



*THE  
CONE  
COLLECTOR*

*#24 January 2014*



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*On the Cover*

Live *Gastroidium eldredi*

(Morrison, 1955)

Photo by Layana Letourneux

(Tuamotu, French Polynesia)

As far as we can ascertain, this is the first time *G. eldredi* is photographed alive! Thanks to Layana Letourneux for permission to publish this photo and to David Touitou for arranging it.

## *Note from the Editor*

Dear friends,

I am proud to present to you TCC's first issue for 2014. As always, a wonderful team has worked to make it come true and I must begin by thanking all the authors and contributors for sharing their knowledge and experiences with us. Recurring praise is also due to André Poremski for his sterling work in the graphic design of the bulletin.

Later this year the 3rd International Cone Meeting will take place. As everybody knows by now, Madrid has been selected as the locale for our gathering. A dynamic, efficient and dedicated Organizing Committee spares no effort to ensure that it will match the huge success of the two previous ones and in this number of TCC you will find much exciting information and a program. Again, I wish to thank all those who have already agreed to collaborate and especially those who will present talks, organize workshops, etc.

I do hope to meet as many of you as possible in Madrid next October. For the moment, and without further ado, enjoy TCC #24 and be sure to let us know have your comments, suggestions, ideas, photos and articles for our next number – already in the making!

António Monteiro

# Who's Who in Cones

Armando Verdasca

I am a Portuguese collector of seashells, born in 1966, with a degree in Economics and a Master in Applied Mathematics. I currently live near Lisbon, and also near the sea, for which I am absolutely passionate (just like many Portuguese navigators were many centuries ago); I am a diver, aquarist reef keeper, and seashells lover.

The fascination with the aquatic world, diving and seashells collecting was born one day long ago, in a faraway place, in another continent, in a country of warm and bright colours, surreal and naïf for some and of eternal longing for me. I am speaking of Mozambique, where I lived for six months in 1995. I was immediately in love with the odd tropical exoticism of seashells, with their exuberant shapes and bright colours, which I saw for sale in informal markets. Cones fascinated me the most by their endless variation of colours and patterns, in particular the group known as "tentled mark cones", like *textile*, and more specifically the *pennaceus* complex, that can be found in Mozambique as the most beautiful subspecies and in many colour forms.

*Conus pennaceus*, Born, I. von, 1778, three of many colour forms existing in Northern Mozambique; Nacala Bay, Nampula Province.

Anyway, in that first trip and stay in Mozambique I had no opportunity to dive or to meet friends that could guide me to the best sites. Indeed, that first visit had a well-defined professional purpose and I had only a few months to complete my appointed tasks: as an economist in the head office of a Portuguese firm, I was in charge of leading a team providing professional training to the technical financial area of its Mozambican subsidiary. I did receive invitations to carry on working in Mozambique, but that wasn't the purpose of my trip and I didn't even discuss it previously with my family.

However, the project was quite enticing and the idea remained in my heart. Three years later I accepted the challenge that I had initially refused: to work in Mozambique, this time as an expatriate, leading the financial area in the Mozambican subsidiary. Thus, in early 1999, in the very first days of January, I returned to Mozambique, and this time my family would accompany me for some time. I stayed until March of 2002.

I made friends, met many fabulous sites for diving and collecting shells and I brought many shells back with me: a very sweaty collection, full of adventures and shenanigans, built with passion and of which I am quite very proud. It were in fact those friends that I made then who initiated me in the collecting of seashells: José Rosado, Carlos Afonso, Manuel Amorim, Brian Hayes and in particular the late César Fernandes, eternal friend, whom I had the opportunity and privilege to know well, learning from him much of what little I know about the "art" of shell collecting.

Later on, I got to know several other Portuguese collectors, such as António Monteiro, Paulo Granja and Bernardino Monteiro, with whom I share stories of this fascinating world of seashells too, as well as many other friends throughout the world to whom I owe a lot of happiness that the shells collecting brought me.

My collection of Cones has grown ever since, both through purchase and exchanges, usually with shells that I collected myself on dive trips made to other places beyond Mozambique: the Cape Verde Islands, Angola, Martinique, Mexico (Caribbean side), Egypt (Red Sea), Maldives and Papua New Guinea, and also other less exotic locations in the Atlantic and the Mediterranean Sea.

Nowadays I keep a general (except for a few families)



## Harry John Berryman's Award-Winning Displays of Cones



The Cone displays prepared by Harry John Berryman are well known to attendants of Shells Shows in the U.S.A. The great care he puts in their organization and presentation has won him several awards. Now, Harry has shared with us images of his trays and panels, for which we thank him!

I am sure that everybody will enjoy them.

A.M.

collection of seashells from Mozambique and a collection of worldwide Cones comprising between 2 and 3 thousand specimens.

As I said above, my preference goes to the “tent-marked cones” group, and in particular the *pennaceus* (of which I have some hundreds of specimens), and closely related species. But all specimens of exceptional beauty and/or patterns interest me greatly, as do the species from the western coast of Africa, in particular from former Portuguese colonies, like Angola and Cape Verde Islands.

Beyond my work in the field of Economics job and enjoying time with my family (I have two daughters), I occupy my time organizing the collection and attending to two reef aquariums in which I keep live corals, reef fishes and invertebrates (more than 1,000 litres of saltwater in my living room!); no living Cones though... I don't want them to feed on my little fishes!



Bill Lyons, Harry John Berryman, Anne Joffe













*Rhizoconus verrillianus* Gmelin, J. F., 1791  
Flag Cone  
Punta Engabo, Mactan Island, Cebu.

*Rhombiconus imperialis imperialis* Linnaeus, C., 1758  
Imperial Cone  
Bobol, Cebu.

Type species  
*Strategiconus generalis* Linnaeus, C., 1767  
General Cone  
Dredged 20 meters, Olango Island, Cebu.

*Strategiconus flagellatus* "Muschler, F. C."  
Hwass, C. H. in Bruguière, J. G., 1792  
Paddle-carved Cone  
Throughout the islands.

*Strategiconus filitarsis* Linnaeus, C., 1767  
Littered Cone  
Throughout the islands.

*Rhombiconus distans* Hwass, C. H. in Bruguière, J. G., 1792  
Distans Cone  
Throughout the islands.

*Strategiconus flagellatus facinoratus*  
Klauer, L.C., 1845  
Tangle mts. 10 to 20 meters, Panglao Island, Bohol, Cebu.

Type Species  
*Virgiconus virgo* Linnaeus, C., 1758  
Virgin Cone  
Throughout the islands.

*Virgiconus emaciatu* Reeve, L. A., 1849  
False Virgin cone  
SCUBA diver, 15 meters, Calituban Island.

*Virgiconus flavida*  
Lamarck, J. B. P. A. de, 1810  
Yellow Pacific Cone  
Compressor diver, 10 to 20 meters in coral rubble, Olango Island, Cebu.

*Virgiconus kinohi* Habe, T. & Kosuge, S., 1970  
20 to 40 meters, Panglao Island.

*Virgiconus moreletii* Crosse, 1858  
Morelet's Cone  
Hoakah diver off Balabac Island.

*Virgiconus thalassiarctus* "Gray, J. E."  
Sowerby, G. B. I in Sowerby, G. B. H, 1834  
Bough Cone  
Palawan Island.

*Virgiconus thalassiarctus azona* Wils, E., 1972  
Collected at 8 meters in Northern Palawan.

*Virgiconus thalassiarctus castrensis* Gould, A. A., 1842  
Collected at 8 meters Northern Palawan.

*Virgiconus thalassiarctus depriesteri* Wils, E., 1972  
Collected at 8 meters in Northern Palawan.

*Virgiconus thalassiarctus mariei*  
Joussoume, F. P., 1899  
Dwarf form, collected in Northern Palawan.

*Virgiconus thalassiarctus sorsogon*  
Sowerby, G. B. I, 1834,  
Ticao Pass, Baluan, Mindanao Island.

Type Species  
*Virroconus eburneus* Linnaeus, C., 1758  
Ivory Cone  
Throughout the islands.

*Virroconus eburneus* Hwass, C. H. in Bruguière, J. G., 1792  
Ivory cone  
Local diver, low tide on reef, Olango Island, Cebu.

*Virroconus chaldeus* (Röding, P. F., 1798)  
Vermiculate Conus  
Throughout the islands.

Type Species  
*Vindiconus planorbis planorbis*  
Born, I von, 1778  
Planorbis Cone  
Compressor diver, 20 to 40 meters, Olango Island, Cebu.



*Fialoncos planorbis* Higgins  
Hwan, C. H., in Bruguère, J. G., 1792  
Vial Cone  
Throughout the islands.

*Fialoncos circumcinctus*  
Iredale, T., 1929  
Compressor diver, 20 to 35 meters.  
Otango Island, Cebu.

*Fialoncos ferruginus* Sphaer  
Brazil, J., 1875  
SCUBA diver 25 meters off Balabac Island.

*Calamiconus jeffreyi*  
(Petack, E. J. & Seargent, S. B. 20011)  
Collected by Doug Jeffrey, off Balabac Island, Palawan.

*Lepidoceras coffea* Gmelin, J. F., 1791  
Coffee Cone  
Hookah diver 25 meters off Balabac Island.

*Lepidoceras glans* Hwan, C. H.  
in Bruguère, J. G., 1792  
Acorn cone  
Local on reef, 1977, Bobon, Northern Samar.

*Lepidoceras granum*  
Rikeland, D. & Fischler, H., 1985  
Compressor diver, 20 to 30 meters.  
Otango Island, Cebu.

Type Species  
*Hermes nassella* Linnaeus, C., 1758  
Nassella Cone  
Local on reef, low tide, April 2001, Otango Island, Cebu.

*Hermes viola* Cernohorsky, W. O., 1977  
Violet Cone  
SCUBA divers 25 meters off Masbate Island.

*Karondaconus procellens* procellens  
Adams, A. in Adams, G. H. & Adams, A., 1854  
Admiral Cone  
Tangle nets, 30 to 40 meters, Aliguay Island, Cebu.

*Karondaconus procellens* bicolor  
(Sowerby, G. B. I., 1833)  
Tangle nets, 75 meters, Aliguay Island.

*Karondaconus procellens* subaequalis  
Sowerby, G. B. I., 1870  
Southern Mindanao.

*Rolaniconus acerbois*  
Walsh, J. G., 1978  
Asteroid's cone  
Local fishermen, 3 to 4 meters,  
Calamian Island, Palawan.

*Rolaniconus boeticus* boeticus  
Reeve, L. A., 1844 "1843"  
Boeticus Cone  
Point Bolinao, Pangasinan, Lingayen Gulf.

*Rolaniconus boeticus* boeticus nitidus  
Reeve, L. A., 1848  
Hookah diver off Balabac Island.

*Rolaniconus carolinus* Gmelin, J. F., 1791  
Scarlet Cone  
SCUBA diver, 12 meters, Eastern Samar Island.

*Rolaniconus varius* Linnaeus, C., 1758  
Freckled Cone  
SCUBA Diver 25 meters off Otango Island.

*Dendroconus betulinus* betulinus Linnaeus, C., 1758  
Beech Cone  
Throughout the islands in limited quantity.

*Dendroconus figulus* Linnaeus, C., 1758  
Fig Cone  
Lingayen Gulf, Western Luzon.

*Dendroconus glaucus* Linnaeus, C., 1758  
Glaucous cone  
Lingayen Gulf, Western Luzon.

*Dendroconus saratensis* Hwan C. H.  
in Bruguère, J. G., 1792  
Sarat Cone  
SCUBA diver, Manila Bay.

*Conaxoprella articulata* articulata  
Sowerby, G. B. III, 1873  
Nada Cone  
Tangles nets 150 meters off Dalicuang Island.

*Conaxoprella aphrodite* Petack, E. J., 1979  
Tangle nets 150 meters off Aliguay Island.



*Conasprella bailleyi* Rickett, D. & Motta, A. J. da, 1979  
Tangle nets, 20 to 30 meters, Panglao Island, Bohol, Cebu.

*Conasprella pagoda* Kiener, L. C., 1846  
Tangle nets, 25 to 30 meters, Santa Rosa Island, Cebu.

*Conasprella nakawanensis* (Kuruda, T., 1956)  
Trapped at 10 meters, Balicasag Island, Bohol.

*Yeddoconus ichinosana* (Kuroda, T., 1956)  
Ichinose Cone  
Tangle nets, 40 to 60 meters, Balicasag Island, Bohol.

*Yeddoconus lone* Fulton, H. C., 1938  
20 to 30 meters, Panglao Island.

*Yeddoconus kimioi* (Habe, T., 1965)  
Kimio's Cone  
Tangle net, 40 to 60 meters, Aliguay Island, Cebu.

*Yeddoconus memiae* (Habe, T. & Kosuge, S., 1970)  
Tangle nets, 50 to 70 meters, Punta Engabo, Mactan Island, Cebu.

*Yeddoconus spirofilis* (Habe, T. & Kosuge, S., 1970)  
Tangle nets, April 2001, 50 to 70 meters, Aliguay Island, Cebu.

*Viminiconus vimineus* Reeve, L. A., 1849  
Wickelwork Cone  
Tangle nets, 20 to 30 meters, Tayabas Bay.

*Protostriconus obscurus* "Humphrey, G. MS" Sowerby, G. B. H., 1833  
Obscure Cone  
SCUBA diver on reef, 5 to 10 meters, Bogo, Cebu.

*Bathyconus orbigny'si orbigny'si* Audouin J. V., 1831  
Orbigny's false Cone  
Tangle nets 150 meters off Balicasag Island.

*Bathyconus saecularis* Melvill, J. C., 1898  
Tangle nets, 20 to 40 meters, Panglao Island, Bohol.

# A Sampling of Philippine Cones



## Type Species

*Conus (Conus) marmoreus* Linnæus, 1758

Family: Conidae Fleming, C.A., 1822

Genus: *Conus* Linnæus, 1758

Subgenus: *Conus* Linnæus C., 1758

*Cylindrus* Batsch, 1823

*Leptoconus* Swainson W. A., 1840

*Darioconus* Iredale T., 1930

*Calibanus* Motta A. J. da, 1985

*Eugeniconus* Matta A. J. da, 1991

*Textilia* Swainson W. J., 1840

*Pionoconus* Morch, O. A. L., 1851

*Puncticulis* Sowerby, W. A., 1804

*Asprella* Schaufuss, L. W., 1869

*Livodoconus* Wils, E., 1970

*Harmoniconus* Motta, A. J. da, 1991

*Kioconus Motta, A. J. da, 1991*  
*Lithoconus Morch, O. A. L., 1852*  
*Miliariconus Tucker, J. K. & Tenorio, M. J., 2009*  
*Rhizoconus Morch, O. A. L., 1852*  
*Rhombiconus Tucker, J. K. & Tenorio, M. J., 2009*  
*Strategoconus Motta, A. J. da, 1991*  
*Virgiconus Cotton, B.C., 1945*  
*Virroconus Iredale, T., 1930*  
*Vituliconus Iredale, T., 1930*  
*Vituliconus Motta, A. J. da, 1991*  
*Calamiconus Tucker, J. K. & Tenorio, M. J., 2009*  
*Leporiconus Iredale, T., 1930*  
*Hermes Montfort, P. D. de, 1810*  
*Kurodaconus Shikama, T. & Habe, T., 1968*  
*Rolaniconus Tucker, J. K. & Tenorio, M. J., 2009*  
*Dendroconus Swainson, W. A., 1840*  
*Conasprella Thiele, 1929*  
*Yeddoconus Tucker, J. K. & Tenorio, M. J., 2009*  
*Viminiconus Tucker, J. K. & Tenorio, M. J., 2009*  
*Protostrioconus Tucker, J. K. & Tenorio, M. J., 2009*  
*Bathyconus Tucker, J. K. & Tenorio, M. J., 2009*



*Cones textile* on the prowl.

## Killer Cones

There are over 600 different species of cones and all are venomous. Their venom can result anywhere from nothing more than a bee sting to deadly. About 15 human deaths have been attributed to cone stings. Symptoms for the more serious cone stings include localized pain, swelling, numbness, tingling and vomiting. Some involve muscle paralysis, changes in vision and respiratory failure leading to death. There is no antivenin; the treatment of life support is used until the venom is metabolized by the victim. They possess a radula sack containing a quiver of darts enabling the use of more than one dart at a time. The three shown here, *C. geographus*, *C. tulipa* and *C. striatus* are considered to be the most deadly.



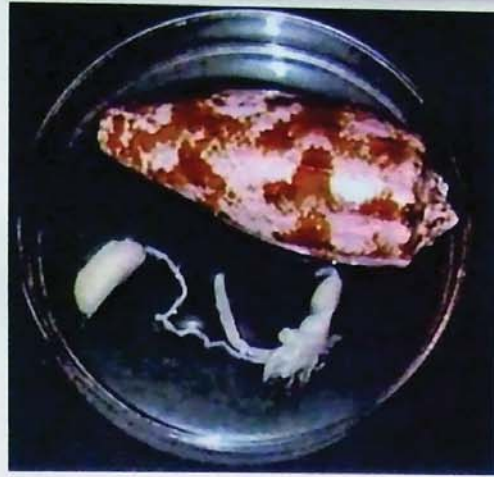
*Conus (Gastriidium) geographus* Linnæus, C., 1758



*Conus (Pionoconus) striatus striatus* Linnæus, C., 1758



*Conus (Gastriidium) tulipa* Linnæus, C., 1758



*C. geographus* dissected showing the poison system, the venom bulb, proboscis and venom duct.



An armed harpoon, ready to strike sticking partially out of the proboscis.



Enlargement of the harpoon.



The "business end" of a *C. striatus*.



*C. virgo* attacking *Harpago chiragra*.



*C. marmoreus* attacking a  
*Cypraea caputserpentis*



*Cones auleus* attacking a *Scutus inguis*.





Tethered by fine threads attached to the harpoon that enables the predator to reel in its prey.



*C. geographus* with mouth expanded to receive its victim.



Two cones eating small fish.





*L. corallinus* Kiener



*L. granum* Röckel & Fischöder



*P. cinereus* Hwass

## Benefits from

## The Killer Cones

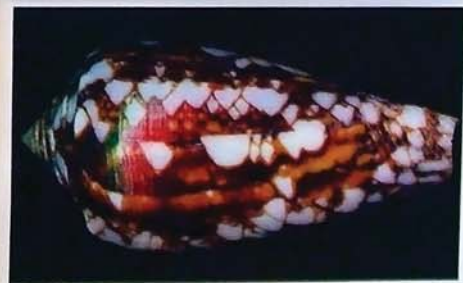
“Cones are nature’s pharmaceutical drug designers. In recent years their venom has been showing significant promises as a new source for the medical profession. Most notably, certain cone venoms have been discovered to be able to reduce the heart rate or to turn off the signaling of a single class nerve. The venom from the *Conus magus* has provided a non-addictive pain reliever 1000 time as powerful as morphine. *Conus victoriae* has proven to be effective in treating postsurgical and neuropathic pain, even accelerating recovery from nerve injury. The first approved use as a pain killer by the U.S. Food and Drug Administration was on December 2004 under the name “Prialt” Other drugs currently on trial are compounds that may be used in the treatment of Alzheimer’s disease, Parkinson’s disease and epilepsy.

The **\$741 million** from a deadly cone snail **Conopeptides** produces about **70,000 different conotoxins**.

