THE CONE COLLECTOR

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THE CONE COLLECTOR

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On the Cover:

Conus ermineus Born, 1778 spotted among coarse sand and rubble off the Caribbean coast of Colombia. Photo thanks to Afonso Jorio of Guarapari, Brazil.

Note from the editor

When I launched *The Cone Collector* (with the help of my good friend Paul Kersten), I was aware that a fixed periodicity of four issues a year was rather ambitious.

The reason why I was keenly aware of that was that I already had some experience in editing this kind of newsletter, albeit with a much different range. As a matter of fact, for more than ten years I have been editing a bulletin for Portuguese shell collectors (it is called *O Búzio*, is of course written in Portuguese and addresses all kinds of subject pertaining to shells and shell collecting); before that, I edited the newsletter *Halia* of the now extinct Portuguese Malacological Society, as well as its occasional publications and more recently I have also accepted some similar responsibility with the magazine of a club of which I am a member and which is devoted to ghost stories (yes, that's right, ghost stories are one of my other interests besides shells...).

And why was a four-issues-a-year rather ambitious? Well, obviously because to keep that rhythm one has to have regular collaboration from several different authors! Failing that, either there is not enough material with which to fill each number or else the Editor has to write a lot by himself, which of course makes the publication rather dull...

I was prudent enough to complement that four-a-year rule with the proviso that "the number of pages per issue is not fixed, but in principle it will not be inferior to 12 pages". This was included in the "Editorial Rules", included in TCC # 0.

The current issue is our tenth and I am very happy to be able to state that so far not only have we been able to always appear on schedule, but we have usually largely exceeded that prudent minimum number of pages. That is of course a result of the enthusiasm of our many readers and contributors and it should be clear to everyone that we will carry on in the same way if and only if everybody keeps it up!

In each issue we try to include a varied assortment of articles, from the more scientifically minded to the less technical. It is always nice to publish photos of exceptional specimens, news of meetings of Cone collectors, book reviews, tales about collecting trips, etc. In time I hope to be able to present yet other subjects; for instance, I would be very interested in hearing from those who study Conotoxins and who would be willing to tell us briefly about their work!

Just keep your articles, comments, photos, etc., coming, and we will keep TCC alive and kicking!I will finish by once again underlining the sterling work that my good friend André Poremski does with the graphics of our newsletter! Truly unsurpassable and a great asset to the publication, as I am sure everyone will agree.

A.M.

Who's Who in Cones: Jon F. Singleton

I checked the old records and it was a bright sunny morning when I entered this world back in 1932. This great event was at the seaside resort of Bournemouth, on the southern coast of England. I grew up by the sea and maritime activities were to remain a major part of my life.

My first collecting was the large European Sea Urchins, which after cleaning I used to trade with a local souvenir shop. the main buyers were the U.S. servicemen who were billeted at the sea-front hotels, awaiting the invasion of Europe in 1944. Other than the local edible scallops, I had seen few shells until viewing the July'49 *National Geographic* magazine which contained colour plates of Indo-Pacific molluscs. Without doubt this article had a strong influence and aroused my interest in shells.

Military conscription was still in force at that time for all young men at the age of eighteen, and I was called up for Army service. However I jumped off the train en route, and enlisted in the Fleet Air Arm of the Royal Navy, where I would remain for the next twenty years. My first experience of warm water shells was the Mediterranean Sea, so not surprisingly my first ever cone was *C. mediterraneus* as it was then known.

Despite interruptions like Korea and other minor wars, I had opportunities to shell my areas around the Indian and Pacific Oceans, the West African coast and the southern Atlantic. The number of cones within my cabinet today shows that I did not allow the Navy to interfere with my "career" too much. I was fortunate in visiting Australia in 1959, and had thoughts that the land "down under" might be a good place to live sometime in the future.

During my military service, the one region I had never visited was the Caribbean and I also wanted to do a transit of the Panama Canal. So I achieved this by taking a French cargo boat which took a few passengers from Marseille to Sydney. This was a ten week voyage, with lengthy stops at all the French territorial islands en route through the Caribbean and Pacific.

My next twenty years were spent working in the mining industry, first at Groote Eylandt, south-east of Darwin, N.T., and then over to the N.W. coast of Western Australia for a lengthy stay. The large inter-tidal regions of N.W. Australia are a sheller's delight. Although cone species are rather sparse, the easily accessible Amoria volutes were a great source of exchange for cones. I retired in 1992, re-locating to Geraldton on the mid-west coast of Western Australia.

Although I retain a keen interest in all marine shells, lack of space made me slowly trade off all other families and just retained the cones. I also have a keen interest in Conchological History. At one time I had some 8,000 specimens of cones in my cabinet, but have down-sized in recent years, passing on many duplicates to other institutions. The remainder will eventually be incorporated within the West Australian Museum collections.

The W.A. Museum has graciously allowed me to study much of the cone material from their many expeditions over the years. Many have already been illustrated within this magazine, and hopefully a few more in the future.

Granulose forms of *Conus imperialis* and *C. pulicarius*

Jim Cootes

In my many years of collecting members of the genus *Conus*, one of my interests has been to collect granulose specimens of species, which are normally smooth. Over the years I have managed to accumulate a good number of granulose forms of different species. There are a number of species in which granulose forms are quite frequently seen, for example *Conus ammiralis* and *C. arenatus*; and others where I have only seen a couple of specimens. Two of these are illustrated below.

Conus imperialis is 40.7 mm long by 20.5 mm across the widest point of the shell. This specimen was collected in tangle nets at about 80 metres depth near Balicasag Island, Bohol, in the Philippines. I have 2 specimens of this granulose form but the illustrated piece is by far the "roughest."

Conus pulicarius is 36.5 mm long by 20.4 mm across the widest point of the shell. This specimen was taken by a diver in shallow water in the Sulu Sea in the southern Philippines. I have 3 specimens of this granulose form and all are equally "rough."

Once time avails itself I will make a complete list, from my collection, of granulose forms for our newsletter.

About *C. stramineus* Lamarck, 1810

António Monteiro

Very recently, Paul Kersten presented the following problem:

"I'll show you two shells from my collection which I believe belong to the same species. The first one is labeled as *Conus nahoniaraensis* (Fig. 1) and it comes from the Solomon Islands. The second one (Fig. 2) was found last April in Pandangaran Bay in South West Java, Indonesia. What bothers me is the fact that I believe both are *Conus stramineus* indeed, but that in the Solomon Islands only the form *mulderi* seems to appear and that neither the nominate *stramineus* nor the form (or subspecies?) *mulderi* seems to live in Java, according to the *Manual of the Living Conidae* by Röckel et al. Do you have more information about this problem? Do you agree with the ID I put on them?"

I tended to agree with Paul's identification of both specimens as *C. stramineus*. The occurrence of *C. stramineus stramineus* in the Solomon Islands could mean that *C. s. mulderi* must not be considered as a subspecies: it would be either a mere form (otherwise, it would have to be considered as a separate species).

On the other hand, one has to have in mind that geographic range is not a constant feature: populations will drift, will invade new territories and eventually become scarce in others; differences in water temperature, salinity, etc. may well cause or allow such changes...

In the meantime, Bill Fenzan had the following to say about these specimens:

"Your confusion over the identification of specimens in the *C. stramineus* complex is a common problem among collectors. Bob da Motta (1986) tells how he was sold one batch of cones as *C. stramineus*, another batch from a different source as *C. straturatus*, and still another batch - again from a different source - as *C. collisus*. Shells from all three batches were all the same thing and all were misidentified. These shells became the type material for *C. nahoniaraensis*."

