

## Remote, Barren Rowley Shoals Has Its Charm

By TWILA BRATCHER

Unspoiled Rowley Shoals lies in the easternmost Indian Ocean, about 180 miles west of Broome, Western Australia. The occasional charter boats that visit the area have been doing so only recently, and foreign fishing fleets are not permitted there.

The only important scientific work on Rowley Shoals was done by groups from the Western Australian Museum in Perth.

I was a participant in a recent privately organized trip to the Rowley Shoals. Lynn Funkhouser, the group leader, is an accomplished professional underwater photographer and president of the Chicago Shell Club. Others were Jeanette Ridley, underwater photographer from Seattle; Philip and Heidrun Faulconer, underwater photographers from San Diego, John and Mary Poble, underwater photographers from Nebraska, my sister Billee Dilworth Brown, a docent at Scripps Aquarium in La Jolla, and myself.

Day 1. SYDNEY. The nonstop flight from Los Angeles to Sydney takes about 15½ hours. We spent two hours in the Sydney International Airport, mostly in clearing Customs and Immigration, before transferring to the domestic terminal for another two-and-a-half-hour flight to Perth.

When I finished the arrival formalities in Perth, I heard myself being paged. Dr. Fred Wells and Shirley Slack-Smith, heads of Perth's two shell groups [both of whom work at the Western Australian Museum] had come to take me to my hotel, where I checked in about noon.

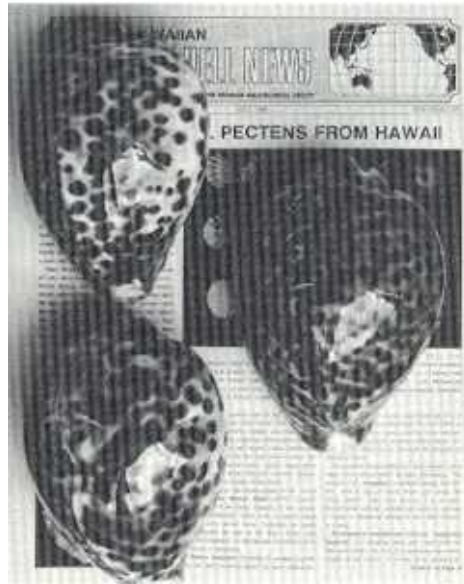
My sister Billee, a last-minute participant in our Rowley Shoals expedition, couldn't book on my flight. She left Los Angeles about an hour-and-a-half ahead of me, but arrived at our hotel in Perth nearly 11 hours later.

Day 2. PERTH. The free Red Clipper bus that circles the Perth business district took us to the Western Australian Museum of Natural History, where we met the staff and looked over the *Terebra* collection. They gave us a list of the shells collected on their own Rowley Shoals expedition. Many were new records for Western Australian shores. We plan to see if we can add any species.

Day 3: We visited the Art Museum and toured Perth. After lunch, a member of one of the shell clubs arrived with a *Cypraea marginata* in exchange for shells we had taken to the club meeting last night. The rest of our group arrived in Perth just in

Later, Dr. Wells drove us to a joint meeting of the Western Australia Shell Club and the Malacological Society of Australia, Western Division. I showed our program on the Red Sea and Egypt and identified *Terebra* for some of the members.

(Cont'd on Page 9)



McNally's Trophies

Photo: Schoenberg

## RECENT FINDS

By LYMAN HIGA

Dan McNally tells me he continues to have good luck diving off the northeastern corner of Oahu and along the North Shore. Among recent goodies was a 5¼-inch tiger cowry from 30 feet in the Kuilima-Kahuku stretch of coast. The difficulty is in getting there. Heavy surf makes shore dives impractical most of the year, and the nearest small-boat ramp is miles away.

Another HMS member, George Stender, reports finding a specimen of *Mitra turgida* Reeve under a coral head on rubble in only two feet of water at Fort Kamehameha Reef, late in October. Although the species is known throughout the Indo-West Pacific from East Africa to Polynesia, it is extremely rare in Hawaii, where it is usually found in beach drift, according to Kay's **Hawaiian Marine Shells**.

Stender also found what he describes as a "giant" live *Conus nussatella* Linne on gravel in eight feet of water on the same reef earlier in October. I don't have the actual measurement. The species is rather rare in Hawaii. Perhaps a dozen are reported in a year.

\* \* \*

Not exactly a new find, two specimens of *Mikadotrochus beyrichii* (Hilgendorf) were collected last year in approximately 115 meters of water in Sagami Bay, Japan. The pair were among more than 13 live specimens observed from the Japanese submersible *Shinkai 2000* on a sandy bottom among rocks in a rapid current, says a report by Y. Kanie, A. Sugiura and K. Egawa in *Venus*. Since *M. beyrichii* is sensitive to light, they conclude that it is not a bathyal inhabitant as was previously believed.

