



*THE
CONE
COLLECTOR*

#22 April 2013



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On the Cover

Tenorioconus curassaviensis
on eggs, in Aruba.

Photo by Carlos Afonso.

*Note from
the Editor*

Dear friends,

The project “The Cone Collector” is still under seven years old and yet when I look at all we have achieved so far I cannot help thinking that we have probably exceeded expectations.

We started modestly – as becomes any serious project – back in October 2006, with our newsletter aimed at all those who are interested in studying or collecting Cones, from professional biologists to amateur collectors. Today we can proudly display a total of twenty-four numbers of TCC, two hugely successful international meetings and a website that brings together an unparalleled wealth of information on Cones.

As a matter of fact, after the uploading in our website (at www.theconecollector.com) of the important and vastly updated and augmented work by Mike Filmer’s involving taxonomy and nomenclature, we now have at the same address Paul Kersten’s extremely useful and well-known Checklist, enriched with new images and much more detailed information than before.

This is the work of a team – the names of Manuel Jimenez Tenorio, Bill Fenzan, John Tucker, Gavin Malcolm, Mike Filmer, Paul Kersten and André Poremski readily come to my mind as front row collaborators of TCC, but all others who have contributed with articles, photos, opinions, suggestions and unfailing support deserve equal credit! The project belongs to all and can only survive with the continued support of all. Cone collectors are in fact a strong community, a brotherhood almost, connected by a common fascination with this beautiful and so interesting group of animals.

Other initiatives will be coming your way in the future. The 3rd International Cone Meeting is already in the making – you will hear more about it soon. Great things will be achieved with your help. For now and without further ado, enjoy TCC # 22.

António Monteiro

Who's Who in Cones: Christopher Roux

I was born on the 14th June, 1961 in the West of France, more precisely in Vendée, known today for its Vendée Globe Challenge but also for its Museum of seashells housing in the harbour of Les Sables d'Olonne(1).

With my parents and grandparents, we used to collect shells and seafood at low tide in these rich coasts of Vendée and South Brittany (Morbihan) where I spent many weekends and holidays.

This gave me the opportunity as a young boy to discover the beauties of Mother Nature. If I am very eclectic in my centres of interest, collecting seashells is somehow a crystallization of my taste for live, nice things, life creation...

I probably got the collector's gene among my other genes, as my great-grandfather collected butterflies and my grandparents collected art and curiosity objects. Very early I started with stamps, coins, cigar rings and my passion for seashells started with an advertising-loyalty program led by Shell in the late seventies. Every time you were filling up your car tank at Shell, they gave you a seashell in a gift box! Even if it was a rather limited approach, for me it was a true unveiling of the world of seashells; to this day I keep the little booklet offered by the petroleum company!

But the real things started a few years later with a wooden box found in the attic of my grandfather's house. This big box contained hundreds of tropical seashells, safely preserved in sawdust. With hindsight and knowledge, I can say that these beauties were collected during the 19th century in the Pacific and the New

Caledonian region, as some of the specimens are actually endemic of Pine Island...

From that time I really started as a shell collector, which wasn't easy as I was a bit isolated in my countryside province. I got an access to the Museum d'Histoire Naturelle of Nantes where I could document my identifications. It wasn't easy to follow the routes written by the explorers and naturalists of past centuries, but these researches gave me the taste for travelling and a preview of the variety of the species.

My studies in Chemistry and after that my jobs took a large part of my time and I have been obliged to put the shells aside. Gradually however, as Export manager I was travelling very often around the world, and in spite of severe lack of time I bought and collected specimens from various regions in South Africa, Reunion, Indonesia, and Australia...

Finally I joined the French Association of Conchylology (AFC – www.xenophora.org) where I met people who helped me in the reorientation of my passion.

As many, at the beginning, my collection was a general one but with time and experience, my interest has matured and I specialize in one family. I was driven by the desire to go beyond the mere gathering of the collector and it was the beauty, the aesthetics, the variability of certain shells and the scientific interest – plus the fellowship I had found at the AFC – that guided my choice to the Cones.

Today my business as consultant-trainer allows me to be more sedentary and I can more easily devote time



Rare and beautiful

Remy Devorsine

to the Cones. This allowed me to associate myself with Eric MONNIER, Loïc LIMPALAËR and Alain ROBIN in a very ambitious project: “A Systematic Iconography of the Living Worldwide Conidae”. More precisely, we decided to review all the knowledge on the family produced during the past years including the systematic, the phylogeny based on the radular works, and DNA analysis. About 60% of this exciting project is already completed: in about 1000 plates with icons, numerous pictures showing variability of patterns, colors, localities, we hope to make a revised and as exhaustive as possible synthesis of this fascinating family.

Ed. Note:

(1) – Muséum du Coquillage, Les Sables d’Olonne:
<http://www.museum-du-coquillage.com>

Our friend Remy Devorsine has sent in photos of a beautiful specimen of *Phasmoconus goudeyi* Monnier & Limpalaër, 2012.

As we all know, this recently described species is very rare and Remy estimates that less than twenty specimens have been caught to this day.

This specimen is 43.8 mm long, in excellent condition, and was collected during a night dive at the Bourail Passage, New Caledonia, at a depth of 75 metres. It is now in Remy’s collection, of which it is and no doubt one of the stars.



An outstanding *Harmoniconus nux*

António Monteiro & Günther Herndl



During a visit to western Mexico, on a very hot sunny early afternoon last January, the second author was lucky to make an outstanding discovery.

He and his pal Eduardo (Lalo) Amador Moreno were visiting a rocky shore close to Melaque, Jalisco, not far from Lalo's home village, Barra de Navidad, which they affectionately refer to as "nux point". It is in fact a shallow "bridge" between a gravel beach and a chain of small rock islands starting 50 meters offshore (see photo below), which at low tide is partly exposed.

They were searching for *Harmoniconus nux* Broderip, 1833, that can be found intertidally in considerable numbers in the area, during low tide. The waters there

are quite rough, on a ground substrate of large rocks and stones, some of which are covered with "moss-looking" algae, on which the Cones creep during daytime – but always completely submerged – presumably on the hunt for worms.

Actually, one specimen was found feeding on a flat worm of pale cream colour, 7 or 8 mm in size and with a triangle-shaped head; these little flat worms obviously live inside the "moss-algae".

Gladioconus gladiator Broderip, 1833 is also found in the same area, but in somewhat deeper water and not creeping around on these algae-covered stones, instead hidden in small cavities or under stones.



As should be expected in such a rough environment, most specimens of *H. nux* have eroded spires and shoulders, and many have scars. The sizes of found shells ranged from 13 to 25 mm and all the larger ones had an eroded spire.

But the star of the catch was a 15.1 mm specimen that totally lacked darker pigments: a bright orange *H. nux*. It is a delightful specimen indeed and we are happy to show it here.

Conus nux (W.J. Broderip, 1833)
Family CONDIAE PUNCTICULIINAE
(*Harmoniconus*)

15,1 mm, at low tide on rock with algae, "nux-point",
Melaaque, Pacific Mexico, January 2013

Conotoxins: Weapons of Mass Destruction?

Manuel Jiménez Tenorio

I remember very well when I first saw in the cinema the feature movie “The Lost World: Jurassic Park”, a sequel to the blockbusting movie “Jurassic Park” by Steven Spielberg which brought dinosaurs into life. In that sequel, a live, adult Tyrannosaurus rex and its offspring are brought to San Diego. Of course, they escape and cause great havoc in the city. In order to stop these creatures, the main characters of the movie use a gun delivering poison darts envenomed with the conotoxin of *Conus purpurascens*. In the movie they use the following dialog when referring to this:

“...*Conus purpurascens*, the south sea cone shell, is a neurotoxin loaded in the dart used for the Lindstradt Air Gun. It's the most powerful neurotoxin the world. Acts within .002 second making it faster than the nerve conduction velocity. So the animal is down before it feels the prick of the dart.”

Well, for a cone lover like me, it was interesting to see how this well-known feature of cone snails was used in action in a movie, although not exempt of errors: we all know that *purpurascens* is not a cone shell from the South Seas. The anaesthetic abilities of its conotoxins have possibly been much exaggerated. Mind that no-one had been able to experiment on the effects of a conotoxin on a living dinosaur before!

Apparently, cone snails and its venoms and darts resulted attractive to Hollywood writers. In an episode of the TV Show “C.S.I. Miami” (season 9, episode 5, “Sleepless in Miami”) a murder takes place (as usual), and the culprit used “a neurotoxin derived from a cone snail (housed in a fancy aquarium at the salon)” to commit the homicide. The cone snail in this case was *Conus marmoreus*. How the murderer managed to extract the neurotoxin from this molluscivorous cone species, and how it was modified to make it lethal to humans is obviously not explained in the episode! This is not the first time that this story is used on a TV show: a cone snail had been already used as a murder weapon on an episode of the old “Hawaii 5-0” series (I

guess that Hawaii is a much more appropriate location for finding dangerous cones like *geographus* or *striatus*!)

