the Strandloper

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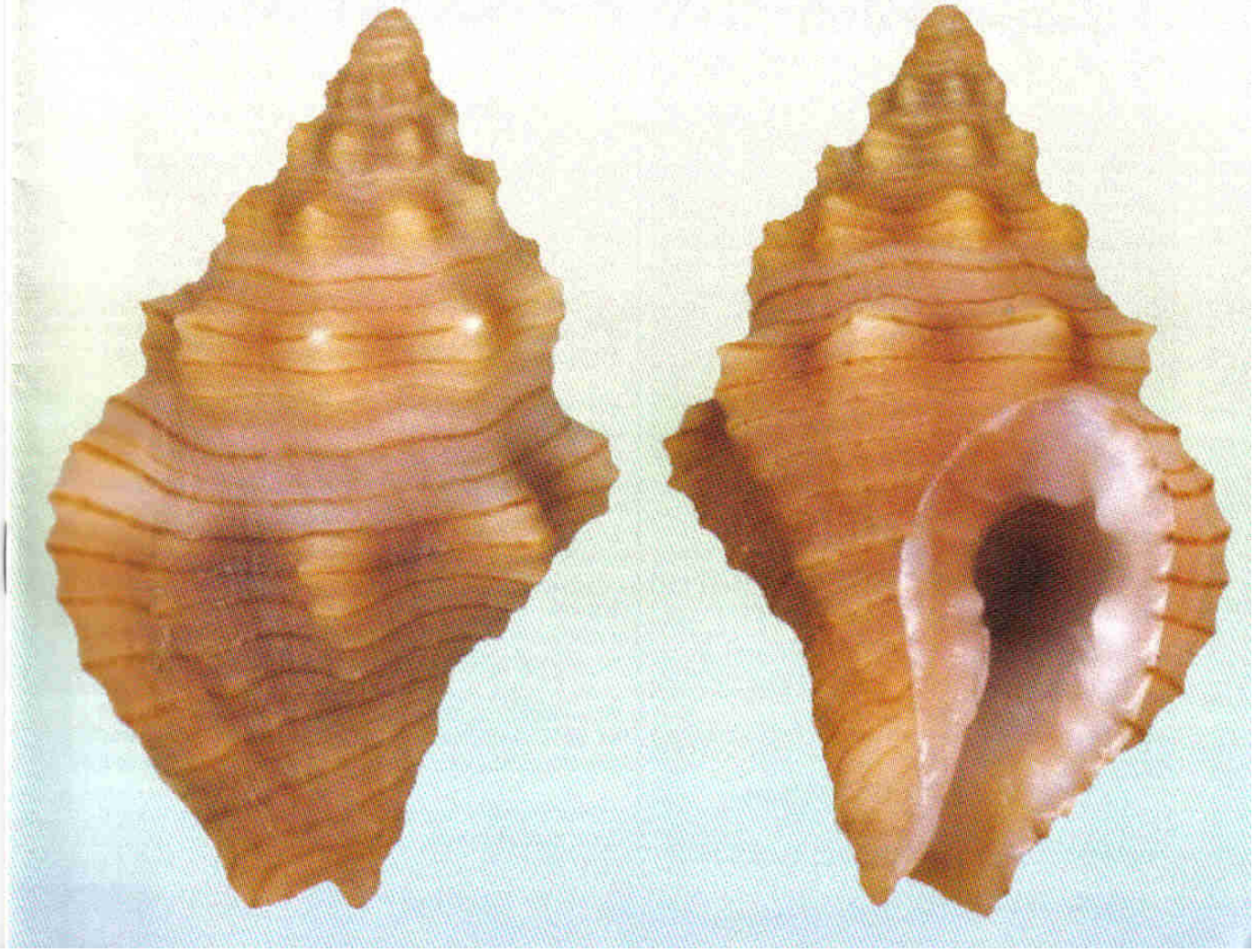

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The Editor

Book Review

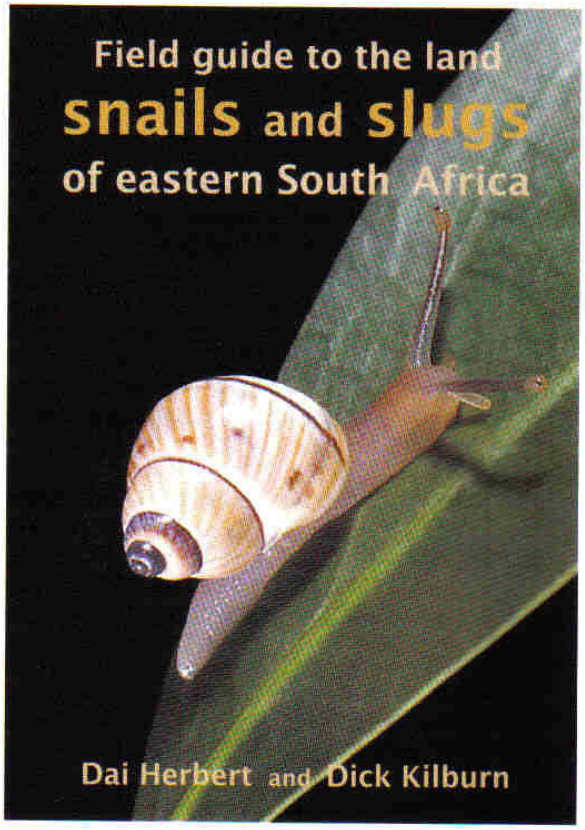
The field guide to the land snails and slugs of eastern South Africa, Dai Herbert & Dick Kilburn

- Prof. Chris Appleton*

South Africa's land snails and slugs have not enjoyed as much attention from biologists as they deserve since Major Matthew Connolly's landmark 660-page monograph was published in 1939. Dai Herbert and Dick Kilburn have done a fine job in partly filling this gap by collating what is now known of the land mollusc fauna of the eastern parts of the country, principally KwaZulu-Natal, much of it gained from their personal experience, and presenting it in a practical and readable way. In preparation for this book, the authors made numerous malacological safaris to remote localities in search of snails. In several instances, they were rewarded by finding and photographing live specimens of species not seen since they were described 65 or more years ago! Other finds from these safaris turned out to be new records not only for KwaZulu-Natal but for South Africa as well.

A glance at the Contents page shows that the species-by-species account, which occupies the bulk of the book, is preceded by a very relevant discussion of aspects of the anatomy and biology of land snails, their habitats, distribution and diversity within the different biomes of eastern South Africa. Reading Chapter 2 made me aware for example of the importance to land snail diversity of the evergreen but not-very-extensive *Podocarpus* forests of the Drakensberg, its foothills and parts of the KwaZulu-Natal midlands. This is a clear pointer for mollusc conservation (and of other invertebrates too) since habitat destruction has been shown to be a major reason for the large number of extinctions recorded amongst terrestrial snails worldwide. Importantly too, the numerous introduced snails and slugs that have become established in the region are discussed and illustrated.