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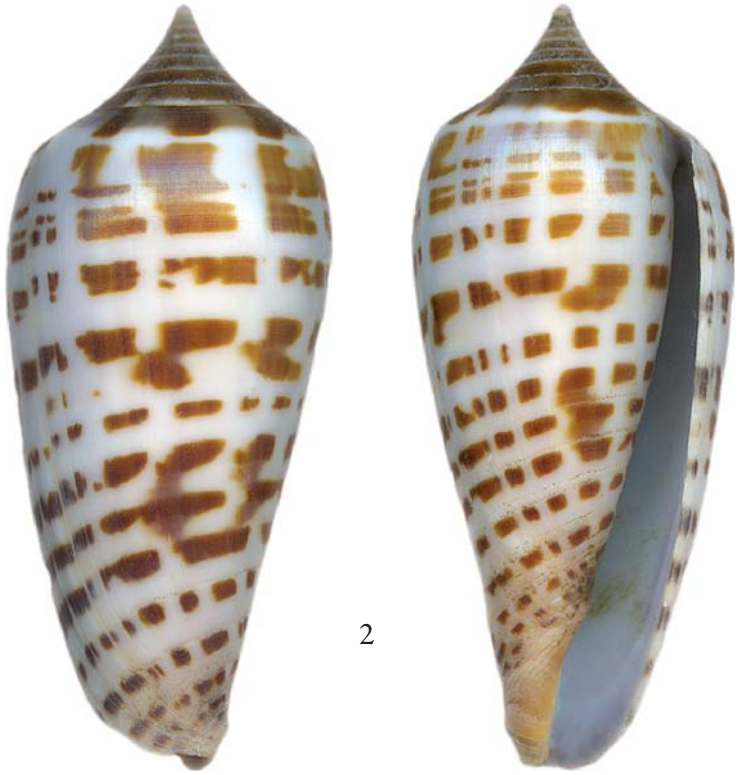

2

Comments of Figure 1

After comparing colour photos of the type material of *C. nahoniaraensis* da Motta, 1986 to your first picture of a shell said to come from the Solomon Islands, it is my opinion that your shell was misidentified by the source from which you received the shell.

If you do not have the original reference, the *Conus* Biodiversity website (*biology.burke.washington.edu/conus/index.php*) has excellent photos of the *C. nahoniaraensis* holotype, and other cone species types.

If the identification placed on the shell by your source is wrong, the collecting locality may also be in error. Delsaerdt (1994) illustrates specimens of what was locally called *C. stramineus* (on page 75) from the Solomon Islands. They are together on the same plate as six specimens from the Philippines for comparison. Delsaerdt argues that the shells from the Solomon Islands are separable from those found in the Philippines. In my opinion, though, the differences listed are not significant when more Philippine shells (and shells from other areas) are studied. The only difference I see in the Solomon Island shells illustrated is that they are smaller than the Philippine ones.

Comments of Figure 2

The neotype (designated by Alan Kohn in 1981) of *C. stramineus* Lamarck, 1810 is illustrated in several places. The easiest photos for you to view are probably those on the *Conus* Biodiversity website.

Gabriella Raybaudi (1992) discusses the *C. stramineus* complex cones in relation to *C. zebra*. During her discussion she compares and illustrates many populations of shells close to the *C. stramineus* neotype. This reference may be helpful to you if you have it.

Röckel (1987 & 1992) notices differences between the neotype of *C. stramineus* (from the Moluccas and Java) and similar shells from the Philippines and Solomons; these are summarized in the later paper:

"*C. s. stramineus* (syn. *C. alveolus* Sowerby I, 1833 and *C. fuscomaculatus* E. A. Smith, 1877) has a relatively narrower last whorl (RD 0.51-0.56 versus 0.55-0.62) and usually a lower spire (RSH 0.09 – 0.13 versus 0.11 – 0.19); the pattern of its last wohrl [sic] shows squarish brown spots, which are not only spirally, but also axially aligned – an arrangement unusual in *C. s. amplus*) [Note: It was later discovered that *C. mulderi* Fulton has priority over the name '*amplus*']. In *C. s. stramineus*, the postnuclear sutural ramps are uniformly brown except for the shoulder ramp, the aperture is only of light violet (pronouncedly violet-brown in *C. s. amplus*), and the surface is less glossy."

Unfortunately, I am unable to determine how many specimens of populations under review were studied to arrive at this list of differences between *C. stramineus* (nominate species from Indonesia) and *C. stramineus mulderi* (subspecies used in Röckel et al in 1995 from the Philippines and Solomon Islands). It looks like only a few old specimens matched the characteristics of the neotype well enough to cause them to be classified as the nominate species – *C. stramineus*. These specimens were all localized to Indonesia (Moluccas & Java).

If you read the list of differences carefully, you will see that specimens with some intermediate characteristics may be possible:

1) RD of 0.55 or 0.56 may be either *C. s. stramineus* or *C. s. mulderi*

2) RSH of 0.11 to 0.13 may be either one, too.

3) Arrangement of spots can be a subjective determination.

The only two clear differences that appear to be constant are the uniformly brown postnuclear sutural ramp in *C.*

stramineus from Indonesia and the deeper colouring in the aperture of the subspecies (*C. s. mulderi* shells).

Based on these criteria, I believe both of your shells would be classified as *C. s. mulderi* by Dieter Röckel since neither one has the uniformly brown postnuclear sutural ramp cited as a distinctive characteristic of *C. stramineus*.

My opinion is that *C. stramineus* is more likely just one variable species and *C. mulderi* is just a synonym. I say this because I have specimens from Java (like yours) that have the characteristics of the subspecies *C. s. mulderi*. The source of these specimens has not given me reason to question the reliability of the locality data. Further study may show that two or more subspecies are separable, but I am not aware of any more recent papers that shed further light on the problem.

If my position were true, both of your shells would be classified as just *C. stramineus* – as you have proposed calling them.

Literature cited

da Motta, A. J. 1986.
A New *Conus* from the Solomon Islands (*Gastropoda: Conidae*). *La Conchiglia*, Year XVIII – N. 210-211 (Sett-Ott. 1986), pp. 20-21.

Delsaerdt, A. 1994.
The *Conidae* of the Solomon Islands, Part 5, Alphabetical review treating the (sub)species from *Conus* sertacinctus up to *Conus zebra*. *Gloria Maris* 33:4-5, pp. 66-97.

Raybaudi (Massilia), G. 1992.
Conus zebra Lamarck, 1810: a unique *zebra* a' pois? *Gloria Maris* 31:4-5, pp. 49-64.

Röckel, D. 1987.
Anmerkungen zum *Conus stramineus*-Komplex mit Beschreibung von *Conus zapatosensis* spec. nov. *Spinxiana*, 10:3 (Dezember 1987), pp. 285-293.

Röckel, D. and Korn, W. 1992.
New Species and Subspecies of the Genus *Conus* (*Mollusca: Neogastropoda*) from the Indo-Pacific, *News on Conidae II, Acta Conchyliorum*, Nr. 3, pp. 5-29, 3 plates.

Röckel, D., Korn, W. & Kohn, A. J. 1995.
Manual of the Living Conidae, Volume 1: Indo-Pacific Region. Verlag Christa Hemmen, Weisbaden, Germany, pp. 517.

Any further opinions about these questions will of course be most welcome!

