

THE CONE COLLECTOR

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EDITORIAL

We are quite happy to report that reactions to *The Cone Collector* # 0 were overwhelmingly positive. We are very thankful for such warm reception, which clearly means that this was something that absolutely begged to be done! The present issue is being sent to over seventy readers.

Our trial issue established the tone of the newsletter and we will always try to have something for everyone, from the relatively inexperienced collector to the professional researcher.



C. cf. carcellesi Martins, 1945 (Uruguay)

Some of our readers sent in a number of comments, some of them pointing out several typing mistakes and other minor errors (plus a more serious one), which prompted us to correct them and send everybody a “revised” version. Thanks are due to everyone who took the time to read everything carefully and to point out the said mistakes. Hopefully such flaws will be avoided from now on.

Besides favourable comments to issue # 0, we immediately got actual contributions from several of our readers, which is everything we could hope for. The newsletter will not live long without the help and enthusiasm of everyone. Keep those contributions coming, please! From views on taxonomy to news on a successful shelling trip, from photos of live animals to requests for help in identifying any strange specimens, everything will be welcome in our pages!

Finally, it should be noticed that through the efforts of several friends, *The Cone Collector* can be found on-line, through links in a couple of personal pages and also in the sites of several well known dealers. This will of course help us to get in touch with an ever increasing number of collectors, which is exactly one of our main goals.

So, hoping that everybody will enjoy the new issue, let's get on with the show!

And don't forget: we do want to hear from you, so please keep in touch.



WHO CREATED CONIDAE?

Well, if your answer to that question is “God”, be assured that I do not plan to dispute or in any way comment or contradict it. But I refer to a more modest creator...

It so happens that Alan Kohn observed that it is not correct to attribute the *taxon* Conidae to Rafinesque (in 1815), as we did, since “Rafinesque's [...] name was based on a genus-group name that is a junior synonym of *Conus*, so the family name cannot be based on it”.



Constantine Samuel Rafinesque
(1783-1840)

Let us quote from Alan Kohn, *A Chronological Taxonomy of Conus, 1758-1840*, (Smithsonian Institution Press, Washington and London, 1992), page 5:

«The earliest available family-group name for Conidae is *Conulia*, proposed by Rafinesque (1815) as a subfamily of his 20th family, ‘*Involvea*’, of his “Class *Apalosia. Les Mollusques*”. It included *Conullus* and *Cylindulus*, Rafinesque’s names for *Conus*, as well as the genera *Ancilla*, *Oliva*, and *Terebellum*, also renamed by Rafinesque. Because the generic name *Conullus*, on which *Conulia* was based, is a junior synonym of *Conus*, and the family name Conidae won general acceptance, the latter is maintained (*Code*, Art. 40).

John Fleming of Edinburgh, a Presbyterian minister but close associate of the Scottish evolutionist Robert Grant, and later

Professor of Natural History at King’s College, Aberdeen (Page, 1972; Desmond, 1989), erected a separate family, Conusidae, with two genera, *Conus* and *Terebellum* (Fleming, 1822). The headings of his elaborate dichotomous system of classification indicated shell characters, and Fleming (1822: 490) included the following accurate description of the body in this family, clearly based on observation of the living animal: “Furnished with a long proboscis, and produced tentacula, with the eyes near the summit on the outside. The lid is placed obliquely on the foot, and is too small to fill the mouth of the shell”.

In same year, Férussac ([1822]) also erected a separate family (“7e Famille, Les Cônes”) for *Conus*, withdrawing the genus from Lamarck’s family, “Les Enroulées”, which contained the genera *Ovula*, *Cypraea*, *Terebellum*, *Oliva*, *Ancillaria*, and *Conus* (Lamarck, 1812). Férussac did not provide a Latinized family name, and Fleming’s spelling of Conusidae must be emended to Conidae and attributed to Fleming (1822)(*Code*, Arts. 29a,b; 32c,d). *Conus* is automatically the type genus of the family (*Code*, Art. 63).»

Our sincere thanks to Alan Kohn for reminding us of this point, which is also explained in Bouchet & Rocroi’s recent (2005) paper.

All confusion apart, the family we are dealing with should for all intents and purposes be referred to as Conidae Fleming, 1822.

NOTE:

John Fleming was born near Bathgate, Linlithgowshire, Scotland, on the 10th January, 1785. By 1805, he completed his studies at the University of Edinburgh and was ordained as a minister in 1808. Although he practiced as a minister and a teacher, throughout his life, he is mainly remembered today as an outstanding naturalist – he was made a fellow of the Royal society of Edinburgh in 1814 –, who endeavoured to reconcile theology with science. In 1831, he was the first to recognize fossilized fish remains in the Old Red Sandstone units at Fife.

In 1834 John Fleming took the chair of natural philosophy at University and King’s College, Aberdeen and in 1845 is made professor of natural science at New College (Free Church), Edinburgh. His works

included *Philosophy of Zoology* (1822) and *History of British Animals* (1828). The latter covered not only living but fossil species, and in general his defenses of the argument that climatic regimes changed, and that the extinct species of particular areas may have flourished under rather different environmental conditions than extant ones, was an important philosophical advance for the study of animal distribution.

Fleming died at Edinburgh, on the 18th November, 1857.



WHO'S WHO IN CONES

Besides supplying information (and whenever possible also fun) to all – both collectors and professional malacologists – who are interested in Cones, our newsletter also aims to stimulate contact amongst everybody.

Modern life does not always facilitate communication, despite all the technical facilities at our disposal, even between people who share the same interests and only too often have collectors been divided upon several issues. The Cone Collector wishes to stimulate discussion of all aspects pertaining to Cones and Cone collecting, so that everybody will be able to express opinions and doubts and to make suggestions.

In order to achieve this, it is also important that we get to know each other and that is why in our previous issue both members of the editorial team presented themselves with photos and short biographies. This is something that we do wish to continue and in fact the same was suggested by others like our friend Bill Fenzan.

Thanking Bill for this and other useful suggestions, it seemed only appropriate that he would be the one to start our “Who’s Who” column. So, in his own words, let me introduce to you...

William J. Fenzan



I was born in Barberton, Ohio on August 4, 1953 and grew up in the middle of the United States far from the sea. My interest in shells started when a friend returned from Florida with shells and asked me to help him identify them. I eventually started my own collection and added to it by purchase over time.

After University graduation, I was commissioned in the United States Navy as a Supply Corps Officer to conduct purchasing for ships. During a 20-year career in the Navy, I was able to buy and collect shells in Japan, the Philippines, Singapore, Diego Garcia and Australia. I found that the shells I was most interested in acquiring and studying were the cones.

On retirement from the Navy, I found a job as a financial analyst in Virginia where I live with my wife and fourteen year old daughter. We have a dog (Shetland sheepdog) and two house cats.

I have only published one paper describing a new species of cone. Unfortunately, publication of my paper was delayed so it did not leave the printer until shortly after another paper describing the same species was distributed.

During the past two and a half years, I have been photographing primary types of American cones for another collector in California who is planning to write a cone book.



