THE CONE COLLECTOR

#20 - June 2012

THE CONE COLLECTOR

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On the Cover
***Conus victoriae* on eggs, Cape Missiessy, Australia.**

Image courtesy of Willy van Damme

Note from the Editor

Dear friends,

With the help of divers hands – and the help of the hands of divers, if you will pardon the wordplay – we have put together what I honestly believe is another great issue of TCC.

As always, we tried to include something for everyone and you will find in this number everything from fossil Cones, to reports of recent collecting trips, to photos of spectacular specimens, to news of new descriptions recently published, among other articles of, I am sure, great interest!

You will notice that we do not have the "Who's Who in Cones" section this time. That is entirely my fault, as I simply failed to invite a new collector to send in a short bio for it. The truth is, several of us have been rather busy with a lot of details concerning the 2nd International Cone Meeting, to be held at La Rochelle (France) later this year – you can read much more about it in the following pages! I hope to see many of you there, so that we can make a big success of this exciting event!

So, without further ado, tuck into what we selected for you and enjoy!

A.M.

New World Record Size

Philippe Quiquandon

Our friend Philippe Quiquandon has just sent in photos of an exceptional *Conus australis* Holten, 1802
At 123.32 mm, it is in fact the new world record.
It was taken alive at the China Sea, in a depth of about 200 metres.

A Question About *Strategoconus generalis*

Remy Devorsine

I would like to share something I have noticed concerning those *generals*.

The five specimens series belong to my friend Teena DAYMOND collection, and the two others are from my collection but I did swap them with Teena.

They all have been caught by prawn trawlers north in the area called "Light ship" and south of Fraser Island, in the area of Tin Can Bay, Queensland, from 65 fathoms and deeper.

What did catch my attention is that they are all dark orange color. Could it be a local population? Hopefully some of our readers will have an opinion on this matter.






Breaking Cones in Mayotte (or breaking stones in Cayenne...)

David Touitou & Pierre Escoubas

The Team

The 2012 Mayotte mission in which I was involved has been organized as part of the VENOMICS European project. The ultimate goal of the project is the development of innovative drugs derived from venom compounds. In that respect, cone shells represent an abundant and original source of novel molecules than may become drug leads. The mission was organized and led by Pierre Escoubas, leader of the VENOMICS consortium, and CEO of a small Biotech startup company (VenomeTech) located in the Sophia Antipolis research cluster near Nice on the French Riviera. Pierre has had a long research career in France and overseas, he has worked at French Universities and in CNRS laboratories and has been involved in venom research for more than 25 years. He contacted me several months ahead of the mission to ask for my participation as a cone shell expert, and of course I accepted the offer right away with great enthusiasm!

The two other scientists in the « Mayotte team » were Frédéric Ducancel and Renaud Vincentelli. Frédéric heads a research laboratory at the CEA in Saclay near Paris, and is also a long-time specialist of venoms and cones. He is in charge of "genomics" studies in the VENOMICS project. The last member of the team is Renaud Vincentelli, a research engineer in Marseilles, who heads a group involved in protein production in a joint CNRS/Marseilles University laboratory.

However our scientists are not only lab rats! All three are certified divers, Renaud is actually a diving instructor and a certified scientific diver and both Pierre and Frédéric have experience in field work. Frédéric has in the past collected cones in New Caledonia, while Pierre is familiar with field work in temperate and tropical areas such as the jungle of French Guiana.

In short, we have a "top team", everyone got his diving gear in order, and preparation of the trip has been meticulous. More than 20 kg of equipment have been packed, in order to set up a small field laboratory for handling and dissection of the biological samples.

Our objective: the cones of Mayotte

Mayotte remains a poorly explored destination for cone shell collectors. Publications on the cones of Mayotte remain scarce. In order to establish an exhaustive listing of the cones species known to be present there, I had to resort to XENOPHORA articles! In issue N° 118, an article by Norbert Verneau lists the know species of cones from Mayotte. This will be the most useful information for the preparation of the mission. Other contacts in the network of cone collectors allowed me to list the spots to be visited, and the species that could potentially be found at those locations. I take this opportunity to warmly thank Norbert who not only hosted us with great hospitality, but also joined us in collection trips on some of his favorite spots. I also thank Pierre Vachon, Eugène Schublin and Matthias Deuss whose help was most important in the preparation of the mission.

After many email exchanges with Pierre, it's finally a go for the mission, we have a battle plan and we're off to Mayotte! Destination Dzaoudzi for a week with a clear objective: to bring back at last 25 different species !

The Departure

We all gather at Orly airport and I meet Renaud and Fred for the first time. Immediately the atmosphere warms up and I show my new colleagues my cone shell book, while having a beer in the terminal. After a long flight of 9:40 hrs, and only 2 or 3 hours of dozing in the plane, we land at the Mayotte airport on Petite Terre, the smaller of the two islands, located northeast of Grande Terre, the main island. Norbert is waiting for us and after warm greetings, Pierre rents our car and we reach our final destination, the guest house "Les Couleurs" where the owner Laurent is waiting for us. A quick drink and we pull out our snorkeling gear

Pierre, Renaud and our captain

to go explore the Petit Moya reef. We need to hurry as prospection at low tide is mandatory there and time is short.

Once the car is parked, everyone suits up and we then need to walk under a fiery sun, to reach the water. It's dreadfully hot and we won't be able to reach the reef as the tide will reverse soon, and our snorkeling time is limited. We start prospecting as soon as we reach knee-deep water, just beyond the small mangrove that grows at the edge of the water. We're not alone as many local fishermen are coming here to cast their nets at low tide. We start snorkeling in the deepest part of the spot (4-5 m in the central zone) but the water is muddy, and there is a lot of silt on the bottom. This does not help with the sweeping of sand under dead coral plates and visibility is really bad...

Pierre and Norbert have started on the left side of the zone and find *Conus leopardus* specimens. Well... Norbert does! Pierre's eye is not yet trained for cone hunting, the water is muddy, his mask fogs up and he wonders how Norbert is able to spot enormous *Conus virgo* right under his nose! Well, the important thing is to find our first cones. Fred, Renaud and I started exploring the right side and our first cones are some pretty *Conus striatus*. I am actually quite surprised to find that many specimens, obviously the species is common in Mayotte waters.

After one hour, Norbert and I decide to push further and we head towards the reef. At low tide, may coral heads are exposed, surrounding other parts where the water is just deep enough to get immersed. With our long neoprene suits, walking under the sun is a torture so we quickly focus on the pools where depth is 50 cm at the maximum.

We come upon other shell families such as conchs or cowries (*Cypraea helvola, Cypraea annulus, Cypraea erosa, Cypraea vitellus, Cypraea histrio* and *Cypraea isabella*). All the live cones that we find are common Indian Ocean species. Norbert was hoping for *Conus betulinus*, unfortunately we'll only find a

Starting shell identification on the boat

dead specimen. I find one dead *Conus tenuistriatus*, a rather rare species. The live augers found are: *Terebra babylonia, T. dimidiata, T. affinis, T. felina, T. crenulata* and *T. cerithina*.

After snorkeling for four hours, we're tired and it's time to head back for the beach as the tide is up. Pierre and Renaud who don't have the knack yet for cone hunting have drifted slowly for the last 30 minutes using our surf board, while admiring the scenery! Three hours of sleep only is not quite enough and it's time to head back as the rain starts. After some shopping for basics, we manage to rent dive tanks for the Sunday boat trip. Back to the guest house, we take time to examine today's findings, so that Pierre can start preparing a detailed computerized inventory that will serve as a database to process and store all biological samples in the coming week.

Our first day is a success, morale is high and time flies. Our dissection specialists can't even get started as we leave for Norbert's home. After dinner, he shows us his magnificent collection of Mayotte cones and we complete with him the determination of some rebel species!

Collectors vs. scientists: one to zero ! But tomorrow we all hope to do better.

Sunday, March 25th

We have to meet with our rental boat captain at 8:00 am at the port. We load the car under driving rain, and leave after a copious breakfast. One the gear is on the boat, our captain, a local fisherman, heads for the North. After 45 minutes, we are ready to explore a large reef inside the lagoon. The tide is low and we can easily explore the coral without skin diving below 4 or 5 meters.
The zone is very rich in coral heads of all sorts, a delight for the eyes. Many fish species evolve in the labyrinth of corals, and it's a welcome contrast with the muddy waters of the previous day. Great fun today!

First day - crossing the mangrove under a blazing sun

However, cones are rare and although I'm hoping for a nice discovery every time I lift a dead coral plate (*C. episcopatus* or *C. aulicus*), I must confess that I remain coneless...

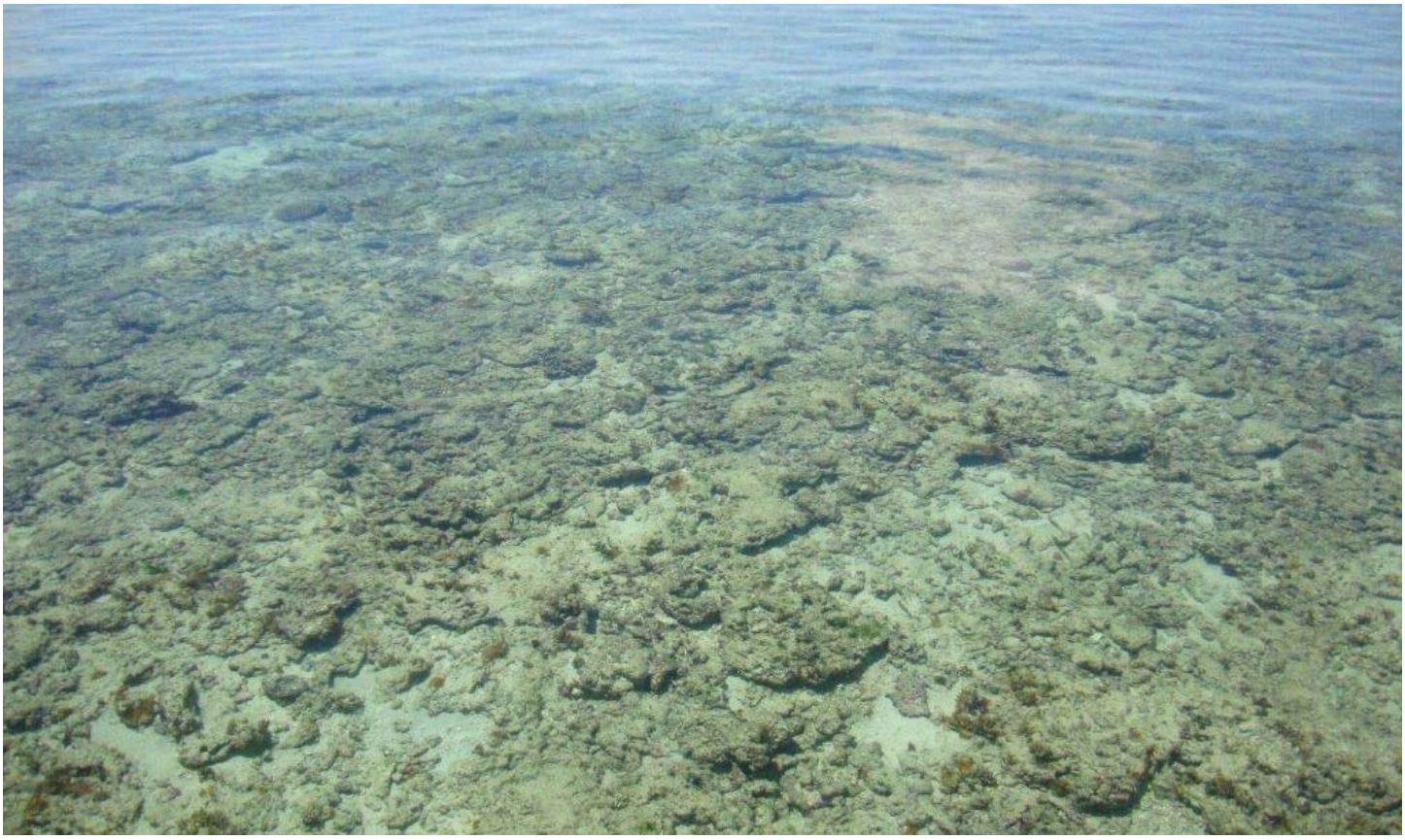
Finally, I come upon a few species such as *Conus canonicus* and *Conus striatus*. Our scientist friends also get lucky and find the common *Conus tessulatus*. Fred will also find in sand pockets some small sand-dwelling *Conus sp.* which are currently being identified by Pr. George Richard in Paris. But at least all those specimens are alive! Before heading back to the boat, I find a pretty Murex: *Chicoreus torrefactus*. We see few cowries except for a large *Cypraea tigris* and a dead *Cypraea globulus*.

After an hour and a half of prospection we get back on the boat and head for another coral reef close to the northernmost part of Petite Terre. The tide is quite low and many coral heads are visible. Our group gets back into the water for a two-hour prospection. As water is very shallow on the reef top, we can easily hunt for shells without long apneas, a big advantage.

The area is quite rich and there is a lot of malacological biodiversity! Everyone finds common cones, Fred start to get back into the race and we can feel his excitation building up! We also find several impressive helmet shells (*Cassis cornuta*), and finally I happen upon a magnificent *Conus striatellus*! Since the beginning of our trip, I have been looking for this species, known to be rather common in Mayotte (while uncommon to rare elsewhere), and which I am really fond of ! This specimen is absolutely magnificent!

Finally, thanks to Norbert who went exploring the reef wall, we collect several more species. I also find a small dead *Conus mitratus* and Norbert finds a dead *Conus obscurus*. Those two species are difficult to find alive. A dead *Conus nussatela* is also found.

At that spot, we'll also find several strikingly beautiful Murex (*Naquetia sp.*), pretty *Chicoreus torrefactus* of modest size, many conchs of all sizes and some cowries



The barrier reef - so many dead coral plates to investigate

such as the beautiful *Cypraea chinensis variolaria, Luria isabella, Mauritia histrio, Erosaria helvola, Erosaria erosa, Bistolida hirundo* dead and *Lyncina lynx*.

In short, great success for all and faces light up with big smiles! It's only our second day and already our collection is abundant, and everyone got back onto the boat with his box full of cones. This spot will remain as one of our best memories of the whole week. But we must leave already.

Once everyone is onboard, we sort out our shells and the boat leaves for a third spot.

We anchor near a small islet in front of Grande Terre, and we keep our wet suits on as we devour the delicious grilled fish (Vivaneau) and bananas prepared by our captain's wife. It is time now to take the next step: a tank dive. Two buddy pairs are formed: Pierre with Renaud and Fred with David. Norbert will snorkel as we could not get a fifth tank set for him.

We swim down the bottom slope but rapidly we must realize that the spot is not favorable for cone collection in daytime. The bottom is a mix of sand and silt, and there are very few dead coral plates to be explored. At night this must be a good zone for augers, miters or olives. We swim back up to the islet and we start exploring the 3-4m depth zone where many rocks and dead corals offer good cone habitats. We find common species such as *Conus arenatus*, *Conus tessulatus* and *Conus striatus* but the gold award goes undoubtedly to Fred who discovers under my eyes a magnificent *Conus omaria*! This species is rather uncommon in Mayotte. Shell triangles are large and the specimen is very different from those found in the Philippines or New Caledonia. But similarly to the specimens found in the Seychelles, the spire is not pointed as in the *convolutus* form. I am quite impatient to compare its DNA sequence with that of specimens from the Pacific!

While snorkeling, Norbert has found *Conus striatus* but more importantly *Conus augur* that we had not collected previously. Pierre and Renaud have also found several

Young *Conus consors* alive

beautiful cones, and their morale is at the top. I must confess that *Conus augur* is a really beautiful species, although I never paid much attention to it before.

After one hour and a half we must recon that time flies too quickly! We are reluctant to get back on the boat as everyone still has a half-tank of air and we all want to get back down. Fred is stuck by the "acute collectionitis virus" and as our vigilance lapses, he goes back to the bottom! His bubbles will betray him and he will be forced to get back on the boat as we must leave, the sun is already setting.

Getting back to the guest house, a totally different chore awaits us: we must now dissect two days worth of sampling. We now have many specimens and need to handle them rapidly, as dead cones will be useless. We therefore buy some overpriced pizzas at the van sitting on the port and after a very quick dinner we start on the crucial task of dissecting the cones. We first try to extract the live animals without breaking the shells using various methods, but to no avail. The animals hide themselves inside their shell. Follows a brief period of intense stress, how are we going to proceed ?

We must admit the obvious: the shells will have to be broken. We first try with a portable vice, but the shells are really too hard. Stroke of luck: our host has a small sledgehammer; here is the solution to our problem ! A few well-applied strikes and the shells break, we can extract the intact body of the mollusk, but from now on we will have to break all the collected shells. And the worst part of it ? The task of shell-breaker will now be devoted to the group shell collector!!! What torture!

Although breaking encrusted *Conus lividus* has not been a major trauma for me, breaking the magnificent *Conus striatus* shells was really painful! This will actually become a permanent joke during the rest of our mission and Pierre will regularly promise me a direct access to the section of hell reserved to shell collectors...

However, seeing my profound distress, Pierre and Fred will accept not to break *Conus convolutus*, it will

David's souvenirs from Mayotte

be frozen and the animal extracted tomorrow! Once the cones are frozen, Pierre can still extract the venom and use tissue for "DNA barcoding". It is then decided that we will exceptionally preserve some specimens when Fred who needs fresh tissue, will have gathered enough material. This will save the French collector from having a heart attack! End of the dissection run at 10:30 pm, and past midnight for the narrator...

Monday, March 26th

A new « dissection morning » starts; we must complete the processing of the cones collected yesterday on the three different spots while not mixing them. We will need five hours of work for that ! With the heat, no air conditioning and Spartan conditions, the work is hard. I keep breaking the shells of course...

Once we are done, we break for a quick sandwich lunch and meet with Norbert. He takes us to a spot on the coast, accessible by car, one of his secret gardens! We are supposed to find *Conus maldivus*, locally abundant. Water is shallow although the tide is up, but turbidity is high. On that type of sand/silt substrate, the collection method consists in spotting the partially buried cones from the surface. Rapidly, I find my first *C. maldivus*. The species is dear to my heart, and it's a great pleasure to be able to collect it so easily. In addition, the specimens are large, a real joy! Collecting like this is really enjoyable but we must often skin-dive close to the bottom to locate the shells. What strikes me in this spot is the number of dead shells, chiefly *C. maldivus*. I will be lucky enough to find a dozen there on that day, each more beautiful than the next one.

Norbert finds a MAGNIFICENT dead *Conus lithoglyphus* of large size and perfect condition. He gives it to me as a gift, it's perfect and we can't break that one! In this particular spot, large specimens are often found, not encrusted and not marked, which is exceptional for the species! I can confirm that fact as we will find two during this outing. We also find two dead cones belonging to rare species: *Conus consors* and *Conus circumactus* (*Conus connectens* for some).

David's souvenirs from Mayotte

Pure luck, I also come upon an enormous dead *Conus fuscatus* of totally brown color! Norbert confirms that this is a remarkable specimen. I also find two pretty *Conus sugillatus* fresh dead!

This is for sure a perfect night spot!!! But Norbert has had a very close encounter with a large tiger shark on a nocturnal prospection of the site a few days before our arrival, getting "bumped" by the shark in very shallow water. That news has thus totally damped our enthusiasm for nightly expeditions...

