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Description of *Sciteconus coffeebayensis* n. sp. (Gastropoda: Conidae) from Southeastern Africa

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ABSTRACT A new species of *Sciteconus* dredged at a depth of 110m from Coffee Bay in the Eastern Cape of South Africa is described. The shell morphological features of the species within the subgenus *Sciteconus* are similar with only minor differences in the coloration of individual specimens. *Sciteconus coffeebayensis* n. sp. has an off-white background color with orange-brown spiraling lines that are broken. The center band is broad, consisting of large orange-brown markings alternated by off-white coloration. The basal part has a darker brown coloration around the body-whorl. The new species is also compared to two *Sciteconus* species from Port Alfred.

KEYWORDS Conidae*, Sciteconus, Sciteconus coffeebayensis,* Coffee Bay, Eastern Cape, South Africa

INTRODUCTION

The Eastern Cape of South Africa has unique endemic cones classified in the genus *Sciteconus* da Motta, 1991*,* with some of the oldest descriptions, one of those being *Sciteconus bairstowi* (Sowerby III, 1889). Recent studies on the subgenus *Sciteconus* revealed several new species dredged from Coffee Bay and Port Grosvenor, northern Eastern Cape, South Africa. Korn (2001) first described a small cone from Port Grosvenor (approx. 170km north of Coffee Bay), dredged from 85m: *S. brainhayesi* (Korn, 2001). Veldsman (2016a) described a species from southern KwaZulu-Natal: *S. mpenjatiensis* S.G. Veldsman, 2016, and Veldsman (2016b) added another four species to the subgenus: *S. ariejoostei* S.G. Veldsman, 2016 from Coffee Bay, *S. xhosa* S.G. Veldsman, 2016 from Fish River Mouth, *S. velliesi* S.G. Veldsman, 2016 and *S. nahoonensis* S.G. Veldsman, 2016 from East London, and recognized *S. brainhayesi* specimens from Coffee Bay. Aiken (2021) discovered two more species from Port Alfred area: *S. mosterti* (Aiken, 2021) and *S. markpagei* (Aiken, 2021). Browsing through Coffee Bay cone material, several specimens were found to be different from the nominate *S. brainhayesi* lot and did not concur with any of the other *Sciteconus* species, hence the description here of a new species: *Sciteconus coffeebayensis* n. sp.

Tucker & Tenorio (2009) proposed a systematic classification for the family Conidae, classifying *Sciteconus* da Motta, 1991 to generic level, and reconfirmed in Tucker & Tenorio (2013). Phuillandre *et al.* (2014) performed a molecular phylogenetic analysis on the Conidae where they classified most of the genera proposed by Tucker & Tenorio (2009, 2013) into subgenera under one genus, *Conus. Sciteconus* is thus proposed to be a subgenus of the genus *Conus* by Phuillandre *et al.* (2014, 2015). However, Phuillandre *et al.* (2014) only used molecular material from *Sciteconus infrenatus* and *Pictoconus pictus* within their phylogenetic analysis, and not one of the species discussed here or the nominate species of *Sciteconus.* One

understands Phuillandre *et al.* (2014, 2015) approach by limiting the number of accepted genera, retaining most cone species within the genus *Conus,* and assigning members of these genera to species groups/subgenera to enable effective communication of these groups.

Limpalaër (2018) discusses the classification proposed and used by Monnier *et al.* (2018) within their two-volume edition A Taxonomic Iconography of the Living Conidae, that is a combination of previous classification systems, with 71 genera and 19 subgenera. *Limpalaër* (2018) and Monnier *et al.* (2018) classified the *Sciteconus* species under the genus *Floraconus* Iredale, 1930. *Limpalaër* (2018) mention that *Sciteconus* species appear to belong to the same molecular group as *Floraconus*, but in one study by Phuillandre *et al.* (2014), the phylogenetic analysis shows *Floraconus* and *Sciteconus* on different clades, quite separate from each other with no closely related linkage. According to Tucker & Tenorio (2009, 2013) the two genera have different shell morphological features, and different radula. Furthermore, *Floraconus* is reserved for Australian cone species, whereas *Sciteconus* is reserved for cones endemic to South Africa. The author presented a paper on the *Sciteconus/Floraconus* of South Africa and their distribution with reference to the Coastal Province and Sub-Provinces at the 5th International Cone Meeting, Lisbon, Portugal in 2019. It was argued that the two genera are different from each other, and that the South African species should be classified within their own genus *Sciteconus* and not under *Floraconus.* The reasons for classifying the South African species within *Floraconus* was challenged by the author, but no conclusive explanation was provided for the *Floraconus* classification. It was then proposed by the author, and here again, that *Sciteconus* is reinstated and used at the generic level for the South African species previously classified under it.

