

## Revision and Description of New *Piperamarginella* species (Gastropoda: Marginellidae: *Marginella*) from the Eastern Cape, South Africa – Part 3

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**ABSTRACT** Three new species in the subgenus *Piperamarginella*, genus *Marginella* from the Eastern Cape, South Africa, are described. This study follows on the studies conducted by the author (2024a, 2024b) where six new species in total were described, *Marginella (Piperamarginella) buffaloensis*, *M. (P.) lindaswartae*, *M. (P.) gonubiensis*, *M. (P.) salmarosea*, *M. (P.) boetveldsmanni*, and *M. (P.) florescopictorata*. Further study on the group revealed another three new species, described here as *M. (P.) almae* n. sp., *M. (P.) aletae* n. sp. and *M. (P.) parvamaculofera* n. sp.

**KEYWORDS** Marginellidae, *Marginella*, *Piperamarginella*, *Marginella (P.) almae* n. sp., *M. (P.) aletae* n. sp., *M. (P.) parvamaculofera* n. sp., Eastern Cape, South Africa

### INTRODUCTION

Recent study on the *Piperamarginella* revealed several new species, especially recent work by the author (2024a, 2024b) where six new species were described and compared to several congeners within the *Piperamarginella*. The species described by the author (2024a, 2024b) included:

*Marginella (Piperamarginella) buffaloensis* S.G. Veldsman, 2024;

*M. (P.) lindaswartae* S.G. Veldsman, 2024;

*M. (P.) gonubiensis* S.G. Veldsman, 2024;

*M. (P.) salmarosea* S.G. Veldsman, 2024;

*M. (P.) boetveldsmanni* S.G. Veldsman, 2024;

and, *M. (P.) florescopictorata* S.G. Veldsman, 2024.

These taxa are compared to *M. (P.) monozona*, *M. (P.) obliqua*, and *M. (P.) piperata*. The shells within this subgenus are very similar and share many morphological characteristics that make them *Piperamarginella* (Veldsman 2017, 2019). The coloration, shell morphology and size of the

shells studied here are at first glance very similar, but with closer investigation there are several differences between the three new species described here and should be read in conjunction with the author's articles in 2024a and 2024b. The new species named herein are: *(P.) parvamaculofera* n. sp., *M. (P.) almae* n. sp., and *M. (P.) aletae* n. sp. Many collectors might even have these shells misidentified in their collections as *M. (P.) piperata* Hinds, 1844 or some other name within the *Piperamarginella* subgenus, since there was a lot of confusion in this group pre-2013. Details of some of the closer congeners are discussed in several previous articles (Aiken 2019, Veldsman *et al.* 2014, Veldsman 2022, 2024a, 2024b, Veldsman & Veldsman 2024). The shells of the new species, like most other *Piperamarginella* species, are found along the beaches of the Eastern Cape, South Africa (Figure 1), and have been collected live by diving at shallow depths, and dredged in deepwater.



**Figure 1.** Locality map indicating the main localities along the Eastern Cape, South Africa, where the three new species occur.

## METHODS

*Marginella* species within the same subgenus share several taxonomic characters, such as the type and size of labial denticles, posterior notch presence and callus on columella. Other shell morphological features are used here to differentiate species from each other, but not limited to the shoulder shape and width, general shape of the shell, spire height and characteristics, aperture shape and width, shape of the labrum, markings, and coloration.

Material from the Institute for Marine and Environmental Science's (IMES) Collection (previously known as the Veldsman Collection) were studied along with material from the Anton Groenewald and Linda Swart Collections, and material from ex collections of Douw Steyn, P.J. Botha, Media Evans, D. & M. Meyer, Val van der Walt, C. Westhof, and S. Theunissen [now part of the IMES Collection].

Shells were measured with a pair of digital calipers (RS Pro Electronic Digital Caliper 150 mm/6", South Africa). To ensure precision, each measurement was taken in triplicate. All the type material of the new species and other material studied were photographed by S.G. Veldsman.

## SYSTEMATICS

Phylum	Mollusca Linnaeus, 1758
Class	Gastropoda Cuvier, 1795
Subclass	Caenogastropoda Cox, 1960
Order	Neogastropoda Wenz, 1938
Superfamily	Volutoidea Rafinesque, 1815
Family	Marginellidae Fleming, 1828
Genus	<i>Marginella</i> Lamarck, 1799
Subgenus	<i>Piperamarginella</i> S.G.Veldsman, 2017

*Marginella (Piperamarginella) aletae*  
S.G.Veldsman n. sp.  
(Plate 1, Figures 1-2, 7)