But what comes next is neither joke nor fiction!

Very recently, doing a routinely literature survey on the latest scientific publications about cones and conotoxins, a rather weird article came into my hands. The article was titled “Conotoxins: Potential Weapons from the Sea”, and was authored by Peter D. Anderson (a freelance Chemical, Biological, Radiological and Nuclear warfare consultant from Randolph, Massachussets, USA) and Gyula Bokor (staff psychiatrist, Taunton State Hospital, Taunton, Massachussets, USA). What most shocked me was the journal in which this article was published: Journal of Bioterrorism and Biodefense. This is an open access journal, and hence, the article in question can be freely accessed at the following link:

<http://www.omicsonline.org/2157-2526/2157-2526-3-120.pdf>

In this article, the authors speculate with the existence of concerns in the homeland security field that certain conotoxins could be weaponized and used as an aerosol. Most conotoxins do not pose a bioterrorism threat, but the so-called conotoxins may represent a risk of potential terrorist use.

The article has a first part in which cone snails, their toxicity to humans and the pharmacology of the conotoxins are briefly reviewed. Then, it passes onto the scientific and medical applications of conotoxins, to end with the potential uses as bioterrorist weapons. Apparently, the direct chemical synthesis of the conotoxins in clandestine laboratories would be more likely than actually “farming” cone snails for conotoxin supply. Since much research is being done worldwide on conotoxins, the supplies in laboratories might be diverted to terrorists. Nowadays, the US Department of Health and Human Services requires registration and

background checks, as well as biosafety and security procedures for handling conotoxins at amounts exceeding 100 mg. This is a proof that the issue is taken seriously by government agencies. Furthermore, you can check at

http://www.australiagroup.net/en/biological_agents.html

and scroll down to toxins. The Australia Group (AG) is an informal forum of countries which seeks to ensure that exports do not contribute to the development of chemical or biological weapons. There are 41 members of the Australia Group including the US, UK and Japan but excluding Russia. All participating states are parties to the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC). When it comes to conotoxins, they appear listed in their biological agents section, and their international trade has to be controlled. This excludes conotoxins in product form when referred to pharmaceutical formulations designed for testing and human administration in the treatment of medical conditions, when they are pre-packaged for distribution as clinical or medical products, or when they are authorised by a state authority to be marketed as clinical or medical products.



According to the article, potential methods for the use of conotoxins in terrorism include contamination of food sources or aerial dispersal in concentrated population areas, most likely in the form of aerosol. The possible health effects of conotoxins used in this form are compared with those of the botulism toxin, which are expected to be similar.

This article concludes with a most dangerous scenario which would be the clandestine manufacture of the toxins and the delivery as aerosol over a concentrated population area. Fortunately, the article also concludes that numerous technical hurdles need to be overcome to weaponize the conotoxins.

To be honest, I am not sure whether or not this article has fulfilled the purpose of showing conotoxins as potential bioterrorism weapons. Venomous animals and their venoms have been known since ancient times, and it is well known that their extracts have been used for poisoning darts and arrows for hunting. The same might be said about many plants. As far as I know, no biological warfare has been developed from the venom of snakes or spiders, for instance (although this might actually be classified information!), so I do not foresee that cone snail venoms might behave differently in this sense, despite the efforts of Hollywood in showing otherwise. In our troubled present, we might think of many potential threats coming from virtually anywhere (including outer space!). It is good to be aware of all potential safety and security risks and keep an eye open for them, but I do not think that it is good becoming paranoid. This is my personal opinion, anyway.

At least one thing is clear, as a friend of mine said when commenting on this article: the shape of cone shells makes them perfect for missile warheads!

Images of living coastal Cones from Aruba

Carlos Afonso

Last January-February 2013 I had the opportunity to travel to the Caribbean and revisit some friends living in Aruba Island. During this visit I was able to photograph some of the coastal Conidae species inhabiting the island. I hereby share with TCC readers some of the images taken.

Figure.1 – Top row: (left) *Gladioconus mus* (Hwass in Bruguière, 1792) and (right) endemic *Gladioconus hieroglyphus* (Duclos, 1833); Bottom row: *Stephanoconus regius* (Gmelin, 1791).



Figure.2 – *Tenorioconus curassaviensis* (Hwass in Bruguière, 1792) with different color and patterned shells.



Figure.3 – Top and middle rows: *Perplexiconus cf. puncticulatus* (Hwass in Bruguière, 1792); Bottom row: (left) *Perplexiconus cf. puncticulatus* (Hwass in Bruguière, 1792), (right) *Perplexiconus cf. puncticulatus* (Hwass in Bruguière, 1792) and *Perplexiconus puncticulatus f. columba* (Hwass in Bruguière, 1792).



Is this the most beautiful *Conus generalis* you have seen?

Jim Cootes

In my collection of *Conus* there are a number of quite outstanding specimens. The shell illustrated here just stands out from the other *Conus generalis* (of which I have about 70 pieces) by the pure clarity of the pattern and its colouration.

This specimen was purchased in an auction in early 2005, and the label states that it came from Balicasag Island, in the Philippines. The shell is about 65 mm long by 28 mm across the shoulder.

For me, this is the most beautiful *Conus generalis* I have seen. How about you?



Etymology of cone species names L-M

António Monteiro

Here is another section of the study of the etymology for Cone species names. This time, I examine the species names beginning with L and M.

Renewed thanks to all those listed previously who contributed to this work. Special thanks to Kelly Dhondt for her incessant support and many useful suggestions.

lamberti Soubervie, 1877

Named after Father Pierre Lambert (1822-1903), a reverend in New Caledonia

lani Crandall, 1979

Tamed after T. C. Lan, Chinese conchologist

laterculatus Sowerby, 1870

From the Latin, meaning “made with bricks”

leekremeri Petuch, 1987

Named after Lee Kremer, American conchologist and shell dealer

legatus Lamarck, 1810

From the Latin, meaning “ambassador”

lemniscatus Reeve, 1849

From the Latin, meaning “decorated with hanging ribbons”, hence the “ribbon-stringed” Cone

lemniscatus carcellesi Martins, 1945

Named after Alberto R. Carcelles (1897-1977), Argentinian malacologists

lemniscatus xanthocinctus Petuch, 1980

The name means “with a yellowish band” (the Greek word *xanthos* means “yellow”, the Latin word *cinctus* means “encircled, girded, surrounded”)

lenavati da Motta & Röckel, 1982

Named after Phairot Lenavat, conchologist from Thailand

lenhilli Cargile, 1998

Named after Leonard C. Hill III (1950-1997), an American malacologists

lentiginosus Reeve, 1843

From the Latin, meaning “freckled”

leobottonii Lorenz, 2006

Named after Luigi Galileo Bottoni (?-1996), an Italian theologian

leobrerai da Motta & Martin, 1982

Named after Fely Moreno and Charlie Leobrerai, conchologists and shell dealers from the Philippines

leopardus Röding, 1798

From the Latin leopardus, meaning “leopard”

leviteni Tucker, Tenorio & Chaney in Severns, 2011

Named after the American ecologist and malacologist Paul J. Leviten

lienardi Bernardi & Crosse, 1861

Named after François Liénard de la Mivoie (1782-1862), French malacologist from Mauritius

lightbourni Petuch, 1986

Named after John (Jack) R.H. Lightbourne, a conchologist from Bermuda

limpusi Röckel & Korn, 1990

Named after Alan Limpus, Australian malacologists

limpusi albellus Röckel & Korn, 1990

From the Latin albus, meaning “white”, apparently the diminutive of albus, so it would mean “small white (one)”

lischkeanus Weinkauff, 1875

Named after Karl Emil Lischke (1813-1886), German malacologist

lischkeanus kermadecensis Iredale, 1912

Named after the Kermadec Islands, South Pacific

lischkeanus subrosea Röckel & Korn, 1992

From the Latin, meaning “under the rose”

lischkeanus tropicensis Coomans & Filmer, 1985

The name is “derived from the Tropics of Capricorn and of Cancer, because the populations have an antitropical distribution around the 23 ½ ° north and south latitudes”

litoglyphus Hwass, 1792

From the Greek: *lithos* means “stone” and the verb *glyfein* means “to carve, to cut out with a knife”; *lithoglyphos* means “sculptor”. Hence, the Cone is “carved in stone”

litoglyphus carpenteri Crosse, 1865

Named after Philip Pearsall Carpenter (1819-1877), American malacologists

litoglyphus seychellensis Nevill & Nevill, 1874

Named after the Seychelles archipelago, in the Indian Ocean

litteratus Linnaeus, 1758

From the Latin, meaning “letter-marked”

lividus Hwass, 1792

From the Latin, meaning “of a blue or leaden colour” or “livid”

lizardensis Crosse, 1865

Named after Lizard Island, in the Great Barrier Reef

lizardensis sibogae Schepman, 1913

Named after the Siboga Expedition (1899-1900) to Indonesia, Siboga being the name of the ship used in the expedition

lizarum Raybaudi & da Motta, 1992

Named after the second author's wife Liza and the first author's daughter of the same name

locumtenens Blumenbach, 1791

From the Latin, meaning "a professional person who temporarily fulfills the duties of another"

longurionis Kiener, 1845

From the Latin *longus*, meaning "far", "long", and *longurio*, meaning "a tall person"

longurionis kantanganus da Motta, 1982

Named after Kantang, a district in western Thailand

loroisii Kiener, 1845

Named after Édouard Lorois (1792-1863), prefect of Morbihan, France, a French shell collector

loroisii huberorum da Motta, 1989

Named after Franz and Eva Huber, Austrian shell collectors

loroisii insignis Röckel & Moolenbeek, 1995

From the Latin *in*, meaning "in" or "on", and *signum* meaning "sign", hence "distinguished" or "remarkable". The Latin word *insignis* means "distinguished by a mark, remarkable, notable, extraordinary"

loyaltiensis Röckel & Moolenbeek, 1995

Named after the Loyalty Islands, New Caledonia

lucasi Bozzetti, 2010

Named after Lucas Gregorio, grandson of the author

lucaya Petuch, 2000

Named after the Lucaya Indians, the original inhabitants of the Bahamas

luciae Moolenbeek, 1986

Named after Lucia (bio ?)

