THE CONE COLLECTOR

#7 - July 2008

THE CONE COLLECTOR

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On the Cover:

Conus eversoni Petuch, 1987, a very rare species in collections and thought to be endemic to the Bay Islands of Honduras. Photo by Randy Allamand of Sebring, Florida, USA.

Note From the Editor

You are now in possession of issue number 7 of *The Cone Collector*, which is actually our eighth issue! If you follow this newsletter from the beginning, you will know that this apparent numerical paradox – which can appear particularly bizarre since your Editor is in fact a Maths' teacher – result from the fact that we started with an experimental issue, which was identified as issue #0.

Once again we have tried to put together an interesting collection of articles, with something for everyone – you may actually find a couple of rather surprising subjects inside...– from beginners to the Cone world (if not even to the shell world) to advanced collectors.

Thanks are due to all the authors who took the time to write those articles and send them along. Surely nothing could be done without them! And the sheer variety of subjects covered will hopefully encourage others to contribute too.

May I say that I am especially satisfied with the "Who's Who in Cones" column? I have always felt that shell collecting is not only about shells, it is also about making friends. Being in touch with people from all over the world who share our interests is for me a major reward of collecting. And I always felt that it was nice to have faces to go with names and to know something about our fellow collectors. Our gallery will grow with each additional issue and even from an historical point of view such a register will be of some importance years from now.

I hope that you enjoy the new TCC. Don't forget do give us some feedback. Your opinion does matter!

António Monteiro

Who's Who in Cones: Manuel Jiménez Tenorio

I was born in Jerez de la Frontera, Spain, on the 28th April 1965. My hometown is known worldwide thanks to its finest exports, Sherry and horses, being also considered one of the cradles of genuine Flamenco. After primary and secondary school, I went to the University of Cádiz, where I obtained the BSc in Chemistry. Then I moved to Brighton, United Kingdom, where I spent three years doing research for my PhD at the University of Sussex. Once I obtained my PhD degree, I returned to the University of Cádiz in 1991, where I got a position as assistant professor of Inorganic Chemistry. I gained my tenure in 1996, and since then I belong to the staff of the University as full-time lecturer and researcher. I married my wife Maribel in 1993; we have two daughters, Claudia (seven) and Isabel (four), and live in Jerez.

Although Jerez is not on the seaside, it is very close, just about 15 km. This means that since my very early childhood I was in contact with the sea. As usual, the first contact with seashells was during summer on the beach. My interest in the collecting Natural History items was born then. But my main interests at the time were insects, especially butterflies. I discovered the beauty of tropical shells in our honeymoon in Bali in 1993 and became attracted to *Cypraeas*. And I discovered that getting shells in Bali was much easier than catching butterflies! When I returned home with a bunch of more or less common shells, I identified them with the help of a book borrowed from a friend. In this fashion, my passion for shell collecting was born.

Thanks to frequent travels to England for professional reasons, I met Kenneth Wye when he had a shell shop near Covent Garden in London. I obtained from him my first specimen shells, as well as advice and guidance. The information gathered in this way prompted my first shell-collecting trip to the Philippines in 1995. Shortly afterwards I took a scuba diving course. I got in touch with many dealers from different countries, and made many shell friends thanks to the Internet. I kept making diving and shell-collecting trips to many places: Mauritius, Sri Lanka, Maldives, Egypt, Canary Islands...

As my collection was growing up (mainly *Cypraeidae*, *Conidae*, *Strombidae* and *Volutidae*), I was becoming more and more interested in *Conidae*. Being the proud owner of one copy of the "Manual of Living Conidae" shortly after its publication, I considered that the Indo-Pacific region was reasonably well covered, but the information on *Conidae* from other regions was more scarce and scattered. I decided to study the Cones from these areas in detail by myself, gathering information, photographing specimens and type material, etc, with the aim of preparing a work which could be some day of help to other *Conus* collectors. One of the most problematic groups was the *Conidae* from the Cape Verde Islands. Thanks to information kindly provided by Dr. Emilio Rolán, my good friend Carlos Afonso from Portugal and myself made our first field trip to the Cape Verde Archipelago in 1999. Since then, I have been visiting these islands yearly, and have made many interesting discoveries. All the information collected during these trips proved to be very useful when I joined efforts with António Monteiro

and Guido Poppe for the preparation of "the West African and Mediterranean Species of *Conus*" for the Conchological Iconography series. Now, the "South African *Conidae*" part of the Iconography will be out soon, and I will be hopefully working on the cones from the remaining geographic areas.

Being a professional researcher in chemistry, I soon adopted a scientific approach to the study of *Conus.* In the last four years I have authored 8 papers and two books on *Conus*, and have described around a dozen of new *Conus* species and subspecies. In recent times, I became acquainted with geometric morphometric techniques applied to the study of molluscs' shells in general and of *Conus* in particular. I am quite interested in the supraspecific classification of *Conidae* and in the study of radular anatomy. At present, I am studying the populations of *Conus guanche* from the Canary Islands, and a number of *Conus sp*. from different localities. I am involved in other projects dealing with geometric morphometric analysis of *Pleurotomariidae*, and of Cerion land snails from the Bahamas, in collaboration with Dr. Jerry Harasewych.

Finally, I must mention that apart from science and shells, I have other hobbies. I love classical music, especially from the baroque period, being very fond of Handel's baroque operas. I also love hiking and mountaineering, as well as skiing, and try to do all of these things as often as I can.

Letters to the Editor

From Don Moody:

Thanks for another enjoyable and informative issue [TCC #5]. Two articles were of particular interest to me. The first on the status of *Conus queketti*. I must confess that while there are certainly similarities between some forms of *C. imperialis* and *C. queketti*, there is enough doubt for me to at least leave it in the category of a possible valid species (but certainly subject to a change in opinion), and I have added some notes about its status to my collection label as well. I was fortunate to recently purchase a specimen from Alan Seccombe. I have second specimen in very fine condition, but with a light yellow pattern in coloration (about 42 mm).

Conus queketti E.A. Smith, 1906, 31mm, dredged off Natal, South Africa in 40 meters. Photo by Alan Seccombe.

As for *Conus stearnsi*, this is a common species found throughout the West Coast of Florida. The pictures that Andre Poremski provided for this issue are certainly the norm for the species. I have found some variation in small isolated populations along the West Coast. Ones from the Sanibel Island and the Ft. Myers Beach area in open passes tend to be almost white with a trace of white-on-white markings, larger and slightly broader at the shoulder, while others found further back in the passes among silty sand and seagrasses correspond more closely to your figured specimens.

Tampa Bay seems to be the best spot to find specimens that are practically solid black – about one

out of every six, and the general population there seems darker than ones further south. North of Tampa Bay, in Johns Pass, seems to be a small population that is off-white with only brown speckling. From Tarpon Springs north to the Big Bend area of west Florida the population is generally found in thick, silty mud and thick seagrass, and taken by screening. These specimens are very small and generally are only about 12mm or smaller, and tend towards a reddish brown ground color a limited speckling. Off Keaton Beach, north of Steinhatchee, in Florida's Big Bend I screened small specimens at extremely low tide about half a mile from the shoreline – these were small (10mm or less), narrower in aspect, and a uniform glossy light grey color. I have a dead-taken specimen from St. Andrews Bay in Panama City, but have not been able to collect any live specimens there or anywhere else in the Florida Panhandle. Personal observation would suggest a range from Cape Sable to the Big Bend, and possibly further west. These are an interesting and variable species within a narrow range of color and pattern, and are always a pleasure to find popping out of the sand on the edge of a sandbank on the incoming tide. Thanks for the great pictures Andre!

The Editor replies:

Thanks a lot for your comments, Don! Everybody appreciates this kind of interaction, with comments to previously published articles that may in turn raise further discussion, for the benefit of all.

From Mike Filmer:

Thanks for issue no. 6 yet another great effort on which I have a few comments :

Page 8. I am surprised that Alan Limpus does not mention that *C. advertex* is a synonym (form) of *C. angasi* Tryon.

Page 17. An interesting paper but I do not think that shells mimic other shells for reasons of security. As far as I am aware predators of mollusca are not affected by the poisons in other mollusca – for example many native people living near the sea in South East Asia eat all kinds of shellfish including cones with no adverse effects, also I have often found the remains of Cones including those known to be toxic which have been eaten by predators with, it seems, impunity. As for *C. geographus* and *Melo miltonis,* the later is gigantic compared to the former, at least 3 times the size!

Page 24. I do not think that *cebuensis* deserves subspecies status – it is only a form of *proximus* and this form is found not only in the Cebu area it is therefore not geographically separated from *proximus*.

Octopuses are a very well known predator of Cone shells – many fine specimens have been found at the entrance to Octopus lairs.

The Editor replies:

Some of the instances in Al's paper on mimicry are of course cases of convergence rather than actual mimicry, but they are quite striking nonetheless!

Lost Cone Holotype Recovered by Amateur Cone Collector

Bill Fenzan

This is a brief note to inform readers of *The Cone Collector* that the holotype of *Conus* (*Floraconus*) *lightbourni* Petuch, 1986 has been located and delivered to the proper type repository. The holotype was said to have been deposited in the Delaware Museum of Natural History in the original description, but a 1991 type catalog of material stored at the museum states it was never received.

I recognized the shell as the missing holotype when it was offered to me for sale by a shell dealer. Once identity of the specimen was confirmed as the missing holotype, the Curator of Mollusks at the Delaware Museum of Natural History, Dr. Elizabeth Shea, was notified of the discovery. The shell was delivered to the museum on 14 March 2008, 22 years after it was accessioned by the museum.

This recovery of a missing name-bearing type was only possible because of the generosity of the many people who helped me pursue knowledge of concerning cone type specimens over the last few years. A fuller account of this fortunate recovery will be submitted to the editor of *American Conchologist* magazine later this year for publication.

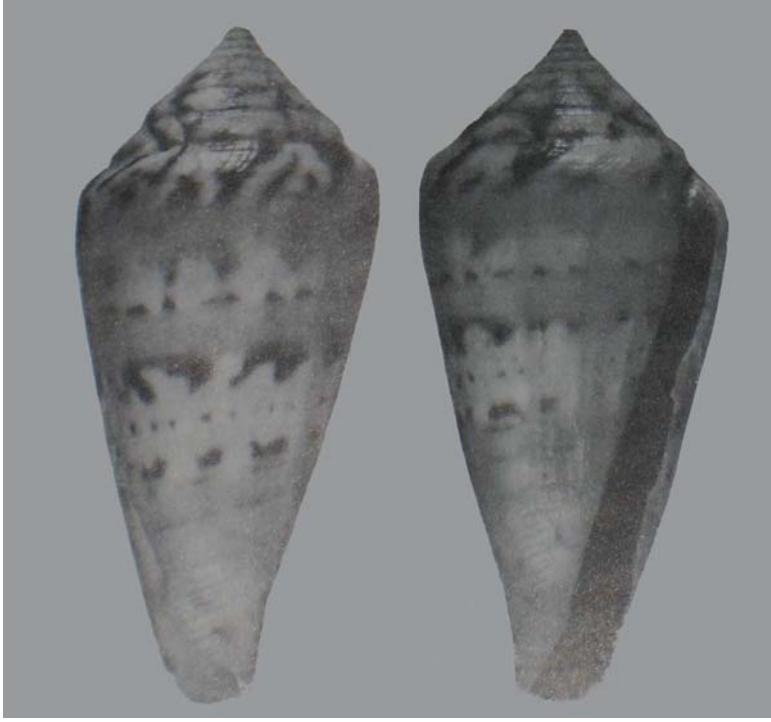


Photo caption:

Conus lightbourni Petuch, 1986, holotype (text figures from the original description). Copyright © 2007 Biological Society of Washington. *From Proceedings of the Biological Society of Washington*, reprinted by permission of Allen Press Publishing Services.

Note from the Editor:

Naturally, we thank Bill for this note, anticipating his longer paper on the subject. We also thank the author and the publisher of the original description for permission to use the photo of the holotype.

During the recent Shell Show held in Antwerp. Belgium, a number of Cone collectors had the opportunity to meet – and obviously to discuss Cones and Cone problems! Here is a photo of a happy foursome!

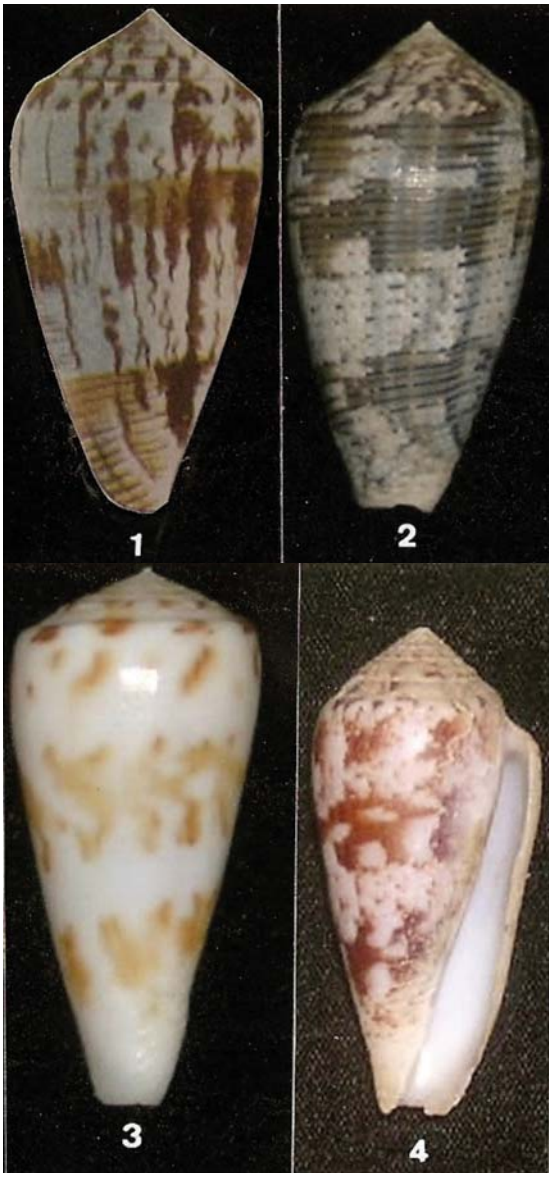
From left to right: Bill Fenzan, Gabriella Raybaudi Massilia, Paul Kersten and Onno Roep.