**Description.** The shell is moderately large (14-17 mm), fusiform semi-elongated shaped, shoulder low and rounded, slightly rounded at center of body whorl, bending slightly inwards on last third at the anterior end. Thin labrum, smooth and off-white background color with red-brown markings on top, no developed posterior notch or labial denticles. Spire high, spire whorls convex and rounded. Small protoconch, light grey color. Columella slightly bending inwards, with four thick continuous plications on anterior side, which take up half the length of the aperture, off-white color. Callus covering all the plicae, no callus on inside of columella. Aperture narrow and lip straight to slightly rounded, off-white color. Background of the body whorl off-white colored. A thin light-colored band below the shoulder with dark brown spots included. The body whorl consists of thin lines of small

blocky pattern alternating pinkish and darker red-brown to brown coloration. A light-colored band at the last third on anterior side, around the body whorl only barely visible on dorsal side. The last section towards the anterior side is similarly colored than the larger portion on the posterior side. A darker broad line is visible only on the aperture side, not visible on dorsal side. A pinkish marking is visible on last plicae. The spire consists of large blotches of light and dark pink, and brown markings.

**Type Material.** The type material of the holotype and paratypes of *M. (P.) aletae* are as follows:

- Holotype: 16.22 x 9.07 mm (Plate 1, Figure 1); Jeffreys Bay, beach collected; 1987; Coll. Natal Museum South Africa (NMSA), ID No: P2658/T4629 (Donated by L. Swart).
- Paratype 1: 15.87 x 8.75 mm (Plate 1, Figure 2); Jeffreys Bay, beach collected; 1982; IMES Coll.
- Paratype 2: 16.51 x 8.88 mm (Plate 1, Figure 7); Jeffreys Bay, beach collected 1987; IMES Coll.
- Paratype 3: 16.30 x 8.81 mm; Jeffreys Bay, beach collected 1986; IMES Coll.
- Paratype 4: 15.74 x 8.53 mm; Jeffreys Bay, beach collected 1987; L. Swart Coll.
- Paratype 5: 16.80 x 9.22 mm; Jeffreys Bay, beach collected 1987; L. Swart Coll.
- Paratype 6: 16.03 x 8.86 mm; Jeffreys Bay, beach collected 1987; L. Swart Coll.
- Paratype 7: 14.93 x 8.81 mm; Jeffreys Bay, beach collected 1996; IMES Coll.
- Paratype 8: 14.76 x 8.39 mm; Jeffreys Bay, beach collected 1987; IMES Coll.
- Paratype 9: 15.55 x 8.71 mm; Jeffreys Bay, beach collected 1987; L. Swart Coll.

Paratype 10: 16.22 x 8.88 mm; Jeffreys Bay, beach collected 1987; IMES Coll.  
 Paratypes 11-27: 14.05-16.15 mm, beach collected at Jeffreys Bay and Xora River Mouth 1987; from the IMES Coll. and L. Swart Coll.

**Distribution.** Type locality of *M. (P.) aletae* n. sp. is beach collected, Jeffreys Bay, Eastern Cape, South Africa. Specimens studied were mainly beach collected, Eastern Cape, South Africa.

**Etymology.** This species is named for Alet Potgieter, friend of the Veldsmans and many of the material used in the study came from her collection, now included in the IMES collection.

*Marginella (Piperamarginella) almae*  
 S.G.Veldsman n. sp.  
 (Plate 1, Figures 3-4, 8)

**Description.** The shell is moderately large (14-16 mm), fusiform sub-oval shaped, shoulder rounded, rounding body whorl and sharp bend inwards on last third at the anterior end. Thin labrum, smooth and off-white background color with red-brown markings on top, no developed posterior notch or labial denticles. Spire moderately high, spire whorls convex, slightly stepped and rounded. Small protoconch, light grey color. Columella mostly straight, bending slightly inwards at center, with four thick continuous plications on anterior side, which take up half the length of the aperture, off-white color. Callus covering all the plicae, no callus on inside of columella. Aperture narrow and lip straight to slightly rounded, off-white color. Background of the body whorl off-white/creamy to light pinkish colored. A thin light-colored band below the shoulder, followed by a broader band consisting of thin speckled lines (alternating dark and light pinkish to cream colored spots), fading in beached shells. A light-colored band at the last third on anterior

side, around the body whorl, followed by a dark line. The last section towards the anterior side is similarly colored than the larger portion on the posterior side. A pinkish marking is visible on last plicae, fading on beached specimens. The spire consists of large blotches of dark pink and brown markings.