## TREE SNAILERS! IT'S TIME TO UNITE

By RON KNIGHT

LORENGAU, MANUS ISLAND, PAPUA NEW GUINEA — We amateur specialists in terrestrial molluscs are subject to some special handicaps. Not only are we scattered around the world and frequently isolated in the much larger body of marine shell enthusiasts, but we suffer from a seeming shortage of literature. Many of us have nowhere to turn for advice, assistance and comparative material.

Professionals interested in the pulmonates have easier access to literature, of course, but they face a more subtle handicap. That is their wide separation from the enthusiasts in the field who traditionally supply the scientists with the specimens, data and puzzlers that are the feed stock of the technical literature. All of us — scientists and amateurs, professionals and beginners — are the losers in this arrangement.

It seems to me that it is time for the land-snail people of the world to unite!

Some basic questions need to be answered. For one, how many of us are seriously interested in the pulmonates? How widely are we scattered? What problems have we in common, and where do our interests diverge? Could we support a regular newsletter? How many of us plan — or already have written — papers on the land snails? Are we in a position to share literature?

I would be willing to do the ground work in setting up some sort of a mutual-interest group. Being in such an isolated (although snail-rich) area, however, I would not be in a position to run an organization after it is set up. Ideally, a group of enthusiasts living in one community would serve as officers, but the club rules would have to be worked out by all interested in the project.

Any Hawaiian Malacological Society members (or interested nonmembers) who wish to participate in this effort are invited to write me at P. O. Box 108 Lorengau, Manus, Papua New Guinea.

Give me your ideas. In return, I will keep everyone informed of developments.

I do ask each of you to enclose US\$5 with your letter, to help defray the inevitable cost of postage. Naturally, I will be fully accountable for its expenditure.

\* \* \*

**Hawaiian Shell News** will be happy to receive and publish regular reports on this project.

# REEFCOMBING

Veteran members of the Hawaiian Malacological Society were pleasantly surprised by the recent news that a rare and costly volume, Banks' *Florilegium*, had been acquired by the University of Hawaii Library as a memorial to Jessica Rea, Society President in the early 1960s. By happy chance, it was the two millionth volume accessioned by the library.

Mrs. Rea came to Hawaii in 1930 to teach at the School for the Deaf and Blind, and later in Honolulu public schools. Possessing a great interest in biology, she became active in botany and malacology, and eventually was a trustee of Hawaii's Lyon Arboretum Association. Her son, Charles Pedric Rea, who made the presentation of the book, is a graduate of the University of Hawaii. He was responsible for establishment of the Jessica Rea Memorial Library Fund in the University of Hawaii Foundation, which bought the new work.

Banks' *Florilegium* consists of 738 botanical engravings recording the plants collected by Joseph Banks and Daniel Carl Solander on Captain James Cook's first round-the-world voyage of exploration from 1768 to 1771. The actual engravings were made by Sydney Parkinson. The work is being published for the first time. Production started in 1980 and will be completed in 1988.

The Smithsonian Institution described the publication project as "the most ambitious, large-scale fine arts printing venture of modern or any other time." The Hawaii set is number 49 of a limited edition of 100 copies. There are said to be only about 15 sets in the entire United States.

## Don Hemmes Honored

Dr. Don Hemmes, chairman of the natural science division of the College of Arts and Sciences at the University of Hawaii in Hilo and a frequent contributor to *Hawaiian Shell News*, has been chosen by the Mycological Society of America to receive its 1986 W.H. Weston Award for Teaching Excellence. The award was made at the August meeting of the American Institute of Biological Sciences in Massachusetts.

Hemmes, who joined the Hilo faculty in 1973 after completing postdoctoral work in Switzerland and at the University of California at Riverside, has received two previous awards for excellence in teaching. One was from the UH Regents and the other from the Associated Students of the University of Hawaii.

In addition to his personal interest in malacology — in particular, recently, the little-known microshells found around the coast of Hawaii's Big Island — Dr. Hemmes teaches undergraduate courses in mycology, botany and microbiology.

## Those 'Common' Names

The Council of Systematic Malacologists/American Malacological Union Committee on Scientific and Vernacular Names of Molluscs has completed its final review and revisions of a national molluscan "Common Names List," according to the

November (1986) AMU News. The work covers all published North American terrestrial and aquatic molluscs found out to a depth of 200 meters offshore.

A grant from the Shell Oil Co. to the American Fisheries Society will cover publication costs. Both hardbound and softbound editions are expected to be available in a few months. Proceeds, after distribution costs are met, are to be shared by the American Fisheries Society and the AMU.

