Subprovince

INTRODUCTION

Recent research into the composition and distribution of molluscan faunas found along the coasts of Brazil has shown that the biodiversity of the family Conidae is much higher than previously thought (Petuch, 2013; Petuch and Berschauer, 2020). Within the Brazilian Molluscan Province (Amazon River Mouth south to Cabo Frio, Rio de Janeiro State; Petuch and Berschauer, 2020), the Cearaian Subprovince of northern Brazil and the Bahian Subprovince of central Brazil were both found to contain extremely rich endemic cone shell faunas, containing many species that were previously unnamed and undescribed. Characteristically, many of these unnamed taxa were found to be geographically highly-restricted, often being found on one island, one reef area, or one small stretch of coastline. For illustrated reviews of the Brazilian cone shell faunas and their biodiversity, see Petuch, 2013;

Petuch and Berschauer, 2020; and Petuch and Myers, 2014.

In response to the increased interest in Brazilian malacology that resulted from these numerous recent discoveries, we have formed a group of active amateur malacologists who are devoted to intensive field work and research of the unexplored areas of the Brazilian Province. As “citizen scientists” we have devoted our spare time to diving on previously unexplored coral and coralline algal reefs, to investigating isolated intertidal areas, and to working with local fishermen to secure deep water specimens. These endeavors have yielded a large number of new and interesting gastropods, including important additions to the known Brazilian cone shell fauna. Four of these new species are described in the following sections. The holotypes of the new taxa are deposited in the type collection of the Zoological Museum of the University of São Paulo, São Paulo, Brazil, and bear MZSP catalog numbers.

SYSTEMATICS

Class Gastropoda
 Subclass Sorbeoconcha
 Order Prosobranchia
 Infraorder Neogastropoda
 Superfamily Conoidea
 Family Conidae
 Subfamily Conilithinae
 Genus *Jaspidiconus* Petuch, 2004

Jaspidiconus barragrandensis Crabos,
 Pomponet, Pereira, and Passos new species
 (Plate 1, Figures A, B)

Description. Shell of average size for genus, fusiform, with straight sides, polished and smooth; shoulder sharp and carinate; spire elevated, slightly stepped, with slightly canaliculated whorls; body whorl ornamented with 12-14 incised spiral sulci; shell color beige or pale tan overlaid with amorphous larger dark tan patches and numerous rows of small, thin, dashes; shoulder carina edged with 16-20 large brown, evenly-spaced spots; aperture narrow, pale tan on interior.

Type Material. HOLOTYPE- length 20.4 mm, width 10.5 mm, from Barra Grande Bahia State, Brazil, MZSP 157112.

Type Locality. Found dead at low tide, Barra Grande, Camamu Bay, 150 km south of Salvador, Bahia State, Brazil.

Distribution. The new species is known to range from Morro de São Paulo on Tinhare Island to Boca do Rio Beach, Boipeda Island, and south to Barra Brande, southern Bahia State, Brazil.

Etymology. Named for the type locality, Barra Grande, Bahia State, Brazil.

Discussion. This new Bahian Subprovince cone is most similar to *Jaspidiconus marinae* Petuch and Myers, 2014 (Figure 1 C, D) from Itaparica Island, Salvador, Bahia State, but differs in being a larger, less-inflated shell with straighter sides. It is also a less-colorful shell, exhibiting mostly pale tans and beiges, and never having the intense purple and pink colors seen on the Itaparican species. Characteristically, *Jaspidiconus barragrandensis* also has more numerous and proportionally-smaller spots on the shoulder carina.

Jaspidiconus tibauensis Crabos, Pomponet,
 Pereira, and Passos new species
 (Plate 1, Figures E, F)

Description. Shell of average size for genus, stocky, rotund, inflated, with rounded sides; shoulder rounded, slightly angled; spire subpyramidal with slightly stepped whorls; shoulder edge with 16-18 low, rounded knobs; body whorl ornamented with 16-18 rows of proportionally large, rounded pustules; rows of pustules separated by incised shallow groove; color pale pinkish-white overlaid with very large, prominent, amorphous pinkish-tan patches; edge of shoulder with widely-separated small reddish-brown narrow flammules; aperture proportionally-wide, white within interior.