The authors' eye for detail is reflected in the many wonderful photographs and an informative text making up Chapters 10 and 11. Look for example at the extraordinary array of 'teeth' inside the aperture of the shells of the tiny hunter snails (*Gulella* spp.) in the scanning electron micrographs on, for example, page 211. In some species they almost fill the aperture so that one wonders how the animal's soft parts can possibly emerge. The presence of delicate sculptural decorations on the shells of pinwheel snails such as *Trachycystis scolopendra* so carefully shown on page 232 makes on wonder what purpose they serve. Presumably these extensions of the shell's outer layer, the periostracum, disrupt its circular outline and so camouflage it against predators hunting by sight. The fascinating feeding habits of the cannibal snails of the genus *Natalina* are described and illustrated on pages 215 to 217. However the *pièce de résistance* amongst the photographs must be the amazing picture on page 257 (and on the back cover) showing a tail-wagger snail (*Sheldonia cornea*) clearly suspended by a fine, silk thread as it bungee-jumps to safety from an advancing predator. But one cannot leave this exceptional book without mention of the series of spectacular photographs on page 286 showing one of South Africa's endemic carnivorous slugs, *Chlamydophorus sexangulus*, killing and eating a millipede as large as the slug itself!



The penultimate chapter deals with snail farming and covers both the traditional European *escargot* and its relatives and the indigenous African *achatines* that are now becoming popular on restaurant menus around the world. The final chapter discusses pestiferous species and gives advice on how to control them. Most of these are aliens but happily, not many of them have spread beyond built-up areas.

Accuracy and attention to detail are hallmarks of Herbert and Kilburn's *Guide* which is not only well written but profusely illustrated, using a combination of photographs, drawings and distribution maps to accompany the text. Clear descriptions of the characteristic shape, size, colour and texture of the shell, and where necessary the soft parts too, are given for each of some 280 species from KwaZulu-Natal and northern parts of Eastern Cape. Aspects of their biology and distribution are also discussed as far as these are known. Every species is illustrated by means of a colour photograph, often of the living animal, scanning electron micrograph or line drawing together with a distribution map. Thus there are nearly 600 photographs in all with many of the larger species, e.g. the familiar giant African or agate snails (Achatinidae), being shown in colour. Most of these photographs were taken by the authors themselves and are of high quality. Many of the smaller, cryptic species such as the carnivorous hunter snails (Streptaxidae) are illustrated by means of fine electron micrographs. There are also over 100 line drawings skilfully prepared by scientific artist Linda Davis. Keys to family level have been developed for both snails and slugs. Those for snails rely largely on shell characters and for the slugs on easy-to-see anatomical characters. Groups of families with features in common are colour-coded to allow more accurate identification, to species level in many cases.

Here is a book that bridges the gap between biology, or more precisely malacology – the study of molluscs - and popular natural history. Criticism could be levelled at its restricted geographical coverage. But this is understandable in view of the relatively poor state of knowledge of what is undoubtedly a very diverse land snail fauna living in the rest of South Africa. Hopefully other volumes will follow.

Unfortunately, as the authors note, snails and slugs do not have a good public image but it is hoped that this book will help to change this. In all respects, this is a splendid and well-produced publication that must make the authors proud. I recommend it to all lovers of invertebrates and the natural world.

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Engina ignicula Fraussen, 2004, a new buccinid from South Africa

*J.P. Marais and A.P. Marais

The family Buccinidae is well represented in South African waters. Members of the family usually inhabit sub-tidal, sandy or rubble bottoms, but are sometimes found on hard substrates or under rocks. Many species are very small and difficult to obtain from deeper habitats. However, certain bottom-feeding fish often pick live or crabbed shells from underwater caves or hard-to-reach crevices. Most of the specimens of this recently described species have been collected by Danny Spengler, a South African collector who has brought to light many interesting species from fish guts which he obtained from commercial fishermen.

Description: Pale yellowish to reddish-brown, with dark, reddish-brown spiral lines, axial interspaces at periphery sometimes with large dark blotches. Axial sculpture of 9-10 strong ribs. Body whorl with 11-13 overriding primary spiral cords, spiral interspaces with 3-7 fine secondary cords. Columella callus thick, with 3-4 radially orientated ridges and 3 strong abapical denticles. Outer lip thick, with 1 adapical and 4-6 abapical denticles within. Attains 8 mm.

Distribution: Only known from off Richards Bay. Obtained from the stomach of Slinger (Chrysoblephus puniceus) caught in 50-100 m.

Note: It differs from Engina incarnate (Deshayes in Laborde & Linant, 1834) in having broader spiral interspaces, a larger aperture and more columella denticles. It also shows some resemblance to two South African muricids, Orania corallina (Melvill & Standen, 1903) and Orania fischeriana (Tapparone Canefri, 1882). The name 'ignicula' means 'little spark' and refers to the striking colour of this small shell.

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Forms of Cribrarula cribraria comma (Perry 1811) and of c. esontropia francescoi (Lorenz 2002) and a description of c. esontropia francescoi form mainland.

(The following text was adapted from the original publication in *Xenophora*, April 2005.)

- Ronnie Watt*

This paper presents a discussion of the following:

- A listing of the sp., ssp. and forms of the *Cribrarula* of Africa and the western Indian Ocean with their geographical ranges.
- Is there a distinct form of *cribraria comma*?
- Is *esontropia francescoi* form *mainland* indeed a ssp. of *esontropia* or should it be considered a ssp. of *cribraria* or even a form of *cribraria comma*?
- A description of *esontropia francescoi* form *mainland*.
- Could there be a distinct regional variation of *esontropia francescoi* form *mainland*?

THE *CRIBRARULA* OF AFRICA AND THE WESTERN INDIAN OCEAN

- *cribraria abaliena* (Lorenz, 1989)
- *cribraria comma* (Perry, 1811)
- *esontropia esontropia* (Duclos, 1833)
- *esontropia cribellum* (Gaskoin, 1849)
- *esontropia francescoi* (Lorenz, 2002)
- *esontropia francescoi* form *mainland* (Lorenz, 2002)
- *pelliserpentis* (Lorenz, 1999)

DISCUSSION

Material available to author in his own collection: *c. comma* (130), *c. comma var.* (3), *e. francescoi* (16), *e. francescoi* form *mainland* (34), intermediates of *cribraria comma/ esontropia francescoi* (3) and varying numbers of specimens of *c. abaliena*, *e. esontropia*, *e. cribellum* and *pelliserpentis*. In addition, the author viewed specimens in the collections of Werner Massier (Swakopmund, Namibia), Clinton Matheson (Johannesburg, South Africa) and Vellies Veldsman and the late Laurie Smith (Pretoria, South Africa).

cribraria comma and its forms

The shell is oval-pyriform with a callous base. The dorsal netting is dark brown and forms small, dense, regular lacunae. [Plate 1 and 2] Marginal spotting is usually absent but specimens with faint spotting on the labral margin are known. [Plate 3] Much rarer are specimens with spotting on the columellar margin. [Plate 4]

Plate 1:
C. comma from various West Indian Ocean localities

Plate 2:
C. comma from various West Indian Ocean localities

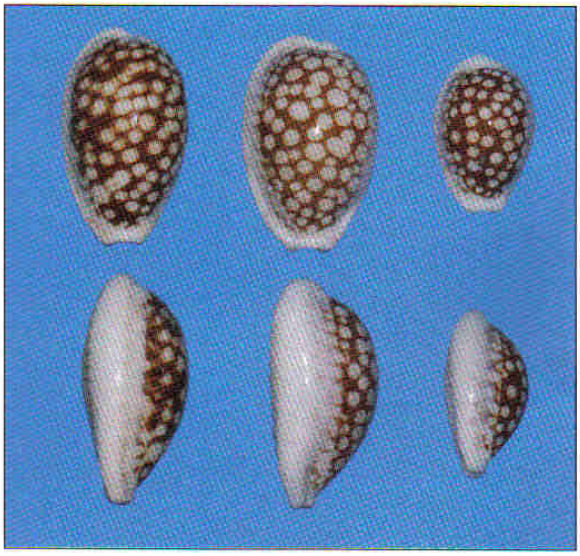


Plate 3:
C. comma with labral margin spotting

Plate 4:
C. comma with columellar margin spotting

It is very variable in size, shape, dorsal coat colour and lacunae pattern. Specimens can be very elongated or globose and callussed. [Plate 5] The lacunae can be large or small and dense. Lacunae can be regular or irregular or diffused or even overlap similar to that of *e. francescoi*. [Plate 6] The pattern of the labral margin extends onto the margin but is frequently incomplete. [Plate 7]