Research by University of Utah,  
Professor Baldomero Olivera



*Conus (Pionoconus) magus* Linnæus, C., 1758



*Conus (Levconopsis) victoriae* Gatiff, J. H., 1905



*H. nussatellus* Linnaeus



*V. thalassiarachus* laying eggs



*F. hopwoodi* Tomlin



*C. (A.) colossus* laying eggs



*C. (H.) musicus* Hwass



*R. pertusus* Hwass



"The Beauty of the Beast"

Bibliography

Abbott, R. T. & Dance, S. P., 2000. *Compendium of Seashells*. Odyssey Publishing, El Cajon, California.

Poppe, G. T., 2008. *Philippine Marine Mollusks*. Conch Books. Hackenheim, Germany.

Robin, A., 2008. *Encyclopedia of Marine Gastropods*. Conch Books. Hackenheim, Germany.

Springsteen, F. J. & Leobrera, F. M., 1986. *Shells of the Philippines*. Carfel Seashell Museum, Manila, Philippines.

Internet:

Divegallery.com. *Venomous Cones*.

Hardy's Internet Guide to Marine Gastropods.

Underwaterkwaaj.com. *Conus*.

Voices.yahoo.com. *Venom as a Painkiller*.

Wikipedia.org. *Conus*

Zonatus.com. *Killer Cones*.

## Another Giant

Our good friend Philippe Quiquandon has sent photos of yet another exceptional specimen: this time, a giant *Vituliconus ferrugineus* (Hwass 1792). This specimen measures no less than 92,51 mm and is in shipshape condition! It was collected by surface supplied (hooka) divers at a depth of 40 m off Bohol Island, Philippines, in June 2013.



# Etymology of Cone Species Letters Q-S

António Monteiro

In a previous section of this ongoing work, à propos *Conus bairstowi* Sowerby, 1889, I have written: “Named after Samuel Denton Bairstow (?-1899), South African (originally Yorkshire) naturalist”.

Our friend Harry John Berryman recently sent a message to inform that he had found a more precise information about Bairstow, through the Internet site [www.southafricansettlers.com](http://www.southafricansettlers.com). Here it is:

Samuel Denton Bairstow

Born in Huddersfield, Yorkshire, England, on the 31st March, 1854; died in Port Elizabeth, Cape, South Africa, on the 27th July, 1898. His parents were George Bairstow and Hannah and he married Helena Marion.

Harry also tells us that he is trying to put together a collection of portraits of people involved with Cones, especially those linked to Cones' names. Perhaps others will have interesting information to share on this subject. The pages of TCC will welcome comments, information, images, etc.

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Our study of the etymology of Cone species names is approaching the end, as we take a look at the names that begin with the letters Q, R and S.

I renew my sincere thanks to all those listed previously who contributed to this work; special thanks in this case to Bill Fenzan. I will be grateful for any comments and/or information in the cases listed below where I was unable to reach a conclusion.

*queenslandis* da Motta, 1984

Named after Queensland, northeastern Australia

*quercinus* Solander, 1786

From the Latin *quercus*, meaning “oak tree”, probably referring to the general aspect of the shell

*quercinus albonerosa* Garrard, 1966  
???

*quiquandoni* Lorenz & Barbier, 2008

Named after Philippe Quiquandon, French conchologist and shell dealer

*rachelae* Petuch, 1988

Named after the late Rachel ("Rae") Germon, who was Jerry Harasewych's curatorial assistant at the Smithsonian Institution

*radiatus* Gmelin, 1791

From the Latin *radiare*, meaning “to radiate light” or “to shine”

*rainesae* McGinty, 1953

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

*ranonganus* da Motta, 1978

Named after Ranong, southern Thailand

*raoulensis* Powell, 1958

Named after Raoul Island, Kermadec Islands, South Pacific

*rarimaculatus* Sowerby, 1870

From the Latin, meaning “sparsely dotted”

*rattus* Hwass, 1792

From the Latin, meaning “mouse” or “rat”

*rattus taitensis* Hwass, 1792

Named after Tahiti Island, French Polynesia

*rawaiensis* da Motta, 1978

Named after Rawai Beach, south Phuket Island, Thailand

*recluzianus* Bernardi, 1853

Named after Constant A. Récluz (1797?-1873), a



French malacologists

*recluzianus gloriakiiensis* Kuroda & Ito, 1961  
Named after the region of Kii in Japan, meaning “the glory of Kii”

*recluzianus roseorapum* Raybaudi & da Motta, 1990  
From the Latin, referring to the brownish pink colour of shells

*recluzianus urashimanus* Kuroda & Ito, 1961  
Named after Urashima Tarō, a Japanese legend about a fisherman, who rescues a turtle, being rewarded with a very long visit to the Palace of the Dragon

*recurvus* Broderip, 1833  
From the Latin recurvare, meaning “curved upward”

*regius* Gmelin, 1791  
From the Latin, meaning “regal”

*regius citrinus* Gmelin, 1791  
From the Latin, meaning “lemon-yellow” (lemon = “citreum”)

*regularis* Sowerby, 1833  
From the Latin, meaning “regular”

*retifer* Menke, 1829  
From the Latin *rete*, meaning “network” (probably referring to the pattern of shells)

*richardbinghami* Petuch, 1992  
Named after Richard Bingham, American conchologist

*richeri* Richard & Moolenbeek, 1988  
Named after Bertrand Richer de Forges (b. 1948), French zoologist from New Caledonia

*ritae* Petuch, 1995  
Named after Rita Besse, wife of Bruno Besse, French

conchologist and shell dealer

*rizali* Olivera & Biggs, 2010  
Named after José Protasio Rizal Mercado y Alonso Realonda (1861-1896), national hero of the Philippines

*roberti* Richard, 2009  
Named after Francis Robert, a conchologist from Guadeloupe (Lesser Antilles)

*rolani* Röckel, 1986  
Named after Emilio Rolán Mosquera (b. 1935), Spanish malacologists

*rosalindensis* Petuch, 1998  
Named after the Rosalind Bank, off Honduras

*rosemaryae* Petuch, 1990  
Named after Rosemary Adams, American conchologist

*royaiken*i Veldsman, 2010  
Named after Roy Aiken, South African conchologist

*rufimaculosus* Macpherson, 1959  
From the Latin, meaning “with reddish markings”

*rutilus* Menke, 1843  
From the Latin, meaning “red”

*saecularis* Melvill, 1898  
From the Latin, meaning “profane”

*sagarin*oi Fenzan, 2004  
Named after Rudy Sagarino, the fisherman from the Philippines who discovered the first specimens of the new species in Aliguay Island

*sagei* Korn & Raybaudi, 1993  
Named after Walter E. Sage III, (1949-1995), American malacologists

*sahlbergi* da Motta & Harland, 1986

Named after Carl Sahlberg (b. 1947), American conchologist

*salzmanni* Raybaudi & Rolán, 1997

Named after Otmar Salzmann, an Austrian shell collector

*sanderi* Wils & Moolenbeek, 1979

Named after Finn Sander, malacologist from Barbados

*sanguinolentus* Quoy & Gaimard, 1834

From the Latin, meaning “blood stained”

*sartii* Korn, Niederhöfer & Blöcher, 2004

Named after François-Marie Sarti, French conchologist from Madagascar

*sauros* Garcia, 2006

From the Greek *sauros*, meaning “reptile”, referring to the rough surface of the species, not unlike the skin of some reptiles

*sazanka* Shikama, 1970

Named after the sazanka, a Japanese camellia (*Camellia sasanqua* Thunb.) with a deep pink colour

*scabriusculus* Dillwyn, 1817

From the Latin, meaning “small and rough”

*scalaris* Valenciennes, 1832

From the Latin, meaning “stepped”, referring to the profile of the spire

*scalptus* Reeve, 1843

From the Latin, meaning “carved”, “engraved” or “scratched”

*schirrmeisteri* Coltro, 2004

Named after Eduardo Schirrmeister, a Brazilian conchologist

*scopulicola* Okutani, 1972

From the Latin *scipulus*, meaning “rock”

*scopulorum* van Mol, Tursch & Kempf, 1971

From the Latin *scopulus*, meaning “rock”

*sculletti* Marsh, 1962

Named after Marten J. Scullett, an Australian conchologist

*sculpturatus* Röckel & da Motta, 1985

From the Latin, meaning “sculpted”

*segondensis* Fenzan, 2008

Named after Segond Channel, Luganville, Espiritu Santo island, Republic of Vanuatu

*segravei* Gatliff, 1891

Named after Segrave (bio ?), an Australian conchologist

*selenae* van Mol, Tursch & Kempf, 1967

From the Greek *selen*, meaning “moon”

*sennottorum* Rehder & Abbott, 1951

???

*sennottorum gibsonsmithorum* Petuch, 1986

Named after Jack and Winifred Gibson Smith, conchologists from Venezuela (currently living in England)

*sertacinctus* Röckel, 1986

From the Latin, meaning “with garland-like bands”

*shikamai* Coomans, Moolenbeek & Wils, 1985

Named after Tokio Shikama (1912 -1978), Japanese palaeontologist

*sieboldii* Reeve, 1848

Named after Philipp Franz Balthasar von Siebold (1796-1866), a German physician and naturalist; he

was the first European to teach Western medicine in Japan

*simanoki* Tenorio, Poppe & Tagaro, 2007  
Named after Jitrakorn Simanok, a shell collector from Thailand

*simonis* Bozzetti, 2010  
Named after the author's grand daughter Simone

*smirna* Bartsch & Rehder, 1943  
???

*solangeae* Bozzetti, 2004  
Named after Solange Rahantooa, from Madagascar

*solomonensis* Delsaerd, 1993  
Named after the Solomon Islands

*speciosissimus* Reeve, 1848  
From the Latin, meaning "extremely good-looking"

*speciosissimus lindae* Petuch, 1987  
Named after Linda Petuch, the author's wife

*spectrum* Linnaeus, 1758  
From the Latin, meaning "spectre", "ghost"

*spectrum conspersus* Reeve, 1844  
From the Latin conspergere, meaning "to sprinkle", hence the "sprinkled" Cone

*spectrum daphne* Boivin, 1864  
From the Greek, meaning "laurel"

*spectrum filamentosus* Reeve, 1849  
From the Latin, meaning "covered with threads"

*spectrum lacteus* Lamarck, 1810  
From the Latin, meaning "milky"

*spectrum pica* Adams & Reeve, 1848

From the Latin, meaning "magpie"

*spectrum stillatus* Reeve, 1849  
From the Latin stillare, meaning "to drip"

*sphacelatus* Sowerby, 1833  
From the Latin, meaning "gangrenous" (?)

*spirofilis* Habe & Kosuge, 1970  
From the Latin, meaning "with spiral threads"

*splendidulus* Sowerby, 1833  
From the Latin, meaning "splendid"

*sponsalis* Hwass, 1792  
From the Latin, meaning "spouse"

*sponsalis nanus* Sowerby, 1833  
From the Latin, meaning "dwarf"

*sponsalis nux* Broderip, 1833  
From the Latin, meaning "nut"

*spurius* Gmelin, 1791  
From the Latin, meaning "false" or "spurious"

*spurius arubaensis* Nowell-Usticke, 1968  
Named after Aruba Island, southern Caribbean Sea

*spurius atlanticus* Clench, 1942  
Named after the Atlantic Ocean

*spurius aureofasciatus* Rehder & Abbott, 1951  
From the Latin, meaning "golden-banded"

*spurius baylei* Jousseaume, 1872  
Probably named after Claude Emile Bayle (1819-1895), a French malacologists

*spurius lorenzianus* Dillwyn, 1817  
Named after Lorenzian, a shell collector (bio?)

*spurius ochraceus* Lamarck, 1810

From the Latin, meaning “ochre coloured”

*spurius phlogopus* Tomlin, 1937

From the Greek *phlogopos*, meaning “fiery-looking”

*stearnsii* Conrad, 1869

Probably named after either Frederick Stearns (1831-1907), American conchologist (or possibly after Robert Edwards Carter Stearns (1827-1909), also an American zoologist)

*stercusmuscarum* Linnaeus, 1758

From the Latin, meaning “dotted with fly droppings”

*stimpsoni* Dall, 1902

Named after William Stimpson (1832-1872), American zoologist

*stocki* Coomans & Moolenbeek, 1990

Named after Jan Hendrik Stock (1931-1997), Dutch zoologist

*stramineus* Lamarck, 1810

From the Latin *stramen*, meaning “straw”, hence the “strawy” or “straw-coloured” Cone

*stramineus mulderi* Fulton, 1936

Named after Mulder (bio ?)

*striatellus* Link, 1807

From the Latin, diminutive of *striatus*, meaning “grooved”

*striatus* Linnaeus, 1758

From the Latin, meaning “striated” or “furrowed”

*striatus floridus* Sowerby, 1858

From the Latin, meaning “flowery” or “florid”

*striatus chusaki* da Motta, 1978

Named after Khun Chusak Sangiam, shell collector

from Thailand

*striatus oahuensis* Tucker, Tenorio & Chaney in Severns, 2011

Named after Oahu Island, in the Hawaiian archipelago

*striatus subfloridus* da Motta, 1985

From the Latin, meaning “beneath floridus”

*striolatus* Kiener, 1845

From the Latin, meaning “finely striated”

*striolatus decurtata* Dautzenberg, 1910

From the Latin *decurtare*, meaning “to reduce” or “to shorten”

*stupa* Kuroda, 1956

A “stupa” is a dome-shaped Buddhist monument, hence probably referring to the shape of the shell

*stupella* Kuroda, 1956

From the Latin, meaning “lesser stupa”

*subulatus* Kiener, 1845

From the Latin, meaning “slender” (subul = awl)

*suduirauti* Raybaudi, 2004

Named after Emmanuel Guillot de Suduiraut (1938-2010), French conchologist and shell dealer

*sugimotonis* Kuroda, 1928

Named after Reverend Ryusho Sugimoto, Japanese conchologist

*sugimotonis vicdani* Lan, 1978

Named after Victor Dan, a conchologist from the Philippines

*sugimotonis whiteheadae* da Motta, 1985

Named after Thora Whitehead (b. 1936), Australian shell collector

*sukhadwalai* Röckel & da Motta, 1983

Named after Phiroz Sukhadwala, an Indian conchologist

*sulcatus* Hwass, 1792

From the Latin, meaning “plowed” or “grooved”

*sulcatus bocki* Sowerby, 1881

Probably named after Carl Bock (1849-1932), Norwegian traveller in South Asia, who studied in London and was sent as collector by the Marquis of Tweeddale to the Malay Archipelago

*sulcatus bretteinghami* Coomans, Moolenbeek & Wils, 1982

Named after George Bretteingham Sowerby (1788-1854), British naturalist, the son of James Sowerby. Together with his brother James De Carle Sowerby he continued their father's work on fossil shells, publishing the latter parts of the *Mineral Conchology of Great Britain*. He authored the *Thesaurus Conchyliorum*, a work that was continued by his son, George Bretteingham Sowerby II and his grandson George Bretteingham Sowerby III.

*sulcatus samiae* da Motta, 1982

Named after Samia Martin (1910-90), Philippine shell collector, with her husband Roger

*sulcocastaneus* Kosuge, 1981

From the Latin, meaning “with brown grooves”

*sunderlandi* Petuch, 1987

Named after Kevan Sunderland, American conchologist

*suratensis* Hwass, 1792

Named after the Indian city and district of Surat

*sutanorcum* Moolenbeek, Röckel & Bouchet, 2008

The name “sutanorcum” is merely “mucronatus” spelled backwards, which refers to the similarity

between the two species

*suturatus* Reeve, 1844

From the Latin *sutura*, meaning “a seam, a sewing together”

*suturatus sandwichensis* Walls, 1978

Named after the Sandwich Islands (which was the name given to Hawaii by James Cook, in the 1770s; Cook named the islands after John Montagu, 4th Earl of Sandwich (1718-1792), a supporter of his voyages; John Montagu is best known today for the invention of the modern sandwich)

*swainsoni* Estival & von Cosel, 1986

Named after William John Swainson (1789-1855), English zoologist

*sydneyensis* Sowerby, 1887

Named after Sydney, Australia

*sydneyensis illawarra* Garrard, 1961

Named after the region of Illawarra, New South Wales, Australia

# Fossil *Conus* from Italian Piacenzian Pliocene

Giancarlo Paganelli

In the last 220 years about twenty species of fossil *Conus* from the Italian Piacenzian Pliocene layers (3.6 to 1.8 mya), mainly in the Apennine Mountains of Piedmont, Liguria, Emilia and Tuscany were found. The first fossil taxon described was *Conus antidiluvianus* Bruguière, 1792, then Lamarck, Brocchi most of all, Orbigny, Sacco and others described all the currently known Italian fossil cones.

*C. ventricosus* Gmelin, 1791 is the only known living species. This species was recognized as fossil only later. Brocchi doesn't mention it in his work. The first record I found is in Philippi, 1836 as *C. mediterraneus* Hwass, 1792.

The species shown represent nearly all the ones present in the Italian Pliocene. They were collected mainly in the gullies of Rio Stramonte, Diolo, Province of Piacenza (in person) and in Tuscany, Province of Siena. Often it is not easy to identify the right taxon as the variability detected and the lacking of the colour pattern.

All the specimens represented were from my collection and myself photographed. Many of them are not in my availability any longer.

## References

- Bellardi L., & Michelotti G., 1841.  
*Saggio orittographico sulla classe dei Gasteropodi fossili dei terreni terziarii del Piemonte.*
- Bruguière J. G., & Hwass, C. H., 1792. Cône.  
*Encyclopédie Méthodique: Histoire Naturelle des Vers.*
- Brocchi G., 1814.  
*Conchiologia Fossile Su-bapennina, con Osservazioni Geologiche sugli Apennini e suolo adiacente.*
- Bronn, H. G., 1828.  
*Verzeichniss der vom Heidelberger Mineralien-Komptoir herausgegebenen geognostisch-petrefaktologischen Sammlungen.*
- Caprotti E., 1971.  
*Considerazioni generali sulla Malacofauna dello stratotipo Piacenzia-no* (Castell'Arquato, Piacenza).
- Cavallo O., & Repetto G., 1992.  
*Conchiglie fossili del Roero. Atlante Iconografico.*
- Chirli C., 1997.  
*Malacofauna Pliocenica To-scana vol. I. Superfamiglia Conoidea.*
- Crosse J. C. H., 1865.  
*Description de Cônes nouveaux provenant de la collection Cuming.*
- Fontannes F., 1880.  
*Les Invertébrés du Bassin Tertiaire du Sud-est de la France.*
- Lamarck J. B. P., 1810.  
*Sur la détermination des especes.*
- Malatesta A., 1974.  
*Malacofauna Pliocenica Umbra.*
- Mayer-Eymar C., 1891.  
*Diagnose specierum novarum.*
- Orbigny A., 1852.  
*Prodrome de paléontologie stratigraphique universelle des animaux mol-lusques et rayonnés faisant suite au cours élémentaire de paléontologie et de géologie stratigraphiques.*
- Philippi, R. A., 1836.  
*Enumeratio Molluscorum Siciliae cum Viventium tum in Tellure Tertiaria Fossilium.*
- Rossi Ronchetti C., 1955.  
*I tipi della "Con-chiologia fossile subapennina" di G.*

*Brocchi.*

Sacco F., 1893.

*I Molluschi dei Terreni Ter-ziarii del Piemonte e della Liguria. Pt. XIII. Conidae e Conorbidae.*

Spadini V., 1989.

*Il Genere Conus (Gastrop-oda: Neogastropoda) nel Pliocene senese.*

## Species

*Conus antediluvianus* BRUGUIÈRE, 1792

Shell moderately large. Last whorl narrowly conical with right sides. Shoulder carinate. Spire high, stepped, coronate. Teleoconch sutural ramps concave. Aperture narrow with parallel sides. No trace of colour pattern.