Step by step

Jon Singleton

It was a calm day at the N. W. Cape of Western Australia, and I was slowly snorkelling along the edge of an inshore reef. I had no thoughts of cones being familiar with the region, just hoping for a few nice volutes for exchanging material at a forthcoming shell show.

In was in about five metres of water I spotted a large colony of extra large *Conus pulicarius*, easily identifiable in the crystal clear waters. One odd cone caught my eye, as it seemed to have dark lines under the periostracum. I brought this cone to the surface, and found it was heavily ridged all over.

The normal *C. pulicarius* is a smooth-bodied cone, and this is achieved by maintaining a steady continual growth. Occasionally a specimen will grow in stages, and on recommencing it leaves a thickened old lip-line, which normally spoils the general appearance. I had a thought this might occur if the local food source became scarce, causing the cone to shut down its growth, and only start again when feeding conditions improved. However, after seeing a few specimens which had fairly even stages, it seems likely there must be other unknown reasons.

This *C. pulicarius* is one such specimen. The old lip-line gap at the ventral adjacent to the lip is about 10 mm. the gaps then slowly and evenly decrease to less than 5 mm over the dorsum to the lip edge. The overall effect has produced an attractive "abnormality" which makes it a very collectable specimen. It is also much heavier than a similarly sized smooth specimen. The illustrated cone is 62.5 mm × 38 mm.

This style of "step by step" growth stages is not uncommon amongst the sand-dwelling species. I have seen it with *C. arenatus*, *tessulatus*, *flavidus*, *eburneus*, and only just recently the first *C. textile* with similar lip-line indentations.

How many candles?

António Monteiro

Recently, Paul Kersten has asked an interesting question: Is there any information about how long a cone can live? Can a big cone like *C. betulinus* reach a higher age than other smaller ones? I'm afraid I had no idea and couldn't help wondering: how many candles indeed can we eventually find in a Cone's birthday cake? Bill Fenzan, to whom Paul had put the problem too, replied as follows:

I took a look at the books I have out and did find a reference that presents estimates of the life span of a cone.

Kohn, A. J. and Perron, F. E., 1994.
Life History and Biogeography Patterns in Conus. Oxford University Press, Oxford. pp. 106.

This is a small book, but it contains a lot of data on Indo-Pacific cones such as egg capsule size, adult size and accurate distribution data. In the introduction is a paragraph that addresses how long a cone lives:

"Growth in *Conus* is indeterminate, periodic increments to the shell are not apparaen, and longevity is unknown. Growth curves derived from mark-recapture studies of two species on an Australian Great Barrier Reef suggest that *C. miliaris* reachs modal shell length of 30-35 mm in 3-4 years and may live 6 years, and *C. flavidus* reaches mean shell length of 41 mm in 16 years and may live 30 or more years. (Frank, 1969; Kohn, unpublished data)."

The reference to 'Frank, 1969' is:

Frank, P. W., 1969.
Growth rates and longevity of some gastropod mollusks on the coral reef at Heron Island. *Oecologia*, 2: 232-50.

This is obviously helpful, but still not a full answer. Does anybody have any further information on this subject? I am sure that we would all enjoy learning about it. And while we are at it, here is another question raised by Paul: do you know what causes sudden colour change in cones? For instance, there are normally coloured specimens of *Conus regius* changing into the *citinus* pattern suddenly

Why is that? Answers, anyone?

The identity and systematics of *Conus lindae* Petuch, 1987

John K. Tucker

Introduction

There have been many species of *Conus* described from the Western Atlantic in recent years but few are as enigmatic as *Conus lindae* Petuch, 1987. This species was described from 240 m of the southern coast of Grand Bahama Island in the Bahamas, which is not an isolated or difficult place to reach. The water depth is, however, difficult to collect in. There have been no subsequent mentions of the species except in species lists and catalogs. For instance, Filmer (2001) listed the species as a synonym of *C. sphacelatus* G. B. Sowerby II, 1833. Sowerby's species is related to *C. cardinalis* and both have nodulose shoulders. Other than being collected in the Bahamas, Petuch's description of *C. lindae* seemed to have little in common with species related to *C. cardinalis*.

The purpose of the present paper is to investigate the relationships of *Conus lindae* to other Western Atlantic species of *Conus* including some fossil species. Examination of other specimens collected in the Bahamas and of images of living specimens from the Bahamas allows clarification of the systematics and identity of this species.

Materials and Methods

The holotype (USNM 859886) and one of two paratypes (RSMAS) was examined. I also examined three specimens contained in my own private collection and images of living specimens provided by Thomas Honker of Delray Beach.

Results and Discussion

Petuch's (1987) original description is brief, vague, and of little value in identifying the species. In fact it is more what he does not say that is important. Petuch does not mention nodules nor does he mention ornamentation of the spire whorl tops. The specimens that I examined including the holotype (Fig. 1) do not have nodules at all at any stage of growth. Thus, they cannot be conspecific with *Conus sphacelatus*, a species with prominent nodules along the shoulder angle. Moreover, there are no spiral cords (ridges) on the whorl tops. These are present and well developed in *C. ermineus*, another species that resembles *C. lindae*. This latter species resembles *C. lindae* in general shell shape. However, *C. lindae* cannot be conspecific with *C. ermineus* based on spire whorl morphology. Cords are present on the whorl tops of *C. ermineus*.

There are three groups of species in the Western Atlantic that do not have spiral cords on the spire whorl tops. These three groups include the species related to *Conus anabathrum*, those related to *C. jaspideus* and *C. mindanus*, and those related to *C. spurius*. Other species either have well developed nodules or spiral cords on the whorl tops. Unfortunately the radular morphology of *C. lindae* is unknown. Were it known it would not be at all difficult to place it with its nearest relatives. However, photographs of the living specimens indicate that *C. lindae* has a markedly long operculum (Figs. 4 and 6) that makes up at least one third of the apertural length. Only the species related to *C. spurius* have such long opercula. Moreover, like *C. lindae*, species related to *C. spurius* have little or no development of nodules on the early whorls. Thus, if subgeneric names were employed, I suggest that *C. lindae* belongs in the subgenus *Spuriconus* Petuch, 2003 rather than *Gradiconus* Da Motta, 1991 (where *C. anabathrum* belongs) or *Jaspidiconus* Petuch, 2003 (where *C. jaspideus* and *C. mindanus* belong).

The fossil species, *Conus yaquensis* Gabb, 1873 from Pliocene/Pleistocene of Florida, may be *C. lindae*'s closest relative. Both species are *Spurioconus* and have no cords on the whorl tops and no nodules on the spire whorls. Most *C. lindae* are more angular looking than most specimens of *C. yaquensis* (compare Fig. 2 to Figs. 7-10). However, it seems that larger *C. lindae* (Fig. 3) develop more rounded shoulders making them more similar to *C. yaquensis*. Moreover, the color pattern of *C. yaquensis* Gabb, 1873, which consists of spiral rows of spots (Figs. 7 and 8), resembles that found in *C. lindae* excepting that *C. lindae* has more and narrower rows of

spots (Fig. 3). Examination of the radula of *C. lindae* could confirm its placement in *Spurioconus*.

Acknowledgments

I thank Alan Kohn for providing images of the holotype of *C. lindae*. Thomas Honker very kindly provided the images of the living *C. lindae* and the specimens in my collection.

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A systematic classification of the gastropod family *Conidae* at the generic level. Rome: *La Conchiglia*, 48 pp.