MODERN CLASSIFICATION

Referring to the changes in classification, at the family level, recently proposed by Bouchet & Rocroi, we have received the following comments from John Tucker:

The classification used by Bouchet and Rocroi in 2005 is essentially the one proposed by Taylor *et al* in a major classification paper published in 1993. They tried to use cladistic methods which result in the grouping of all the molluscs with enrolled (i.e., harpoon like) radular teeth into one family Conidae. Thus all the former turrids included in the family.



Radular tooth of *C. pulcher siamensis* Hwass, 1792

Unfortunately biologically this is likely correct but the problem is that it compresses all the divergent groups into a single family. Cone shells are unique in having the inner whorls resorbed among the Conidae (of Taylor *et al*).

I personally think that the "true" cone shells and all the turrid conid subfamilies should be elevated to family status and grouped in their own superfamily to show the clade with enrolled radular teeth. Thus you would have a Conidae, a Clathurellidae, a Daphnellidae, etc.

This is certainly as logical as having a separate Drilliidae for turrids that did not go anywhere compared to a crunched up batch of fast movers like the Conidae (*sensu lato* of Taylor *et al*).

Comments anyone?



LETTER FROM MIKE FILMER

In relation to your nice obituary and article on Bob da Motta you may like to publish in your next issue the following letter:

“Readers might be interested to learn that Bob da Motta became a cone collector and later a specialist in cones through me. In late 1970 Bob, whom I did not know, came to my house in Bangkok to collect his wife Lisa, who was playing contract bridge with my wife Hilda and some other members of the International Womens Club at our house. As the ladies had not finished playing I invited Bob in to my study where I had a tray of cones on my desk. Bob asked many questions and was clearly fascinated. Not long after this I met him at a small Bangkok shell shop buying shells. We became good friends and I later visited him in Hong Kong.

We exchanged shells and correspondence for many years and among my collection’s treasures is paratype no. 3 of *C. ciderryi*.



Conus ciderryi da Motta, 1985

When he was trying to set up a Cone Society, at Bob’s request I visited Walter

Cernohorsky in New Zealand to discuss the idea and see if Walter would be interested in curating the collections. Walter was interested but in the end the project fell through because a suitable location could not be found and enough money could not be raised for the project.

Mike Filmer"



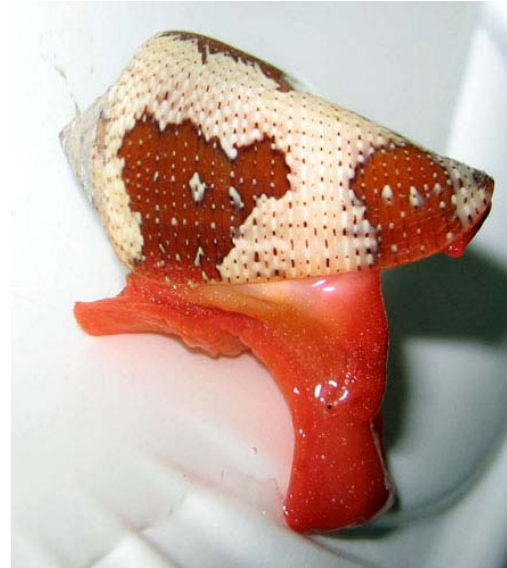
PHOTOS OF LIVE *C.*
CURASSAVIENSIS HWASS, 1792

Conus curassaviensis Hwass, 1792 belongs to the wonderful and still a bit mysterious group of species that are usually known under the collective designation of “*cedonulli* group”. It comes from Aruba, in the Netherland Antilles.



Thanks to our friend Andre Poremski, we are able to present a few photos of living animals. These are quite beautiful photos that will certainly please everybody.

Here, then, is *C. curassaviensis* in its glorious colours:



Andre Poremski has promised further photos of Caribbean cones, which we will gladly publish in future issues of *TCC*. To give everybody some idea of what may come next, here is a beautiful live *Conus regius* f. *citrinus* Gmelin, 1791.





Conus bocagei Trovão, 1978

ABOUT THE NOMENCLATURE OF ANGOLAN CONES

As could perhaps be expected, the article narrating the origins of several problems in the nomenclature of Angolan Cones, published in our previous issue, elicited a few comments.

The two main ones have to do with the status of the names introduced by Kaicher and we shall transcribe them below.

First, we received the following comment from John Tucker:

«I might mention that the Commissions actions of Kaicher's names came as no surprise to me. There is a widespread misconception that Article 13 (names published after 1930), 1.1 (be accompanied by a description or definition that states in words characters that are purported to differentiate the *taxon* or) means that a formal comparison between two or more related species is required. This is not the case. Mention of a new name in connection with characters with characters being the operative word is sufficient to create a new species. Untold thousands of species are described in the older literature without a formal comparison. Article 16 which applies to names after 1999 rather tightened things up but not much. It requires that there be evidence of the intention of the author to describe a new species. It also requires fixation or designation of holotype or syntypes. But it did not add a requirement for a formal comparison. Thus I can describe a new species intentionally, place the types in a museum collection and not compare it to any other *taxon* and still be within the code. Thus the Commission had no options on the Kaicher names.»



Later on, we have received a rather different view from Mike Filmer:

«I was mistaken about the validity of the Kaicher cone names - *alexandrinus* - *lineopunctatus* - *lobitensis* and *negroides*. They are infact all unavailable names (*nomen nudum*) because although Kaichers cards are acceptable ICZN opinion 1905 (1998) the names were described and figured but not indicated (compared with other species). They are therefore not *nomen dubium* but *nomen nudum*».

I believe that the issues raised quite clearly require some clarification. Comments, anyone?



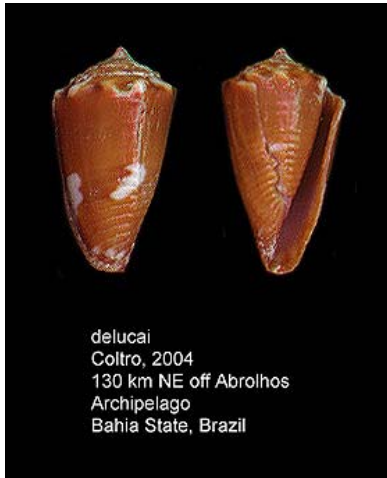
A bibliography of cone shells described after 1999

John K. Tucker

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- Afonso, C. M. L. & Tenorio, M. J. 2004. Description of a new offshore species of *Conus* from the Cape Verde Archipelago (Gastropoda, Conidae). *La Conchiglia* 236(310):33-40, 10 figs.
- Bondarev, I. 2001. Description of a new cone species (*Conus evansi*) from the Red Sea, Dahlak (Gastropoda, Conidae). *La Conchiglia* 23(299):25-26, 61, 3 figs.
- Bozzetti, L. 2004. *Conus solangeae* (Gastropoda: Prosobranchia, Conidae) dal Madagascar Meridionale. *Malacologia Mostra Mondiale* 43:13-14.
- Bozzetti, L. 2005. *Conus giorossii* sp. n. (Gastropoda, Conoidea) da Flores, Indonesia. *Malacologia Mostra Mondiale* 48:3-5.
- Coltro, J. 2004. New species of Conidae from northeastern Brazil (Mollusca: Gastropoda). *Strombus* 11:1-7, pls. 8-16.