The *kinoshitai* Story in Australia

Jon Singleton

Most of the deeper water cones which were originally discovered and named from the N. W. Pacific region have since proved to range extensively down to West Pacific, and a few even into the Indian Ocean. One such species is *Conus kinoshitai* Kuroda, 1956, and the first living specimen from Australian waters was collected in July 2007.

The *kinoshitai* story begins with two live cones being found in the Gloucester Passage, which is off Bowen on the central Queensland coast. These were tentatively identified as *C. kinoshitai*, and one was illustrated within the 1964 *Cone Shells of the World* on Pl. 22, fig. 20. This hand drawn illustration does not match the *kinoshitai* shape familiar to collectors today, and even the authors seemed uncertain as they likened it to *C. anemone*, a species not occurring in Queensland waters. To me, the nearest match for their illustration is a dark form of *C. achatinus*, an uncommon species in Queensland waters and rarely found alive. The whereabouts of the two Gloucester Passage cones is unknown.



On to the late 1960s and new prawn fishing areas were opened for trawling. The older technique of prawn trawling produced a lot of by-product such as shells, and it was a boom time for collectors. A large percentage of the shells were long dead and eroded, and from a box of such junk shells which had been in storage for a few years, I discovered a faded but intact *C. kinoshitai*. All this material had been trawled off Cape Moreton, just north of Brisbane, from a depth of 160 metres. The only other possible Queensland *kinoshitai* is shown within the 1995 *Cone Manual* as a *C. tribblei* on Pl. 25, fig. 15. This is an eroded cone without any colour or pattern, but the shape to me is a far better match for a *C. kinoshitai*.

Over on the other side of the continent, research vessels were also seeking new fishing grounds, and in the early 1980s many areas of the N. W. Shelf to the north of Port Hedland, Western Australia, were sampled and many unusual shells surfaced in the dredge. One large cone 72.7 mm × 32.2 mm was identified as a *C. kinoshitai*, though it was long dead, but still with some dorsal pattern.

It was to be another 25 years before the first live taken *kinoshitai* surfaced from N. W. Australia. A survey vessel sampling between Broome and the Kimberly coast trawled a live 60.3 mm × 29 mm specimen with the standard lavender and brown markings.

The illustrations show the old 1964 specimen at fig. 1; fig. 2 is a matching *achatinus*: fig. 3 the old Cape Moreton cone; and fig. 4 the recent live-taken specimen.

References:

Marsh, J. A. & Rippingale, O. H.
1964: *Cone Shells of the World*, first edition.

Röckel, D., Korn, W. & Kohn, A. J.
1995: *Manual of the Living Conidae*.

A Fine Find!

John Abba

It was a moonless, drizzling night in March. Been raining on, and off, for over a week. Habitat of the *Conus abbas*'s are known to be in mud-sand, and up to a depth of 20 meters.

This night I went to 30 meters, and dropped " Tangle Nets " 15 sets in all, towards the village where the mud sediments were higher than sand..

3 days later it was pick up time, and " Bingo." Specimens of *Conus abbas* in the 70 mm uncommon, and 80 mm rare, all tangled up trying to get at the decaying pieces of fish I used as bait.. Well the one that stood out was the 91.5 mm. Never has a 90mm plus known to date been found!

The *Conus hyaena* measuring 80.5 was another BIG one. Again no specimen known over the WRS of 76.5 mm.

So was it the moonless night? Was it the time of year, as I have been noticing this cone species for years. Was it the more muddy bottom than usual? OR was it the rain lasting for over a week that lowered the salinity of the sea water? I did measure the salt in the water with a gauge, I use to measure salt in my live lobster tanks. It was .090.

Usually at this Pangandaran Bay its .092 and near the Equator in North Sulawasi, Manado its .093. Should be .093 in the Philippines, but could be wrong.

Whatever it was, that prompted these *Conus abbas* and *Conus hyaena* to crawl out, well, guess we'll have to wait 'till next year. Seasons's over..But its definitely same time, same spot next year..for further studies.

An Exceptional Specimen

Philippe Quiquandon

As we are well aware of, our friend Philippe Quiquandon specializes in exceptional shells, particularly in World Record Sizes. This time he has sent photos of a truly giant *C . vicweei* Old, 1973: no less than 100.6 mm in length! The specimen was trawled alive by a Thai boat off Burma, from a depth of about 400 m.

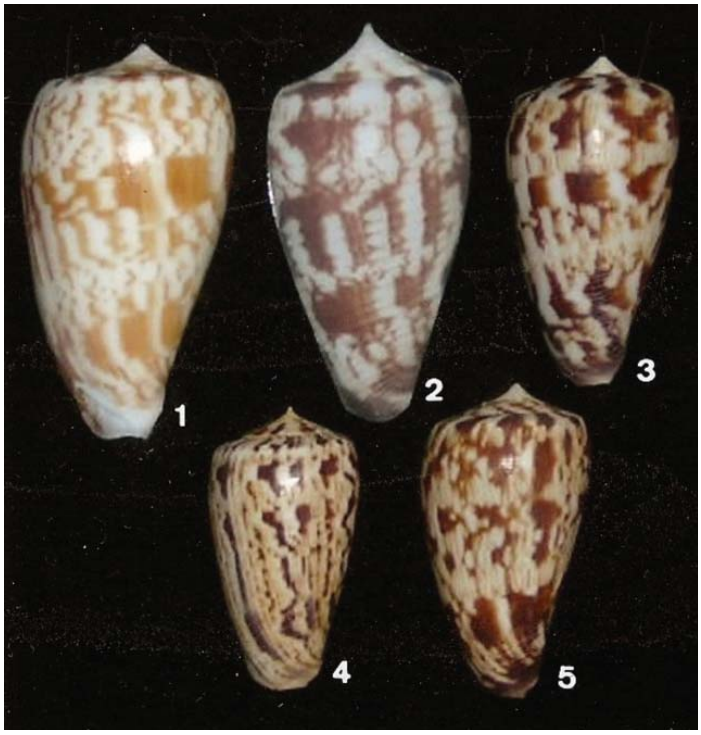
The *spectrum* complex in Australia

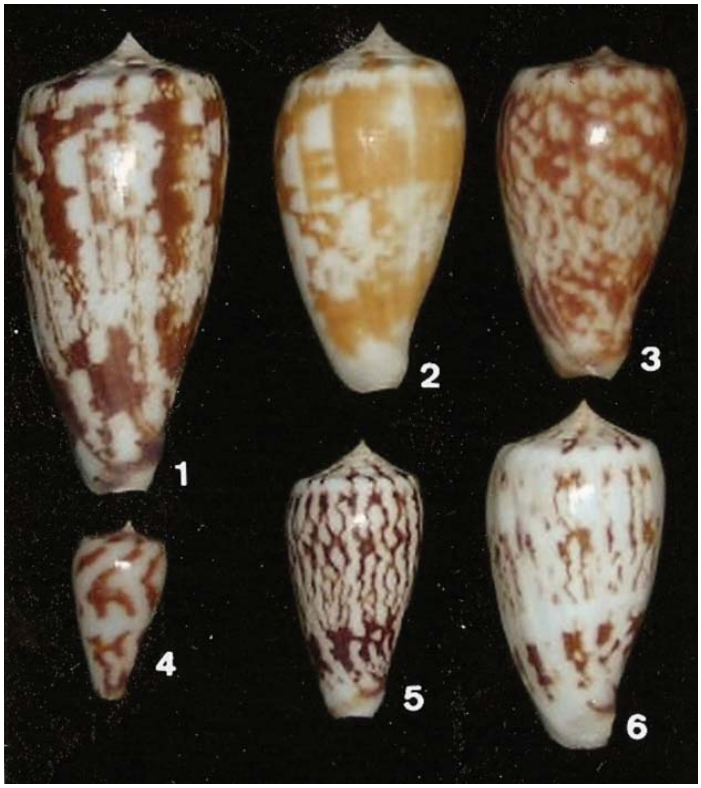
Jon Singleton

Conus spectrum is a reasonably common species around the subtropical coasts of Western Australia and Queensland. Although I have no record myself, it must be around the offshore islands of the Northern Territories. A specimen from Darwin is illustrated within a major article on *Conus* radula study.

The West Australia coastal *spectrum* is the "*stillatus*" form and can be found living intertidally on sand flats which can be covered by 10 metres of water at high tides. This coastal form ranges along the N. W. coast from the N. W. Cape to just north of Broome. At some far N. W. offshore islands a *C. spectrum* can be found living between 10 to 20 metres depth. These are heavier in weight compared to similar sized coastal specimens.

The *C. spectrum* from Queensland waters show a lot more variety in colour and pattern. A large form which can attain a length of 80 mm occurs in Keppel Bay, just accessible to divers, but more commonly trawled. It has a standard pattern of chocolate brown on white. Similar colour specimens also occur at locations up to off Townsville, but do not appear to reach





the length of the Keppel Bay specimens. The most common form which is spread over the whole Queensland eastern coast to as far south as the Swain Reefs, are usually white with thinner brown stripes and small blotches. A yellow to orange form occurs at a few isolated locations. As with all cone species, amongst a large population, the odd unusually marked specimen will occasionally be found. I have sighted a uniform medium brown coloured *spectrum* within a private collection, but never an all white specimen.

The illustrated specimens from West Australia are 35 to 57 mm in length: figs. 1 & 2 are the offshore form; the figs. 3, 4 & 5 are the coastal *C. stillatus* form. The Queensland illustrations are 43 to 73 mm in length: fig. 1 from Keppel Bay, fig. 2 the orange form, fig. 6 the commoner standard form, and figs. 3, 4 & 5 just odd variations.

Reference:

Rolán, E. & Raybaudi, G. 1994: New Investigation on the radular teeth of *Conus*. *Argonauta* VIII (7-12) December, Part II.

Rediscovery of *Conus boivini* in Madagascar?

Luigi Bozzetti

After its description dating back as far as 1845, all traces of *Conus boivini* Kiener were lost, the little information available in written works is controverted; Walls (1978) writes about a second specimen, the picture of which is referred to as *C. conspersus* Reeve,1844 by Marsh and Rippingale (1964), such attribution is quite doubtful and not worldwide accepted. Röckel, Korn and Kohn (1995) do not include this shell among valid species, and set it apart in Appendix 1, among nominal species of doubtful validity. Coomans, Moolenbeek and Wils (1982) consider it as a teratologic specimen of *C. gubernator* Hwass,1792. Richard (1990) acknowledges its specific validity.

The specimen in the picture hereby was found in Toliara area, South-western Madagascar, in November 2007, size is 65 x 33mm; the dimensions and morphological features (depressed spire, spiral sculpture under shoulder and on the basis, lateral sides constricted on the posterior area) fully match with the description of *C. boivini* as well as with the holotype picture. The location where it was found, the colour and the pattern remind of *C. gubernator*, therefore, should this specimen turn out to be conspecific to Kiener taxon, this would confirm the hereabove quoted hypothesis made by Coomans et al..

References:

Comans, H.,E., Moolenbeek, R.,G., & Wils, E.
1982: Alphabetical revision of the (sub)species in recent *Conidae* 5. *baccatus* to *byssinus*, including *C. brettinghami* nomem novum. *Basteria*, Leiden. 46: 3-67.

Marsh, J.,A., & Rippingale, O., H.
1964: *Cone Shells of the World*. Jacaranda: Brisbane. 1-166.

Richard, G.
1990: Revision des *Conidae* du Museum National d'Histoire Naturelle de Paris. Ecole Pratique des Hautes Etudes, *Perpignan Cedex*. 1-231.

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

Walls, J.,G.
1978: *A Synopsis of the Living Conidae*. TFH Publications: Neptune City, New Jersey. 1-1009.

Note from the Editor:

Personally I have no doubts whatsoever that this specimen is indeed a teratological specimen of *C. gubernator* Hwass in Bruguière, 1792 and in fact this is not the first such specimen that I saw. For this reason I concur with the author's opinion that it confirms the hypothesis by Coomans et al.

Conus gubernator from the West Indian Ocean: An Iconographic Syntheses

Armando Verdasca & António Monteiro

Conus gubernator Hwass in Bruguière, 1792 has always captivated the interest and curiosity of cone collectors because of its great diversity of patterns and forms.

Many will remember countless articles that appeared in *Hawaiian Shell News* from late 1970s to early 1980s discussing *Conus pramparti* (a nomen nudum, since it was never published with a proper description), *Conus leehmani* Röckel & da Motta, 1979, (presently considered as a mere form of *Conus gubernator*, which means that *C. leehmani* is a synonym of *C. gubernator*) and *Conus frauenfeldi* Crosse, 1865 (which some consider a form of *Conus magus*). The subject is still controversial nowadays [1].