Tuesday March 27th

We head off early, heading for a spot on the southeastern part of Grande Terre, this time by car. After getting to Grande Terre via the small ferry and crossing the island covered by luscious tropical vegetation, we get to the spot and start snorkeling. The area is immense and we investigate several biotopes during more than four hours. From the beach, we first come across volcanic boulders, followed by a sandy area with a few seaweed patches, and then reach the reef itself.

In one morning, we will find there many CONIDAE species, but also other shells such as augers and cowries. The reef is absolutely pristine and fishes are both abundant and superb. Pierre finds an enormous and magnificent *Conus bandanus*, he's really getting the hang of it ! The specimen will escape the sledge hammer and the cleaned shell now sits in a good place in his office.

This is really an idyllic morning, and it is difficult to get everyone to head back to the beach. Pierre has "escaped" for ten minutes of mind-boggling skin-diving on the reef, surrounded by huge and colorful fish schools and he will even have a close encounter with a turtle followed by her remora fish. This spot is undoubtedly one of the most beautiful places that we will visit during the week.

Unfortunately we must leave as we have an appointment at a local government office. After another quick

David's souvenirs from Mayotte

sandwich on the roadside, we finish the day trip by a short conference at the local administrative office that has granted us collection permits.

Back to Petite Terre, we resume our daily routine: sorting and cataloguing the samples followed by a few hours of dissection. Another day that ends past 10:00 pm!

Wednesday, March 28th

We leave this morning for a boat exploration of the Southeastern reef of Petite Terre. Our captain drops us at the reef edge. Finally! I have been longing for this moment for awhile. We get to the coral and already an interesting zone appears. The depth is 6 to 10 meters here and the reef edge is composed of a sandy bottom, covered by coral debris and sometimes enormous overturned dead coral plates. These "Asian hats" provide ideal hiding spots for CONIDAE especially *Conus aulicus* and *Conus episcopatus*, as well as *Cypraea argus* and *Cypraea talpa* in the Seychelles...

Norbert and I start exploring the area while the three biologists head towards the shallower top of the reef. After many unfruitful and tiresome apneas, I must recon with the obvious: no rare species to be found here! I only find a nice *Conus canonicus* specimen and Norbert finds a most beautiful *Cypraea argus* (a species rarely encountered alive in Mayotte).

I then decide to explore the top of the reef in order to get a bit of rest. The water is still crystal-clear and a few large coral blocks appear. After two hours of snorkeling, I determine that many species are present but nothing is rare! I also find a live *Harpa armouretta* as well as a fresh dead, and conchs are also present. Each time I lift another coral plate, I am hoping for a discovery, but... nothing! I must confess that my hopes were high: *C. aulicus, C. textile* (extremely rare and at this time would not be *C. textile* but *C. archiepiscopus*), *C. aureus paulucciae*, *C. pennaceus*... However, the tidal current is strong and constant and some of us are getting tired. Tempers flare and although the spot is rich in biodiversity, and everyone has collected well,

Norbert's collection

the accumulated fatigue and lack of sleep show.

I finally come upon a new zone where many dead corals, essentially "porites" always offer excellent hiding places for cowries. I start upturning some of these incredibly heavy coral boulders, and rapidly I find a beautiful cowry: *Cypraea mappa*. I also find *Cypraea leviathan*, many *Cypraea histrio* and *Cypraea arabica*. A little further, a second *C. mappa* is discovered!! What great fun!

But it is 1:00 pm already, the tide has reversed, and we absolutely need to anchor for lunch. We stop near a beautiful islet as *Conus quercinus* is supposed to dwell on the sand slopes of this area. We get back into the water: Norbert, Renaud and Fred go exploring the edge of the sandy slope to hunt for those cones. Pierre and I start exploring the reef that grows along the islet. I clearly have in mind to try and find a second *Conus augur*. It won't take more than five minutes before I spot one sitting on a coral plate in 80 cm of water . But it will be the unique specimen found in that area!

After another well-deserved and delicious local meal prepared by the captain's wife, and a few minutes of rest under the shade of a tree, we set off again to dive on the reef. We jump off the boat and soon reach the bottom at -20m, but it will take only a short while to figure out that the area is devoid of cones. We break the dive, surface and head for another spot.

Aiming at exploring the external side (I have dreamt of it for ages!), we navigate along the reef looking for a suitable spot. This is a seldom visited biotope in Mayotte and everything is possible. After anchoring again, we get to the bottom again at ca. -20 m and start our search. Although excited by the potential of this external reef slope, (*Conus aureus paulucciae*, *Conus legatus, Conus bullatus, Conus pertusus, Conus crocatus*,..), we must soon admit that this is a total failure. Forty minutes of search by a team of four people yields absolutely NOTHING. Not a single cone shell and we don't even find other shell families. The only discovery at the end of the dive is *Mitra cardinalis*. It is a great personal disappointment.

The "Dream team". From left to right - David, Fred, Pierrre and Renaud

We finally stop on a last spot for some additional snorkeling. It is 4:30 pm, what a day! The tide is going up, and visibility is not very good. I find a beautiful juvenile *Conus consors*. This may even the first documented find of this species, alive in Mayotte !

Back to the guest house and more dissections. Late in the evening we end up in a roadside open-air "restaurant" for a late dinner. Basically a van and some garden plastic tables with a homemade grill set on the floor as a kitchen. Bananas, breadfruit and a delicious piece of chicken grilled make for a simple, and fulfilling dinner. Morale has never been so high, we managed to collect many samples, and many different species and our faces are lit up with smiles after another 15-hours day! What an adventure!

Thursday, March 29th

Today we set off on the dive boat operated by a local diving club, rented for the day on a private tour. We are planning for two tank dives and some snorkeling during the mid-day interval, so as not to waste any time. We are headed north.

The first dive is in the Northern pass, depth is fifteen meters at the most. The water is not very clear and there is a quite a bit of current. Although the bottom looks promising, and there are five of us looking for cones, this is again a cone shell desert. Cones are very rare; the few species we find are all common and have already been found during our previous snorkeling trips.

At noon, we stop at the Northern islets, for some snorkeling. I set off to the right and without knowing it, end up in the best collecting spot. The area is rich and *C. canonicus* is present in numbers.

After a quick sandwich break, we head for our second diving spot, an underwater coral reef which tops at ca -10 meters under the surface. However, same result as the previous spot: feels like cones are there but not much can be found. I was hoping to find *Conus aureus*

Live corals in the lagoon

paulucciae... but nothing ! My only satisfaction on that spot will be a large and beautiful *Conus canonicus* of 61mm.

Although the outcome of the diving is somewhat disappointing, the day has given us the opportunity to collect quite many specimens of *C. canonicus*, and this species will become the emblem of our mission. Also we had a chance to do a superb last dive on a pristine reef, teeming with life. We all head back happy and smiling, to start another evening of dissection.

Friday, March 30th

It is decided that the pace of the last day will be quieter, we have to dissect many specimens left over, in particular those we have frozen, and we need to finalize many things. And we must also go shopping for souvenirs! In the morning we set off for the "city center" of Dzaoudzi (actually a single street) in order to bring back some souvenirs, and we spend a bit of time at the minuscule local market where we purchase local spices.

Then it's dissection time again. Our scientists have also decided to target spiders and scolopendra. Norbert has collected in the morning a dozen large spiders for us, while Fred and Renaud are off to a centipede hunt. Armed with gloves and a good dose of courage, they walk around the neighborhood, lifting stones... Unfortunately, they come back empty handed. This is when they get a brilliant idea: to offer the local kids a small token for collecting live centipedes.

An hour later, they will get 11 live specimens for a few Euros and a large cake bought for one of our picnics! Everyone is happy and the kids will come back the same afternoon, eager to do more hunting. Unfortunately, there is no more time and we need to pack.
But for myself, impossible to put away my snorkeling gear so early! An appointment is made with Norbert for a last trip to the reef at 2:00 pm and while Pierre and Fred are dissecting the last samples, we head for two and a half hours of snorkeling, just for the fun. We

Renaud hunting for shells

see dozens of *Conus striatus*, one *Conus augur* in the seaweed patches near the beach and I find a piece of what looks like a *Conus mustelinus*. But we need to get back. Our sojourn ends with a last group dinner at the restaurant, gathering all participants to the mission, and we regretfully part with Norbert who has been a unique and indispensable guide during this stay.

The next morning sees us headed to the airport and metropolitan France, with an exceptional sample collection in our luggage and unforgettable memories of Mayotte.

The final outcome of a one-week collection trip in Mayotte is therefore:

CONIDAE found alive : 39 species
CONIDAE found dead : 11 species.

The result of the expedition is therefore well beyond our initial goal of 25 species. We have gathered many more, out of the 72 species of *Conus* described in Mayotte.

Purely from a collector's perspective, Mayotte is a rich and surprising island. What was the most striking to me was that almost all species can be found in all spots! Indeed we found little distribution differences between fringing reefs, isolated lagoon reefs or the barrier reefs. One may conclude that there is less compartmentalization than in other collection zones I am familiar with, such as the Society Islands in French Polynesia or the Seychelles.

Tide amplitude is also a factor to be considered, as collection periods must be calculated according to tidal levels. Indeed, snorkeling at low tide in 80 cm of water can avoid skin-diving and apneas, a comfortable collection mode that collectors will appreciate! The only issue in Mayotte is the apparent *Conus* scarcity on the external reef slope. While we have conducted three diving explorations there, we have collected no cones. However, we have not exhaustively explored the island. We have not been able to visit the southern, eastern and Northern barrier reefs!!! In short we have only explored a tiny fraction of the immense site!!! The

Renaud and David after a few hours at low tide

Mayotte lagoon, with a total surface of 15.000 sq. km remains one of the largest in the world.

It is enthralling to see that *Conus pennaceus* and *Conus gubernator* are very rare there and that *Conus textile* that is abundant on both sides of the Mozambique channel is not found in Mayotte, or is apparently replaced there by a much rarer species (*C. archiepiscopus*). As in the Seychelles, the dominant malacophagous cone is by far *Conus canonicus*. It is also surprising that we have not seen any *Conus geographus*!

Conus striatellus is a locally abundant species, although it is generally uncommon or rare elsewhere! And what about *Conus barthelemyi*? It is said to have been found during a dive in the lagoon... *Conus moluccensis* is also said to have been collected once... Mayotte still keeps many secrets... and that's good! The island will keep us dreaming for a long time... of the species of the external slope!

The fist cone shell mission of the VENOMICS project can thus be considered a great success. The collected specimens are already undergoing studies in the different laboratories associated with the project and the mission has reached its objectives. Careful planning, meticulous preparation, unfailing logistics and a fantastic team have been keys to success. The first results of work related to the samples of Mayotte will soon be presented in scientific conferences and reports.

We are already working on our next destination, and the "dream team" of cone shell collecting will reunite again in a few months for another adventure !

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David doing the final cone species identification

The mission was organized by VenomeTech (*www.venometech.com*) and funded by the VENOMICS project (*www.venomics.eu*).

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The venomous apparatus of a cone - muscular bulb and tubular venom gland

Conus virgo before dissection

A very calm sea

Best time - the lunch break

Departure from the Choazil Islets

David with a plentiful collection

Norbert the man-fish

The immense lagoon of Mayotte

Worst time of the day for David

Etymology of Cone Species Names E-G

António Monteiro

In this issue of TCC I continue the study of the etymology for Cone species names. Continuing the lists included in previous issues I will now tackle species with names beginning with E, F and G.

But first, I must point out that Tom Rice kindly sent a correction to the etymology of *C. coelinae spiceri* Bartsch & Rehder, 1943, for which I had indicated the wrong Spicer. According to Tom, it should read thus:

coelinae spiceri Bartsch & Rehder, 1943
Named after Dr. V.D.P. (Vernum Dennis Phillip) Spicer, 1897-1968, who was a mentor to me in my early years of collecting, and had collected specimens in the 1920's and 1930's while a U.S. Navy officer stationed in Hawaii, Midway and Samoa. He retired to his hometown of Centralia, Washington and his collection ended up in the Washington State Museum in Olympia. During the later 1920's and early 1930's he, along with Dr. Fred Baker, described a number of mollusks - mostly micros.

ebraeus Linnaeus, 1758
The Hebrew Cone, probably because the decoration of the shell was remindful of letters from the Hebrew alphabet

eburneus Hwass, 1792
From the Latin, meaning "made of ivory" or "white as ivory"

eburneus crassus Sowerby, 1858
From the Latin, meaning "thick" or "solid"

eburneus polyglotta Weinkauff, 1874
From the Greek *polus*, meaning "many", and *glo(o) tta*, meaning "tongue" or "language", hence "one who speaks several languages", possibly referring to the decoration of the shell, remindful of characters in different alphabets or to "a lot of tongues", like in "tongues of fire", referring to the decoration of the shell

echo Lauer, 1988
The name "recalls the warm brown shades which outline and emphasize the white tent pattern"

eduardi Delsaerdt, 1997
Possibly named after Edward Wils, Belgian malacologist

eldredi Morrison, 1955
Apparently named after the parents of Joseph Paul Morrison (1906-1983), (born Eldred, but having been adopted by Dr. & Mrs Hugh Tucker Morrison after his parents' decease in 1912 and 1913, when they were missionaries in Belgian Congo), an American conchologist

elegans Sowerby, 1895
From the Latin, meaning "elegant"

elegans ramalhoi Coomans, Moolenbeek & Wils, 1986
Named after Amarílio Ramalho, Portuguese shell collector

emaciatus Reeve, 1849
From the Latin, meaning "wasted away" or "emaciated"

emarginatus Reeve, 1844
From the Latin, meaning "notched at the edge" or "deprived of its edge"

emarginatus scariphus Dall, 1910
Possibly from the Latin *scarifico*, meaning "to open cuts on", or from the Greek *skariphos*, a word synonymised with *fruganon* (dry stick), *graphis* (stylus for writing), *karphos* (pieces of dry wood, splinters, a stick). Possibly referring to the pattern on the shell that can be remindful of a scarred surface

emersoni Hanna, 1963
Named after William Keith (Bill) Emerson, (b. 1925), an American malacologist, currently Curator

Emeritus at the American Museum of Natural History, New York

encaustus Kiener, 1845
From the Greek, meaning "painted with wax colors fixed with heat, or with any process in which colors are burned in" (*kaustos* means "burnt, red-hot")

episcopatus da Motta, 1982
The name means "close to episcopus" (because the species used to be wrongly identified as *C. episcopus* Hwass, 1792)

ermineus testudinarius Hwass, 1792
From the Latin, meaning "like a tortoise", probably referring to the general aspect of the shell

ernesti Petuch, 1990
Named after James Ernest, conchologist and shell dealer from Panama

erythraensis Reeve, 1843
Named after the Red Sea (in Greek, *erythraikos* means "of the Red Sea")

erythraensis dillwynii Reeve, 1849
Named after Lewis Weston Dillwyn, FRS (1778-1855) was a British porcelain manufacturer and conchologist

escondidai Poppe & Tagaro, 2005
The name (from the Spanish and Portuguese *esconder*) means "hidden", and refers to the fact that before description specimens were hidden among masses of dead collected Cones from Aliguay, in the Philippines

estivali Moolenbeek & Richard, 1995
Named after Jean-Claude Estival, conchologist from New Caledonia

eucoronatus Sowerby, 1903
From Greek and Latin, meaning "well crowned" (the Greek prefix *eu* means "well" and the Latin *coronatus* means "crowned")

eugrammatus Bartsch & Rehder, 1943
Probably from the Greek *eugrammos*, meaning "well drawn" (from *eu*, meaning "well", and *gramma*, meaning "signal", "letter" or "drawing")

eugrammatus lapulapui da Motta & Martin, 1982
Named after Lapu Lapu (1491-1542), hero of the Philippines

evansi Bondarev, 2001
Named after Ron Evans, an Australian shell collector

eversoni Petuch, 1987
Named after Gene Dudley Everson (b. 1941), American conchologist

excelsus Sowerby, 1908
From the Latin, meaning "elevated"

exiguus Lamarck, 1810
From the Latin, meaning "very small" (in all kinds of meanings: strict, exact, scanty, small, little, petty, short, poor, mean, inadequate, inconsiderable, paltry)

exiguus bougei Sowerby, 1907
Named after Joseph Louis Bouge (1878-1960), French malacologist

exiguus cabritii Bernardi, 1858
Named after Cabrit, French shell collector

exiguus optimus Sowerby, 1913
From the Latin meaning "best"

exiguus vayssetianus Crosse, 1872
Named after Vayssète (bio ?); we could only find a French teacher called Vayssètes (mid 19th century) and also a French scholar monk, Dom Joseph Vaissète (1685-1756)

eximius Reeve, 1849
From the Latin, meaning “selected”, “special”, “choice”, “taken out”, “excepted”

explorator Vink, 1990
From the Latin, meaning “explorer”, named after Christopher Columbus, the famous explorer, whose first landing site in Jamaica was Discovery Bay, the locus typicus of the species

explorator caysalensis Raybaudi & Prati, 1994
Named after Cay Sal Bank in the Bahamas

fergusoni Sowerby, 1873
Named after David Wilson Ferguson (1835-1909), American malacologist

ferrugineus Hwass, 1792
From the Latin, meaning “of the colour of iron rust”

ferrugineus chenui Crosse, 1857
Named after Jean-Charles Chenu (1808-1879) a French physician and naturalist

ferrugineus sophiae Brazier, 1875
Named after Sophia (bio ?)

figulinus Linnaeus, 1758
From the Latin *figulus*, meaning “potter”, hence the “little potter” Cone

fijiensis Moolenbeek, Röckel & Bouchet, 2008
Named after the Fiji Archipelago, Pacific Ocean

fijisulcatus Moolenbeek, Röckel & Bouchet, 2008
A member of the so called “*sulcatus*” group endemic to the Fiji Islands

filmeri Rolán & Röckel, 2000
Named after Michael Robin (Mike) Filmer (b. 1926), English shell colector and researcher

fischoederi Röckel & da Motta, 1983
Named after Hörst Fischöder, German conchologist

flammeacolor Petuch, 1992
From the Latin, meaning "flame-colored", in reference to the bright orange-red color often seen on this species

flavescens Sowerby, 1834
From the Latin, meaning “yellowish”

flavescens caribbaeus Clench, 1942
Named after the Caribbean region

flavescens flamingo Petuch, 1980
From the Portuguese flamingo, the bird of the family *Phoenicopteridae*, probably referring to the deep pink colour of the shells

flavidus Lamarck, 1810
From the Latin, meaning “yellow” or “yellow-tinged”

flavus Röckel, 1985
From the Latin, meaning “yellow”

floccatus Sowerby, 1839
From the Latin *floccu*, meaning “flake”, hence the “flaky” or “snow-flaked” Cone

floccatus magdalenae Kiener, 1845
Named after Magdalena or Madeleine (?)

floridanus Gabb, 1869
Named after the peninsula of Florida, southeast Unites States

floridulus Adams & Reeve, 1848
From the Latin *floridus*, meaning “blooming”, hence the “little blooming” Cone

foscaclaudiae Assi, 2010
Named after the author’s wife, Fosca Claudia Bellotto

fragilissimus Petuch, 1979
From the Latin, meaning "the most fragile", in reference to the paper thin shell of this species

frausseni Tenorio & Poppe, 2004
Named after Koen Fraussen, Belgian conchologist

frigidus Reeve, 1848
From the Latin, meaning "cold"

fulmen Reeve, 1843
From the Latin, meaning "lightning", probably referring to the pattern of some specimens

fumigatus Hwass, 1792
From the Latin *fumigare*, meaning "to smoke" or "to fumigate"

fumigatus blainvillei Kiener, 1845
Named after Henri Marie Ducrotay de Blainville (1777-1850), French zoologist

fumigatus excavatus Sowerby, 1866
From the Latin *excavare*, meaning "to hollow out"

fumigatus henoquei Bernardi, 1800
Named after Henoque (bio ?)