lucidus Wood, 1828

From the Latin, meaning "bright" or "lucid", "full of light", "shining"

luteus Sowerby, 1833

From the Latin, meaning "yellow" (golden-yellow, orange-yellow)

luteus richardsae Korn & Röckel, 1992

Named after Aurora Richards, American conchologist

lynceus Sowerby, 1858

Possibly from the Greek *lynx*, meaning "lynx". In Greek mythology, Lynceus was one of the Argonauts; he was said to have excellent sight, even able to see through trees, walls and underground. Used as an adjective, *lynceus* also meant "with an excellent sight"

madagascariensis Sowerby, 1858

Named after Madagascar, the large island in the Indian Ocean

magellanicus Hwass, 1792

Named after Fernão de Magalhães (Ferdinand Magellan), a Portuguese navigator; same origin as that of Strait of Magellan, the navigable sea route between mainland southern South America and Tierra del Fuego

magellanicus colombianus Petuch, 1987

Named after Colombia

magellanicus hilli Petuch, 1990

Named after Leonard C. Hill III (1950-1997), an American malacologists

magellanicus kirkandersi Petuch, 1987

Named after Kirk Anders, American conchologist and shell dealer

magnificus Reeve, 1843

From the Latin, meaning “magnificent”

magnottei Petuch, 1987

Named after Gary Magnotte (1938-1996), American conchologist

magus Linnaeus, 1758

From the Latin, meaning “magician”

magus assimilis A.Adams, 1854

From the Latin, meaning “similar”

magus borneensis Sowerby, 1866

Named after Borneo, southeast Asia

magus carinatus Swainson, 1822

From the Latin, meaning “with a keel”

magus cernohorski da Motta, 1983

Named after Walter Olivier Cernohorsky (b. 1927), malacologist born in Czechoslovakia, later acquiring New Zealand nationality

magus circae Sowerby, 1858

Named after Circe, goddess of magic in Greek mythology

magus consul Boivin, 1864

From the Latin, meaning an official of the Roman republic

magus frauenfeldi Crosse, 1865

Named after George Ritter von Frauenfeld (1805-1873), Austrian zoologist

magus fulvobullatus da Motta, 1982

From the Latin *fulvo*, meaning “tawny” or “gold coloured”, and *bullatus*, meaning “bubble-shaped”

magus metcalfi Reeve, 1843

Named after William Metcalf (?-1874), British malacologist

magus raphanus Hwass, 1792

Raphanus in the genus of the radish (*Raphanus sativus* Lin.), an edible root vegetable of the *Brassicaceae* family that was domesticated in Europe, so perhaps “radish-shaped”

magus signifer Crosse, 1865

From the Latin, meaning “sign-bearing”

magus ustulatus Reeve, 1843

From the Latin, meaning “scorched”, “consumed by fire”

malacanus Hwass, 1792

Named after Malacca, a state in the southern Malay Peninsula

mappa Solander, 1786

From the Italian *mappa*, meaning “map” or “chart”; in classic Latin *mappa* actually means “napkin”

mappa granarius Kiener, 1845

From the Latin, meaning “grainy”

mappa trinitarius Hwass, 1792

Named after the island of Trinidad, south Caribbean

marchionatus Hinds, 1843

The name means “from the Marquesas Islands”

marmoreus Linnaeus, 1758

From the Latin, meaning “made of marble” or “resembling marble”

marmoreus crosseanus Bernardi, 1861

Named after Joseph Charles Hippolyte Crosse (1826-1898), a French conchologist

marmoreus pseudomarmoreus Deshayes, 1875

From the Latin, meaning “false marmoreus”

marmoreus suffusus Sowerby, 1870

From the Latin, meaning “overspread with a liquid”

martensi Smith, 1884

Named after Eduard von Martens (1831–1904), a German malacologists

mauricioi Coltro, 2004

Named after Maurício Andrade Lima, a Brazilian conchologist and shell dealer

mayaguensis Nowell-Usticke, 1968

Probably named after the city (and bay) of Mayaguez, Puerto Rico, specimens have been found in the nearby Pta. Guanajibos, and Pta. Arenas on the West Coast of Puerto Rico

mazei Deshayes, 1874

Named after Hippolyte Pierre Mazé (1818-1892), French malacologists

mazei rainesae McGinty, 1953

Named after Mrs. H. Taylor Raines (?–1965), an American shell collector

mcbridei Lorenz, 2005

Named after Daniel McBride, an American shell collector

mcgintyi Pilsbry, 1955

Named after Paul P. McGinty (1877-1956), an American malacologist

medoci Lorenz, 2004

The species is “named in honour of the Belgian golden retriever Medoc who has been a regular visitor of shell shows throughout Europe for several years”

melvilli Sowerby, 1879

Named after James Cosmo Melvill (1845-1929), British malacologists

melvilli boschi Clover, 1972

Named after Donald Tacke Bosch (b. 1917), American medical officer and amateur malacologist resided in Oman

memiae Habe & Kosuge, 1970

Named after Memi (bio ?)

miles Linnaeus, 1758

From the Latin, meaning “soldier”

milesi E.A. Smith, 1887

Named after Manly Miles (1826-1898), American conchologist

miliaris Hwass, 1792

Possibly from the Latin *milium*, meaning “millet”, or *miliarium*, meaning “milestone” (from *milia*, plural of *mille* = 1000)

miliaris fulgetrum Sowerby, 1834

From the Latin, meaning “lightning”, referring to the pattern of shells

miliaris pascuensis Rehder, 1980

Named after the Polynesian Easter Island, also known as Rapa Nui and, in Spanish, as Isla de Pascua

milneedwardsi Jousseaume, 1894

Named after Henri Milne Edwards (1800-1885), doctor and naturalist born in Bruges of English father and French mother

milneedwardsi clytospira Melvill & Standen, 1899

From the Greek *klytos*, meaning “glorious, renowned”, and *speira*, meaning “spiral”

milneedwardsi kawamurai Habe, 1962

Named after Ryosuke Kawamura (1898-1993), Japanese malacologists

mindneedwardsi lemuriensis Wils & Delsaerdt, 1989
Named after Lemuria, a hypothetical “lost continent” possibly situated in the Indian Ocean

mindanus Hwass, 1792
Named after Mindanao, one of the islands in the Philippines

mindanus agassizi Dall, 1889
Named after Jean Louis Rodolphe Agassiz (1807-1873), Swiss paleontologist and naturalist

mindanus bermudensis Clench, 1962
Named after the Bermuda Islands, in the north Atlantic

mindanus duvali Bernardi, 1862
Named after M. Duval (?-1865), French conchologist

mindanus iansa Petuch, 1979
Named after the god Iansa, one of the Orixas of the Macumba religion of Bahia State, Brazil

mindanus vanhyningi Rehder, 1944
Named after Thompson Van Hyning (?-1948), American conchologist

miniexcelsus Olivera & Biggs, 2010
Looking like a very small *C. excelsus*

minnamurra Garrard, 1961
Named after Minnamurra (meaning plenty of fish in the local Aboriginal dialect), a suburb in the Illawarra region of New South Wales, Australia

mitratus Hwass, 1792
The name means “shaped like a mitre” (also: “wearing a turban”), a “mitre” being the headdress of a bishop in many western churches

moluccensis Küster, 1838
Named after the Moluccan Islands, Indonesia

moluccensis marielae Rehder & Wilson, 1975
Named after Mary Eleanor (Mariel) King, an American shell collector from Hawaii

moluccensis merleti Mayissian, 1974
Named after Yves Merlet, shell collector from New Caledonia

moluccensis stainforthii Reeve, 1843
Named after Francis J. Stainforth (?-1869), a British shell collector