It should be stressed right from the start that the subgenus *Strioconus*, first introduced by Thiele in 1929, which includes *Conus gubernator* and some of its nearest cousins, such as *Conus striatus* Linnaeus, 1758, *Conus barthelemyi* Bernardi, 1861 and *Conus gauguini* Richard & Salvat, 1973, is known to allow for many forms and local variations, as well as subspecies.

In Röckel et al, the description of *Conus gubernator* reads as follows:

> "Medium-sized to large[2], moderately solid to moderately heavy. Last whorl conical to ventricosely conical in form leehmani, also narrowly conical and narrowly conoid-cylindrical to conoid-cylindrical in typical form and intermediate shells; outline slightly to sometimes strongly convex at adapical fourth to third, straight below; adapical fourth often bulbous and central area slightly concave in form leehmani and intermediate shells... Spire of low to moderate height; outline slightly convex or slightly sigmoid to concave, concave to deeply concave in form leehmani... Teleoconch sutural ramps flat in early whorls, concave to deeply concave in late whorls, with 0- 1 increasing to 5- 10 spiral grooves; spiral sculpture weak to obsolete on latest ramps. Last whorl with several shallow spiral grooves on basal fourth to third and variably broad ribbons between; fine spiral threads extending from shoulder to base, occasionally coarser on basal ribbons."

When it comes to pattern, the authors add, about the typical form of the species:

> "Ground colour white, often suffused with violet and less commonly with grey or brown. Last whorl with separate or confluent tan, reddish or blackish brown axial markings. Each marking may have two different shades of brown; surface often with underlying yellowish brown to violet background pattern. Violet tints more pronounced in specimens from Mozambique, Madagascar and Aldabra Is. than in shells from more northern localities. Axial markings variable in size and shape, ranging from irregular flecks to large, often zigzag flames. Pattern elements evenly distributed across last whorl or clustered in spiral rows on both sides of centre; rows may partially fuse into solid bands. Shells lacking surface pattern elements intergrade with shells with a heavily blotched and banded last whorl. Siphonal fasciole white, occasionally tinged with yellowish brown. Larval whorls and first 1-4 postnuclear sutural ramps white to orange, or light pink. Following sutural ramps with yellowish to reddish or dark brown radial blotches, streaks or lines. Aperture white to bluish white; occasionally bright orange deep within."

Things obviously get more complicated when we abandon the typical form and face form *leehmani*, which is described by Röckel et al in the following terms:

> "Ground colour white to cream. Last whorl with a yellowish brown spiral band on each side of centre; an additional spiral band may be present below shoulder. Spiral colour bands separate or

connected by a variable number of identically coloured axial streaks to broad bands. Dark or reddish brown spots or axial streaks or blotches mostly over spiral bands; markings usually sparse and irregularly spaced, occasionally absent. Siphonal fasciole white or tinged with yellow. Larval and first 1-4 postnuclear sutural ramps orange. Following sutural ramps with reddish brown radial blotches. Aperture white, pale orange deep within in some specimens."

From a morphometric point of view, the form *leehmani* is characterized by a relatively wide shoulder (very wide in populations from the Maldive Islands, with RD of 0.56-0.58)[3].

Fig. 1 Detail of *Conus gubernator f. leehmani*'s spire.

After a close examination of the specimens of *Conus gubernator* in our collections and bearing in mind its provenance, as well as the morphometric parameters and pattern, we share the opinion expressed by Röckel et al thus:

"Conchological similarities in size, sculpture of last whorl and spire as well as colour pattern suggest that *C. gubernator* and the form originally described as *C. leehmani* are conspecific. The latter occurs mainly in the Maldive and Laccadive Archipelagoes and occasionally in Mozambique. Specimens from Chagos, Seychelles, Amirantes, and Mascarenes (Pl. 45, Figs. 15-19) are intermediate in shell morphology, colour pattern, and apex colouration between typical *C. gubernator* and form *leehmani*. The species originally described as *C. veillardi* (Pl. 45, Fig. 6) differs from *C. gubernator* only in its smaller adult size. Colour pattern of the last whorl, aperture colour and sculpture of the shell agree with *C. gubernator* and we regard *C. veillardi* as a local variant. Shells of smaller adult size but otherwise not separable from typical *C. gubernator* are known also from the nearby Aldabra Is."

When it comes to habitat, populations from Mozambique and Madagascar usually live intertidally, normally not deeper than 6/8 metres, on sandy bottoms covered with algae. Both forms *terminus* and *leehmani* can be found together. Populations are also known from greater depths, both in South Mozambique and in Southern Madagascar (Bozzetti, pers. comm., 2007); in such instances the habitat tends to be somewhat richer, under coral slabs or buried in sand in crevices of the coral platform.

From a morphometric point of view, the intertidal populations of the form *terminus* from Mozambique and Madagascar are very close to each other: RD about 0.50 with high spires, RSH above 0.15.

When it comes to deep water (20 metres depth or more) populations from Mozambique and Madagascar, the specimens found usually present an orangish or brownish ground colour usually with two white spiral bands. When we consider morphometric parameters, RD ranges from 0.51 to 0.52 in specimens from Madagascar and is of about 0.55 in the ones from Mozambique. The spire is high in Mozambique specimens (RSH of 0.20-0.25), whereas specimens from Madagascar tend to have lower spires (RSH of about 0.15).

When we come to form *leehmani*, specimens from Mozambique normally present a high spire (RSH of about 0.20) and RD ranging from 0.57 to 0.60, whereas the specimens from Maldives have a medium high spire (RSH of 0.10-0.12) and a wide shoulder (RD above 0.50). On the other hand, specimens from Reunion Islands have low spires (RSH less than 0.10) and are narrower (RD from 0.55 to 0.57); maximum diameter of the shell is located more anteriorly than in specimens from either Maldives or Mozambique.

Fig. 2 Outlines of *Conus barthelemyi* (left) and *Conus gubernator f. leehmani* (right).

On the next plates we show several colour forms and variants in the West Indian Ocean.

Plate 1.1: Lectotype of *Conus gubernator* Hwass in Bruguière, 1792 and examples of specimens of this colour form.

Plate 1.2 & 1.3: Specimens of *Conus gubernator terminus* form Lamarck, 1810, from Kiener.

Plate 2.1: Holotype of *Conus gubernator leehmani* form Röckel & Da Motta, 1979 and examples of specimens of this colour form, from Maldives Islands Archipelago.

Plate 2.2: Examples of *Conus gubernator leehmani*, from Reunion Island population photos 1, 2 and 3 ("*Conus pramparti*"), and from Mozambique, photos 4, 5 and 6. The photos 7, 8 and 9 are albinistic variants of *Conus gubernator*, close to *C. leehmani* colour form.

Plate 3.1: Holotype of *Conus gubernator veillardi* da Motta, 1990 from Glorieuses Islands and examples (photos 2 and 3). The photo number 7 shows the holotype of *Conus boivini* Kiener, 1845, for us an aberrant (freak) specimen with a reversed spire, going inwards instead of out the shell. Other photos show albinistic variants of *C. gubernator*.

Acknowledgments:

We thank the Professor Alan Kohn for permission to reproduce the photo of the Holotype of *Conus leehmani,* and Michel (Mike) Filmer for the correspondence, the kind and hopeful words and the photos of some specimens from your collection and photos of the Lectotype of *Conus gubernator* and Holotype of *Conus veillardi* and *Conus boivini* too. We would like thank Luigi Bozzetti for the correspondence and permission to work with some deep water specimens of *Conus gubernator*, from Madagascar.

Plate 1.1:

1. Lectotype (photo Mike Filmer) of *C. gubernator*, Hwass, 1792; 76,5x34,0mm. MHN of Geneve.
2. 80,3 x 38mm, Tulear area, Madagascar, lobster nets (60-100mt depth). Armando Verdasca collection (AV).
3. 70,2 x 34,8mm, Nacala Bay area, North of Mozambique, shallow water. António Monteiro collection (AM).
4. 81,0 x 40,0mm (with periostracum), Pointe aux Pimentes, Mauritius, on reef flat in shallow water. (AV).
5. 103,8 x 43,5mm, Tulear area, Madagascar, lobster nets (60-100mt depth). (AV).
6. 72,5 x 34,8mm. Nacala Bay area, North of Mozambique, shallow water. (AM).
7. 75,10 x 35,55mm. Ternay Bay, Mahe Islands, Seychelles, shallow water. Mike Filmer collection (MF).
8. 56,70 x 25,50mm, Off. Inhaca Island, South of Mozambique, dived about 24-27 mts. (AV).
9. 91,25 x 44,15mm. Black River, Mauritius, shallow water. (MF).

Plate 1.2:

1. 79,3 x 33,8. Nacala Bay area, North of Mozambique, shallow water. (AV).
2. 73,8 x 30,9. Nacala Bay area, North of Mozambique, shallow water. (AM).
3. 68,1 x 27,0. Nacala Bay area, North of Mozambique, shallow water. (AV).
4. 68,9 x 32.0mm. Cabaceira Pequena, North of Mozambique, shallow water. (AM).
5. 80,9 x 35.4mm. Tulear area, S.W. Madagascar, shallow water. (AM).
6. 72,0 x 31,7mm. Zanzibar, Tanzania, shallow water. (AV).
7. 81x38mm. Tulear area, Madagascar, shallow water. (AV).
8. 99,0 x 42,0mm. Inhaca Island, South of Mozambique, shallow water. José Rosado collection. (JR).
9. 70,0 x 28,0mm. Nacala Bay area, North of Mozambique, shallow water. (AV).

Plate 1.3:

1. 71,5 x 30,7mm, Nacala Bay area, North of Mozambique, shallow water. (AM).
2. 66,0 x 28,9 mm, Nacala Bay area, North of Mozambique, shallow water. (AM).
3. 64,2 x 27,5mm, Nacala Bay area, North of Mozambique, shallow water. (AV).
4. 68,0 x 31,0mm, Nacala Bay area, North of Mozambique, shallow water. (AV).
5. 78.3 x 38.7mm, Nacala Bay area, North of Mozambique, shallow water. (AM).
6. 75,2 x 32,0mm, Nacala Bay area, North of Mozambique, shallow water. (AV).
7. 66,1 x 28,5mm. Tulear area, Madagascar, shallow water. (AV).
8. 78,1 x 30,8. Tulear area, Madagascar, shallow water. (AV).
9. 64,3 x 28,3mm, Nosy Bay, Nosy Be Island, northern Madagascar, shallow water. (MF).

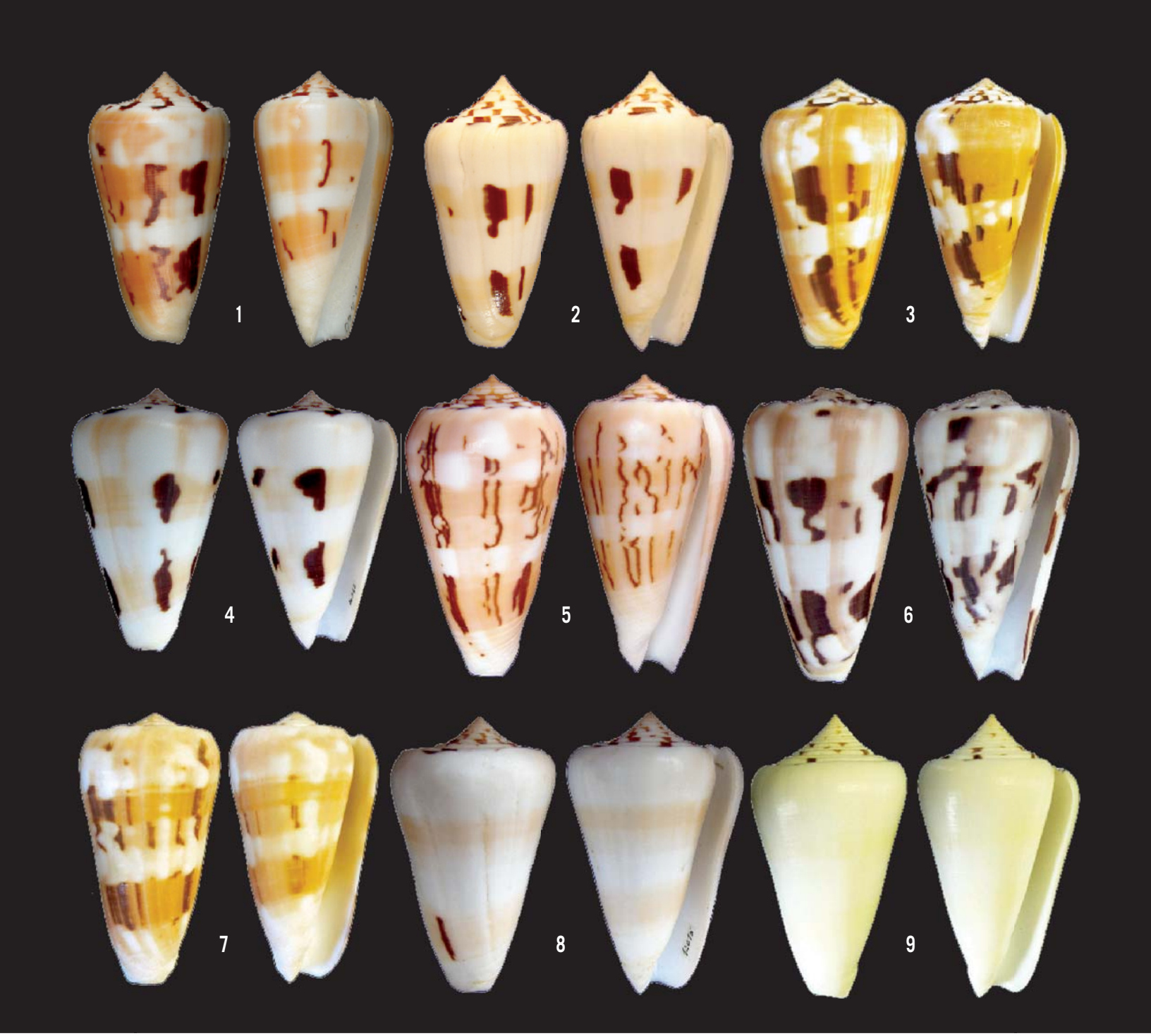


Plate 2.1:

1. Holotype (photo A. Kohn) of *C. leehmani,* Röckel & da Motta, 1979; 65,5x34,0mm. MHN of Geneve.
2. 61,1 x 31,2, Maldives Islands. (AV).
3. 85.40 x 45.10 mm, Gan Island, Maldives Archipelago, in sand from 20 meters. (MF).
4. 55.5 x 32.8mm, Maldives Islands. (AM).
5. 69,3x36,0mm, Maldives Islands (?). (AV).
6. 61.7 x 33.5, Maldives Islands. (AM).
7. 81.15 x 42.35 mm, Gan Island, Maldives Archipelago, in sand from 20 meters. (MF).
8. 63.9 x 37.0 Maldives Islands. (AM).
9. 59.6 x 32.8 mm. Kilakari, southern India, dived about 10 meters. (MF).