**Type Material.** The type material of the holotype and paratypes of *M. (P.) almae* are as follows:

Holotype: 15.10 x 8.27 mm (Plate 1, Figure 3); Jeffreys Bay, beach collected 1997; Coll. Natal Museum South Africa (NMSA), ID No: P2657/T4628 (Donated by S.G. Veldsman - IMES).  
 Paratype 1: 15.58 x 8.94 mm (Plate 1, Figure 4); Jeffreys Bay, beach collected; 1986; IMES Coll.  
 Paratype 2: 15.41 x 8.58 mm (Plate 1, Figure 8); Jeffreys Bay, beach collected 2002; IMES Coll.  
 Paratype 3: 15.23 x 8.56 mm; Jeffreys Bay, beach collected 1986; IMES Coll.  
 Paratype 4: 15.45 x 8.49 mm; Jeffreys Bay, beach collected 1986; L. Swart Coll.  
 Paratype 5: 15.97 x 9.09 mm; Jeffreys Bay, beach collected 1981; IMES Coll.  
 Paratype 6: 14.56 x 8.52 mm; Jeffreys Bay, beach collected 1981; IMES Coll.  
 Paratype 7: 15.19 x 8.36 mm; Jeffreys Bay, beach collected 1981; L. Swart Coll.  
 Paratype 8: 15.62 x 8.84 mm; Jeffreys Bay, beach collected 1981; IMES Coll.  
 Paratype 9: 15.34 x 8.81 mm; Jeffreys Bay, beach collected 1981; IMES Coll.  
 Paratype 10: 15.94 x 8.98 mm; Jeffreys Bay, beach collected 1998; IMES Coll.  
 Paratypes 11-39: 13.73-16.62 mm, beach collected at Jeffreys Bay, and Xora River Mouth 1998; from

the IMES Coll., A. Groenewald and L. Swart Coll.

**Distribution.** Type locality of *M. (P.) almae* n. sp. is beach collected, Jeffreys Bay, Eastern Cape, South Africa. Specimens were mainly beach collected, Eastern Cape, South Africa.

**Etymology.** This species is named for the author's mother-in-law, Alma van Zyl.

*Marginella (Piperamarginella)  
parvamaculofera* S.G.Veldsman n. sp.  
(Plate 1, Figures 5-6, 9)

**Description.** The shell is moderately large (14-17 mm), fusiform oval shaped, shoulder broad and rounded. Moderately thick to thick labrum, smooth and off-white background color with dark grey to red-brown markings on top, no developed posterior notch or labial denticles. Spire low, spire whorls convex and rounded. Moderately wide protoconch, light grey color. Columella bending inwards with four thick continuous plications on anterior side, which take up half the length of the aperture, off-white color. Callus covering all the plicae, no callus on inside of columella. Aperture moderately wide and lip rounded, off-white color. Background of the body whorl off-white colored, with very fine speckled pattern (light to dark colored), consistent in thin bands around the body whorl. A light-colored band in the center around the body whorl (very faint). The last portion towards the anterior side of the shell the same coloration as the first half on the posterior side. Light pink to grey marking visible on last plicae. The shoulder has a thin band presented as alternating light and dark pink markings. The spire has similar coloration as the body whorl only slightly darker.

**Type Material.** The type material of the holotype and paratypes of *M. (P.) parvamaculofera* are as follows:

Holotype: 16.70 x 9.71 mm (Plate 1, Figure 5); Jeffreys Bay, beach collected 1987; Coll. Natal Museum South Africa (NMSA), ID No: P2659/T4630 (Donated by L. Swart).

Paratype 1: 16.00 x 8.77 mm (Plate 1, Figure 6); Jeffreys Bay, beach collected 1981; IMES Coll.

Paratype 2: 17.00 x 9.32 mm; Jeffreys Bay, beach collected 1996; IMES Coll.

Paratype 3: 15.46 x 9.07 mm (Plate 1, Figure 9); Jeffreys Bay, beach collected 1989; L. Swart Coll.

Paratype 4: 16.94 x 9.39 mm; Jeffreys Bay, beach collected 1987; IMES Coll.

Paratype 5: 16.96 x 9.78 mm; Jeffreys Bay, beach collected 1987; IMES Coll.

Paratype 6: 15.85 x 8.80 mm; East London, dredged 95-100 m in 2013; IMES Coll.

Paratype 7: 16.30 x 9.53 mm; Jeffreys Bay, beach collected 1997; IMES Coll.

Paratype 8: 15.50 x 8.92 mm; Jeffreys Bay, beach collected 1997; L. Swart Coll.

Paratype 9: 16.38 x 9.31 mm; East London, beach collected 1997; IMES Coll.

Paratype 10: 15.16 x 8.81 mm; Jeffreys Bay, beach collected 1997; IMES Coll.

Paratypes 11-48: 14.34-17.71 mm, beach collected at Jeffreys Bay, and East London 1997, from the Veldsman Coll., A. Groenewald and L. Swart Coll.

**Distribution.** Type locality of *M. (P.) parvamaculofera* n. sp. is beach collected, Jeffreys Bay, Eastern Cape, South Africa. Specimens studied were mainly beach collected and dredged, Eastern Cape, South Africa.

