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**New data on East-African *Mericella* species, and description  
of a new species of *Scalptia* (Neogastropoda:  
Cancellarioidea: Cancellariidae)**

André VERHECKEN (1) & Luigi BOZZETTI (2)

(1) Scientific Associate, Malacology Section,  
Royal Belgian Institute of Natural Sciences, Brussels (RBINS)  
(2) Via L. Devoto, 3, 20133 Milano, Italy.

**Abstract:** New material from Mozambique allowed redescription of the poorly known *Mericella paschalis* (Thiele, 1925). The genera *Mericella* Thiele, 1929, and *Gardiella* Olsson & Bayer, 1973, were found to be synonymous. A new species of *Scalptia* is introduced, based on shells from southern Madagascar.

**Introduction:** The knowledge of East-African **Cancellariidae** has been rather poor for a long time, but has expanded considerably during the last two decades (Beu & Maxwell, 1987; Beu & Verhecken, 2000; Petit & Harasewych 1991, 1993, 2000a, b, 2002; Verhecken 1991, 1997). The present paper studies material of two taxa: a poorly known *Mericella* species described on only one broken shell by Thiele (1925) and for which no further data have been recorded since; and a new *Scalptia* species from southern Madagascar.

### Species studied

#### A. *Mericella paschalis* (Thiele, 1925)

The Mollusca collected off East-Africa by the “Valdivia” during the *Deutsche Tiefsee Expedition* 1898-99 were published by Thiele (1925). He described five new

cancellariid species: *Cancellaria plebeja* from Stn 104, 155 m, Agulhas Bank, South Africa; *C. patricia* from Stn 244 in the Zanzibar Channel, 463 m; *C. (Merica) jucunda*, 2 shells (15.2 x 7.3 mm, 12.4 x 5.6 mm) from Stn 242, off Dar es Salam (depth not mentioned), 6° 34' 8" S, 39° 35' 5" E, Tanzania; *C. (Merica) paschalis* (based on a single broken shell) from Stn 245, 5° 27' 9" S, 39° 18' 8" E, Zanzibar Channel, depth not mentioned, Tanzania and *Admete aethiopica* from Stn 251 and 256, off the African coast, at about 1°45'N and S of the Equator, depths 693 and 1134 m respectively. These species are rather distinct from most cancellariids known at that time; their type material is in the Institut für systematische Zoologie, Malakologie, Museum für Naturkunde in Berlin (ZMB).

This was the only information on these species until the identification of *C. patricia* in southeastern Australian material (Verhecken, 1991) and of *Admete aethiopica* in material taken in Indonesian waters by the Karubar expedition (Verhecken, 1997: 316).

Thiele placed *C. jucunda* and *C. paschalis* in the subgenus *Merica*. Later (1929: 352) he introduced the genus *Mericella* as a section of *Narona*, with *C. (Merica) jucunda* as monotype. He gave the following short distinctive characteristics (transl.): "shell rather finely cancellated, whorls inflated, outer lip expanded, smooth inside". Only *M. bozzettii* Petit & Harasewych, 1993, from off Cape Ras Hafun, Somalia, and *Cancellaria (Merica) paschalis* were also placed in *Mericella* by Petit & Harasewych (1993: 221).

Shells of *Mericella paschalis* have now been identified in material from Bazaruto, Mozambique, kindly made available for study by Mr J. Rosado (Maputo, Mozambique). This is the first material of this species found since 1925, and contains the first undamaged shells collected. A redescription of this species is given here, based on the fragmentary holotype and the shells from Mozambique here studied.

### *Mericella paschalis* (Thiele, 1925)

(Figs. 1-5)

#### **Material studied:**

Holotype, by monotypy: a broken shell, 8.9 x 5.0 mm, ZMB 109368 (Fig. 1), 'Valdivia' Stn. 245, Zanzibar channel, 5° 27' 9" S, 39° 18' 8" E, off Tanzania.

New material: five shells, trawled at a depth of 375-450 m off Zavora, Bazaruto, Mozambique.