METHODOLOGY

The study examines *Sciteconus* specimens from Coffee Bay and compares them to the other closely related species from the genus (Figure 1). Main shell morphological features and color pattern were used during this study to differentiate the new species from its closest congeners within the genus *Sciteconus*. All photographs were taken by S.G. Veldsman, except for the holotypes of *S. mosterti* and *S. markpagei,* which were taken by Mark Page, received with courtesy of Roy Aiken.

SYSTEMATICS

Phylum Mollusca Linnaeus,1758
Class Gastropoda Cuvier, 1795
Subclass Caenogastropoda Cox 1960
Order Neogastropoda Wenz, 1938
Superfamily Conoidea J. Fleming, 1822
Family: Conidae Fleming, 1822
Subfamily: Coninae Fleming, 1822
Genus: *Sciteconus* da Motta, 1991
Type species: *Sciteconus algoensis* (G.B. Sowerby I, 1834).

Sciteconus coffeebayensis S.G. Veldsman, n. sp.
(Plate 1B, Plate 2)

Description. Shell small (between 18-23 mm), moderately light. Profile conical. Shoulder moderately convex, slightly rounded and smooth. Spire low, slightly stepped, with sharp, nipple-like protoconch, moderately deep suture. Very fine ridges close to suture on inner part of the spire whorl, spire off-white with sparse orange-brown markings. The basal last third of body-whorl has very fine ribs around body-whorl. Moderately narrow aperture, with rounded convex lip. No markings or color band on shoulder. Background color of body whorl off-white with orange-brown spiraling lines, the lines are broken by off-white marking thus not

continuous. The center band is broad, consisting of large orange-brown markings alternated by off-white coloration. The basal part has a darker brown coloration around the body-whorl.

Distribution. *Sciteconus coffeebayensis* so far has only been recorded off Coffee Bay, Eastern Cape, South Africa.

Type material.

Holotype: 20.98 x 11.67 mm (Figure 1B); dredged 110 m off Coffee Bay, Eastern Cape, South Africa; Coll. Natal Museum South Africa (NMSA), ID No. P2315/T4615. Donated by S.G. Veldsman.

Paratype 1: 19.60 x 11.22 mm; Paratype 2: 20.72 x 12.21 mm; Paratype 3: 18.83 x 11.06 mm; Paratype 4: 22.16 x 12.45 mm; Paratype 5: 18.39 x 10.03 mm; Paratype 6: 16.91 x 9.84 mm; Paratype 7: 20.03 x 12.51 mm. (not shown in Figure 2)

All type material dredged at 110 m, off Coffee Bay, Eastern Cape, South Africa.

Etymology. *Sciteconus coffeebayensis* is named for the type locality, Coffee Bay.

DISCUSSION

The shell morphological features of the species within this group of small cones in the *Sciteconus* genus are very similar with only minor differences. Main differences can be observed in the coloration of individual specimens, being consistent within their features. With regards to the closest related species off Coffee Bay, *S. brianhayesi* has prominent orange bands around the body-whorl, broad dark and light-colored background bands with thin dark bands on top, two thin dark orange bands in the middle, consisting of a broken pattern, and a thin dark orange band below the shoulder. *Sciteconus coffeebayensis* has an off-white background color with orange-brown spiraling lines, the lines broken. The center band is broad, consisting of large orange-brown markings alternated by off-white coloration. The basal part has a darker brown coloration around the body-whorl. *Sciteconus ariejoostei* has no markings on the spire such as the previous two species, has light and dark broad orange bands around body-whorl, sometimes with fine darker bands on top, with a thick light-colored band in the middle with no visible markings, and a thin dark orange band below shoulder. The other closely related species in this group are not found at Coffee Bay, each has its own coloration and shell morphological features as discussed by Veldsman (2016) and Aiken (2021). *Sciteconus mpenjatiensis* has similar spotting to *S. coffeebayensis,* apart from that it occurs far north in KwaZulu-Natal, it has a broader profile and on average larger shell. The two species described by Aiken (2021) *S. markpagei* and *S. mosterti* have color patterns similar to *S. coffeebayensis,* apart from that they occur very far south at Port Alfred, both have a slender, longer shell profile in comparison to *S. coffeebayensis.*