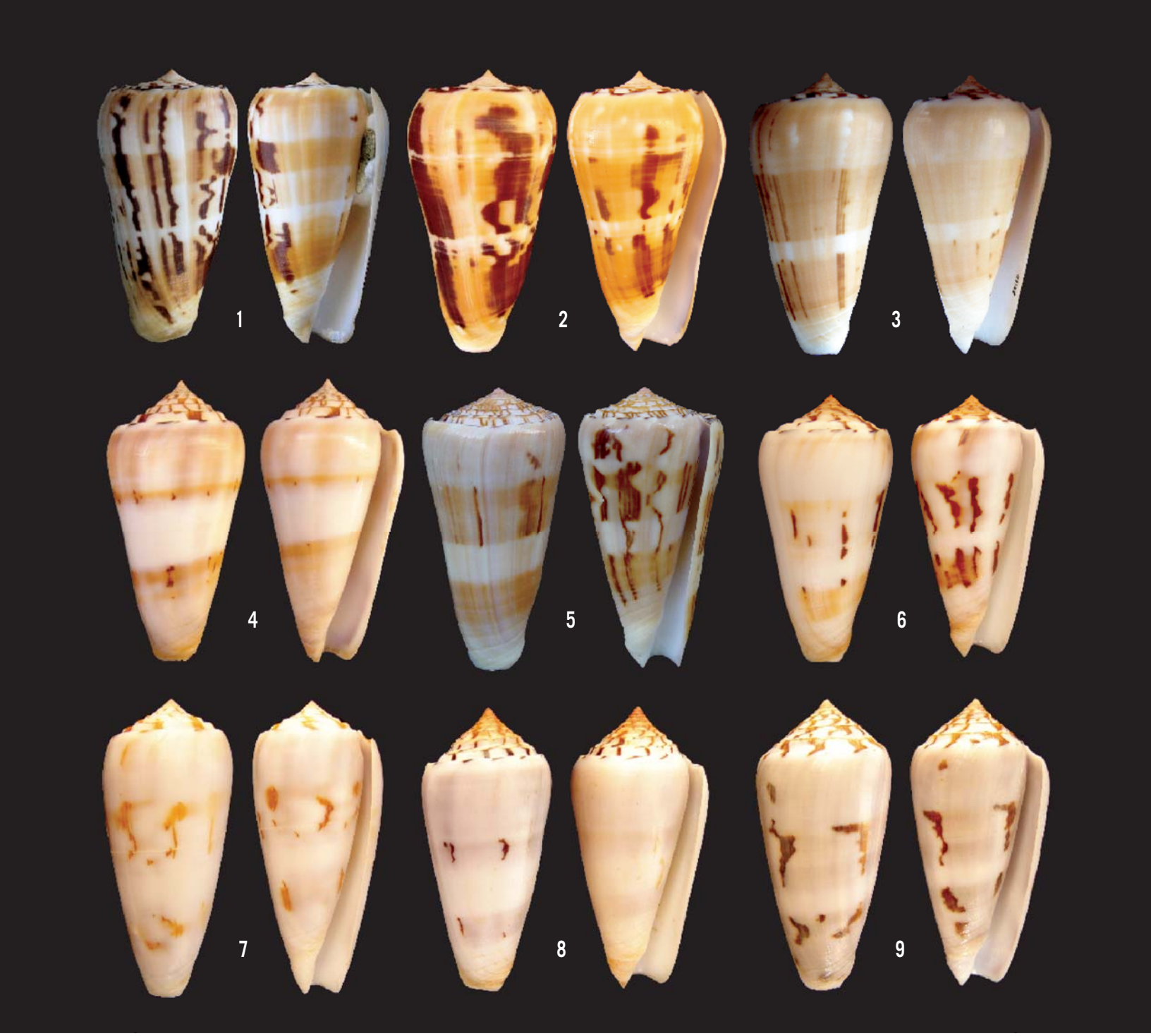


Plate 2.2:

1. 100,0 x 49,9mm. Reunion Island, dived about 50-60 mts. (AM).
2. 99,1 x 51,5mm. Cap Lahoussaye, Reunion Island, dived about 50-60 mts. (AV).
3. 78.9 x 39.0mm. St. Gilles, Reunion Island, dived about 50-60 mts. (AM).
4. 64,1 x 30,8 mm, Nacala Bay area, North of Mozambique, shallow water. (AV).
5. 58,1 x 28,2mm. Off. Inhaca Island, South of Mozambique, dived about 30 mts. (JR).
6. 65,4 x 31,6mm, Nacala Bay area, North of Mozambique, shallow water. (AV).
7. 70,2x30,0mm. Tulear area, Madagascar, shallow water. (AV).
8. 66,5 x 30,2mm, Nacala Bay area, North of Mozambique, shallow water. (AV).
9. 62,5 x 28,0mm, Nacala Bay area, North of Mozambique, shallow water. (AV).

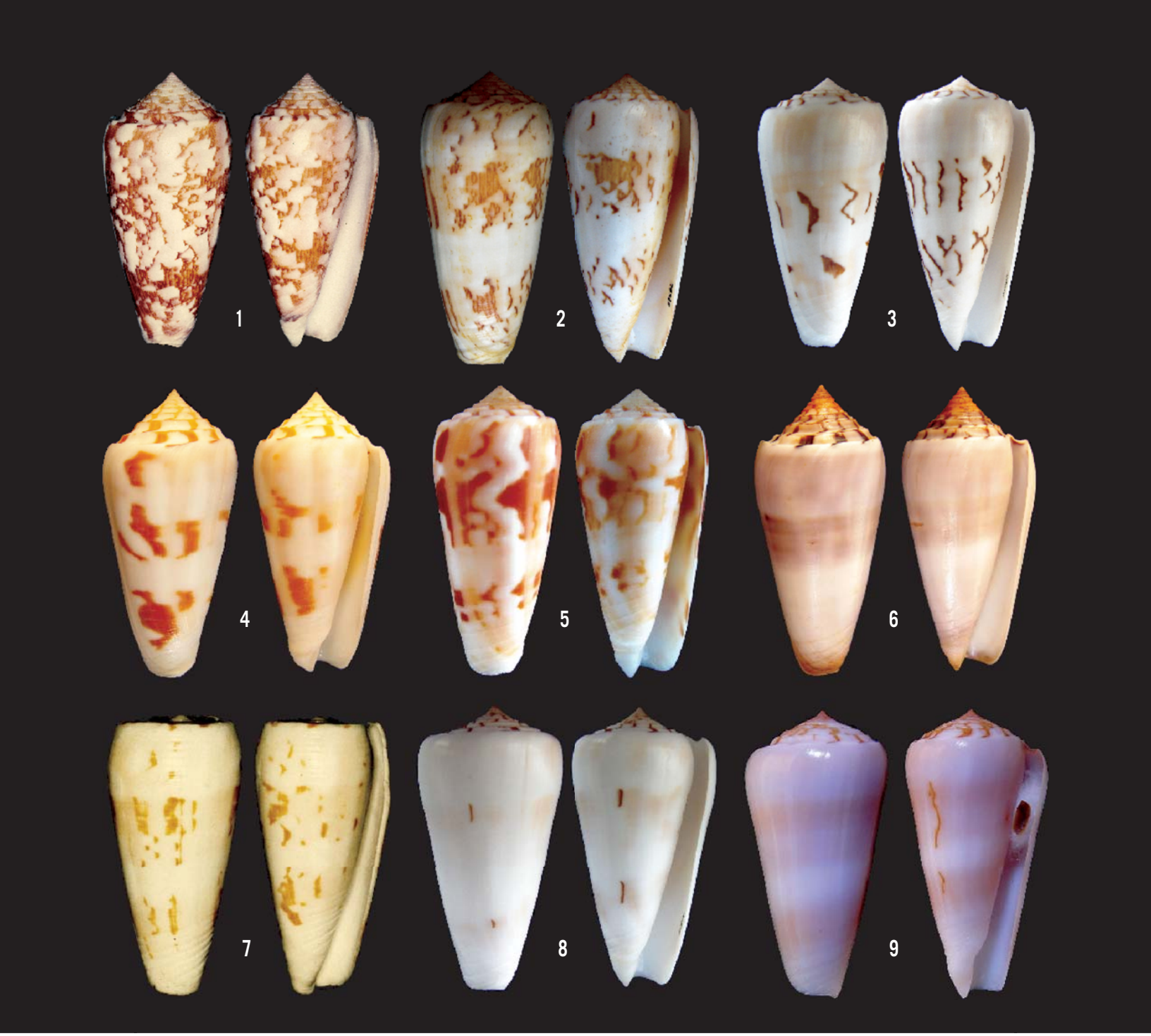


Plate 3.1:

1. Holotype (photo Mike Filmer) of *C. veillardi*, Da Motta, 1990; 52.5 x 25.3 mm in MHN of Geneve.
2. 65.1 x 29.6mm. Glorieuses Islands (11 30 S ; 47 20 E). (AM).
3. 61.3 x 29.4mm, Nacala Bay area, North of Mozambique, shallow water. (AM).
4. 65,0 x 30,0mm. Chocas, North of Mozambique, shallow water. (AV).
5. 60.8 x 26.6 mm Cabaceira Pequena, North of Mozambique shallow water. (AM).
6. 66,8x30,0, Nacala Bay area, North of Mozambique, shallow water. (AV).
7. Holotype (photo Mike Filmer) of *Conus boivini* (Kiener, 1845); 60.0 x 29.1 mm in MNHN.
8. 69.3 x 34.4 mm Nacala Bay area, North of Mozambique, shallow water. (AM).
9. 42,2x21,0mm. Off. Inhaca Island, South of Mozambique, dived about 30 mts. (AV).

[1] The whole discussion began in November 1976 in an article by Elmer G. Leehman (*Hawaiian Shell News*, page 8), in which two photos were shown, of something then named "*Conus pramparti*"; they were compared with *C. barthelemyi* (Elmer apparently had acquired them as such), and *C. gubernator*, which they also resembled. Later, in an article dated March 1977, Mike Filmer suggested that the specimens coming from the Maldives could be a hybrid of gubernator and barthelemyi!
[2] Usual length between 55 and 80 mm.
[3] In *Hawaiian Shell News*, June 1980, page 5, da Motta suggests a way of separating *C. gubernator* from *C. leehmani*: if the ratio between length and width of the shell is less than 2.1, we would have *leehmani*; otherwise it would be *gubernator*! Such criterion appears to us as quite artificial and hence unacceptable.

References:

Bentley-Buckle, M.
1980: *Conus leehmani* – Or something else? *Hawaiian Shell News*, page. 14, March.

da Motta, A. J.
1979: A New Cone from Indian Ocean. *Hawaiian Shell News*, page. 3, November.

da Motta, A. J.
1980: The question of *Conus leehmani*. *Hawaiian Shell News*, page. 5, June.

Filmer, R. M.
1977: "*Conus pramparti*" – a Valid Species? Replay of Leehman article. *Hawaiian Shell News*, page. 6 and 10-11, March.

Filmer, R. M.
2001: *A Catalogue of Nomenclature and Taxonomy in the Living Conidae 1758-1998*. – 388 pp., Leiden (Backhuys Publishers).

Hayes, Joe.
1982: R.I.P. "*Conus pramparti*" and *C. leehmani*? *Hawaiian Shell News*, page 14, February.

Leehman, Elmer G.
1976: Two Offbeat Conus barthelemyi. *Hawaiian Shell News*, page 8, November.

Leehman, Elmer G.
1977: "*Conus pramparti*" – a Valid Species? *Hawaiian Shell News*, page 6, March.