furvus Reeve, 1843
From the Latin, meaning "dark"

furvus aegrotus Reeve, 1849
From the Latin, meaning "sick" or "ill"

furvus albicans Sowerby, 1857
From the Latin, meaning "whitening"

furvus granifer Reeve, 1849
From the Latin *granum*, meaning "grain", hence the "grained" Cone, "fer" (from the verb *ferre* = to carry) means "who carries"

furvus lignarius Reeve, 1843
From the Latin, meaning "carpenter", probably because the appearance of the shell is remindful of the texture of wood (the Latin word *lignum* means "wood")

furvus neobuxeus da Motta, 1991
A new name for *buxeus* (meaning the "box-wood" Cone)

furvus nivalis da Motta, 1985
From the Latin *niveo*, meaning "snow-white" (the word *nivalis* itself also means "of snow", "snowy", "snow-white")

furvus polygrammus Tomlin, 1937
Possibly from the Greek gramma, meaning "sign", "drawing", "letter", hence "with several signs"

furvus turritinus da Motta, 1985
From the Latin *turris*, meaning "tower", referring to the high spire of shells (*turritus* (of which the dimunitive is *turritinus*) means "furnished with towers, towered" and also "towering", "very high, like a tower")

gabelishi da Motta & Ninomiya, 1982
Named after Anthony (Tony) J. Gabelish (b. 1931), an Australian conchologist and shell dealer

gabryae Korn & Röckel, 1992
Named after Gabriella Raybaudi Massilia, Italian malacologist

gadesi Espinosa & Ortea, 2005
Named after the Spanish dancer and choreographer Antonio Gades [Antonio Esteve Ródenas] (1936-2004), who lived in Cuba

garciai da Motta, 1982
Named after Emilio Fabian Garcia (b. 1939), American malacologist, born in Cuba

garywilsoni Lorenz & Morrison, 2004
Named after Gary Wilson, an Australian malacologist

gauguini Richard & Salvat, 1973
Named after Eugène Henri Paul Gauguin (1848-1903), French painter

generalis Linnaeus, 1767
The "general" (military rank) Cone

generalis krabiensis da Motta, 1982
Named after the province of Krabi, Thailand

generalis maldivus Hwass, 1792
Named after the Maldive Islands, in the Indian Ocean

geographus Linnaeus, 1758
From the Greek, meaning "geographer" (from *geo* = earth + *graphe* = drawing or description)

gigasulcatus Moolenbeek, Röckel & Bouchet, 2008
From the Latin *gigas* meaning "very large": a very large member of the so called "*sulcatus*" group

gilvus Reeve, 1849
From the Latin, meaning "cream-coloured" or "brick-coloured"

giorossii Bozzetti, 2005
Named after Gio Rossi, Italian conchologist

gladiator Broderip, 1833
From the Latin, meaning "gladiator" (from *gladius* = sword)

glans Hwass, 1792
From the Latin, meaning "acorn"

glaucus Linnaeus, 1758
From the Latin *glaucus*, meaning "silvery-gray"

glenni Petuch, 1993
Named after Glenn Duffy, shell dealer from the Dominican Republic

glicksteini Petuch, 1987
Named after Marvin R. Glickstein (b. 1932), American conchologist

gloriamaris Chemnitz, 1777
From the Latin, "glory of the seas"

glorioceanus Poppe & Tagaro, 2009
From the Latin, "glory of the oceans"

gondwanensis Röckel & Moolenbeek, 1995
Named after Gondwana (or Gondwanaland), the southernmost of two supercontinents that formed part of the Pangaea supercontinent from approximately 510 to 200 million years ago

gordyi Röckel & Bondarev, 2000
Named after the ship R/V Gordy, from which this cone was dredged

gradatulus Weinkauff, 1875
From the Latin, meaning "small stepped"

gradatus Wood, 1828
From the Latin, meaning "stepped" (referring to the profile of the spire of the shell)

gradatus regularis Sowerby, 1833
From the Latin, meaning "regular"

grangeri Sowerby, 1900
Named after Albert Granger (1838-1911), French conchologist

granulatus Linnaeus, 1758
From the Latin, meaning "with granules", "granulated"

granum Röckel & Fischöder, 1985
From the Latin granum, meaning "grain", referring to the shape of the shell

gratacapii Pilsbry, 1904
Named after Louis Pope Gratacap (1851-1917), American zoologist

grohi Tenorio & Poppe, 2004
Named after Klaus Groh, German zoologist and publisher

gubernator Hwass, 1792
From the Latin, the "governor Cone"

gubernator leehmani da Motta & Röckel, 1979
Named after Elmer G. Leehman, conchologist from Hawai

gubernator veillardi da Motta, 1978
Named after Maurice Veillard, a French conchologist from La Réunion

guidopoppei Raybaudi, 2005
Named after Guido T. Poppe, Belgian conchologist and shell dealer

Portuguese Fossil Cones

Carlos Gonçalves & António Monteiro

Although the Cones living along the Portuguese southern coast are limited to a single species – two at the most, depending on whether one considers *Conus desidiosus* A. Adams, 1854 as a synonym of *C. ventricosus* Gmelin, 1791 or not – the fossil register in the area is much richer.

At the eastern end of the Parque Natural da Ria Formosa, in the Algarve, near the locality of Cacela Velha, is located a 7 to 9 million years old Upper Miocenic fossil bed, which has been known and studied since the 19th century. Specimens from Cacela can be found in several European paleontological museums.

Mouth of Cacela brook

The most important bibliographic reference for Cacela fossil molluscs is undoubtedly Francisco António *Pereira da Costa's Moluscos Fósseis – Gastrópodes dos Depósitos Terciários de Portugal*, with excelent plates by Angélico Castro, left unfinished by the author but later (1866) published by Berkeley Cotter, on behalf of the Comissão Geológica de Portugal; another work worth mentioning is Jacques Bourcart, Georges Zbyszewski and Antoine Chavan's 1940 book *La Faune de Cacela em Algarve.*

Berkeley Cotter's paper *Mollusques Tertiaires du Portugal* (1903/4) indicates no less than 300 different species of

Gastropods and Bivalves found in the Cacela fossil beds, while the recent (2002) *Síntesis Paleontológica del Tortoniense Superior de Cacela*, by J. Civis, J. Pais, J. A. González Delgado, and P.Lagoinha, mentions about 160 species. The name Cacela has been used for no less than five Gastopod species: *Buccinum cacellense*, *Cancellaria caccelensis*, *Conus caccelensis*, *Pleurotoma cacellensis* and *Terebra caccelensis*.

The most abundant species to be found at Cacela belong to the families *Turritellidae* (especially *Mesalia delgadoi* (P. da Costa, 1866) and *Turritella gentili* (Chavan, 1940)), *Naticidae* (especially *Neverita josephinia* (Risso, 1826)) and *Marginellidae* (*Marginella stephaniae* (P. da Costa, 1866)), but Cones are also relatively abundant and are represented by several distinct species.

Mesalia delgadoi

Turritella gentili

Neverita josephinia

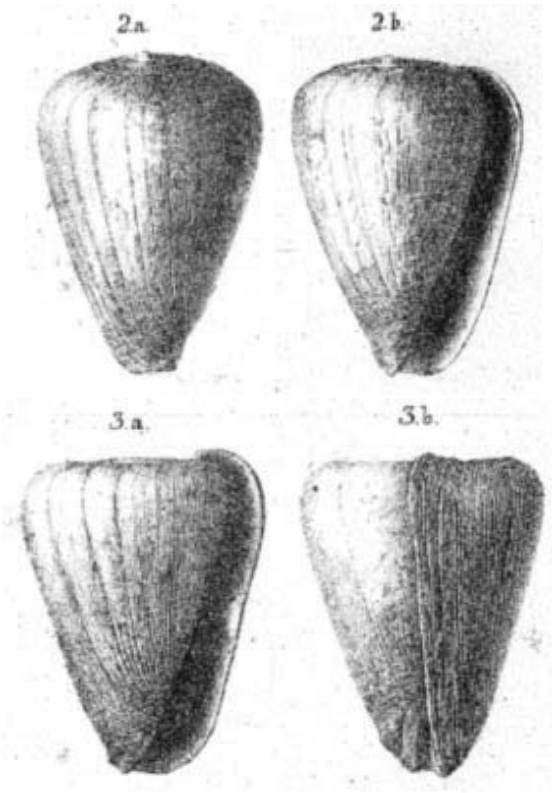
Natica sp.

Pereira da Costa lists no less than 15 species belonging to the family *Conidae*, several of which have been found by the second author, years ago, and more recently by the first author. All specimens illustrated in the present article belong to the collection of Carlos Gonçalves.

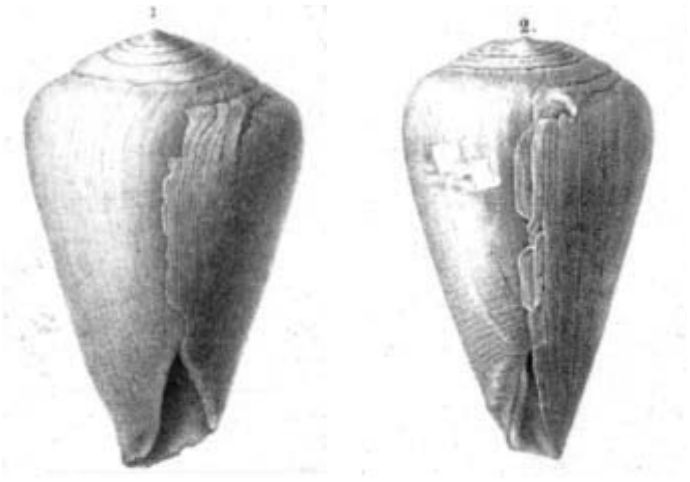
Table 1 – List of *Conidae* species indicated in Pereira da Costa's book

Conus avellana (Lamarck, 1810)	Tab. IV, Fig. 8
Conus berghausi (Michelotti, 1847)	Tab. I, Fig. 2-3, Tav. II, Fig. 3-6
Conus betulinoides (Lamarck, 1810)	Tab. I, Fig. 1, Tab. II, Fig. 1-2
Conus broteri (P. da Costa, 1866)	Tab. IX, Fig. 25-30
Conus cacellensis (P. da Costa, 1866)	Tab. III, Fig. 4-6
Conus clavatus (Lamarck, 1810)	Tab. IV, Fig. 1
Conus dujardini (Deshayes, 1845)	Tab. IX, Fig. 3-17
Conus eschwegi (P. da Costa, 1866)	Tab. IX, Fig. 18-24
Conus mercati (Brocchi, 1814)	Tab. III, Fig. 1-3
Conus sharpeanus (P. da Costa, 1866)	Tav. VII, Fig. 3-4
Conus splendens (Grateloup, 1847)	Tav. VII, Fig. 5-6
Conus puschi (Michelotti, 1847)	Tav. VIII, Fig. 3-7, Tav. IX, Fig. 1-2
Conus subraristriatus (P. da Costa, 1866)	Tab. IV, Fig. 2-7
Conus tarbellianus (Grateloup, 1835)	Tav. V, Fig. 1, Tav. VI, Fig. 1-2
Conus ventricosus (Gmelin, 1791)	Tav. IV, Fig. 9-11

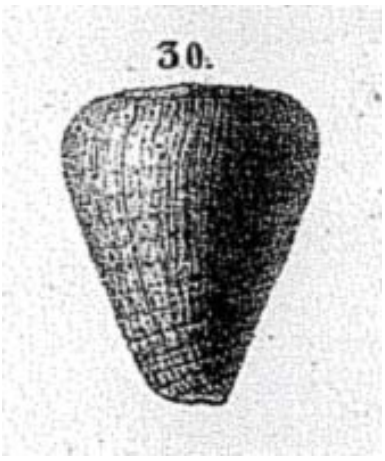
Recent research has enabled the first author to find 12 of these 15 species, which are shown below, together with reproductions of the drawings from Pereira da Costa's plates.



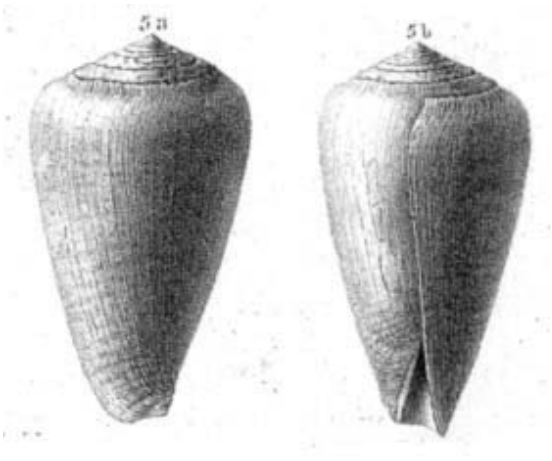
Conus berghausi



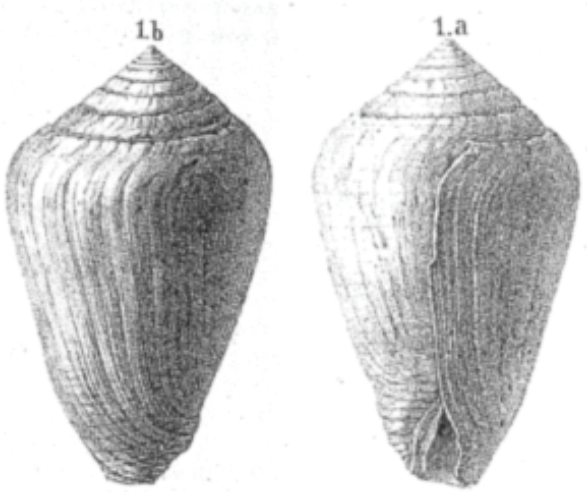
Conus betulinoides



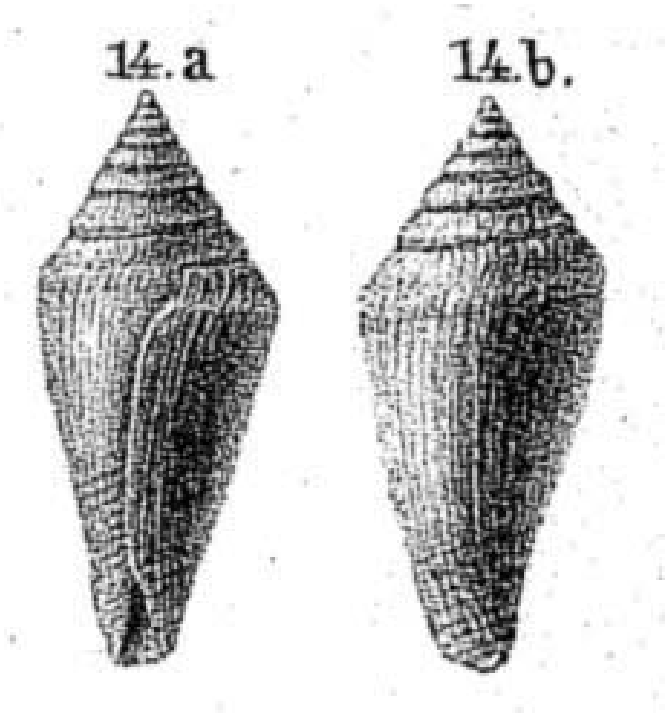
Conus broteri



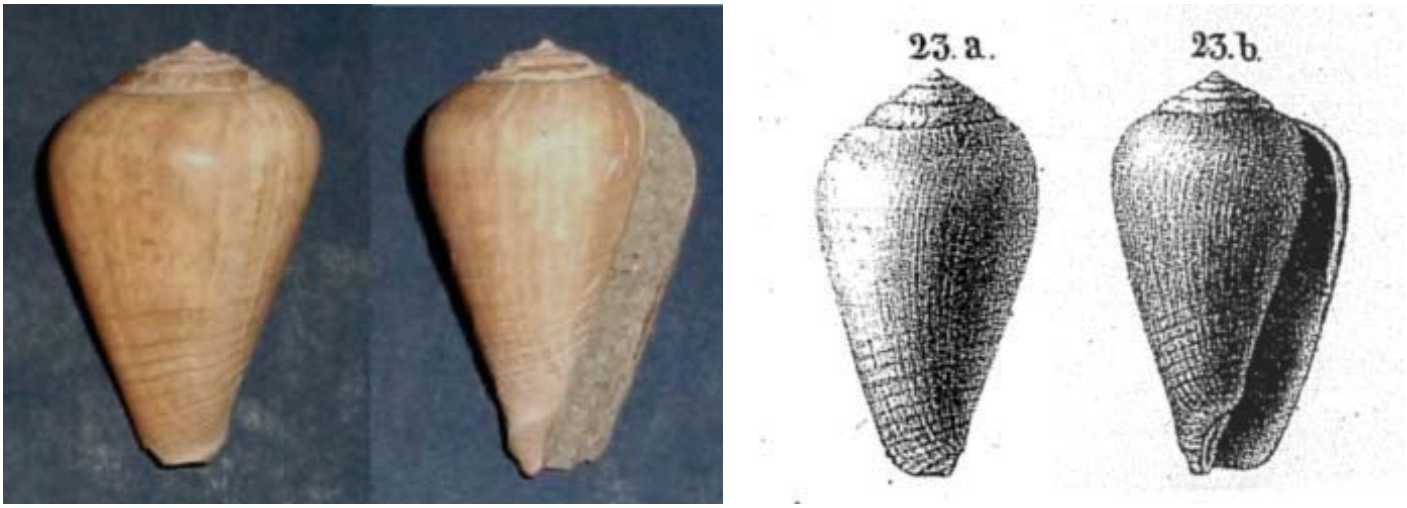
Conus caccelensis



Conus clavatus

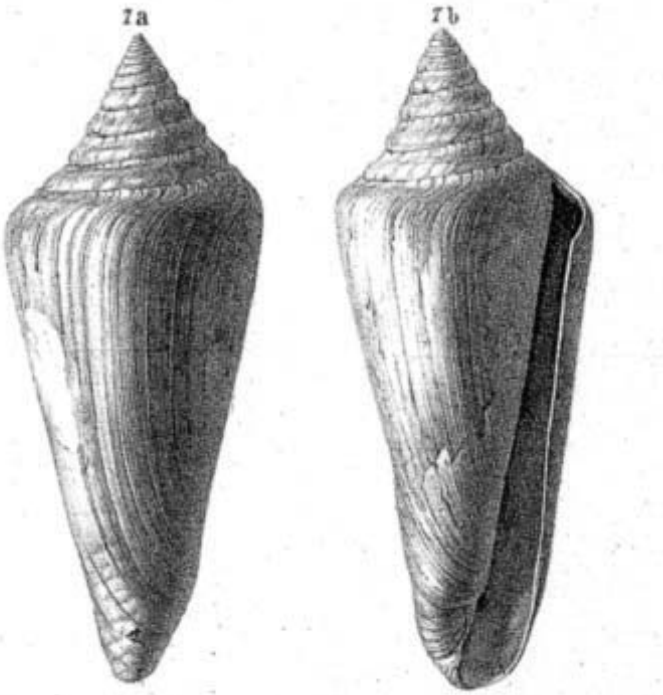


Conus dujardini

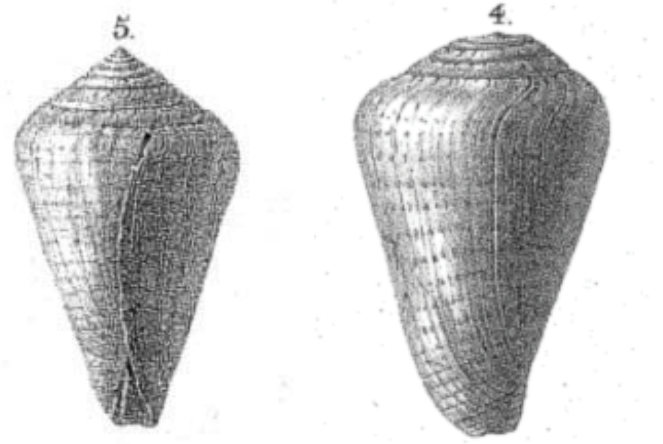


Conus eschwegi

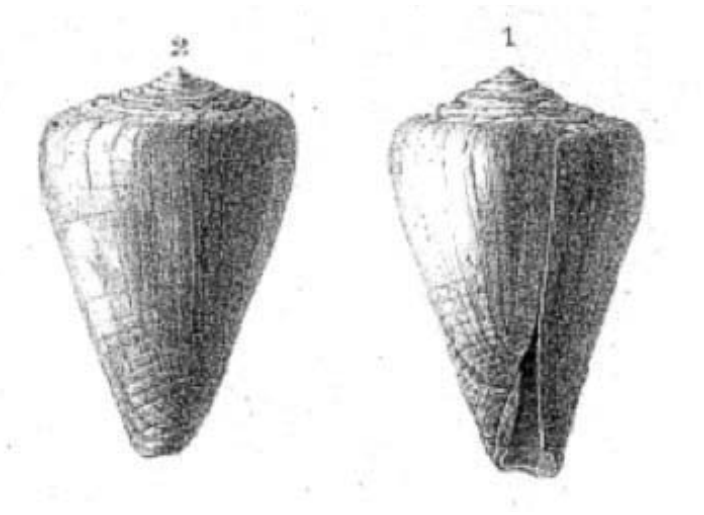
Conus mercati



Conus puschi



Conus subraristriatus



Conus splendens

Conus tarbellianus

Communal Egg Laying in *Conus (Gradiconus) anabathrum* Crosse, 1865

Rick McCarthy

It has become an annual ritual for me to make a shelling pilgrimage to S.W. Florida every winter to take advantage of the extreme low tides. This past December was no exception.