Conus delucai Coltro, 2004



Conus brianhayesi Korn, 2001

Delsaerdt, A. 2000. Conidae of the Solomon Islands Part 7. *Gloria Maris* 39(2/3):23-58, pls. 15-18.

Espinosa, J. & Ortea, J. 2005. Descripción de una nueva especie del género *Conus* Linné, 1758 (Mollusca: Neogastropoda) de la costa norte occidental de Cuba y las Bahamas. *Revista de la Academia Canaria de Ciencias* 16:125-129. (published August 2005)

Fenzan, W. J. 2004. Description of *Conus sagarinoi* sp. nov. (Gastropoda: Conidae) from the Philippines. *La Conchiglia* 36(311):15-20, 4 figs.

Filmer, R. M. 2005. A new *Conus* species from the Philippines (Gastropoda – Conidae). *Of Sea and Shore* 27(1):59-66.

Garcia, E. F. 2006. *Conus sauros*, a new *Conus* species (Gastropoda: Conidae) from the Gulf of Mexico. *Novapex* 7:71-76.

Korn, W. 2001. A new *Conus* species from the Natal Province, Rep. of South Africa (Mollusca: Conidae), including detailed information on *Conus bairstowi* Sowerby III, 1889. *La Conchiglia* 32(297):15-20, 11 figs.

Korn, W. 2001. A name change. *La Conchiglia* 33(299):18.

Korn, W., Niederhöfer, H.-J. and Blöcher, M. 2000. *Conus pennaceus* from Madagascar- a complex of geographical subspecies (Gastropoda: Conidae). *Stuttgarter Beiträge zur Naturkunde, ser. A (Biologie)* 610:1-25, 14 figs., 6 pls.

Korn, W., Niederhöfer, H.-J. and Blöcher, M. 2001. *Conus sartii* sp. nov. from Madagascar (Gastropoda: Conidae). *La Conchiglia* 33(301):32-40, 21 figs.

Lan, T. C. 2002. A new cone from Japan. *Bulletin of Malacology Republic of China* 26:1-4.

Lorenz, F. 2001. Notes on some species of Conidae and Cypraeidae from Indonesia with the description of *Conus empressae* sp. nov. (Mollusca: Gastropoda). *Schriften zur Malakozoologie aus dem Haus der Natur-Cismar* 18:15-20, pl. 2.

Lorenz, F. 2004. Two new species of Conidae from southern Madagascar. *Visaya* 2:19-23.

Lorenz, F. 2005. An overlooked species of *Conus* (Gastropoda: Conidae). *Schriften zur Malakozoologie aus dem Haus der Natur-Cismar* 22:71-74, pl. 4.

Lorenz, F. 2006. Two new species of *Conus* from Palawan, Philippines (Gastropoda: Conidae). *Club Conchylia Informationen* 38(1/2):4-9, 2 pls.

Lorenz, F. & Morrison, H. 2004. A new species of Conidae (Gastropoda: Toxoglossa) from Western Australia: *Conus garywilsoni* sp. nov. *La Conchiglia* 35(309):43-46, 1 pl.



Conus garywilsoni Lorenz & Morrison, 2004

Monteiro, A., Tenorio, M. J., & Poppe, G. T. 2004. *A Conchological Iconography the Family Conidae the West African and Mediterranean Species of Conus*. ConchBooks, Hackenheim, Germany, 102 pp., 164 pls.

Moolenbeek, R. G. 2006. *Conus (Lilliconus) kuiperi* spec. nov. (Gastropoda, Conidae), from the Sultanate of Oman. *Basteria*, supplement 3:83-85, figs. 1-5.

Petuch, E. J. 2000. A review of the conid subgenus *Purpuriconus* da Motta, 1991, with the description of two new Bahamian species. *Ruthenica* 10(2):81-87, 1 fig.

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

Poppe, G. T. & Tagaro, S. 2005. A new *Conus* from Aliguay Island, the Philippines. *Visaya* 1(4):40-44, 2 pls.

Raybaudi Massilia, G. 2004. An "old" new species of *Conus* from the Philippines. *Visaya* 2:38-41.

Raybaudi Massilia, G. 2005. The first discovered Pacific Ocean member of the

Conus traversianus group: *Conus guidopoppei* new species. *Visaya* 1(5):143-147.

Röckel, D. & Bondarev, I. 2000. *Conus gordyi*, a new species from Saya de Malha Bank, western Indian Ocean. *La Conchiglia* 31(293):41-43, 10 figs.

Rolán, E. & Röckel, D. 2000. The endemic *Conus* of Angola. *Argonauta* 13(2):5-44, 150 figs.

Rolán, E. & Röckel, D. 2001. The endemic *Conus* of Angola. 2. Description of three new species. *Iberus* 19(2):57-66.

Tenorio, M. J. & Afonso, C. M. L. 2004. Description of four new species of *Conus* from the Cape Verde Islands (Gastropoda, Conidae). *Visaya* 2:24-37.



Conus claudiae Tenorio & Afonso, 2004

Tenorio, M. J. & Poppe, G. T. 2004. Description of three deep-water species of *Conus* from the central Philippines. (Gastropoda, Conidae). *Visaya*, July, 2004, 20-25, 5 pls.

Note: See below the actual list of species described



A population of
Conus ventricosus Gmelin, 1791
south of Taranto, Ionian Sea

Giancarlo Paganelli

Conus ventricosus Gmelin, 1791, being a vermivorous predator, occurs along all the Italian coasts and islands where the seabed is rocky with algae. Over five years I collected about sixty specimens of this species in Marina di Pulsano, near Taranto, on the Ionian Sea.

The site of the collecting is restricted to a 500-metre-long stretch of reef coast. The seabed is 3-5 metres deep and alternates sandy and rocky belts with small algae. The specimens were collected during daytime, chiefly in the morning; they were partially buried in the sand near rock faces and well camouflaged (as they are mainly active during the night), making their finding very difficult. The smaller specimens are near the shore at not many centimetres from the surface of the water in hollows of the rocks hidden by algae. The shells are often covered by a calcium carbonate layer that sticks tenaciously to it and cannot be removed without damaging the surface. The body whorl and most of all the spire are often eroded.



C. ventricosus Gmelin, 1791 (49.5 mm)

I examined and measured about 30 specimens of medium-large dimensions (33 to 56 mm in length and 20 to 32 mm in width) excluding the smaller specimens (15-30 mm in length):

Shells moderately solid (RW= 0.23).

Last whorl ventricosely conical (RD = 0.68, PMD = 0.74), outline convex.