monachus Linnaeus, 1758
From the Latin, meaning “a monk”

moncuri Filmer, 2005
Named after Alistair Moncur, British conchologist and shell dealer

monile Hwass, 1792
From the Latin, meaning “necklace”, referring to the pattern on the shell

montillai Röckel, 1985
Named after Manuel Montilla, conchologist and shell dealer from the Philippines

moreleti Crosse, 1858
Named after Pierre Marie Arthur Morelet (1809-1892), French malacologists

morrisoni Raybaudi, 1991
Named after Joseph Paul Morrison (born Eldred, but adopted by Dr. & Mrs Hugh Tucker Morrison after his parents' decease in 1912 and 1913, when they were missionaries in Belgian Congo), (1906-1983)

moylani Delsaerdt, 2000
Named after Ron Moylan, an Australian shell collector

Cone shells on stamps

Bruce Livett PhD

mozambicus Hwass, 1792

Named after Moçambique (Mozambique), in southeastern Africa

mozambicus lautus Reeve, 1844

From the Latin meaning “elegant”, “splendid” or “gaudy”

mucronatus Reeve, 1833

From the Latin, meaning “sharp-snouted” or “pointed”

muriculatus Sowerby, 1833

From the Latin, meaning “prickly”

muriculatus sugillatus Reeve, 1844

According to Reeve, the “bruised” Cone

mus Hwass, 1792

From the Latin, meaning “mouse”

musicus Hwass, 1792

The name means “music” or “musician”, possibly because the decoration of the shell can be remindful of notes on a music sheet

musicus ceylanensis Hwass, 1792

Named after Sri Lanka, once called Ceylon (from the Portuguese Ceilão)

musicus mighelsi Kiener, 1845

Named after Jesse Wedgwood Mighels (1795–1861), American malacologist

mustelinus Hawss, 1792

From the Latin, meaning “weasel” or “ermine”

In times past, it was the usual for collectors of all kinds to assemble, catalogue and display their chosen curiosities in so called Curiosity Cabinets. With time some of the more impressive collections were published as books. Witness the impressive collection of colour illustrations of shells, butterflies, insects, and more (from 1734-1765) of Albertus Seba published by Taschen 1980 in the book “Cabinet of Natural Curiosities”.

Cone shell collectors have been well served by books such as “Cone Shells: A Synopsis of the Living Conidae” by Jerry G. Walls (1979), the “Manual of the Living Conidae”, Vol. 1. Indo-Pacific Region, by Röckel, Korn and Kohn (1995), recently complemented by “The Cone Shells of Florida: An Illustrated Key and a Review of the Recent Species” by John K. Tucker, with a foreword by Dr Emilio F. García, MdM Publishing 2013; and by “A Conchological Iconography: The Family CONIDAE, The West African and Mediterranean Species of *Conus*” with text and 164 pages of colour plates by Antonio Monteiro, Manuel Tenorio & Guido Poppe, ConchBooks 2004. The latter Iconography included within a chapter on ‘History and Shell Collecting’ four black & white Text Figures illustrating 8 different species of cone shells present on postage stamps and First Day Covers from Cape Verde Islands and from several West-African countries (from a stamp collection by Cecile Hoskens), indicating the value placed by the inhabitants of these countries on these impressive animals. But outside of these publications information about the occurrence of specific *Conus* species on stamps has been difficult to source.

With the advent of digital publishing a number of museum collections have become available on the web providing the amateur and professional collector alike with ready access to images of a vast worldwide collection of shells and other natural curiosities. Many of these sites incorporate search engines allowing fast retrieval of material of interest. Searchable databases such as Alan Kohn’s *CONUS BIODIVERSITY WEBSITE* (<http://>

biology.burke.washington.edu/conus) listing 3,253 species published between 1758 and 2009, WoRMS the World Register of Marine Species (*www.marinespecies.org*) and the 'Illustrated Checklist of the Living Conidae' by Paul Kersten (*http://www.theconecollector.com/checklist/Pages*) provide comprehensive and authoritative lists of valid species names with synonyms. Common names of species are also available online from this bilingual Japanese/English database *http://bigai.world.coocan.jp/pic_book/family/3000.html* that in addition lists for each species its Country, Locality, Distribution and Habitat! Updates and corrections to the content, index and citations of previously published books have also been made available on the web (e.g. to Röckel, Korn and Kohn, 1995: see *http://biology.burke.washington.edu/conus/information/RKKcorrigenda.php*).

Stamp collectors have likewise been well served by numerous catalogues, perhaps the best known being those published by Stanley and Gibbons "the home of stamp collecting since 1856". These catalogues are now available on-line *http://www.stanleygibbons.com/stanleygibbons*. Here you can search over 100 stamp catalogues by Country and Region and Shop-On-Line filtering by keyword (eg. shells). But each stamp catalogue must be searched individually and these searches only reveal those stamps that are currently in stock and for sale. You can not search the world's store of stamps by shell type or by species. But don't despair. Help is at hand!

Thirteen years ago I received a request from Tom Walker in the UK asking whether I might be interested in putting up on-line all the cone shell stamps from his CD catalogue SHELLS ON STAMPS. This CD contained colour images of every stamp that depicted shells, over 6,500 stamps in total ! Tom also provided information about shells on stamps to Stanley Gibbons Stamp Catalogue, but at the time there was no web catalogue available.

THE CONE SHELL AND CONOTOXINS

WEBSITE: *http://grimwade.biochem.unimelb.edu.au/cone*

My background is as a biochemist and pharmacologist interested in the biology and toxinology of cone shell venoms (1). For my sins I had set up a web page "Cone Shells and Conotoxins" *http://grimwade.biochem.unimelb.edu.au/cone* to annotate progress in the field and it was this site that attracted Tom's attention. My knowledge of HTML programming was rudimentary at best, but I was keen to see what could be done as I could see the added value that a listing of cone shells on stamps could provide to cone shell enthusiasts and research scientists who accessed my site.

So began a fruitful and most enjoyable collaboration with Tom (2). Six years later we eventually met up when I visited the UK and stayed with him at his home in Reading. At the time he had just retired and was moving out of stamps (he has now sold his collection) and had shifted his active interests to archaeology assisting with a project excavating Roman ruins close to where he lives. Tom has continued to provide me with valuable updates to the image database and along the way I have learnt much about the countries and regions where cone shells are collected and valued as cultural icons.



THE “CONE SHELLS ON STAMPS” WEBSITE:
http://grimwade.biochem.unimelb.edu.au/conel/cones_on_stamps.html

Our collaborative project resulted in a web resource, http://grimwade.biochem.unimelb.edu.au/conel/cones_on_stamps.html that now displays a total of 332 images of stamps listed alphabetically by *Conus* species (100 identified *Conus* species + 12 indeterminate *Conus* sp) from 79 countries/regions (see Table). The web listing includes the date of issue and denomination of each stamp and annotations against each stamp, where appropriate.

Not surprisingly, the most popular *Conus* species depicted is *Conus textile* appearing on 39 stamps from 20 different countries, closely followed by *Conus marmoreus*, appearing on 16 stamps from 13 different countries. Somewhat surprisingly, *Conus geographus* appears on only 9 stamps, from 8 different countries. The Solomon Islands stand out as the country that has depicted the most species of *Conus* (16 species) – on a total of 17 stamps; rivalling Wallis & Futuna Islands with 13 different species depicted on 20 stamps. The Philippines, the proposed radiation of *Conus* and home to the widest distribution of *Conus* species has depicted just 5 identified *Conus* species (2 denominations each of *C. geographus*, *C. gloriamaris*, *C. marmoreus* and *C. striatus*, and 1 denomination each of *C. textile*) and an unidentified *Conus* sp. Australia, with over 80 different *Conus* species identified around its shores including the Great Barrier Reef has only issued one stamp depicting a cone shell, that of *Conus textile*. The only redeeming feature is that this is an image of a live specimen displaying its vividly patterned foot and striped siphon. Very few of the cone shell images on stamps are of live specimens. Christmas Island, a protectorate of Australia, also issued a stamp with an image of a live *Conus textile* and a second stamp depicting just the shell of a *Conus capitaneus*.