Filmer, R. M. 2000.
A Catalogue of Nomenclature and Taxonomy in the Living Conidae 1758-1998. Leiden: Backhuys Publishers, 388 pp.

Gabb, W. M. 1873.
On the topography and geology of Santo Domingo. *Transactions of the American Philosophical Society*, new series, 15:49-259, 2 maps.

Petuch, E. J. 1987.
New Caribbean molluscan faunas. Charlottesville, Virginia: *The Coastal Education and Research Foundation*. 154 pp., 29 pls. + addendum, 2 pp., 1 pl.

Petuch, E. J. 2003.
Cenozoic Seas The View from Eastern North America. CRC Press, Boca Raton, Florida, [xii] + 308 pp.

Sowerby, G. B., II. 1832-1841.
The conchological illustrations, or coloured figures of all the hitherto unfigured Recent shells. London: [Parts and their dates for *Conus* are: parts 24, 25, 28, 29, 32, 33 = 1833 (figs. 1-41); parts 36, 37, 54-57 = 1834 (figs. 42-91); parts 147, 148 = 1838 (figs. 92-111); parts 151-158 = 1839 (figs. 112-137).]

Plate captions

***Conus lindae* Petuch, 1987**

1. USNM 859886 *Conus lindae* 31 mm, holotype, off south coast of Grand Bahama Island, Bahamas, 240 m.

2. JKT 3491 *Conus lindae* 28.7 mm, Bahamas, dredged in 400 m, off Victory Cays, Bimini Chain. May, 2000; this is the specimen Petuch (2002) illustrated in fig 3J.

3. uncataloged *Conus lindae* 52 mm, Bahamas, dredged in 400 m, off Victory Cays, Bimini Chain. May, 2000, photo courtesy Tom Honker.

4. uncataloged *Conus lindae* 35 mm, Bahamas, dredged in 400 m, off Victory Cays, Bimini Chain. May, 2000, photo courtesy Tom Honker.

5. uncataloged *Conus lindae* 35 mm, Bahamas, dredged in 400 m, off Victory Cays, Bimini Chain. May, 2000, photo courtesy Tom Honker.

6. uncataloged *Conus lindae* 41 mm, Bahamas, dredged in 400 m, off Victory Cays, Bimini Chain. May, 2000, photo courtesy Tom Honker.

***Conus yaquensis* Gabb, 1873**

7. JKT 3039 *Conus yaquensis* 24.8 mm, Pinecrest beds-above Unit 7a, Pliocene, AMPAC Quarry south of Sarasota, Sarasota, Florida.

8. JKT 3060 *Conus yaquensis* 36.1 mm, Pinecrest beds-black layer, Pliocene, AMPAC Quarry south of Sarasota, Sarasota, Florida.

9. JKT 3102 *Conus yaquensis* 54 mm, Pinecrest beds, along -road side, Pliocene, AMPAC Quarry south of Sarasota, Florida.

10. JKT 3102 *Conus yaquensis* 43.6 mm, Pinecrest beds, along -road side, Pliocene, AMPAC Quarry south of Sarasota, Florida.

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Freak Cones

António Monteiro: John Abba

Many collectors have a certain fascination for deformed specimens and it is true that in some cases quite extraordinary malformations can be found.

One such collector is our friend John Abba, who just sent in a photo of some such specimens, with the following comment:

> I came across this unusual obsession of collecting "Freak Cones" a few yeas ago when collecting here in Indonesia began getting boring. What do you collect when you go snorkeling, scuba diving and come up with the same shells every shelling trip?
>
> My interest gradually turned to freaks as no two shells from the same genus share the same two individual characteristics... Since then, I've even been labeled "Freaky Freak" or "Freaky John". Well, just looking at these gorgeous shells, does bring on an exceptionally "high, daydream, feeling".
>
> My personal opinion of why a shells becomes distorted the way it is probably and mainly due to injury stemming, growth defects, as early, as when its in its embryo stage, resulting in distortion, of normal growth, in the shell, as the animal, matures.
>
> Guess they say a picture is worth a thousand words
>
> – John

Editor's note: Let us try to turn this "Freak Cones" section into a regular thing! Not only will John be able to supply other examples from his collection, but also contributions from others will be most welcome!

The Cone from Lizard Island

Jon Singleton

Conus lizardensis is one of the deeper water species found off the northern coast of Australia. Its range is between northern Australia and the southern coasts of Indonesia and New Guinea, and down the chain of small islands of the Torres Straits to as far south as Lizard Island in northern Queensland. It also just extends to the far N. W. of West Australia.

The habitat of *C. lizardensis* is below the safe scuba diving depth, and the main source was from fishing trawlers operating in the region at depths of 50 metres and below. The Darwin based boats were the main source for collectors, but after a few years the boats moved to new fishing grounds and the species is now rarely offered by dealers.

The holotype of *C. lizardensis* is a sub-adult cone size 18 mm × 8 mm, and the species was named for the type locality of Lizard Island. This species shows no variation in shape or sculpture over the entire range. The main body colour is white and finely grooved over the entire length. The light brown pattern markings can be either orderly or scattered. The average length of mature specimens is 35-40 mm, but in the 1970s trawlers working in the Arafura Sea landed some extra large specimens in excess of 50 mm in length. These had lost some of the grooving on the upper half of the body, and most of the pattern. The few I sighted were all dead collected and had a "chalky" appearance, so possibly these were sub-fossils.

The illustrated specimens range in length from 30 to 53 mm. The largest fig. 1 is one of the possible sub-fossils. The figs. 2 & 3 from the Timor Sea, Northern Territories, fig. 4 a Queensland specimen from the type locality, and fig. 5 from off the Rowley Shoals, West Australia.

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Speaking of Cones in Lisbon

António Monteiro

Shortly after Christmas, my friend Manuel (Manolo) Jimenez Tenorio visited me in Lisbon once again. It was a great pleasure to be able to welcome Manolo and his family (wife Maria Isabel and daughters Cláudia and Isabel – they all have Cones named after them: *C. claudiae* Tenorio & Afonso, 2004, for the eldest daughter and *C. isabelarum* Tenorio & Afonso, 2004 for the mother and youngest daughter!) and to be able to spend a whole day "talking shells".

As always, Manolo has several different projects on his hands, which of course I am not at liberty to discuss here! Suffice it to say that at least one of them is quite far-reaching and likely to cause much discussion in due time!

Our talk ranged from West African species – especially the still largely mysterious Angolan endemics – to West American ones, the subject of a future issue of *A Conchological Iconography*. A lot of work is already completed and the finished work will be very valuable to all Cone collectors, to be sure. Taking advantage of Manolo's visit, we made over two hundred photos of Panamic specimens, to add to the many images of type material, etc. that are already available for publication.

Should we have more time, there would be no scarcity of interesting subjects to discuss. Cones are an endless source of puzzles to challenge our curiosity. But we only had one day together, so we had to postpone further discussion until the next meeting. Soon, we hope.

Anemone versus *novaehollandiae*

Jon Singleton

Is *Conus novaehollandiae* a synonym or subspecies of *Conus anemone*, or are they two separate species? This is an unresolved question for which there is no scientific evidence either way. So it has become a case of the "lumper" versus the "splitter," and though I usually tend to the former, this is one case where I go for the split, until science proves otherwise.

C. anemone has an extensive range from Shark Bay in Western Australia, south along the southern coastline, including Tasmania, and north to the Solitary Islands off the N. S. W. coast. Since being named by Lamarck in 1810, the species has attracted another 19 names, with Lamarck also naming the first of these in 1810. The varied shape and colour pattern of *C. anemone* were no doubt the cause of these names, now all considered to be synonyms by most collectors.