Leehman, Elmer G.
1977: Similar but different. *Hawaiian Shell News*, page 9, December.

Leehman, Elmer G.
1977: Still more about "*Conus pramparti*". *Hawaiian Shell News*, page 5, May.

Leehman, Elmer G.
1982: Do scientists care about shell names? *Hawaiian Shell News*, page 3, September.

Martin, Roger.
1982: *Pramparti – Leehmani – Frauenfeldi*. *Hawaiian Shell News*, page 8, July.

Röckel, D., & da Motta, A. J.
1979: New Cone from Indian Ocean. *La Conchiglia*: 11 (122-123): 17-18.

Röckel, D., Korn, W. & Kohn, A. J.
1995: *Manual of the living Conidae*. Vol. 1. Indo-Pacific region. – 517 pp., Wiesbaden (Verlag Christa Hemmen).

Richard, Georges.
1981: Révision systematique des *Conidae*. *Xenophora*, nº. 3, Mai.

http://biology.burke.washington.edu/conus/gallery/index.php

Touitou, David.
2007: Conus gubernator f. leehmani, Da Motta & Röckel, 1979, in the Seychelles, *The Cone Collector* #3, July.

Tucker, John K.
1984: The species described by da Motta and co-workers. *Hawaiian Shell News*, page. 5, February.

Australian Corner

Jon F. Singleton

Cone News from Australia - 19

Conus chiangi was named by Azuma in 1972 and given a type locality of South China Seas. The likely source of the type was from Taiwan boats seeking red coral for the jewelry trade. Sadly for the marine environment, but fortunately for cone collectors, this destructive smash and grab fishing for coral was the only source of this species for many years.

The range of *C. chiangi* slowly grew as specimens were discovered from the Philippines and south to New Caledonia. Nearly all colonies were found at depths from 200 to 400 metres.

Surprisingly, there is also a record of a live *C. chiangi* being found in Western Australia waters. It was dredged from off Hibernia Reef, on the edge of the N. W. Shelf to the north of Broome. This specimen is slightly sub-adult at 10.1 mm × 5.7 mm, and from only 80 metres depth, which is shallow in comparison to other W. Pacific locations.

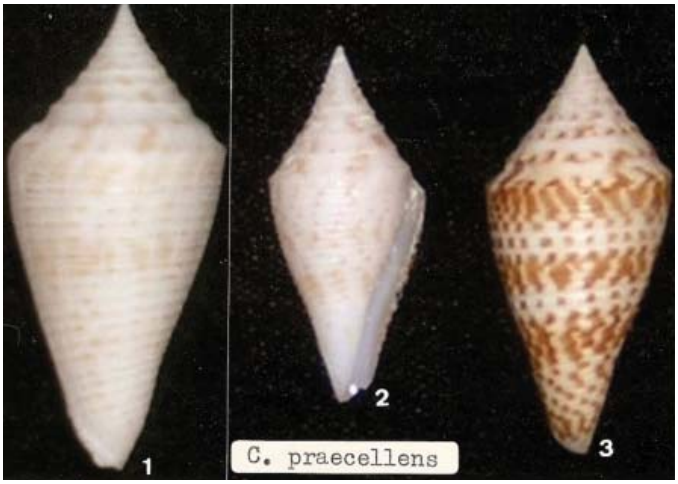
Cone News from Australia - 20

Conus praecellens is a well-known species and not regarded in any way to be a rare cone, but within Australian waters it is a difficult species for collectors to obtain. It has not been recorded as being within safe scuba depths, and the few specimens known are all trawled from deeper waters.

Up to a few years ago it was a rare item with only two known specimens trawled from prawn trawlers operating off Cape Moreton on the Queensland coast. I was fortunate in obtaining one of these two found in the early 1970s. These two were of the common medium brown and white pattern of regular blotches and dots in bands.

The first record of *C. praecellens* from Western Australia was a dead specimen landed by a Carnarvon fishing trawler. This was likely the standard brown pattern, though the specimen was paler and appeared faded. A few years later, in the mid 1970s, a deep water prawner operating off Port Hedland landed a few smaller and paler specimens which had been live taken. These were an off-white with very pale brown/green markings. I was in the right place at the right time, and a dozen cans of beer brought me some nice shells including a couple of there *praecellens*.

After many years of being a rare item in Australian waters, a fisheries research vessel sampling near the Rowley Shoals in the N. W. brought up some 20 large specimens averaging 45 mm in length. Only one specimen appeared to be fresh dead, the remainder looking very greyish from being buried in a silty seabed.



The illustrated specimens range in length from 29 to 43 mm. Figs. 1 & 2 are the pale N. W. form, and fig. 3 a Queensland specimen.

A most distinctive specimen of *Conus regius*…or beginner's luck !

David Touitou

In the rainy season of 2001 – I was living in Martinique at the time – a few friends and I profited from a sunny day to go snorkeling off a beach in the northern Caribbean, a place where few tourists went at all.

At 11:00 hours, having just arrived and parked our cars, we went directly into the sea. I was the only shell collector in the group. I had already spotted a few empty shells of *Cypraea cinerea* Gmelin, 1791 as well as a few promenading *Strombus*, when we reached a zone where I felt that I was entering a *regius* area.

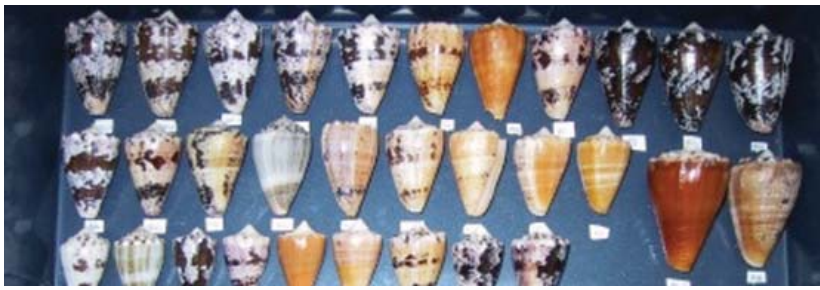
I dived to the bottom in order to search the base of the big rock boulders. My first specimen was right in front of me. On that day I found no less than 14 specimens.

After a few hours of searching we decided to go back to the beach to rest under the sun. Only my friend Cyril chose to carry on his search, so I lent him one of my pots (coprology recipients used in laboratories for medical analysis), so that he can bring back any shells he may chance to find. It must be said that Cyril was a beginner; in fact that was one of his very first snorkeling expeditions ever.

One hour and a half later he rejoined us. His plastic pot was full to the brim and he proudly hands it to me, so that I can examine his catch. The plastic material of the container deformed its contents, but I soon noticed that a large shell was occupying some 80% of its total capacity. It was bright red and, judging from the size, I immediately believed it to be a specimen of *Strombus pugilis* Linnaeus, 1758. I turned the pot around and surprise! I saw the opening of a shell that did not resemble that of a *Strombus* at all; what was more, the living animal was clearly visible and it was certainly not a conch! It was a coronated cone shell! A monster cone of an amazing colour. I took it from the container and it was wonderful, a true gem at about sixty millimeters, of an orange colour so rich that it seemed almost red! In a single outing, Cyril had outdone several months of searches with only one specimen. Since he did not actually collect shells, he simply gave it to me a few weeks later.

Fortunately it had been kept in a refrigerator all along so he had not ruined it in any way. The following pictures were taken immediately after cleaning:

Its colour should be compared with that of other specimens of *C. regius citrinus*:



And here is the same specimen today. Its length is of 57,2 mm:

It has certainly lost something of its original brilliancy but its orange colour is still quite distinct from what one usually finds on typical Caribbean specimens. Here are a couple other specimens of *C. regius citrinus* for comparison purposes:

Harry Potter & the Poisonous Orange Snails

Brian Hammond

In the famous *Harry Potter* series of books by J K Rowling there are references to Poisonous Orange Snails. In *The Prisoner of Azkaban* p. 58, they are described as "oozing slowly up the side of their glass tank" in the Magical Menagerie shop, Diagon Alley. What might these snails be? Well in his book *The Science of Harry Potter* Roger Highfield, Science Editor of the *Daily Telegraph*, has suggested they might have been Cone shells. Roger goes on to suggest a number of possible candidates:

Conus textile suzannae, *C. regius citrinus*, *C. capitaneus*, *C. magus*, *C. consors* and *C. spurius*

Could Harry Potter's snails have been *Conus textile suzannae* Van Rossum, 1990 (fig. 1)? Certainly this is one of the more poisonous species from the genus *Conidae.* Maybe they were the orange form of *Conus magus* Linné, 1758 (fig. 2). I think this shell would be the ideal candidate because after all *magus* is the Magician's Cone. *Magus* is not only a poisonous orange snail it is also a curer of pain as it was from the venom of *Conus magus* that the pain killing drug PRIALT was synthesized.

Another possible candidate could be *Conus aulicus aurantia* Dautzenberg, 1937 (fig. 3) certainly a very poisonous species, the venom of which might be very useful in Professor Snape's Potion classes, or in a potent spell for dealing with "He who must not be named".

Roger's suggestion of *Conus regius citrinus* Gmelin, 1791 (fig. 4) was not high on my list of candidates as it is rarely found in a true orange form, however reports on the internet show that a toxin from the venom of *regius* has been used in research on effective ways of treating chronic pain and may lead to future drugs being available. Another species used in a similar way and resulting in the drug code named ACV1, currently in clinical trials is *Conus victoriae* Reeve 1843 (fig. 5). An orange form of *victoriae* is known.

Conus capitaneus cecillae "Chenu" Crosse, 1858 (fig. 6) is undoubtedly an orange snail. However I find it difficult to see how this small cone could be very effective as an ingredient in a lethal spell but you never know perhaps it has magical properties Muggle scientists have yet to discover.

Conus consors Sowerby, 1833 is closely related to *magus* and shares the magician cone's magical properties in treating morphine resistant pain. The form *poehlianus* Sowerby III, 1887 (fig. 7) is often orange/brown in colour.

Conus spurius arubaensis (fig. 8) is an orange spotted cone and a possible candidate, but if we are considering orange spotted cones then why not the common Tessellate Cone *Conus tessulatus* Born, 1778 (fig. 9).

Some other possible candidates not mentioned by Roger might be *Conus bengalensis* Okatuni, 1968 (fig. 10) (in it's orange form), *Conus amadis castaneofasciata arbonatalis* da Motta, 1978 (fig. 11), *Conus princeps apogrammatus* Dall, 1910 (fig. 12), *Conus neptunus colorovariegata* Kosuge, 1981 (fig. 13), *Consus sazanka* Shikama, 1970 (fig. 14), *Conus cordigera* Sowerby II, 1866 (fig. 15), *Conus crocatus* Lamarck, 1810 (fig. 16), *Conus kinoshitai tamikoae* Shikama, 1973 (fig. 17) (tends to be more yellow than orange), *Conus tinianus* Hwass, 1792 (fig. 18), ...

I am sure the list of candidates for Harry Potter's Poisonous Orange Snails is much larger than this. However if we knew whether they were used for lethal spells to try and kill your opponent, or as part of a cure at St Mungo's Hospital for Magical Maladies and Injuries to treat the victims of clashes with Voldemort, we might be able to reduce the list.

If I was betting man then I'd put my money on the Magician's Cone. Maybe not knowing is part of the magic? No one a few years ago would have thought that a series of children's fairytales could provoke discussion within the cone shell world. I would be interested in any other cone collector's views on likely candidates for these magical creatures.

Acknowledgement:

I would like to offer my sincere thanks to Roger Highfield for his kind permission to reproduce information from his fascinating book which is a must for all Harry Potter fans.

An aberrant specimen from Madagascar

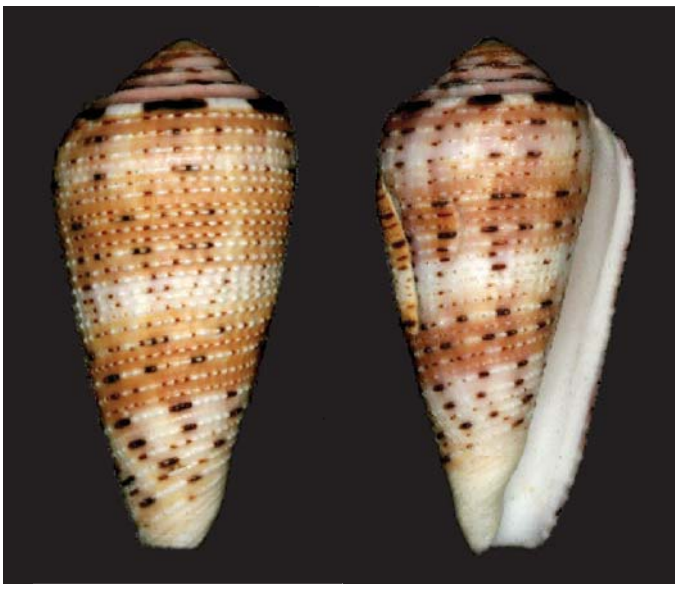
Our friend Richard Goldberg has just sent a picture of an interesting, aberrant *Conus* specimen from Tulear, Madagascar.

It is a small *Conus betulinus*. The shell is 41mm in length. The pinched-in body whorl most likely was the outcome of sustaining and surviving a crab attack with injury to the animal and significant damage to the shell. The scar is at a point on the body whorl is just inside the aperture (somewhat visible in the extreme right photograph). This mollusc's survival has lead to a rather unusual outcome; almost as if it grew with an overly tight belt around its midsection leaving a significant constriction!