Type Material. HOLOTYPE- length 16.9 mm, width 9.9 mm, from Tibau, Rio Grande do Norte State, Brazil, MZSP 157115. PARATYPES- length 15 mm, from Tibau, in the Olivier Crabos Collection; length 18 mm, from Icapui, Ceara State, Brazil, in the Gregorio Pereira de Queiroz Collection; length 18.4 mm, from Tibau, in the Geraldo Pomponet Collection.

Type Locality. Collected on coralline algal rubble and carbonate sand, 30-40 m depth off Tibau, Rio Grande do Norte State, Brazil.

Distribution. The new species ranges from Tibau, Rio Grande do Norte State to Icapui, Ceara State Brazil. It has also been dredged from 70 m depth on the offshore Canopus Bank.

Etymology. Named for the town of Tibau, Rio Grande do Norte State, near the border of Ceara State, northeastern Brazil.

Discussion. This distinctive Brazilian Province *Jaspidiconus* species is the newest member of a complex of heavily-pustulated cones that ranges all along northern Brazil. Of these, *J. tibauensis* is most similar to *J. damasomonteiroi* from Camocim, Ceara State (Figure 1 G, H), but differs in being a much more inflated and rotund species that is noticeably less-elongated. The pustules on *J. damasomonteiroi* are also proportionally much larger and more prominent than those seen on *J. tibauensis*, especially those along the edge of the shoulder. The new species is also similar to the sympatric *J. toincabrali* Petuch and Berschauer, 2019, also found at Tibau, but differs in having less-prominent and more subdued pustules on the body whorl, in having more rounded and lower knobs on the edge of the shoulder, and in having a much more colorful shell with a pink base color and with very large and conspicuous brown flammules and patches. The more ornate and more heavily-pustulated *J. toincabrali* consistently has a pure white shell that lacks any traces of color on the body whorl or spire.

Subfamily Puncticulinae
Genus *Dauciconus* Cotton, 1945

Dauciconus luizcoutoi Crabos, Pomponet,
Pereira, and Passos new species
(Plate 2, Figures A, B)

Description. Shell of average size for genus, very elongated and attenuated, with straight sides and low, almost flattened spire; shoulder angled with slightly rounded, subcarinate edge; spire whorls slightly canaliculated; body whorl smooth and polished; shell base color pale pinkish-white overlaid with dense network of longitudinally-arranged brown flammules and 2 broad bands of orange-tan color and one white band, with orange-tan bands being anterior and posterior to white central band; spire whorls white with numerous evenly-spaced dark reddish-brown, crescent-shaped flammules; protoconch pink; aperture uniformly narrow, colored deep pink inside.

Type Material. HOLOTYPE- length 58.1 mm, width 29.3 mm, from off Coroa de Barra Seca, Linhares, Espirito Santo State, Brazil, MZSP 157116.

Type Locality. Collected by octopus fishermen, from 60 m depth off Coroa de Barra Seca, Linhares, Espirito Santo State, Brazil.

Distribution. The new species is known only from the type locality off Linhares, Espirito Santo State, Brazil. At 60 m depth, the new species occurs together with the smaller cone, *Poremskiconus archetypus* (Crosse, 1865).

Etymology. Named for Luiz Couto of Guarapari, Espirito Santo State (Mar a Mar Company), who brought this outstanding shell to our attention.

Discussion. Although known from a single specimen from the Ilhas Rasas, this new species is so distinctive that we felt confident describing it and giving it a name. Of the Bahian Subprovince *Dauciconus* species, *D. luizcoutoi* is similar only to *D. riosi* (Petuch, 1986) (Figure 2 C, D), but differs in being a proportionally more narrow and elongated shell with a lower spire. Although a colorful species, *D. riosi* usually exhibits wide bands of bright orange or orange-tan color and never has the pinkish-white base color or dense network of brown longitudinal flammules that characterize *D. luizcoutoi*. The bright pink color of the interior of the aperture is unique to the new species and is not seen in any other Brazilian cone shell.