Plate 1. No. 1, 67.7 mm. No. 3, 48.6 mm (Diolo, Piacenza). No. 2, 60.4 mm (Ciciano, Siena).

*Conus ventricosus* GMELIN, 1791

Shell of medium to large size. Last whorl conical to ventricosely conical. Shoulder subangulate. Spire of medium high. Teleoconch sutural ramps flat. Aperture wider at base than at shoulder. Non trace of colour pattern.

Plate 1. No. 4, 38.4 mm. No. 5, 57.4 mm (Pietrafitta, Siena).

*Conus betulinoides* LAMARCK, 1810

Shell of medium to moderately large size. Last whorl conical. Shoulder rounded. Spire of moderate high with concave outline. Teleoconch sutural ramps flat. Aperture wider at base than at shoulder. No trace of colour pattern.

Plate 1. No. 6, 59.5 mm (San Gimignano, Siena).

*Conus canaliculatus* BROCCCHI, 1814

Shell of small size. Last whorl conical with right sides. Shoulder angulated. Spire high, stepped, outline straight. Teleoconch sutural ramps flat. Aperture narrow with parallel sides. Colour pattern of thin reddish spiral lines.

Plate 1. No. 7, 27.5 mm. No. 8, 17.8 mm (Diolo, Piacenza).

*Conus mercati* BROCCCHI, 1814

Shell of medium to large size. Last whorl conical with slightly convex sides. Shoulder subangulate to rounded. Spire moderately low to moderately high with straight to slightly concave outline. Tele-oconch sutural ramps slightly convex. Aperture wider at base than at shoulder. No trace of colour pattern.

Plate 2. No. 9, 90.5 mm. No. 10, 36.8 mm (San Gimignano, Siena).

*Conus noe* BROCCCHI, 1814

Shell of large size. Last whorl narrowly ovate. Shoulder rather indistinct. Spire high with convex (domed) outline. Teleoconch sutural ramps flat. Aperture narrow. No trace of colour pattern.

Plate 2. No. 11, fragment 35 x 32 mm [estimated 85 mm] (Diolo, Piacenza).

*Conus pelagicus* BROCCCHI, 1814

Shell of small size. Last whorl conical, convex adapically, slightly concave at base. Spire of moderate high with straight outline. Teleoconch sutural ramps convex. Aperture narrow with parallel sides. Colour pattern of dark thin spiral lines and dots.

Plate 3. No. 17, 30.0 mm (Diolo, Piacenza).

*Conus ponderosus* BROCCCHI, 1814

Shell medium-sized. Last whorl conical to ventricosely conical; outline variably convex adapically, straight to almost slightly concave below. Shoulder subangulate to rounded. Spire of moderate height with straight outline. Teleoconch sutural ramps flat. Aperture with almost parallel sides. No trace of colour pattern.

Plate 3. No. 18, 38.9 mm (Melograni, Siena).

*Conus pyrula* BROCCCHI, 1814

Shell of medium size. Last whorl conical; outline variably convex adapically, slightly convex to almost straight below. Shoulder rounded. Spire of moderate height, with convex outline. Teleoconch sutural ramps slightly convex. Aperture rather narrow with parallel sides. Colour pattern of axial reddish lines.

Plate 2. No. 12, 53.2 mm (San Gimignano, Siena). No. 13, 37.5 mm (Melograni, Siena). No. 14, 36.5 mm. No. 15, 35.5 mm. No. 16, 37.9 mm (Ciciano, Siena).

*Conus striatulus* BROCCCHI, 1814

Shell of small to medium size. Last whorl conical with right sides. Shoulder angulated. Spire of moderate high with straight outline. Teleoconch sutural ramps flat. Aperture rather narrow with parallel sides. Colour pattern of thin reddish interrupted spiral lines.

Plate 3. No. 19, 36.5 mm (Diolo, Piacenza).

*Conus virginalis* BROCCCHI, 1814

Shell of medium size. Last whorl conical with right sides. Shoulder angulate. Spire rather low with straight outline. Teleoconch sutural ramps flat. Aperture narrow with parallel sides. No trace of colour pattern.

Plate 3. No. 21, 36.5 mm (Diolo, Piacenza).

*Conus brocchii* BRONN, 1828

Shell medium-sized. Last whorl conical with right sides. Shoulder carinate. Spire rather high, stepped, with straight to slightly concave outline. Teleoconch sutural ramps concave. Aperture narrow with parallel sides. No trace of colour pattern.

Brocchi identified this *Conus* as *deperditus* BRUGUIÈRE, 1792; later Bronn described it as a new species.

Plate 3. No. 22, 45.7 mm. No. 23, 39.8 mm (Diolo, Piacenza).

*Conus clavatulus* ORBIGNY, 1852

Shell of medium size. Last whorl pyriform. Shoulder rounded. Spire of moderate height with concave outline. Teleoconch sutural ramps flat. Aperture with parallel sides. No trace of colour pattern.

Plate 3. No. 24, 48.1 mm (San Gimignano, Siena).

*Conus deshayesi* ORBIGNY, 1852

Shell of small size. Last whorl ventricosely conical. Shoulder rounded. Spire of moderate high with rather straight outline. Teleoconch sutural ramps flat. Aperture with parallel sides. Colour pattern of grey interrupted spiral lines.

Plate 3. No. 25, 30.4 mm (Ciciano, Siena).

*Conus subtextile* ORBIGNY, 1852

Shell medium-sized. Last whorl conical; outline slightly convex. Shoulder subangulate to rounded. Spire of moderate height, outline variably concave to convex. Teleoconch sutural ramps flat to slightly convex. Aperture narrow with parallel sides. Colour pattern of a thin ochre tent network.



Plate 3. No. 26, 50.3 mm. No. 27, 27.1 mm [juvenile]  
(Ciciano, Siena).

*Conus pecchiolii* CROSSE, 1865

Shell medium-sized. Last whorl conical to broadly conical; outline convex adapically, slightly convex to almost straight below. Shoulder rounded. Spire of moderate height, convex. Teleoconch sutural ramps flat. Aperture wider at base than at shoulder. Colour pattern of many nearly regularly spiral dashes of red and grey.

Plate 4. No. 28, 46.5 mm. No. 29, 28.8 mm (San Gimignano, Siena).

*Conus bitorosus* FONTANNES, 1880

Shell of medium to moderately large size. Last whorl ventricosely conical. Shoulder rounded. Spire of moderate high. Teleoconch sutural ramps convex. Aperture wider at base than at shoulder. No trace of colour pattern.

Plate 4. No. 30, 57.1 mm (Pietrafitta, Siena). No. 31, 47.3 mm (Ciciano, Siena).

*Conus gallicus* MAYER-EYMAR, 1890

Shell of small size. Last whorl conical with straight to slightly convex sides. Shoulder subangulate. Spire

moderately high with concave outline. Teleoconch sutural ramps convex. Aperture wider at base than at shoulder. No trace of colour pattern.

Plate 4. No. 32, 30.0 mm (Ciciano, Siena). No. 33, 31.3 mm (Pietrafitta, Siena).

*Conus laeviponderosus* SACCO, 1893

Shell medium-sized. Last whorl ventricosely conical; outline variably convex. Shoulder subangulate to rounded. Spire of moderate height, outline flat to slightly convex. Teleoconch sutural ramps slightly convex. Aperture wider at base than at shoulder. Colour pattern of many thin ochre interrupted axial lines.

Plate 4. No. 34, 53.8 mm. No. 35, 38.3 mm (San Gimignano, Siena).

*Conus spongiopictus* SACCO, 1893

Shell of medium size. Last whorl ventricosely conical; outline variably convex. Shoulder subangulate. Spire of moderate height, outline flat to slightly convex. Teleoconch sutural ramps flat. Aperture wider at base than at shoulder. Colour pattern constituted by a tangled network of ochre thin lines, as painted by a sponge, which is why the name.

Plate 4. No. 36, 51.4 mm. No. 37, 38.7 mm (Ciciano, Siena).

## Plate 1

1-3, *antidiluvianus* BRUGUIÈRE, 1792  
4-5, *ventricosus* GMELIN, 1791  
6, *betulinoides* LAMARCK, 1810  
7-8, *canaliculatus* BROCCCHI, 1814

## Plate 2

9-10, *mercati* BROCCCHI, 1814  
11, *noe* BROCCCHI, 1814  
12-16, *pyrula* BROCCCHI, 1814

## Plate 3

17, *pelagicus* BROCCCHI, 1814  
18, *ponderosus* BROCCCHI, 1814  
19, *striatulus* BROCCCHI, 1814  
20, *virginalis* BROCCCHI, 1814  
21-22, *brocchii* BRONN, 1828  
23, *clavatulus* ORBIGNY, 1852  
24, *deshayesi* ORBIGNY, 1852  
25-26, *subtextile* ORBIGNY, 1852

## Plate 4

27-28, *pecchiolii* CROSSE, 1865  
29-30, *bitorosus* FONTANNES, 1880  
31-32, *gallicus* MAYER-EYMAR, 1890  
33-34, *laeviponderosus* SACCO, 1893  
35-36, *spongiopictus* SACCO, 1893

## Plate 5

Colour Pattern

1-2, *laeviponderosus*  
3, *canaliculatus*  
4, *striatulus*  
5-6, *pecchiolii*

## Plate 6

Colour Pattern

7, *deshayesi*  
8, *spongiopictus*  
9-10, *pyrula*  
11, *subtextile*  
12, *pelagicus*