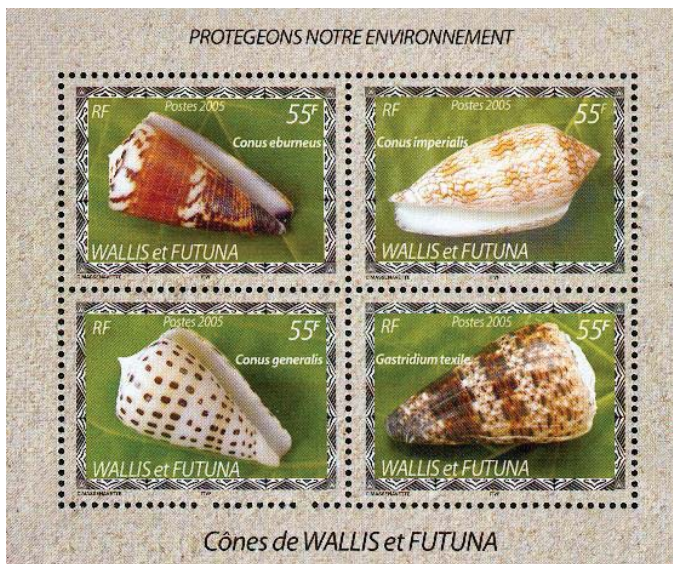


An example of a recent addition to our web resource is an image of *Conus geographus* on a \$1.40 stamp issued 11 April 2012 by Niue. I was intrigued to read about the island of Niue. I had not heard of it before. Niue is an island country in the South Pacific Ocean, 2,400 kilometres northeast of New Zealand and within the triangle formed by Tonga, the Samoas and the Cook Islands. The intricate illustrations provided, I found out, were created by John Henry Tagaloailuga in Niue in 1990. They are based on shells collected by his father, Herman Tagaloailuga, between 1979 and 1985 from Niue's Hikutavaki Reef. The web amazes me. Always something new to learn. Niue is encouraging tourism



and Air New Zealand operates flights to Niue. I plan to go to Niue for a holiday sometime soon, before it is ruined by too many tourists.

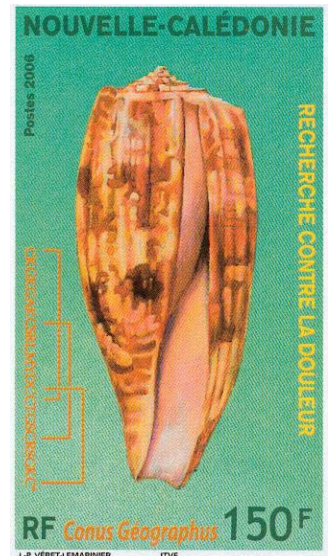
Some interesting “misinformation” was revealed during the compilation of our image database, including stamps with incorrectly assigned *Conus* species and others where the information about a particular conotoxin was incorrectly assigned to another *Conus* species. For example, the 55F stamp issued by Wallis & Fortuna Islands (26-1-05) featuring *Conus textile* is mislabelled as *Conus imperialis* <http://grimwade.biochem.unimelb.edu.au/cone/Cone%20images/Wallis%20Futuna/WAL864B.jpg> There are numerous other misassignments both on the Wallis & Fortuna Islands stamps and elsewhere. (Take a look at our annotations for the stamps depicted on the website).



MISINFORMATION ON DISPLAY: Block of 4, Top Left, *Conus vitulinus* labelled *Conus eburneus*; Top Right, *Conus textile* labelled *Conus imperialis*; Lower Left, *Conus eburneus* labelled *Conus generalis*; Lower Right, *Conus imperialis* labelled *Gastridium textile*!!

A second example of “misinformation” is a 150f stamp from New Caledonia featuring *Conus geographus* that includes a chemical formula for a conotoxin (the

yellow stick structure with letters on the left) that is not present in *Conus geographus* but is produced in the venom duct of a different cone shell, *Conus magus* (3). I don't know if that error makes the stamp more valuable, but I doubt it as the mistake was never corrected.



The CONCHOLOGY, INC. website run by Guido and Philippe Poppe includes a web catalogue (<http://www.conchology.bel?t=43>) showing all the stamps that are on Tom Walker's CD “SHELLS ON STAMPS”; the website was last updated in October 2008 and illustrates all the 6500 stamps showing shells and other molluscs that were issued worldwide until the end of 2007 when Tom stopped collecting new issues. Magnified images of many stamps are included to highlight the particular mollusc that is present. This site is fully searchable; for example if you put 'Conidae' under 'Family' or 'Conus' under 'Species' you will find all the stamps with cones. You can even combine search items, for example 'Conus' with theme 'Jewellery' or 'Painting'. You can also sort by Country and by Year of issue. However, you can still not select stamps by cone shell species - as are listed alphabetically at my CONE SHELLS ON STAMPS web site. Should you wish to obtain any stamps showing shells or other molluscs then one place to start is the STAMPS FOR SALE part of the Poppe website: <http://www.poppe-stamps.com>, although it is not possible to search for particular mollusc families.

However, all the listings are complementary and provide a valuable and searchable curatorial and scientific online resource about cone shells for conchologists, malacologists, stamp collectors and the general public. I suspect that some of you will have your own

collection of stamps featuring cone shells. Now, if you have read this far, I need your help. Please take another look at the page I developed listing cone shells on stamps http://grimwade.biochem.unimelb.edu.au/cone/cones_on_stamps.html. The listing is alphabetical (A-Z) by *Conus* species name (ie. *Conus abbas* to.... *Conus vitulinus* – and ending with *Conus sp*). Click on a country or geographical region to see the stamps from that country or region. Please check to see if you have any stamps in your collection that are not in my image databank and let me know. I am also missing the Common Name for many of the species. If you know it, please email me.

My aim is to have as complete a listing as possible so that it can serve as a reference source for present and future collectors.

I would also appreciate notice of any new stamps that feature cone shells so together we can keep this resource up to date.

I encourage you to browse the web site at leisure to discover some magnificent art work depicting species of *Conus* from exotic locations (4) that will tempt your imagination and perhaps even a “working holiday” on a tropical island.

Footnotes

(1) For an informative presentation on the biology of Cone Snails, see Baldomero Olivera’s site “The Cone Snail: Exploring Cone Snails and Science” at <http://www.theconesnail.com>

(2) The author wishes to thank Tom Walker for his his comments on this article for TCC and suggestions for improvements incorporated herein.

(3) The peptide sequence imprinted on the 150f *C. geographus* stamp from New Caledonia is of omega conotoxin MVIIA, a 3-loop conotoxin from *Conus magus*, NOT from *Conus geographus*! Conotoxin MVIIA (also known as Ziconotide, Prialt <http://www.prialt.com/patients.html>), is a powerful analgesic available in the US and Europe for treatment of neuropathic pain (Refs. "A toxin against pain", Gary Stix, Scientific American, April 2005, pp. 70-75 ; and "Toward Better Pain Control", Allan Bausbaum and David Julius, Scientific American, June 2006, pp. 60-67).

(4) This stamp sheet from St Thomas and Prince island depicting *Conus genuanus* is a work of art.

<http://grimwade.biochem.unimelb.edu.au/cone/Cone%20images/St%20Thomas%20Prince/MiB56.jpg>

Table CONE SHELLS ON STAMPS

The following countries and geographical regions have issued stamps featuring the following *Conus* species (# of different stamps issued). Images of these species on the stamps can be viewed at http://grimwade.biochem.unimelb.edu.au/cone/cones_on_stamps.html

COUNTRY	SPECIES
Angola	<i>C. pulcher</i> (8)
Australia	<i>C. textile</i> (live) (1)
Bahamas	<i>C. regius</i> (4)
Belgian Congo	<i>C. pulcher</i> (1)
Belize	<i>C. granulatus</i> (4), <i>C. spurius</i> (3)
Bermuda	<i>C. lightbourni</i> (1), <i>C. mindanus</i> "Bermuda Cone" (1)
British Indian Ocean Territory	<i>C. distans</i> , <i>C. generalis</i> (1), <i>C. imperialis</i> (1)
Burkino Faso	<i>C. pulcher</i> (3)
Cape Verde Islands	<i>C. ateralbus</i> (1), <i>C. balteus</i> (1) = <i>C. cuneolus</i> (1), <i>C. decoratus</i> (1), <i>C. salreiensis</i> (1), <i>C. evorai</i> (1), <i>C. verdensis</i> (1)
Caribbean	<i>C. regius</i> (1) on Block of 4 [and <i>C. spurius</i> from Nevis, an island in the Caribbean]
Cayman Islands	<i>C. austini</i> (1)
China (Hong Kong)	<i>C. areneosus nicobaricus</i> (1)
China (Taiwan)	<i>C. stupella</i> (2)
Christmas Island	<i>C. capitaneus</i> (1), <i>C. textile</i> (2)
Cocos (Keeling) Islands	<i>C. miles</i> (3)
Cook Islands	<i>C. episcopatus</i> (2) [from Penrhyn (North Cook Island)], <i>C. miles</i> (3), <i>C. textile</i> (12)
Comoro	<i>C. aulicus</i> (1), <i>C. litoglyphus</i> (1), <i>C. litteratus</i> (1), <i>C. textile</i> (2)
Czechoslovakia	<i>C. sp</i> (1) Hero and Leander: Cupid mourning
Djibouti	<i>C. betulinus</i> (1), <i>C. cuvieri</i> (1), <i>C. inscriptus</i> (1), <i>C. jickelii</i> , <i>C. locumtenens</i> (" <i>C. acumenatus</i> ") (1), <i>C. striatus</i> (1), <i>C. taeniatis</i> (1), <i>C. vexillum</i> (" <i>C. sumatrensis</i> ") (1)
Dominica	<i>C. hieroglyphus</i> (1), <i>C. mus</i> (1), <i>C. regius</i> (2)
Fiji	<i>C. ammiralis</i> (1), <i>C. coffeae</i> (1), <i>C. geographus</i> (1), <i>C. imperialis</i> (1), <i>C. mustelinus</i> (1), <i>C. pertusus</i> (1),
French Polynesia	<i>C. gauguini</i> (1), <i>C. marchionatus</i> (5), <i>C. pertusus</i> (1), <i>C. sp</i> (1) 44f Tahiti
French Territory of Afars & Issacs	<i>C. betulinus</i> (1), <i>C. striatus</i> (1), <i>C. taeniatus</i> (1), <i>C. textile</i> (1), <i>C. vexillum sumatrensis</i> (1),
Gabon	<i>C. pulcher</i> (1), <i>C. pulcher f. prometheus</i> (1)
Ghana	<i>C. genuanus</i> (1)
Gilbert and Ellice Islands	<i>C. gloriamaris</i> (1), <i>C. litteratus</i> (1),
Grenada	<i>C. regius</i> (1)
Grenada Grenadines	<i>C. mus</i> (1), <i>C. spurius</i> (1)