Genus *Poremskiconus* Petuch, 2013

Poremskiconus guarapari Crabos, Pomponet, Pereira, and Passos new species
(Plate 2, Figures E, F)

Description. Species of average size for genus, stocky, truncated, broad across the shoulder; spire proportionally low, subpyramidal; shoulder angled, subcarinated, ornamented with conspicuous low, knob-like undulations; body whorl polished and shiny, colored uniform dark orange-brown, with single narrow band of white around mid-body; white central band marked with small brown flammules; spire white, marked with large, prominent, evenly-spaced flammules of darker orange-tan color; undulating shoulder carina marked with evenly-spaced small dark tan flammules; aperture uniformly narrow, white within; protoconch and early whorls orange-tan.

Type Material. HOLOTYPE- length 22.5 mm, width 12.7 mm, from Ilhas Rasas, Guarapari, Espirito Santo State, Brazil, MZSP 157113. PARATYPES- 2 specimens, lengths 25 mm and 28 mm, from Ilhas Rasas, in the Olivier Crabos

Collection; length 24 mm, in the Geraldo Pomponet Collection.

Type Locality. Collected in 8m to 20 m depths off the Ilhas Rasas, 3 km off Guarapari, Espirito Santo State, Brazil.

Distribution. Known only from the Ilhas Rasas off Guarapari, Espirito Santo State, Brazil.

Etymology. Named for the city of Guarapari, Espirito Santo State, Brazil. The city was named after a type of spear used by the local Native Americans to hunt Scarlet Ibis.

Discussion. *Poremskiconus guarapari* is the newest member of a large and characteristic species complex of Brazilian cones, containing at least 12 species (see Petuch and Berschauer, 2020). Although three species are known from the southern Caribbean Sea (Panama, Colombia, and the Grenadines), the majority of the known *Poremskiconus* species occur only in the Brazilian Province and can be considered one of the primary biogeographical index genera for the Province and its subprovinces. Of all the species within this tight-knit complex, the new Rasas Islands (Ilhas Rasas) endemic is most similar to *P. abrolhosensis* (Petuch, 1987) from the coast of Bahia State, including the Abrolhos Islands and Abrolhos Platform, and south to Espirito Santo State (Figure 2 G, H). *Poremskiconus guarapari* differs from its congener in being a far less colorful shell, lacking the bright red and orange colors seen on *P. abrolhosensis*, and instead having a uniform orange-tan shell color. The Abrolhos cone also differs in often having rows of fine orange-brown dots encircling the body whorl (like the specimen shown here) and in having white spire whorls that are marked with very large, prominent, evenly-spaced dark brown flammules. See Petuch and Berschauer, 2020 for an illustrated overview of the genus

Poremskiconus in the Brazilian Province, including endemic species from the Abrolhos Platform.