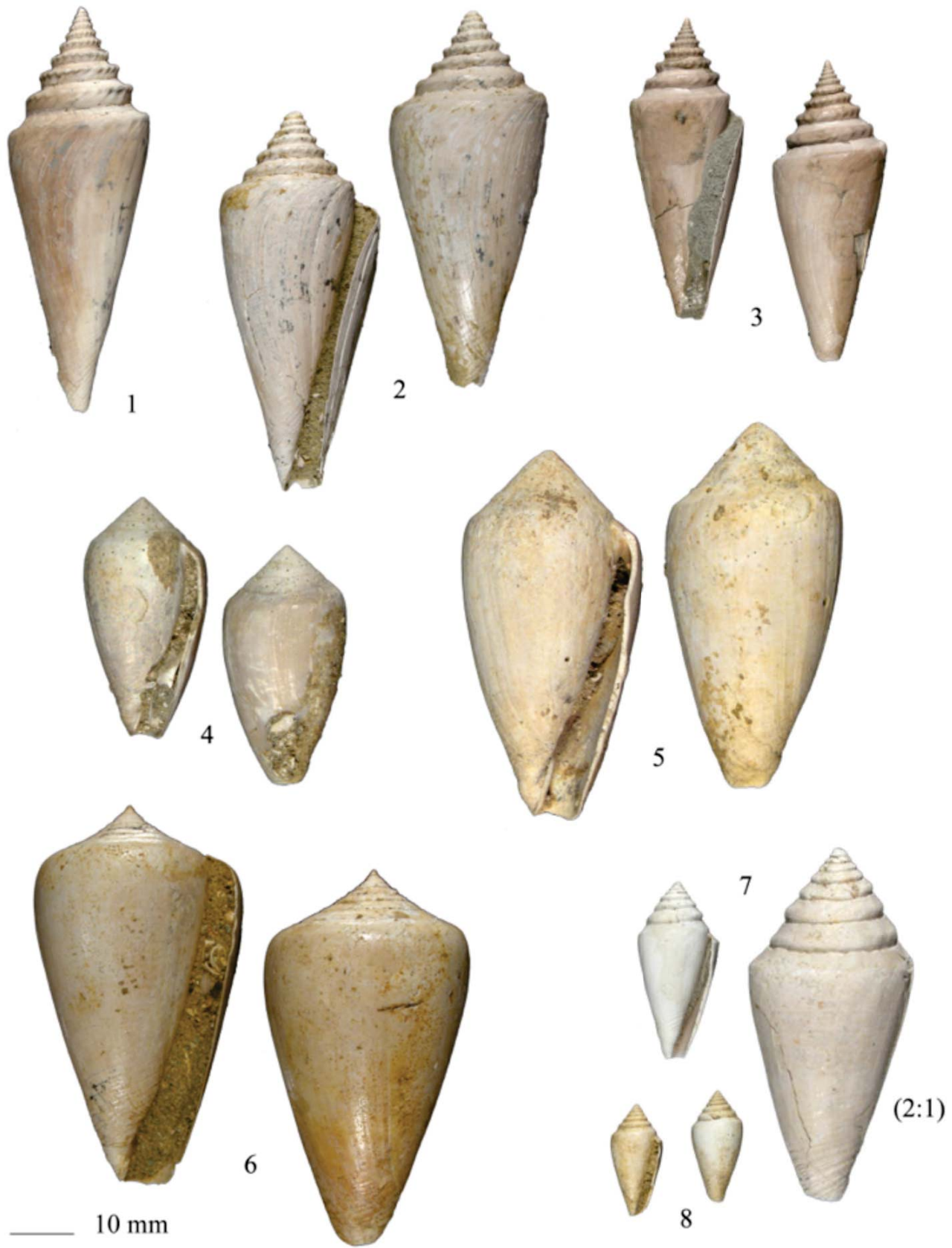


Plate 1

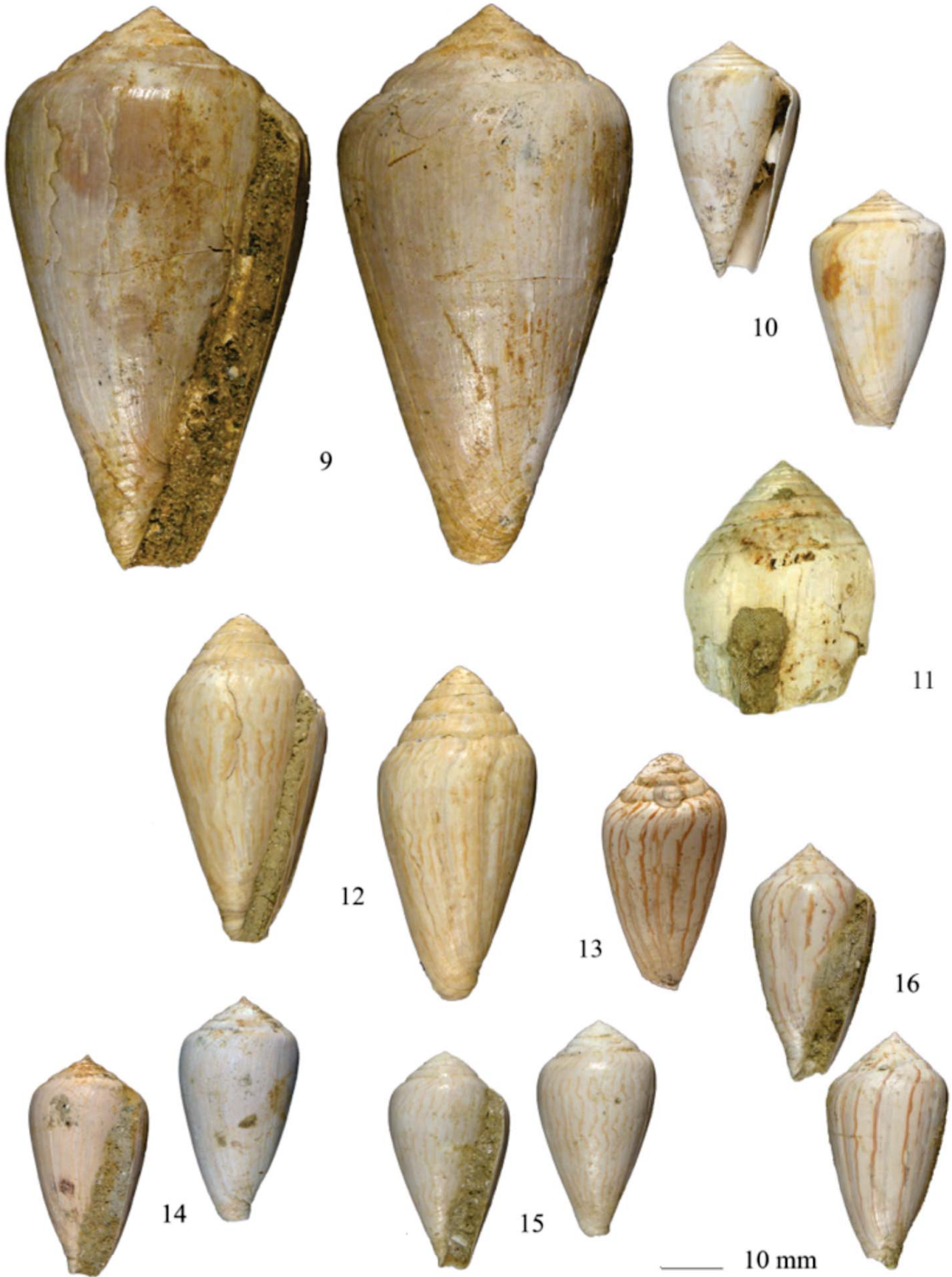


Plate 2



Plate 3

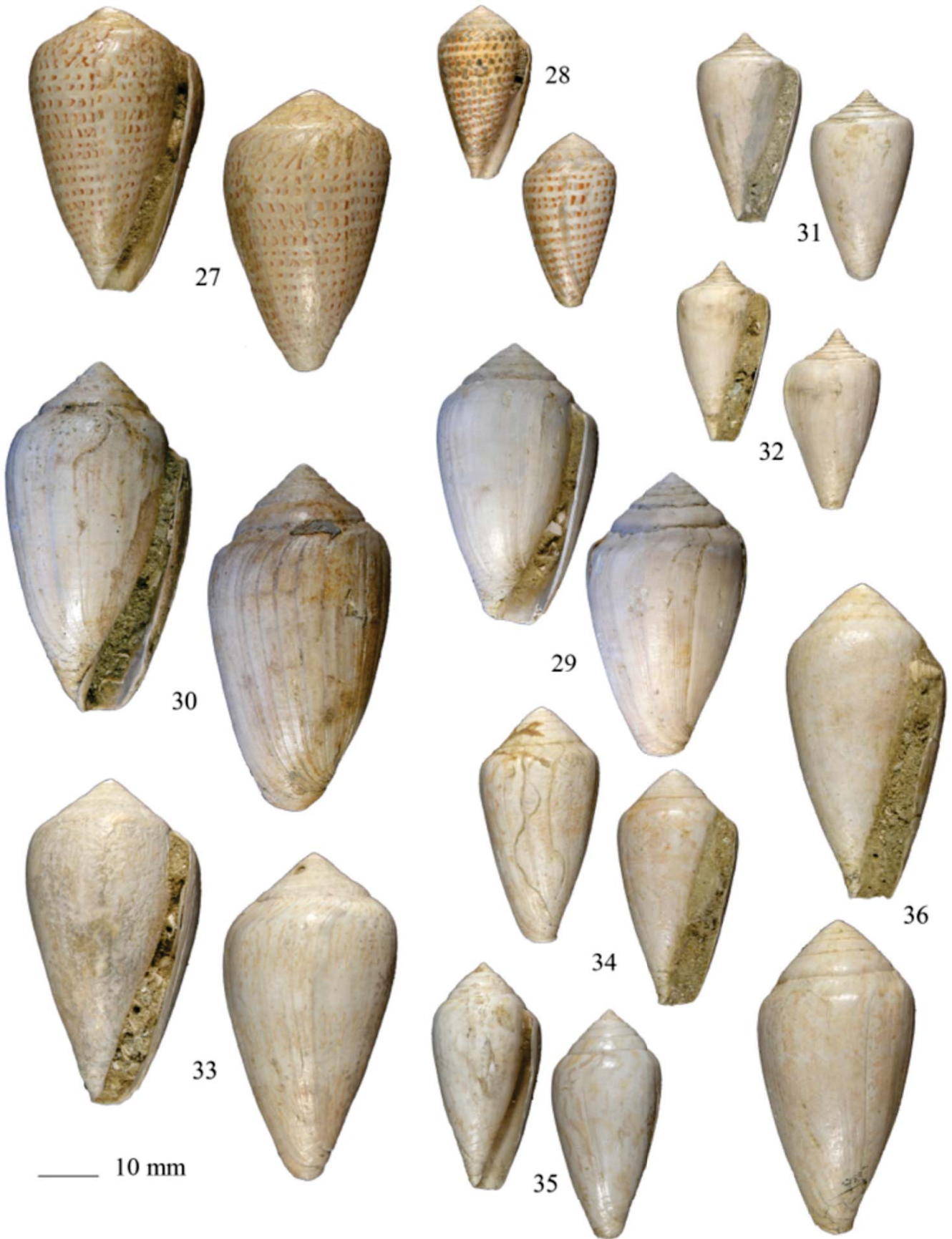


Plate 4

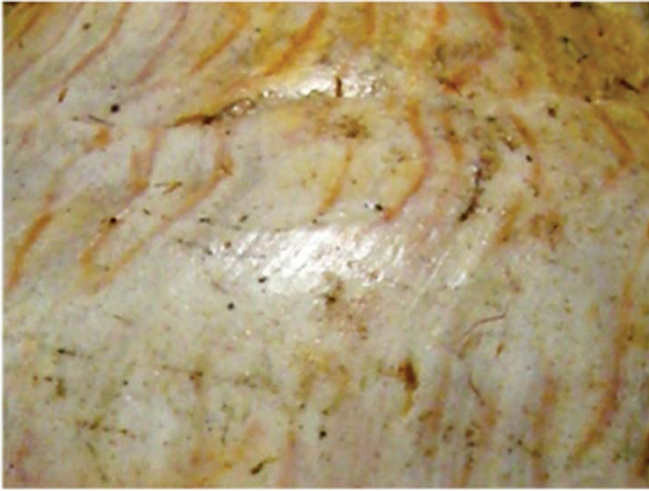


fig. 1



fig. 2

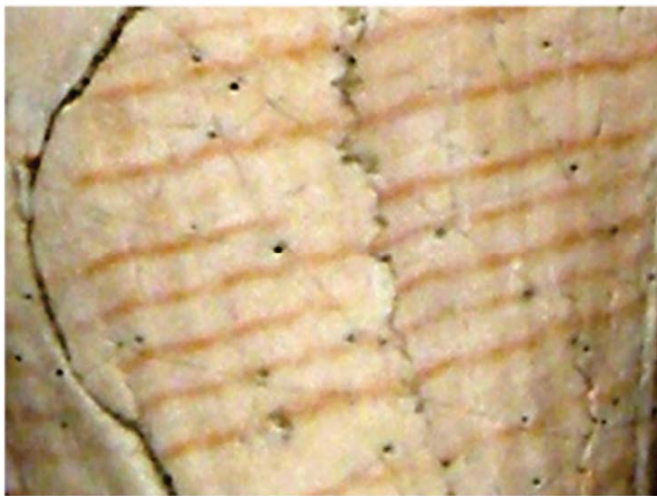


fig. 3



fig. 4

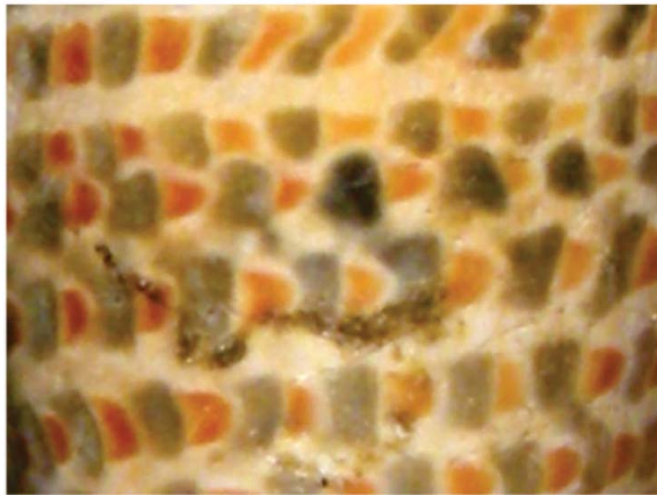


fig. 5



fig. 6

**Plate 5**



fig. 7



fig. 8

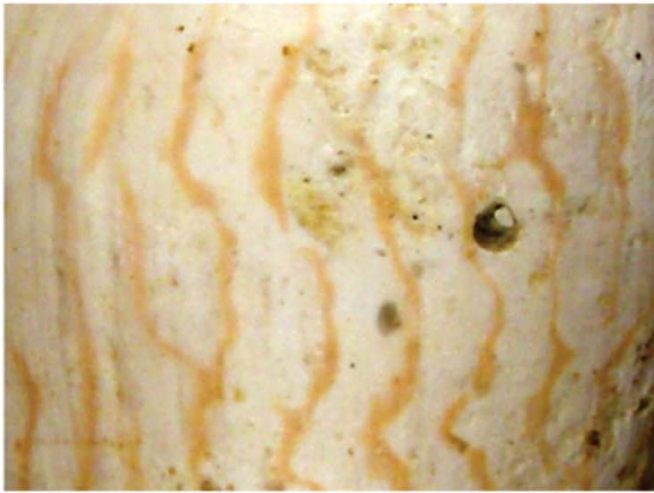


fig. 9



fig. 10



fig. 11

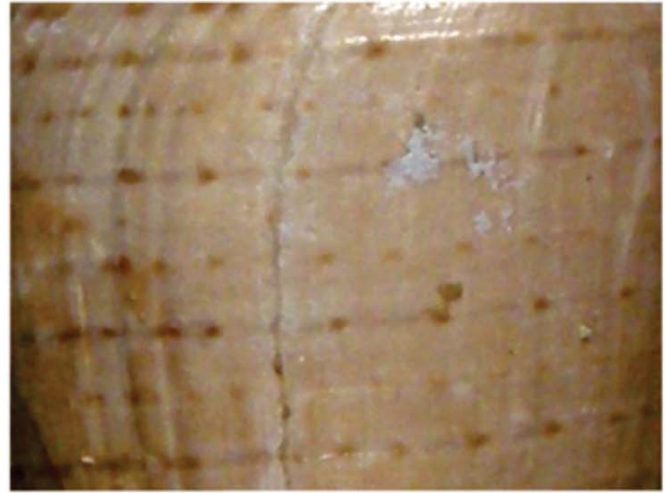


fig. 12

**Plate 6**



# Uncommon *Conidae* from Eastern Australia

Trevor Young



*Conidae* from L to R, *Plicaustraconus wallangra*, *Plicaustraconus wallangra*,  
*Plicaustraconus angasi*, *Plicaustraconus advertex*, *Austoconus sydneyensis*



*Plicaustraconus wallangra* (TA Garrard,1961)  
27.7 mm & 34.6 mm (2 colour forms)  
Small sp. trawled 185 m Cape Moreton, Queensland  
Larger sp. trawled 50-60 m off Southport, Queensland



*Plicaustraconus angasi* (GW Tryon,1884)  
48.3 mm Trawled 50-60 m off Southport,  
Queensland

*Plicaustraconus advertex* (TA Garrard,1961)  
41.6 mm Trawled 180 m off Cape Moreton,  
Queensland



*Austroconus sydneyensis* (GB Sowerby III,1887)  
31.7 mm Trawled 150 m off Byron Bay, New South  
Wales

# A Personal Experience: Searching for West African Cones off the Eastern Coast of Gran Canaria, Canary Islands

Benito José Muñoz Sánchez

The Canary Islands, also known as Canaries, are a Spanish archipelago located just off the Northwestern coast of mainland Africa, 100 kms to the west of the border between Morocco and Western Sahara.

This strategic location near the Equator line as well as its volcanic nature makes the whole archipelago's marine life very varied, being a perfect combination of Atlantic and Mediterranean, with many endemic species.

In recent years, the increasing popularity of both scuba diving and underwater photography has provided marine biologists and other researchers with much more information on the marine life of the islands, many of them new for science.

Because of my interest in marine life in general, and being a shell collector interested in knowing more about the natural history of the molluscan fauna of both the Eastern Atlantic Ocean and the Mediterranean Sea, I decided to take some days off to travel to the fantastic island of Gran Canaria, one of the seven largest islands of the Archipelago, in August 2013, to do some field research and bring back with me some nice shells from that area; and... needless to say, to meet some local shell collectors!

In the two images below, you can see the location of the Archipelago in a World Map (see thin blue arrow) and the seven largest islands (Tenerife, Fuerteventura, Gran Canaria, Lanzarote, La Palma, La Gomera and El Hierro). The Chinijo Archipelago, in the northernmost point of Lanzarote, consists of the smaller islands of Montaña Clara, Graciosa and Alegranza as well as the much smaller islets of Roque del Este and Roque del Oeste.

## The beginning...

After a short and comfortable flight from the airport of Seville, in the Iberian Peninsula, I arrived at Las Palmas Airport, in the bay of Gando, near the city of



Las Palmas. I picked up my luggage and had a light lunch in the restaurant of the airport. I was there at last!

First, I decided to meet a local shell collector and a very good friend too, Jonay García Melián, who is the proud owner of one of the largest specimens of *Lautoconus guanche* (Lauer 1993) I have ever seen (the shell is 55.3 mm in length, which is close to the WRS, which currently stands at 57.63 mm – António Monteiro, personal comm. from Philippe Quiquandon). We decided to start our adventure together after lunchtime,

visiting a first shelling spot formerly very good for local cones, in the southern coast of Santa Lucía de Tirajana, located in the east coast of the island.

The rocky shore of this zone is completely covered with plenty of rounded and naturally polished rocks, locally called “Bolos”, of volcanic origin, where is possible to find several interesting shells at low tide – mainly in tide pools – including some big *L. guanche*.

Needless to say that anyone not very well trained must take good care with these rocks, because they are fully covered with a thin layer of slippery greenish seagrass, making the zone very uncomfortable and a bit dangerous for your feet (and back!). Our walk took over 3 hours!...

Unfortunately, most of the shells we found there were really in bad condition because of the powerful waves and/or crabbed; living shells are rarely found nowadays in the tidal pools near the shore line because local people use the area to collect some small crabs, which are known to be the favorite meal of the fish locally called as “Vieja” (*Sparisoma cretense* Linnaeus 1758, Family *Sparidae*), a very popular “delicatessen” from the whole Canary Archipelago, and certainly still moderately abundant in these sub-tropical waters. Because of this, many rocks weren’t in their natural position.

We were looking for seashells amongst the rocks during low tide, finding a few crabbed *L. guanche*, well coloured but most of them with damaged lips, and several live *Stramonita haemastoma* (Linnaeus 1758), in its local variation (a smaller shell, well coloured and with a polished dorsum).

We only took a few of those shells, just for observation, to make some photos in situ and study, and we finally left most of them alone because of their poor condition. We didn’t have the opportunity to snorkel there because of the surf and the strong current (this area is a

very well-know windy spot, ideal for both the amateur and profesional surfers, see Figs. 1 and 2).



Fig. 1  
In the researched area of St. Lucía de Tirajana the wind is very often strong and makes the blue sea ideal for both surfers and kite-surfers but the snorkelling is not recommended because the currents and the waves. Photo of the author.



Fig. 2  
Low tide in the southern coast of St<sup>a</sup>. Lucía de Tirajana. Note the big polished rocks locally called as “Bolos”. This is an ideal place to get some local common shells, and sometimes *L. guanche* can be found alive. Photo of the author.



Fig. 3  
At last! A live *L. guanache* (Lauer 1993) in a tidal pool at day time in the southern coast of St. Lucía de Tirajana. The live ones are very often covered with a thin layer of green algae, which is missing in most of the crabbed shells. Note the bottom covered with the same small algae, making the shell hard to see into the distance. These cones share the habitat with some other small gastropods, mainly small *Trochidae* (*Osilinus atratus* Wood, 1828) and *Patellidae* (*Patella candei crenata* d'Orbigny, 1838). Photo of the author.



Fig. 4  
Jonay García Melián looking for some local seashells just in the limit of the surf at low tide in the southern coast of St. Lucía de Tirajana. He was really very brave to walk without his shoes amongst the rocks covered with slippery sea-grass and sea-urchins! Photo of the author.

In the same place, just at the limit of the tide, we also found a live *Luria lurida pulchroides* (Alvarado & Alvarez 1964), and a couple of big *Aplysia dactylomela* (Rang 1828), subclass *Opisthobranchia*... We finally left the rocky area pleased with that first day!.

After a well-deserved sleep, in my second day I was ready to meet another fantastic shell collector from the island, Miguel Artiles Ruiz, who lives in Arinaga, in the municipality of Agüimes. He has been diving and snorkelling in Gran Canaria for many years, being a keen expert on marine life in the whole island, and has a very good shell collection, including some interesting series of *L. guanache* from different localities, not only in the same island but also in the others in the whole Archipelago.

Miguel “taught” and suggested to me some good spots for a safer snorkelling and to collect seashells in low tide.

Thanks to his appreciated suggestions and experience in the area, in the following days of that week I visited some of the best places for shelling, finding *L. guanache* again, some of which in very good condition for the species, mostly live, but some big crabbed ones too... Now I want to introduce the reader to some of the natural history of this interesting species.

### *Lautoconus guanache*: A bit of history...

*Lautoconus guanache* (Lauer 1993) is a vermivorous cone from the Eastern Canary Islands (Lanzarote, Fuerteventura, Tenerife, and Gran Canaria) as well as the islets of Graciosa and Lobos. It is apparently absent in the western islands (La Palma, Gomera and El Hierro). This cone is also found in the African mainland: Western Sahara and Mauritania. It may resemble *L. ventricosus* (Gmelin 1791), *L. hybridus* (Kiener 1845), *Varioconus aemulus* (Reeve 1844) and *L. taslei* (Kiener 1845), but it can be separated from those species on the basis of several morphological details of

the radula, and the colour of the aperture, as well as the general shape of the shell.

The existence of different populations of this gastropod throughout the Canaries is also known and deserves a more complete study. I suggest reading the interesting article "Colour variations of *Conus guanche* Lauer 1993" on pages 2-3 in *The Cone Collector* #3 (July 2007), by Francisco Déniz, from Las Palmas, who very kindly showed me some of the specimens used for his study in his stunning collection. In the plate accompanying that article you will find some interesting variations from most of the Eastern islands and the Chinijo Archipelago, in the east coast of Lanzarote.

In my opinion and after long conversations with both collectors and divers from Gran Canaria I believe that *L. guanche* is now uncommon (indeed it is becoming rare) in most of the spots I have examined, mainly because of the severe destruction of its habitat as a result of many years of intensive touristic affluence in the coast, as well as other reason not very well known. Pollution of some areas could play a role in the reduction of viable populations.

According to the collectors who live in Gran Canaria, this species was moderately abundant in the east coast of the island in the past decades because the habitat is easy to access, even at low tide.

At the present time, if you pay attention and have well-trained eyes, you can find a few nice ones, especially smaller specimens, with intact lips, and fresh colours (often hidden under the thin layer of green algae and periostracum) in the most of the areas researched.

As far as I know from my personal observations, in the places I have been observing *L. guanche*, they like to live in very shallow water, in the tidal zone, and it is even possible to find them out of the water in some areas, during day time, but they aren't in very exposed places to strong sunlight, mainly under big rocks amongst

shell rubble and tiny stones, with the bottom generally covered with green algae.

Specimens living in the surf areas are usually badly flawed, whereas the ones observed in quiet and protected areas, may be found in better condition. As a note, I did not find any female ones with the typical eggs or shells mating in its natural habitat.

As I mentioned before they live (and share) in the same habitat with other some small gastropods species (bivalves were really scarce in some of the places visited). It is worth noticing that in all the areas where I have been observing live seashells, I have also found big worms (very well-known as "Fireworms") which are very gregarious, concentrating in groups of some dozens, under the stones and huge rocks. I wonder if small specimens of these fireworms may be a suitable food source for *L. guanche*.

The smaller shells of *L. guanche* that I found (size range 25-35 mm) are generally in slightly better condition than the biggest ones, very often with fully intact lips, but the growth lines are very often marked and well visible, making the shell really hard to get in GEM condition (I can sincerely say that I only found a very reduced number of real gem ones with fresh colours). The bigger specimens I got (>35 mm) were obviously in bad condition, albeit sometimes with intact and perfect lips. Crabbed ones were also found together with live shells, but because of the poor condition after the death of the molluscs, we left those alone.

The biggest shell I found during my trip was over 45 mm and it was in dead condition. I also got a few broken shells and numerous fragments, amongst the shell rubble in the tidal pools.

I wonder if the natural predators of these shells have played an important role in the scarcity of the species in many spots. Certainly their influence will not be very significant if you compare with the role of the

pollution and destruction of the fragile habitat where the cone and other marine species live. For instance, in Maspalomas, in the southeastern tip of the island, lots of buildings and several harbours have destroyed or altered the habitat of many species...

Two days before the end of my trip I had the opportunity to visit another interesting spot, between St Lucía and San Bartolomé de Tirajana, where lots of many seashells have been found in the last years, also *L. guanche*. However, the visit was fruitless that day because of the strong wind, very rough sea and the low tide was poor. The waves were sparkling and the sea was “simply” brown...

I only managed a few broken shells and several crabbed specimens in the tidal pools, nothing special (except for a very nice fresh dead *Erosaria spurca verdensium* Melvill 1888, a moderately common cowry in the island).



Fig. 5  
A couple of live fresh specimens of *L. guanche* from a shelling spot located between St. Lucía and San Bartolomé de Tirajana. Note the typical greenish pattern caused by growth of algae and its dark periostracum. These shells have been found in low tide out the water in a place not directly exposed to the sunlight. Photo of the author.



Fig. 6  
Another live one (note the red color of the animal) found in low tide in a shelling spot located between St. Lucía and San Bartolomé de Tirajana. Photo of the author.



Fig. 7  
Impressive huge and massive specimen of *L. guanche*, collected somewhere in shallow water in the east coast of the island of Gran Canaria. This is certainly the biggest and heaviest specimen I've ever seen in a single collection. Size: 55.3 mm. Collection and photo Jonay García Melián.



Fig. 8  
Nice set of three big ones! All collected in the eastern coast of Gran Canaria. Sizes: 55 mm, 42 mm and 40 mm. Collection and photo Jonay García Melián.

### The kingdom of *Kalloconus pulcher siamensis*

West Africa's *Kalloconus pulcher pulcher* (Lightfoot 1786) is certainly the largest member of the family, but the subspecies described later as *K. pulcher siamensis* (Hwass 1792), present in all of the Islands of the Archipelago (and apparently also in Madeira Island, where some live specimens are said to have been captured by divers) is generally much smaller and the average size depends much on the particular population.

The largest specimens from the Canary Islands occur at Lanzarote, whereas the average size of those from La Palma is less than 100 mm. In the east of Gran Canaria my partner Jonay and I have found specimens reaching sizes over 60-120 mm. Some of these were found in very dead condition but a few were perfect, even with still fresh periostracum and perfect lip.

*K. pulcher siamensis* is a big cone, with a beautiful and constant pattern, heavy and very solid, with a very thin and fragile lip, even in the fully mature specimens, which live in small colonies; they like to live half buried

in fine sand and shell rubble or fine mud amongst huge rocks covered with seaweed in moderately shallow water to deeper. It's never collected alive outside the water, like *L. guanche*.