COUNTRY

Guinea
Guinea continued...
Guinea-Bissau
Ivory Coast
Jamaica
Kenya
Laos
Liberia
Malagasay Republic
Maldives
Marshall Islands
Mauritius
Micronesia
Montserrat
Mozambique
Namibia
Nevis
New Caledonia

Norfolk Island
Niue
Palau

Papua New Guinea

Paraguay
Penrhyn (North Cook Island)
Philippines

Pitcairn Islands

Qatar
Ruanda-Urundi
Ryukyu Islands
Samoa

St Thomas & Prince Island
St Vincent Grenadines
Senegal

SPECIES

C. aemulus (1), *C. arenatus* (1), *C. augur* (1), *C. circumactus* (1), *C. episcopatus* (1)
C. figulinus (1), *C. geographus* (1), *C. guinaicus* (2)
C. genuanus (2),
C. genuanus (1), *C. pulcher pulcher* (1)
C. regius (1)
C. textile (1), *Conus sp* (1), costumes, pendant
C. aulicus (1)
Conus sp (1) Mask, African festival
C. textile (1), *Conus sp* (1)
C. abbas (1), *C. amadus*, *C. bengalensis* (1), *C. capitaneus* (1)
C. episcopatus (1)
C. milneedwardsi lemuriensis (2)
C. generalis (1), *C. textile* (1)
C. sozoni = *C. delessertii* (2)
C. marmoreus (1)
C. betulinus (8), *C. mozambicus* (2)
C. spurius (1)
C. bullatus (1), *C. coccineus* (1), *C. exiguus*, *C. exiguus*, form *cabritii* (1), *C. floccatus* (1), *C. ferrugineus* form *chenui* (1), *C. floccatus* (1), *C. geographus* (2), *C. lamberti* (1), *C. lienardi* (1), *C. marmoreus suffusus* (1), *C. moluccensis moluccensis* (1)
C. capitaneus (1), *C. ebraeus* (1)
C. geographus (1)
C. ebraeus (1), *C. eburneus* (1), *C. geographus* (1), *C. litteratus* (1), *C. marmoreus* (1), *Conus sp* (1)
C. auratus (2), *C. gloriamaris* (1), *C. litoglyphus* (1), *C. marmoreus* (1), *C. suratensis* (1), *Conus sp* (2)
C. marmoreus (1)
C. episcopatus (2), *C. pennaceus* (2)
C. geographus (2), *C. gloriamaris* (2), *C. marmoreus* (2), *C. striatus* (2), *C. textile* (1), *Conus sp* (1)
C. geographus (1), *C. litoglyphus* (1), *C. marmoreus* (1), *C. striatus* (1), *C. textile* (1), *Conus sp* (1)
C. aulicus (4), *C. pennaceus* (1)
C. pulcher pulcher (1)
C. textile (2)
C. bandanus nigrescens (1), *C. litteratus* (1), *C. miles* (1), *C. tessulatus* (1), *C. textile* (1), *C. vexillum vexillum*
C. genuanus (1), *C. pulcher pulcher* (1)
C. cedonulli (3), *C. granulatus* (2), *C. spurius* (1)
C. gloriamaris (1)

COUNTRY

Seychelles
 Singapore
 Socialist Republic of Vietnam
 Solomon Islands

South Africa
 South West Africa
 Sri Lanka
 Tanzania
 Thailand

Togo
 Tonga
 Trinidad and Tobago
 Tuvalu

Turks and Caicos Islands
 United Arab Emirates
 Uruguay

Vanuatu
 Wallis and Futura Islands

Yemen People's Democratic Republic

SPECIES

C. betulinus (1), *C. textile* (1), *C. virgo* (1)
C. marmoreus (1),
C. miles (1)
C. aureus (1), *C. auratinus* (1), *C. canonicus* (1), *C. consors* (1), *C. consors poehlianus* (1), *C. corallinus* (1), *C. ferrugineus* (1), *C. floccatus* (1), *C. floccatus f. magdalenae* (1), *C. generalis* (1), *C. gloriamaris* (2), *C. marmoreus* (1), *C. ochroleucus f. tmetus* (1), *C. proximus* (1), *C. sulcatus f. bretteingham* (1), *C. textile* (1)
C. pictus (1)
C. pulcher pulcher (1)
C. textile (1)
C. litteratus (1)
C. thailandis (1)
C. genuanus (1), *C. mercator* (1), *C. pulcher pulcher* (1)
C. aulicus (6), *C. bullatus* (10), *C. textile* (3)
Conus sp (1) [A hermit crab emerging from a cone shell]
C. marmoreus (1)
C. regius (1)
C. textile (1)
C. clenchi (1)
C. bullatus (1), *C. marmoreus* (1), *C. textile* (1)
C. ammiralis ammiralis (1), *C. capitaneus* (1), *C. distans* (1), *C. eburneus* (2), *C. generalis* (2), *C. imperialis* (2), *C. leopardus* (1), *C. marmoreus* (1), *C. textile* (4), *C. tulipa* (1), *C. vexillum vexillum* (1), *C. virgo* (1), *C. vitulinus* (1)
C. splendidulus (1)

Conus striatus survives its deadly “fugu” meal

Sébastien Dutertre

Conus striatus is a large piscivorous cone, known to prey on fish as big as its shell, or even slightly bigger. Like other cone snails, *C. striatus* uses potent venom to rapidly subdue its prey. While most fish are no match for a hungry *C. striatus*, toadfish and pufferfish of the *Tetraodontidae* family produce a defensive toxin, called tetrodotoxin, which is one of the most lethal natural compounds. Most of the readers will be familiar with “Fugu”, the Japanese word for pufferfish, which also defines the dish prepared from it. If prepared by an inexperienced chef, this meal might be your last...

It is unlikely that pufferfish evolved tetrodotoxin to avoid humans, but rather to fight off predators...So, what would happen if a predator, such as *C. striatus*, preys on such indigestible food item?

Remarkably nothing! I witnessed the same *C. striatus* catching and swallowing toadfish twice in my fishtank, without any consequences. Did *C. striatus* develop tetrodotoxin resistance through an evolutionary arm-race with the pufferfish? Or were these particular specimens of fish not toxic, for unknown reason? An interesting question which will require further investigations...



Report on a shelling trip

Remy Devorsine

Here is a resume of our annual field trip 2012. The trip destination was East Diamond Islets in the coral sea 500 km East of Mackay in North Queensland. We were 20 shells collectors and 4 crews on board of Eastern Voyager, a 72 feet motor vessel based in Gladstone. For the story, the Brisbane shell club has been using the same company for 21 years in a row and we are going again next year, this time fishing the Swain reefs group. The East Diamond Islets, a very remote place, are home of 21 species of sea birds, a colony of red hermit crabs and a nesting place for green turtles during September & October.





During the green turtles nesting seasons, the water of these islets is patrolled by huge tiger sharks preying on green turtles, one of their favourite foods. We were using ours shark shields during night dives... just in case!

Those three islets (West, Central and East Diamond islets) are on the edge of a 5 to 6 hundreds meters drop off. We left Gladstone on the 10 of November 2012 late afternoon and steam nonstop to Outer Bugatti Reefs where we did stop a few hours waiting for better sea conditions between Bugatti reefs and East Diamond Islets where waves of 5 meters where forecast. During that time we did some dredging and two dives at Bugatti reef where we found a few shells but nothing of great interest except for two volutes, *Cymbiolacca peristicta*, the "Bugatti reef form" according to some experts on board! One found by myself, diving (see picture, top right), the second found by the dredging crew.

On the barrier reef every reef has got its very own form of volutes... again according to the experts on board. After a few hours, the weather forecast was better, the waves dropped from 5 to 3 meters. This was on the 13th November. We pulled up the anchor at midday and resumed our trip. Next stop: East Diamond Islets, where we arrived on the 15th November at midday.