Plate 5:
Different shell shapes of *C. comma*

Plate 6:
Different lacunae forms and patterns of *C. comma*

Plate 7:
Labral margin patterns of *C. comma*

The dorsal coat colour can vary from dark brown to chestnut to pale-brown and even yellow–ish. [Plate 8] The dorsal ground colour ranges from creamy white to pale-purple. [Plate 9]

Left - Plate 8:
Dorsal coat colours of *C. comma*

Top - Plate 9:
Dorsal ground colours of *C. comma*

Lorenz refers to two variations of *c. comma*:

***c. comma* Variation A**

The distribution extends from Tanzania to Somalia. The shells are elongate oval to cylindrical. The labral margin is rounded, hardly callous. The columellar margin is hardly callous. Marginal spotting is rarely found and if so, would be faint along the upper labral margin but absent on the base and columellar side. The ground colour is pale purple, showing very faint transverse banding. The dorsal netting is coarse, the coat colour is rather dark brown, forming small lacunae. He considers this to be the typical *c. comma*.

***c. comma* Variation B**

The distribution range covers the KwaZuluNatal Province of South Africa, Mozambique and Madagascar. The shape of the shell is oval, often callous. (Massier has in his collection specimens of this oval, callous form originating from mainland Tanzania as well as Zanzibar.) The labral margin is rounded and rather callussed. The columellar margin is often rather callussed. The marginal spotting is often distinct along the upper labral margin with some spotting rarely on the columellar margin and the base always unspotted. The ground colour is saturate purple with distinct darker transverse banding. The dorsal colour is very dark brown, forming small lacunae.

From the description and with specific attention to the references about labral margin spotting and the callussed labral and columellar margins, these specimens could only refer to ***e. francescoi*** form *mainland* which Lorenz described in 2002.

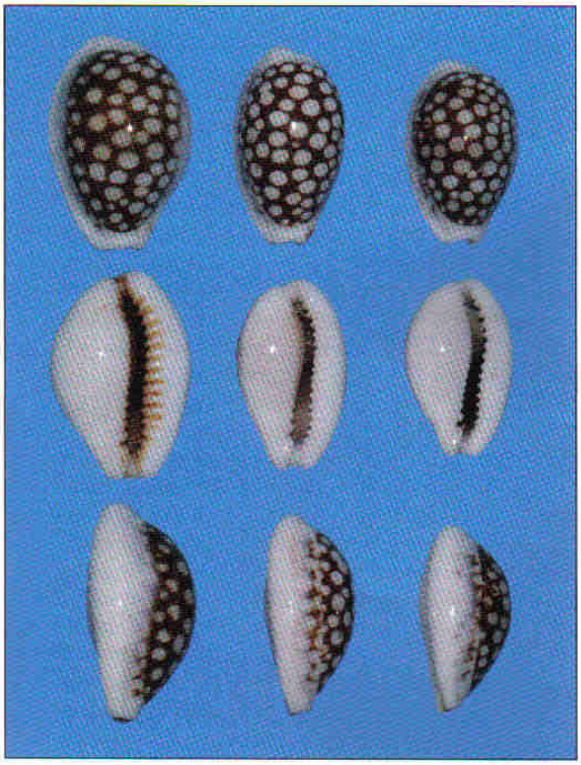
Merlin is of the opinion that specimens in his collection of Variation B from Mozambique and Madagascar, are similar to Variation A and that these are often confused with *e. francescoi*: "Dans la forme B toutes celles que nous avons du Mozambique et de Madagascar sont semblables à la forme A. Il semblerait qu'il y ait souvent confusion avec *francescoi*.

***c. comma* "form tanga"**

Lorenz makes a casual mention of this form. The locality is Prison Island in Tanga Bay off Tanzania. They are medium-sized (19.5 – 22.8 mm) with a blue-ish ground colour and chocolate dorsal colour forming round lacunae. The specimens show feint to distinct spotting on both margins. [Plate 10]

Similar-looking specimens are also found on northern Unguja Island, Zanzibar, Tanzania. A sample of three specimens show lengths ranging from 14.2 – 18.8mm. Only one of these specimens shows spotting on both margins. Two further specimens from Shanzu Village and Diani Reef in Kenya also bear resemblance. All of the specimens except two have a dark base. The dark base is not seen in the Tanga Bay specimens. [Plate 11]

The further discussion of this as a definite form of *c. comma* is inhibited by the lack of a sufficient number of specimens from these localities. The name "tanga" might well be invalid because the form could extend beyond Tanga Bay.



Top - Plate 10: *C. comma* "form tanga"

Bottom - Plate 11: Look-alikes of *C. comma* "form tanga"

Right - Plate 12: *C. cribraria comma* cf. *C. cribraria abaliena*

***c. comma* "form vallendum"**

I obtained a very globose specimen of *c. comma* from KwaZuluNatal Province, South Africa. It was dubbed "vallendum" on its original identification slip. The specimen was beach collected in 1985. I assume that the "val" in "vallendum" refers to the South African collector Val van der Walt from whom I obtained the specimen. It has some but not all of the features of *e. francescoi* form *mainland*.

This should be considered an anecdotal exercise to identify a specimen with prominent differing features. However, if a case can be made out that this is indeed a specimen of *e. francescoi* form *mainland*, then it must be considered the earliest attempt to name the form.

c. comma* cf *c. abaliena

Lorenz describes the shape of *c. abaliena* as oval, callous with the labral side rounded and callous and the columellar margin very callous and bent-up. The ground colour is pale orange with no conspicious transverse banding. The dorsal netting is wide, complete, pale brown and forms large lacunae.

Specimens resembling *c. abaliena* in size and colour originate from Zanzibar, Tanzania and Reunion. These are adult shells. The length ranges between 11.5 mm – 16.2 mm. They differ from *c. abaliena* in that they are significantly more slender, do not have callous margins and the lacunae are smaller and more typical of *c. comma*. [PLATE 12]

Is this a variation of *c. comma*? Or an intermediate between *c. comma* and *c. abaliena*? Lorenz accepts the sharing of the same geographical region of these two ssp. just as he acknowledges the co-existence of *e. esontropia* and *e. cribellum* and by *cumingii cumingii* (SOWERBY I 1832) and *c. astarayi* (SCHILDER 1971).