As far as I know, this cone is variable in size and pattern; there is also some variation in the height of the spire. Live ones have been collected in both eastern and western Gran Canaria from a few metres deep to SCUBA depth (12-22 meters deep); it is still locally common in certain areas. The majority of adult ones have a badly eroded zone on the dorsum, often with inclusions and small worms' holes.

I have talked with both SCUBA divers and local collectors from the Canaries who have seen this species alive in Gran Canaria and other islands, partially buried in the sandy-shell rubble bottom, and they have confirmed that this is a nocturnal species, as is usual with many marine predators. This species is vermivorous, as well as the much smaller *L. guanche*, previously cited. I haven't observed *K. pulcher siamensis* predated at day time.

With this important knowledge in my mind, I decided to research by myself together with my friend Jonay two days in the shallowest area where he had been diving for shells for years, confirming the existence in this zone of a small population, and finding a few adult ones, with an average size of 60 mm, a few of which were found alive and a couple of them fresh dead but in very good condition. Also, a large one - 128 mm - was found. All the shells observed during low tide were buried in the bottom between 2-6 meters deep, but they can be observed more frequently in the deeper zone of the researched spot where we found a few ones. However, that depth was excessive for my lungs and I decided to observe them from the surface of the sea, thanks to the crystalline water. Contrary to some local collectors, we didn't use SCUBA equipment to look for shells from the researched areas.





Fig. 9  
A couple of nicely patterned *K. pulcher siamensis* (Hwass 1792) found alive half buried in sand and shell rubble in Telde, eastern Gran Canaria. Note the creamy-brown foot of the largest shell and the very thin and fragile lip of both shells. The pattern of the smaller specimen slightly resembles the beautiful shell of *Genuanoconus genuanus* (Linnaeus 1758), a rare cone species also recorded in the Canaries. Photo of the author.



in shape and color to the larger *K. pulcher pulcher* in the largest one pictured. Sizes: smallest 118 mm and largest 148 mm. Collection and photo Jonay García Melián.

Figs. 12 - 13



Figs. 10 - 11  
Lovely pair of typical *K. pulcher siamensis* collected in Gran Canaria. The periostracum of the shells have been removed for aesthetic purposes. Note the richness of color and pattern of the smaller one and the similarity

Stunning specimen of *K. pulcher siamensis* from Gran Canaria. “Diver collected 22 m. East coast”. Note the fresh colours of this one, as well as the perfect and complete pattern. The brown periostracum have been removed for aesthetic purposes. Size: 72.4 mm. Collection and photo of the author.

**Some personal notes and remarks about other cones also present in the Canary Islands...or related to dubious findings.**

My visit to the island of Gran Canaria could not finish without confirming the “mythical existence” of another species of cone present in some collections of seashells from Canary Islands: *Genuanoconus genuanus* (Linnaeus 1758). It’s geographical distribution is Western Africa, from the coast of Senegal to Angola including the Cape Verde Archipelago, as well as São Tomé e Príncipe islands.

As far as I know, specimens of this beautiful cone have been recorded also from Tenerife and La Palma (for further info please read pg. 176 “European Seashells” by Guido T. Poppe & Yoshiriro Goto).

The shells I have examined in the collections of Jonay García Melián and other local collectors I met were obtained mainly at low tide, in tidal pools near Las Palmas, Gran Canaria. They were taken dead, but the pattern was well preserved in all the shells, so they were easily recognizable as the real thing. I cannot confirm if some of the shells of this species recorded are really from the nets of fishing boats operating in the African mainland, between Mauritania and Senegal, and even from some spots in the Gulf of Guinea. *G. genuanus* lives on sandy bottom in shallow water in Western Africa. I know that some efforts in Cape Verde have produced a few live specimens (see Fig. 15). These CV specimens seem to be slightly smaller than the cones from the African mainland. The shell pictured below from CV have been found at 4/5 meters deep in black sand pockets between coral half buried in the former Matiota Beach (where is now the harbour) in

São Vicente. If the species really lives in the Canary Islands, its habitat is still unknown and this area could be considered as the northernmost point of its distribution. I haven’t found any direct record of recent live ones undoubtedly found in Gran Canaria. It would be great news indeed for many of us to see a picture of a live specimen found in the Canaries!



Fig. 14  
*G. genuanus* (Linnaeus 1758) found at low tide in Telde, eastern Gran Canaria. A dead one, but still easy to identify as the true *G. genuanus* from Western Africa. Note the solid appearance of this shell and the well preserved shape. Size: 50 mm. Collection and photo Jonay García Melián.

Figs. 15 - 16





*G. genuanus* live collected in Cape Verde Archipelago. Size: 44 mm. Collection and photo Nelson Tiago (Portugal).

Concerning other cones, like the subspecies *K. pulcher byssinus* (Röding 1798), I only saw specimens in collections, mainly collected in Western Sahara and Mauritania; this subspecies is not found or recorded from the Canary Islands. The one pictured was collected in Western Sahara at an unknown depth.

I have not been able to confirm the existence of *Lautoconus guinaicus* (Hwass 1792) in the Canary Islands. This species is known only from Senegal (South of Dakar to Pointe Sarène, Petite Côte Area). Reports of the occurrence of *L. guinaicus* in the Canaries are probably erroneous (forms of *L. guanche* (Lauer 1993) mistaken by *L. guinaicus*).

Finally, I would like to add that *Lautoconus ventricosus* (Gmelin 1791) and the beautiful *Lautoconus desidiosus* (Adams 1854) are typical from the Atlantic coast of South Portugal and Spain and the Strait of Gibraltar, in the Mediterranean Sea, and they have been erroneously recorded from the Canaries. *L. ventricosus* is also present in the Eastern Mediterranean Sea, as well as the coast of Northern Africa (Morocco, Tunisia, Libya, etc) and the Ionian Sea. We didn't find any of these



Fig. 17  
Beautiful specimen of *K. pulcher byssinus* (Röding 1798) collected by diver in Western Sahara. Note the brown periostracum (like velvet) covering all the surface of the shell. Size: Not recorded. Collection and photo Jonay García Melián.

two related species during our shelling activities and we believe that the information provided in the page 175 of the book "European Seashells" Guido T. Poppe & Yoshiriro Goto is really a mistake with *L. guanche*.



Fig. 18  
The author examining part of the material used for this article, obtained during one research in the field in the east coast of Gran Canaria. August 2013. Photo Jonay García Melián.

## Bibliography & Acknowledgments

This article would not have been possible without the help of this excellent bibliography dedicated to the cones of Western Africa and Mediterranean: “A Conchological Iconography. The family CONIDAE – the West African and Mediterranean species of *Conus*”. António Monteiro, Manuel J. Tenorio & Guido T. Poppe. Ed. Conchbooks. 2004.

I also obtained additional information and notes about cones from Canary Islands in this book: “European Seashells”. Guido T. Poppe & Yoshiriro Goto. Vol. 1. Ed. Verlag Christa Hemmen. 1991.

During the seven days I stayed in Canary Islands, I met several nice people interested in seashells. I am greatly indebted to those listed here, including some other friends, without whose contribution – in one way or another – this article could not have been completed: Jonay Garcia Melián, from Las Palmas, for allowing me to use illustrations of *Conidae* from his collection, his sincere friendship and great partnership during all the days that we traveled together looking for the best spots for the seashells.

Miguel Artiles Ruiz, from Arinaga, another keen

collector, for always granting me access to his stunning collection of shells of the world, including many interesting landsnails, endemic to the Archipelago.

My acknowledgments for his friendship and for helping me to search the best spots for snorkeling in the eastern coast of Gran Canaria, and appreciated suggestions about the marine life of the islands.

Francisco “Paco” Déniz, from Las Palmas, for always granting me access to his excellent collection of West Africa’s seashells, in my opinion one of the best in the world, including many interesting cones, and for sharing a good meal with Jonay and me, and talking about our lovely hobby...

Manuel “Manolo” Jimenez Tenorio, from Jerez, for years of friendship and valuable comments, suggestions and information about the diet of cones of the Canary Islands.

José Manuel Muñoz Sánchez, from Sanlúcar de Barrameda, for constant support, valuable comments and suggestions about the best way to focus this article. Nelson Tiago, from Vila Nova de Gaia Portugal, for friendship and letting me add several photos of a real live specimen of *G. genuanus* collected in São Vicente, in the Cape Verde Archipelago, and information regarding the specimen pictured in this article.

And finally, António Monteiro, from Lisbon Portugal, for kind friendship, interesting suggestions and useful information, who very kindly decided to add this article to the fantastic magazine devoted to Cone World...

## Comments on TCC #23

We have received a number of comments about some of the articles published in TCC #23. This is great, as collaboration from our readers is always very much appreciated! And often it allows us to correct some mistakes that may have crept into our pages...

That is precisely the case of the first comment, sent by David P. Berschauer, one of the three authors of the article "Microhabitats of Two *Perplexiconus* Species in Aruba". The other authors are Leo G. Ros and Jordy Wendriks and David pointed out that in some references Jordy's name is occasionally misspelled with an extra "c". Our apologies to Jordy if we have done so somewhere inadvertently. All seems correct in the version uploaded to our website.

Bill Fenzan also referred to that same article, in the following terms:

In the article "Microhabitats of Two *Perplexiconus* Species in Aruba" by David P. Berschauer, Leo G. Ros and Jordy Wendriks (TCC #23), the authors refer to "*Perplexiconus puncticulatus columba* (Vink, 1990)" several times. Danker Vink, however, did not author the name "columba" in 1990.

*Conus columba* was authored by Hwass in 1792 in J. G. Bruguière's *Encyclopédie Méthodique*. Vink did author *Conus puncticulatus cardonensis* as a subspecies in 1990, but restricted its distribution to the Paraguana peninsula in Venezuela which is outside the boundaries of Aruba. Further, the authors cite "Fort de France, Martinique" as the type locality of *P. columba*. According to Vink (1990) it is "L'Océan asiatique and Ile de France". Vink adds parenthetically (i.e. Mauritius) after Ile de France. Kohn (1992) indicates a type locality of "Indian Ocean". I did not take the time to look up the correct type locality in my copy of the original description, but it looks like "Martinique" should not have been used.

It should be noticed that the author for *columba* has

already been corrected in the version uploaded to the website.

Ed Petuch has also sent in a detailed comment about another article:

Antonio, thanks a million for sending along the new TCC; as always, you did a fantastic job. However, I feel that I have to comment on one of the articles, mainly because it is so full of incorrect statements and misidentifications; I refer to Zanzi's article on *burnetti*.

First of all, Hendricks' monograph (PRI) is really a bad work, filled with mistakes and should never have been published in its present form. As it turns out, *burnetti* is not a valid species, as it is actually the same shell as *Dauciconus gravesae* (Petuch, 1994); Warren Allmon would not let Hendricks (his student) communicate with me, so he wrote a very bad work that is essentially useless for collectors and paleontologists (for starters, he puts everything in the genus *Conus* and does not recognize or discuss the family *Conilithidae*; he also considers many of the Pliocene fossil species to be the same as the living species today; it's a ridiculous work and a disgrace to the PRI.

Zanzi also uses Hendricks' incorrect data that *burnetti (gravesae)* is from the Tamiami Formation; it is not! It's from the much younger Caloosahatchee Formation.

He also states that *burnetti (gravesae)* has only been collected in Collier county; that is completely incorrect, as the species is especially common in the Caloosahatchee beds in Palm Beach and Desoto Counties, essentially all over southern Florida.

Zanzi's illustrated specimen is not *gravesae (burnetti)*, but is actually a *Seminoleconus diegelae* (a faded specimen). Zanzi mentions that his shell has rows of elongated spots, which is typical of

*diegelae*; *gravesae* (*burnetti*) has rows of tiny dots.

Apparently Zanzi has not seen the *Compendium of Florida Fossil Shells*, which illustrates all of these species (and over 100 other species), so he does need to see that book and look at the photos; even though Janowsky screwed up the book by inserting a blank page and messing up the pagination, it is still a usable book. Zanzi can also purchase the DVD of the book from MDM Books.

Sorry about this diatribe, but this article was just too full of incorrect and erroneous information to just let it pass. In the future, if you receive any articles about Florida fossil cones, I would be glad to look them over for you. Again, thanks for sending along TCC.

I am sure that Alessandro Zanzi will be very glad to receive all this information and obviously he may complete his studies of Florida fossil Cones.

Finally, Jesse Todd sent in the following critique:

I have one suggestion to a wonderful magazine. A Table of Contents would be nice. When my old computer crashed, I lost the article I needed. I have searched through the journals to find the article again. While visually pleasing, and I mean pleasing - gorgeous photographs, it is a little frustrating time-wise.

It is a good suggestion, Jesse, and we will try to comply from our next number on.

A.M.

# New Publications & Taxa

## 1) *Xenophora Taxonomy* # (October, 2013)

As announced in our last number, the Association Française de Conchyliologie (AFC) decided to create a companion magazine to their well-known bulletin *Xenophora*, which will accept descriptions of new taxa.

The first number of *Xenophora Taxonomy* was published last October and is entirely devoted to Cones!

It is a beautiful magazine, fully illustrated in gorgeous colour, so I am sure everybody will want to subscribe to it (just join the AFC and you will automatically receive both bulletins!); the language is English, with summaries in French. This first issue (number 2 is scheduled for early 2014 and number 3 for Spring, according to available information) has a total of 48 pages, divided between two papers:

Eric Monnier, Loïc Limpalaër & Alain Robin, "Revision of the *Pionoconus achatinus* complex. Description of three new species: *P. koukae* n. sp. from Oman, *P. arafurensis* n. sp. from Northern Australia and *P. rouxi* n. sp. from Western Australia" (pp. 3-39, including Plates 1-12)

Manuel J. Tenorio & Carlos M. L. Afonso, "A New Cone Species from Aruba: *Perplexiconus wendrosi* sp. nov. (*Gastropoda, Conilithidae*)" (pp. 41-47, including Plate 1)

a) As indicated in the title, the first paper describes three new species:

### *Pionoconus koukae*

Monnier, Limpalaër & Robin, 2013

Holotype (39.4 mm): Muséum National d'Histoire Naturelle, Paris, France (MNHN 26396)

Type locality: West Coast of Masirah, Oman

Etymology: Named after Alain Robin's wife Kouka

### *Pionoconus arafurensis*

Monnier, Limpalaër & Robin, 2013

Holotype (42.6 mm): Illinois Natural History Survey in



*Pionoconus koukae* Monnier, Limpalaër & Robin, 2013



*Pionoconus arafurensis* Monnier, Limpalaër & Robin, 2013

Champaign, U.S.A. (INHS 44378)

Type locality: Darwin, Northern Territory, Australia

Etymology: Named after the Arafura Sea, between the north coast of Australia and the south coast of New Guinea



*Pionoconus rouxi* Monnier, Limpalaër & Robin, 2013

Holotype (46.4 mm): Western Australian Museum, Perth, Australia (S66439)



Paratype 8 (35.4 mm)

Type locality: south East corner of Sunday Island, Kimberley, Western Australia

Etymology: Named after Christophe Roux, well-known French Cone collector

In the same paper, the following taxa are raised to valid specific status:

*Pionoconus barbara* Brazier, 1898

*Pionoconus vinctus* A. Adams, 1854

b) The second paper presents the description of *Perplexiconus wendrosi* Tenorio & Afonso 2013



Holotype (14.7 mm): Muséum National d'Histoire Naturelle, Paris, France

Type locality: Barcadera, West coast of Aruba

Etymology: Named after Jordy Wendriks and Leo G. Ros, Aruban divers and collectors

2) *Malacologia* #80 (August, 2013) and #81 (November, 2013)

In two recent numbers of the well-known Italian magazine *Malacologia*, published by Mostra Mondiale, Cupra Marittima, three new Cone taxa were described.



In *Malacologia* #80, we find two papers:

Stephan G. Veldsman, "Description of *Darioconus natalaurantia* (Gastropoda: Conidae) from KwaZulu-Natal, South Africa"

Tiziano Cossignani, "*Pionoconus striatus juliaallaryae* nuova sottospecie dall'Oceano Indiano"



Allary, well-known French conchologist and shell dealer

In *Malacologia* #81, another subspecies was described in the following paper:

Tiziano Cossignani, "*Rhizoconus pertusus elodieallaryae* nuova sottospecie di Tuamotu"

*Darioconus natalaurantia* Veldsman, 2013:

Holotype (63.0 mm): Natal Museum, South Africa (NMSA-3309)

Type locality: Off the coast of Scottburgh, KwaZulu-Natal, South Africa

Etymology: Named for its orange colour and its locality

*Pionoconus striatus juliaallaryae* Cossignani, 2013

Holotype (55.95 mm): Muséum National d'Histoire Naturelle, Paris, France

Type locality: Djibouti

Etymology: Named after Julia Allary, daughter of Alain



*Rhizoconus pertusus elodieallaryae* Cossignani, 2013

Holotype (30.6 mm): Muséum National d'Histoire Naturelle, Paris, France

Type locality: Tuamotu Islands

Etymology: Named after Elodie Allary, daughter of Alain Allary, well-known French conchologist and shell dealer

3) *Miscellanea Malacologica* 6(3) (December, 2013)

*Miscellanea Malacologica* is a Dutch peer-reviewed scientific journal, established in 2004. In number 6(3), we find the following paper:

Robert G. Moolenbeek & Arnold L. Zandbergen, "*Kioconus vanvilstereni*, a new species from the Philippines (*Gastropoda: Conidae*)"

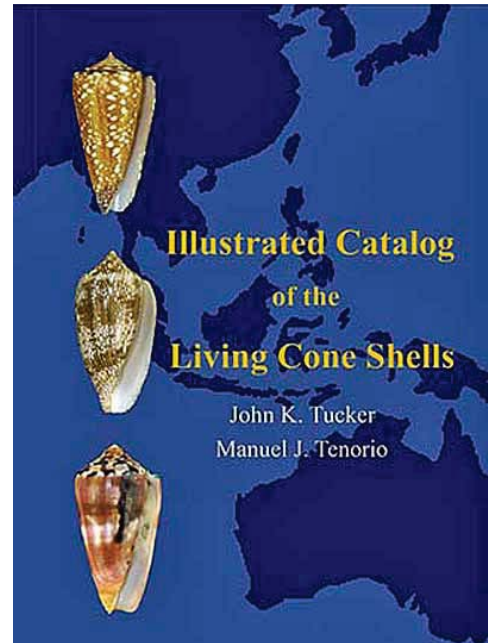


*Kioconus vanvilstereni* Moolenbeek & Zandbergen, 2013

Holotype (43.0 mm): Naturalis, Leiden, Netherlands (RMNH.MOL. 330786)

Type locality: Sulu Sea, Mindanao, Zam-boanga, Philippines

Etymology: Named after Henny van Vilsteren, enthusiastic Dutch Cone collector



4) *Illustrated Catalog of the Living Cone Shells*

*Illustrated Catalog of the Living Cone Shells*, by John K. Tucker & Manuel J. Tenorio

Introduction by Nicolas Puillandre, from the Muséum National d'Histoire Naturelle, Paris, France

MdM Publishing, Wellington FL, U.S.A., 2013

517 pages, 21.6 x 29.7 cm; all species fully illustrated in colour; hardcover laminated board case binding

Price: US\$179.95

As we all know, books covering the whole spectrum of Cone shells in the last century have been few and far between. The amount of information available in 1964, when Marsh & Rippingale's *Cone Shells of the World* was first published, was appallingly scant, when compared with what we know today about the entire group; moreover, the book was illustrated in watercolors that not always gave a clear idea of the aspect of shells. In 1979, Jerry G. Walls published *Cone Shells: A Synopsis of the Living Conidae*, which was already a great advance on the previous volume, despite some controversy raised

by the author's taxonomical decisions in a few instances.