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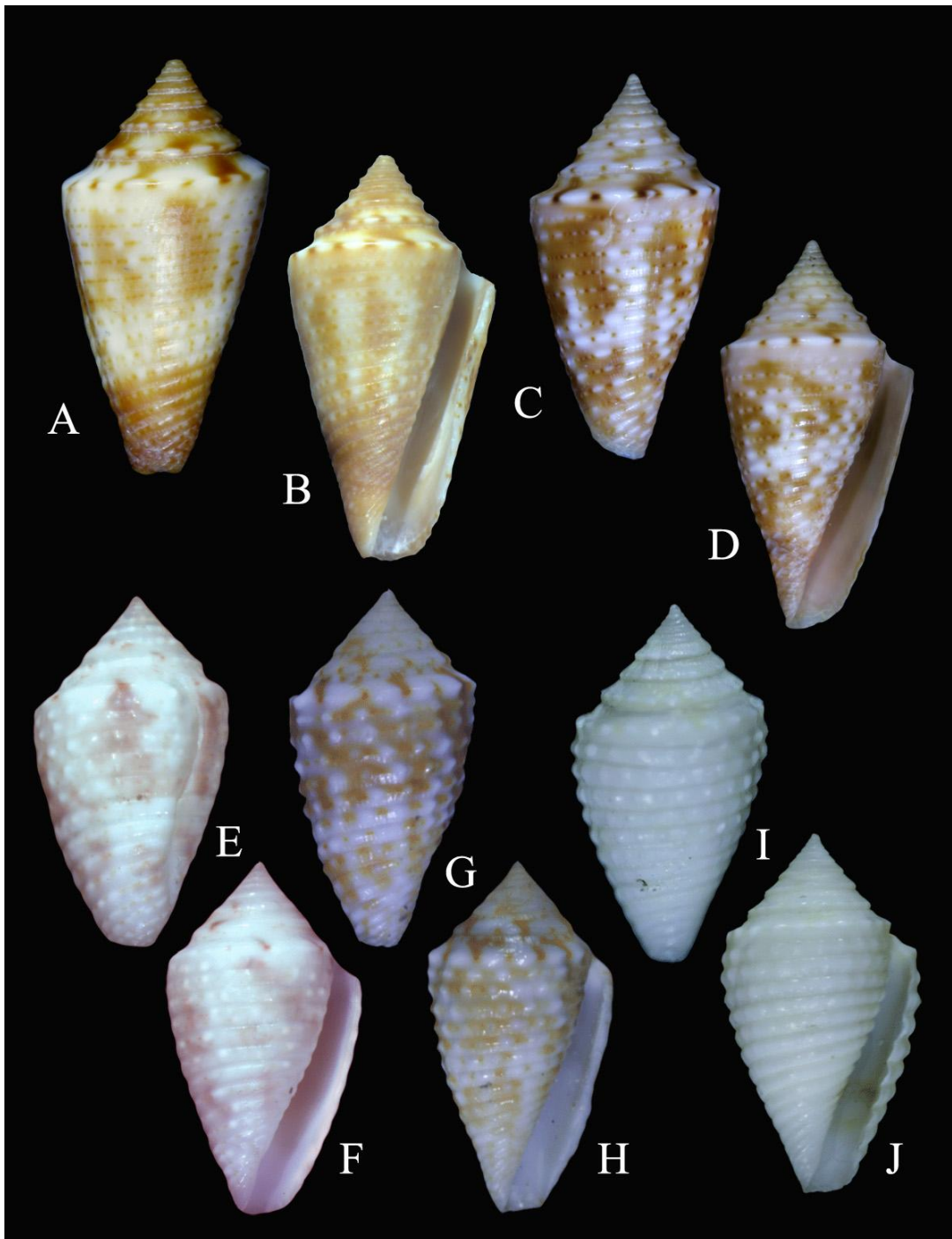


Figure 1. *Jaspidiconus* species from the Bahian and Cearaian Subprovinces of the Brazilian Molluscan Province.

A, B= *Jaspidiconus barragrandensis* Crabos, Pomponet, Pereira, and Passos, new species. Dorsal and ventral views of the 20.4 mm holotype from Barra Grande, Camamu Bay, Bahia State, Brazil, MZSP 157112; **C, D=** *Jaspidiconus marinae* Petuch and Myers, 2014. Dorsal and ventral views of a 20 mm specimen from Itaparica Island, Salvador, Bahia State, Brazil; **E, F=** *Jaspidiconus tibauensis* Crabos, Pomponet, Pereira, and Passos, new species. Dorsal and ventral views of the 16.9 mm holotype from Tibau, Rio Grande do Norte State, Brazil, MZSP 157115; **G, H=** *Jaspidiconus damasomonteiroi* Petuch and Myers, 2014. Dorsal and ventral views of a 15 mm specimen from Camocim, Ceara State, Brazil; **I, J=** *Jaspidiconus toincabrali* Petuch and Berschauer, 2019. Dorsal and ventral views of a 16 mm specimen from Tibau, Rio Grande do Norte State, Brazil.