Granulose *Conus aurisiacus* Linnaeus, 1758

Jim Cootes

Here are a couple of images of a granulose form of *Conus aurisiacus* Linnaeus, 1758. This shell was taken in tangle nets at about 70 metres depth in the Sulu Sea in the southern Philippines. The illustrated shell is about 45 mm long by 22 mm in diameter. In my over 40 years of collecting cone shells this is only the second granulose form of this species I have ever seen.



What has always puzzled me is what causes a normally smooth-shelled species to become granulose? Any thoughts by other cone shell lovers would be of great interest.

LSPD: Live Seashells Picture Database

David Touitou

I write to introduce the new version of Live-seashells. Thanks to the cooperation of Jean-PierreBarbier and his computer scientist Tony, I am proud to announce the birth of a new free online database dedicated to live seashells. It allows, like the one about Philippine seashells (*www.poppe-images.com*) to appreciate the beauty of the live animals. At the moment, this site focuses on only two Families, cowries and cone shells.

This site currently hosts 271 images of live cones and 226 cowries. I would like to thank all those who have contributed their amazing photographs and especially to my mates Laurent Kbaïer and Serge Rolland. I hope that you will be able to add to this great resource. For more information, please contact *info@live-seashells.com.*

I hope you enjoy the latest version of this web site: *www.live-seashells.com*

Conus ammiralis Linnaeus, 1758
Serge Rolland (New Caledonia)

Conus bengalensis Okutani, 1968
Somwang Patamakanthin (Thailand)

Conus thailandis da Motta, 1978
Somwang Patamakanthin (Thailand)

Conus howelli and *Conus raoulensis* One or Two Species?

R.M. (Mike) Filmer*

Introduction:

In 1981 B.A. Marshall of the National Museum of New Zealand published, in the *New Zealand Journal of Zoology* (Vol. 8, pp 493 – 501), an extremely interesting article entitled "New records of Conidae (Mollusca: Gastropoda) from the New Zealand region." In this article Marshall records *Conus kermadecensis* Iredale, 1912 (now regarded as a subspecies of *C. lischkeanus* Weinkauff, 1875), *C. teramachii* Kuroda, 1956 and *C. smirna* Bartsch and Rehder, 1943 as all having been found off northern New Zealand.

However the most interesting records, relevant to this article, refer to *C. howelli* Iredale, 1929 and *C. raoulensis* Powell, 1958 because, until the publication of Marshall's article, these two species were little known and rarely figured.

Early in 1985 Bruce Marshall was kind enough to lend me some of the specimens collected off the north-east coast of New Zealand and adjacent islands and covered by the article referred to above. Included were four, possibly three, specimens of *C. howelli* and three possibly four specimens of *C. raoulensis*. I studied these specimens, made detailed notes and took colour photographs of each one. This data has remained in my files for over twenty years. I had expected more specimens and much more information on these two species to materialize but very little has happened therefore I have now decided to publish my data and colour photographs together with details of the types. I also include in this study two specimens of *C. howelli* which are in the AMS general collection and one specimen which is in my collection.

My thanks Bruce Marshall for the loan of the specimens and to Ian Loch of AMS and Dr. Tom Schiotte of ZMUC for permitting me to photograph and study the relevant holotypes.

I hope that the information contained herein will be of use to those interested in these two very rare species, their relationship to each other and to some other *Conus* species.

Conus howelli Iredale, 1929

Published in *Records of the Australian Museum* 17 (4): p. 182, pl. 40, figs 1 & 8. Holotype in AMS (27 x 13.3 mm). Type locality Montague Isl. N.S.W. Australia, trawled in 50 – 60 fths. Nomenclatural status, an available name.

Mentioned In:

1) Garrard, 1961: *Family Conidae* p. 29, pl. 182, figs 1 & 8.
2) Marsh & Rippingale, 1964: p. 142, pl. 20, no. 13. Moreton Bay, Queensland.
3) Hinton, 1978: p. 66, no. 3.
4) Walls, 1979: p. 588 & p. 360, figs top 25.9 mm. Off Terrigal, N.S.W. & bottom 22 mm. Moreton Bay, Queensland [latter dubious, this is probably a juvenile *C. amadis ss castaneofasciatus* Dautzenberg, 1937]. Compared to *C. teramachii* Kuroda, 1956] Incorrectly mentions spiral ridges on the spire whorls, [probably taken from the dubious specimen].
5) Paul, 1982: page. 4, fig. (c).
6) Moolenbeek, 1986: p. 214.
7) Hart, 1993: p. 50, fig top left.
7) Wilson, 1994: p. 207, pl. 48, figs 12a & 12b. Off Stanwell Park, N.S.W. 135 meters.
8) Röckel et al, 1995: p. 276, no. 277, pl. 58, figs 25 – 28 [all figures on this plate are photographically elongated and fig. 25 is the same as pl. 1B figs 1 – 5 herein and figs 26 and 28 are the same as pl. 1A figs 8 & 5 herein].
9) Röckel et al, 1995: (2) p. 573, fig. 35. Ten dead specimens were dredged in 230 – 280 meters off New Caledonia largest specimen 26 mm. [these are very small for this species].

New Description:

C. howelli is an attractive, small, solid, broadly conical shell. It is from 20 to 40 mm. in length and from 10 to 20 mm. in width.

The spire is low to medium in height and slightly concave to straight in outline. There are 3 shiny, convex and

flesh coloured nuclear whorls, which are often eroded. The 6 to 8 concave to flat post nuclear whorls have the outer edge raised. The whorls which are slightly stepped are vaguely beaded or nodulose at the outer edge. There are no spiral grooves or cords on the spire whorls but there are fine axial striae. The colour is cream to flesh with some fine brown to orange radial streaks, some specimens also contain a few tan brown bars or blotches.

The sides of the body whorl are straight to barely concave, the shoulder is acute and undulate to barely nodulose. The body whorl sculpture varies from occasionally smooth and shiny to, more often, with some fine spiral cords which may be vaguely beaded. The body whorl has a cream through very pale pinkish or even brown base colour. Some specimens have fine tan to orange-tan wavy axial lines which sometimes merge to form two or three bands. Other specimens have no axial lines but have stronger orange-brown blotches.

The aperture is medium to broadish in width, the anal notch is fairly deep while the columella is barely noticeable. The lip is rather thin and sharp and the interior is pale pinkish-white to bluish or dull white.

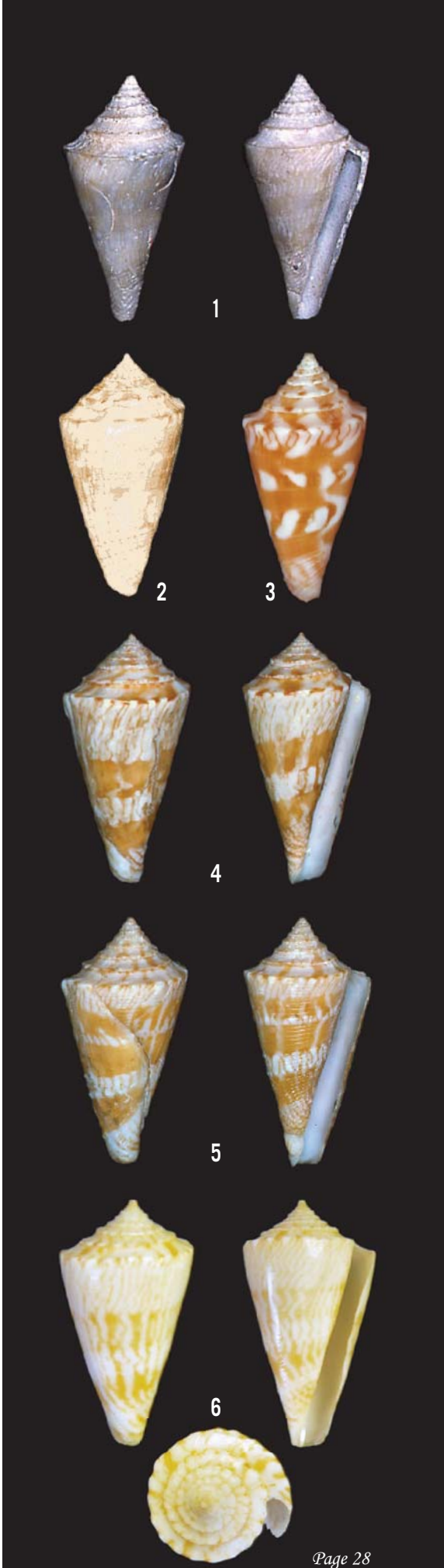
The periostracum is very thin, pale tan to chestnut in colour and transparent. The operculum and the animal are unknown to me and have not been described elsewhere.

The habitat is reported as on a shell or hard substrate bottom from 50 to almost 300 meters. All known specimens have been trawled or dredged.

The range is restricted to N.S.W., where it found quite far South, southern Queensland, northern New Zealand, the offshore islands between Australia and New Zealand and New Caledonia.

Specimens Studied (Figs. 1-8):

1. Holotype 27.00 x 13.30 mm.
2. No. M 59571, 40.5 x 20.7 mm. in collection New Zealand National Museum, dredged, dead, on shell bottom in 64 – 69 meters off White Island, N.Z. in January 1979, "r.v. Tangaroa"
3. No. P 82, 21.8 x 10.65 mm. in collection New Zealand Oceanographic Institute, dredged, dead in 78 – 84 meters off Lord Howe Island in May 1977, "r.v. Tangaroa"
4, 5. Two specimens 39 x 20 mm. (fig. 4) and 31 x 15 mm. (fig. 5) in collection Australian Museum, trawled off Stanwell Park, N.S.W.
6. One specimen 30.7 x 16.4 mm in collection author, trawled live off Narooma, N.S.W. (very close to Montague Island), in the early 1970's.



7

8a

8b

7. No. M 59572, 20.7 x 11.3 mm. in collection New Zealand National Museum, dredged, live, on hard substrate in 94 meters on Ranfurly Bank, East Cape, N.Z. in January 1975 "r.v. Tangaroa".
8. No. M 59568, 27.5 x 13.9 mm. in collection New Zealand National Museum, (figs. 8a & 8b) dredged dead, on shelly bottom in 64 – 69 meters off White Island, N.Z. in January 1979, "r.v. Tangaroa". [see page 10 herein].

Conus (Kermasprella) raoulensis Powell, 1958

Published in *Records Auckland Institute and Museum* no. 5 (1/2); p. 83, pl. 9, fig 1. Holotype in ZMUC, (18 x 9.4 mm). Type locality off Raoul Island, Kermadec Islands, (off New Zealand), (75 – 85 meters). Nomenclatural status, an available name.

There were in the late 1970's some twenty specimens in New Zealand Institutions of which I was able to study three possibly four specimens.

Featured In:

1) Cernohorsky, 1976: p. 3, figs 2 – 5.
2) Wagner & Abbott, 1978: no. 26-394. states "possibly a very pustulate form of *C. acutangulus* Lamarck, 1810" [erroneous].
3) Walls, 1978: p. 824, & 572 top figure is a paratype from Auckland Institute and Museum, 19.6 mm.
4) Cernohorsky, 1978: p. 144, pl. 50, fig. 7.
5) Marshall, 1981: p. 495, figs 3 (A – C).
6) da Motta, 1982: p. 3. A brief comparison with *C. rogmartini* da Motta, 1982.
7) Paul, 1982: page 5, fig. b.
8) Hart, 1993: p. 50, fig. top right.
9) Röckel et al, 1995: p. 261, no. 256, pl. 55, figs 9 – 12. [fig 10 is pl. 2, fig. 10, fig. 11 is fig. 3 & fig. 12 is fig. 5 herein]
10) Röckel et al, 1995: p. 582, fig. 42. 1 specimen 14.5 x 6.0 mm. dredged dead from 280 – 295 meters, [a rather dubious *C. raoulensis* this shell may be another species].
11) Brook, 1998: p. 227, mentions one dead specimen found in 44-146 meters, northern Kermadec Islands.
12) Ferguson, 1999: p. 2. [an error as the cone pictured is *C. floridulus* Adams & Reeve, 1848].
13) Evans, 1999: p. 4.

New Description:

A small (15 to 20 mm), solid and biconic shell with straight to slightly convex sides and with a dull texture. Spire high, concave in outline and stepped.

The apex is papillose. The protoconch flesh coloured to opaque. The early whorls are beaded and the latter whorls flat to barely concave and strongly nodulose. The sutures are carinate. The spire whorls are sculptured with axial threads. The colour is white to salmon with axial tan to orange-brown bars between some of the nodules which are white.

The shoulder is acute to carinate with very pronounced nodules.

The body whorl is sculptured with irregular rounded spiral cords, some of which are pronounced and others weak, Some specimens have numerous close set cords while others have less numerous well separated cords. Most of the cords bear regular nodules of varying sizes from large and pronounced to small and beadlike. Some axial striae may be present between the spiral cords. The colour is pale salmon to off white with orange-tan blotches which may be sparse in some specimens but numerous in others. Sometimes the blotches form two or three irregular bands.

The aperture is narrow and straight, the anal notch is on the deep side. The columella is small and straight. The interior is pinkish to bluish white and the lip is thin but firm.