The target species for these trips is *Conus (Gradiconus) anabathrum* Crosse, 1865 and *Conus (Jaspidiconus) stearnsi* Conrad, 1869. This trip yielded an experience that I had not witnessed on previous trips to the same mudflats.

The *Conus anabathrum* were plentiful and I was able to observe several occasions of egg deposition, including some instances of communal egg laying. The Cones typically chose to attach their egg capsules to solid objects that were interspersed throughout the appropriate micro-habitats of the mudflat.

Most commonly the egg capsules were attached to the egg cases of Lightning Whelks *Busycon contrarium* and to the exoskeletons of dead Horseshoe Crabs *Limulus polyphemus*. Typically there would be two or three specimens together depositing their eggs, although there was one egg mass noted with 18 specimens in contact and more individuals within a couple of feet of the mass, presumably on their way to join in the laying frenzy.

I have included photos of the egg laying as well as a photo of a *Conus anabathrum* feeding on a Polychaete worm. The photos were taken on December 24, 2011. This experience just proves that, even though we may be visiting the same spots on a regular basis, there is always the potential for new observations and delightful surprises!

Communal egg deposition by *C. anabathrum*

C. anabathrum attaching egg capsules to whelk egg case

C. anabathrum feeding on Polychaete worm.

C. anabathrum attaching egg capsules to horseshoe crab exoskeleton
(note half buried *Melongena corona* in top left of photo)

The Yeppoon Shell Club

Jon F. Singleton

The town of Yeppoon is on the central Queensland coast, just over 600 kms north of Brisbane. It was back in 1960 that a group of shell collectors got together and had informal social meetings on their hobby, and which eventually led to the formation of an official Shell Club, which eventually grew into being the premier shell club within Australia. After a few years, the Club invested in an old elongated shed on the outskirts of town which became their headquarters.

Some 40 years on and the Club-house now surrounded by development, the old hall was sold, and a new headquarters was erected alongside the local tourist office.

The new club-house was named "Shellworld" and one large room was turned into a Shell Museum which is open all year round, with free admission. However, a strategically placed collection box near the exit is well patronized by visitors, and most proceeds go to sponsoring marine science students.

All the major families are displayed at waist height, with drawers below holding spares for exchange, and other minor families. The walls contain a mass of odd marine curios, and a niche by the entrance a small stall with oddments for sale.

The photograph shows Ena Coucum, a foundation member, and whose own collection forms a large part of the displays. As well as her hours of duty at Shellworld, Ena remains active in all aspects of the Shell Club, nad has been the juniors instructor for many years.

New Publications / New Taxa

António Monteiro

As always, I thank the authors for the photos illustrating this information.

1) Filmer, R. M. (Mike), Taxonomic Review of the *Conus spectrum*, *Conus stramineus* and *Conus collisus* Complexes (*Gastropoda – Conidae*) – Part II: The *Conus stramineus* Complex, *Visaya* Vol. 3 No. 4, November 2011 (p. 4-41, pl. 30-54)

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The second part of this three-part article deals with the *Conus stramineus* group and the following taxa are examined: *C. fulmineus* Gmelin, 1791, *C. fulgurans* Hwass in Bruguière, 1792, *C. novemstriatus* (Röding, 1798), *C. stramineus* Lamarck, 1810, *C. zebra*, Lamarck, 1810, *C. alveolus* Sowerby I & II, 1833, *C. scalptus* Reeve, 1843, *C. subulatus* Kiener, 1845, *C. nisus* Sowerby II, 1858, *C. blanfordianus* Crosse, 1867, *C. fuscomaculatus* E. A. Smith, 1877, *C. mulderi* Fulton, 1936, *C. sertacinctus* Röckel, 1986, *C. nahoniaraensis* da Motta, 1986, *C. zapatosensis* Röckel, 1987, and *C. solomonensis* Delsaerdt, 1992.

A new species is described as *Conus moolenbeeki*:

Type locality: West coast of Negros Island, Philippines.

Holotype: 32.80 × 14.20 mm (Zoologische Museum, Universiteit van Amsterdam, the Netherlands).

Etymology: Named after Robert G. Moolenbeek, a well known researcher of the Zoologische Museum, Universiteit van Amsterdam, the Netherlands.

In the same article, a lectotype is designated for *C. blanfordianus* Crosse, 1867, type localities are designated for *C. scalptus* Reeve, 1843 and *C. blanfordianus* Crosse, 1867, and the type locality is corrected for *C. nisus* Sowerby II, 1858 (*C. amplus* Röckel & Korn, 1992).

2) Petuch, Edward J. & Sargent, Dennis M., A New Member of the *Gradiconus* Species Complex (*Gastropoda: Conidae*) of the Florida Keys, *Visaya* Vol. 3 No. 4, November 2011 (p. 98-101, pl. 1-3)

This paper describes the new subspecies *Gradiconus burryae mazzolii*:

The Cone From the Solomons

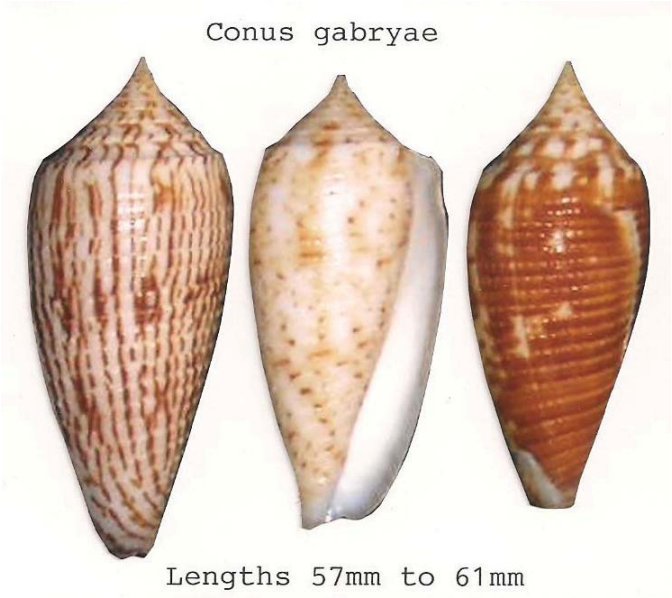
Jon F. Singleton

In the mid 1970s, a Solomon Islands based salvage diver, Brian Bailey, dredged many fine shells from off Russell Island, which is north-west of Guadalcanal. These specimens were eventually marketed as *Conus duplicatus* Sowerby I, 1823, mainly by U.S. dealers. These cones proved to be a variable species in colour and pattern, ranging from all white to all brown. The supply of these cones was to be short, as no doubt the salvage business took the discoverer elsewhere in the Solomons. It would appear this species may well be endemic to the region, all being trawled at a depth of 100 metres, and to the best of my knowledge none have surfaced over the last 30 years.

The first illustration of these cones appeared within the old *Hawaiian Shells* magazine in 1978, where three specimens were shown as variations of *C. armadillo* Shikama, 1971. This was followed by the Walls *Cone Shells* book which illustrated *C. duplicatus* as a full separate species. It is shown on page 269, but as most cone collectors know today, there are actually three species shown on this page, *C. armadillo* Shikama, 1971, *C. kuroharai* Have, 1965 and *C. duplicatus*.

A description of *C. armadillo gabryae* L. Raybaudi, 1989 appeared with an issue of the *Connoisseur of Seashells*. This paper was well illustrated showing the holotype, which was the commonest form, along with five colour and pattern varieties. The holotype size 62.5 × 25 mm was deposited within the MHNG. Many authors believed the magazine to be primarily a sales catalogue, and not a suitable publication for naming new species, under the ICZN Code. However I am unsure if any official decision on this was made by the ICZN.

This Solomons cone was subsequently named *Conus gabryae* Korn & Röckel, 1992, the authors considering it to be a full separate species from *C. armadillo*. The holotype size 62.7 × 26.2 mm is within the SMNS. It was pleasing to see the authors retention of the "*gabryae*" name.



Most of the younger cone collectors will be unlikely to see this cone available, unless it is from an old collection broken up for sale. Today very few shells of any species reach the market from the Solomons, following racial disturbances and riots which broke out some years ago, and tourism naturally declined.

References

1978. E. Leehman, "Three of a kind, and rare", *H.S.N.* August 1978

1989. L. Raybaudi, "Description of *C. armadillo gabryae*", *Connoisseur of Seashells*

1992. W. Korn & D. Röckel, "Description of *C. gabryae*"

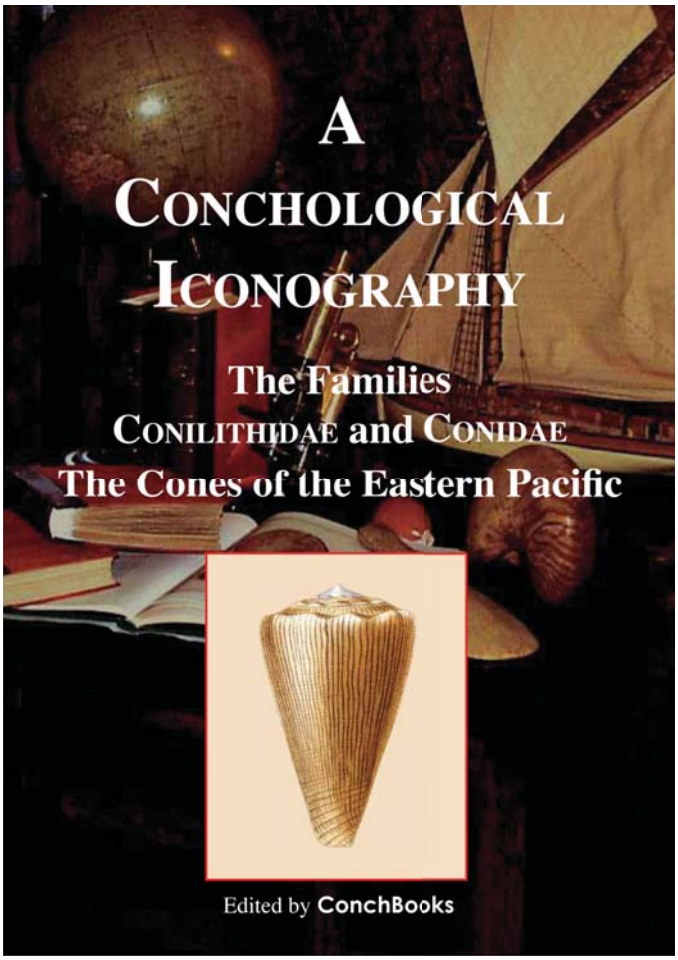
Type locality: Northern end of Little Torch Key, Little Torch-Big Pine Channel, lower Florida Keys.

Holotype: 16.7 × 7 mm (Los Angeles County Museum of Natural History, California).

Etymology: Named after Nicolas E. Mazzoli, of Pine Island, Florida and Florida Atlantic University, who collected the holotype.

The authors have sent the additional information that "after much discussion with other cone experts", they have elevated *mazzolii* to a full species in their recent book. So, it should now be referred to as *Gradiconus mazzolii* Petuch & Sargent, 2011.

3) Tenorio, Manuel J., Tucker, John K. & Chaney, Henry W., *The Families Conilithidae and Conidae – the Cones of the Eastern Pacific, in A Conchological Iconography*, Ed. ConchBooks, Germany, 2012. Price: € 72.00.



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The prestigious series *A Conchological Iconography*, directed by Guido Poppe and Klaus Groh, has already published three parts on Cones: first, in 2004, there was a section dealing with the species from the Mediterranean and East Atlantic; in 2008 appeared the section on the South African species; now we have this new part dealing with the Eastern Pacific fauna.

The present work is up to the high standards established in this series and of course it follows the general layout of the previous parts. It has a total of 112 pages that include, after some general considerations, a full treatment of the species present in the area under study, and also a study of the radular teeth of the several species and a study of the morphometry of the species included in the genus *Gradiconus*. There follow 88 colour plates – numbered from 225 to 312, following the numbering of the previous parts of the Iconography dealing with Cones. In all, 44 species are included, four of them described as new. The plates also include several photos of living specimens.

There is little need to underline the great importance of this new publication for all those – researchers and collectors alike – with an interest in Cone shells. The authors are well known of us all and in themselves guarantee the high quality of the work.

The new species described in this publication are as follows:

a) *Dauciconus kaiserae* sp. nov.

Type locality: N. E. of Isla Manuelita, Isla del Coco, Costa Rica.

Holotype: 21.0 × 9.6 mm (Santa Barbara Museum of Natural History, California).

Etymology: Named after Kirstie L. Kaiser, of Puerto Vallarta, Mexico, who has studied the malacofauna of the region.

b) *Dauciconus shaskyi* sp. nov.

Type locality: N. E. of Isla Manuelita, Isla del Coco, Costa Rica.

Holotype: 34.75 × 16.7 mm (Santa Barbara Museum of Natural History, California).

Etymology: Named after the late Dr. Donald Robert Shasky, MD (1925-2002), a dedicated collector of eastern Pacific mollusks.

c) *Gradiconus nybbakeni* sp. nov.

Type locality: Bahía Los Frailes, Baja California Sur, Mexico.

Holotype: 26.4 × 9.8 mm (Santa Barbara Museum of Natural History, California).

Etymology: Named after the late Dr. James Willard Nibbaken (1936-2009), Professor of Biology, founder of the Moss Landing Marine Laboratories, and particularly interested in the study of eastern Pacific Cones.

d) *Gradiconus skoglundae* sp. nov.

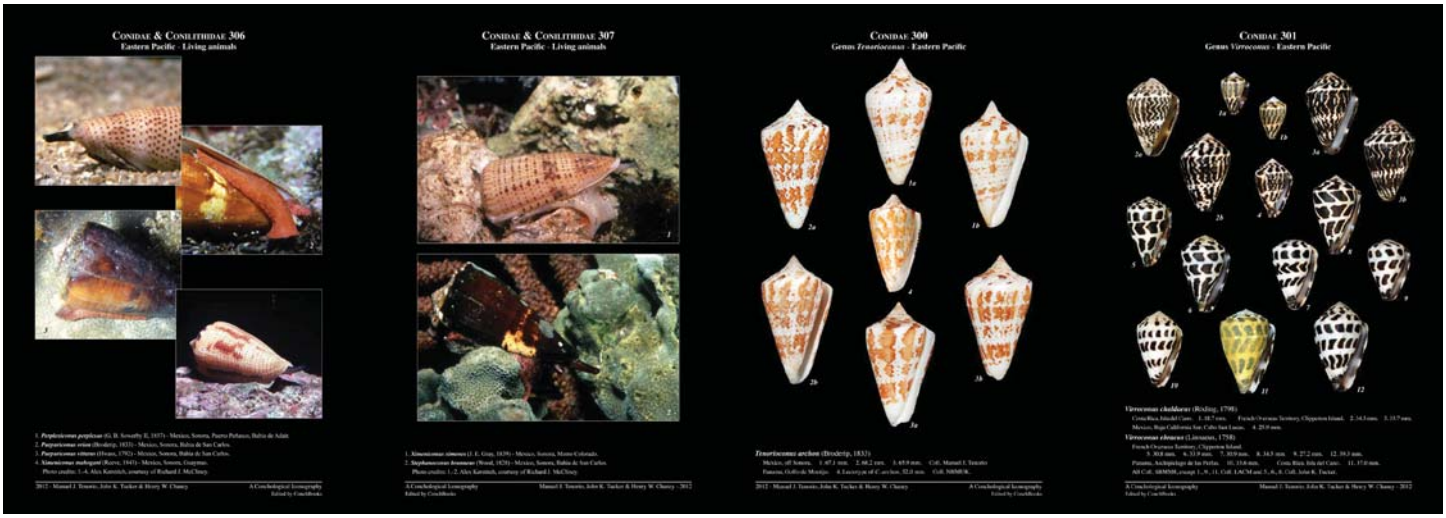
Type locality: Bahía Los Frailes, Baja California Sur, Mexico.

Holotype: 24.9 × 10.4 mm (Santa Barbara Museum of Natural History, California).

Etymology: Named after Carol Skoglund, an American conchologist and shell dealer.

Besides the descriptions of these new species, the present publication also designates a neotype for *Gradiconus gradatus* (Wood, 1828) (33.8 × 14.5 mm, Santa Barbara Museum of Natural History, California).