The taxonomic status of *e. francescoi*

[Plate 13] Lorenz's description in "New Worldwide Cowries" reads:

"The holotype is a moderately leightweight shell of elongate-pyriform shape, with slight development of callus around the margins but a rather thin base. The extremities are short and rather blunt. The aperture is wide and slightly curved behind. It widens anteriorly, the anterior canal is constricted. The labral teeth are evenly spaced, rather thin and extend slightly onto the lip. On the columellar side, the teeth are distant and rather thin, relatively few in number, with only the last anterior tooth being thickened. ... The extremities and margins are white, the orange embryonal shell is visible through the thin white basal callus. The dorsal ground is greenish-purple, with two paler transverse bands. The dorsum is covered with a dark reddish-brown coat forming numerous large, circular lacunae, many of which overlap. The dark coat ends abruptly towards the labral side, leaving about one-fourth of the dorsum exposed. Above the labral edge there are numerous distinct purple spots which form larger terminal spots towards the anterior extremity. Along the left side there are a few indistinct purple spots in the anterior third. The interior of the shell is dark purple.

In the paratypes, the degree of marginal callosity varies considerably. There are slender, thin walled shells as well as very broad callussed specimens. The degree of marginal spotting varies too... the dorsal coat varies in the size and number of lacunae. In nearly all specimens studied, there is no pattern along the labral fourth of the shell."

From his earlier commentary on *pelliserpentis*, it appears as though Lorenz favoured assigning *francescoi* to *c. comma*.

'In Madagascar and Mozambique, an interesting variation of *Cribrarula cribraria comma* (PERRY 1811) occurs (variation B),

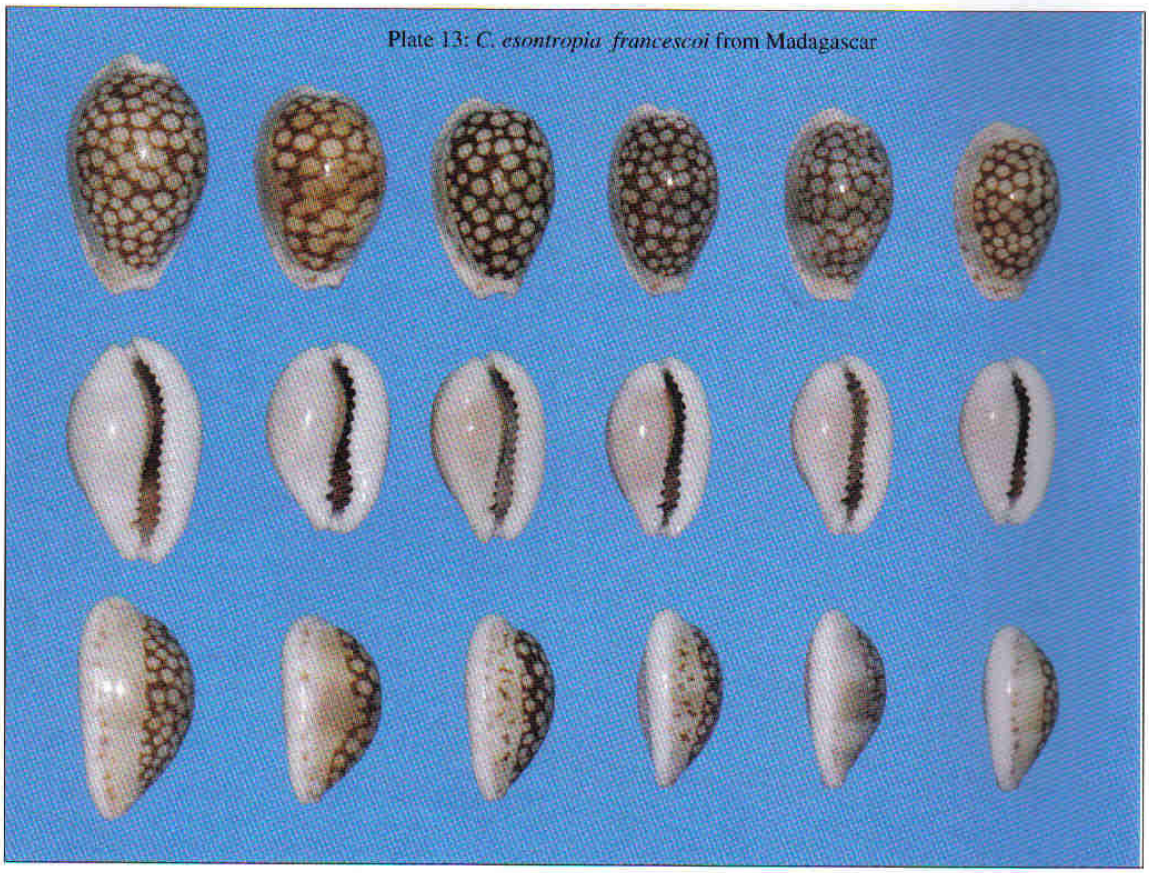


Plate 13: *C. esontropia francescoi* from Madagascar

which differs from typical specimens (variation A) by distinct spotting along the dorsal edge of the labral margin. This spotting, however, is not present along the columellar margin or on the base. This feature is a fundamental difference to the Mascarenan *Cribrarula esontropia* DUCLOS, which has lead to confusion in the past, e.g. by myself (see Lorenz 1998). The true *Cribrarula esontropia* (including its subspecies *cribellum*) seems really endemic to Mauritius and La Reunion, while all records of the species from other areas in the Indo Pacific and the Persian Gulf seem to be based upon exceptionally well spotted specimens of *cribraria comma*, *cribraria ganteri* and the new taxon described herein, *Cribrarula pellisserpentis* sp. nov."

Lorenz later revised this and assigned *francescoi* to *esontropia* rather than *cribraria comma*:

"In *e. francescoi* ... the collumelar teeth are coarser and less numerous than in all East African species of *Cribrarula*. This is the main difference also from the East African *cribraria comma* (PERRY 1811)... in which the labral spotting is rarely found labrally, but is usually absent. Also *c. comma* has both lobes of the pattern. ... The closer conchological resemblance allows a placement of *e. francescoi* as subspecies of *esontropia* rather than *cribraria*."

In summary, Lorenz writes:

"The recently discovered *francescoi* from Madagascar differs from its relatives by the absence of the labral lobe of pattern, by stronger dentition and by reduction of the marginal spotting along the left side."

However, spotting on the labral margin of Madagascar specimens, can be intensely dense and extensive to the point of having an appearance of a solid line. [Plate 14]

Plate 14: *C. esontropia francescoi* from Madagascar

Amongst malacologists there is disagreement about such a placement. Some would favour it to be a ssp. of *cribraria*, i.e. *cribraria francescoi* and there is also the opinion that it should be considered a form of *c. comma*, i.e. *c. comma* form *francescoi*.

The latter opinion is that of Massier who motivates his arguement as follows:

"According to Lorenz's map in his new book *cribraria comma* should not be found further south than Central Mozambique. Well, I have some typical ones from southern Mozambique and northern Natal. Most shells I have from the *mainland* are in-betweens of *c. comma* and *franciscoi*. Only a few are real *franciscoi*. This is also an indication that *francescoi* should rather belong to *cribraria* and not *esontropia*. The typical flat and squat shape of *esontropia* is not found in *francescoi*. I have never seen in *francescoi* the heavy marginal spotting of *esontropia* which even reaches the base. On the other hand I have seen many *cribraria comma* with the same spotting as *francescoi* and there are also *francescoi* with no spotting but all the other features.

I can also conclude that *francescoi* should be called *cribraria francescoi* and not *esontropia francescoi*. Seeing that there are so many integrades with *cribraria comma* and that the geographical distribution overlaps I would call *francescoi* a form of *c. comma* and not a subspecies."