The tower on the islet is a remote controlled weather station and a light house. The place was very rich in shells of all sorts. Cone species were very well represented: *arenatus*, *litteratus*, *quercinus*, *bandanus*, *leopardus*, *vitulinus*, *striatus*, *textile*, *vexillum*, *mustelinus*, *tessulatus*, and (hard to believe but true)... *flocatus* in only 5 meters, found on the last night dive! We knew they were around, as we found a few fresh dead ones during the day.

We did stay there 3 days looking mainly for a very rare volute from this specific area, the *Cymbiola perplicata*



(see picture). We were not very lucky, actually quite disappointed as only three were found live, two by the dredging crew, and one by a diver. Few fresh dead were found as well and I was lucky enough to find one fresh dead in so good condition that you could not see the difference after the shell was cleaned. We do believe that the very strong cyclone who did occur in that area a couple of years ago is one of the main reasons for the absence of live volutes on this trip, compared to the one a few years ago. One of the reasons for blaming the cyclone was the large number of dead shells found in all species.

Interestingly, a few *C. crocatus* were found at low tide under rocks... I would have never thought that this was possible! Fishing was also good, doesn't matter where we were trying... We left Perfect Lagoon to go back to base, where we docked on the 22nd November 2012, with our heads already full of souvenirs. Cheers!

We left this piece of "paradise" on the 18th November, as strong winds were forecasted for the next day. On the way back to base, we did stop at Perfect Lagoon Reef in the Swain reefs group, where I found my first live *Conus artroptus* and *C. mitratus*. Found also *C. varius*, *C. glans*, *C. bandanus*, *C. aulicus*, and *C. distans*.





Previous page & top left, *C. varius*. Top right, *C. mitratus*. Bottom row, *C. artroptus* (dorsal and ventral view)

On *Conus victoriae* territory

Will van Damme

Our friend Will van Damme has sent in a selection of photos concerning the Australian *Cylinder victoriae* Reeve, 1843.

These are quite interesting, not only for the images of live specimen with their egg capsules, but also to give everybody a clear idea of the spot where they are to be found!



Unusual specimens of *Contraconus adversarius*

Alessandro Zanzi

Normally, when we think of the *Contraconus adversarius*, we are accustomed to imagine it with an high spire, but when I received this sinistral *Conus* collected in the SMR Aggregates Inc. pit in Sarasota County (pit 11 / 12), characterized by a very low spire, I remember the document by Jonathan R. Hendricks “The Genus *Conus* (*Mollusca: Neogastropoda*) in the Plio-Pleistocene of the Southeastern United States” - *Bulletins of American Paleontology* Number 375, December 2008.

In this document, Hendricks supports that all previously described species of sinistral *Conus* belong to one highly morphologically variable species, *Conus adversarius* Conrad, 1840, and supports its conclusion with the observation of more than 6280 specimens.

Hendricks writes: “Petuch’s holotype specimens appear distinctive in shell shape when compared with the lectotype of *Conus adversarius*. These specimens appear less distinctive, however, when large sample sizes are considered and morphological variation is assessed quantitatively”. “Petuch’s use of spire height as a key taxonomic character for some of his sinistral cone taxa is at odds with the data collected here. For example, Pl. 10 demonstrates a continuous spire angle (SA) in 11 specimens from deposits near Sarasota, Florida.”

I omit other considerations and present some photographs of this *Contraconus adversarius* (94,5 x 46,9 mm.) [AZFC 160-07], very similar to that in Plate 8 n. 7 (44,3 mm.), in the document by Jonathan R. Hendricks:



Contraconus adversarius Plate 8 n. 7



Contraconus adversarius [AZFC 160-07]



Contraconus adversarius [AZFC 160-07]
(The *Conus* identified by the initials AZFC belong to my collection.)

Record specimens

Philippe Quiquandon

Philippe Quiquandon is well known for his – often successful – efforts to obtain world record sizes for all kinds of Shells, from common ones to the very rare. One could expect extremely large specimens to be ugly,

gerontic individuals, full of scars and other kinds of blemishes. Amazingly, though, many of these WRS shells are of a stunning beauty and of gem quality!



Textilia julii Lienard, 1870
64.1 mm WRS
La Réunion, west coast, on coral
Dived at 62 meters deep at night



Vindication after 37 or more years?

Joaquin M. Inchaustegui

January 15, 2013

As will be seen by the attached short note I submitted to the magazine of Sea and Shore published in the Spring, 1975 issue, I discovered a small tear-shaped pearl from a *Conus striatus* that I had exchanged with an American lady shell collector temporarily living in Kenya, East Africa. When I received this shell there was a distinct aroma that all shell collectors recognize and I could see part of the mollusk's flesh in the aperture. Before adding this to my collection I decided to clean the shell by soaking in fresh water and exchanging the water about every 6 hours or so to avoid later developing Bynes Disease which would ruin the shell.

While on one of the water changes I noticed a piece of flesh had fallen out of the shell taking with it the operculum and a strange "something" shaped like a tear or a grape seed. It had the same colors as the striatus and when I rolled it between my thumb and finger I noticed it was hard and smooth. Not knowing what to think of this, I showed it to Dr. R. Tucker Abbott on one of our Caribbean trips in the 70's and after he examined it under low magnification, he concluded that the shell had been damaged and while repairing this damage the animal trapped a piece of the shell and started to form a "pearl" by secreting new material around it.

Unfortunately, I was not experienced enough to recognize the rarity or importance of this so did not pay much attention to it other than sending this short article to Of Sea and Shore, bringing it to the Louisiana Malacological Society monthly shell meeting for a "Show and Tell", and showing it off to my shell collecting friends who became dubious as to the authenticity of this "pearl" and would take it as poppycock and would look down their noses at me when I would show it off. When in the same magazine issue there was mention of a "pearl" found inside a cowry shell I concluded that this was not such a rare occurrence and put the "pearl" in a little poly-bag with

the *C. striatus* in my cone cabinets. Little did I know that Hurricane Katrina would come along and reclaim this back to the Gulf of Mexico in 2005.

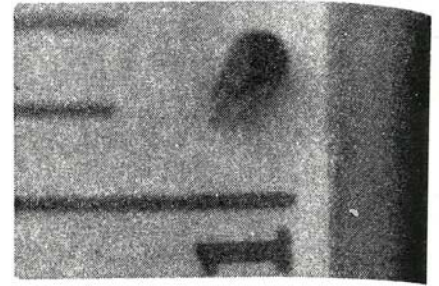
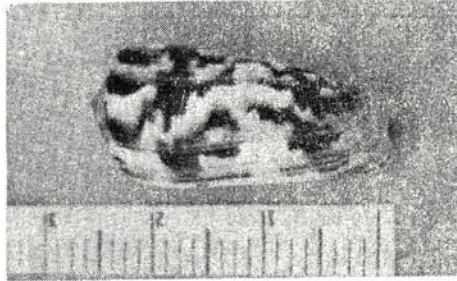
And so it went till Dr. Alan J. Kohn of the University of Washington and *Conus* expert co-author of *Manual of the Living Conidae Volume 1: Indo-Pacific Region*, discovered a second pearl in a *Conus* (*C. cedonulli*) which Robert Masino recently found off Union Is., islands of the Grenadines, which confirmed that I had really found a "pearl" in a *Conus* way back when, giving the lie to those that pooh-poohed me for those 37 years or more. All this will be summarized in the upcoming manual in the revisionary systematics of the west coast *Conus* being prepared by Dr. A. J. Kohn and will make great reading even for those with only a slight interest in *Conus*.

See scans of the respective articles on the following page...

Pearls From Cones and Cowries ?

It has often been reported that some cone shells have caused poisonous stings that have resulted in much suffering and, in some cases, even death to the victim. In Australia and other areas of the Pacific, death from cone stings occur nearly every year. However, I have not seen written reference to the fact that cone shells can produce pearls!

The accompanying photographs were taken by Wil Richard of Gretna, Louisiana, of a *Conus striatus* that I received in exchange from Kenya. While examining the shell I noticed that a dried piece of the animal's flesh was still inside, so I took it out. When the piece of dried flesh fell out I noticed a small piece of "something"



attached to it. Upon closer examination, it appears to be made of the same material and is the same color as part of the shell. The shell is $2\frac{1}{2}$ inches long and the "pearl" is $\frac{3}{16}$ inches long.

J.M. INCHAUSTEGUI; Gretna, Louisiana

The shell has a long, very obvious repair where it must have suffered extensive damage. Perhaps a small piece of grit got trapped between the mantle and the shell, when it was injured, and the animal secreted more shell matter around it to eliminate the irritation the same way that a pearl oyster does.

On Saturday, January 11, 1975, a diver friend of mine, Bill French, went out on the dive boat "Kona Princess" to Santa Rosa Island off the coast of Southern California. He is not a conchologist, but he does pick up an occasional shell. When he finds something unusual, he brings it to me. On this particular trip he picked up a couple of *Cypraea spadicea* Swainson, 1823, that he found on a pinnacle in 65 feet of water. This Chestnut Cowry is the only cowry found in local waters.