Surprisingly for a shallow water species, little seems to be known about the life cycle of *C. anemone*. It is likely the species has neither, or a very short free-swimming veliger stage, resulting in diverse colonies. Many of the extreme variations appear to be very restricted in their range, while others seem to spread out over a 199 kilometres stretch of coast. Size also varies, from the slender *C. anemone compressus* found at the Abrolhos Islands and Shark Bay and rarely exceeds 35 mm in length. The other extreme is the *C. anemone* which attains 100 mm in length and found near Thorney Island Passage, South Australia. Oddly, both forms have long suffered from incorrect identification, the *compressus* name being given to the high-spired form of *anemone*, and the large form being marketed as *peronianus*, though the type locality for *peronianus* is Sydney Harbour.

The *C. novaehollandiae* is endemic to Western Australian waters, and has a 1200 kilometres range from the western side of the N. W. Cape, along the N. W. coast to the King Sound region near Derby. Over this range, *novaehollandiae* retains a constant shape, sculpture and basic colour pattern of brown and white. The shades of brown will vary from a light golden to a dark brown, and of course the odd aberrant colour form will occasionally appear as it can happen with any species. This consistency seems to indicate the *novaehollandiae* does possess a free swimming veliger stage to assist dispersal.

The northern limit for *C. anemone* is Shark Bay, then there is a 500 kilometres gap until *C. novaehollandiae* is found off the N. W. Cape. This gap has been well shelled along the coastal region, and fishing trawlers have operated there over the years, but no signs of either *anemone* or *novaehollandiae* in this gap.

So we will have to wait for science to give us the true answer. We hear a lot these days about DNA through TV and the press, but it appears very rarely used with molluscs as yet. However, I have read that the first "split" has been made with *Conus* using DNA sampling. I understand a colony of *C. ebraeus* from the Seychelles, and also Okinawa, have been found to possess a differing DNA than *C. ebraeus* from other Indo-Pacific locations, though visually they look identical. The *Conus judaeus* of Bergh, 1896 has been raised to a full species name for these odd "*ebraeus*".

West African Corner

Carlos Afonso & Gonçalo Rosa
(with special thanks to António Monteiro)

A purple symphony - 28

Conus pseudonivifer Monteiro, Tenorio & Poppe, 2004

Conus pseudonivifer Monteiro, Tenorio & Poppe, 2004 is endemic of Boavista, Maio and Santiago Islands (Cape Verde Archipelago, West Africa). There are several known populations, distributed in the Northern coast of Boavista Island and the North and Northwest coasts of Maio Island. We firmly believe that some of these populations might actually represent distinct and as yet undescribed species, but so far there are no studies to support this hypothesis. A few scattered specimens have been found in Santiago Island and some other interesting populations have also been found in Maio and Boavista Islands, but for now, due to the scarcity of specimens, little can be written about them and the distribution of their populations on these islands.

Adult specimens range from 26 to 45 mm, with a straight profile, a short convex spire and a well-marked suture. The shell has a bluish white background with a distinctive pattern of thick interrupted spiral lines in shades of deep purple or dark brown. The spire is bluish white with dark brown blotches. The aperture and columella are purple.

In the past, *C. pseudonivifer* was considered a form of *C. venulatus* Hwass, 1792, often referred to as *C. nivifer* Broderip, 1833, which is erroneous, the latter being synonymous with *C. venulatus*. As a matter of fact, the color of the aperture and the general shape of the shell make it closer to *Conus trochulus* Reeve, 1844. It would even be conceivable that the latter might represent a patternless form of the former, but no real intermediate forms have been found and *C. pseudonivifer* can be separated from *C. trochulus* because the latter as a more slender shell. It can also be separated from *C. venulatus*, which has a white or light bluish ground colour on the last whorl or spire, slightly convex profile, slightly concave spire and whitish aperture. The fact that *C. pseudonivifer* appears to be distinct from both *C. venulatus* and *C. trochulus* and the fact that the name *C. nivifer* (=*C. venulatus*) cannot be applied to this species meant that a new name had to be introduced for it. The name "*pseudonivifer*" obviously refers to the previous confusion with *Conus nivifer*.

Population A – Northwest Boavista Island

Page 17. Bluish-white to whitish-grey background with a highly variable pattern. In some shells, little of the background can be seen because the density of brown lines is such that they coalesce to form a very rich pattern. In some specimens there are only very thin short interrupted brown lines while in others the thin interrupted lines are replaced by brownish and white dots or dashes. Many specimens in this population may not show the typical pseudonivifer pattern of interrupted lines.

Population B – East Boavista Island

Page 18-19. Typical *pseudonivifer* specimens with a whitish background and well spaced interrupted brownish lines; purplish aperture. It can easily be separated from the other populations by its simpler and widely spaced interrupted line pattern. There is little pattern variability and some of the largest known specimens come from these populations.

Population C – Northeast Boavista Island

Page 20. Variable pattern, usually bluish white-grey background with light or dark brown lines that can coalesce and form bands or blotches. There are also less evident interrupted white lines, mostly on the central and upper portion of the last whorl. The aperture is purple brown. Specimens from this population have some differences when compared to typical *pseudonivifer* specimens.

Population D – North Boavista Island

Page 21. White or light pinkish-white background with thin light brown interrupted lines and less evident white

lines. One of the less colorful populations, easily distinguished from others due to its lighter shell and faded pattern. There is little variability. Apex white and aperture light pink to white

Population E – North Maio Island

Page 22. Typical *pseudonivifer* specimens. Differs from the populations found at Navio Quebrado by its lighter background colour, lighter brown interrupted lines, less evident white spiral lines and narrower shell. Aperture purplish or pinkish brown.

Population F – West Maio Island

Page 23. Bluish-white to whitish-grey background with a rich and highly variable pattern of dark brown dashes, interrupted lines and the presence of smaller white dotes and lines. Aperture very dark purple when freshly caught, fading to purple-brown afterwards. This population is quite distinct and does not fit in well with the typical *pseudonivuifer* specimens.

Population G – Northwest Maio Island

Page 24. Bluish white background with dense interrupted brown lines and smaller white lines. Specimens fit perfectly in the pseudonivifer specimens. Larger and most beautiful shells with intense colours come from this population, which may distinguish it from the one found in Praia Real. Shells have a purplish brown aperture and little pattern variability.

Population H – Northeast Maio Island Galeão Oriental (*cf. pseudonivifer*)

Page 25. White background with a highly rich pattern on a very elegant elongated shell. Almost no pattern of spiral interrupted lines is present. Apex white and aperture pink when freshly caught, fading afterwards. Two color forms exist in this population: a brownish pattern form and an orange brown color form (also called the "golden form" by some collectors). Shells of this population are quite rare and were only found recently. This population does not resemble any other and certainly does not fit in with typical pseudonivuifer specimens.

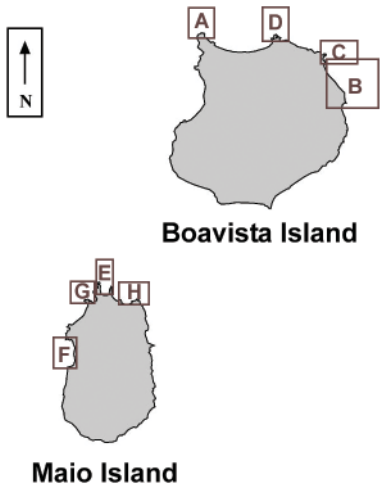
Literature cited

Monteiro, A., Tenorio, M. J. & Poppe, G. T., 2004. The Family Conidae: The West African and Mediterranean species of Conus. A Conchological Iconography. Eds. ConchBooks, Hackenheim, Germany.