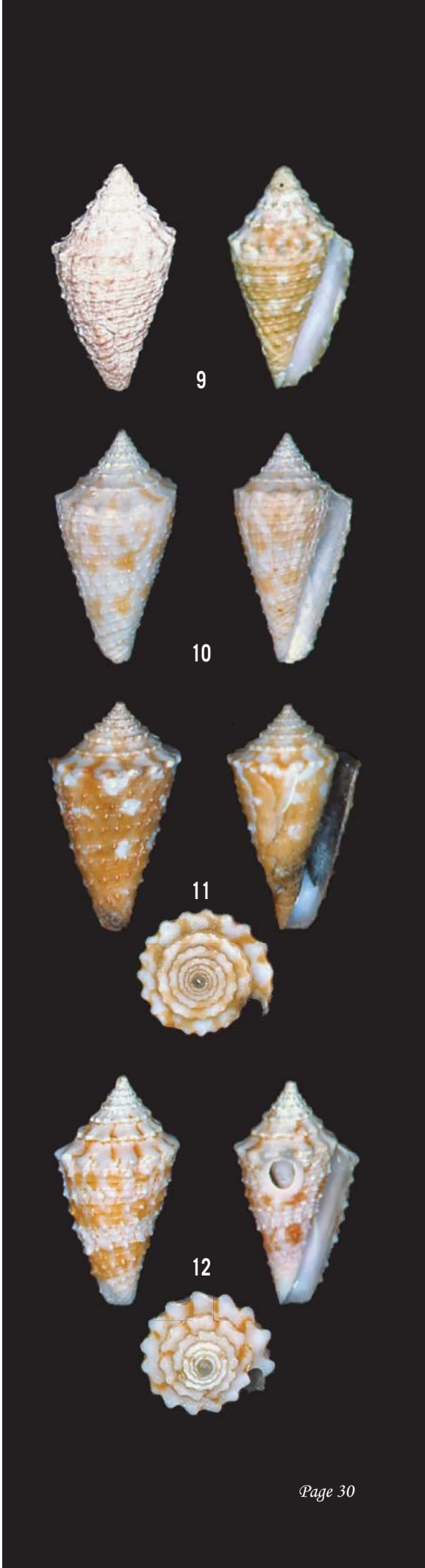
The periostracum, operculum and animal are unknown to this author. Cernohorsky and Hart report the periostracum as "straw coloured and thin".

The habitat is from 45 to 300 meters, probably on hard substrate.

The range is restricted to northern New Zealand and the offshore islands and possibly New Caledonia.

Specimens Studied (Figs. 9-12):

9. Holotype 18.00 x 9.40 mm.
10. No. P.18, 22.40 x 11.30 mm. in collection New Zealand Oceanographic Institute, Off Norfolk Island, 86 - 90 meters, (ex "R.V. Tangaroa", 25.01.1977).
11, 12. No. MF.25632, 20.60 x 11.50 mm. in collection National Museum New Zealand, (fig. 11) East of Dayrell Island, Herald Islets, Kermadec Islands, 135 – 146 meters (ex "R.J. Acheron", 10.09.1976). 4) No. P.5, 17.55 x 9.35 mm. in collection New Zealand Oceanographic Institute, (fig. 12) Wanganella Bank, New Zealand, 126 meters (ex "R.V. Tangaroa", 24.01.1977).



Comparison of *C. howelli* and *C. raoulensis*:

	C. howelli	*C. raoulensis*
Size	20-40 mm	15-20 mm
Weight	Lighter	Heavier
Shape	Conical More elongate	Biconical More stout
Spire		
- Height	Medium	High
- Outline	Slightly concave	More concave
- Sutures	Faintly beaded	Strongly nodulose
- Striae	Fine axial threads	Fine axial threads
Shoulder	Acute undulate to beaded	Acute to carinate & strongly nodulose
Body Whorl	Usually shiny	Usually dull
- Cords	- Fine at base, often absent	- Strong & irregular, never absent
- Nodules	- Small & beadlike, often absent	- Varying from small to large
- Colour	- Cream to pinkish or even tan	- Pale salmon to pinkish or off white
- Pattern	- Fine wavy brown axial lines, may be absent, and orange to tan blotches	- Orange to tan blotches, may form 2 or 3 bands or be almost solid
Interior	Pale pinkish white to bluish or dull white	Pale to pinkish white to bluish white
Aperture	Medium to broadish	Narrow
Columella	Small & straight	Small & straight
Periostracum	Thin, transparent, pale tan to chestnut	Thin & straw coloured
Habitat	Shelly or hard substrate 50-300 meters	Unknown, probably hard substrate 45-300 meters
Known Range	Eastern Australia New Zealand Offshore Islands New Caledonia	New Zealand Offshore Islands Possibly New Caledonia

Comparison with Similar Species:

Apart from some small *Conus* species found only in the Caribbean Sea *C. howelli* and *C. raoulensis* can be compared to:

C. acutangulus Lamarck, 1810. A rather variable species which may resemble *C. raoulensis* in shape but has spiral cords on the spire whorls and regular spiral cords on the body whorl which are never nodulose.

C. floridulus Adams and Reeve, 1948 has sides which are more convex. The spire is barely stepped and the spire whorls have some spiral striae. The body whorl may possess sharp pustules which form spiral rows but which are not obviously on cords. The columella has a slight twist in it and all specimens have a purple basal stain. It is found in shallower water and from 5 to 80 meters.

C. muriculatus Sowerby, 1833 is a heavier and stouter shell although like *C. otohimeae* and *C. floridus* it has a smooth (*forma sugillatus* Reeve, 1844) and a pustulate form. It always has brown to yellow bands on the body whorl, a purple basal stain and blue to purple blotches in the interior of the aperture. It is found intertidally and down to 70 meters.

C. otohimeae Kuroda & Ito, 1961 is quite close to *C. howelli* but differs in its stouter shape, less stepped spire, flatter spire whorls, and brown dots on the spire. The body whorl has fine spiral lines of brown dots interspersed with white, these are occasionally absent. There are no axial brown lines matching those found on *C. howelli*. The *forma rogmartini* da Motta, 1982 has strong even spiral cords which are nodulose and similar to but stronger and much more regular than those found on *C. raoulensis*. The normal (non nodulose) form of *C. otohimeae* may have spiral grooves instead of cords at the base of the body whorl. Both species live in 50 – 300 meters. *C. otohimeae* occurs in the Philippines and Japan but is not known to occur south of the Philippines. In Walls, 1978: page 189 bottom right, is an illustration captioned *C. capitanellus* Fulton, 1938 but I believe this is a specimen of *C. otohimeae* as suspected by Marshall.

Conclusions and Remarks:

One of the specimens, which I studied (no. M 59568. BS 706. R 64) in the Marshall article (fig. 2, no. F) and (pl. 1B, figs 4 – 8) herein is, in my opinion, *C. raoulensis* and not *C. howelli*. There may be other specimens in the New Zealand collections which are perhaps wrongly identified.

This may well have led to the impression that strongly nodulose specimens of *C. howelli* exist which this author does not think is the case. One of the main differences between *howelli* and *raoulensis* is the presence or absence of strong nodules another is that *howelli* is more slender and has a lower spire.

I conclude as did Cernohorsky (1976), Marshall (1981), Hart, 1993 and Röckel et al, 1995 that *C. howelli* and *C. raoulensis* are both valid species. Both appear to be very rarely collected but being deep water shells this is not too surprising. I have not found it difficult to separate these two species (see table).

However I found it rather more difficult to separate *C. howelli* from *C. otohimeae* and conclude that while I believe them to be distinct species it is possible that they are geographically separated subspecies. If this were the case *C. otohimeae* would become a subspecies of *C. howelli*. It is significant that *C. otohimeae* was not found during the deep water dredging by French research vessels off New Caledonia and elsewhere in the South Pacific, whereas *C. howelli* was (see Röckel et al, 1995). Until we know more about *C. howelli* I believe that it should be retained as a valid species as should *C. otohimeae*.

Abbreviations:

AMS = Australian Museum, Sydney, N.S.W. Australia.
N.S.W. = New South Wales, Australia.
ZMUC = Zoologisk Museum, Copenhagen, Denmark.

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Bibliography:

Brook F.J.
1998: "The coastal molluscan fauna of the northern Kermadec Islands, South West Pacific Ocean" in *Journal of the Royal Society of New Zealand*, vol. 28, no. 2, June 1988. pp 185-233.

Cernohorsky W.O.
1976: "Cones from the Kermadec Islands" in *Hawaiian Shell News* (vol. XXIV, no. 9), Sep. 1976.
1978: Tropical Pacific Marine Shells.

da Motta A.J.
1982: "A magnificent New *Conus* species found in the treasure Islands of the Philippines" in *Carfel Philippines Shell News,* vol 4, no. 2.

Evans R.
1999: "*C. raoulensis* Powell, 1958 (The real McCoy)" in *Keppel Bay Tidings*.

Ferguson J & L.
1999: "*Conus raoulensis* Powell, 1958 in Australian Waters" in *Keppel Bay Tidings*.

Garrard, T.A.
1961: Family *Conidae*, *Journal Malacological Society of Australia* (vol. 5).

Hart M.
1993: "*Conidae* from the New Zealand region" in *World Shells,* no. 7.

Hinton, A.
1978: *Guide to Australian Shells*.

Marsh J.A. & Rippingale O.H.
1964, 1968 & 1974: *Cone Shells of the World*.

Marshall B.A.
1981: "New Records of *Conidae* from the New Zealand region" in *New Zealand Journal of Zoology*, vol. 8, [the article referred to in the introduction herein].

Moolenbeek R.G.
1986: *Conidae* of the Chesterfield Islands etc, *Bulletin Zoologisch Museum*, Universiteit van Amsterdam.

Paul W.J.
1982: "Cone Shells in New Zealand" *Australian Shell News* no. 40, October.

Röckel D. Korn, W & Kohn, A.J.
1995: *Manual of the Living Conidae* (vol. 1).

Röckel D. Richard, G & Moolenbeek, R.G.
1995: "Deep Water Cones from the New Caledonia region", *Résultats des Campagnes Musorstom*, Vol. 14, Mémoires du Muséum National d'Histoire Naturelle, 167: 1995.

Wagner & Abbott R.T.
1978: *Standard Catalog of Shells*.

Walls, J.G.
1979: *Cone Shells a synopsis of the living Conidae*: 1979.

Wilson, B.
1994: *Australian Marine Shells* (vol. 2): 1994

Field Notes: Boasts & Best-Laid Plans

Kelly McCarthy

It was certainly one of those moments of disbelief, when I had to pinch myself to check that I was not narking out. Could that object at the end of my torch-light really be what I think it is? Pinch. Ow! Yes, I am still sane and it sure is...

One Month Prior

Natalia's

My husband, André Poremski and I had been planning our shelling trip to Utila – one of the Bay Islands of Honduras – for several months now. We were at our usual Sunday morning neighborhood hang-out, a quaint pastry-coffee shop called Natalie's. André had his customary triple-shot espresso and blueberry marzipan tart, while I had my slightly less intense double-shot espresso and vanilla bean panna cotta. It was a gorgeous spring day so we decided to take our treats outside and get some much-needed sun on our skin. Before launching into our typical frenzied conversation about our next expedition, we took a moment to enjoy the gentle breeze in the air, a couple of territorial cardinals bickering somewhere in the tree above us, and this fearless chipmunk who was looking for crumbs at our feet.

Some of our greatest adventures had been planned at Natalie's and if everything went to plan, Utila would not disappoint. André had been doing a lot of research on the cone species that could be found around the island, their last known localities, habitat and depth information. He also had been developing an inventory of substrate information about several of the dive spots from stories carried back by divers that frequented the area. Meanwhile, to aide in my relatively amateur ability to identify the marine habitats of the cones we sought to find (my three years to his twelve-plus years), I had been pulling together water-proof flash cards of the species' habitats with as much detailed information as André could provide. For my untrained eye, this was the best way to learn how to quickly identify the environs

in which I should look for our elusive cones. Today was the day we would put all of this information together on a large map of the island that contained clearly marked dive spots and underwater terrain in order to plot out our cone-hunting strategy.

The moment had passed and after a couple sips of our espressos, André grabbed another table and shoved it next to ours. He then unfurled his "map-of-maps" and pulled out several different colored pens for each of us. And there the quiet ended and our caffeine-induced, frenzied conversation began.

The Map-of-Maps

André had been building this map-of-maps since we decided to make the journey to Utila to hunt for cones that may not have been collected off this island in over a decade. It was truly a beautiful work of art: a map built from satellite imagery complete with very detailed reef overlays. We set to work plotting the known and possible locations of cones recognized to be found off Utila. We matched substrate information with data labels and came up with a pretty impressive composite to predict the best areas for diving with the greatest probability of surfacing with some molluscan treasures. By the end of our map session we agreed on our priority species and locations. To make the hunt even more exciting, we assigned a rough estimate regarding the likeliness of collecting worthy specimens based on the assumption that we would be in the correct habitat. For example, we determined that *C. cardinalis* (*cf. kulkukan*) would be likely, whereas *C. granulatus* and *C. eversoni* would be rare to unlikely.

(An important little aside here: When André introduced me to the world of cones several years ago, it was *C. granulatus* – the famous "Glory of the Atlantic" – that got me hooked. Maybe it was the name and the mystique or maybe it was when I discovered that the adventure to find these exquisite, living works of art was such an exciting one, who knows, but there was no turning back for me and ready or not, André had found a partner for life.)