Other sections of a national "common names" list are being prepared by groups involved in decapod Crustacea, coelenterates, amphipods, bryozoans, echinoderms and aquatic insects.

Dr. Donna D. Turgeon, U.S. National Fisheries Service (F/M12) Washington, D.C. 20235, has full information on the subject.

## Have You Ever Been Stung?

Dr. Alan J. Kohn, professor of zoology at the University of Washington in Seattle and former president of the American Malacological Union, is widely recognized for his expertise in cones. In addition to his many other duties, he is compiling information on *Conus* stings of people. The last list was compiled nearly 25 years ago.

This came to HSN's notice when Dr. Kohn wrote "Recent Finds" editor Lyman Higa, seeking details of a Mrs. Hiller who received a *Conus imperialis* sting in 1967. Did Higa know Mrs. Hiller's present whereabouts or how her arm feels 20 years later? The answer, unfortunately for science, is no.

Just in case anyone else has been zapped by a cone in the past 25 years and hasn't had it reported in HSN, Dr. Kohn sent several questionnaire forms to fill out. Ask Lyman Higa for a copy.

## Shellfishing Conference

Hofstra University at Hempstead, Long Island, NY, is hosting an international conference on the problems and possible solutions of coastal resource management in shellfishing. The dates are 19, 20 and 21 August, 1987. The conference title is "Shellfishing and Coastal Management: A Global Perspective."

Participation has been invited from all disciplinary, industrial and governmental perspectives. Papers "emphasizing closer cooperation [among] scientists, corporations and commercial fishermen" are encouraged.

Terry Baker, Associate Dean, School of Education, Hofstra University, Hempstead, NY 11550, is the man to contact.

The caption with the photo of the president and vice president of the Societe Belge de Malacologie (HSN Nov. 1986, page 5) misspelled the name of the president. It should be R. Duchamps. We regret the error.

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Hawaiian Shell News is issued free to members of the Society. Postage rates have been computed and added to membership dues. Individual copies of any issue may be obtained, free of charge, by qualified individuals for bona fide research projects.

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Typesetting, composition and printing of *Hawaiian Shell News* is done by Fisher Printing Co., Honolulu.

## Back Issues

The Hawaiian Malacological Society maintains a modest stock of back issues of *Hawaiian Shell News*. Copies of most issues back to 1960 are available although some are in xerox form. Write the Back Issue Manager for information.

# Reproduction and Growth Rates in *Oreohelix subrudis* (Reeve)

By DOROTHY E. BEETLE\*

FORT COLLINS, CO. — Adult and juvenile specimens of *Oreohelix subrudis* (Reeve) were collected in October, 1984, from an inactive geyser cone above Union Pass Road, 9.7 miles west of Dubois, Fremont County, Wyoming. The geyser no longer erupts, but a cool water spring still flows from the cone, which has crumbled away on one side. The cone is approximately 16 feet in diameter and eight feet high. The interior has a thick cover of plants. The cone is ringed by aspen within the setting of a spruce forest. The ground surrounding the cone is covered with *Oreohelix*, both living and dead shells.

Twelve adult *Oreohelix subrudis* were caged together in a 12x7x5-inch translucent plastic container in October 1984. They were fed lettuce, aspen and willow leaves, rabbit pellets, cucumbers and cash register tapes. A decided preference was shown for rabbit pellets, cucumbers and cash register tapes. Lime was supplied as chalk powder, limestone or egg shells.

Mating was observed at intervals and live young were born between January and June, 1985 (see table 1).

The young were left in the container with the adults. Within four to six weeks following birth, however, each group of young died. Nematode infection may have been the cause of some deaths. Within a week or two following each birth one adult, presumably the parent, died. There were seven deaths of adults until only five were left. It seems that the captive *Oreohelix* died after producing young.

The remaining five adults continued an alternating pattern of aestivation and activity. The experiment was terminated on July 15, 1986, after more than a year in which the snails failed to produce young.

Eight juvenile specimens of *Oreohelix subrudis*, collected at the same time as the adults, were raised in petri dishes separately. Measurements started on November 7, 1984, and terminated on October 27, 1986. The *Oreohelix* were offered food and lime as indicated above. At intervals the snails would aesti-

\*2631 Shadow Court, Ft. Collins, CO 80525

Birth date	Number	Diameter (mm)	Whorls
1/21/85	16	3.0-3.2	2¼
3/12/85	14	3.1-3.4	2¼
4/3/85	12	3.1-3.6	2¼-2½
4/22/85	9	3.1-3.5	2¼
5/1/85	3	3.6-4.9	2¼-2½
5/14/85	6	3.1-3.4	2¼
6/9/85	7	3.0-3.4	2¼

vate, regardless of the humidity level. Their diameters were measured with vernier calipers at approximately two-month intervals to avoid extra handling of the fragile shells. Data on development of whorls is shown in table 2. The graph (right) shows the increase in diameter during the two years of the study.