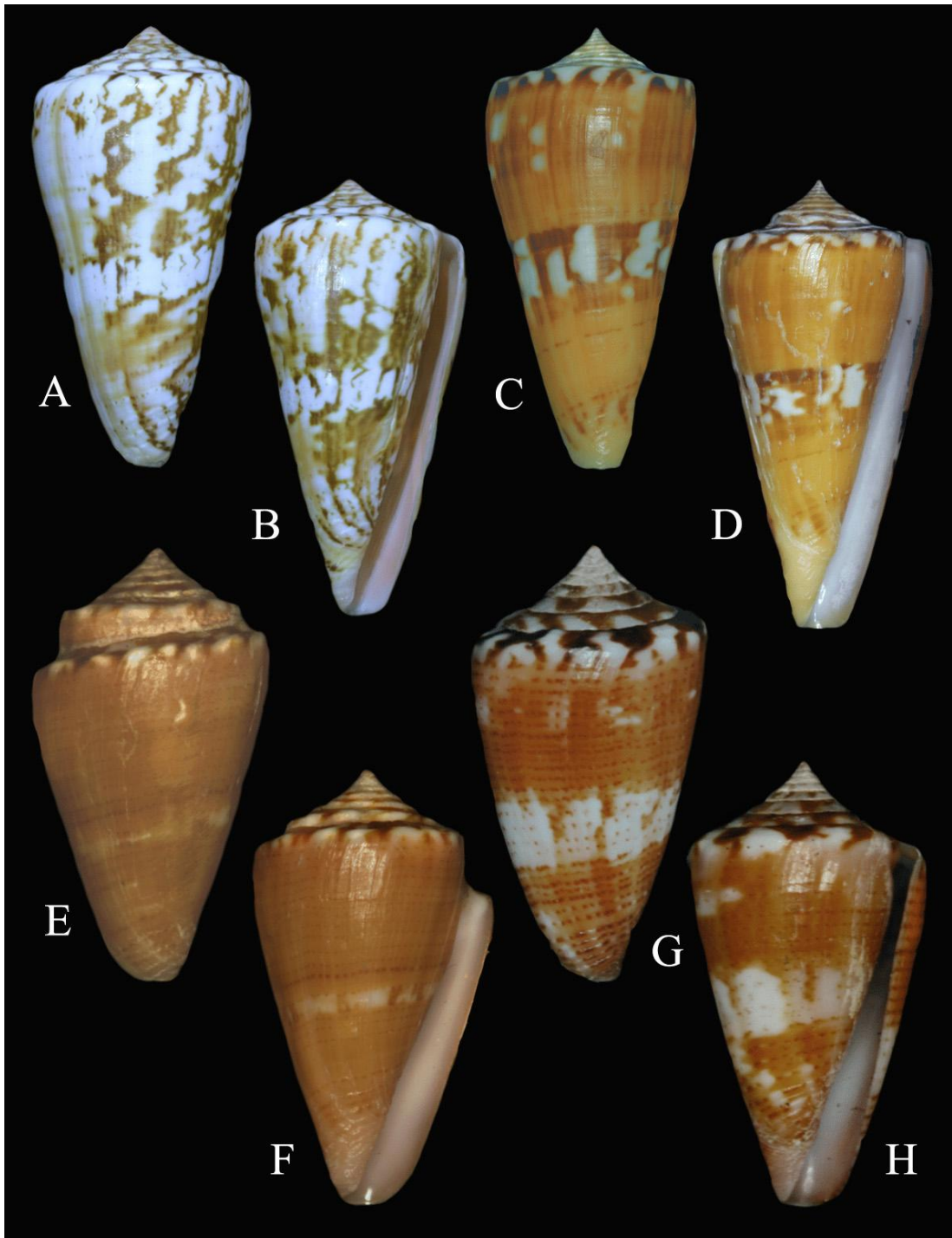


Figure 2. *Dauciconus* and *Poremskiconus* species from the Bahian Subprovince of the Brazilian Molluscan Province.

A, B= *Dauciconus luizcouthi* Crabos, Pomponet, Pereira, and Passos, new species. Dorsal and ventral views of the 58.1 mm holotype from Coroa de Barra Seca, Linhares, Espírito Santo State, Brazil, MZSP 157116; **C, D=** *Dauciconus riosi* (Petuch, 1986). Dorsal and ventral views of a 42 mm specimen from Guarapari, Espírito Santo State, Brazil; **E, F=** *Poremskiconus guarapari* Crabos, Pomponet, Pereira, and Passos new species. Dorsal and ventral views of the 22.5 mm holotype from Ilhas Rasas, Guarapari, Espírito Santo, Brazil; **G, H=** *Poremskiconus abrolhosensis* (Petuch, 1987) (= *P. baiano* Coltro, 2004). Dorsal and ventral views of a 24 mm specimen from off Guarapari, Espírito Santo State, Brazil.