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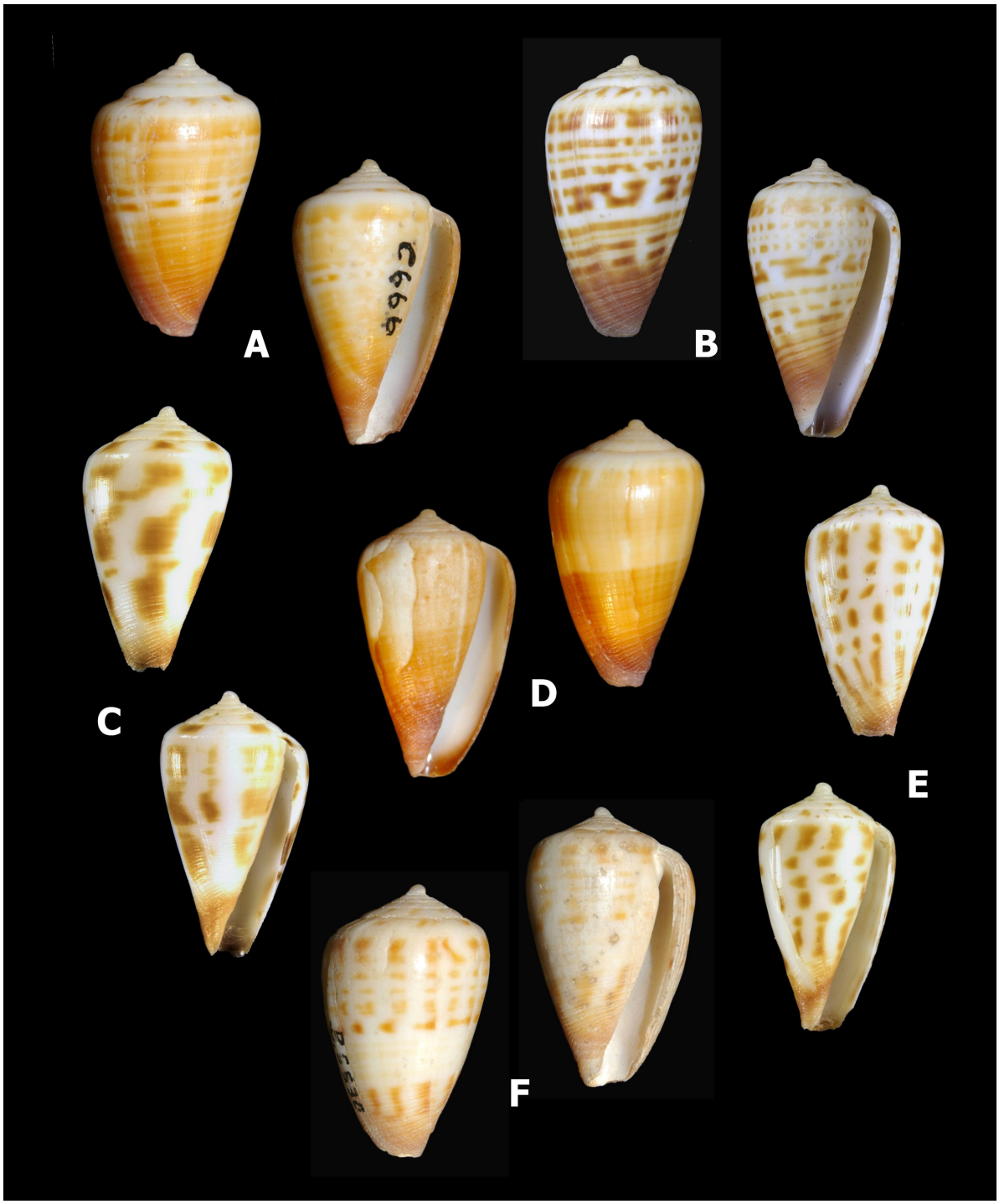

Plate 1. A= *Sciteconus brainhayesi* (Korn, 2001) Holotype: 18.55 x 10.83 mm, Port Grosvenor, dredged 85m, NMSA-C666/T1772. **B=** *Sciteconus coffeebayensis* n. sp. Holotype: 20.98 x 11.67 mm, Coffee Bay, dredged 110m, NMSA-P2315/T4615. **C=** *Sciteconus mosterti* (Aiken, 2021) Holotype: 22.2 x 12.6 mm, Port Alfred, dredged 90-115m, NMSA-P1450/T4410. **D=** *Sciteconus ariejoostei* S.G.Veldsman, 2016 Holotype: 20.82 x 12.33 mm, Coffee Bay, dredged 110m, NMSA-P0672/T4203. **E=** *Sciteconus markpagei* (Aiken, 2021) Holotype: 20.80 x 11.30 mm, between Port Alfred and Kenton-on-Sea, dredged 100m, NMSA-P1451/T4411. **F=** *Sciteconus mpenjatiensis* S.G.Veldsman, 2016 Holotype: 21.15 x 12.99 mm, Trafalgar, dredged 120m, NMSA-B5530/T4173.