**Etymology.** This species is named "*parvamaculofera*" for its small size and spotted appearance.

## DISCUSSION

All three new species along with the closest congeners in this subgenus *Piperamarginella* share most shell morphological characteristics. The species described here, however, differ in general shape and pattern details. *Marginella (P.) almae* is fusiform sub-oval shaped, *M. (P.)*

*altetae* is fusiform semi-elongated, and *M. (P.) parvamaculofera* is fusiform oval shaped. Detailed comparison is found in Table 1. For comparison with the other closest congeners, refer to the comparison tables in Veldsman (2024a, 2024b).

	<i>M. (P.) almae</i>	<i>M. (P.) aletae</i>	<i>M. (P.) parvamaculofera</i>
<b>General shape</b>	Fusiform sub-oval	Fusiform semi-elongated	Fusiform oval
<b>Spire</b>	Spire moderately high, spire whorls convex, slightly stepped and rounded	Spire high, spire whorls convex and rounded	Spire low, spire whorls convex and rounded
<b>Columella and aperture</b>	Columella mostly straight, bending slightly inwards at center, aperture narrow and lip straight to slightly rounded.	Columella slightly bending inwards, aperture narrow and lip straight to slightly rounded.	Columella bending inwards, aperture moderately wide and lip rounded.
<b>Plicae markings</b>	A pinkish marking visible on last plicae, fading on beached specimens.	A pinkish marking is visible on last plicae.	Light pink to grey marking visible on last plicae.
<b>Body-whorl pattern</b>	Background of the body whorl off-white/creamy to light pinkish colored. A thin light colored band below the shoulder, followed by a broader band consisting of thin speckled lines (alternating dark and light pinkish to cream colored spots), fading in beached shells. A light-colored band at the last third on anterior side, around the body whorl, followed by a dark line. The last section towards the anterior side is similarly colored than the larger portion on the posterior side.	Background of the body whorl off-white colored. A thin light-colored band below the shoulder with dark brown spots included. The body whorl consists of thin lines of small blocky pattern alternating pinkish and darker red-brown to brown coloration. A light-colored band at the last third on anterior side, around the body whorl only barely visible on dorsal side. The last section towards the anterior side is similarly colored than the larger portion on the posterior side. A darker broad line is visible only on the aperture side, not visible on dorsal side.	Background of the body whorl off-white colored, with very fine speckled pattern (light to dark colored), consistent in thin bands around the body whorl. A light-colored band in the center around the body whorl (very faint). The last portion towards the anterior side of the shell the same coloration as the first half on the posterior side.

**Table 1.** Comparison between *M. (P.) almae*, *M. (P.) aletae* and *M. (P.) parvamaculofera*.

## ACKNOWLEDGEMENTS

The author thanks Sulize Veldsman for proof reading and support during development of this paper, and Vellies (J.H.) Veldsman for his input and proofreading. A special thanks to Linda Swart and Anton Groenewald for making available material used during this study. Mary (Nelisiwe) Manukuza from the Natal Museum, South Africa (NMSA) is thanked for providing the holotype numbers.

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### Cite as:

**Veldsman, S.G. 2024.** Revision and Description of New *Piperamarginella* species (Gastropoda: Marginellidae: *Marginella*) from the Eastern Cape, South Africa – Part 3. *The Festivus* 56(3):146-153. <http://doi:10.54173/F563146>



**Plate 1. Figures 1-2.** *M. (P.) aletae* 1. Holotype: 16.22 x 9.07 mm, Jeffreys Bay, beach collected, Coll. NMSA (P2658/T4629). 2. Paratype 1: 15.87 x 8.75 mm, Jeffreys Bay, beach collected, Coll. IMES. 3-4. *M. (P.) almae* 3. Holotype: 17.12 x 9.21 mm, Jeffreys Bay, beach collected, Coll. NMSA (P2657/T4628). 4. Paratype 1: 15.58 x 8.94 mm, Jeffreys Bay, beach collected, Coll. IMES. 5-6. *M. (P.) parvamaculifera* 5. Holotype: 16.70 x 9.71 mm, Jeffreys Bay, beach collected, Coll. NMSA (P2659/T4630). 6. Paratype 1: 16.00 x 8.77 mm, Jeffreys Bay, beach collected, Coll. IMES. 7. *M. (P.) aletae* Paratype 2: 16.51 x 8.88 mm, Jeffreys Bay, beach collected, Coll. IMES. 8. *M. (P.) almae* Paratype 2: 15.41 x 8.58 mm, Jeffreys Bay, beach collected, Coll. IMES. 9. *M. (P.) parvamaculifera* Paratype 3: 15.46 x 9.07 mm, Jeffreys Bay, beach collected, Coll. L. Swart.