**Description:** Shell elongate, white; no traces of a periostracum. Top angle 45-49°. Shell height 12.4-17.2 mm, shell width 6.5-8.1 mm. Sculpture consisting of fine axial and spiral riblets. Protoconch bulbous, smooth and shiny, paucispiral with  $1\frac{3}{4}$  -  $1\frac{7}{8}$  whorl, visible height 1.3-1.8 mm, maximum diameter 1.5-1.9 mm. Protoconch rim neatly indicated, forming an opisthocyrt line. Teleoconch with up to  $4\frac{1}{2}$  whorls. Axial sculpture consisting of low narrow riblets: 13-15, 14-16, 17-25 and 21-28 respectively on first to fourth teleoconch whorl; the last whorl has 19-28 axial riblets. There can be 2-3 low varices, spaced 180-240° along the whorl. Spiral sculpture consisting of 3, 3-4, 4-6, 5-7 thin cords on first to fourth whorl respectively; the last whorl has 18-22 cords. The area between the suture and the first spiral ridge on the younger whorl is flat and steeply inclined; it is much wider than the normal spacing between the spiral lines. Height of the last whorl 8.2-11.3 mm (65-67% of total shell height). The whorls are rounded, but near the posterior suture there is a flat sloping area, wider than the other areas between the spiral ridges, one thin spiral line can be present in that area. Aperture oblong; height: 6.5-8.7 mm (49-53% of total shell height); width 3.0-3.5 mm. Columella straight, slightly inclined towards shell axis anteriorly, with two well-defined rounded folds placed near half height of the aperture; the posterior fold may be slightly broader than the other one. Aperture smooth inside, without lirae nor teeth. Hardly any siphonal canal, no siphonal fasciole. A thin colourless callus covers part of the parietal side; it can be thicker on the columellar side, where it completely covers the umbilical area. Aperture rim thickened and reflected outwards, forming a sigmoid line.

The new material originates from about 15° south of the type locality, but completely agrees with the holotype characters. The depth range of this species was unknown, but off Mozambique the bathymetrical distribution seems to be 375-450 m.

**Discussion:** Differences between *Mericella paschalis* and *Mericella jucunda*:

The new material has the same rather coarse sculpture as the holotype of *M. paschalis*. The figures given by Thiele (1925: pl. 34 fig. 21; 1929: fig. 424) for *M. jucunda* suggest a rather fine and smoothish sculpture, but its syntypes [ZMB 109369: 2 complete shells 12.4 x 5.6 mm (68), 15.2 x 7.3 mm (Figs. 7-8); 2 juveniles 5.9 x 3.3 mm (2 teleoconch whorls); 5.3 x 3.1 mm (1.75 teleoconch whorls); and an apertural part] show a fine, yet rather crisp sculpture with fine rounded knobs (mentioned by Thiele) at the crossings of the sculpture lines (Figs. 7-9). This sculptural difference between *M. jucunda* and *M. paschalis* is less evident in Thiele's figures, therefore it is shown here (Figs. 1-9). It is unlikely that these two types of sculpture would be the extremes of the sculpture variability in one and the same species. Moreover, *M. jucunda* also differs from *M. paschalis* in having the columellar folds narrower and placed much more obliquely, and in its outer lip which is more expanded anteriorly than in *M. paschalis*. Between the axial ribs, *M. jucunda* has fine axial intritacalx riblets (as proposed by d'Attilio &

Radwin, 1971), absent in *M. paschalis*. The only quantitative differences reside in the sculpture: the higher number of axials starting from the 2<sup>nd</sup> teleoconch whorl onwards (*M. paschalis*: 2<sup>nd</sup> whorl: 14-16, 3d whorl: 17-25, last whorl: 19-27; *M. jucunda*: 2<sup>nd</sup> whorl: 24-25, 3d whorl: 34-35, last whorl: 45-46), and the slightly higher number of spirals on the 2<sup>nd</sup> and 3d whorl. (*M. paschalis*: 2<sup>nd</sup> whorl: 3-4, 3d whorl: 4-6; *M. jucunda*: 2<sup>nd</sup> whorl: 5-6, 3d whorl: 8, on the fourth whorl this difference has disappeared).