Massier later added additional comments:

"I cannot detect the dark dorsal banding in *francescoi* mentioned by Lorenz in any of my specimens. My tooth count resulted to nothing. In *francescoi* I counted between 11 - 15 columellar teeth and in *comma* 12 - 15. This is also supported by the teeth statistics in your work. So I cannot support Lorenz's statement: 'In *e. francescoi* the columellar teeth are coarser and less numerous than in all East African species of *Cribrarula*.' I have to state that I do not have enough specimens in my collection to justify a proper statistic with regards to the teeth."

The authorship of *francescoi* is disputed by Merlin and Philippe Quiquandon, France. They claim to have identified it as a ssp. of *Cribrarula* in advance of Lorenz's publication of his description. According to Merlin & Quiquandon they showed specimens of these shells that hailed from Madagascar, to Lorenz at the Paris

Seashells Show 2002. Lorenz identified them as *e. francescoi*. The French then published their notes and photographs of specimens in Xenophora. They identified the specimens as *e. francescoi* but posed the question whether the ssp. should not rather be associated with *cribraria*.

In an article in a later edition of Xenophora, Loïc Limpalaër endorses the Merlin & Quiquandon claim to have identified *francescoi* first: "As both the authors [Merlin & Quiquandon] explain they preceded the publication of this taxon by Felix Lorenz by a few weeks". And: "It was inadvertently christened in our columns of [Xenophoria] no 99: *Cribrarula esontropia francescoi...*".

e. francescoi form _mainland_ and a possible variation thereof

Lorenz has yet to publish specific characteristics for what would constiutute *e. francescoi* form *mainland*. He does provide a photograph of a specimen on Plate 34:6 in "New Worldwide Cowries".

Xenophora edition no 102 has photographs of specimens from Mozambique and Madagascar bearing the identification *Cribrarula cribraria francescoi*. The Madagascar specimen meets Lorenz's description of *e. francescoi* and the Mozambique specimen would then qualify as Lorenz's *e. francescoi* form *mainland*.

Xenophora edition no 99 featured a photograph of a specimen from KwazuluNatal Province, South Africa which the authors labeled as *c. comma*. Because of the largely absent labral pattern and the spotting on both the labral and columellar margins, this specimen would also match Lorenz's *e. francescoi* form *mainland*.

Based on the Lorenz and Xenophora photographs and with specific reference to my own collection of *mainland* forms (obtained from and verified as such by Lorenz and other sources), I wish to present the following as a discussion of and description for *e. francescoi* form *mainland*:

14 Specimens of *e. francescoi* and 34 specimens of *e. francescoi* form *mainland* were available for study. [Plate 15, Plate 16, Plate 17] I am indebted to Jean-Claude Merlin, France, for detailed notes of the *e. francescoi* form *mainland* specimens in his collection. Merlin concurs with most of my own observations.

Following Lorenz's guideline, *e. francescoi* is restricted to Madagascar and *e. francescoi* form *mainland* is a relative found in Mozambique and the KwaZuluNatal and Eastern Cape Provinces, South Africa.

Shape - When comparing *e. francescoi* with *e. francescoi* form *mainland*, the immediate impression is that the South

African and Mozambican specimens are not as slender as those from Madagascar. In fact, the *mainland* specimens appear globose and frequently more callussed and especially so amongst those from the Eastern Cape Province. (*e. francescoi* form *mainland* has a strong resemblance to *exmouthensis*. This is not the case with *e. francescoi*.)

> Massier concurs: "I agree with your statement that on average the *mainland francescoi* is more bulbous than their counterparts from Madagascar, but in-betweens do exist. Merlin also states this fact."

Dorsal coat colour - There is also a difference in the dorsal coat colour with the *mainland* specimens ranging from chestnut to bright brown and those from Madagascar being deep brown.

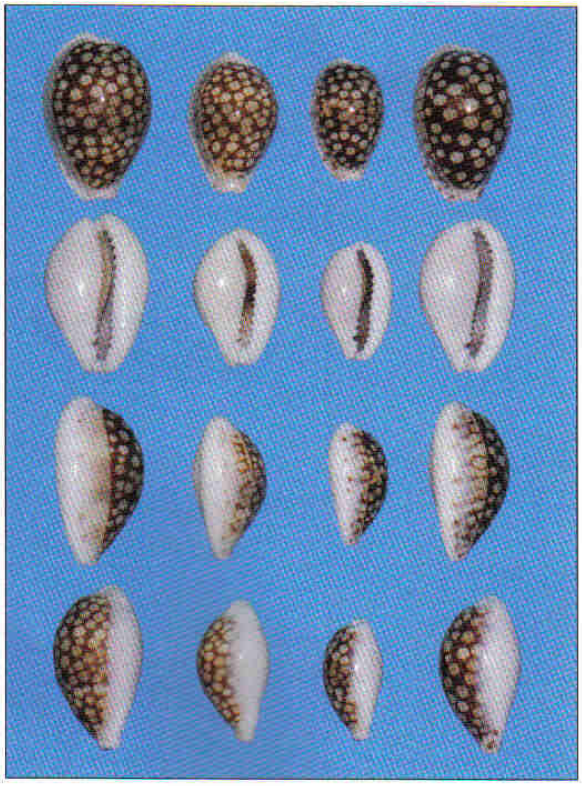
Dorsal base colour - The dorsal base colour of *e. francescoi* show the distinctive green-purple hue whereas the *mainland* specimens have a more subdued hue that varies from cream-white to green.

Transverse banding - The embryonic banding across the dorsum is visible but not as obvious in the *mainland* specimens.

Lacunae pattern - There is substantially less overlap of lacunae and in some specimens there is no overlap.

Labral pattern - The labral pattern is often completely absent but more generally greatly reduced.

Marginal spotting - The spotting on the labral margin varies from sparse and scattered to extensive and stretching the length of the entire margin. Spotting on the columellar margin is infrequent and when present, restricted to the anterior extremity.



Left - Plate 15: *C. esontropia francescoi* form *mainland*

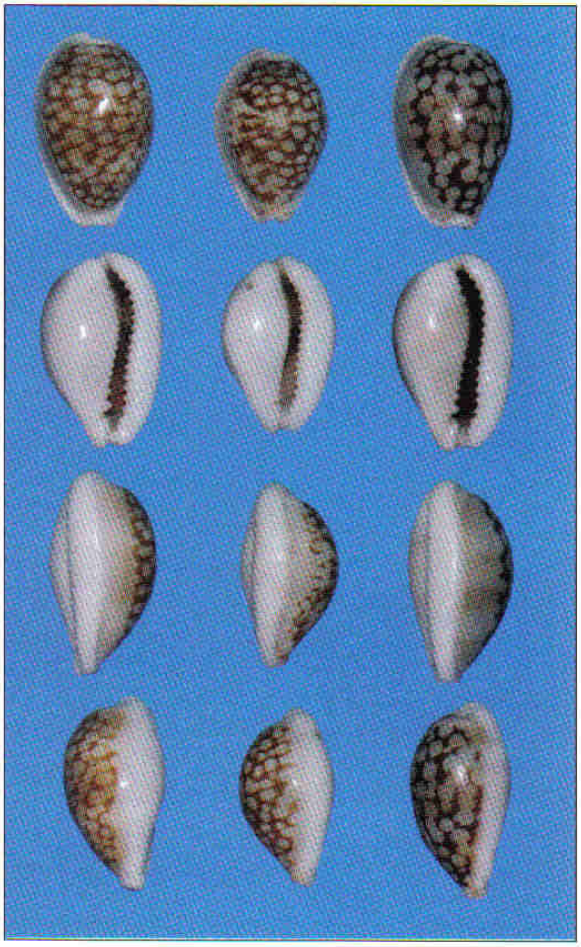
Top - Plate 16: *C. esontropia francescoi* form *mainland*