(e) *Gradiconus gradatus*



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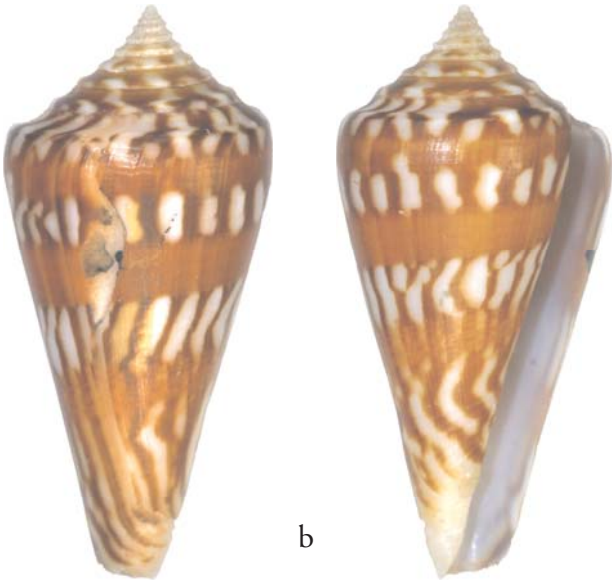

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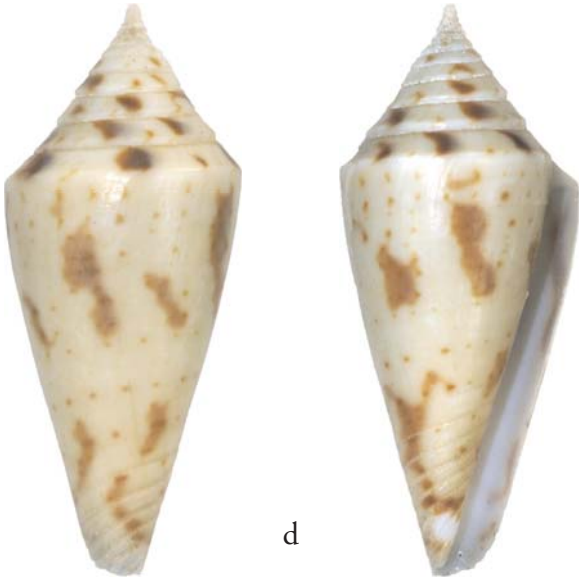


d

e

4) Bozzetti, Luigi, Two new species of *Conidae* (*Gastropoda: Prosobranchia*) from Southern and South-Western Madagascar. *Malacologia* # 74, February 2012 (p. 4-6)

The following new taxa are described:

a) *Asprella madecassina* sp. nov.

Type locality: Lavanono, Southern Madagascar.

Holotype: 32.63 × 18.38 mm (Muséum National d'Histoire Naturelle, Paris).

Etymology: Named after its geographical origin.

b) *Rolaniconus gilberti* sp. nov.

Type locality: Lavanono, Southern Madagascar.

Holotype: 30.51 × 20.32 mm (Muséum National d'Histoire Naturelle, Paris).

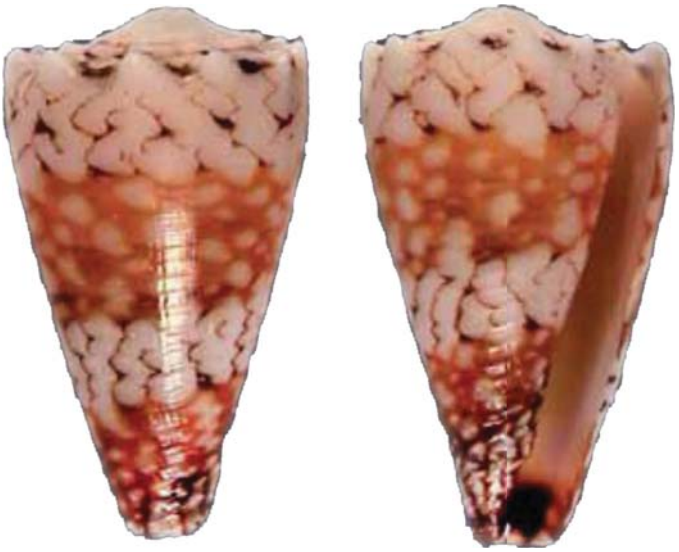
Etymology: Named after the late Gilbert Ernest Philippe Rakotomanga, from Antananarivo, Madagascar.

5) *Acta Conchyliorum* # 11, April 2012 is an all-Cones issue, and includes the following papers:

(i) Lorenz, F. & Barbier, J.-P., Two new Cones from the Philippines (*Gastropoda : Conidae*)
(p. 3-10, pl. 1-4)

The following new taxa are described:

a) *Conus vidua cuyoensis* subsp. nov.



Type locality: Cuyo Islands, Philippines.

Holotype: 29.3 mm (Muséum National d'Histoire Naturelle, Paris).

Etymology: Named after its type locality.

b) *Protoconus hanshassi* sp. nov.

Type locality: Siargao, Philippines.

Holotype: 23 mm (Muséum National d'Histoire Naturelle, Paris).

Etymology: Named after Hans Hass.

(ii) Fenzan, W. J., A new species of *Conus* from South Africa (*Gastropoda: Conidae*)
(p. 11-13, pl. 1-2)

The following new taxon is described:

Conus felix sp. nov.

Type locality: Off Umkomaas, Mkomazi River mouth, Kwa-Zulu Natal, South Africa.

Holotype: 28.2 × 15.2 mm (Muséum National d'Histoire Naturelle, Paris).

Etymology: Named after Felix Lorenz.

(iii) Monnier, E. & Limpalaër, L., *Conasprella lorenzi* (*Gastropoda, Conidae*), a new species of cone from the Republic of South Africa
(p. 17-22, table 1, pl. 1-3)

The following taxon is described:

Conasprella lorenzi sp. nov.

Type locality: Lavanono, Southern Madagascar.

Holotype: 27.5 mm (Muséum National d'Histoire Naturelle, Paris).

Etymology: Named after Felix Lorenz.

(iv) Monnier, E., Limpalaër, L. & Lorenz, F., *Phasmoconus niederhoeferi* (*Gastropoda, Conidae*), a new species of cone from the East China Sea and notes on the *Ph. moluccensis* (Küster, 1838) and *Ph. proximus* (Sowerby II, 1860) complexes.
(p. 27-, pl. 1-2)

Phasmoconus niederhoeferi sp. nov.

Type locality: East China Sea, in the region of Taizhou, province of Zhejiang, China.

Holotype: 35.0 mm (Staatliches Museum für Naturkunde Stuttgart).

Etymology: Named after Hans-Jörg Niderhöfer.

(v) Filmer, M., Monteiro, A., Lorenz, F. & Verdasca A., A new species of Conus from the Philippines
(p. 37-40, pl. 1-3)

The following new taxon is described:

Conus kostini sp. nov.

Type locality: Balut Island off Davao in Mindanao Province, Southern Philippines.

Holotype: 97.80 × 45.30 mm (Muséum National d'Histoire Naturelle, Paris).

Etymology: Named after the late Andrey Kostin, Russian shell collector.

Etymology: Named after Jacques Colomb, French shell collector.

(vi) Monteiro, A. & Groh, Klaus, Report on the 1st International Cone Meeting in Stuttgart, 1st to 3rd of October 2010

6) *Visaya* Vol. 3, No. 5, March 2012 includes the following papers:

(i) Monnier, E. & Limpalaër, L., *Dauciconus colombi* (*Gastropoda: Conidae*) a new species of *Conus* from Martinique
(p. 15-17, pl. 1-2)

The following taxon is described:

Dauciconus colombi sp. nov.

Type locality: Le Vauclin Bay, East Coast of Martinique.

Holotype: 19.31 × 10.67 mm (Muséum National d'Histoire Naturelle, Paris).

(ii) Limpalaër, L. & Monnier, E., *Phasmoconus alexandrei* (*Gastropoda: Conidae*), a new species of Conus from the Western Pacific
(p. 21-25, pl. 1-2)

The following taxon is described:

Phasmoconus alexandrei sp. nov.

Type locality: Aliguay Island, North of Mindanao, Philippines.

Holotype: 34.38 × 17.7 mm (Muséum National d'Histoire Naturelle, Paris).

Etymology: Named after the late son of the first author.

(iii) Monnier, E. & Limpalaër, L., *Phasmoconus goudeyi* (*Gastropoda: Conidae*), a New Species of *Conus* from New Caledonia
(p. 41-44, pl. 1-2)

The following taxon is described:

Phasmoconus goudeyi sp. nov.

Type locality: Bourail, West coast of New Caledonia.

Holotype: 41.03 × 19.38 mm (Muséum National d'Histoire Naturelle, Paris).

Etymology: Named after the late Bernard Goudey, a Cone collector.

(iv) Poppe, G. T. & Tagaro, S. P., New *Conidae* from the Central Philippines
(p. 47-51, pl. 1-5)

The following taxa are described:

a) *Cylindris scottjordani* sp. nov.

Type locality: Cuyo Islands, Philippines.

Holotype: 68.7 × 31.3 mm (Staatliches Museum für Naturkunde Stuttgart).

Etymology: Named after Scott Jordan, diver, naturalist and bibliophile.

b) *Phasmoconus sogodensis* sp. nov.

Type locality: Cebu, off Sogod, Philippines.

Holotype: 52 × 21.5 mm (Coll. Conchology Inc., to be given to a Philippine Institution).

Etymology: Named after the type locality, a town on the east coast of Cebu Island.

7) Lorenz, Felix. A new species of *Rolaniconus* from the western Indian Ocean (*Gastropoda: Conidae*), in *Schriften zur Malakozoologie*, # 26 (2011)

The following taxon is described:

Rolaniconus lecourtorum sp. nov.

Type locality: Cargados Carajos Shoal, North Mauritius Island.

Etymology: Named after the Le Court family of Mauritius.

Rolaniconus lecourtorum. The specimens shown are not type material but are typical of the newly described taxon (largest shell 15 mm)

As always, I thank the authors of the different papers listed and the editors of the publications where they were included for their invaluable help in supplying texts and photos and authorization for their reproduction here.

A Complex Complex!

Edward J. Petuch

As we informed in our latest issue, Ed Petuch and Dennis Sergent recently published the descriptions of a number of different new species, including two from the Philippines, *Virgiconus tethys* Petuch & Sargent, 2011, and *Calamiconus jeffreyi* Petuch & Sargent, 2011.

I have recently asked the first author to elaborate on the differences between these two new taxa and the lookalike (or relatively lookalike…) *Calamiconus quercinus* (Lightfoot, 1786). Ed was kind enough to send in an extensive comment which I am sure will be helpful to everyone. So, here is what Ed has to say:

> After looking at "*quercinus*" from all over the world for years now, it definitely represents a complex of several closely-related species.
>
> Classical *quercinus* lives in shallow open sand areas in intertidal depths and is a turbinate, broad-shouldered species usually colored a deep yellow-orange and covered with closely-packed fine brown lines; some individuals can lack these lines, being simply a dark yellow shell or can be partially lined.
>
> *C. quercinus* is centered mostly in the south western Pacific and extends across into the Indian Ocean. The giant pale yellow or white shell from deep water (100 m) off Queensland and northern New South Wales, that completely lacks lines, is *albonerosa* of Garrard; it has a thick, black periostracum and it is definitely a distinct endemic eastern Australian species. The small, shiny white shell with 2 pale yellow bands and no lines from the Red Sea is *albus* of Shaw – since the name is preoccupied, it will need a new name; this is also a valid endemic coral reef-dwelling species and differs from typical quercinus in being a more slender, biconic shell with a higher spire
>
> There is also an unnamed large pale species, also from deeper water off Madagascar and southeastern Africa, which resembles the Australian *albonerosa* but has a flatter spire and is broader across the shoulder; some specimens will have a few scattered lines occasionally.
>
> There seems to be a species radiation of *quercinus*-type cones going on in the Philippines, with at least 3 species occurring there. *C. jeffreyi* is the Philippine cognate of the cooler water northeastern Australian *albonerosa*; it lives in deeper water (down to 45 m) and is a larger, more elongated shell with a proportionally higher spire and is usually a pale yellow-white or white with a thick black periostracum like *albonerosa*.
>
> Most specimens that I have seen lack any lines but Doug Jeffrey has some specimens that are smaller, darker orange-tan in color and have a few scattered dark brown lines (proportionally thicker than typical *quercinus* lines); these specimens, all from islands off western Palawan in the South China Sea, are also smaller than *jeffreyi* and are much broader across the shoulder. These strange cones live on living coral on deep reefs and may represent a new, unnamed species.
>
> *V. tethys* is very distinctive: it is always a deep canary yellow or pale yellow-white and is much more elongated, narrower, and more stretched-out than *quercinus* or *jeffreyi*, being shaped like *virgo* (at first glance it looks like a *virgo* with no purple tip); *tethys* also never has lines, but is always a uniform yellow (like *virgo*; which is why I put it in *Virgiconus*; but it may be a *Calamiconus*). Most importantly, the spire of *tethys* is distinctly domed, with a low rounded shape resembling the spire of *terebra*; the spire whorls are not slightly concave in profile as in *quercinus*, *albonerosa*, *albus*, or *jeffreyi*, but

are convex; the spire of *tethys* is also colored dark yellow like the body whorl and has a characteristic thin white band around the edge of the shoulder, separating the yellow spire from the yellow body whorl – a distinctive feature in *tethys*.

V. tethys live in deep water (down to 100 m) and has only been taken by fisherman in the northern Sulu Sea near southeastern Palawan. It apparently lives on deep coral rubble and shell hash sea floors (judging from the other shells collected with it).

So, there is much more to "*Conus quercinus*" than meets the eye! I bet that a more in-depth study of these plain yellow cones will show that there are several other unnamed and unrecognized species in this group, particularly in the deeper water areas around Madagascar and the central Indian Ocean islands. I was probably a bit premature in naming these two species, but it may cause people to start looking more closely at their collections of "*quercinus*"!

I really like *tethys*; the elongated, slender shape is elegant and the weird low domed spire and white shoulder band is certainly distinctive.

Hope this helps a bit…

Upon receiving these comments, I replied that probably some DNA analysis will be required to separate different *quercinus*-lookalikes and Ed then added the following:

> You are absolutely correct! DNA and isoenzyme work will definitely show that there is more than just one wide-ranging species. By the way, please feel free to publish my comments or share them with other cone lovers. It would be a good way to start a discussion of this neglected group. There are just too many differences in ecology, bathymetry, and biogeography for it to be a single variable species (if that were true, *quercinus* would be the only cone to do that, which is unlikely). What I am proposing is really an hypothesis that, hopefully, will generate interest.

And so it does, Ed! So it does!

Voyage to the Seychelles

David Touitou

Introduction

I wish to thank Alan Jarrett (MARINE SHELLS OF THE SEYCHELLES, Carole Green Publishing, 2000), for having shared is knowledge of the Mahé bays.

List of CONE species that I had been unable to find in the Seychelles before this trip:

List taken from Alan Jarrett's book:
Conus betulinus – *Conus quercinus* – *Conus figulinus* – *Conus bullatus* – *Conus crocatus* (with photo in the book) – *Conus ammiralis* (with photo in the book) – *Conus abbas* – *Conus keatii* = *Conus inscriptus f. adenensis* (with photo in RKK) – *Conus pertusus* – *Conus auricomus* – *Conus obscurus* – *Conus mitratus* – *Conus zonatus* (mentioned in HSN, December 1969) – *Conus cylindraceus* – *Conus circumactus*

Addendum after some research:

Conus barthelemyi (R.K.K. + message from the late M. Rawlingson Plant, found on CONCHNET, presence to be confirmed)

Conus balteatus (R.K.K with photo, page XX).

Conus aureus paulucciae: found up north (Maldives) and down south (Comores & Réunion).

I should stress that there is no trace of eventual searches for Cones in the Seychelles below 30-40 m. The slopes bordering the Seychelles plateau have remained free from any collecting. It is quite possible that species such as *Conus molluccensis* (to mention only the most classical one) can be found there. In the past, dredging has brought up *Conus keatii* (*Conus inscriptus f. adenensis*), but from which depths?

Angelfish

Friday, 20 April

We arrive at Mahé with Air Emirates. My parents who were already at Praslin, bid us welcome as we step down from the plane, take our two children and go to their peaceful haven. Nicole and I go along the coast towards south, where we have rented a bungalow for a few days. The Chalets d'Anse Forban are located between Anse Forban et Anse Marie-Louise.

Facing the bungalows there is a small lagoon, which I had already spotted thanks to Google Earth and that seemed auspicious for Cone hunting, because it was full of algae. Besides, the Anse Marie-Louise pass had kept me dreaming for a long time! As a matter of fact, that small gap in the reef is the only spot in the Seychelles known to harbor the very rare *Conus zonatus*. In his book, Alan Jarrett mentions it and a second clue is found in an article published in December 1969 by George D. Ballentine in *Hawaiian Shell News* (HSN). In this short but very precise article. Mr. Ballentine mentions that pass, where he collected a lone living specimen himself. He goes on to tell that he found it in a sandy spot where *Conus imperialis* and *C. distans* were also found, and he warns that the pass may be dangerous because of the pervading strong sea current.

My outing on this first day takes place in front of our lodgings. I do not care to go wading in the pass, thinking to myself that freshly out of the plane it would probably be unwise to fight a strong current… First observation: the lagoon presents no interest whatsoever. We can find some common cowries like *Cypraea helvola, Cyp. annulus, Cyp. moneta, Cyp. caurica* and *Cyp. histrio*, but when it came to Cones… nothing to write home about.

The habitat would be right for *C. namocanus* and *C. capitaneus*, but apart from a few *C. coronatus*… absolutely nothing!

I try to reach the top of the reef, but the waves are too strong and there is not enough water. So, I slowly glide towards the famous pass. In front of it there is a detritus area. I search a bit among the fragments of

C. distans

dead coral, but no periostracum is to be seen.

The current pulls me steadily towards the pass and, temptation proving too strong, I go in, zigzagging along that ardently dreamed of pass. The current is indeed tough and every once in a while I turn back to test my capacity to swim against it, as I drift out to sea.

The pass does not resemble the mental image I had construed of it. I think of the article in HSN and from the surface I scan the sand pockets. Soon I spot a shape but, diving for it, I see it is a *C. distans*. A little farther ahead I find a dead *C. imperialis*. Everything is according to Mr. Ballentine's description. Unbelievably, towards the right hand side, I swim over dozens of *C. distans* of all kinds of sizes; a little farther ahead, two big, even monstrous, *C. bandanus* are facing each other. I see a third specimen, smaller, but much prettier. I must confess that I have never had any preference for large Cones.

I also spot a large *C. vexillum* and the entire area is teeming with hundreds of dead shells, mostly *C. distans, C. lividus* and *C. rattus*. What truly amazes me is the size of the Cones! They are all huge. The dead specimens of *C. rattus* are twice as big as those I am used to find ! After 35 minutes, I decide to go call it a day.

On my way back I spot a dead *C. geographus*, a huge dead *C. arenatus*, also large *C. flavidus* among the algae and to wrap it up a stunning *Lambis crocata* with an unusually intense orange aperture!

Saturday, 21 April

I leave early and alone to visit the Anse aux Poules Bleues. There is a low tide and I have to walk through the algae layers to reach a certain depth. When he lived at Mahé, Alan Jarrett found there the rare *C. omaria*, in very shallow water. How could I resist? I begin on the top of the reef. Cowries are legion there: *Cyp. tigris, Cyp. histrio, Cyp. helvola, Cyp. caurica, Cyp. clandestina, Cyp. isabella*. Then I start exploring the slope, since

C. frigidus

Alan told me I should look between 3 and 4 metres deep. After one hour, no luck at all: not a single *C. omaria*. What's more, no Cone whatsoever! I come back to the higher portion of the reef on my way home and pass by normally sized and coloured *C. catus*, as well as *C. frigidus*, a rather uncommon species that we had not found in Mayotte.