Aperture wider at base than at shoulder. Outer lip often thin and brittle, especially in smaller specimens. Shoulder weakly angulated to rounded. Spire usually of moderate height (RSH = 0.15), stepped, rarely high; outline almost straight to moderately convex. Sutural ramps convex with deep and narrow sutures. Protoconch grayish.

The anal canal is about as long as half the width of the last whorl. The outlet is clean and goes towards the shoulder in a rounded angle. The colour is brown.

Background colour whitish suffused with grey clouds. Last whorl generally with a network of brown olive flecks and thin reddish spiral dashes; there is often a light spiral band below the centre. Surface generally rather opaque. Shoulder with radial red-brownish spots or flames.

Aperture dark violet that often fades to white deep within, with a white band below the centre; marginal zone white that shows the same pattern as the opposite side. Columellar fold slightly bent.

Foot light brown mottled with black, suffused of red at the edges. Tentacles light brown, often with red tip. Siphon black marbled of whitish, sometimes red at the end. Periostracum yellowish to olive-brown, varying in thickness, translucent to opaque.

Operculum elliptical, brown, about 30% of the aperture length.

It is possible to conclude that the population tested is rather uniform in shape and colour. Only a few specimens present a higher or lower spire and a darker colour pattern than average.

Bibliography

MELONE, N., 1967. Note sul *Conus mediterraneus* Brug. (Gasteropoda - Toxoglossa) del Mar Jonio. *Thalassia Salentina*, 2:108-121.

MONTEIRO, A., TENORIO, M. J. & POPPE, G. T., 2004. The Family Conidae. The West African and Mediterranean species of *Conus*.

KOHN, A. J. & RIGGS, A. C., 1975. Morphometry of the *Conus* Shell. *Syst. Zool.*, 24(3): 346-359.

PARENZAN, P., 1976. Fauna malacologia dei laghi di Ganzirri e del Faro (Messina). XXX Congrès-Assembl. plénière de la CIESM, Spalato, 22-30 ott. 67:78.

RÖCKEL, D., 1981. *Conus mediterraneus* o *Conus ventricosus*? La Conchiglia, 13(3-4):18-19.



Fig. 1. Outline.



Fig. 2. Spire, Protoconch.



Fig. 3. Colour Pattern



Fig. 4. Operculum



Fig. 5. Foot, Siphon, Tentacle



Fig. 6. Anal Canal



Fig. 7 Periostracum



Fig. 8. Map



Fig. 9 Two images of the reef (Marina di Pulsano)



AN ARTIST'S IMPRESSIONS

Some of us have an artistic talent that many others certainly envy. One such artist is Boet van Heugten. You can judge for yourself from the following two renditions of *Conus peli* Moolenbeek, 1996. The first one shows one of the paratypes whereas the second depicts three specimens from the collection of the Zoölogical Museum, Amsterdam. They come from Oman.



THE GENUS PROBLEM

Marco Bettocchi

I have been a Cone collector since 1982 and until 1991 I had always classified my specimens within the single genus *Conus*.

Then, Bob da Motta published his “*A systematic classification of the*

Gastropod family CONIDAE at the generic level” and so I was able to put some order into my collection, even if many doubts remained on the correct placement of some taxa in a subgenus or in another.

It was rather difficult to understand for a simple collector like myself (I am an architect, not a malacologist), since no consensus had

been reached upon what generic classification to adopt. So I followed the model suggested by da Motta, because it seemed to me to be the one that most allowed us to stress the differences between species.

But the time passes. New studies and researches have been done on the Cones (radular teeth, DNA, venoms). It turns out that accepting a classification at the generic level based on the shape of the shell only is a bit limited.

Therefore, I am considering reclassifying my collection again, replacing the ten extant genera (the eight selected by da Motta, plus *Lilliconus* and *Conorbis*) with the single genus *Conus*, and considering different subgenera (maybe eliminating a few of da Motta's subgenera that I had always regarded as quite "forced" (for instance, *Ongoconus* = *Strategoconus* in view of the shape; *Fumiconus*?, into *Hermes*; etc.).

To be able to do this, I need every bit of news about recent studies and classifications, as well as ideas and opinion from all of you.

Let us begin a discussion on this topic!

Some years ago I had a web site (conusmarmoreus.org) which maybe someone of you had seen. By it, I suggested to debate the problem. The result? One answer only! Nowadays, by means of *The Cone Collector*, I think it should be easier to debate on this topic, which has always been a matter of the first importance for me. An interesting result could be obtained from a collective discussion.

Sufficiently interesting to induce some malacologists and even the ICZN to take up the problem at scientific level? There is an old saying in Italy: "If they are roses, they will flower...".

A warmest *Ciao*.



CONTRIBUTION FROM ALFRED J. SPOO

I write and illustrate for my local newspaper, trying to make people aware of what the beautiful planet contains that most people never notice. Here's an article along with the illustration that I did on Cones three years ago in the paper:

The empire strikes back!

The empire strikes back! From the beginning of time man has been hunting shells for food, tools, a form of currency and for the pearls that some types yield, but like many other things there is a group of shells that are capable of defending themselves and even killing people and these are scientifically known as Conidae.

There are three distinct groups in this family; these are: those that are vermivorous (feed on worms), those that are molluscivorous (feed on small snails as well as other cones) and those that are piscivorous (feed on fish). The sting of the worm eaters is similar to that of the sting of a bee and produces pain and swelling, but that of the fish eaters, the larger members of the family, are the most toxic and the most dangerous to man. Over the years there have been numerous fatalities reported including an incident of a Japanese diver who came up with a large cone and was bitten and died in less than ten minutes.

The poison is neurotoxic, similar to that of cobras and mambas - the initial sting causes severe localized pain, then numbness, dizziness and vomiting, paralysis of the diaphragm and finally death by suffocation because the lungs no longer work. There is little treatment for people who

are stung by the picivorus type because death can occur in as little as five minutes after the bite!

Cones are equipped with two eyes, a muscular foot, a siphon (to bring water into the gills) and a rather large mouth, called a rostrum. Inside the rostrum is a proboscis, which delivers the darts and this is connected to a poison duct, which is attached to the poison bulb. The darts are stored in a radular sac and are delivered to the proboscis, one at a time as they are needed - there is always one in the proboscis and ready to be fired.

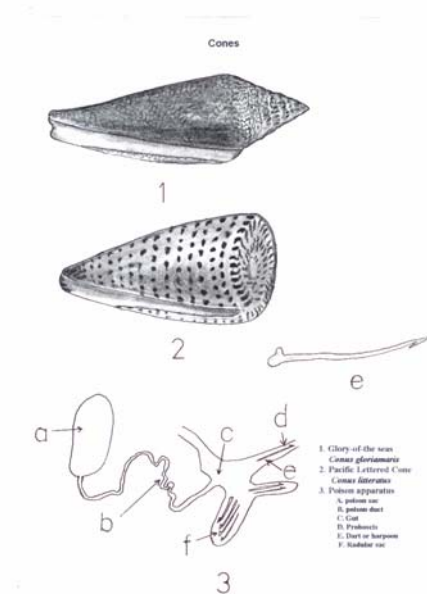
Perhaps you have heard of a fish that is called the Archer Fish; it uses a jet of water to shoot down insect prey from plants over hanging the water. Cones are more like the natives with their poison darts and blow guns - when the prey is within striking range the proboscis appears and a dart is hurled into the victim, who is killed and drawn into the rostrum and digested.