Right - Plate 17: *C. esontropia francescoi* form *mainland*

Teeth - The labral teeth of *e. francescoi* are short and fine but the *mainland* specimens have teeth that are short and coarse. There is a significant disparity in the relation of labral teeth to columellar teeth: the averages of 14 specimens of *e. francescoi* specimens are 13.50:14.00 whereas the averages of 34 *mainland* specimens are 14.06:13.94. (Merlin's figures for the averages of 7 specimens of the *mainland* form are 14.29:13.86)

Intermediates - Merlin also identifies intermediates between *c. comma* and *e. francescoi* form *mainland*. His specimens hail from Richards Bay and Park Rynie, both in the KwaZuluNatal Province. Richards Bay lies further north and is not far from the Mozambican border. The most significant difference is that the interior colour is predominantly pale compared with the generally dark interior colour of the true *mainland* specimens.

General comment - I favour a more descriptive naming of *e. francescoi* form *mainland*. Because of its prominent and eye-catching differences inclusive of the shell shape, colour, lacunae and teeth, I propose ***e. francescoi* form robustus**.



Top - Plate 18: The most southern specimens of *C. esontropia francescoi* form *mainland*

Right - Plate 19: The most southern specimens of *C. esontropia francescoi* form *mainland*

The most southern specimens of *e. francescoi* form *mainland*

Until late 2003 the most southern locality of specimens of *e. francescoi* form *mainland* in my collection was Park Rynie in the KwazuluNatal Province. I then acquired a collection 14 specimens from Lorenz that were beach collected in a more southern region stretching from Port Shepstone to Port Edward in the KwaZuluNatal Province. The shells were collected by Nolan Webb during the years 1972 to 1983.

With some exceptions, the specimens are of poor condition having lost most of the colour and lacunae pattern. The embryonic banding can be seen and the labral margin spotting is preserved. In most of the specimens the labral margin spotting is extensive, reaching from the posterior to the anterior extremities. Several specimens show very bold spotting. [Plate 18, 19]

Massier has specimens from the same region in his collection that differ as regards the marginal spotting:

> "I do have some shells from Mzamba (Northern border of the Transkei) which show all the *francescoi* features but no marginal spotting at all. All my *francescoi* (or *c. comma*) from Southern Natal or the Trankei are not live-taken. Often the dorsal pattern is very much reduced, but the marginal spotting, if present, is still feintly visible."

The shape and density of the lacunae and their overlapping are more reminiscent of *e. francescoi* from Madagascar. There is a far greater degree of lacunae overlapping than in the other *e. francescoi* form *mainland* specimens. In some specimens the netting pattern is vaguely similar to that of *pelliserpentis*. The three smallest specimens in the collection show heavy callussed margins. [Plate 20]

The poor condition of the beached shells deters me from speculating whether this collection of specimens might constitute a valid variation of *e. francescoi* form *mainland*. On average they are, however, distinctly different from *mainland* specimens collected further north.

Plate 20: The most southern specimens of *C. esontropia francescoi* form *mainland*

REFERENCE SOURCES

1. *Hawaiian Shell News*, New Series No. 292 - April, 1984 - Vol. XXXII No. 4
2. Liltved, W. R., 2000, *Cowries and their relatives of South Africa,* 2nd Enlarged Edition, Seacomber Publications, South Africa, ISBN 0-908-42089-7
3. Limpalaër, L., 2003, *"Retour sur Madagascar. 2eme Partie: Sur les traces d'esontropia"*, Xenophora: Bulletin de l'Association Francaise de Conchyliologie, Number 102, April – June 2003, ISBN 0755-8198
4. Lorenz, F. and Hubert, A., 2000, *A Guide To Worldwide Cowries,* 2nd Revised and Enlarged Edition
ConchBooks, Germany, ISBN 3-925919-25-2
5. Lorenz, F., 2002, *New Worldwide Cowries,* ConchBooks, Germany, ISBN 3-925919-59-7
6. Lorenz, F., *Another new species of Cypraeidae from Madagaskar (Mollusca: Gastropoda, Cypraeidae.) Cribrarula pellisserpentis sp. Nov.,* ttp:// www.cowries.info/shell/coandro/pelli.html
7. Merlin, J.C. and Quiquandon, P., 2002, *"Les Variations de Cribrarula ou 'en attendant Lorenz'"*, Xenophora: Bulletin de l'Association Francaise de Conchyliologie, Number 99, July – September 2002, ISBN 0755-8198
8. Personal correspondence with Lorenz, F.
9. Personal correspondence with Massier, W.
10. Personal correspondence with Merlin, J.C.

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Some Notes on the Evolution of Mollusks

* Zvi Orlin

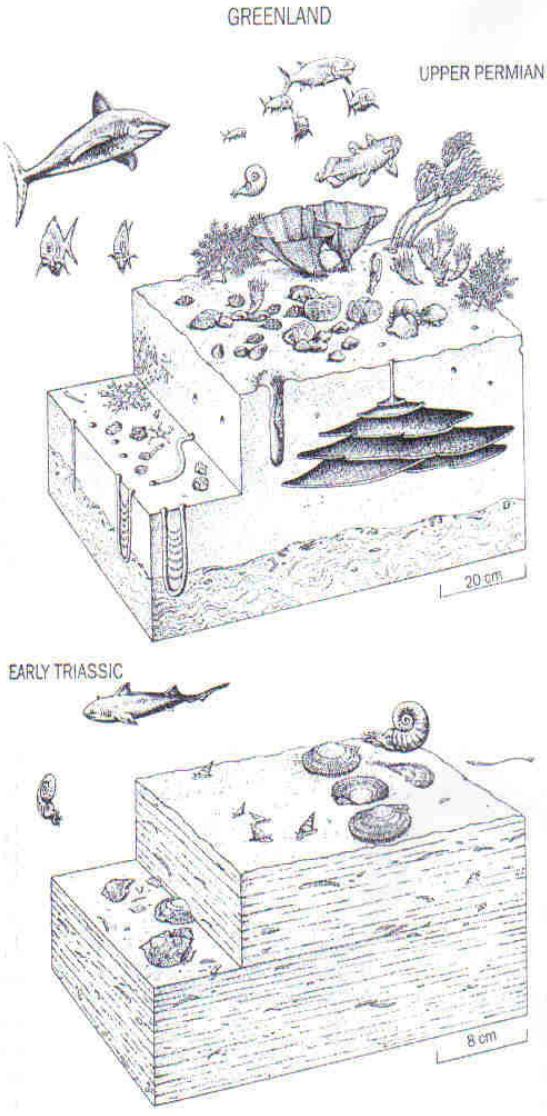
As I was studying evolution, I decided to summarize the facts about Mollusks. This was no easy task, and I decided to concentrate on the more important mass xtinctions, and their affects on the taxa of Mollusks, but mainly at the level of Classes and Orders. I did not relate to all the minor extinctions, although they took their toll of many of the species that evolved. I therefore consider this a short resume of the exciting tale of Evolution, which only mentions some of the major events. We are obliged to refer to the geological eras, and I present herewith a copy of a chart with their designations, which is necessary to understand the time series of events here described. We must remember that the Mollusks had a decided advantage, with their hard calcium carbonate shells, which enabled them to be well preserved in the fossil record. The use of mollusks has played a central role in Biostratigraphy, and indeed in the development of the discipline itself. With the help of the fossils, we can identify approximate time sequences in the geological layers, and they are of great assistance in determining the record of evolution in the different strata.