Having rejoined Nicole, we both went snorkeling in the lagoon of the Anse Forban. I ended up finding a large *C. canonicus*, then a smaller second specimen. An interesting species at last! Farther away I found several *C. coronatus*, as well as a completely encrusted *C. nanus*. We also went into the pass, but besides the many *C. distans*, nothing worth mentioning. The current was stronger than it was the day before, so we came back. It was then that I found a pretty *C. moreleti*, which I observed quietly. Watching the living animal, I do realize that it is vastly different from that of *C. lividus*: whereas the animal of *C. lividus* is a very dark violet (almost black), with a similarly coloured siphon, that of *C. moreleti* is lighter (Orangish) but above all there is an orange band at the tip of the siphon, then a black band and then a white one, which makes it readily identifiable. In the past I had never noticed that, but from now on that observation will allow me to tell them apart easily even when they are heavily encrusted. Near the shore I find my first living giant *C. rattus*, resting upside down on sand and totally encrusted.

Rereading the December 1969 HSN article (for the nth time…) I see that the author collected his *C. zonatus* in February. That is obviously not good news. As a matter of fact, February and March are known to be important spawning months for our beloved Cones. During that period, several species come closer to shore. This information is given by Alan Jarrett in his book and I was able to confirm it myself, in general terms, in February 2007. It was particular flagrant for two interesting and uncommon species: *C. gubernator f. leehmani* and *C. aulicus.* By the end of April, who knows if *C. zonatus* has returned to its normal biotope?

Sunday, 22 April

C. leopardus

We leave for the Port Launay bay. I have spotted that cove through Google and it seems fit for prospection. I also hope to be able to revisit a spot indicated by Alan in the area of the Anse à la Mouche. It will be best to do it in the morning, because the tide will rise in the afternoon, rendering most spots now accessible from the shore rather impracticable.

We arrive soon (8:50 am). The sky is cloudy and so is the water, contributing to a glaucous overall ambiance. Wrong tip: there is nothing there. Beautiful corals, fishes, one stressed octopus, but no shells, except for just a few cowries. I try to look into the algae agglomerations in the middle of the bay, but only a huge *C. leopardus* is to be found.

We decide to regain our lodgings. As we pass Port Glaud, we find a small low tide lagoon that entices us! We turn round, get our gear and soon are prospecting once again! The water is 80 cm deep at most and we walk a bit to get to a deeper zone when all of a sudden I feel a pain in my foot; as I lift it, I see the point of a *Terebra* sticking up… Some luck! I should have listened to Nicole, who had chosen to wear her footwear…

At last we arrive at the "bathing" zone. We swim slowly amongst the algae, along the sand tracks. The water there is clear and here and there a small piece of dead coral is waiting to be turned over, which is quite nice! I see a large dead Cone resting on the bottom, shaped like a *C. striatus*. As I get nearer, I am amazed to realize that it is not *C. striatus* at all, but indeed a huge *C. gubernator*! I certainly was not expecting that in such shallow water. The Cone is in very good shape, with a superb pattern, but is has been attacked by limpets, a collector's plague: the spire has been assaulted by 6 or 8 of those creatures, although fortunately the only one resting on the dorsum of the shell did not mess it up.

After such a find, the troops are motivated and we examine the entire zone quite thoroughly! We see other Cones: *C. virgo, C. lividus, C. arenatus, C. flavidus* and to wrap it up a small *C. striatus*, a species that is not common in the Seychelles, where it usually cohabits

C. gubernator

Juvenile fish

with *C. gubernator*. That meant we were at the right place. On our way back, we see *Cyp. carneola*.

After eating, I go snorkeling alone in the Anse à la Mouche, since in the past Alan found *C. pennaceus* there, together with *C. episcopatus* and *C. bandanus*. Once the car is parked, I walk for 25 minutes along the shore before I reach the reef. The water is cloudy, because the tide is rising and the waves are quite strong. Once at the reef, the water's turbidity lessens and I can start to get busy. I do not have much time, because I promised I would go back early. The place looks nice, but in the end, except for a few common shells (*Cyp. caputserpentis, Cyp. histrio, C. coronatus, C. lividus*) and a beautiful *C. canonicus*, I could find nothing out of the ordinary.

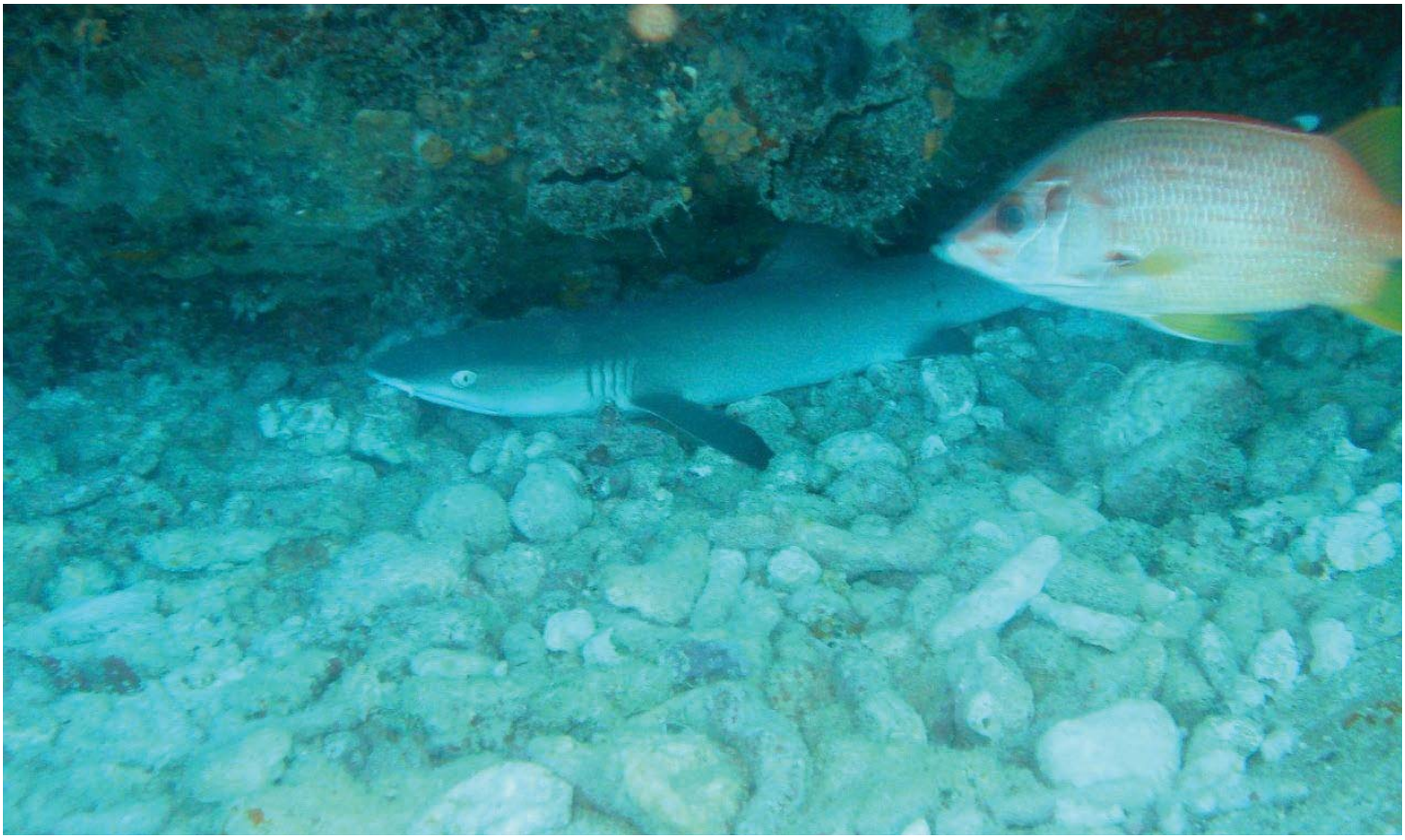
Once back in the Anse Forban, fourth immersion of the day in front of our lodgings at high tide. More wandering about than research. We find a *C. geographus* cut in two and a large *C. rattus*, as well as *Cyp. vitellus*.

Monday, 23 April

We for some snorkeling in the same small lagoon as yesterday. A charming spot indeed! For about one hour and a half we search the area again. Nicole finds essentially *C. arenatus*, whereas I see *C. virgo, C. lividus*, and two *C. striatus*, but no *C. gubernator* at all!

Next we decide to visit the capital, Victoria. In one of the "curio" shops along the main way I run once more into Antoine Manes, who is mentioned several times in Alan Jarrett's book and was in the 70s a great shell collector, and knows Mahé and its surroundings like no one else. In that time he scuba dived for shells and was able to collect most local rarities, like *C. crocatus* and *C. ammiralis*.

I introduce myself and he invites me to enter his shop and take a look at his local Cones. The trouble with that otherwise very nice chap is that he will tell you anything. I ask him if he still has is wonderful *C. crocatus* and he tells me that he keeps it there. Inside



White Tip Reef Shark

a small box he keeps his rare shells (*Cyp. guttata, Cyp. valentia*,…), and the specimen is old but very pretty, resembling *C. thailandis* as far as shell shape and pattern are concerned. Then I see a beautiful *C. bullatus f. pongo* and he offers to sell them to me cheap. I offer € 100.00 for the pair, he says € 150.00…

Then we go to another drawer, where everything is mixed up. Local Cones are kept together with foreign ones. In spite of the fact that I identify all his Cones before he has an opportunity of reading the labels stored in their apertures, and can easily separate all suspect specimens, he persists in giving me his vendor pattern and I get tired.

Watching the pretty saffron-coloured Cone, I find it different from the one photographed in HSN and in Alan's book. I must stress that Alan saw it with the animal still inside. Mr. Manes shows me a pretty *C. aurisiacus* from the Seychelles… I should say not! And it goes on with *C. pennaceus* from Madagascar… Inside the drawer there is more than half a dozen beached *C. bullatus f. pongo*. Maybe they were dredged… Maybe…

As I usually do not buy shells, I am no longer interested in the purchase of such items that are lacking in my collection. How can I be sure of their origins? Even the *C. bullatus* may well originate in some other place in the Indian Ocean… I end up buying nothing. It was a pity to have been unable to discuss habitats and Cones, as that man holds an ocean of knowledge that will one day disappear without a trace…

Back in our lodgings, we go to the lagoon in front to relax. I try to venture into the pass, because the sea is absolutely calm. It is 5:00 p.m. and the tide is high. The lagoon is already cloudy but the pass is clear and there is no current. It is bliss. That allows me to scrutinize the bottom peacefully.

A group of eagle rays swims in front of me, large fishes come and go, lionfishes fly about majestically, squids hunt. Two Cones rest on the bottom upside down, *C. moreleti* and *C. flavidus*. A *C. leopardus* is moving and

C. vexillum

from the surface I spot about twenty *C. distans*, but no trace of either *C. imperialis* or *C. zonatus*. The remains of a large *C. rattus* recently devoured are scattered on the bottom and lifting a slab outside the reef I find *C. catus*. I go home empty-handed.

Tuesday, 24 April

Last day in Mahé. We depart early for the Anse Royale, because Alan had told me that with a little bit of luck we could find *C. betulinus*. This is one of the two classics from the Seychelles that I still lack (*C. beetulinus* and *C. quercinus*). We leave towards the reef in the lagoon. The current is somewhat strong and the zone looks austere. I soon get the feeling that the general look of the place is not adequate to collect Cones, so I take the opportunity to make a few photos of tropical fishes. Nevertheless, we do come by a few species: *C. lividus, C. ebraeus, C. arenatus* and *C. leopardus*.

After swimming for one hour against the current, we decide to go back ashore. As we pass over sandy patches, I explain to Nicole that if by any chance we see any zones with algae we should take a look there, because that is where *C. betulinus* would be.
We are about 30 metres from the shore and we do indeed arrive at a zone heavy with algae. We swim slowly, scrutinizing the sand paths that form between the prairies of eelgrass (*Zostera sp.*). As we go over a sandy area stuck between a zone of algae and a zone of detritus, I notice what appears to be part of the shoulder of a buried Cone. Only a small portion is visible, but I am certain that it is not a bit of coral, in view of its unusual rounded shape. Surely another specimen of the common *C. leopardus*. I go down (2 metres) and find that in fact a large Cone is hiding; as I extract it carefully, its profile has a lot to say about the species: it is *C. betulinus*! Unbelievable, after having looked for the species for so long! It is a big specimen in excellent condition. It is always a pleasure to find a species one has not seen before. Even in Mayotte we had not come by it… We search for about one hour more, but no find no other specimen.

C. betulinus

As soon as we get back to our lodgings, I leave again to the north, heading for Ternay Bay. From the very beginning that place has appeared to me to be the most promising, and Alan had in fact confirmed the presence there of no less than *C. gubernator* and *C. pennaceus*! However, upon our arrival on Friday, I had learned bad news from the landlady: it is no longer possible to get to that bay. That same afternoon we had driven along the West coast to survey the area and we had gone all the way to that particular bay, but when we got there a guardian had kindly sent us away…

I had decided to go alone and somehow make the guardian allow me to go to the beach. After forty minutes on the road, I am stopped by a chain across the road, at the entrance of the old derelict school. The guardian is not the same as before. We bargain the suitable bribe and two hundred rupees (that's € 100.00) later, I am walking under the scorching sun along the road that leads to Eldorado.

I arrive at the beach, but the tide is at its lowest, which means walking some more on the layers of algae, towards the reef. A painful chore at mid-day and I feel the sun biting on my back.

I quickly find the zones indicated by Alan, but neither *C. gubernator* nor *C. pennaceus* show up. I will even go as far as saying that in one hour and a half I fail to find anything that might be considered original: *C. lividus, C. moreleti, C. frigidus, C. sponsalis, C. rattus, C. leopardus, C. coronatus* and *C. catus*. It is a big disappointment, but one must go through such poor experiences only the best to enjoy one's lucky days!

Back home, I grab something to eat and we depart for the Port Glaud lagoon. Thirty five minutes by car. The tide is rising, causing a strong current, but the water remains clear and the depth is interesting (1 to 2 metres). We keep on seeing the big classics such as *C. arenatus* and *C. leopardus*, and we also find a beautiful *C. striatus*. The latter species appears to enjoy this biotope and apparently prefers to hide under great chunks of Porites that litter the bottom without being

C. flavidus

attached to anything. But still no *C. gubernator*…

Wednesday, 25 April

Going to Praslin.

Thursday, 26 April

We go for a short boat ride in the Anse la Farine. We do a bit of snorkeling with Moana, first in the algae zone, then on the detritus zones bordering the beach. We pass several common cowries: *Cyp. erosa, Cyp. caurica, Cyp. helvola, Cyp. moneta* and *Cyp. annulus*; and also a few Cones: *C. lividus, C. flavidus* and *C. namocanus*.

Friday, 27 April

A short bath at Anse Boudin. For a number of years now we thought we would not be allowed to go there, because a hotel was being built nearby. Swimming with our masks around the rocks, with the children, we see *C. rattus, C. sponsalis* and *C. parvatus*.

Saturday, 28 April

We had scheduled a long day on a boat, but the weather has changed to rain. Nevertheless, we take advantage of a sunny spot in the afternoon to go for a swim. Searching near the shore for a while, we find most of the common cowries – *Cyp. Isabella, Cyp. caurica, Cyp. carneola, Cyp. helvola, Cyp. annulus, Cyp. tigris, Cyp. caputserpentis* and *Cyp. histrio* – as well as a few Cones – *C. lividus, C. rattus, C. namocanus, C. moreleti* and *C. parvatus*.

Sunday, 29 April

We go by boat to one of the nearby islands. Once the boat is safely anchored, I depart alone for a short prospection. As I go beyond the point of the small cove, the current is violent and the waves are strong. The water is heavily turbid. I go towards the sea and the water becomes much clearer, but the bottom there is 7 to 10 metres down. I dive once and again in apnea, amidst rays, turtles and hundreds of colourful fishes.

C. canonicus

The scenery is enchanting! But I see no Cones, so I decide to go to a small lagoon that I know well. In spite of the strong seas and lack of visibility, I am still able to find and lift a few slabs of dead coral. I find plenty common cowries, a dozen *C. canonicus* and also *C. cattus, C. lividus, C. rattus, C. episcopatus* encrusted, and two beautiful *C. geographus*. Having left my camera behind, I can register no images. In the evening, after a very poor fishing, we go for a ride with the children along the Anse la Farine and near the shore we see a huge *C. namocanus* and a very large (for the species) *C. coronatus*, besides common intertidal cowries. I had considered stopping at a reef that shelters *C. pennaceus,* but I was afraid I would not have enough petrol, so the plan is postponed!

Monday, 30 April

A rainy day.

Tuesday, 1 May

We leave by boat for a long day. First stop at a nearby island. The whole family goes along the outer side of the reef. Water is crystalline clear and there is no current. The children and their mammy play with a turtle while I go through large coral slabs ten metres below. I find nothing and the apnea quickly tires me. We approach the shore and we proceed along the granitic coast.

The bottom is now 4 to 6 metres distant. I spot a few cowries and some *C. canonicus*. In the crevices of the granitic rocks hide *C. rattus* and *C. parvatus*. Under a small slab I find a superb orance *C. catus*. This variation is truly original and gem specimens are rare; as a rule, it is found only atop the reef, which explains why it is often damaged.

We get back to the beach. The children play on the sand while we rummage through the small lagoon. There we find a large number of species: *C. canonicus, C. distans, C. rattus, C. coronatus, C. miliaris, C. lividus,* and *C.*

C. nussatella

moreleti, but the prize must go to Nicole for finding a first *C. nussatella* and, a little farther ahead, under a single slab, three more live specimens, two of which quite large! It is a species not often found.

We go away after having had lunch, towards my "*pennaceus* spot", where we anchor in front of a pass. I leave the family fishing while I go to the lagoon. We have anchored quite far from the reef and I have to swim the blue water before reaching the pass. The current is strong and is "going out", so I struggle for a moment before managing to reach the lagoon. I could have searched for a whole hour, as there was not a single *C. pennaceus*. All the common cowry species are there and I should have searched the other side of the pass! That being said, I do see *C. catus, C. coronatus, C. lividus, C. flavidus, C. canonicus, C. leopardus, C. frigidus, C. ebraeus*, and *C. chaldeus* (which is not common).

After a bath and a little fishing that will get us six wrasses, we go home exhausted.

Wednesday, 2 May

No searches today.

Thursday, 3 May

A new outing by boat. The sea is very calm, which is a treat. We go towards the nearby islands and anchor at a first point. Once again we go along the outer slope of the reef and this time we get to its tip, where in the past large *C. apiscopatus* were found. And indeed Nicole finds the first one under a slab of dead coral about 6 m deep, whereas I find mind in the same kind of habitat, two metres deeper. They are beautiful, with the usual local patterns, which mean large converging triangles. On the way back I spot a *C. vexillum*. We also search in a small lagoon, but it gives us nothing truly original, except for the second live *C. chaldeus* of the trip.

We anchor at a different reef and while Nicole and Teiva have something to eat, Moana and I go looking for *aulicus*. However, after 40 minutes of apnea around

C. pennaceus

the -8 m zone we fail to find a single specimen!

We weigh anchor and leave for a different island. Unfortunately, the high tide and strong waves make the spot rather tough. Once again, seven-year old Moana accompanies me. We search the area for approximately a half hour, but find nothing out of the ordinary, although we do see *C. canonicus* and *C. varius*.

Friday, 4 May

We take to sea once more and anchor near an islet that we have not visited for a number of years. We go snorkeling with the children. The current is strong and we must quickly approach the reef. Myriads of fish welcome us there as I search for a while under large slabs of dead coral for a possible dwarf *Cyp. talpa* (it's the right spot for those), *Cyp. argus* or *Cyp. mappa*, without any luck at all. We swim around huge granitic wave beaten boulders. A turtle strolls along looking for food, a small white tipped shark rests on a rock, and mackerels come and go in tight ranks. Passing under an enormous flat rock, I see hundreds of small Cones: *C. parvatus, C. rattus* and *C. frigidus*. They group in each sandy path and I had never seen so many in one place.