### Genera *Mericella* Thiele, 1929 and *Gardiella* Olsson & Bayer, 1972

Olsson & Bayer (1972: 876) introduced the new genus *Gardiella* for three new Caribbean deep water species. In their discussion they state "... *Mericella* is perhaps the more likely possibility with which *Gardiella* may be congeneric. However, definite reference of our Caribbean shells to *Mericella*, as first considered, would be premature since it would imply a direct relationship between our Caribbean species and an imperfectly known species from the Indian Ocean, an expression of a degree of knowledge on our part that we do not possess".

*Cancellaria corbicula* Dall, 1908, from 650-1980 m, off Southern California, was placed in *Mericella* by Abbott (1974: 247) and in *Gardiella* by Kaicher (1978: card 1952). Thiele (1925: 201), while describing *M. jucunda*, mentioned its closeness to *Merica bifasciata* (Deshayes, 1830) (*Merica oblonga* Sowerby, 1825) and especially to *C. corbicula*, but stated, without providing the differences, that both species are clearly different.

Characteristics of *Mericella* and *Gardiella* are compared in table 1

Discussion: table 1 shows that the genera *Mericella* and *Gardiella* are very much alike conchologically, the main differences being the relative spire height and the suture form. The shell size of the largest *Mericella*, *M. bozzettii* (up to 37 mm), is in the same range as for the three *Gardiella* species (30.1 to 31.5 mm). In species of *Mericella*, the relative aperture height (*M. jucunda*: 0.488-0.493; *M. paschalis*: 0.494-0.527; *M. bozzettii*: 0.553) is larger than in *Gardiella* (0.388-0.396). This agrees with Petit & Harasewych (1993: 223), who consider a value > 0.5 a diagnostic feature for *Mericella*. However, in general, there are no important differences in shell characteristics that would justify a separation between *Mericella* and *Gardiella*. Therefore, *Gardiella* must be considered a junior synonym of *Mericella*, or at most as an Atlantic subgenus of it.

Comparison of the genera *Mericella* and *Gerdiella*. (a): Text in **Bold**: Thiele's (1929) diagnosis (translated); in *italics*: own observations on *M. jucunda* syntypes; underlined: *M. bozzettii*. (b): Olsson & Bayer, 1973: 876.

	<i>Mericella</i> <sup>a</sup>	<i>Gerdiella</i> <sup>b</sup>
Form	<i>elongated</i>	stout, broadly elongated
Umbilicus	<i>imperforate</i>	imperforate
Columellar folds	<i>2, rounded, posterior one the strongest</i>	2, sharply keeled, upper one the largest
Axis	<i>straight</i>	short, pillar straight
Apex	<i>blunt</i>	blunt
Protoconch	<i>large, 1 3/4 whorls, smooth</i>	large, pupoid; 2.5 whorls, 1 <sup>st</sup> : smooth, 2 <sup>nd</sup> : axial riblets
Postnuclear whorls	<b>inflated</b> <b>rather finely cancellated</b>	rounded or strongly shouldered fine spirals & axials or strong plain spiral cords
Sutures	<i>very narrow</i>	deeply recessed
Varices	<i>weak, spaced 180-225 °</i>	spaced 150°
Aperture	<b>outer lip expanded</b>	widely expanded, semiovate parietal side only weakly arched labial side regularly curved
Callus	<i>thin, spreading on the parietal side.</i>	spreading pad on parietal side thickens the outer lip
Outer lip sinus	<i>sigmoid profile</i>	wide, shallow, in upper half (sigmoid profile)
Inside aperture	<b>smooth or with weak denticles</b>	smooth or lirated
Outer colour	<i>whitish</i>	white or light brown