Map

Populations of *Conus pseudonivifer* Monteiro, Tenorio & Poppe, 2004, found in Boavista and Maio Islands, Cape Verde Archipelago, West Africa.

Population A – Ponta do Sol, Boavista Island
Population B – Porto Ferreira & Canto, Boavista Island
Population C – Gatas, Boavista Island
Population D – Derrubado, Boavista Island
Population E – Praia Real, Maio Island
Population F – Pau Seco to Calheta, Maio Island
Population G – Navio Quebrado, Maio Island
Population H – Galeão, Maio Island



Population A – Northwest Boavista Island

Population B(1) – East Boavista Island

Population B(2) – East Boavista Island

Population C – Northeast Boavista Island

Population D – North Boavista Island

Population E – North Maio Island

Population F – West Maio Island

Population G – Northwest Maio Island

Population H – Northeast Maio Island Galeão Oriental (*cf. pseudonivifer*)

An Exceptional Specimen

Very recently, a well known Japanese collector, Naotoshi Sudo, from Fujisawa City (Kanagawa Prefecture), acquired a truly outstanding specimen of *Conus spectrum* Linnaeus, 1758, in an on line auction organized by C&S Shell Cabinet, from Hong Kong.

Naotoshi Sudo kindly gave us permission to reproduce the photos of his wonderful specimen (the photo was made by C&S Shell Cabinet). I am sure that all Cone collectors would like to have a similar one... We must keep trying, of course!

Australian Corner: Jon F. Singleton

Note about *C. reduzianus* - 26

A new subspecies of *Conus recluzianus* was recently described within a *Visaya* magazine.Within their text, the authors commented on specimens of *C. recluzianus* which were illustrated within the *Cone Manual* on Pl. 28, figs. 10 through to 25. I thought their treatment of the two Australian specimens was a little harsh, and may well have left readers with the impression that *C. recluzianus* was unlikely to occur in Australian waters.

The comments were that fig. 19 was in too poor condition for positive identification and that fig. 20 had little to do with *recluzianus* other than a similar pattern.

As to the first, I feel that, without any "Aussie" bias, the shape and sculpture make it a close match with the holotype at fig. 10. The second, a subadult specimen, I had the opportunity to examine myself some years ago, and it is certainly a *recluzianus*.

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C. recluzianus is a rarely collected species around Australia, and in Queensland waters I have heard of just six specimens, all from the Capricorn Channel and Cape Moreton regions, just 35 km north of Brisbane. It seems strange the species has not been found anywhere over the remaining 3,500 km of coastline. There are a couple of records from off the "Top End," and at several locations westwards along the N. W. coast to the N. W. Cape.

The illustrated specimens range in length from a 30 mm sub-adult to 58 mm, and cover the whole coastal range known in Australia.

Literature cited

Röckel, D., Korn, W. & Kohn, A. J. 1995.
Manual of the Living Conidae, Volume 1: Indo-Pacific Region. Verlag Christa Hemmen, Weisbaden, Germany, pp. 517.

Tenorio, M. J. Poppe, G. & Tagaro, S. 2007.
Description of *C. recluzianus simanoki* n. ssp. *Visaya*, Vol. II, No. 2.

An Ashmore endemic - 27

The Ashmore Reef is one of a group of off-shore islands and reefs off the far N. W. coast of Australia, and one of the largest, being some 20 km in length and 10 km wide.

During a visit in 1985 I collected a number of small cones off the N. E. corner of the reef. These were small, averaging 25 mm in length, base colour white with orange markings. A few dead specimens were found on the reef-top, but the live cones were in the shallows around 3 to 5 metres depth.

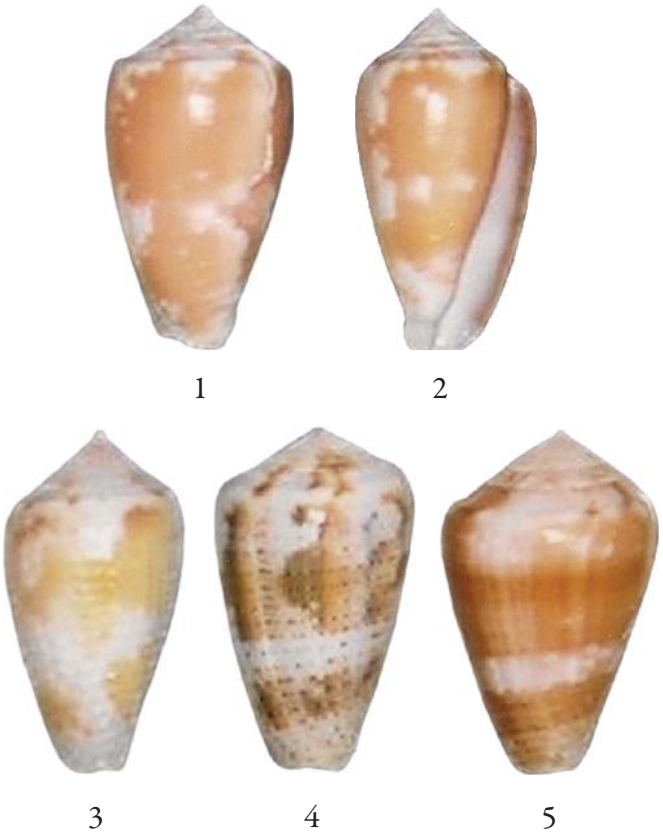
These cones were not immediately identifiable to me, but after study at home I decided they were likely a colourful form of *C. striolatus*, a species not then recorded from West Australia waters, though found off Queensland. It

was five years later that some *C. striolatus* with the standard colour and pattern were found on Ashmore Reef, not too far from the locality of the orange cones. However, these *striolatus* grew much larger, to 40 mm in length, so I recatalogued my orange as just *C. species*.

This cone was under study for naming in Australia when the description of *C. morrisoni* appeared in 1991. Sadly, the holotype was placed in an overseas museum, and another type lost to Australia.

Within the *Cone Manual* published in 1995, the authors placed *C. morrisoni* as a synonym of *C. catus*. I only possess two specimens of the orange *catus*, but to me they are not a good match, and similar sizes specimens are much heavier in weight.

The illustrated specimens are between 22 mm and 27 mm in length. Figs. 1-3 are *C. morrisoni*, with Fig. 3 being the only postulate specimen I have seen. Fig. 4 is an Ashmore Reef *C. striolatus* and fig. 5 an orange *C. catus* from Queensland.



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It is likely that *C. morrisoni* will remain unavailable to collectors as access to the reef is now restricted. It is frustrating to Australians that the government allows Indonesian fishermen to land on the reef, but not Australians.

Literature cited

Raybaudi, G., 1991.
La Conchiglia, No. 260.

Röckel, D., Korn, W. & Kohn, A. J. 1995.
Manual of the Living Conidae, Volume 1: Indo-Pacific Region. Verlag Christa Hemmen, Weisbaden, Germany, pp. 517.

Aussie *C. lischkeanus* - 28

Conus lischkeanus is a well known species which has an extensive range from East Africa to the Western Pacific. It is also a common species on both sides of the Australian continent.