On the opposite side, I lift a dead coral and the swirl caused by its displacement slightly ventilates the coral sand, bringing to view a very small portion of a Cone's periostracum… In the spite of the smallness of the bit of shoulder that is apparent to my eyes, I know that I have found the uncommon *C. pennaceus*. The specimen is magnificent, stocky and typical of the Seychelles. What a find!

We leave that small paradise to have another go at the *aulicus* reef, but once again our search gets us no results. Afterwards, we try the *pennaceus* reef again, but we only see there the more common species. After a good try at fishing, we return home quite tired in the evening.

C. episcopatus

Saturday, 5 May

Last day in the Seychelles sea. We take advantage of a windless day to take one last boat ride. We visit a small lagoon in which we see most common local Cones, as well as *C. catus, C. nussatella, C. canonicus* and *C. episcopatus*. Usually, *C. violaceus* is found there, but not this time.

We finish our small journey anchoring in an inlet. The whole family goes along the coast formed by monstrous granitic rocks and the water is crystal clear. We pass some turtles, a large humphead parrotfish and all kinds of friendly fishes. At the foot of the granitic slope, the bottom is between 6 and 10 m deep. I search in the sand and detritus filled crevices, where *C. imperialis* hides (it's no use lifting coral slabs of this species).

I spot a nice specimen of *C. miles*, which is not too common at the Seychelles, and we also find a pretty fresh dead *Cyp. carneola*. We pass a small natural channel between the boulders; it is only 3 m deep and the narrow shape of an encrusted Cone appears on the bottom, between coral pieces – it is surely *C. imperialis*. One metre ahead, a second specimen; both are very beautiful and typical of the area: slender, strongly coronate shoulder, with dark bands resembling *C. fuscatus*. On the other side of the inlet I see two more specimens (at -6 and -8 m) from the surface, but they are both badly damaged. How nice it is to look for shells like this, calmly, from the surface! I am reminded of the search for *C. maldivus* at Mayotte, *C. generalis* in New Caledonia and *C. regius* in Martinique.

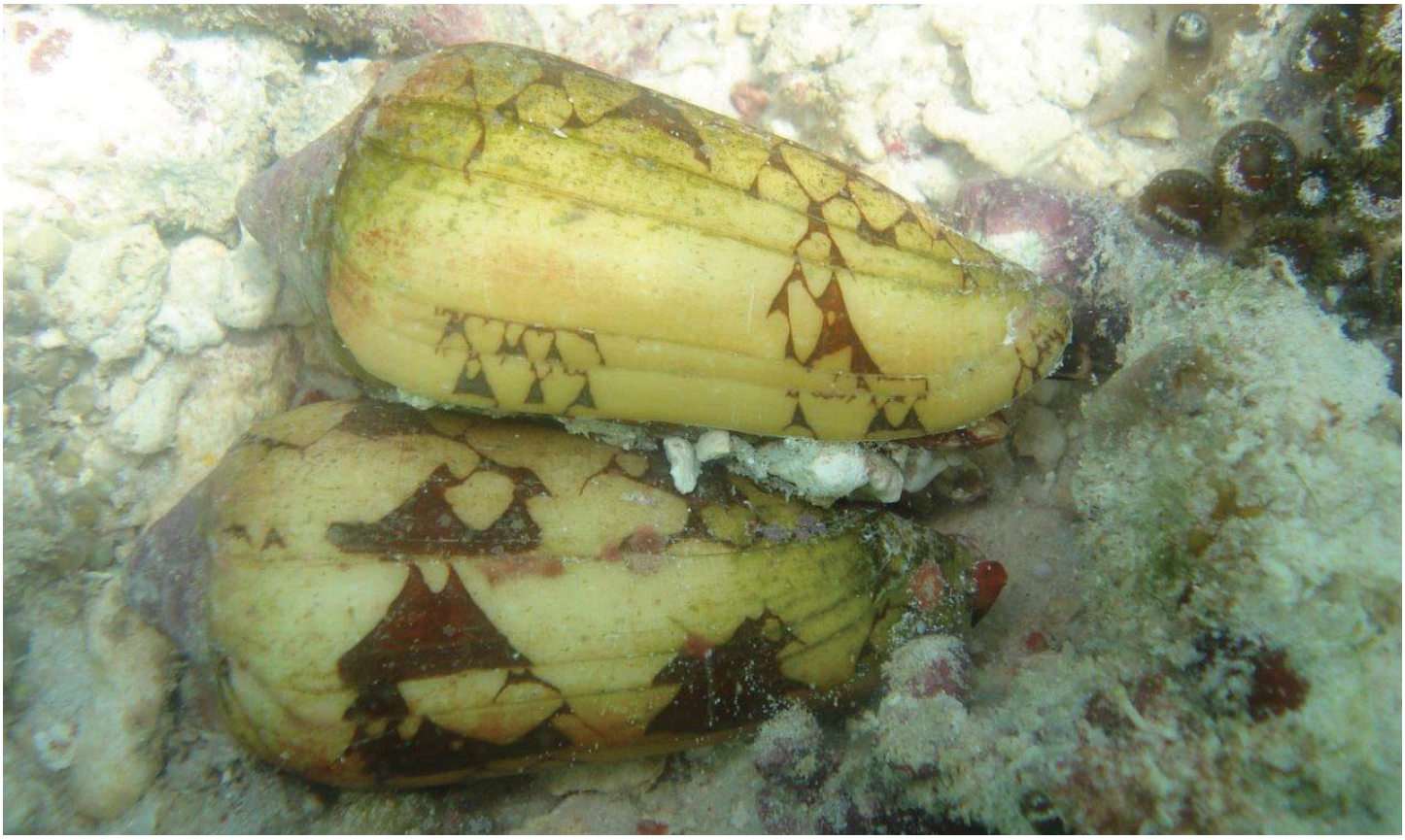
Sunday, 6 May

Travelling back to southern France, our heads full of high coloured images.

C. catus

C. ebraeus

C. geographus



C. episcopatus

C. imperialis

C. moreleti

C. striatus

C. striatus

C. virgo

David

More on *Conus moncuri* from New Ireland

Felix Lorenz & Jana Kratzsch

In TCC #18 p. 31f Sebastian Dutertre reports the finding of *Conus moncuri* Filmer 2005 at Albatross Passage near Kavieng, New Ireland (refer to his article for detailed maps of the place). We have just been there, and also found the species, not even knowing of the report in TCC.

The habitat can be described as follows: Albatross Passage is a favorite dive-site famous for large fish, pygmy seahorses and during our stay, a whaleshark went past to say hello. There is a steep wall followed by a sandy drop-off at 30 m. Above the wall, a strong current leads into a passage whose sides are bordered by mangroves. On one side of the drop-off, a coral pinackle (Danny's Bombie*) is connected to the wall by a sandy saddle which drops to 33-38 m. On that gently sloping sandbar, dead coral rubble and green algae form small patches scattered over the slightly silty substrate.

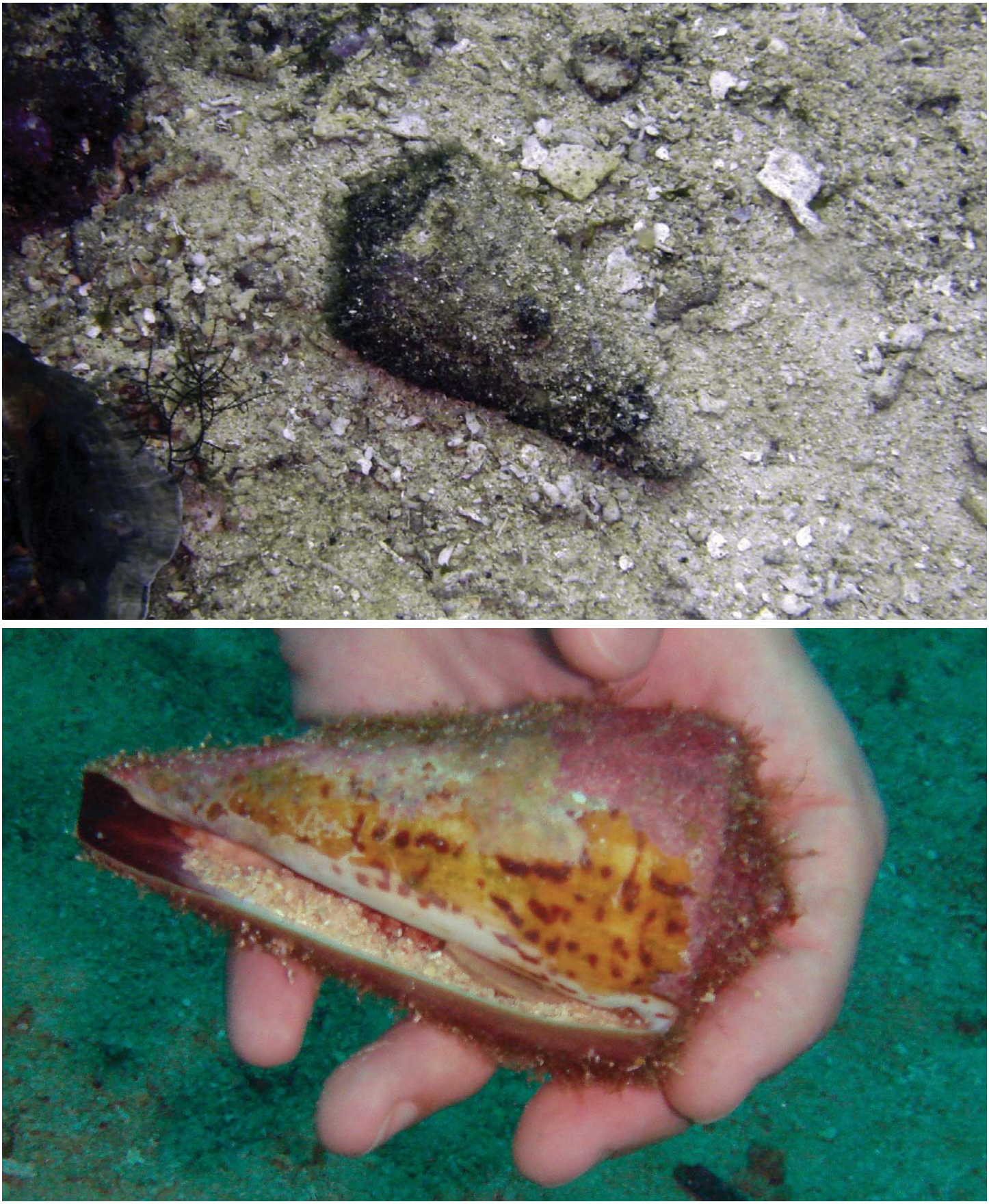
During four dives, we were able to collect six specimens of *Conus moncuri* crawling about in an area of 30 m by 10 m. Other species of Gastropods encountered in the same spot and habitat are *Conus litteratus* (small specimens), *Conus moluccensis* and *Xenophora cerea*.

We assume that *Conus moncuri* is abundant along the deeper areas of the sand slope below the wall opposite the passage. In the following we are illustrating our specimens, pictures of the habitat. The living animal is carmine red, covered with striking whitish specks; the periostracum is rather thin, transparent and decorated with fine transverse ridges.

We wish to thank our friends Dietmar and Ange Amon of the Lissenung Island Resort, who welcome divers that want to enjoy the most unspoilt reefs imaginable. The team of Lissenung tolerates modest and circumspect collecting of seashells for study purposes. For more information see *www.lissenung.com*

*isolate bolders of coral are often referred to as "Bommies" by divers. The correct spelling is bombie, which is the Aboriginal word for "stand alone".

Conus moncuri, living animal



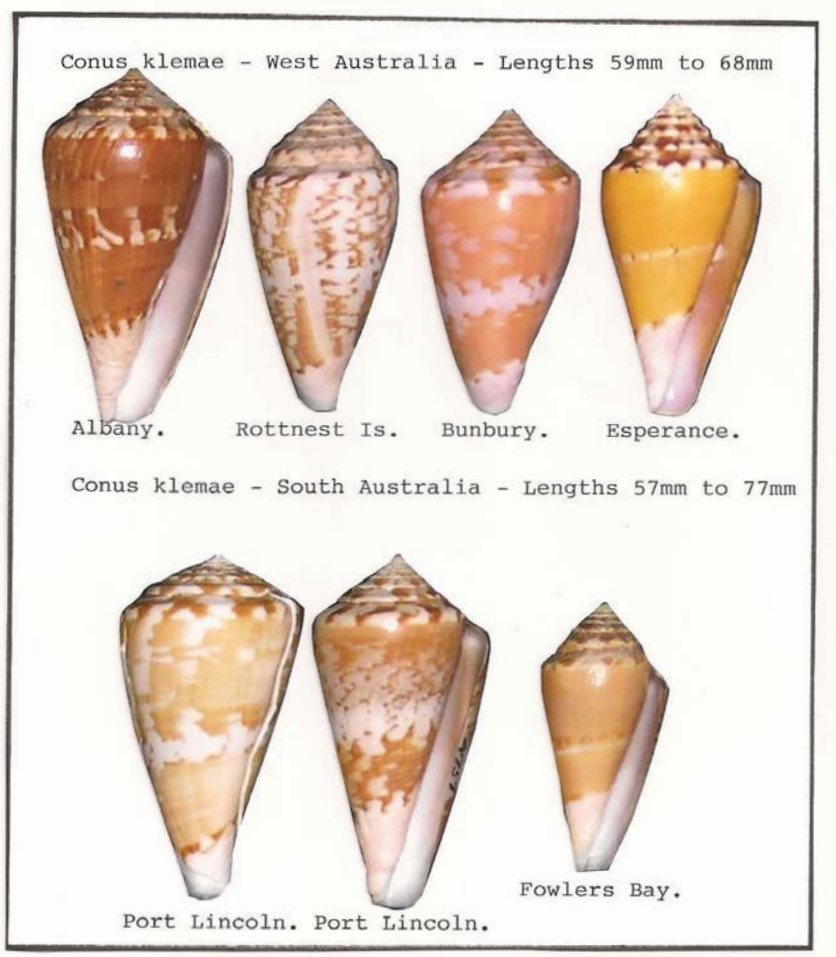
Conus moncuri, in its habitat

Shells of *Conus moncuri* collected at 33-38 m at Albatross Passage. Largest shell 104 mm.
Inserts: details of the pointed protoconch.

Conus klemae in Australia

Jon F. Singleton

Conus klemae Cotton, 1953 is a large distinctive endemic species in Australia, and it has always seemed strange to me that it was not named at a much earlier date. The fact that the holotype size 46.5 × 25.5 mm has a type locality of Corny Point, South Australia, is also surprising as this cone is far more common in West Australian waters, ranging from Perth, and south, and along the southern coast to Esperance, and no doubt further east where coastal access becomes difficult, and there is little shelling activity.



C. klemae is a variable species with a variety of colour and pattern forms, with pinks, reds and brown shades being common, with the collectors delight being the rarer bright yellow form. In West Australian waters this species is found alive in fairly shallow water, and well within easy snorkelling or scuba depths. Small juveniles around 20 mm in length inhabit the Margaret River region south of Perth in just a metre of water. I have sighted a score within a one hour swim, and I have often collected a nice variety of good fresh dead specimens.

In South Australian waters, *C. klemae* becomes a much rarer species. My only self collected specimens were from Fowlers Bay, some 300 kms east of the West Australia/South Australia border. Although fishing trawlers operated down the western side of the Eyre Peninsula, I have never heard of any *C. klemae* from this source. Some 20 years ago a diver made a discovery of a giant sized colony off Port Lincoln. Many of these were 100 mm in length, and I was able to obtain a couple of the smaller which were 70 mm in length. The exact location was never disclosed, and for reasons unknown to me no further large specimens ever appeared on the market.

C. klemae does have one synonym, a *Conus coralinus* Habe & Kosuge, 1970, which has given a type locality of Zamboanga, Philippines. The only illustration I have seen of this is within the Coomans et al alphabetical revision of *Conus*, and it is certainly a classic *C. klemae.*

I can only assume this specimen was obtained by a Taiwan trawler operating near the Australian coast prior to the extension of National Territorial waters in the late 1970s.

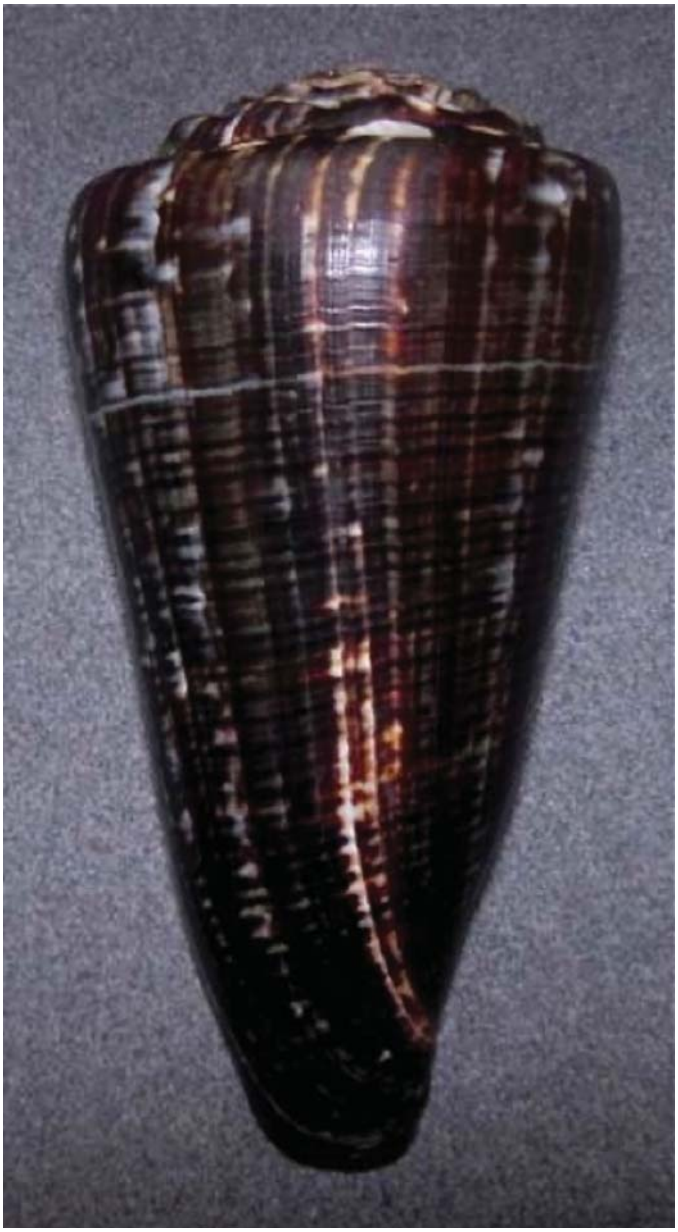
References

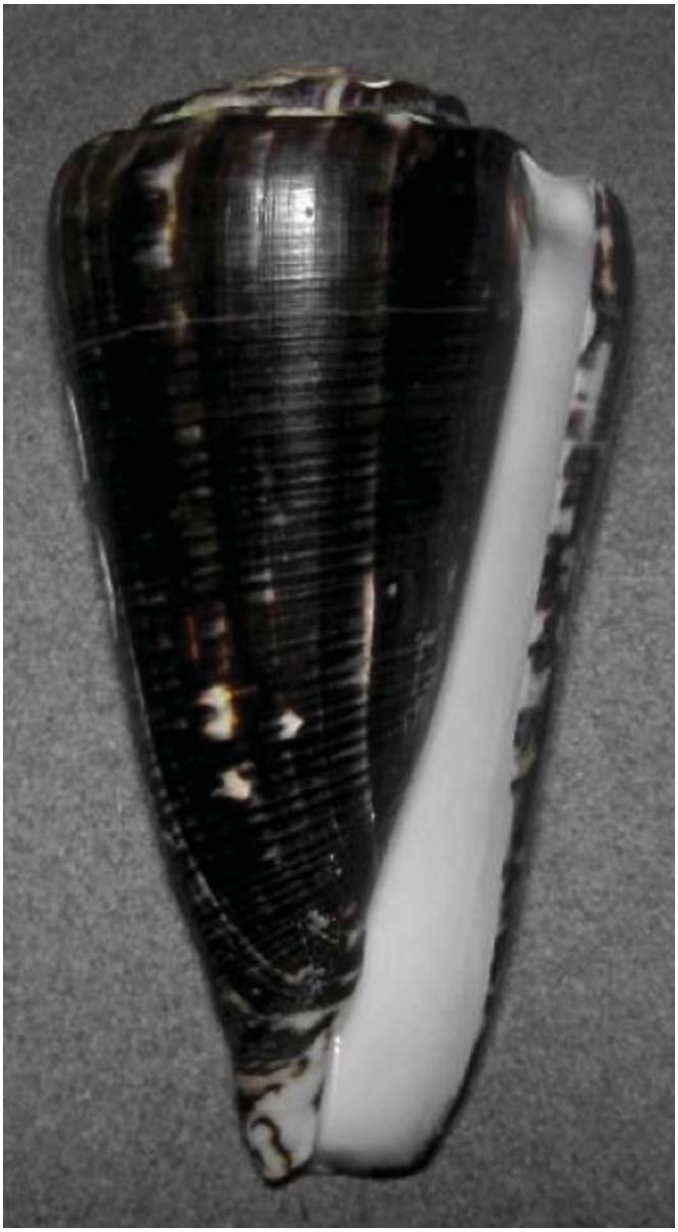
1985. Coomans, Moolenbeek & Wils, *Basteria* Vol. 48, No. 6

An exceptional specimen from the Philippines

It's size is 97.7 mm and it has been identified as *Conus crosseanus f. lineate*. It currently belongs to a collector living in New Caledonia, who wishes to remain anonymous.