## B. A new *Scalptia* species from Madagascar

*Scalptia foveolata* (Sowerby, 1849) is a well-known, rather common eastern South African species, occurring from Jeffreys Bay to Natal, it has a pale buff to chestnut-brown shell of up to 24 mm (Barnard, 1959: 19). Steyn & Lussi (1998: 148) give about the same distribution (Port Elisabeth to Port Shepstone) but add "violet colour"; a question to M. Lussi on this remained unanswered. No finds have been reported from outside the cited area, except for the general statement in a palaeontological paper (King, 1953: 83) that the species occurs in Natal and Mozambique, but the latter locality has never been confirmed. Barnard (1959: 19) stated that this species is only known from beach material; according to recent information it lives in sand in very shallow water, and at low tide is sometimes washed out by strong waves (B. de Bruin, pers. comm.).

The protoconch of *S. foveolata* is paucispiral, indicating a direct development of the larvae, without a floating veliger stage. The surface currents off southern East-Africa are dominated by the NE to SW Agulhas current, opposing to a passive transport from

South Africa to Madagascar. These two factors explain why *S. foveolata* has never been found in Madagascar.

Recently, shells superficially resembling *S. foveolata* have been reported from southern Madagascar; 22 shells in different condition, from Lavanono, WNW of Cap Sainte-Marie, were seen by the present authors. All these shells have a vivid red-violet colour. Apparently all shells were beach-collected, as evidenced by slight to heavy surface erosion on most, and breaks and holes in several of them. This material was obtained from the local population on at least four occasions over a time span of three years. The village is very far from Fort Dauphin and only consists of huts and a small store; therefore the possibility of tampering with the shells to artificially change the colour can be excluded.

Thirteen of these Madagascar shells in fine to reasonable condition were studied, they are here described as a new species, because of their geographical isolation from *S. foveolata* and several constant differentiating characters.

***Scalptia androyensis*** sp. nov.  
(Figs. 10-14)

**Type material:**

**Holotype:** RBINS IG30517, type n° 537, 17.0 x 11.2 mm. Lavanono, Madagascar, beach. (Figs. 10-11)

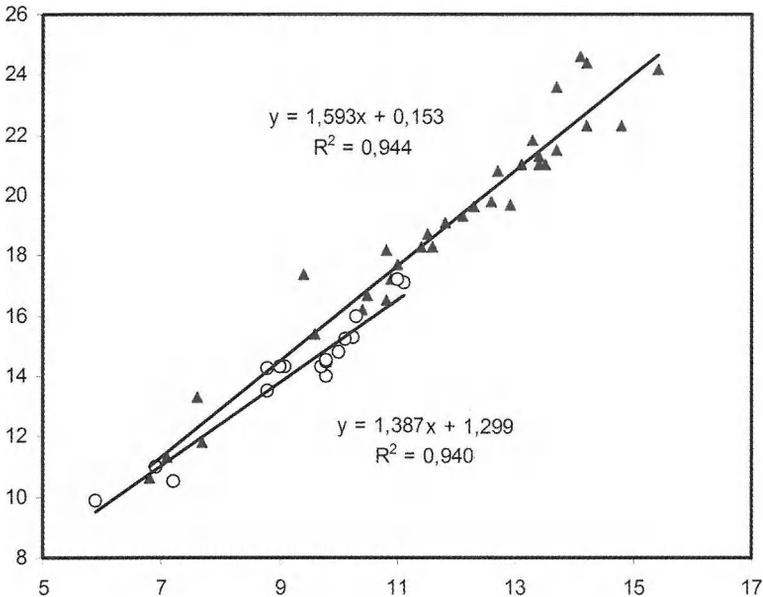
**Paratypes:** all from type locality: 1, 14.3 x 9.0 mm, MNHN; 2-3, 14.3 x 8.8 mm and 14.8 x 10.0 mm, coll. Bozzetti; 4-5, 14.5 x 9.9 mm, AV1199 (Fig. 12) and 14.3 x 9.6 mm, AV1212 (Fig. 13). The other shells seen are not included in the type series because of their poorer condition.