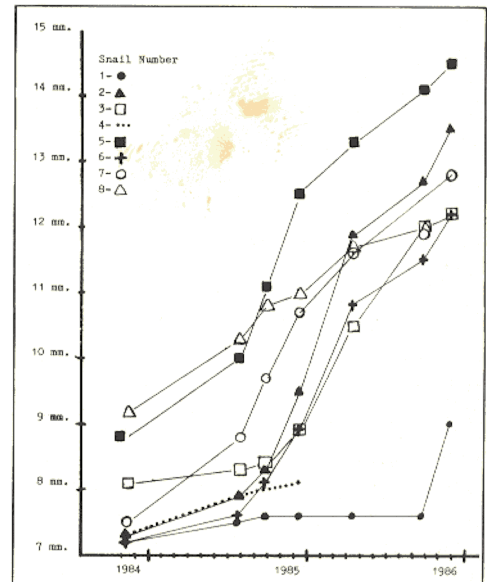
No seasonality was observed in growth. During their first year of captivity the growth rate was slow. That winter and spring — from November 7, 1984, to June 23, 1985 — the diameters of individual snails increased only 0.3 to 1.2 mm. Throughout the summer of 1985 and during their second year of captivity, most of the snails added to shell diameter steadily. An exception was snail No. 1, which from November 7, 1984 to August 18, 1986 increased only 0.4 mm in diameter. A sudden spurt in slightly more than two months increased its diameter to 9.0 mm, a gain of 1.4 mm by October 27, 1986.

It is possible that growth in the wild would reflect a seasonality dependent upon climatic factors and availability of food. The slow growth of the captive snails in the first year may indicate adaptation to a restricted environment and isolation in the petri dishes. After acclimation, growth proceeded steadily under uniform conditions.

In the wild the average shell diameter of *O. subrudis* is about 20 mm, although colonies of very large shells collected elsewhere in Wyoming reached 25 to 27 mm. The number of whorls varies from 5 to 5½. It is likely that a minimum of three years is

required to attain a diameter of 20 mm. How often an individual can reproduce is uncertain, but it appeared that the captive *Oreohelix* died after producing young in captivity.

Grateful acknowledgement is made to Dr. Shi-Kuei Wu and Nancy Brandauer who reviewed this note. I am indebted to Richard E. Pillmore, my husband, for preparation of the graph.



Reproduction and Growth Rates in *Oreohelix Subrudis* (Reeve)

Snail Number	11/7/84	12/14/85	10/27/86	Total Whorl Increment
1	3¾	3¾	3-15/16	0-7/16
2	3¾	3-15/16	4-15/16	1-9/16
3	3½	3¾	4-11/16	1-3/16
4	3¾	3½ (died)		
5	3¾	4-3/16	5	1¾
6	3¾	3¾	4¾	1½
7	3¾	4-1/16	4½	1¾
8	3¾	4¾	lost	—

## HMS ANNUAL PARTY

Nearly 50 members of the Hawaiian Malacological Society turned out for the annual dinner and shell-gift exchange at the Elks Clubhouse in Waikiki on 3 December. Guests-from-farthest-away were Bill and Trudi Ernst, who left Honolulu for the U.S. East Coast in mid-1986 and now plan to return for good when their contract expires.

There was a minimum of formality about the evening. Aside from a great deal of talk of the old days, and an excellent dinner, the program feature was a slide presentation by Wes Thorsson and Ray McKinsey on how not to prepare for and carry out a shell-dredging operation (like don't launch the boat, truck first).

A new feature was two hours of "golden oldies" piano music.

## Speaking of Books:

**LIVING FOSSILS.** Ed. by Niles Eldredge and Steven M. Stanley, 1984. Springer-Verlag New York Inc. 291 pages, text figures and tables. \$45.

Reviewed By **BEATRICE L. BURCH**

Eldredge and Stanley's new volume, *Living Fossils*, is the second in a series of Case Books in Earth Sciences, the first being *Tidal Deposits*. The case book format is more familiar in law and medicine than in biology. This method is used here successfully to study individual species by examining patterns and processes of macroevolution in paleontology.