The darts are also used in self-defense and will readily be used if the cone feels that it is threatened. The cones should never be handled unless the collector is wearing very heavy gloves suited for the occasion; species such as *geographus* and *striatus* can reach any part of their shell with their proboscis and sting you.

The taxonomy of cones can be very difficult; they are a type of saltwater snails and come in array of sizes, colors and shapes and even within a specie there is much variation and sometimes several forms and colors. These are a highly sought after group of shells that number about 400 species and are commonly called cones.

One shell that is found in the Indo-Pacific waters and was once highly prized by collectors is the Glory-of-the-Seas, *Conus gloriamaris* - only five of these were found in the

years from 1838 to 1938. In 1960 one of these shells was sold for \$2000, but in the 1970s numerous new specimens have been found and just like the stock market the bottom fell out and shells that once brought several thousand dollars are now available for two hundred or less depending upon their size.



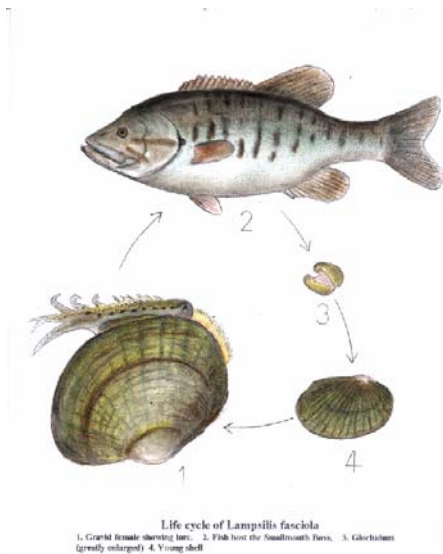
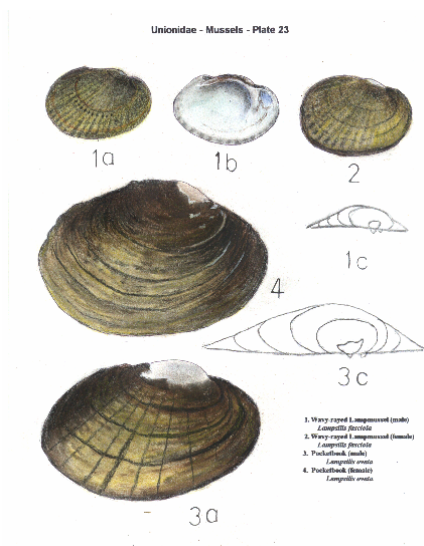
A thin membrane that is called a periostracum covers the living cones and it can be transparent yellowish or brown; this covering must be removed from collected specimens to show their beautiful colors and patterns.

Cones live in tropical waters and are either buried in the sand or secluded among coral reefs so if you are scuba diving or exploring the sand in tropical waters be careful - it could be like reaching into a rock den of rattlesnakes!

Note:

Our friend Al Spoo added the following, which I felt I should share with everybody (even if it is not related to cones), in view of the great quality of his work; I just know this will be greatly enjoyed:

I collect various seashells, but the things that I specialize in are Conidae and Unionidae. I've been working on a publication of Unionidae of Pennsylvania and I'm sending you two plates, which I have painted, so you can get an idea of what I'm trying to accomplish. There are 67 species of mussels in PA and so far I've painted 54 plates.



CONE BIBLIOGRAPHY (Continued)

In our previous number, we took a look on the recent books dealing with Conidae.

About Jerry Walls's 1979 *Cone Shells – a synopsis of the living Conidae*, it is worth referring that a list of corrections – obviously a valuable aid in using that particular book – has indeed been published! It appeared in two versions (thanks to Bill Fenzan for supplying these references). The first version was written by José M. Lauer and George Richard: *Iconographical Revision of J.G. Walls "Cone Shells, A Synopsis of the Living Conidae"* (in *Xenophora*, 47:9-36, 1989); the second one was authored by José M. Lauer: *Iconographical Revision of J.G. Walls "Cone Shells, A Synopsis of the Living Conidae"* (*World Shells*. N. 13 (June 1995): 57-72).

No other books need or indeed deserve mention in this section. But there is a series of articles that in a way played the part of a (still) non-existent book. I am referring to the series of articles written by Danker L. N. Vink wrote for *La Conchiglia* in the 80s and early 90s: "*The Conidae of the Western Atlantic*", parts 1 to 15 (*La Conchiglia* #186/187, September/October 1984 to #261, October/December 1991). This is obviously incomplete, since several new species have been described since and different views on previously known ones have also been reached, but the series is still invaluable as a guide to the Cones of Eastern America.

So, all that being said, what are we still lacking in the way of books? Since Röckel *et al* cover the Indo-Pacific fauna thoroughly and Monteiro *et al* cover the Eastern Atlantic, the answer to that is quite straightforward: we need books that deal with the missing bits!

Manuel Jimenez Tenorio and António Monteiro are currently putting the final touches to a new part of *A Conchological Iconography*, this time devoted to the species of conidae in the South African province. On the other hand, to the best of our knowledge Bill Cargile, Bill Fenzan and Mike Filmer are working on a book on American Cones (although, as I write, I am not sure whether this will include both Eastern and Western coasts of America; but given that the number of species in the West coast is small, it would perhaps be a shame not to include them). When completed, these works will more or less cover the whole thing!

But of course so many species have been described in the meantime, even for the Indo-Pacific region, that an addendum to the *Manual of the Living Conidae – Volume 1: Indo-Pacific Region* is already needed.

Lots of work to do, no doubt. Enough to keep us all occupied (and happy) for a rather long time...



WHAT AM I?

I suppose that we all have in our collections specimens whose identification is somewhat puzzling. The pages of *The Cone Collector* will always welcome photos of such “mystery” specimens and since we do have a large number of readers, all of them interested and often quite knowledgeable in Cones, someone is bound to come up with the right answer!

To inaugurate this section, we present here a specimen from the collection of Loïc Limpalaër. It is obviously a juvenile and it comes from the South coast of Madagascar.



In this particular case, some suggestions as to what it may be have already been put forward, but I will not disclose them here, so that our readers can have their saying!

Loïc has also supplied a photo of a “mystery” cone from New Caledonia. Apparently, only a very few specimens have been collected. Could this be a new species?



Or does anyone want to suggest a name?



OUR SPECIAL SPECIMENS

In our newsletter, we would very much like to publish photos of truly exceptional specimens that can be found in the collections of our readers or in fact in any other collections, including museum collections.