**Type locality:** Lavanono, Androy province, Madagascar.

**Description:** Shell up to 17.2 x 11.0 mm; colour reddish purple in all shells seen, but protoconch, umbilicus, columella and outer lip white, yet the latter may show some reddish patches. Protoconch rather large, smooth, paucispiral with 1.25 whorl, diameter 1.1-1.3 mm, height 0.9-1.1mm; end of protoconch marked only by start of teleoconch sculpture. Teleoconch with up to 4 3/8 strongly shouldered whorls. Sutural plane flat and almost perpendicular to shell axis, the prolongations of the axial ribs cross over obliquely as raised rounded ribs; there are brownish blotches near the shoulder in that area. Axial sculpture consisting of 10-11 low rounded ribs. Spiral

sculpture of very fine close-set striae (about 9 per mm; Fig. 14) all over the teleoconch outer surface, except for the inner part of the umbilicus. Last whorl large, 73-75% of total shell height. Aperture rounded triangular, columella slightly inclined abaxially, with two rather strong folds and a clearly marked tooth at its anterior end. Outer lip thickened, truncated part perpendicular to the shell axis and bearing a small tooth. There are 14-18 (mean: 15.25,  $n = 7$ ) rather strong lirae inside the outer lip. Umbilicus deep but rather narrow.

**Discussion:** The new species best resembles *S. foveolata* from eastern South Africa (Fig. 15), whose protoconch is of the same type and form, but may reach a height of 1.7 mm and a maximum diameter of 1.7 mm. Shells of the new species are smaller and have a neat tendency to be less elongated (see graph 1).



Graph 1. Shell dimensions of *Scalptia* species discussed here. X-axis: shell width, Y-axis: shell height. Circles: *Scalptia androyensis* sp. nov.; black triangles: *S. foveolata*.

Furthermore, *S. androyensis* can easily be distinguished from *S. foveolata* by the following characteristics:

(a) The presence of fine spiral grooves all over the whorls (Fig. 14): this is absent in all 34 studied shells of *S. foveolata*, which may have coloured spiral lines but no grooves.

(b) The sutural area is almost flat and perpendicular to the shell axis, and crossed by the raised axial ribs prolongations; whereas in *S. foveolata* it is excavated, resulting in a sharp-angled shoulder, and the prolongations of the axial ribs are none or very faint.

(c) The number and intensity of the lirae in the aperture: 14-18 (mean: 15.25,  $n = 7$ ) rather strong lirae; in *S. foveolata*, lirae are present in 22 out of 34 shells, but in lower number (9-13, mean: 10.6), and in most cases only very softly indicated.

(d) The columellar folds of *S. androyensis* have about the same strength; they are clearly stronger than in *S. foveolata*, in which the posterior fold is the strongest. Moreover, *S. androyensis* has a marked tooth at the anterior end of the columella.

(e) The umbilicus, although rather narrow, is clearly wider than in *S. foveolata*. The angle formed by the straight lines from the centre of the protoconch to the left inner umbilicus curvature, and to the point where the anterior point of the columella meets the endpoint of the columellar callus is about  $10^\circ$  for *S. androyensis* and  $7^\circ$  for *S. foveolata*.

(f) The vivid red-violet colour of all shells seen from Madagascar.

**Variability:** Mr R.E. Petit kindly informed us of a single shell from the same area, with the same spiral striation, yet of a pale brownish colour. That shell may have been bleached on the beach; but if this were not the case, it could indicate that the violet colour may not be an absolute specific character.

**Etymology:** The new species is named after Madagascar's southernmost province Androy (here treated as a non-latin name), where this material was collected.

**Acknowledgements:** The *Mericella paschalis* material was kindly made available for study by Mr. A. Rosado, Maputo, Mozambique. M. Glaubrecht and F. Koehler (both ZMB) are thanked for the loan of Thiele's type material; P. Bouchet (Muséum national d'Histoire naturelle, Paris) for helpful suggestions; B. de Bruin, (Hout Bay, South Africa) for information on *C. foveolata*; and R. E. Petit (North Myrtle Beach, USA) for additional information. T. Backeljau (RBINS) is thanked for a critical reading of the draft.