Living fossils as discussed in this book are animals that exist today essentially as when they originated millions of years ago. Seven chapters in this thought-provoking book are devoted to Mollusca. In Monoplacophora is *Neopilina*. Gastropoda have *Neomphalus*, *Neritopsis*, *Pleurotomaria* and several Cerithiid species — *Campanile*, *Diastoma melanioides* and *Gourmya gourmyi*. Bivalvia has *Neotrigonia* and Cephalopoda has the *Nautilus*.

Living fossils are examples of arrested evolution. Most groups of animals started or stopped millions of years ago. Slow evolutionary rates which lasted for millions of years with little or no change are described for 34 animal groups. Why did these particular species of animals not evolve further?

It was the aim of the editors for authors of each section to present theories to explain the "living fossils" of today. Brief accounts are given of animals that have changed little over the millions of years since the fossil species originated. Examples of these living fossils are found in 34 chapters on mammals, reptiles, fish, arthropods, bryozoans, corals and mollusks.

Morphology, anatomy, fossil and geologically recent variation and diversity, ecology, geographic distribution, phylogenetic relationships and pertinent literature are given for each subject. The bibliographic references in each case history alone will expand the reader's thinking. This is a stimulating book to give or own.

## The Olive Family

MIAMI — A long-awaited and much-needed book by Dr. Edward Petuch and D.M. Sargeant, *Atlas of the Living Olive Shells of the World*, is now in print. It surpasses all previous treatments of the genus *Oliva*, one of the most beautiful and popular of all shell genera.

The book includes over 300 species, subspecies and color forms, described and illustrated on beautiful color plates. A new systematics is established, recognizing 19 subgenera — 10 described for the first time. Maps outline the range of all species.

The price is \$68.50 plus \$2.50 for postage and handling. The book is being offered by the Coastal Education and Research Foundation, Inc., Ft. Lauderdale, FL 33303.

The Greater Miami Shell Club's Mollusk

## AWHEEL AND AFOOT IN COSTA RICA



Brother Eduardo in his Shell Room

Photo: Richards

By **AURORA RICHARDS**

SAN JOSE — Costa Rica was one of my stopovers in a recent world tour. My only contact in the country was Dr. Hubert Matthes, HMS member and occasional contributor to *Hawaiian Shell News*, whom I had met in Kenya 10 years ago. Dr. Matthes now runs an experimental plantation on the Pacific Coast near Quepos on behalf of some UN agency.

My effort to get in touch with him involved much travel up green hills and down lush dales in wet August weather. My rented car finally bogged down and I ended the journey being pulled by a team of plough horses, in pelting rain.

Our eventual arrival in Quepos surely will be remembered by future generations. With the help of the Quepos postmaster, I finally located the Matthes home. Mrs. Matthes proved to be deficient in both English and Spanish, and I had to resurrect my Swahili vocabulary to learn that Dr. Matthes was on a survey trip to Africa!

My mud-stained adventure turned out to be an enriching experience — for me, at least — thanks to the generous hospitality of the warm-hearted Costa Ricans. When it became known that I collect shells, the local fishermen hastened to offer me a crop caught in recent nettings.

My return to San Jose was not without its own series of events. Crossing a rain-swollen river, the car's engine was flooded and I was again stalled in the middle of nowhere. More local hospitality was lavished on me after I appealed for help from a wedding party on a coffee plantation high in the green mountains of central Costa Rica.

My advice on travel in Central America: Don't drive across the mountains during the rainy season unless you are in a mood for adventures.

If you want to see and talk shells, I recommend the La Salle Museum in the southwestern section of San Jose. It houses a bounty of collections of all kinds, the results of a lifetime of efforts by Spanish-born Brother Eduardo Fernandez Barcena, a man overflowing with energy and enthusiasm. A professor of mathematics at the La Salle Institution, he is one of the most dedicated and versatile naturalists I have ever met.

Brother Eduardo welcomes visitors to his vast collections of minerals, fossils, insects, butterflies and crustaceans. Halls are filled with mounted specimens of reptiles, birds, mammals and marine creatures. Brother Eduardo is a taxidermist in addition to his other skills!


When I entered his office, he was setting up the cleaned skeleton of a bird sent to him after it had died in the zoo. His desk was piled high with fresh shells awaiting classification and storage.

After looking over the museum's collection of pre-Columbian carvings and artifacts, I moved to the "Shell Room" where several thousand specimens, mainly of Caribbean and Panamic species, are on display. Each has been documented with loving care.

Brother Eduardo confessed that, when he started, he had everything to learn. Today, he is extremely well informed about the molluscan life of the Atlantic and Pacific shores of his adopted homeland.

I congratulated him on his achievement.

"There is still so much to be done," he responded. "I will never have time to grow old."