The Australian *C. lischkeanus* were split into two subspecies in 1985, with *C. kermadecensis* being the Queensland and New South Wales species. They range from Noosa Heads, Queensland, to near Sydney. N. S. W. Although a few live specimens have been hand collected by divers, the usual depth habitat is between 100 and 200 metres. Over the range, *C. kermadecensis* does not show very much variation in colour or pattern, being a reddish brown with white bands at the shoulder, mid-body and anterior. Extra large specimens tend to be a paler brown with a broken pattern.

Over in West Australia, the range is far greater, from south of Perth, up the west coast and along the N. W. coast to Dampier, a near 2,000 km stretch. The West

Australia subspecies is *C. tropicensis*, with the basic form being a pale tan with white bands at the shoulder, anterior, and sometimes mid body. These West Australia *tropicensis* have a shallow water habitat, and live specimens are often found on intertidal zones. The specimens found south of Perth are likely survivors of veligers swept south by the Leeuwin Current, a warm stream of water from the tropics. The *tropicensis* also vary in colour and pattern, though this does not occur in large colonies.

Very little is known about *C. lischkeanus* from across the top end in Northern Territories waters. I have sighted a few odd specimens, but all were long dead and eroded.

C. lischkeanus is also well known for being highly variable in the juvenile and subadult stages, and has attracted synonyms. The *C. garywilsoni* named in 2004 from the N. W. Cape of West Australia is likely a synonym, as identical specimens in colour pattern are known from Mozambique and Somalia.

The illustrated specimens range in size from 37 mm to 53 mm in length. Figs. 1 to 4 from West Australia, Figs. 5 and 6 from Queensland, and Fig. 7 from New South Wales.

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Literature cited

Coomans & Filmer. 1985. *Beaufortia*, Vol. 35, No. 1.

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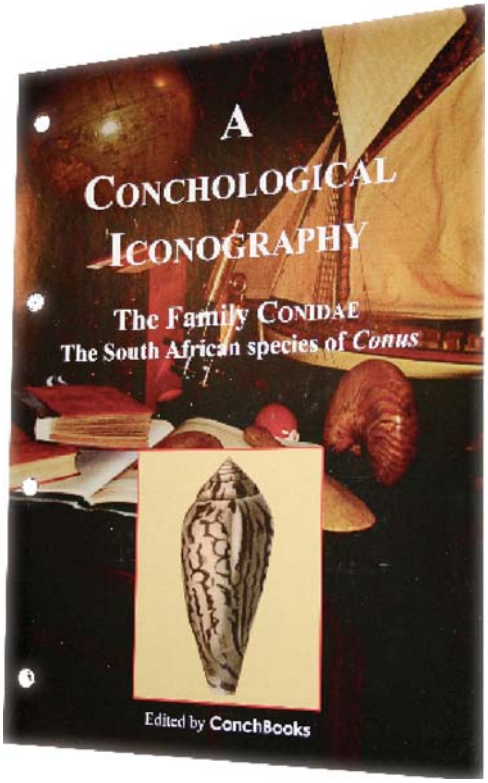
A Conchological Iconography-The Family Conidae: the South African Species of Conus: a quick review

John K. Tucker

This is the 15th offering in the *Conchological Iconography* series, which is edited by ConchBooks (Mainzer Str. 25, D-555546 Hackenheim, Germany). The *Iconography* is directed by Guido T. Poppe (of Conchology, Inc.) and Klaus Groh (of ConchBooks). This particular section was published in 2008 (ISBM 978-3-939767-14-5). The text is by Manuel J. Tenorio and Antonio J. A. Monteiro and is a concise 47 pages. The 60 plates are by Manuel J. Tenorio, Antonio J. A. Monteiro and Yves Terryn and are artistically superb. However, these physical properties of the book do not in any way serve to describe this work.



I am a lumper of the most extreme magnitude and nearly never agree with modern treatments of cone shell species level taxonomy. In part this reflects the years that I have spent collecting the shells and literature of these snails. Amazingly, I agree with almost all of the nomenclature used in this effort.

I am not convinced that the two subspecies of *Conus gradatulus* can be reliably separated using the characters given. Would have liked to have seen a numerical comparison of the shell dimensions to support the contention that the two can be separated by relative spire height. But this is a minor quibble and almost the only one.

The endemic South African species are presented in alphabetical order. The plates are also organized alphabetically. The images are large enough and crisp enough to allow easy identification of the features of the shells for each species. Another great feature of the text is that the primary type specimens are illustrated in black and white images. I believe that only one primary type was missing, that of *Conus baeri* Röckel and Korn, 1992.

The authors recognize 21 taxa endemic to South Africa and manage to illustrate radulae from 15 of those. This is highly unusual and exceedingly valuable resource to have. For one thing it recognizes that these are gastropods with intriguing life histories and not just shells. To further emphasize that a number of images of living specimens are included in the plate 220. Another valuable feature of the book is that several plates (214 to 219) illustrate species that occur in South Africa but that have more extensive ranges in the Indo-Pacific region. The ones thought to occur in South Africa are listed in a checklist and table. I would like to have seen references to institutional collections where there are vouchers. However, this is moderated by the fact that the specimens illustrated were from South Africa and had locality data listed for each.

I am not a fan of 'Selected Bibliographies' such as the one used in this volume. However, I will agree that this one is much more extensive than those found in many other shell books.

I could be accused of some bias because a few specimens from my own private collection made the cut and the authors gave me a kind acknowledgment. They even promoted me from MR. (I have a masters degree) to DR.! However, I can say without qualifications that any one interested in cone shells would benefit from owning this volume. Even if you are not that interested in South African taxa, the number of primary types illustrated along with the comparisons in the text would make the book worthwhile. It can also be useful regardless of the level at which a collector's knowledge and experience is at.

Conus trencarti Nolf & Verstraeten, 2008

The description was published in Neptunea 7(4):

Nolf, F. & Verstraeten, J. *Conus trencarti* (*Mollusca: Gastropoda: Conidae*): a new cone from Senegal, 3 pp., 9 colour plates, 74 figures, 2 text figures and 1 map.

The holotype measures 26.32 mm and is in the Muséum National d'Histoire Naturelle in Paris. It was collected in Almadies (near Dakar), Senegal.