When Bill got home he cleaned his shells. He couldn't get everything out of one of the cowries. He kept shaking it and still it didn't come out so he took a close look. He saw, what he first thought was a rock, looked like a part of the shell. He couldn't believe his eyes so decided to call me.

His first question was, "Have you ever heard of a pearl being found in a cowry?" Of course my answer was "No!". When he brought it over and showed it to me, I had to agree that it was, indeed, a pearl.

I called my friend, Dr. James McLean, Curator of Invertebrate Zoology at the Los Angeles County Museum of Natural History. When I asked him about finding a pearl in a cowry he said that if there were such a thing ... and he was not doubting my word ... it was a "freak of nature".

Bill went to the Museum so Dr. McLean could see the "pearl". He agreed that it was a pearl and of the same material as the cowry shell. He said that the irritation, the star the pearl, had been in the mantle of the cowry. The cowry shell is 45 mm long and the pearl is approximately 5 mm in diameter. The apex of the shell is 3 mm wide and so the pearl inside to stay. The color of the pearl is the

ALBERTA JONES
Burbank, California

A final distinction of *C. cedonulli* is that it appears to be the only western Atlantic *Conus* and only the second in the genus known to have produced a pearl. Embedded in the mantle of a specimen collected in Chatham Bay, Union Isle, Grenadines, the pearl measured 1.6x1.2 mm (Text-fig. 5.40). The shell length

{Text-fig. 5.40 about here}

was estimated from that of the radular tooth to be 44 mm. In his review of pearl formation in gastropods, Coomans (1973) reported that only six families of Caenogastropoda have been known to produce pearls, and Conidae was not included. Two years later, a brief note by Inchaustegui (1975) reported finding what he believed to be a pearl about 5 mm long that fell out of a *C. striatus* shell about 65 mm long from Kenya, along with dried flesh. The shell had suffered extensive damage and the *C. striatus* had repaired it. The pearl was described as being "the same color as part of the shell," but the photographic reproduction was too blurred to determine whether the object was a true pearl or a broken piece of shell. However, Joaquin Inchaustegui (pers. comm.)¹ has informed me that its entire surface was smooth, and that R. Tucker Abbott had examined it and concluded that the *Conus* had in fact secreted new shell material around a nucleus that appeared to be a small broken piece of its own shell. Pearls have rarely been described from neogastropods, but a larger one of similar shape, about 3.2x2.7 mm, was recently reported from the muricid *Thais clavigera* (shell length 46 mm), from Izu Island,

New publications

António Monteiro

Recently described taxa include a number of new species and subspecies from Madagascar and Somalia, named by Luigi Bozzetti, as follows:

Malacologia # 76 (July 2012)



Pseudolilliconus levis Bozzetti, 2012

Holotype 10.18 mm - M. N. H. N. - Paris

The studied specimens have been found in intertidal grit at Lavanono, South Madagascar.

According to the original description, “the new species is named after its lack of appearance.”



Pseudolilliconus scalarispira Bozzetti, 2012

Holotype 9.30 mm - M. N. H. N. - Paris

The studied specimens have been found in intertidal grit at Lavanono, South Madagascar.

According to the original description, “the new species is named after its scalariform spire profile.”

Malacologia # 77 (October 2012)



Cylinder priscai Bozzetti, 2012

Holotype 59.73 x 28.89 mm - Author's coll. Milano Saint Luce, 20km North of Tolagnaro, South-Eastern Madagascar.

According to the original description, the new species honours Prisca J. H. Razafimandimby, of Tolagnaro, Madagascar, friend and collaborator of the author, who found the studied specimen in August 2012.



Pionoconus atimovatae Bozzetti, 2012

Holotype 21.39 x 10.63mm - Author's coll. – Milano
Lavanono, South Madagascar

According to the original description, “the new species is dedicated to the marine biodiversity campaign conducted in Southern Madagascar by the Muséum National d’Histoire Naturelle of Paris in 2010 under the direction of Dr. Philippe Bouchet. This big project [...] was named ‘Atimo vatae’ which in malagasy language means ‘the true South’.”

Malacologia # 78 (February 2013)



Rolaniconus buniatus Bozzetti, 2013

Holotype: 15.50 x 8.07 mm - Author's coll. Milano
Lavanono, Southern Madagascar.

According to the original description, “the new species name derives from the peculiar ashlar sculpture (*buniatus* in Latin).”



Darioconus pennaceus pseudoecho Bozzetti, 2013

Holotype: 60.75 x 31.00mm - M. N. H. N. – Paris
Lavanono, Southern Madagascar

According to the original description, “the new species is named after its pattern, very close to the *D. echo* .”

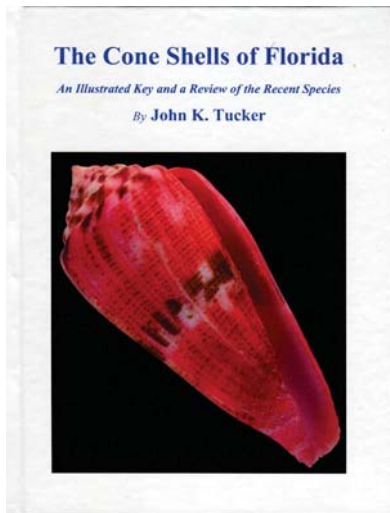
Yeddoconus somalicus Bozzetti, 2013

Holotype 23.60 x 12.06mm - Author's coll. Milano
Ras Hafun, North-Eastern Somalia, Trawled from
150-250m depth

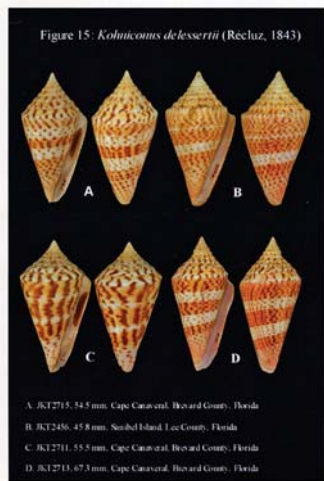
According to the original description, “the name of the new species derives from the finding area.”

Bozzetti has also named a few forms, but since these have no taxonomic value, we shall not mention them here.

On the other hand, John Tucker has recently published a new book on Cones: *The Cone Shells of Florida – an illustrated key and a review of the recent species*. The book was published by MdM Publishing, Florida, U.S.A., hardcover in case with stitched binding, about 7¼



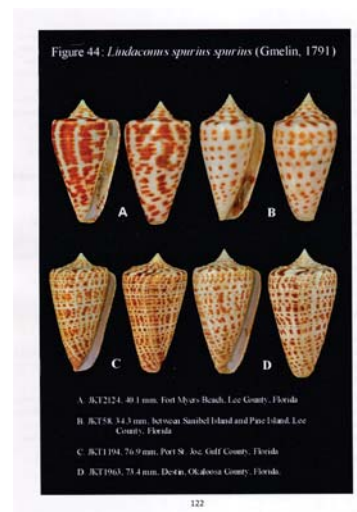
by 10 inch size (18.5 by 23 cm), 155 pages, with 48 full color plates and numerous large color illustrations for steps in the identification key. Price: US\$69.95



According to the author, "the purpose of the book was to provide a review of the cone shell species that occur in Florida. A total of 33 taxa (30 species and 3 subspecies) are documented with 32 previously described and one new species is described." It is in fact the first

fully illustrated guide to the marine Mollusks in the families *Conidae* and *Conolithidae* found in the waters off Florida from the shoreline to the continental shelf. Detailed descriptions and lists of synonyms are given for each species; usually several specimens of each species are shown in top quality plates.

It's rather unique characteristics and exhaustive coverage of the geographical area make this book an extremely valuable addition to our libraries. The identification key provided is innovative and very useful indeed.



The new species named is *Conasprelloides levistimpsoni* Tucker, 2013 and comes from Carabelle, Florida

Finally, *Visaya* 3(6) (October, 2012)

Includes two articles of interest for Cones:

- R. M. (Mike) Filmer, "Taxonomic Review of the *Conus spectrum*, *Conus stramineus* and *Conus collisus* complexes (*Gastropoda – Conidae*). Part III: The *Conus collisus* Complex" (pages 4-32, plates 55-69)

In this paper the new species *C. balabacensis* Filmer, 2012 is described. It comes from Balabac Island, in the Philippines and the holotype measures 25.65 mm. The new species is named after its type locality.



At the same time, the author proposes several changes to taxonomy: *C. collisus* is considered a *nomen dubium* and *C. stigmaticus* is found to be a more appropriate name, while *C. straturatus* is raised to species status.

Loïc Limpalaër & Eric Monnier, “*Pionoconus robini* (Gastropoda, Conidae). New species from the South Western Philippines”



The new species is named after Alain Robin, a well-known French malacologist. The holotype measures 26.15 mm.

We hope to see
your article in
the next TCC!