So, when André highlighted the territory for *C. granulatus* on that map-of-maps and I compared it with my handy-dandy flash cards, well, it was at that moment that I got a little cocky. My birthday was coming up in a month and on that evening I would be taking my very first night dive. I told André that not only would I find the best cone on my first night dive – on my birthday – but that it would be the one and only Glory of the Atlantic, *C. granulatus*.

...and a HUGE one too! At that moment I also realized that my excited breaths were working against me: instead of moving closer to it, I was floating upward and away...

The Adventure Begins

Best-Laid Plans

André and I had recently returned from a month-long trip to Belize during which we were hyperconscious of making sure that everything we needed was in our carry-on packs – to the extent that our packs were so heavy that it made traveling overly cumbersome and quite a pain to go through security. So, this time around, our brilliant plan to travel light included checking everything we could through to Utila. In those checked bags: all of our diving equipment, dive logs, everything that was needed to hunt the elusive cones off Utila. Or so we thought.

The Map Mishap

It was the eve of the departure and the moment when all best laid plans are supposed to start to come together. With our gear and packs waiting anxiously by the door we both turned to go to bed in order to make our 2 am taxi ride to the airport. All the sudden André stopped halfway up the stairs and, back facing me said slowly, "did you pack the map we put together? I haven't seen it in a while." He turned to around, smiled a knowing smile, "You had it last, right?" Ah, yes. I did have it last. I remembered. I was studying the north eastern coast –

the "Iron Shore". I really wanted to find a *C. regius* and there were some reports that this was a pretty good spot to look, especially for *f. citrinus*. But shoot - where did I put it? This map-of-maps that we so excitedly worked on in order to organize the most strategic cone-hunt ever, this work of art – darn it, I had misplaced it and we were both too tired to search for it now. André just laughed, shrugged his shoulders and said that we would surely remember the most important information, anyway. Well, I thought, maybe he'll remember, but will I?

Little did we realize that that mishap may have set off a crazy chain of events that almost prevented us from finding anything on that trip at all.

The Baggage Blunder

The flight to San Salvador was smooth and perfect. We couldn't have been more pleased with our choice to travel light. We arrived in San Salvador right on schedule and rendezvoused with our dear friend, Randy Allamand, just as planned. We chatted a bit about what we were going to do that day once we arrived in Utila. Then, as sure as the sun rises, our plane arrived right on time and we set off for our next stop: San Pedro Sula.

According to our itinerary, we would have about 30 minutes to get off the plane and walk to the gate for the last leg of the flight portion of our journey. Once on the ground at San Pedro Sula we walked the short distance to our new gate. Destination: La Ceiba. The airport was pretty small and we quickly realized that it was also pretty disorganized. We commented briefly on this, but once again, our conversation turned to what our plans would entail on that evening. We thought maybe, just maybe, we would be able to squeeze in an afternoon and night snorkel depending on how quickly our ferry would take us from La Ceiba to Utila island.

Ah yes, best laid plans. It was at that moment that every one of those plans unraveled.

A woman started calling our flight number, but was asking only people flying to Roatan to get in line. Strange. Then, all the sudden, several people started running for the line. We overheard the frenzied passengers saying something about this slot actually being a first-come, first-serve flight with priority for Roatan visitors. We glanced at the board. The next flight to La Ceiba wouldn't be until late afternoon, by which time we would have missed the last ferry to Utila. If we didn't run too, we would have to find last minute lodging in La Ceiba. Now, this wouldn't be so bad, except Honduras was celebrating its annual Carnaval that weekend and lodging would be next to impossible to find. So we ran. In fact we hauled. We were about 2 or 3 ahead of the last people to be allowed seats on that flight. Breathing heavy with satisfied smiles across our faces we sat down, scattered in random spots across the plane. We made it. Thank goodness we were traveling light.

It only took a moment to sink in. André looked back at me and I glanced at Randy, smiles fading. We were all thinking the same thing: if this flight was a priority flight for Roatan, and we literally had to do the 200 meter dash to get a seat, what were the odds that our luggage made it as well? This wasn't a large plane, maybe 40 seats max.

... I quickly slowed my breathing and signaled for André to come have a look at this beautiful creature in its natural habitat. He swam over and before I knew it, he was floating upward and away as well...

We arrived at La Ceiba on time, but just as we feared, our baggage was nowhere to be found. I speak a little bit of Spanish, so did my best to describe the bags to the woman at the counter. She said it was possible that the bags could actually still make it to Utila that night. Relief. Apparently, there was a late plane flying from La Ceiba to Utila at around 6pm. If the next flight in from San Pedro Sula delivered our bags, they had a good chance of being on that evening flight to Utila. For a moment we considered waiting at the airport for the evening flight, but we were satisfied enough with her answers that we decided to just get ourselves on that ferry to Utila instead

of leaving more things to chance and possibly missing our ride there altogether. Regardless, she said, we should be reassured that they would do everything they could to make sure our bags got there swiftly.

The Arrival

Utila Island

Despite a couple of hiccups we had finally arrived. We immediately reported our loss to Miss Tonya, our hostess for the week. She told us that this happens "all the time" and not to worry, our bags should get there in "3 or 4 days maximum." THREE or FOUR days! Wait a minute here. All of our equipment, everything was in those bags. How were we supposed to dive for cones without our gear? The moment of panic passed and we all agreed we would each buy cheap swimsuits and flip-slops, a bottle of sun screen, and set out to find the cheapest dive shop around that would also have equipment that we could use.

We didn't have to travel too far. Our hostess took pity on us and said that we could use their dive equipment for free as long as we were diving with them. Though we weren't able to snorkel that night, it looked as though our luck was taking a slight turn for the better. The equipment was top notch; this was, incidentally, the cheapest dive shop around; and our dive master, Richard, and our captain, Calvin, were awesome. Yes, things were looking up.

...André looked down at me as he was beginning to regulate his breathing. His eyes were enormous with excitement. As he swam toward me I snatched the creature off its rock, grasped it tightly in my hand, and held it up for him to see...

Cone Hunting

Day 1

We woke early on the first day. We slathered ourselves in sunscreen, dressed in our new swimsuits, threw on our day-old travel clothes, and headed off to the infamous Iron Shore. I was determined to find a *C. regius*. We spent much of the morning there, to no avail. We gently peaked under every rock in the area – where were those guys hiding? Maybe we weren't in the exact rumored location – the Iron Shore was pretty long, in fact. It would

have been nice to have that map right about then. We walked back to our lodge empty-handed.

We had a night dive confirmed for the following evening – my first – but we really wanted to go out this night. Unfortunately, it was Sunday – the day of rest on the island – therefore very difficult to arrange much of anything. André and Randy wouldn't be thwarted though. Once the sun set, they strapped on their borrowed snorkel gear and headed for the reef just offshore from our lodge. Again, no luck. We would just have to wait until tomorrow.

...I couldn't keep my torch still as pesky swarms of copepods and red worms attacked my light. We gave up looking at it for the moment and I tucked it into my vest. In our excitement we had to literally force ourselves to slow down on our way back up to the boat...

Day 2

It's my birthday! We had three dives planned for that day. I threw on my swimsuit and now 2-day old travel clothes (crossed my fingers that we would hear good news about our bags) and headed down to the dive shop. André and Randy were already up discussing the dive strategy for the day with Richard and Calvin. Richard pulled out a map of dive sites and pointed to our destinations. I immediately recognized the area to be part of the key region along the southern shore that André had circled on our map. I guess he was right, we would remember the most important information after all. We would scout two different areas by day dive, then dive our favorite (the more promising of the two) that night and the other the following night.

The day dives did not disappoint. The scenery off Utila was incredible and we couldn't help but be constantly in awe of the magnificent terrain: endless caverns, finger channels, drop offs, underpasses, black coral gardens, pillars; and diverse bottoms: coralline sand to silt, rock, and rubble. We found many hints that we were in prime cone habitat.

That night we headed to the farther of the two reefs. It was a perfect evening for my first night dive. The stars were blazing in a pristine sky and shooting stars were falling everywhere. I couldn't believe how calm I was feeling. We jumped in at 7pm on the dot. After Calvin handed each of us our torches, Richard signaled for us to descend into the inky depths.

Except it wasn't really that inky. I was amazed at how bright the torch really was. I could see just fine. I had told the guys earlier that I might not look actively for anything, as I assumed I would have to adjust to this new sensation. Yet, I found that my adjustment period was over as soon as it began. For those reading this story that have yet to take their first night dive, let me briefly emphasize just how amazing it is. The darkness is oddly serene – meditative. The creatures that come out at night are unlike anything you could see in the day time. And the cones are hunting for their dinner.

I descended along the ridge lost in the wonder of it all; 5 meters gave way to 20 meters before I knew it. Then, after what seemed like only seconds, we began our ascent to return to the boat. At this time, I began wondering if André and Randy had found anything. Up to that moment, I was preoccupied (just as I thought) with the macro view of this new underwater world to notice any of the micro creatures. I circled back to the guys to see if they found anything: nothing yet. We were almost done with our dive and my chances for making good on my "best cone birthday boast" were quickly diminishing.

We had planed off at 10 or so meters and were almost directly under the boat when I scanned my torch beam across the broad coral shelf for the last time before surfacing. It was then that I spotted it: a large object at the end of my torch beam was like a flashing red light begging for my attention. It was unbelievable. I pinched myself, gulped air in excitement and almost lost my chances all together. I signaled to André to look and he nearly floated to the surface as well. There it was as though someone placed it there, my birthday *C. granulatus*, waiting for me right under the boat.!

To this day, I can't help but think that some higher power

had something to do with this find. It really was unbelievable and against a lot of odds. We didn't find another *C. granulatus* on that trip – this was the only one – and true to the boast I found it on my birthday, on my first-ever night dive.

One bit of personal advice for future cone hunting boasts: make sure to specify not only to find the best cone, but that it is going to be a live cone. When I snatched it from the reef the red worms and copepods were so prolific and annoying that I had to quickly put it in my vest and surface. When we got back to our room, we took it out and realized it was just fresh dead. Though, I am not complaining. It is large (49mm) and in great condition – it has a *very* special place in our collection.

And that's where this story ends. We had many great adventures throughout the rest of the week, but that's another story for another day.

We will be heading off to Roatan in a few weeks excited and a little wiser. Top lessons we will take with us from this trip:

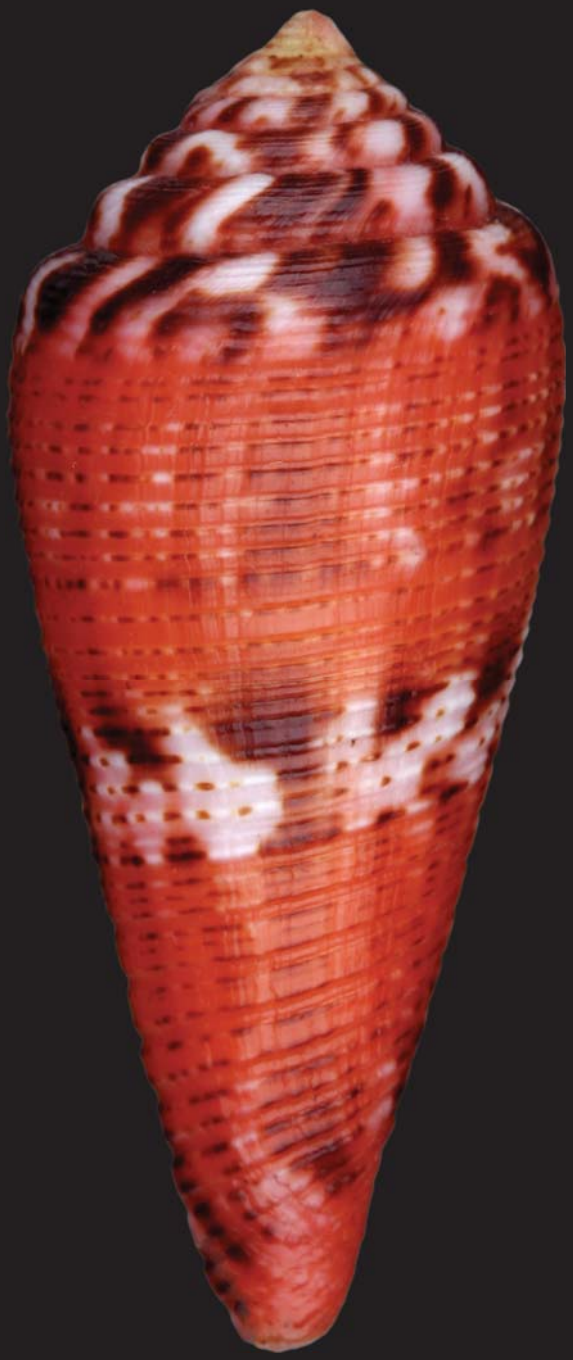
1) When making a boast about finding the best shell (which I did already), be extremely clear about its condition, size, and any other details...just in case "someone" happens to be listening. I will be sure to let you all know how this works out for me this time around.

2) Resist the urge to check all your bags through to your destination. Pack as much as possible into a carry-on. This will save a lot of unnecessary anxiety.

   (By the way, in case you are wondering about those bags and that map: we didn't receive our luggage until 2 days before we left to go back home. Unfortunately, our diving gear wasn't included. We didn't end up receiving our equipment until we got to the airport and found it still sitting, waiting for us at the baggage counter. And as for that map, we never did find it – I think I may have accidentally thrown it away!)

So, for my last lesson:

3) Forget about those best laid plans...it's better to just go on an adventure and see where it takes you!



We hope to see your contribution in the next TCC!