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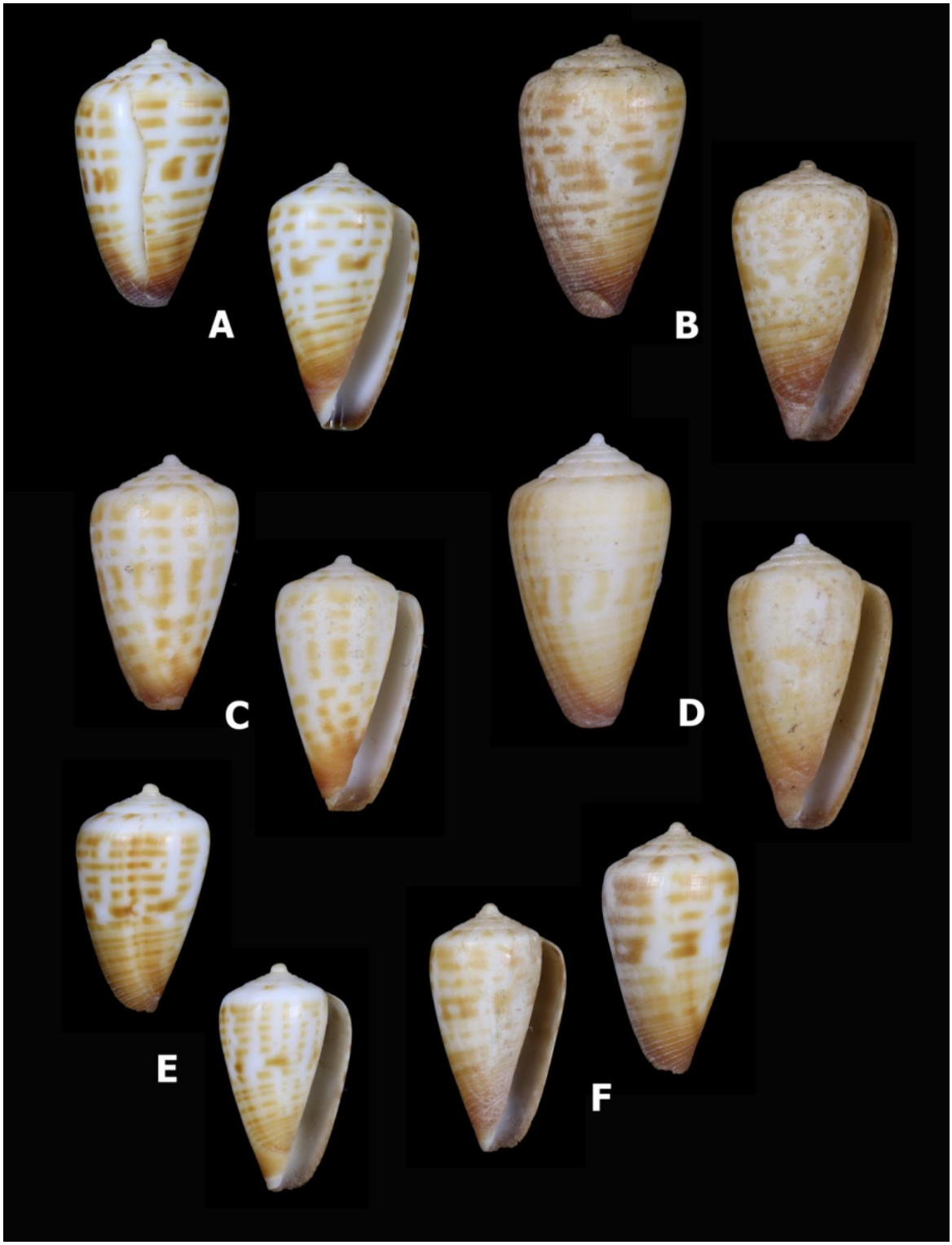

Plate 2. *Sciteconus coffeebayensis* n. sp. Coffee Bay, dredged 110m. **A=** Paratype 1: 19.60 x 11.22 mm; **B=** Paratype 2: 20.72 x 12.21 mm; **C=** Paratype 3: 18.83 x 11.06 mm; **D=** Paratype 4: 22.16 x 12.45 mm; **E=** Paratype 6: 16.91 x 9.84 mm; **F=** Paratype 5: 18.39 x 10.03 mm.