Also in 1979, Alan J. Kohn & A. C. Riggs published their "Catalogue of Recent and fossil Conus" (in *Journal of Molluscan Studies*) and sixteen years later, in 1995, the *Manual of the Living Conidae*, by Dieter Röckel, Werner Korn and Alan J. Kohn was eagerly awaited by collectors worldwide, but unfortunately only the first of three projected volumes was published, covering the Indo-Pacific region. Already in the 21st century, other areas were covered in different issues of *A Conchological Iconography* (Mediterranean and West Africa by Monteiro, Tenorio & Poppe, 2004; South Africa by Tenorio & Monteiro, 2008; Eastern Pacific by Tenorio, Tucker & Chaney, 2012; a further installment of the *Iconography*, dealing with the Western Atlantic is currently being prepared).

In the meantime, the year 2001 saw the publication of *A Catalogue of Nomenclature and Taxonomy in the Living Conidae 1758-1998*, by R. M. (Mike) Filmer, with a huge amount of valuable information (but no illustrations); this work has been constantly updated by the author and is available at TCC's website ([www.theconecollector.com](http://www.theconecollector.com)), where the listings prepared and updated by Paul Kersten can also be found.

Now, Tucker and Tenorio – who had already given us their *Systematic Classification of Recent and Fossil Conoidean Gastropods* in 2009, which dealt with the supraspecific classification of Cones – bring us this Illustrated Catalogue that includes all species-group taxa described prior to October 2013. All the species recognized as valid (or, as the authors prudently write, "probably valid") are illustrated in high quality photographs.

In all, the catalog contains more than 1960 names, of which 743 are presented as probably representing valid species, while 1210 are considered synonyms. The different taxa are grouped in three families, namely *Conidae*, *Conilithidae* and *Conorbidae* and a total of 114 genera, of which 16 are described as the new in this work. It is worthwhile to quote the authors about this number of different genera that so bluntly contrasts with the former use of a single genus for the whole group:

"This 'large' number of genera [...] may seem excessive. However, various sister taxa [...] such as the *Mangeliidae*, *Daphnellidae* and *Clathurellidae* have roughly similar numbers of genera. [...] We consequently consider that the number of genera reflects the long fossil history (Cretaceous to Holocene) of the cone shells [...]." Who can argue with that?

It should also be noted that the taxon *Phasmoconus martinianus* Reeve, 1844 has been re-established.

Obviously, an extensive work such as this will be an invaluable tool for anybody interested in Cone shells. On the one hand, the authors provide an up-to-date classification system of the entire group, whereas on the other they supply an enormous wealth of information with each species-group taxon. This includes not only name, author and date of description, but also the exact publication where the description was presented, the type locality (when known, which is not always the case, especially for the older names), the opinions of several experts re validity or relationships of the taxon, the geographical range and the genus in which the taxon should be placed.

This kind of listing, exhaustive as it may be at the date of publication, usually suffers from a major problem: as new taxa are described it quickly becomes outdated! The authors and publisher have solved this problem with the launch of a website [www.conecatalogupdate.com](http://www.conecatalogupdate.com) which will offer information about taxa described after the publication of the book as well as future revisions made by the authors, as well as others who wish to contribute scientifically documented research.

As stated by Dr. Nicolas Puillandre in his Foreword, "this book will remain a standard among cone snail taxonomists in the future."

As a final note, it should be pointed out that the authors decided to dedicate this important book to Mike Filmer, Alan J. Kohn, Paul Kersten and myself. Personally I am very grateful to my old friends Manolo and John for this dedication that has made me more than a little proud!

5) Article on conservation

“*Conus*: First Comprehensive Conservation Red List Assessment of a Marine Gastropod Mollusc Genus”, by Howard Peters, Bethan C. O’Leary, Julie P. Hawkins, Kent E. Carpenter & Callum M. Roberts (all from Environment Department, University of York, York, United Kingdom, except K. E. Carpenter , from International Union for Conservation of Nature, Global Marine Species Assessment, Biological Sciences, Old Dominion University, Norfolk, Virginia, United States Of America), in PLOS One (PLOS – Public Library of Science).

This is an important paper about conservation issued for Cone snails. It can be found at

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0083353>

6) *Xenophora Taxonomy* #2

The second issue of *Xenophora Taxonomy* has been published in January 2014 by the Association Française de Cnochyliologie. It includes three articles of interest to the Cone world:

“New informations and specimens of *Darioconus laueri* Monnier & Limpalaër, 2013”, by Loïc Limpalaër & Eric Monnier

“New species of *Africonus* (*Gastropoda*, *Conidae*) from Boavista in the Cape Verde Archipelago: Molecular and Morphological Characterization”, by Manuel Tenorio, Carlos Afonso , Regina Cunha & Emilio Rolán

“Description of a new *Profundiconus* from Togian Island, Sulawesi (Indonesia): *Profundiconus stahlschmidti* sp. nov. (*Gastropoda*, *Conilithidae*)”, by Manuel Tenorio & John Tucker

The new Cone taxa described in these articles are as follows:



a) *Africonus swinnyi* Tenorio, Afonso, Cunha & Rolán 2014

Holotype (23.6 mm): Muséum National d’Histoire Naturelle, Paris, France (MNHN 25407)

Type locality: Porto Ferreira, East coast of Boa Vista Island, Cape Verde Archipelago

Etymology: Named after Frank Swinnen, Belgian malacologist



b) *Africonus fadeiroi* Tenorio, Afonso, Cunha & Rolán

2014

Holotype (26.6 mm): Muséum National d'Histoire Naturelle, Paris, France (MNHN 25408)

Type locality: Porto de Derrubado, North coast of Boa Vista Island, Cape Verde Archipelago

Etymology: Named after the Portuguese shell dealer Ramiro Fiadeiro



c) *Profundiconus stahlschmidti* Tenorio & Tucker, 2014

Holotype (10.5 mm): Senckenberg Forschungsinstitut und Naturmuseum Frankfurt, Germany (SMF 336434)

Type locality: Pasir Tengah Atoll, in the Togian Islands, Sulawesi, Indonesia

Etymology: Named after the German malacologist Dr. Peter Stahlschmidt

I thank every author and publisher for permission to reproduce photos of the type specimens of the new taxa described.

# The 3rd International Cone Meeting

Madrid, 3-5 October, 2014

The first two International Cone Meetings (Stuttgart, 2010 and La Rochelle, 2012) were hugely successful and greatly enjoyed by all those who were able to participate.

Directly after the La Rochelle gathering ended, the Organizing Committee started working on the 3rd Meeting which, after consideration of several enticing possibilities, was scheduled for Madrid, Spain, in October 2014, as has been announced already.

Today, we bring you further information about the event, starting with the première of our logotype, drawn by Luís Ambar, who had already authored TCC's logo.

To bring you this new important event, the Organizing Committee – which is comprised of Bill Fenzan, Manuel Jimenez Tenorio, and António Monteiro, as in previous occasions – has been reinforced with the addition of Dr. Rafael Zardoya, from the Museo Nacional de Ciencias Naturales, Madrid. The museum will host our meeting. We are very proud to have obtained the support of this prestigious institution.



We also count on the support of the Sociedad Española de Malacología that will help us in many ways and especially with several aspects of logistics.



To all those involved at this organizational stage, we extend our sincere thanks.



We have prepared a program based on past experience and on a survey of potential participants that was completed some time ago. We believe this program will meet everybody's expectations and ensure a high quality gathering, with interesting talks and other activities.

We have been fortunate in securing the participation of a number of speakers who have much to tell us about the world of cones and cone studies. To all of our speakers, the Organizing Committee extends our most sincere thanks for their willingness to collaborate and help make this event another success.

Without further ado, we present to all our readers the program as it currently stands. We are sure that all those who have already planned to attend our 3rd International Cone Meeting will agree that it is quite interesting and worth the trip to Madrid in October. We certainly hope that many of you who have not yet made your minds to go will be definitely attracted by what we have in the program!

# Program

Madrid, 3-5 October, 2014

## Friday, October 3rd

Registration of attendees

12:00

A museum registration desk will open for the meeting.

Welcome packets will be provided to attendees containing a final program, directory of participants, information about Madrid, information about the Museo Nacional de Ciencias Naturales, and a name tag. Guided tours of the museum will be available after registration.

12:00

Dealer table setup for the mini bourse.

16:00

Mini Bourse

Coffee/water/snacks (cost included in registration fee) will be available in the auditorium.

18:00

Reception (with aperitif).

## Saturday, October 4th

The registration desk will be open from 9:00.

9:30

Opening of the Meeting by António Monteiro (Chairman)

Opening Remarks by the Museum Director and José Templado on behalf of the Sociedad Española de Malacología.



Introduction of the Guest of Honour: Emilio Rolán.

Morning session. Chairman: António Monteiro

10:00

Dr. Emilio Rolán – “Cones and other shells – a career in Malacology”.

11:00

Coffee break.

11:30

Lecture by Rafael Araújo (MNCN): “The MNCN and its malacological collections”.

12:00

Lecture by Rafael Zardoya (MNCN-CSIC) (with Manuel J. Tenorio and Carlos Afonso): “The extraordinary diversity of Cape Verde cone snails”.

13:00

Lunch (at your own expense, local restaurants will be suggested).

Afternoon session. Chairman: Bill Fenzan

14:15

Group photograph.

14:30

Lecture by André Poremski (Washington DC, U.S.A.): “Insights within the *Jaspidiconus* complex”.

15:00

Lecture by José Coltro (São Paulo, Brazil): “Brazilian *Conidae* Biodiversity”.

15:30

Lecture by Alain Robin (Paris, France): “New species at the bottom of your drawer: New cones from Oman and Western Australia”.

16:00

Coffee break.

16:30

Workshop – Michaël Rabiller: “Explaining Cones to young people”.

16:30

Discussion Panel (details to be announced) – Internet resources.

17:00

Mini Bourse.

20:30

Official dinner at the hotel (to be paid separately by participants – see registration form; the dinner will be served as a buffet).

### **Sunday, October 5th**

9:30

Morning welcome/announcements.

Morning session. Chairman: Manuel J. Tenorio

9:35

Lecture by Nicolas Puillandre (MNHN, Paris, France): “The Conotax project: Taxonomy, venoms and evolution of the *Conoidea*”.

10:30

Lecture by Stephan Veldsman (Pretoria, South Africa): “Biogeographic patterns in South African cone snails”.

11:00

Coffee break.

11:30

Official closing remarks by António Monteiro.

Guided tours to the Museum’s collections, organized in small groups under the leadership of Rafael Araujo, will be available to attendees during the whole weekend

(exact schedules to be indicated at a later date).

Very soon a registration form will be sent to you and posted on the website. We encourage you to register soon, as that will really help us to get everything in place to welcome you to Madrid and our gathering.

However, we can already forward some information about the stay in Spain.

As is of course well-known, Madrid is a large city, easily accessible by plane, train, or automobile. Moreover, it has much to offer visitors, which means that some of the participants in the 3rd International Cone Meeting may even want to extend their stay for tourism and get to know the city; at the same time, spouses accompanying participants and not wishing to attend the sessions will have much to occupy them, in the way of sight-seeing, Museums, shopping, etc.

The cost of registration in the Meeting will be of €55.00 per person.

Participants will be lodged in the Holiday Inn Madrid, with which we are in the process of negotiating the price of accommodation.



At the moment, we have secured a price of €95.00 per night for a single room or €105.00 for a double room (prices inclusive of breakfast). These values may be further negotiated if we get a significantly high number of participants.

The hotel is located in the centre of Madrid, only 15 minutes away from Madrid international Barajas airport; it is easily accessible by car and via the underground. It is 10 minutes away from Madrid’s historical centre and near important shopping facilities.





Moreover, the Holiday Inn Madrid is within walking distance of the Natural History Museum. On the map below, the approximate location of both are indicated (red arrow: hotel; blue arrow: museum). The full address of the hotel is: Plaza Carlos Trias Bertran, 4, 28020 Madrid.

As indicated in the program above, the Meeting’s official dinner will take place at the hotel and will be a buffet – a most convenient format to allow everybody to mingle and talk! Diners will be able to choose from a selection of appetizers (including different kinds of Iberian delicatessen, Spanish and international cheeses, and various salads), hot dishes (pasta, vegetables, traditionally cooked fish, and different meats), desserts (different pastries and sweets, seasonal fruit and coffee) and beverages (mineral water, beer, red and white wine, and soft drinks).

The dinner will be paid separately by participants and its cost is estimated at €33.00 per person. As you see, everything is being prepared for all of us to have a great time in Madrid. The Organizing Committee sincerely hopes to meet as many of you as possible next October.

The locale is excellent, the program is vastly interesting, but above all, our meetings always mean that like-minded people have a chance of getting together to “talk cones” during the weekend, which is great. Regardless of how much we can learn, how much information we



can share, one thing is for sure: we will have fun!

So, start planning today and be sure to join us in Madrid. You will not regret it!

António Monteiro

# Cone Snails Regional Iconographies

David Touitou

## Preamble

Since 2004, in my website *www.seashell-collector* I have uploaded several iconographies dealing with Cones as well as with other families (cowries and augers), based on the study of local populations. I have restarted that long but fascinating work in the end of 2013 with two new iconographies, and I took the opportunity to revise the works published in 2004-2005. I am now able to propose the study of:

- CONIDAE from French Polynesia (Pacific Ocean) 2004 (revised, 2013)\*
- CONIDAE from Seychelles (Indian Ocean) 2005 (revised, 2013) \*
- CONIDAE from Mayotte (Indian Ocean) 2013
- CONIDAE from Mauritius (Indian Ocean) 2013

(\*) – to be published in TCC #25

Most of the images belong to the authors' collections. Photos of living animals are by Michel Balleton (Polynesia), Norbert Verneau (Mayotte) and Eric Le Court de Billot (Mauritius), except for the great rarity you will have seen on the cover of the present issue of TCC (*Conus eldredi*), which was taken by Layana Letourneux in the Tuamotu Islands.

For further information, I invite everybody to visit my website *www.seashell-collector* and take a look at the ICONOGRAPHY section. In the Iconography of Polynesian Cones, each species gets its individual page.

The following are currently being revised in the site:

- CONIDAE from Martinique & Guadeloupe (2005)
- TEREBRIDAE from French Polynesia (2004)
- CONIDAE from French Polynesia (2004,2013), for the size of the vignettes

I must apologize for the use of the single genus *Conus* in my studies, but it is so much easier for my tables!

Do pay attention to the scale. The images shown as vignettes (without the size of the specimen) do not necessarily show the true size of one species in relation to another, especially when to very differently sized species follow one another in the listing. In the more recent works I have tried harder on the scale, but proportions will never be kept.

## Introduction

The study of each family of mollusks can be made in several different ways. For instance, one may address the global geographic range for species, but one may also study one family within a restricted zone. In my studies, I have followed the latter method.

As a diver and field collector, this is an approach that suits me perfectly. During my voyages I have met many divers-collectors with whom I have shared my excursions and findings. I began by studying the zones where I was able to dive (Martinique, Seychelles, Polynesia, Mayotte) and more recently I had the pleasure of studying an island I did not know before (Mauritius).

For each study, I have associated with someone living on the spot, someone who would collect the family under study and above all someone with a good field experience. Our main goal was always to ascertain (or not) the presence of certain species in each spot.

As a matter of fact, the global method does not allow the study of each individual zone. One gathers information, then one limits a geographical range as accurately as possible. That means that some errors are bound to occur. Moreover, the specimens studied cannot always be thoroughly certified (except for scientific expeditions, of course). Many studies of *Conidae* have been done with non-verified and often non-verifiable data!

As an example, in the otherwise excellent book

*Coquillages de Polynésie*, by Bernard Salvat, Claude Rives & Georges Richard (Éditions du Pacifique, 1980), *Conus regius* Gmelin, 1791 is included. Although the authors rightly mention that its presence is doubtful, the fact that the reference came from the Muséum National d'Histoire Naturelle (Paris) was enough for it to be included. Who knows, perhaps whoever wrote down the location mistook Tahiti for Haiti? This means that even data coming from most reliable sources must be carefully checked.

Also, in Dieter Röckel, Werner Korn & Alan Kohn's fundamental *Manual of the Living Conidae* (1995), which I have used as a reference ever since I started working on the field, the presence of *C. lienardi* Bernardi & Crosse, 1861 in the Seychelles is mentioned. I believe it was probably a confusion with *C. inscriptus* Reeve, 1843 (also known as *C. keatii* Sowerby II, 1858), which can sometimes resemble *C. lienardi*.

As another example, in many published works the distribution ranges for *Conus textile*, Linné 1758 and *C. canonicus* Hwass, 1792 are given in very global terms, occupying the whole Indian and Pacific Oceans. However, I have no confirmation of the presence of any specimen of *C. textile* found in the Seychelles; the species is not mentioned in Alan J. Jarret's book *Marine Shells of the Seychelles* (Carole Green Publishing, 2000). I have also never found it there. This does not forcibly mean that it cannot exist in that particular location, but it is either extremely rare or else it comes from remote islands.

On the other hand, after studying the Cones from Mauritius, I cannot ascertain the presence of *C. canonicus* in the area. The divers I know, especially Eric Le Court De Billot, have never found it either.

I am often asked how such things may happen. It is quite simple, really. Let us say that one arrives at the Seychelles to live there and one discovers a passion for shells! One begins to collect and identify specimens.

Then one day one is wandering through the market in Victoria and one finds a collector-seller in a curiosity shop. He tells one that he collected this wonderful *Cypraea aurantium* (Gmelin, 1791) in some far away islet (a true story, this...), so one labels it so; as years go by, one becomes an important collector and you collaborate in a study of the fauna of the Seychelles – and then one fetches one's treasures from one's drawers. And that is how we find references with the mention « Old Collection », as though the simple fact that a specimen originates from an old respected collection guarantees that associated data are valid.

By mentioning the possibility of such situations, I by no means wish to discredit any particular work, quite the opposite! I simply mention these facts to explain why I always refrain from readily accepting information and specimens often offered to me as a complement to my own research.

It should now be clear why I pay particular attention to the provenance of the specimens I study, even if that means doing without something that I lack in my collection. The specimens shown in my iconographies have been collected by the authors or else by a closely known diver. I never copy/paste images. Even for common species, each image is of a specimen collected locally – even in those cases where nothing new or of any importance is shown for many relatively constant species. I always prefer to leave an empty space rather than including a specimen of doubtful provenance.

On the other hand, species from deep waters are often missing and the study practically includes only those species that are accessible to collectors. Anyway, cartographies at a given moment in time are by definition non-exhaustive; but they will be quite useful for all those who mean to explore the reefs of these dreamland destinations...

The study of the Cones from Polynesia was done with the help of Michel Balleton, a local collector. The study

## Conidae from Mauritius

Eric Le Court de Billot & David Touitou

of Mayotte Cones was done with the help of Norbert Verneau, who lives there, and also of Matthias Deuss; they have since co-authored a book, *Mollusques de Mayotte*, Matthias Deuss, George Richard, Norbert Verneau 2013. The study of the Cones from Mauritius was done with the help of Eric Le Court de Billot, who lives there. I must thank them warmly for their work, their patience and the time they have spent photographing the illustrated specimens.

I must also extend my thanks to all those who in one way or another have collaborated in these iconographies. Hoping I am not forgetting someone: Alan Kohn, Felix Lorenz, Loïc Limpalaer, Giancarlo Paganelli, Paul Kersten, António Monteiro, Manuel Tenorio, Bruno Mathé, John K Tucker, Bruno & Paul Mathé, Jean-Pierre Arnaud, Alan J. Jarret.