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## Plate 1 : (Right)

### 1-6: *Mericella paschalis*

1: Holotype, 8.9 x 5.0 mm, ZMB 109368, 'Valdivia' Stn. 245, Zanzibar channel, 5° 27' 9" S, 39° 18' 8" E, off Tanzania.

2-6: off Zavora, Bazaruto, Mozambique, 375-450 m.

2: 16.5 x 8.0 mm.

3: 12.4 x 6.5 mm.

4-5: 17.2 x 7.7 mm.

6: 16.9 x 7.7 mm.

**7-9: *Mericella jucunda*** Syntypes from Stn 242, off Dar es Salam (depth not mentioned) Tanzania, Stn. 242: 6° 34' 8" S, 39° 35' 5" E.

7: ZMB109369, 12.4 x 5.6 mm;

8-9: ZMB 109369, 15.2 x 7.3 mm.

8: side view of syntype of Fig. 9, showing the sigmoid outer lip.

## Plate 2: ( over )

### 10-14: *Scalptia androyensis* sp. nov. Lavanono, Madagascar.

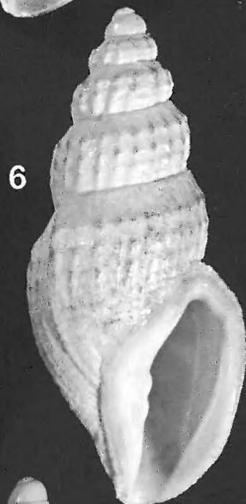
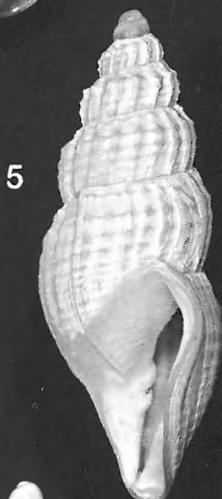
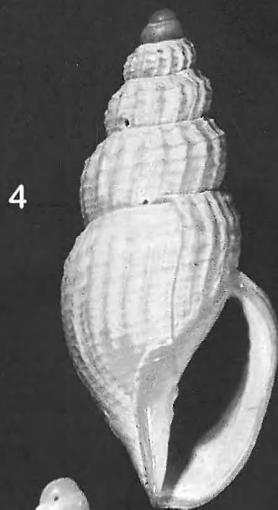
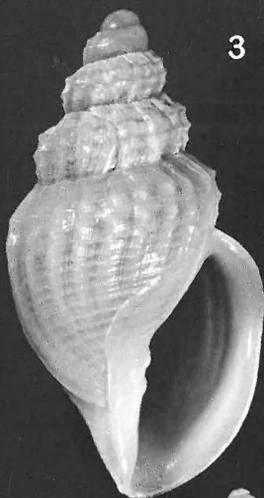
10-1: Holotype, RBINS IG 30517 type n° 537, 17.0 x 11.2 mm.

12: Paratype 4, AV1199, 14.5 x 9.9 mm.

13: Paratype 5, AV1212, 14.3 x 9.6 mm.

14: Fine spiral sculpture of holotype shell, 20 x.

**15: *Scalptia foveolata*** South Africa, Jeffreys Bay, AV0230, 24.6 x 14.2 mm.

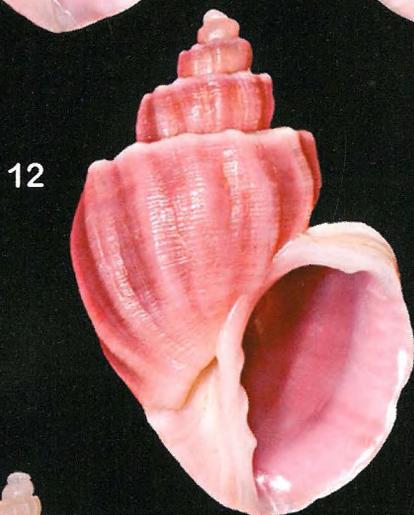




10



11



12



13



15



14