The concept of rarity in shells is something that is often discussed, if for no better reason that it affects the prices of specimens offered for sale! It is obviously a relative – not to say subjective – concept and species that were once rare or very rare indeed have been downgraded to the mere “uncommon” or even “common” categories. Species that were once impossible or at least extremely hard to obtain (examples like *C. aurisiacus* Linnaeus, 1758, *C. dusaveli* Adams, 1872 or *C. thomae* Gmelin, 1791, not to mention the star of them all, *C. gloriamaris* Chemnitz, 1777 readily spring to mind) can now be purchased for a very reasonable price.

Naturally, species coming from deep water will always be harder to get than those from shallower depths, because of the technical problems involved in collection. Also, species having a very restricted geographical distribution or coming from places far away from the usual travel routes will prove to be on the “rare” side of the spectrum.

But to my mind the truly rare shells are the exceptional specimens! Even common to very common species can produce rather unique individuals from time to time. Quite often, virtually no amount of search effort will provide a duplicate.

So, please do go through your drawers and send us photos of those special specimens in your collections. Shells with a particularly unusual colour and/or pattern will fit in this category; unusually large specimens may also apply, of course (although we

are not particularly eager to start any discussion concerning world record sizes).



Conus gloriamaris discovered in Vanuatu!

Jason Biggs (*)

The most famous of all cone snails, this beautiful snail has long been sought after by collectors for its beautifully intricate shell pattern. As you can see, the animal itself is beautiful enough to warrant conservation. Like many other cone snails, this species is especially dangerous to humans, and in this picture you can actually see its long golden tentacle-like proboscis (a fancy word for an extendable tube) reaching out to the bottom of the picture. What you can't see is that someone's hand is there out of the picture and this snail is trying to get back at the scientists for taking it out of its environment, an aggressive defense that many cone snails have to being collected by humans. At the end of this tube is a small needle-like tooth that is used like a hypodermic needle to inject its deadly venom into the body of its victims. Like venomous snakes, cone snails are carnivores and eat other animals. Most often this venom is used to catch other snails, which are the food of choice for this particular cone snail. Other cone species eat worms and some even eat fish. Other things of interest are the siphon (the tube extending sideways with black and red bands), which is used to suck water over its gills and to “sniff” out its prey in the dark, and a strangely alien-like eye stalk with a tiny black dot on it which is the actual eye of the animal. As this species lives

at depths greater than 100 metres, this eye is not particularly helpful for locating prey. This snail was so active that we actually got the first movie of *Conus gloriamaris* attacking and injecting its venom into an olive snail. You can actually see the venom cloud

in the water and the snail being yanked closer to its hunter by the barbed harpoon.



Conus gloriamaris Chemnitz, 1777

(*) – Dr. Jason Biggs was a member of the recent “SANTO 2006” scientific expedition to Vanuatu, in the South Pacific (Santo or Espiritu Santo is the largest island of the Vanuatu archipelago). The aim of the expedition, which involved more than 160 scientists from 25 countries, was to make an “inventory” of the flora and fauna of the area. Many different habitats in the island will be explored, including marine locations, cliffs, caves, freshwater areas, mountains and forest canopies. Particular attention shall be paid to the impact of human settlement in the local biodiversity (Man has lived on the islands for 2500 years now). Organized by the Muséum National d’Histoire Naturelle, Paris, the Institut de Recherche pour

le développement and Pro-Natura International, SANTO 2006 is the largest ever scientific expedition dedicated to biodiversity.



List of recently described species

In our previous number we included a list of recently described species. Some of our readers (including John Tucker and Alan Kohn) noticed a few omissions and for this reason we must go back to the published listing.

First of all, we must refer three fossil species described by Ed Petuch in 2003 (information: J. Tucker):

- C. irisae* Petuch, 2003
- C. petiti* Petuch, 2003
- C. tomeui* Petuch, 2003

On the other hand, both J. Tucker and A. Kohn noticed the absence of *Jaspidoconus pfluegeri* Petuch, 2005 (in: *Cenozoic Seas: The View from North America*, p. 293), which was described as both a Pleistocene fossil and a recent species (the type locality is a Pleistocene fossil site in the USA, but the holotype is a recent specimen).

A couple of mistakes also crept into the previous listing and so it is that *C. empressae* Lorenz is given for 2002, whereas the actual date is 2001 (*C. empressae* Lorenz, 2001), while *C. pennaceus tsara* Blöcher, 2000 should in fact read *C. pennaceus tsara* Korn, Niederhöfer & Blöcher, 2000.

Some doubts have also been expressed about the date for the description of *C. gordyi* Röckel &

Bondarev, 2000, but as a matter of fact the description appeared in the paper “*Conus gordyi*, a new species from Saya de Malha Bank, western Indian Ocean”, *La Conchiglia: International Shell Magazine*, 31 (293): 41-43, dated 2000.

The following were not listed at all and must therefore be added:

- 1) *Conus gadesi* Espinosa & Ortea, 2005 (from Cuba)

There seems to be little doubt that *C. gadesi* Espinosa & Ortea is a synonym of *C. regius* Gmelin, 1791, the description being based on a juvenile specimen.

- 2) *Conus hayesi* Korn, 2001 (from South Africa)

It must be noticed that in the same year the author renamed his new species *Conus brianhayesi* Korn, 2001.

- 3) *Conus pennaceus vezoi* Korn, Niederhöfer & Blöcher, 2000 (from Madagascar)

- 4) *Conus sagarinoi* Fenzan, 2004 (from Philippines)

It seems that most authors (including Bill Fenzan himself) agree that this is the same as *C. terryini* Tenorio & Poppe, 2004, a senior synonym.

After all these corrections and additions, we will now go a step further:

Species described from 1995 to 2000 (alphabetically)

Conus alisi Moolenbeek, Röckel & Richard, 1995 (New Caledonia)
Mém. Mus. Natl. Hist. Nat. 167:559, figs. 2, 4, 5

Conus bahamensis Vink & Röckel, 1995 (Bahamas)
Apex 10(40):99, figs. 1-4

Conus barbieri Raybaudi Massilia, 1995 (Philippines)
La Conchiglia 27(274):60, figs. 1-4



Conus barbieri Raybaudi Massilia, 1995

Conus bellocquae Van Rossum, 1996 (West Africa)
World Shells 16:59

Conus bertarollae Costa & Simone, 1997 (Brazil)
Siratus 3(13):4, figs. 1-20

Conus ceruttii Cargile, 1997 (Nicaragua)
La Conchiglia 29(282):48, figs. 3a, c, 4-7, 8d-f, 9d, e

Conus orbigny coriolisi Moolenbeek & Richard, 1995 (New Caledonia)
Mém. Mus. Natl. Hist. Nat. 167:578, figs. 12, 13

Conus cuna Petuch, 1998 (East Panama)
La Conchiglia 30(287):30, figs. 9, 10

Conus deynzerorum Petuch, 1995 (East Mexico)
La Conchiglia 27(275):36, figs. 1, 2

Conus donnae Petuch, 1998 (Bahamas)
La Conchiglia 30(287):31, figs. 11, 12

Conus eduardi Delsaerdt, 1997 (Red Sea)
Gloria Maris 35(4/5):58, fig. 1a, pl. 1

Conus edwardpauli Petuch, 1998 (East Panama)
La Conchiglia 30(287):32, figs. 13-15