### References

COQUILLAGES DE POLYNESIE Bernard Salvat, Claude Rives Ed. du Pacifique, 1980

MANUAL OF THE LIVING CONIDAE Dieter Röckel, Werner Korn & Alan Kohn, 1995

MARINE SHELLS OF THE SEYCHELLES Alan J. Jarret Carole Green Publishing 2000

THE CONE SHELLS OF SEYCHELLES Alan J. Jarret D. Slimming G.T. Phillips & Co Ltd 1970

WoRMS <http://www.marinespecies.org>

All shells displayed in this article come from Mauritius and come from the collection of Eric Le Court de Billot, except for *Conus julii* kindly shot by Bruno and sent by Paul Mathé.

Thanks for their help to: Felix Lorenz, Loïc Limpalaer, Giancarlo Paganelli, Paul Kersten, Antonio Monteiro, Manuel Tenorio, Bruno Mathé, and John K Tucker.

A. "The *Conus textile* complex"

Here is the list of taxa studied in this work:

*Conus textile*, Linnaeus 1758

*Conus archiepiscopus* Hwass in Bruguière, 1792

*Conus verriculum* Reeve 1843

*Conus textile* f. *scriptus*, Sowerby II, 1858

(==> *Conus textile vauberti*, Lorenz, 2012)

*Conus textile* f. *euetrios* var. *cyanosus* Lauer, Rossiniana 1987

*Conus textile vauberti*, Lorenz, 2012

Mauritius offers, like other Indian Ocean localities, surprising variations of *Conus (Cylinder) textile*, Linnaeus 1758. Many very different patterns may force collectors to search for specific name of species, forms and/or variations. We have shown these specimens to many expert collectors and malacologists. Actually no real consensus have been established. So we had to make a choice. We will update this page whenever new descriptions will be published. The actual idea is that many localities from Indian ocean offers the species named: *Conus archiepiscopus* Hwass in Bruguière, 1792. This shell is very variable in shape and pattern, and may vary a lot in colors showing sometime real beautiful bleuish specimens.

In the R.K.K. (*Manual of the Living Conidae*, 1995), the authors mentioned : "*C. archiepiscopus*: Know from different localities within the Indian Ocean. We consider it a form of *C. textile* very similar to form *euetrios*."

Recently (2012), Dr. Lorenz have isolated the St Brandon population and described as *Conus (Cylinder) textile vaulberti* Lorenz, 2012. Some specialists think that it shall be treated as a species level (*Conus vaulberti*). This shell was earlier known as *Conus textile f. scriptus*, Sowerby II, 1858.

Some specimens have been also described by Reeve as *Conus verriculum* Reeve 1843. Presently (2013) we choose to illustrate 3 different shells:

St Brandon population of *Conus textile vaulberti*, Lorenz, 2012 (replace the older name *Conus textile f. scriptus*, Sowerby II, 1858)

*Conus archiepiscopus* Hwass in Bruguière, 1792 and its bleuish variation *Conus archiepiscopus var. cyanosus* Lauer, Rossiniana 1987

*Conus archiepiscopus f. verriculum* Reeve 1843

### [Plate 1]

(\*) Dr Felix Lorenz recommend to use "*C. textile*" for this specimen: "I am not sure if that pale slender thing should also be called *archiepiscopus*. I'd call that Indian Ocean *textile*. You probably go more by shape, whereas I tend to follow color pattern. I once had a PhD candidate who did DNA on *Conus* and he found that the color pattern much better reflects relationships than shape." He is citing Dr. Christian Melaun (2008), "Phylogenetische und toxinologische Untersuchungen an *Conidae (Mollusca: Gastropoda)* unter besonderer Berücksichtigung west-atlantischer Vertreter der Gattung *Conus* [Phylogenetic and toxinologic examination of *Conidae (Mollusca: Gastropoda)* with special consideration of western atlantic members of the genus *Conus*]", 308 pp, *Inaugural Dissertation Justus-Liebig Universität Giessen, Germany*.

Discussion about the locally know variation of *Conus archiepiscopus/Conus textile: Conus archiepiscopus f.*

*verriculum* (known as *Conus textile f. verriculum*) by David Touitou.

Many collectors are pretty sure this to be a real subspecies or form of *Conus archiepiscopus/Conus textile*. Personnally, with my field experience, I would better recommand to name it as a local variation, due to a variation of feeding habits or due to a variation of habitat. Well, in the *Conus textile* group, *Conus textile* and related species such as *Conus canonicus* may often reveal such patterns worldwide. Let me show you several examples:

### [Plate 2 & 3]

B. Other species

### [Plates 4-8]

C. Data on habitat, size, rarity & forms

Rarity: VC (Very Common) C (common) UC (Uncommon) R (Rare) VR (Very Rare) E (Exceptionnal)  
Depth: IT (Intertidal 0-5m) SW (Shallow water 5-10m) MDW (Moderately Deep water 10-30m) DW (Deep Water 30m-60m) VDW (Very Deep Water 60-100m) DR (Dredged >100m) F(Only found in Fishes stomach)

Size: average adult size, in mm (millimeters)

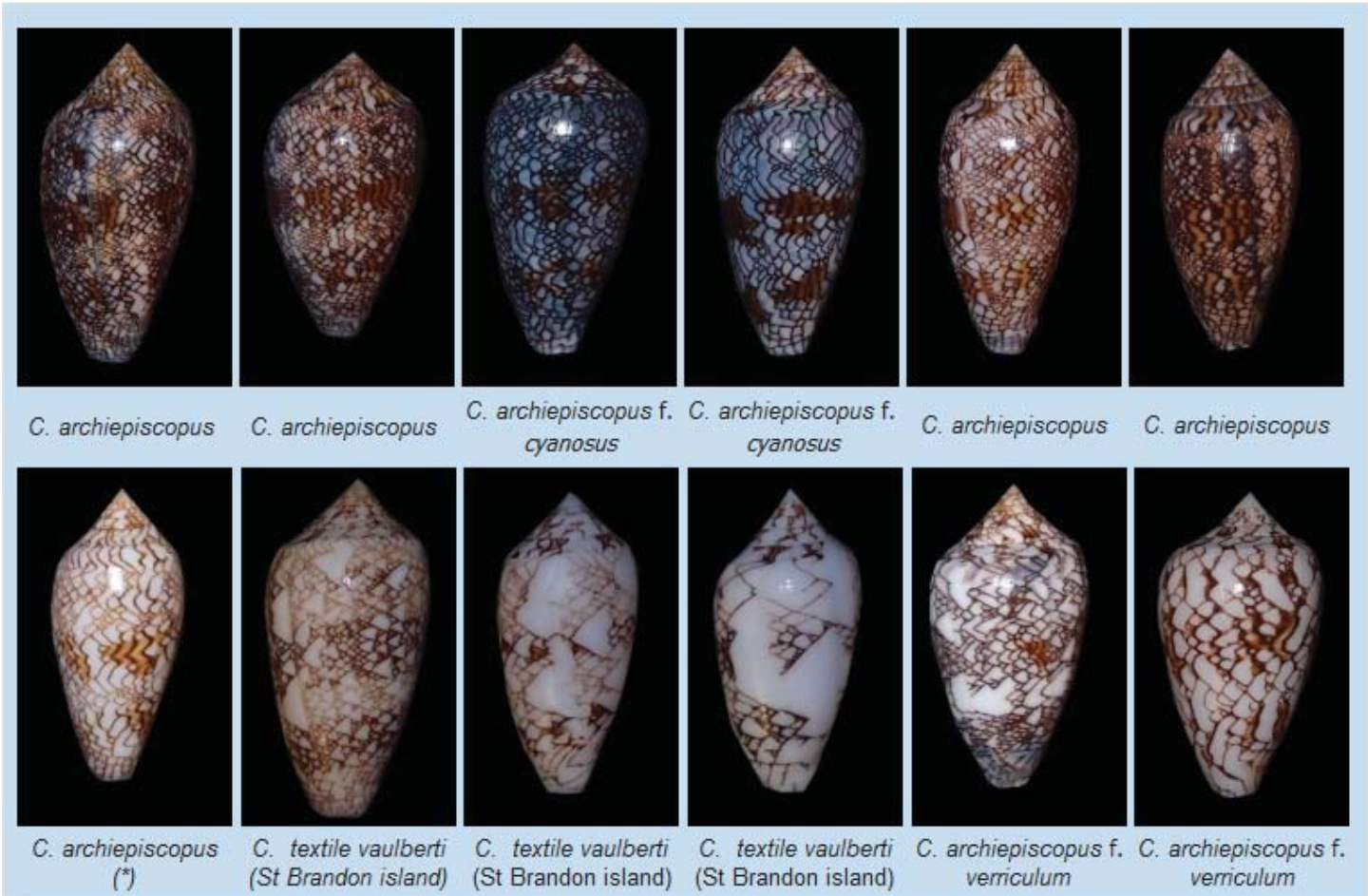
Habitat: L (Lagoon) R (Reef) LP (Lagoon Pinnacles) OL (Outer Slope) S (Shore reef)

Areas: SANDY-LIVE CORAL-CORAL DEBRIS-ROCKY-WEEDY-MUDDY-HARD REEF

The work here has been made by Eric Le Court de Billot.

Name	Size	Rarity	Depth	Habitat/Areas	Comments
<i>capitaneus</i>	40/80	C	IT	L/Coral debris/Weedy	
<i>catus</i>	25/40	C	IT	L/Coral debris	Very often between 0 and 1m
<i>chaldaeus</i>	20/35	VC	IT	L/Coral debris/Weedy	
<i>circumactus</i>	30/65	R	IT to MDW	OL/Coral debris/Muddy	Only small one live at 30 m
<i>coffea</i>	21/33	VR	IT	L	Three dead
<i>coronatus</i>	20/33	C	IT	L/Coral debris/Weedy	
<i>aureus</i>	30/48	VR	DW	OL	Only three dead
<i>distans</i>	40/110	C	IT/MDW	OL/Coral debris/Muddy	Small deep, big ones shallow water
<i>ebraeus</i>	20/50	C	IT	L/Coral debris/Weedy	
<i>episcopatus</i>	50/80	UC	IT	L/Coral debris/Sandy	
<i>flavidus</i>	30/50	C	IT	L/Coral debris/Weedy	
<i>frigidus</i>	30/65	C	IT	L/Coral debris/Weedy	
<i>geographus</i>	80/140	UC	IT	OL/Coral debris/Muddy	
<i>glans</i>	22/30	R	IT	L	Three dead
<i>leehmani</i>	80/108	VR	IT	L/Sandy/Rocky	
<i>legatus</i>	27/55	VR	MDW	OL/Coral debris	
<i>gubernator</i>	35, 40	E	IT	L/Sandy/Coral debris	Only two small live
<i>imperialis compactus</i>	51	E	IT	R/Coral debris	Only one live
<i>fuscatus</i>	30/65	C	IT	L/Coral debris/Weedy	
<i>janus</i>	50/70	UC	MDW/DW	OL/Sandy	
<i>lecourtorum</i>	10/16	VR	IT	L	Only dead
<i>leopardus</i>	60/160	C	IT	L/Sandy/Weedy	
<i>litoglyphus</i>	30/63	UC	IT/SW	L/OL/Rocky/Muddy	
<i>litteratus</i>	50/110	UC	IT	OL/Sandy	
<i>lividus</i>	35/70	VC	IT	L/Coral debris	
<i>maldivus</i>	45/75	UC	IT	L/Sandy/Weedy	
<i>miles</i>	35/60	C	IT/MDW	L/OL/Coral debris	
<i>miliaris</i>	20/35	C	IT	L/Coral debris	
<i>moreleti</i>	25/45	R	IT/MDW	OL/Rocky/Muddy	
<i>namocanus</i>	35/85	UC	IT	L/Muddy/Weedy	
<i>nanus</i>	12/20	C	IT	OL/Rocky/Muddy	
<i>nussatella</i>	40/70	C	IT	L/Coral debris	
<i>obscurus</i>	25/35	R	IT	OL/Coral debris	
<i>parvatus</i>	12/22	VC	IT	L/Coral debris	
<i>paulucciae</i>	75	VR	MDW	OL	Only one dead
<i>pennaceus episcopus</i>	30/60	C	IT	L/Sandy/Rocky	
<i>pennaceus episcopus</i>	45/55	UC	IT	L/Sandy/Rocky	(Rodrigues)
<i>pennaceus rubiginosus</i>	35/55	VR	IT	L/Muddy/Coral debris	
<i>pertusus</i>	27/45	UC	MDW	OL/Rocky/Weedy	
<i>pulicarius</i>	35/60	UC	IT	L/Sandy	
<i>quercinus</i>	30/90	VC	IT	L/Sandt/Weedy	

<b>Name</b>	<b>Size</b>	<b>Rarity</b>	<b>Depth</b>	<b>Habitat/Areas</b>	<b>Comments</b>
<i>rattus</i>	30/60	C	IT	L/R/Rocky/Weedy	Most of the time on top of coral
<i>retifer</i>	25/42	VR	MDW	OL/Coral debris	
<i>sanguinolentus</i>	25/60	C	IT	L/Coral debris	
<i>sponsalis</i>	15/24	VC	IT	L/Coral debris	Often shallow water
<i>striatellus</i>	32/62	R	IT to MDW	OL/Coral debris/Muddy	Just small one live at 30 m
<i>striatus</i>	50/95	C	IT to MDW	L/OL/Coral debris	
<i>tenuistriatus</i>	20/40	R	IT	L/Coral debris	
<i>terebra</i>	30/80	UC	IT	L/Coral debris	
<i>tessulatus</i>	30/65	VC	IT/MDW	L/OL/Sandy/Weedy	Small deep, big ones shallow water
<i>timorensis</i>	30/45	R	IT	L/Coral debris/Sandy	St Brandon
<i>tulipa</i>	50/80	C	IT	L/Coral debris	
<i>varius</i>	25/45	UC	IT	L/Coral debris	
<i>vaulberti</i>	40/65	R	IT	L/Coral debris/Sandy	St Brandon only
<i>vexillum</i>	45/135	UC	IT	OL/Coral debris	
<i>violaceous</i>	45/65	R	IT	L/Coral debris	
<i>virgo</i>	40/130	C	IT	L/Sandy/Weedy	
<i>zeylanicus</i>	25/55	R	IT	L/Sandy/Weedy	
<i>textile verriculum</i>	35/73	C	IT	L/Sandy/Rocky	
<i>archiepiscopus</i>	35/55	R	IT	L/Coral debris	
<i>textile textile</i>	40/75	VC	IT	L/Coral debris	
<i>omaria convolutus</i>	40/60	VR	IT	L/Sandy/Rocky	



**Plate 1**

More images may be checked in this old article :  
[http://www.seashell-collector.com/~ziptric/evo/articles/general\\_articles/page\\_conus-textile-variation-from-tuamotu.html](http://www.seashell-collector.com/~ziptric/evo/articles/general_articles/page_conus-textile-variation-from-tuamotu.html)

Seychelles (Indian Ocean) : *Conus canonicus*



*C. canonicus*



Variation



Variation

I hope you will appreciate this discussion.

**Plate 2**



Mauritius island : *Conus archiepiscopus*



*C. archiepiscopus*



Variation

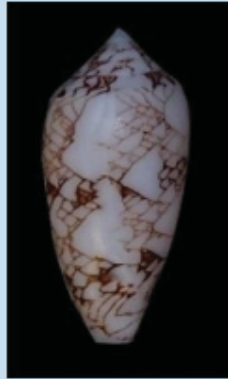


Variation

St Brandon island : *Conus textile vaulberti*



*C. textile vaulberti*



Variation

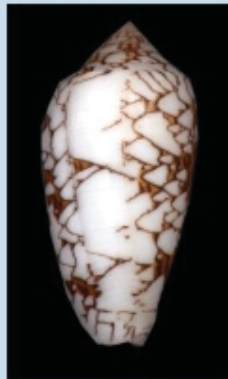


Variation

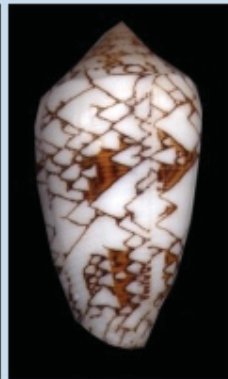
French Polynesia (Pacific Ocean) : *Conus textile textile*



*C. textile textile*  
(Moorea)



Variation  
(Tuamotu : Hao  
Atoll)



Variation  
(Tuamotu : Hao  
Atoll)