Conus trencarti
Coll. António Monteiro

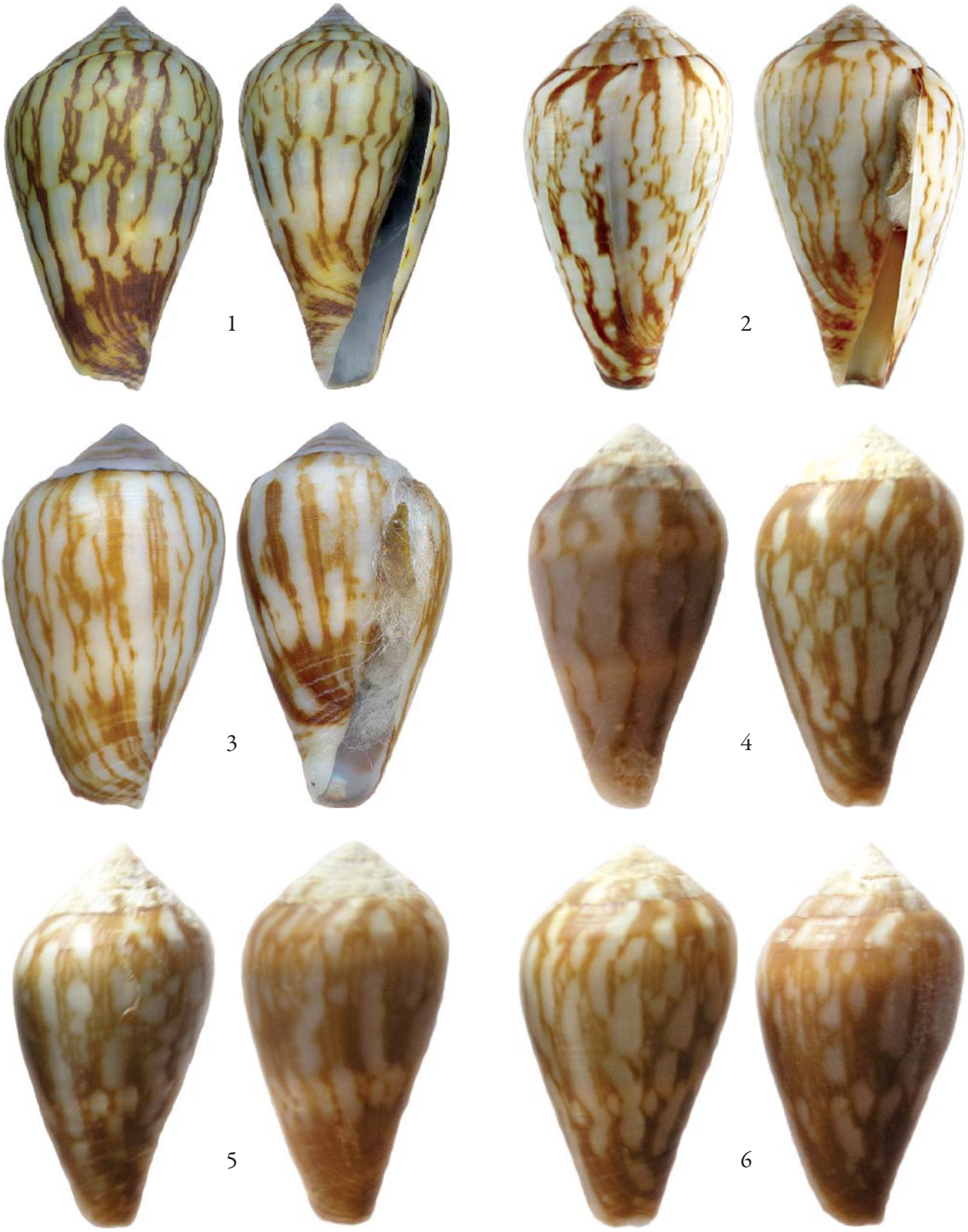
Conus (*Africonus*) *allaryi* Bozzetti, 2008

The description was published in *Malacologia* (Cupra Marittima, IV/2008, October, n. 61):

Bozzetti, Luigi. *Conus allaryi* (*Gastropoda: Prosobranchia: Conidae*), a new species from Angola, 2 pp. 2 colour photos

The holotype measures 25.95 × 14.80 mm and is in the Muséum National d'Histoire Naturelle in Paris. It was collected in San Antonio Bay, 30 kilometres south of Benguela, Angola. Figures on following leaf.

Fig. 1 – Coll. Paul Kersten
Fig. 2 – Coll. Alexander Medvedev
Fig. 3 – Coll. Paul Kersten
Fig. 4-6 – Coll. António Monteiro



Conus (*Africonus*) *allaryi* **Bozzetti, 2008**

New Publications: António Monteiro

Hidden diversity in a hyperdiverse gastropod genus: discovery of previously unidentified members of a Conus species complex, **by Thomas F. Duda Jr., Matthew B. Bolin, Christopher P. Meyer and Alan J. Kohn. in Molecular Phylogenetics and Evolution 49 (2008) 867–876.**

This is an interesting and important paper on the use of molecular sequencing for the separation of Cone species within a well-known complex. Molecular sequence data is of course invaluable whenever morphological differences are a poor tool for the separation of species.

This led the authors to use such modern techniques to characterize the genetic discontinuity of the species in the *Conus sponsalis* group: the Indo-West Pacific *C. sponsalis*, *C. nanus*, *C. ceylanensis*, *C. musicus* and *C. parvatus*, and the eastern Pacific *C. nux*. From the Abstract we gather that, in their analyses, "*C. nanus* and *C. sponsalis* resolve quite well and appear to represent distinct evolutionary units that are mostly congruent with morphology-based distinctions. [The authors] also identified several cryptic entities whose genetic uniqueness suggests species-level distinctions. Two of these fit the original description of *C. sponsalis*; three forms appear to represent *C. nanus* but differ in adult shell size or possess a unique shell color pattern.

PhilippineMarine Mollusks, vol. II (Gastropoda Part 2), **Guido T. Poppe. Ed. ConchBooks, November 2008.**

The second of the announced three volumes of Philippine Marine Mollusks, has just been published. This of course is not a Cone book, but the importance of the family *Conidae* in the Philippine malacological fauna means that over 100 of the total of just under 400 plates are in fact dedicated to Cones. This section was prepared by Gabriella Raybaudi Massilia and included with the other sections in the work, under coordination from Guido T. Poppe.

The sheer size of the work makes it quite important and the excellent quality of the photographic plates, illustrating one to many specimens for each distinct species makes identification easy.

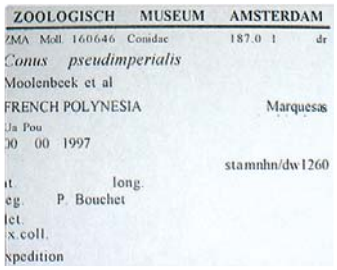
The only aspect that is rather regretful is the almost complete absence of text (except for very short notes here and there, especially where rare and famous species are concerned). Naturally, writing a text to accompany the plates would probably have doubled the size of the book (and it certainly is a big heavy book as it is...) and severely increased its price; it would also have caused a much longer wait for the finished product. Since nowadays such high quality in photos and printing can be achieved, one is allowed to ask whether or not a long accompanying text is in fact necessary. After all, what can be said in words, that is not clear from the images? Well, I would say that something can indeed be said!

We can certainly do without long descriptions of shell morphology; that is in fact clear from a good photo. But a number of remarks helping the reader to separate closely resembling species is always most useful, and only the more so when the author – as is the case with the Cone section of the book – chooses to make several changes in the usual taxonomy of the group.

In many cases synonyms are created or separated and we have no explanation to support such decisions. For instance, the vastly polymorphic *C. magus* is split into several distinct species, but we have no indication of the grounds for that splitting, besides the author's assertion that she wants to motivate further research into that particular issue; but why take as valid some specific or subspecific names (and why are certain subspecies assigned to certain species), and not others? A short text would have been most useful.

Gabriella also chose to use form names freely, something that I am not too keen about and that in some instances seems largely unjustified. I personally see no point in referring to juvenile specimens of well-known species using form names; such names were in fact introduced before the specimens under hand were recognized as juveniles!

C. pseudimperialis
Moolenbeek et al



From the collection of Lyle Therriault

We hope to see your contribution in the next TCC!

Our friend Lyle Therriault has just sent a few photos of beautiful specimens from his collection. Hopefully others will follow his example and send us photos of outstanding specimens for TCC's gallery. In this opportunity, we present *Conus vittatus* Hwass, 1792 (top) and *C. skinneri* da Motta, 1982 (bottom).