The Paleozoic Era

This was the longest of the eras, lasting from 550-251 million years ago (mya), and including the Cambrian and Ordivician Periods in the early part of the era, the Silurian and Devonian Periods in the middle era, and the Carboniferous and Permian in the late Paleozoic. During this era, 3 of the 5 massive extinctions took place, including the major one.

The first mollusks were found in the Paleozoic. In the Early Cambrium Gastropods and Bivalves, and later Nautiloids were found, but they were very small, measured in millimeters. They were all found alongside Brachiopods, (that are closely related to mollusks), suspension feeders housed in bivalve shells, which were to become very important in later times. In the Cambrium most of the eight classes of mollusks evolved. The phylum may have Precambrium history, as yet not found.

In the next Period, the Ordivician (505-438 mya), the Gastropods and Bivalves radiated to many forms, and enlarged in size. They were found on or within the substratum, many of which were coiled, but they were largely stationary on the sea floor, although there were others which were crawled, and resembled modern species. The Early Paleozoic Gastropods were mainly of the Order Archaegastropoda, reaching 34 families but declining to 22 families in the present. Other Prosobranchia orders were of lesser importance. In the Middle Paleozoic Mesogastropoda appeared, 27 families existed but only 22 families are extant. Also Opisthobranchia appeared but they played a minor role in the fossil record. Large Nautiloids were among the largest animals living during this period. Of the Cephalopoda in the Middle Ordivician, there were already 30 families which expanded and diversified. In the Late Ordivician 50 families already existed, they were mostly



29 *Before and after: the northern Arctic ocean. A reconstruction of a typical latest Permian sea-bed (above) and an earliest Triassic sea-bed (below), immediately after the catastrophe, based on information from Jameson Land, East Greenland.*

Nautiloidea; more than a third of all known genera are of this period, although now only one genus – Nautilus, remains.

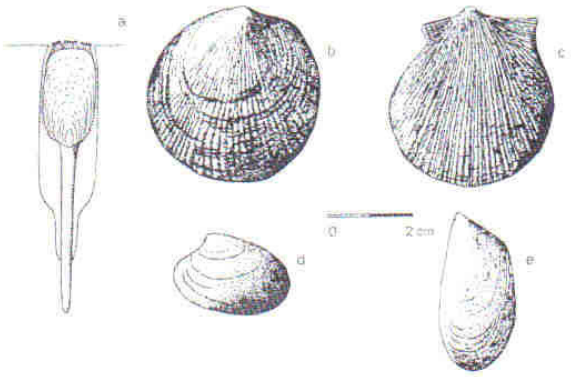
At the end of the Ordivician there was a mass extinction (the first of the Big Five), which was regarded as intermediate in strength, causing the extinction of 40 – 50 % of the world species known. The Mollusks were mainly affected in the Nautiloids, which persisted in low diversity, but a new order of Ammonoids appeared and diversified rapidly. Because they were distinctive and relatively shortlived, they served as important Index Fossils, where they appeared they could be used to identify the geological layers in the time sequence, and this was a guide and a great help to the Paleontologists. The gastropods and bivalves recovered, and the latter even expanded their ecological role, by invading non-marine habitats (as in the Upper Devonian strata in New York State).

A second intermediate mass extinction of marine life, took place at the end of the Devonian Period (360 mya), the second of the Big Five. Brachiopods, which had existed in large numbers, were hard hit, and only 15% of genera were found later. Ammonoids were also on the decline, and many types of gastropods and rugose corals suffered catastrophic extinctions. Species of the cold regions of the world, seemed to have survived better than of the tropics, suggesting that changing climate may have triggered the extinction.

The Late Paleozoic Era, ended at 251 mya. This was the period when the supercontinent of Pangaea was formed, joining all the other continents to Gondwanaland. The Ammonoids rediversified quickly, although only two genera were thought to have survived the Devonian extinction, and once more assumed an important ecological position. This was a period of mobile predators, in which sharks and bony fishes proliferated, mobile swimmers were in mode. Burrowing and surface dwelling Bivalves continued to thrive, and Gastropod fauna were very rich and diverse. At the end of the Permian there occurred a major mass extinction, (the third of the Big Five), in which about 90 – 95% of the known species of the world became extinct.

The Mesozoic Era

Afterwards the Mesozoic Era commenced, from 251-65mya called the Age of Dinosaurs, including Triassic, Jurassic and Cretaceous Periods. Marine biotas were impoverished at the start of the Era, but the ascendancy of the mollusks is noteworthy. The Ammonoids made a dramatic recovery, (after almost total extinction: although only two genera were thought to have survived,) and Lower Triassic rocks have yielded more than a hundred genera, and they diversified to exceed their pre-extinction level. The adaptive radiation that produced these genera, seems to have issued from a single genus Ophiceras; they show diversity in size and



43 *The earliest Triassic 'disaster' forms: the brachiopod* Lingula *(a), and the bivalves* Claraia *(b),* Eumorphotis *(c),* Unionites *(d) and* Promyalina *(e). These magnificent five shelly creatures were virtually all that survived through the end-Permian mass extinction, and they dominated black, anoxic sea floors worldwide.*

shape – up to 2.5meters in diameter and the smallest a few mm., with ornamentation of ribs, nodes, spines and other growths. The other important Cephalopods were Belemnoids, relatives of the Ammonoids and squid like in appearance, which also pursued prey by jet propulsion, and were gregarious and travelled in large groups. In the Mesozoic many types evolved. The Gastropods and Bivalves were less severely affected by the Permian extinction, than the other groups, and expanded in number and variety, to become amongst the most important groups of Early Mesozoic animals of the seas. (As in the Paleozoic some Bivalves burrowed in the sea floor, while others rested on the sediment surface.) The Mesozoic representatives of both groups, closely resemble those living today. During the Cretaceous (Late Mesozoic) the Neogastropods appeared, most aptly named, and produced many modern families and genera. Unlike earlier Gastropods, these mollusks were generally carnivorous, feeding on such prey as worms, bivalves and other snails. Many popular shells belong to this Order, like the Strombidae and Cypraeidae, which appeared for the first time. Of the Bivalves, particularly interesting were the Rudists, as they lived like corals, forming large tropical reefs, utilizing the space vacated by former rugose corals. They assumed the dominant role in tropical reef growth in the Middle and Late Cretaceous, and seem to have overcome the corals temporarily for space. There were also coiled oysters of enormous size – Inoceramus, almost 1 meter in diameter. Also of interest among the Bivalves were the 3 disaster taxa: Claraia, Eumorphotis and Unionites, which radiated during the Early Triassic, and produced new species. The other Bivalves continued their slow evolution, and only recovered their pre-extinction diversity in the Mid Triassic.

There were two more intermediate extinctions (the last of the Big Five) in the Mesozoic, the first at the end of the

Triassic, and the second at the end of the Cretaceous. Rudists, and other large surface dwelling groups including the Ammonites and Belemnites, didn't survive this last mass extinction. Corals and Carolline Algae prevailed on reefs once more.