Conus estivali Moolenbeek & Richard, 1995 (New Caledonia)
Mém. Mus. Natl. Hist. Nat. 167:571, figs. 6, 7

Conus evorai Monteiro, Fernandes & Rolán, 1995 (Cape Verde Islands)
World Shells 12:8, figs. 1-3



Conus evorai Monteiro, Fernandes & Rolán, 1995

Conus gondwanensis Moolenbeek & Richard, 1995 (New Caledonia)
Mém. Mus. Natl. Hist. Nat. 167:572, figs. 8, 9, 54

Conus jacurasoi Petuch, 1998 (Bahamas)
La Conchiglia 30(287):27, figs. 3, 4

Conus julieandreae Cargile, 1995 (Honduras)
La Conchiglia 27(275):24, figs. 1-4, 5b, c

Conus lenhilli Cargile, 1998 (West Indies)
Siratus 2(14):18, figs. 1-4, 6b, 6d

Conus loyaltiensis Röckel & Moolenbeek, 1995 (New Caledonia)
Mém. Mus. Natl. Hist. Nat. 167:577, figs. 1, 10, 11, 55

Conus ortneri Petuch, 1998 (Bahamas)
La Conchiglia 30(287):33, figs. 16, 17

Conus paschalli Petuch, 1998 (East Nicaragua)
Nautilus 111(1):36, figs. 2, 3

Conus patamakanthini Delsaerdt, 1998 (Thailand)
Gloria Maris 36(3):45, fig. 1

Conus peli Moolenbeek, 1996 (Oman)
World Shells 18:3, figs. 1-5

Conus poulosi Petuch, 1993 (Colombia)
La Conchiglia 24(265):11, figs. 12, 13

Conus raulsilvai Rolán, Monteiro & Fernandes, 1998 (Cape Verde Islands)
La Conchiglia 30(286):37, figs. 1-3, 4A, 5A, 6A

Conus ritae Petuch, 1995 (Brazil)
La Conchiglia 27(275):38, figs. 5, 6

Conus rosalindensis Petuch, 1998 (Honduras)
La Conchiglia 30(287):34, figs. 18, 19

Conus salzmanni Raybaudi & Rolán, 1997 (Aden Gulf)
Argonauta 9(10/12):12, figs. 1-16

Conus stanfieldi Petuch, 1998 (Bahamas)
La Conchiglia 30(287):35, figs. 20, 21

Conus tirardi Röckel & Moolenbeek, 1996 (New Caledonia)
Vita Marina 44(1/2):48, pl. 1, figs. 1-4

Conus pictus transkeiensis Korn, 1998 (South Africa)
La Conchiglia 33(289):36, figs. 6, 10-14



Conus pictus transkeiensis Korn, 1998

Conus floridanus tranthami Petuch, 1995 (Florida, USA)
La Conchiglia 27(275):37, figs. 3, 4

Conus vaubani Röckel & Moolenbeek, 1995 (New Caledonia)
Mém. Mus. Natl. Hist. Nat. 167:587, figs. 3, 14, 15, 56

Conus wilsii Delsaerdt, 1998 (Red Sea)
Gloria Maris 36(4):69, figs. 1-4

Conus worki Petuch, 1998 (Brazil)
La Conchiglia 30(287):25, figs. 1, 2

Conus yemenensis Bondarev, 1997 (Yemen)
World Shells 23:66

Conus zylmanae Petuch, 1998 (Bahamas)
La Conchiglia 30(287):28, figs. 6-7

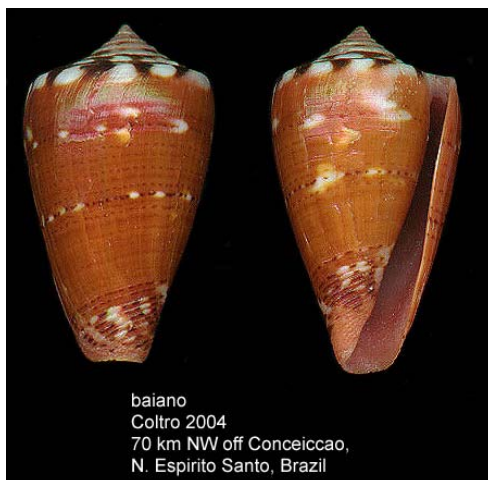
Species described from 2000 to 2006 (alphabetically)

Conus anabelae Rolán & Röckel 2001 (Angola)
Iberus 19 (2):59, figs. 7-12, 22, 25

Conus atlanticoselvagem Afonso & Tenorio 2004 (Cape Verde Islands)
La Conchiglia 36(310):34, figs. 2-6, 7a, 8, 9b, 10a

Conus babaensis Rolan & Röckel 2001 (Angola)
Iberus 19(2):64, figs. 13-20, 23, 24

Conus baiano Coltro 2004 (Brasil)
Strombus 11:4, pl. 4, fig. A, pl. 12, figs. H1, P1-P11, pl. 16, fig. F



Conus baiano Coltro 2004
70 km NW off Conceicao,
N. Espirito Santo, Brazil



Conus bodarti Coltro 2004
130 km NE off Abrolhos Archipelago,
southern Bahia State, Brazil

Conus bodarti Coltro 2004 (Brasil)
Strombus 11:2, pl. 1, fig. A, pl. 8, figs. H1, P1-P11

Conus brianhayesi Korn 2001 (South Africa)
La Conchiglia 33(299):18

Conus cargilei Coltro 2004 (Brasil)
Strombus 11:5, pl. 5, fig. A, pl. 13, figs. H1, P1-P11, pl. 16, fig. H

Conus chiapponorum Lorenz 2004 (Madagascar)
Visaya 2:20 unnumbered fig. and pl. 2

Conus claudiae Tenorio & Afonso 2004 (Cape Verde Islands)
Visaya 2: 27 figs. 1-2, 3, unnumbered fig., pl. 3



Conus crioulus Tenorio & Afonso 2004

Conus crioulus Tenorio & Afonso 2004 (Cape Verde Islands)
Visaya 2:30, figs. 1-4, 5, unnumbered fig., pl. 5

Conus delucai Coltro 2004 (Brasil)
Strombus 11:3, pl. 3, fig. A, pl. 10, figs. H1, P1-P11

Conus empressae Lorenz 2002 (Philippines)
Schr. Malakozool. 18:15, fig. 1, pl. 2, figs. 1, 2, 7, 9

Conus escondidai Poppe & Tagaro 2005 (Philippines)
Visaya 1(4):40, pl. 1



Conus escondidai Poppe & Tagaro 2005

Conus evansi Bondarev 2001 (Red Sea)
La Conchiglia 23(299):25, figs. 1-3

Conus filmeri Rolán & Röckel 2000 (Angola)
Argonauta 13(2):35, figs. 77-80, 140, 148

Conus flavusalbus Rolán & Röckel 2000 (Angola)
Argonauta 13(2):38, figs. 92-96, 144, 149