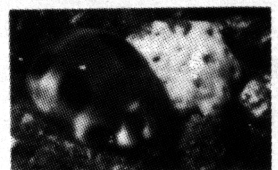


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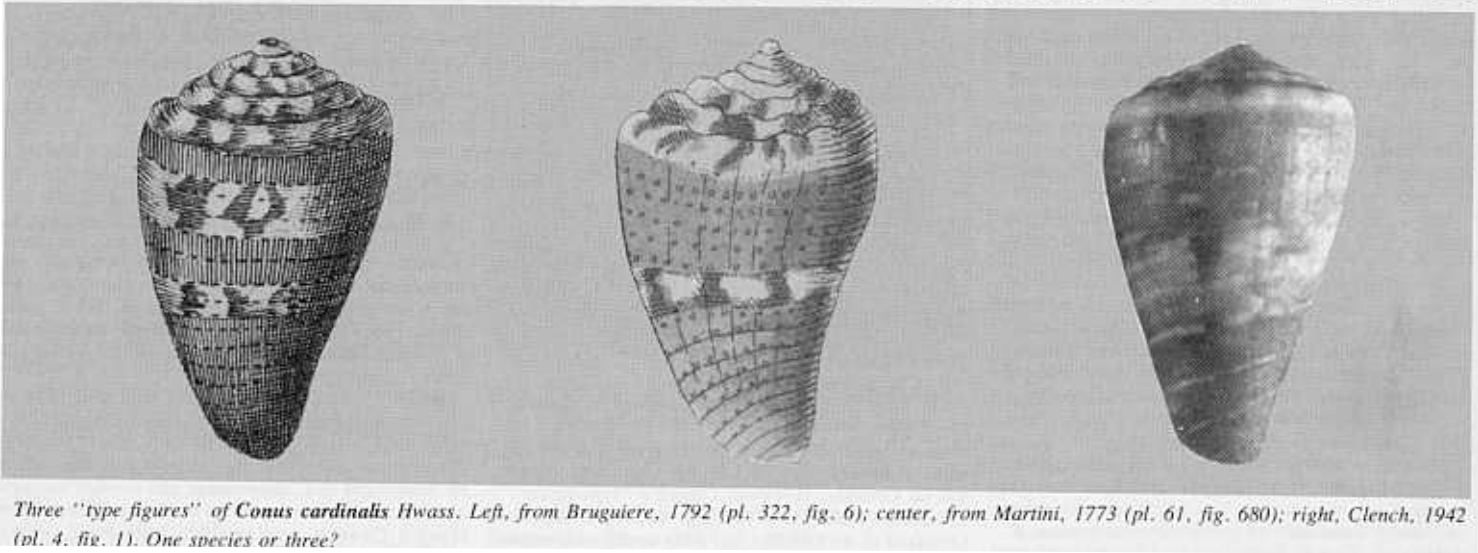
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## A CRITICAL LOOK

# CLENCH'S TREATMENT OF HWASS' SPECIES



Three "type figures" of *Conus cardinalis* Hwass. Left, from Bruguiere, 1792 (pl. 322, fig. 6); center, from Martini, 1773 (pl. 61, fig. 680); right, Clench, 1942 (pl. 4, fig. 1). One species or three?

By DANKER L. N. VINK\*

PORT SUDAN — A modern author who recognizes a population of mollusks as a new species will select a single specimen from among those to be used in his description of the new species, and deposit this specimen, the so-called holotype, in an institution easily accessible to other workers for study and comparison. He may also deposit a number of paratypes in the same or other institutions, e.g., to show the variability of the species, but the identity of the species rests entirely upon the holotype. This is clearly demonstrated in cases where a certain population is described as new, but where a specimen of another already existing species is put aside as holotype. In this case the new name is considered a junior synonym of the name of the existing species, and the population described as new does not yet have a proper name.

The situation is quite different in older literature. In some cases there is even no evidence that the author examined specimens of the species he described. In the case of Gmelin, for instance, who introduced a large number of species names, it is nearly certain that no type specimens ever existed and that Gmelin's studies were restricted entirely to published information. Besides a short diagnosis in Latin, figures from literature were cited, and the identity of the species often can be based only on these figures. Sometimes these represented a number of different species! In such cases comparison of the diagnosis with the various figures is necessary to try to find out what species Gmelin intended to denote by his species name. The figure thought to represent the best of all Gmelin's species is designated as lectotype, which serves as a peg upon which the new name can be hung permanently.