Plate 3

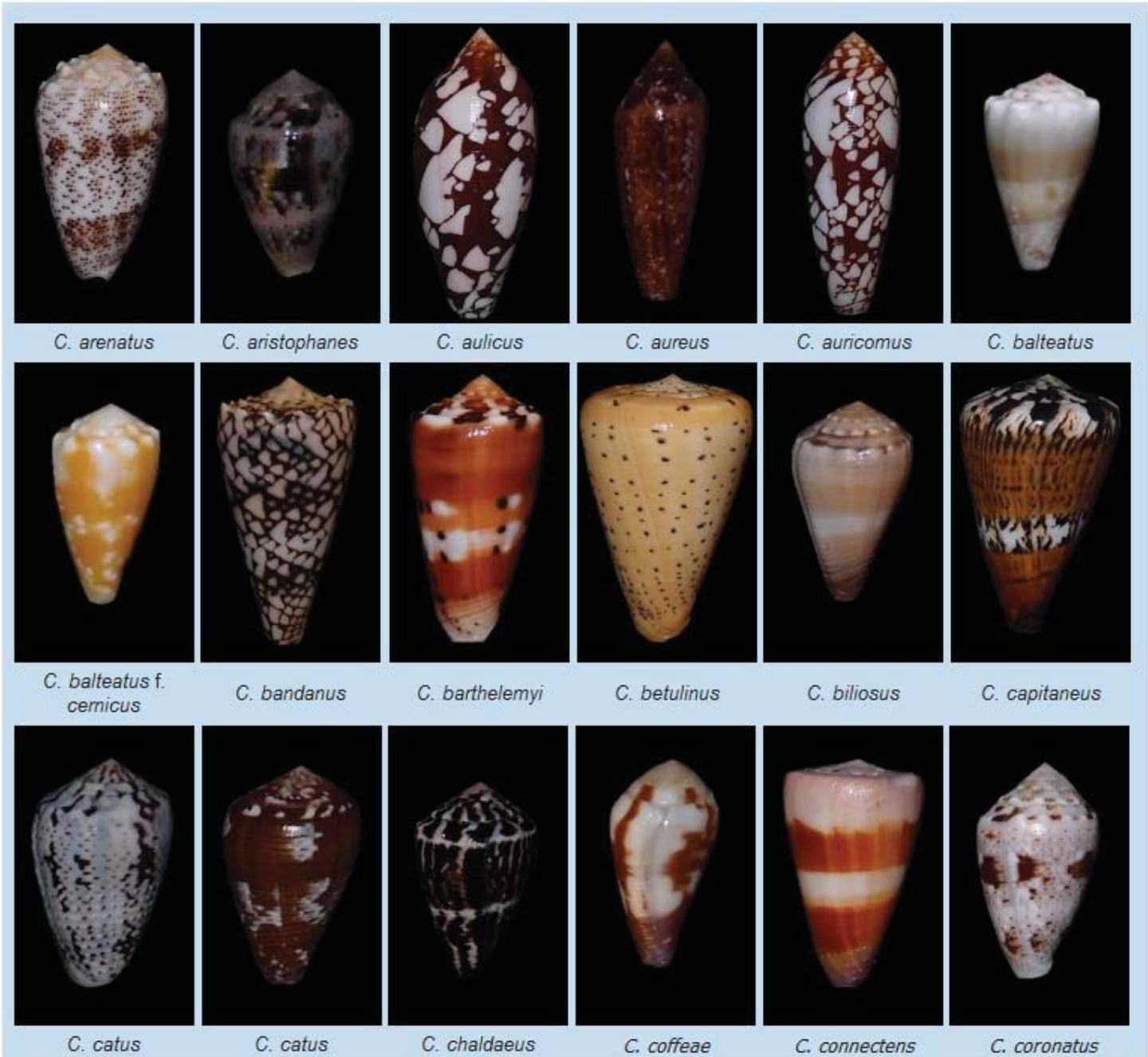


Plate 4



Plate 5



Plate 6

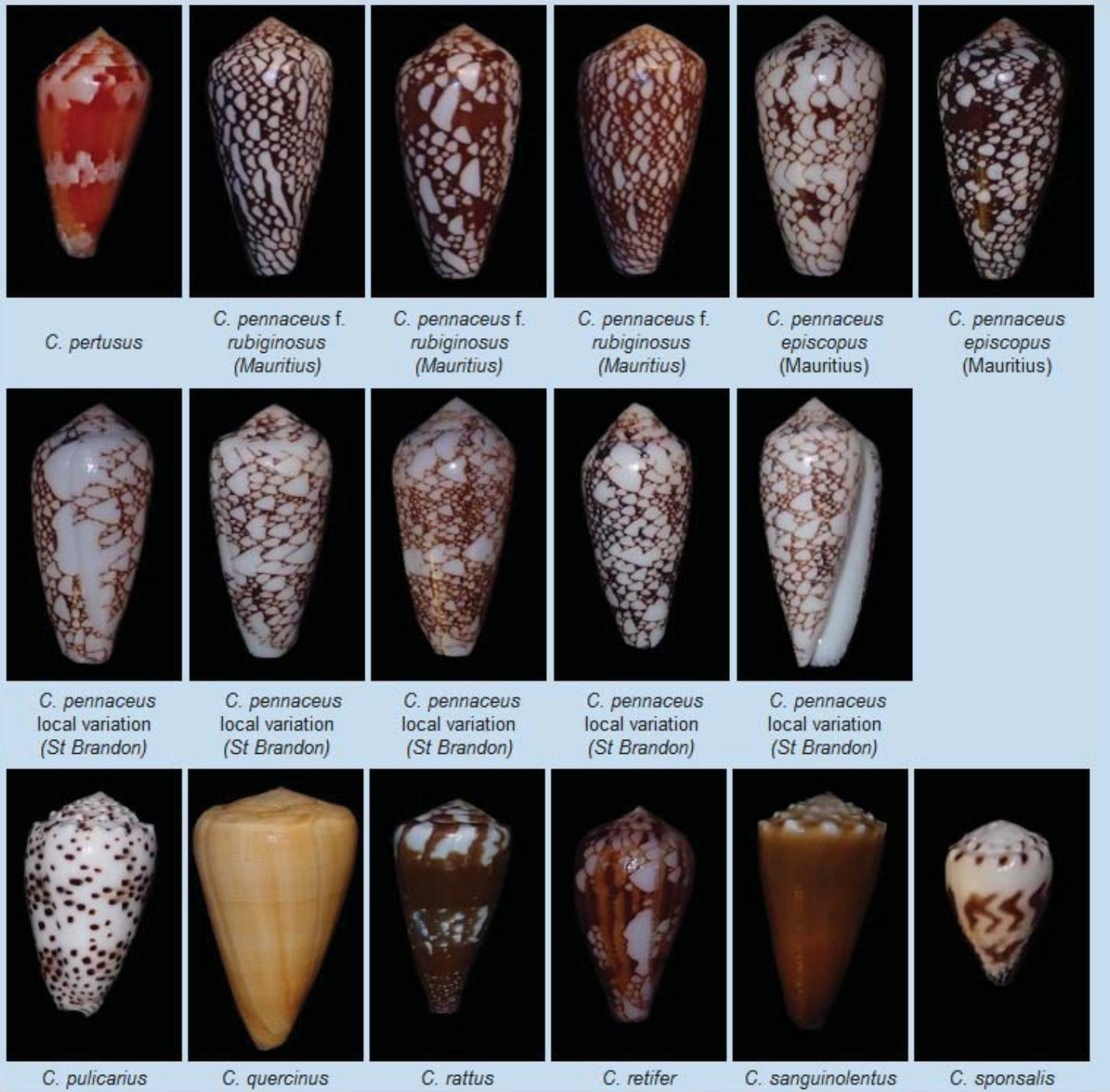
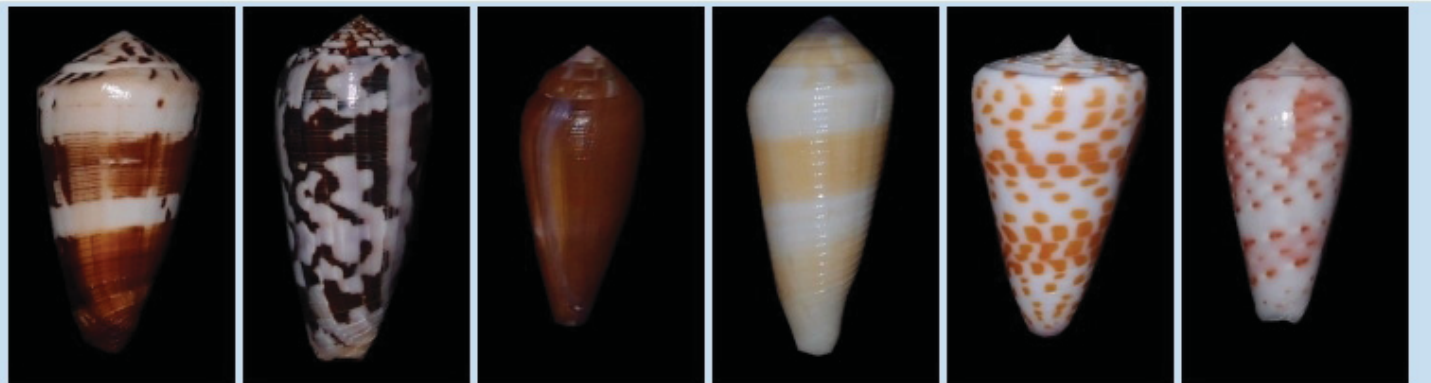


Plate 7



*C. striatellus*

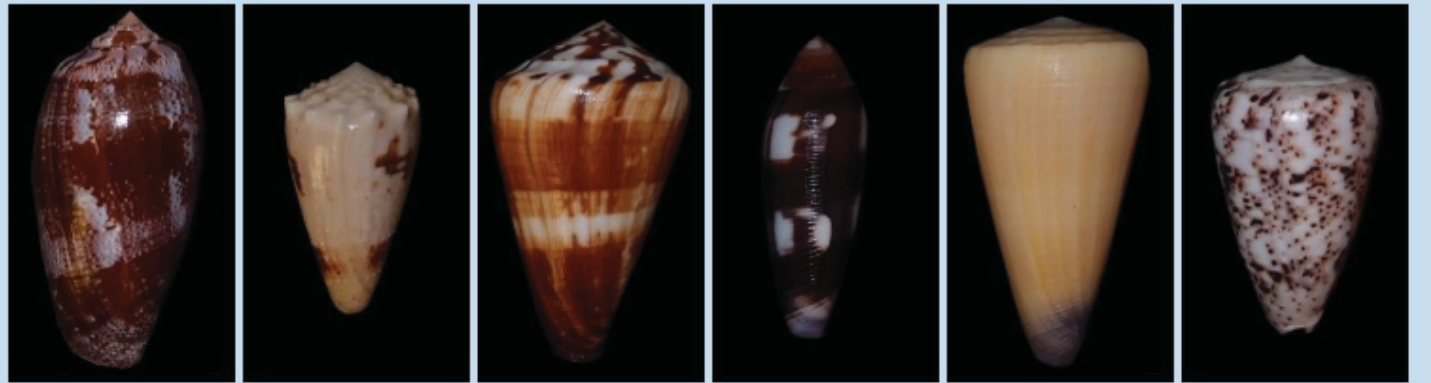
*C. striatus*

*C. tenuistriatus*

*C. terebra*

*C. tessulatus*

*C. timorensis*



*C. tulipa*

*C. varius*

*C. vexillum*

*C. violaceus*

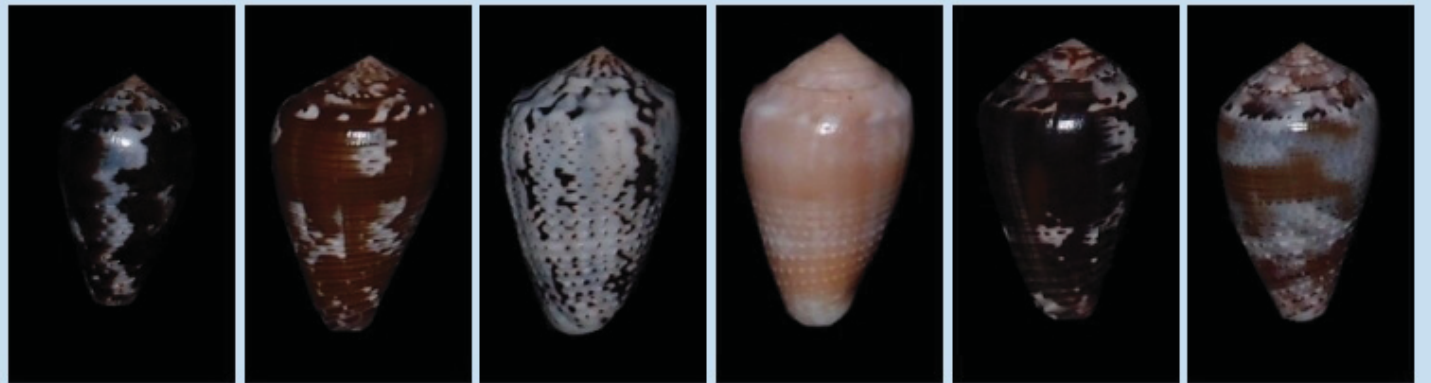
*C. virgo*

*C. zeylanicus*

(1) *Conus ebraeus* have now a know criptic specie named as *Conus judaeus* and is very difficult to distinguish without radular studies.

The specimen shown could be related to both species.

**Variations of *Conus catus* from Mauritius :** as usual this is a very variable species. It would have taken too much cases to display all local variations. Here are some of the variations you may find there :



*C. catus*

*C. catus*

*C. catus*

*C. catus*

*C. catus*

*C. catus*

## Plate 8



*archiepiscopus* with eggs



*archiepisopus* with eggs





*archiepisopus* with eggs



*aulicus*



*catus* with eggs



*catus* with eggs



*chaldeus* with eggs



*episcopatus*



*fuscatus* with eggs



*gubernator*



*litoglyphus*



*namocanus*



*pennaceus rubiginosus*



*pertusus*



*timorensis*



*violaceus*



*violaceus*



# Conidae from Mayotte

Matthias Deuss, David Touitou,  
Norbert Verneau

Much more information may be found in the recent book *Mollusques de Mayotte*, by Matthias Deuss, George Richard & Norbert Verneau (2013).

## Iconography

All shells displayed in this article come from Mayotte and were found by the authors, except *Conus barthelemyi* from Jean-Pierre Arnaud.

Data on Habitat, Size, Rarity & Forms

Rarity: VC (Very Common) C (common) UC (Uncommon) R (Rare) VR (Very Rare) E (Exceptionnal)  
Depth: IT (Intertidal 0-5m) SW (Shallow water

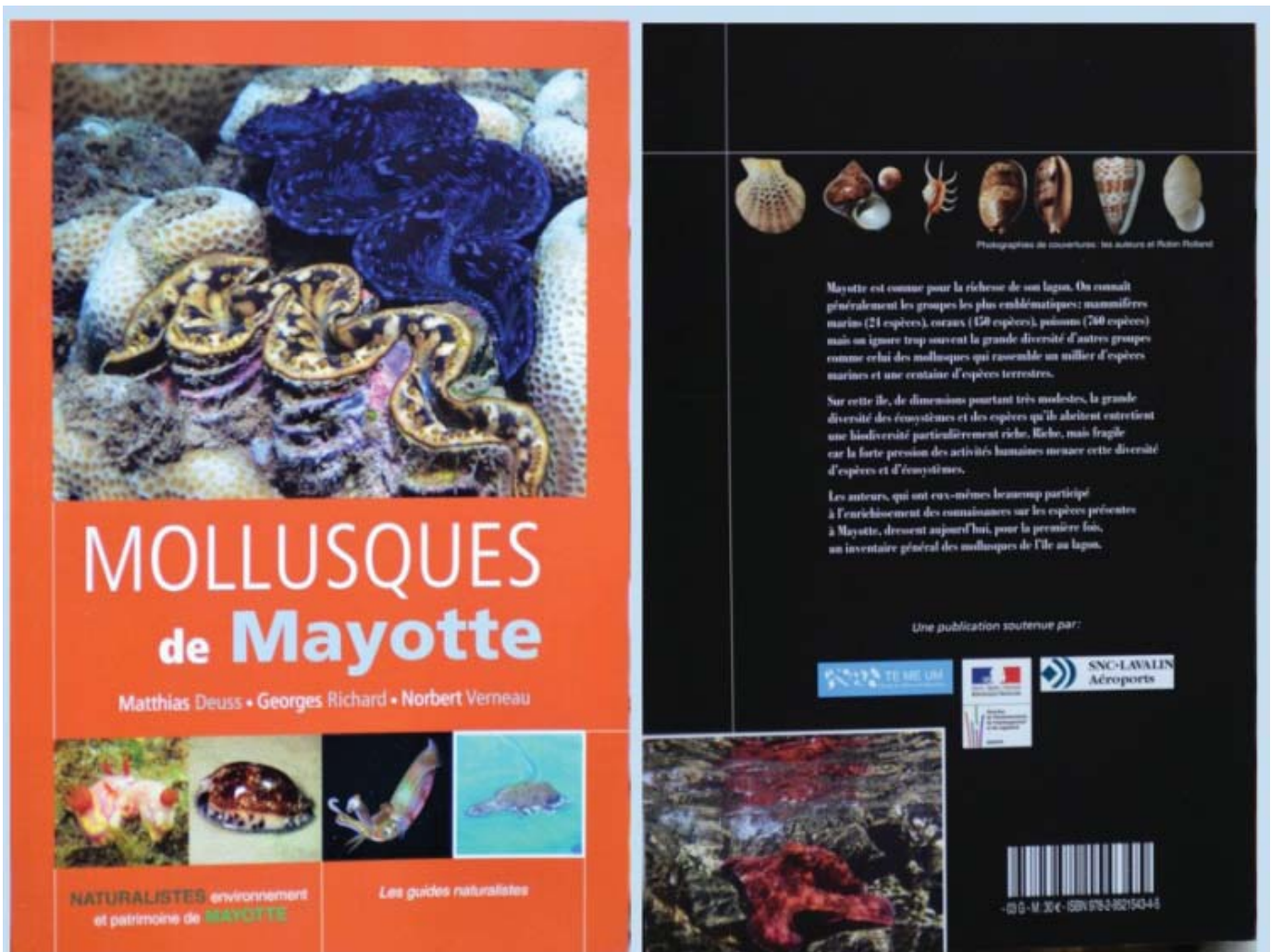
5-10m) MDW (Moderately Deep water 10-30m) DW (Deep Water 30m-60m) VDW (Very Deep Water 60-100m) DR (Dredged >100m) F (Only found in Fishes stomach)

Size: average adult size, in mm (millimeters)

Habitat: L (Lagoon) R (Reef) LP (Lagoon Pinnacles) OL (Outer Slope) S (Shore reef)

Areas: SANDY-LIVE CORAL-CORAL DEBRIS-ROCKY-WEEDY-MUDDY-HARD REEF

The work has been made by Norbert Verneau, photos of live animals are also by Norbert.





*C. achatinus*

*C. acutangulus*

*C. archiepiscopus*

*C. arenatus*

*C. aristophanes*

*C. augur*



*C. aulicus*

*C. auricomus*

*C. balteatus*

*C. bandanus*

*C. barthelemyi*

*C. betulinus*



*C. canonicus*

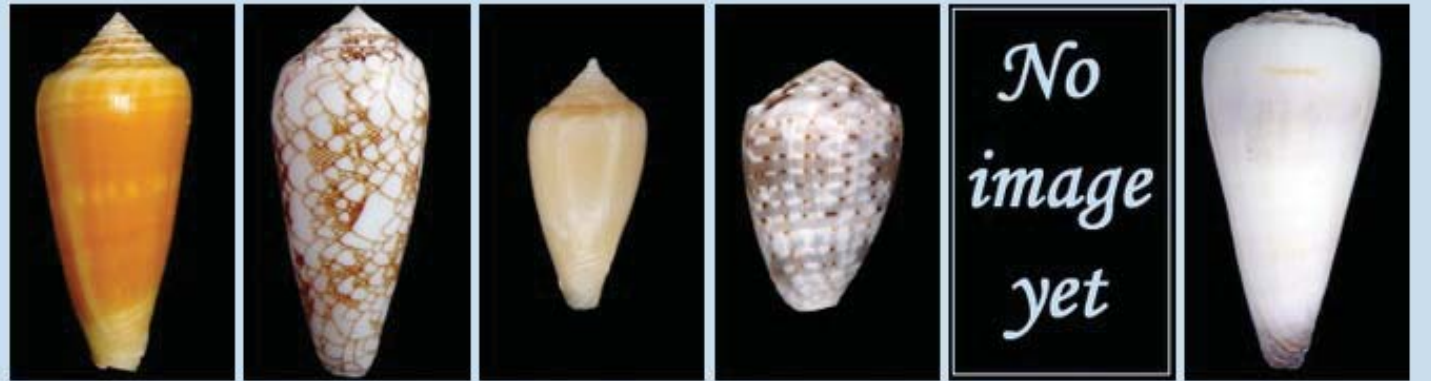
*C. capitaneus*

*C. catus*

*C. ceylanensis*

*C. chaldeus*

*C. connectens*



*C. consors*

*C. convolutus*

*C. corallinus*

*C. coronatus*

No  
image  
yet

*C. cylindraceus*

*C. distans*







*C. vexillum*



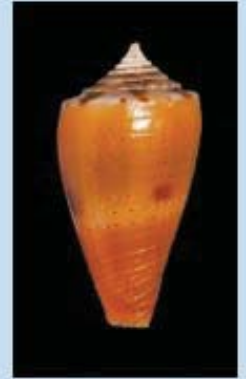
*C. violaceus*



*C. virgo*



*C. zeylanicus*



*C. sp. aff. sapphirostoma*  
**(1)**

**(1)** Comment from John K Tucker : The specimen that you identify as *C. sp. aff. sapphirostoma*, looks like *Pionoconus atimovatae* Bozzetti, 2012. Described from Madagascar. Bozzetti's specimen is probably a juvenile *P. achatinus*. Yours could be an *achatinus* or even possibly a juvenile *P. barthelemyi*. I attach an image of the *atimovatae* holotype. The specimen is 21.4 mm long.



Photo credit : Mr Bozzetti



*betulinus*



*consors*



*convolutus*



*geographus*



*maldivus*



*striatellus*





*paulucciae*



*paulucciae*



*zeylanicus*

We hope to see  
your article in  
the next TCC!