Conus franciscoi Rolán & Röckel 2000 (Angola)
Argonauta 13(2):36, figs. 82-86, 141, 147



Conus franciscoi Rolán & Röckel 2000

Conus fraussenii Tenorio & Poppe 2004 (Philippines)
Visaya p. 20, pl. 1

Conus gabrielae Rolan & Röckel 2001 (Angola)
Argonauta 13(2):33, figs. 67-71, 138, 147

Conus gadesi Espinosa & Ortea, 2005 (Cuba)
Rev. Acad. Canar. Cienc., XVI (Núm. 4) 125-129 plates with wrongly numbered specimens

Conus garywilsoni Lorenz & Morrison 2004 (Australia)
La Conchiglia 35(309):43, pl. 1

Conus giorossii Bozzetti 2005 (Indonesia)
Malacologia 48: pp. 3-5

Conus gordyi Röckel & Bondarev 2000 (Mascarenes Islands)
La Conchiglia 31(293):41, figs. 1-5

Conus grohi Tenorio & Poppe 2004 (Philippines)
Visaya Vol. 1 no. 1; p. 22, pl. 4



Conus grohi Tenorio & Poppe 2004

Conus guidopopei Raybaudi Massilia 2005 (Philippines)
Visaya Vol. 1 No. 5; p. 143-145, pl. 1 fig. 1a, b, c; pl. 2

Conus habui Lan 2002 (Taiwan)
Bull. Malacol. Rep. China 26(1):1, figs. 1a, b, 2a, b

Conus hayesi Korn 2001 (**unavailable name**) (South Africa)
La Conchiglia 32(297):15, fig. 8, pl. 1, figs. 1-4, pl. 2, figs. 5-7

Conus henckesi Coltro 2004 (Brasil)
Strombus 11:3, pl. 2, fig. A, pl. 9, figs. H1, P1-P11

Conus isabelarum Tenorio & Afonso 2004 (Cape Verde Islands)
Visaya 2:29, fig. 1-3, fig. 4, unnumbered fig., pl. 4

Conus kuiperi Moolenbeek 2006 (Oman)
Basteria Vol. Supplement 3, p. 83-85; fig. 1-5

Conus leobottoni Lorenz 2006 (Philippines)
Club Conch. Inf. 38 (1/2); p. 8-9 pl. 2

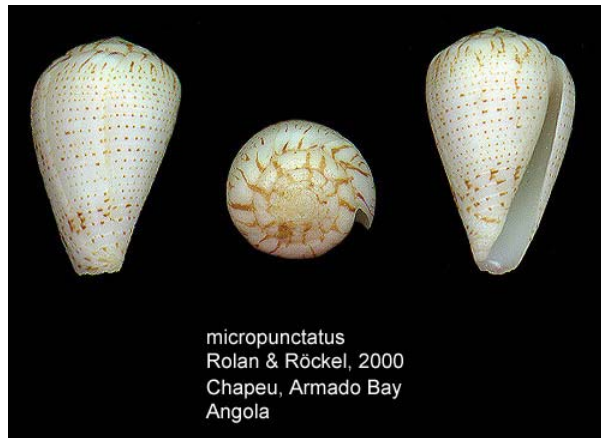
Conus lucaya Petuch 2000 (Bahamas)
Ruthenica 10(2) 83, figs. 1F-I

Conus mauricioi Coltro 2004 (Brasil)
Strombus 11:6, pl. 6, fig. A, pl. 14, figs. H1, P1-P11, pl. 16, fig. E

Conus mcbridei Lorenz 2005 (Indonesia, New Ireland)
Schr. Malakozool. 22 p. 71-74; pl. 4

Conus medoci Lorenz 2004 (Madagascar)
Visaya 2:19, unnumbered fig. and pl. 1

Conus micropunctatus Rolán & Röckel 2000 (Angola)
Argonauta 13(2):35, figs. 72-76, 108, 139, 150



Conus micropunctatus Rolán & Röckel 2000

- Conus moncuri* Filmer 2005 (Philippines)
Of Sea and Shore 27(1):59, pls. 1-3
- Conus moylani* Delsaerdt 2000 (Solomon Islands)
Gloria Maris 39(2/3):36, 3 text-figs., pl. 15, figs. 5-8
- Conus pennaceus tsara* Blöcher 2000 (Madagascar)
Beitr. Naturk., ser. A (Biol.) 610:4, pl. 1, figs. 1-9
- Conus pennaceus vezoi* Niederhöfer & Blöcher 2000 (Madagascar)
Beitr. Naturk., ser. A (Biol.) 610:20, figs. 3-7, pl. 2, figs. 1-9
- Conus petergabrieli* Lorenz 2006 (Philippines)
Club Conch. Inf. 38 (1/2); p. 4-5; pl. 1
- Conus pfluegeri* Petuch, 2004 (Florida, USA)
Cenozoic Seas p. 293, pl. 97, figs. F, I
- Conus pseudocardinalis* Coltro 2004 (Brasil)
Strombus 11:7, pl. 7, fig. A, pl. 15, figs. H1, P1-P3
- Conus pseudonivifer* Monteiro, Tenorio & Poppe 2004 (Cape Verde Islands)
Conchological Iconography p. 66, pls. 60-62, pl. 160, fig. 3
- Conus sagarinoides* Fenzan, 2004 (**conspecific with *C. terryi***) (Philippines)
La Conchiglia 36(311):17, figs. 1-6
- Conus sartii* Korn, Niederhöfer & Röckel 2004 (Madagascar)
La Conchiglia 33(301):35, figs. 1a, b, 2a, b, 3
- Conus sauros* Garcia 2006 (Gulf of Mexico)
Novapex 7 (2-3): 71-76; unnumbered pl. fig. 1-11
- Conus schirrmeisteri* Coltro 2004 (Brasil)
Strombus 11:4, pl. 3, fig. C, pl. 11, figs. H1, P1-P11
- Conus solangeae* Bozzetti 2004 (Madagascar)
Malacologia Mostra Mondiale 43:13, 7 text-figs
- Conus suduirauti* Raybaudi Massilia 2004 (Philippines)
Visaya 2:38, figs. 1, 2, 4-7



Conus suduirauti Raybaudi Massilia 2004

Conus tenuilineatus Rolán & Röckel 2001 (Angola)
Iberus 19(2):58, figs. 1-6, 21

Conus terryi Tenorio & Poppe 2004 (Philippines)
Visaya I ;p. 24, pl. 2

Conus theodorei Petuch 2000 (Bahamas)
Ruthenica 10(2):85, figs. 1T-1U

Conus trovai Rolán & Röckel 2000 (Angola)
Argonauta 13(2):37, figs. 87-91, 142, 143, 147

Conus vulcanus Tenorio & Afonso 2004 (Cape Verde Islands)
Visaya 2:25, fig. 1-1, fig. 2, unnumbered fig., pl. 1

Conus wallacei Lorenz & Morrison 2004 (Indonesia)
Schiff. Malakozool. 21:29, fig. 1 right, pl. 5