After these two extremes — the modern author with his well defined holotype and the earlier compiler with only a number of cited figures — let us look at Hwass, the famous conchologist, whose collection was richer in *Conus* than any other in Europe (Mermod, 1947; Kohn, 1968). Hwass intended to publish a systematic catalogue of his entire collection with information on his new species and with illustrating plates. He permitted Bruguière to use his initial set-up in the *Encyclopédie Méthodique* published in 1792; Hwass' work itself never appeared. The plates engraved by order of

Hwass were published in 1798 under supervision of Lamarck. Nevertheless there is no doubt that the names in Bruguière's *Encyclopédie* must be attributed to Hwass; Bruguière himself warns the reader that the definition and divisions of the genus and the Latin phrases of species and variations belong to Hwass, and that his own work only consisted of indicating specific differences, making general observations, adding the synonymy of the species and finally providing their description.

Concerning the description Bruguière states: "The specimen which I have before me belongs to Mr. Hwass, and I state once and for all that everything relating to length and breadth of shells in this genus has been measured exactly on those of his cabinet, that these measurements are only comparative, and that they do not indicate in any manner the maximum size that these shells may attain." We can thus state that Bruguière described the shells which actually were present in the Hwass' collection and which in most cases are the same as illustrated on the plates in the *Tableau Encyclopédique*. A number of these specimens have been rediscovered and are present in the Muséum d'Histoire Naturelle, Geneva. It is interesting to note that the references to other works, the synonymy, was added by Bruguière. After treatment of "cône cédonulli" he stated himself that more references could have been cited with figures and phrases of "cône cédonulli" but that he was unable to assign these to any of the "variétés" mentioned. "I have thought it more useful not to mention at all these doubtful synonyms than by citing these diminish the confidence which are worth those which I (i.e., Bruguière) report."

Against the above background it seems to me that for identification of Hwass' species one should first investigate whether a specimen of the species resembling the *Tableau* figure presently is available in the Hwass collection. If no Hwass specimens are known, the *Tableau* figure plus Bruguière's extensive description should be used for identification. If one takes into account the importance attached to the holotype in modern species determination, it is evident that the figures cited in the synonymy, which were added by Bruguière (most probably independently of Hwass) have only very limited value. Vink & Cosel (1985-b) based their determination of Hwass' species on the *Tableau* figure and Bruguière's description. Coomans et al. (1985-a), however, when discussing *curassaviensis* took the view that the illustrated specimen plus the four specimens from the synonymy must be considered syn-

types of *Conus cedonulli curassaviensis*. They incorrectly stated that Hwass cited four references from the literature. They assumed that the *Tableau* figure of *C. cedonulli curassaviensis* represented a specimen of *C. cedonulli insularis* from St. Lucia because less than 30 rows of punctuated lines were shown (indeed, about 23 can be distinguished in the figure), but in Bruguière's description of the same shell mention is made of thirty-four (*trente-quatre*) rows.

Designation by Coomans et al. of the shell figured by Argenville as lectotype of *C. cedonulli curassaviensis* was not necessary and may well be invalid as the reference was not cited by Hwass, but added by Bruguière. Fortunately no harm was done as Argenville's shell and the shell figured in the *Tableau Encyclopédique* must both be identified with the same population of cones from Aruba. The figures (Coomans et al. 1985a: fig. 575 and 576) are strikingly similar.

Coomans et al., when discussing *C. curassaviensis*, at least first looked at the *Tableau* figure, but if we study Clench's treatment of the Hwass species in *Johnsonia* 1(6), 1942, it is remarkable that no mention at all was made of the *Tableau Encyclopédique*. Only later (in *Johnsonia* 4(48) 1970) was the *Tableau* mentioned and the existence of the lectotype of *C. aurantius* reported. Clench's identifications in 1942 rested entirely upon the references later added by Bruguière. New "type figures" were selected even though illustrations of the Hwass specimens existed with detailed description by Bruguière (Table I). It is as if he was unaware of the existence of the *Tableau*, and — although earlier I cited Clench's "type figure" in the case of *C. daucus* (Vink, 1984-b:19) — I am now of the opinion that his "type figures" of Hwass' species should be ignored. Those who claim that Clench's action must stand according to the rules and notwithstanding the above arguments should realize that, in fact, the term "type figure" has no meaning in zoological nomenclature.

After Clench (1942), Kohn (1968) also discussed the species named by Hwass, but unfortunately his treatment of Clench's "type figures" was not consistent. In the case of *C. ranunculus*, where the Hwass collection turned out to contain the holotype, he made the observation that the species appeared to be based on a single specimen, the extant holotype, and hence Clench's designation of a "type figure," i.e. representative of lectotype, was no longer valid. In the case of *C. cardinalis*, however, where also

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the holotype was rediscovered, no mention was made of Clench's "type figure."