The Cenozoic Era

The Cenozoic 65-1.8 mya, or the Tertiary Period as it is known, which include the Paleogene and Neogene. (This era is sometimes called the Age of Mammals, as they diversified after the Dinosaurs suffered extinction.) In the Early Tertiary Pteropods appeared: they are small pelagic gastropods, with fleshy wings for swimming, and are commonly called Sea Butterflies, of which there are 15 genera extant (about 100 species). They spend all their life afloat, and are one of the important components of the plankton, and a major source of food for whales. They are the main component of Pteropod ooze in the oceans, and are important in microevolutionary studies. In this period marine life underwent only modest changes, and largely resembled that of the modern world. The real acme of Gastropod evolution was reached in the Cenozoic. The Neogastropods, which dominate today's gastropod fauna, were a great success with their long siphons, but they evolved slowly.

Thus ends this short resume of the evolution of Mollusks, and I hope I will be excused if I have omitted many exciting chapters, in one of the most fascinating episodes of living creatures on earth.

Illustrations from:

· Benton, Michael J. 2003. *When Life Nearly Died.* Thames and Hudson Ltd. London

References:

· Benton, Michael J. 2003. *When Life Nearly Died.* Thames and Hudson Ltd. London, pp.336.
· Clarkson, E.N.K. 1987. *Invertebrate Palaeontology and Evolution.* Allen and Unwin, London, pp. 382
· Kummel, Bernhard. 1970. *History of the Earth, Second Edition.* W.H.Freeman and Company, San Fransisco, pp. 707.
· Stanley, Steven M. 1985. *Earth and Life Through Time.* W.H.Freeman and Company, New York, pp.690.

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Letters & Email

SENT: WEDNESDAY, DECEMBER 01, 2004 6:43 PM
TO: KOBIE DU PREEZ

.... I HAVE A SPECIAL REQUEST: I AM LOOKING FOR CONTACT WITH SHELL COLLECTORS FROM YOUR COUNTRY WHO ARE INTERESTED IN TRADE OF COMMON SOUTH AFRICAN COWRIES FOR COWRIES FROM THE RED SEA. I NEED LARGE BATCHES OF SHELL FOR MY STUDY. MAYBE YOU KNOW SOMEONE.

THANK YOU BEFOREHAND
ED HEIMAN

Dear Kobie,

Please will you place an advert in the Strandloper as follows:

2 CHESTS OF DRAWERS SPECIALLY MADE FOR SHELLS OF VARIOUS SIZES by the late Bruce Preston Bursey

Measurements :
1. Height: 1,39 m Width: 1,83m Depth: 54cm 71 drawers between 31 mm and 200mm
2. height 1.39m Width 1.83m Depth 54cm 100 shelves 37drawers 4 doors

Prices of the 2 chests of drawers:
No 1 R11000 No 2. R9000

Many thanks. Kind regards

Joan Bursey - lowlandsnursery@cybertrade.co.za

The printers devils was a bit too active in the previous issue, my apologies to those involved. The corrections will be made in the minutes.

Regards,
Ed.

Dear Kobie,

Thank you so very much for the additional numbers of Strandloper with my article. It was so thoughtful of you and I do appreciate it. Shall pass them on to Marge's family and to Christina who arranged for us to have the portrait.

The most awful thing has happened. The portrait appeared without acknowledgement.....

" Portrait of Marge Courtenay Latimer by Christina Reeve. Photo: Courtesy of the East London Museum"

.....Is there any possibility that you can have a little Addenda note in the next issue of Standloper?

R.M Tietz

Hi Kobie

I have just received the latest two Strandlopers. Many thanks.

The authors (as stated in Strandloper no. 275, page 6, paragraph 6) for best Strandloper article are incorect. The correct authors are Dawn Brink, Alwyn Marais and myself.

I would be grateful if you could place the *errata* in the next Strandloper.

Many thanks.

Regards, Markus

Book Review: OLIVIDAE - A Collector's Guide, Gunther H.W. Sterba, 2004, 172p. 62 colored plates, 37 figures.

*Zvi Orlin

One of the families in which I have always had great difficulty in determining the species, is Olividae. This is easily understood, as there are almost innumerable forms, some of which vary to a large degree, and make it very difficult to ascertain the species, with the limited methods used by most collectors. Therefore I was very happy to learn of this new updated publication, which could assist me in my classifications. This book is an enlarged and revised English translation, from the German edition published last year.

First a detailed description is given of the shell, followed by the systematics of the family, and then the colored plates, with pictures of 237 of the 317 valid species. The species not figured are named in the *Supplement* with brief information, many of which are deep-water species, of which only a few species are known.

The illustrations are excellent colored photographs, usually of the dorsal side of the shell, and mostly also one picture of the ventral side, with occasional pictures of the nuclei. Small species are shown in natural size, with enlarged pictures alongside for easier determination. But what is most important is that the various forms are also shown, often with a wide range of differences in color and pattern, which are important to the collector in his identifications. The text opposite the plates, gives detailed descriptions of each species, and their known distribution especially where they have special forms. In the *Index* all valid species are in bold type, whereas for other names the correct name is equated. Many of the illustrations are from different locations, showing differences that are most important for correct classification.

After using this up-to-date book to check my collection, I can highly recommend it to all collectors, who are interested in the classification of Olividae. We must thank Professor Sterba for his lifetime study of this interesting family, and placing his expertise at our disposal in this excellent Guide Book.

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Top: *Haliotis pustulata*
Bottom: *Haliotis spadicea*

Haliotis pustulata Reeve, 1846 from Park Rynie

- Johan Marais, Renate Kruyswijk and Alwyn Marais

The family Haliotidae belongs to the order Archaeogastropoda, the oldest and least specialised group of gastropods. Six species occur in South African waters, all belonging to the genus *Haliotis*, i.e. *H. midae*, *H. parva*, *H. pustulata*, *H. queketti*, *H. spadicea* and *H. speciosa*. Of these, *H. pustulata* is by far the most elusive and rare.

Haliotis pustulata was originally described from an unknown locality, but it is now known to occur in the Persian Gulf and down the east coast of Africa. In the past occasional specimens were found in northern Zululand (Natal Museum). Barnard (1963) incorrectly identified it as *H. bistriata*. Several live specimens were since found at Reunion Rocks in the Durban area, while a further specimen was found at Clansthal, 50 km south of Durban. Over the years several dead specimens have also been collected at Park Rynie, 61 km south of Durban. During a recent field trip, the second author of this paper found a relatively fresh beached specimen at Park Rynie, suggesting that a viable colony is still living in the area. This appears to be the southernmost locality for the species.

Description: Shell dark brown, mottled with lighter brown. Exterior with coarse radial corrugations, with fine, unevenly-spaced spiral grooves. Spire relatively flat. Open holes 6-7, situated on low bumps. Columella (inner lip) broad. Attains 61.4 mm.

Note: The shell superficially resembles *H. speciosa* Reeve, 1846, but is readily distinguished by its more oblong shape, lower spire, coarser exterior surface, finer mottling, less evenly spaced spiral grooves and broader inner lip. *H. speciosa* has a distribution range from Port Alfred to the western Transkei (Mbotyi) and is unlikely to overlap that of *H. pustulata*.

The authors welcome any further information on this rare species and can be reached at: johanm@netline.co.za

Reference: Barnard, K.H. 1963. *Ann. S. Afr. Mus.* **47**, 201-360.