We thank Remy Devorsine for having forwarded the photos and permission to publish them.





A Review: Mike Filmer's Nomenclature and Taxonomy in Living *Conidae*

John K. Tucker

Introduction

Recently *The Cone Collector* published a large set of files with a catalog of Recent cone shells by Mike Filmer [Ed.: this was published in our website *www.theconecollector.com*]. This catalog makes an important contribution to the study of cone shell taxonomy by listing Recent (i.e., nonfossil) taxa and providing images of the type specimens or images of representatives of the type specimens.

I have completely reviewed this work and have no doubt that it will be useful. However, there are some problem areas that need to be addressed to make it even more useful. Mike and I have already discussed some of these issues by e-mail. Some of my objections were addressed in the recently published update to the catalog. I think, however, that it is important to bring some of the other points not addressed in this update to the users' attention. I have avoided simple differences in opinion on identifications or synonymies. I have tried to focus on problems that are more general.

General Problems

No identification of lectotype designations: Filmer notes when specimens illustrated are lectotypes but he does nothing to help locate where these designations were made in the literature. For instance, with *Conus informis* Hwass, Filmer presumably illustrated the lectotype. However his comment is: "Lectotype (Kohn) in MHNG, (55.5 x 25.5 mm)." The listing of Alan Kohn's name is not helpful at all. Is it in Kohn, 1968 or 1992 or where? Also why not give the museum numbers for these specimens? Many of them are cited in papers by Kohn and by Coomans et al. The lectotype for *Conus informis* Hwass was actually designated in 1968 along with many of the other Hwass' species that Kohn reviewed. However, Kohn did designate other lectotypes for Hwass' species in 1992.

The casual use of citations reflects another general problem. There is no literature cited. So in this instance of the lectotype designation for *Conus informis* Hwass, you cannot refer to the bibliography to see if you can identify which Kohn reference it could be in. Compiling a bibliography is a tedious task but in the long run this is one of the most important jobs to be completed by the author. I keep a catalog of Recent and fossil cone shells, and I also keep a comprehensive bibliography with this catalog. At this time this catalog is not in print, but I would not publish it without a bibliography.

Identification of images: Theoretically the image shown is of a type specimen. However, the identity of the image is not directly associated with the image. The page with *informis* Hwass and *informis* Reeve demonstrates my concern. With the Reeve citation there is no doubt that the specimen is Reeve's because it is identified immediately below the image. This is not done with *informis* Hwass. I understand that the introduction says that these images are the types. However, are they syntypes, holotypes, lectotypes, etc.? I think it would have been much clearer had captions been associated directly with the images.

Suggested synonymies: Throughout this catalog, there are suggested synonymies. This is a rather standard approach in catalogs. However, this method creates a problem in determining where the hypothesis actually comes from. In my own unpublished catalog, I list opinions of several authors rather than deciding by fiat the systematics of any particular name. In earlier versions, I did not do that and just listed my hypotheses on synonymies. For several instances I reproduce extracts from my current catalog and they are identified below.

One other oddity that I found distracting and also incorrect is Filmer's citation of names published by G. B. Sowerby I in 1833 and 1834 in the *Conchological Illustrations*. Petit (2009) demonstrated that the author of this work was G. B. Sowerby I and that this fact is

stated in the introductory material of the original work. Thus, it is not necessary nor is it correct to cite these names as Sowerby I and II (e.g., inflatus), which Filmer does in most instances. They should be correctly cited as G. B. Sowerby I.

Said to be *nomen nuda* but are available names

indicus Röckel, 1979 *Conus inscriptus* Reeve, 1843, subspecies. *Hawaiian Shell News* 27(3):11, figs. South India and Sri Lanka. Is an available name f. Tucker; is inscriptus f. Filmer, 2001, and is a nomen nudum f. Filmer, 2001, which is incorrect f. Tucker. [Extracted from my unpublished catalog].

Filmer, 2011, says this is a *nomen nudum* because 'no intention to introduce a new name and publication invalid by disclaimer'. Both are incorrect. The disclaimer was not in HSN in 1979. There was no ICZN requirement that the name be intentionally introduced in 1979. *Asprella inscripta indica* (Röckel, 1979) is a validly proposed name and a junior synonym of *Asprella inscripta* (Reeve, 1843).

In discussions that I had with Mike about this name he maintains that the name was described as a variety. It was not. First Röckel never used the term 'variety' instead he used 'variation' but not in a taxonomic manner. In fact Röckel calls his *indicus* a subspecies twice in the paper. Röckel (page 11) said: "This species includes at least two geographical variations (= subspecies) which are easy to distinguish. The East African form is narrow, more cylindrical, and marked by a vivid violet aperture. Evidently this is the variation of Reeve's description, which I suggest be designated as '*Conus inscriptus indicus*'."

Röckel (page 12) further stated: 'It is herewith suggested that three geographical variations (subspecies) be recognized for *C. inscriptus*, as following:

Conus inscriptus inscriptus (East Africa)
C. inscriptus indicus (India and Sri Lanka)
C. inscriptus planiliratus (Andaman Sea, West Thailand and Burma).'

These statements should leave no doubt that Röckel intended to describe *indicus* as a subspecies of *Asprella inscripta*. Röckel did use single quote marks around his name, *indicus* but he also used them with the nominate subspecies, *inscriptus*. But he did not use them in his summary from which I quoted.

Therefore, I consider the name *Conus inscriptus indicus* Röckel, 1979 to be the validly proposed name for a subspecies of *Asprella inscripta* (Reeve). Röckel 's name could, however, be a junior primary homonym of *Conus indicus* Küster, 1838. Both Küster and Reeve attributed the name to Chemnitz. Their species are both synonyms of *Pionoconus magus* (Linné, 1758) (see Filmer, 2011). However, neither used the name in a way that made it an available name regardless of Filmer's suggestion for Küster, 1838. Rather the name *Conus indicus* was made available as a variety of *Conus magus* by Weinkauff (1874). Thus Roeckel's name is a junior primary homonym of *Conus magus* variety *indicus* Weinkauff, 1874.

Misidentified

kohni McLean and Nybakken, 1979. *Conus*. *Veliger* 22(2):140, figs. 4, 24-29. 18-37 m, Caleta Tagus, Isla Isabela, Galápagos Islands, Ecuador, 0°24.5'S, 90°23'W. Is *xanthicus* f. Filmer, 2001; Filmer, 2011; is valid f. Tucker and Tenorio, 2009. Genus: *Kohniconus*. [Extracted from my unpublished catalog].

Despite the excellent original description, which is in my opinion one of the best ever published for a cone shell, *Kohniconus kohni* (McLean and Nybakken, 1979) is continually listed as a synonym of *Dauciconus xanthicus* (Dall, 1910). The authors of the name noted that the two species differ in radular morphology along with differences in the shell morphology and

the morphology of the periostracum. The two species admittedly are both orange colored cone shells but at that point the similarity ends. These two are so different that Tucker and Tenorio (2009) placed them in different families. Please examine plate VI, fig. 5, the radula of *D. xanthicus* and plate XIV, fig. 9, the radula of *K. kohni* in Tucker and Tenorio (2009) and compare the diagnoses of *Dauciconus* (page 88) and *Kohniconus* (page 146). Having to use actual parts of the animal to confirm an identity may be inconvenient for a collector, but this is an animal not just a trinket. Besides the differences in radular morphology, the periostracum of *K. kohni* is smooth and is not fringed. In contrast the periostracum of *D. xanthicus* has tufts at the shoulder and on the body whorl if these have not been cleaned off. The first few whorls of *D. xanthicus* have 3 or so spiral cords on the whorl tops. The whorl tops of *K. kohni* are smooth. The subsutural ramps of *K. kohni* are distinctly concave in cross section, whereas they are only slightly concave or flat in cross section in *D. xanthicus*. Both of these species are illustrated in the new East Pacific *Iconography* (Tenorio et al., 2012).

perplexus G. B. Sowerby II, 1857. *Conus*. *Thes. Conch*. 3(*Conus*), pt. 17:20, pl. 14, fig. 324. Gulf of California and West Colombia. Range: Baja California to Ecuador. Is *puncticulatus* f. Wagner and Abbott, 1978, with query; Walls, 1979; is a junior synonym of *pustulatus* Kiener. 1847, but *pustulatus* is also a *nomen oblitum* according to Filmer and should not be revived f. Filmer, 2001; Filmer, 2011; *perplexus* is valid f. Keen, 1971; Tucker and Tenorio, 2009. [Extracted from my unpublished catalog].

Moreover, *Conus pustulatus* cannot be a *Perplexiconus* because Kiener's species does not have an anterior notch, which is present in *P. perplexus* and *P. puncticulatus* (Hwass in Bruguière, 1792); Kiener's species should be considered a *nomen dubium*. Besides that, the drawing could not be positively identified as either *P. puncticulatus* or *P. perplexus* even if it was one or the other. Both species have pustulose variants, so Kiener's drawing could be of either species, i.e., it is a *nomen dubium*. It could even be *Globiconus baccatus*, which is normally pustulose. However, that species has an enlarged protoconch which is not shown in Kiener's drawing.

unicolor G. B. Sowerby I, 1833. *Conus*. *Conchol. Illustr.* pt. 28, fig. 20. Not stated. Is a *nomen dubium* f. Wagner and Abbott, 1978; Walls, 1979; Kohn, 1992; Röckel, Korn and Kohn, 1995; Filmer, 2001, considered *unicolor* to be a senior synonym for *sanguinolentus*. Filmer suggested that *unicolor* was a *nomen oblitum* and should not be revived to replace *sanguinolentus*. [Extracted from my unpublished catalog].

The Filmer (2011) figure looks nothing like a *Lividoconus*, it is more likely a specimen of *Pionoconus circumcisus*, in other words, it is a *nomen dubium*.

zeylanicus Gmelin, 1791. *Conus*. *Syst. Nat*., 13th ed., 1(6):3389. Filmer, 2011, says this is a junior synonym of *undulatus* Lightfoot, 1786 but that *undulatus* is a *nomen oblitum*; Tucker says that *undulatus* is *Cylinder textile* not *zeylanicus*. [Extracted from my unpublished catalog].

The identification as *Cylinder textile* was the conclusion of Tomlin, 1937; Wagner and Abbott, 1978; Walls, 1979; and Kohn, 1992. The suggestion that it is instead *P. zeylanicus* arose from Röckel, Korn and Kohn, 1995; Filmer, 2001; and Filmer, 2011. Filmer said this was a senior synonym for *zeylanicus* but the specimen shown by him is a specimen of *Cylinder textile*. This specimen is one of the variants with minute closely spaced tents that occur in eastern African specimens.

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Editor's Afterword

This is of course the kind of discussion that is always welcome to the pages of TCC. The study of Cones is not an easy task and different approaches by different authors are well known to exist and in fact are inevitable.
It is only by discussing each individual issue that we can hope to arrive at conclusions. And even if not all will be able to agree on every given point, the full explanation of distinct individual views will at least enable each of us to make up our own minds and settle on some conclusion about problems that we may have faced, eventually for some time.

When shown the above review, Mike Filmer stated that he has "indeed been corresponding with John Tucker who has been critical of some of [his] conclusions appearing in [the] website. In some cases I have accepted John's point of view but in other cases I have not been able to agree with him." Moreover, Mike added that he is "quite happy for [me] to publish his comments in *The Cone Collector*" and that instead of trying to repeat his points of view he "would rather leave it to others to make their own decisions about whose views to accept" – which is, of course, the right thing to do.

With such an open mind, any further comments on the points raised above – or indeed on any others – will be quite welcome too.

I will end with the following information, also supplied by Mike: "in the Update I have already accepted and changed the status of *C. undulatus* Lightfoot but I forgot to change the comments under *C. zeylanicus*; I will do this on the second update."

2nd International Cone Meeting
28-30 September, 2012 - LA ROCHELLE

António Monteiro

Dear friends,

September will soon be with us and as has been widely advertised it will be a very special time for all Cone lovers: we will have the 2nd International Cone Meeting, at La Rochelle, France.

After the huge success of the first meeting, which took place in Stuttgart in 2010, the same Organizing Committee has undertaken the task of preparing this new event, with the invaluable of Michaël Rabiller and Prof. Georges Richard, from La Rochelle's Natural History Museum.

We are sure that all those who attend the meeting will have a very pleasant, informative and interesting weekend.

We had to make a slight adjustment in the program, because our friend Edward J. Petuch will not be able to join us there, for family reasons. We are very sorry and his company will be missed by everybody.

Here is the program, as it presently stands (and we are sure you will agree that it is quite enticing and up to the high standards set in Stuttgart):

PROGRAM

Friday, September 28th

- Registration of attendees

The desk for registration will open at the Museum at 10:00 h.

A welcome packet will be provided to attendees with program, directory of attendees, information about La Rochelle and the Museum of Natural History, name tag, as well as tickets for general admission to the museum.

The Museum Cafeteria will be open for snacks and discussion/get together.

- Dealer table setup for mini bourse
- Possible Guided Tours to the Museum
- 16:00 – 18:00 Mini Bourse

Coffee/water/snacks will be available in Auditorium (included in registration cost)

18:00
Reception at the City Hall (with aperitif).

There will be curators of all La Rochelle and Rochefort museums, the mayor of Rochefort and an official from La Rochelle's City Hall.

Saturday, September 29th

The registration desk will be open from 9:00 h.

9:30
Opening of the Meeting by António Monteiro

(Chairman)

Opening remarks by the museum Director
Introduction of our Guest of Honour:
Dr. Georges Richard

(Chairman António Monteiro)

10:00
Plenary Lecture by Dr. George Richard (Muséum d'Histoire Naturelle de La Rochelle

- Université de La Rochelle, La Rochelle, France): "A career strongly dedicated to Cones"

11:00
Coffee break (included in registration cost)

(Chairman António Monteiro)

11:30
Session Lecture by Michael Rabiller (Muséum d'Histoire Naturelle de La Rochelle, La Rochelle, France): "The Muséum of La Rochelle and its Cone holdings, during and after renovation"

12:00
Session Lecture by Howard Peters (Facultad de Ciencias, University of York, York, UK): "Cone snails: Laying the groundwork for survival of the scarcest"

12:30
Lunch in cafeteria (included in registration cost)

13:45
Group photograph (immediately after lunch, by a professional photographer)

Chairman Bill Fenzan

14:00
Session Lecture by Dr. Eric Monnier and Loïc Limpalaër (Paris, France): "Hidden biodiversity in Cone shells: Criteria that help species recognition and review of some complexes"

14:30
Session Lecture by Dr. Gabriella Raybaudi (Rome, Italy): "A contribution to the study of distribution patterns in Indo-Pacific Cones"

15:00
Session Lecture by Andre Poremski (Washington DC, USA): "Insights within the *Jaspidiconus jaspideus* complex"

15:30
Coffee break (included in registration cost)

(Chairman: Manuel J. Tenorio / Arnold Zandbergen / Michael Rabiller)

16:00
Workshops: presentation, group assembly and team work:

- Dissection and radular mounting
- Identification of juvenile cones
- Identification of cones in old text drawings

17:30
Mini bourse and Poster Session

20:00
Dinner at the Muséum. If the weather's fine, it will be in the garden. It will consist of local products : local aperitf : pineau, cognac, oysters, delicatessen, mussels, local vegetables, cheese and dessert. It will be a buffet, so people can move and talk. Dr. George Richard will be our guest of honour

Sunday, September 30th

9:00
Morning welcome / Announcements

(Chairman : Manuel J. Tenorio)

9:05
Plenary Lecture by Prof. Dr. Philippe Bouchet (Muséum Nationale d'Histoire Naturelle – Paris, France): "Thirty years of tropical deep-water exploration: new cones from the Pacific and Indian oceans"

10:00
Session Lecture by Dr. Reto Stöcklin (Atheris Laboratories, Geneve, Switzerland): "Venomics: From cone snail venoms to drugs"

11:00
Coffee break (included in registration cost)

(Chairman : Manuel J. Tenorio / Arnold Zandbergen / Michael Rabillier)

11:30
Workshops: presentation, group assembly and team work:

- Dissection and radular mounting
- Identification of juvenile cones
- Identification of cones in old text drawings

(Chairman: Antonio Monteiro)

13:00
Official closing remarks

13:30
Lunch (at your own expense, a la carte) [local to be indicated]

Afternoon
Possible group visit to the famous local Aquarium [details to be announced]

Besides the scheduled talks, visits, mini-bourse and workshops – and the fraternization amongst all those present, obviously – we also expect the presentation of posters.

For those unfamiliar with the concept of a poster, we have prepared a template.

In such posters, you will be able to present any information about Cones (for instance: photos of live specimens, self collected specimens, egg capsules, exceptional specimens, etc.). If interested in presenting a poster, please get in touch with António Monteiro (*a.j.a.monteiro@netcabo.pt*) for a copy of the template.

We already have a number of registered attendees, but if you have not sent yours yet, now is the time to do so!

António Monteiro

We hope to see your contribution in the next TCC!