In the case of *C. columba*, Kohn mentioned that establishment of the lectotype by Clench aided little in identification of the nominal species, but that this action must stand. In the case of *C. verrucosus*, on the other hand, the **Tableau** figure was selected representative of the lectotype of *C. verrucosus* and Clench's "type figure" was completely ignored. Nevertheless, whatever Kohn's position in the past, in discussing the matter with Coomans et al. he now disagrees with the designation of "type figures" (Coomans et al. 1985b:145).

Let us now see what confusion has been brought about:

#### 1. *Conus columba*

No harm was done. Bruguière obviously referred to Gaultieri rightly. Both Clench's "type figure" and the **Tableau** figure show specimens of the same *Conus* population occurring in the southern and eastern Caribbean, related to *C. punctulatus*.

#### 2. *Conus ranunculus*

According to Kohn (1968), Clench's selection of a "type figure" is no longer valid now that the holotype has been found. The holotype turns out to be a beach worm shell of an Indo-Pacific species, *C. achatinus*. Clench & Bullock (1970) acknowledge that the name *C. ranunculus* is unavailable for the Atlantic species.

#### 3. *Conus daucus*

Again no harm was done. Both the **Tableau** figures and Clench's "type figure" refer to the "carrot cone." Kohn (1968) found that none of the **Tableau** figures bore a close resemblance to typical shells of *C. daucus*. Coomans et al. (1985b) rightly pointed out that Hwass showed various forms of the species. Variability in *C. daucus* was shown recently by Vink (1984b), but Hwass already had recognized this cone as a polymorphic species.

#### 4. *Conus verrucosus*

Here Clench's reference to the figure in Martini, of little diagnostic value, was bound to create still greater confusion about the ill-defined *C. jaspideus* group, to which any small, inconspicuous, drab spe-

#### REFERENCES:

- Bruguière, J.-G., 1792. *Encyclopédie Méthodique. Histoire Naturelle des vers*, 1:586-757.
- Cernohorsky, W. O., 1974. Type specimens of Mollusca in the University Zoological Museum, Copenhagen, *Rec. Auckland Inst. Mus.* 11:143-192.
- Clench, W. J., 1942. The genus *Conus* in the western Atlantic. *Johnsonia* 1(6): 1-40.
- Clench, W. J. & Bullock, R. C., 1970. The genus *Conus* in the western Atlantic. *Johnsonia* 4(48): 372-379.
- Coomans, H. E., Moolenbeek, R. G., & Wils, E., 1983. Alphabetical revision of the (sub)species in recent Conidae 6. cabritii to cinereus. *Basteria* 47:67-143.
- Coomans, H. E., Moolenbeek, R. G. & Wils, E., 1985a. Alphabetical revision of the (sub)species in recent Conidae 7. cingulatus to cylindraceus, including *Conus shikamai* nomen novum. *Basteria* 48:223-311.
- Coomans, H. E., Moolenbeek, R. G. & Wils, E., 1985b. Alphabetical revision of the (sub)species in recent Conidae 8. dactylus to dux. *Basteria* 49:145-196.
- Kohn, A. J., 1968. Type specimens and identity of the described species of *Conus* IV. The species described by Hwass, Bruguière and Olivi in 1792. *J. Linn. Soc. (zool.)* 47:431-503.
- Mermoud, G., 1974. Catalogue des Types et des exemplaires de Cônes, figurés ou décrits par Hwass, Bruguière, Lamarck, de Lessert, Kiener et Chenu, se trouvant au Musée de Genève. *Revue suisse Zool.*, 54:155-217.
- Vink, D. L. N., 1984a. The *Conus cardinalis* complex. *Conchiglia* 15(180-181):21-25, 28.
- Vink, D. L. N., 1984b. The Conidae of Western Atlantic. Part I. *Conchiglia* 16(186-187):18-22.
- Vink, D. L. N. & von Cosel, R., 1985a. Le complexe "cedonulli" (rapport intermédiaire) *Xenophora* 25:11-14.
- Vink, D. L. N. & von Cosel, R., 1985b. The *Conus cedonulli* complex. Historical review, taxonomy and biological observation. *Revue suisse Zool.* 92:525-603.

TABLE I

Hwass' species	Tableau figure	Hwass Collection	Clench's "type figure"
<i>C. columba</i>	pl.334,fig.3	no type present	Gaultieri 1742,pl.25,fig.G
<i>C. ranunculus</i>	pl.331,fig.1	holotype MHN 1107/43	Seba 1761,pl.43,fig.36
<i>C. daucus</i>	pl.327,fig.3,4,9	no type present	Chemnitz 1778,pl.144A,fig.L
<i>C. verrucosus</i>	pl.333,fig.4	no type present	Martini 1773,pl.55,fig.612c
<i>C. dominicanus</i>	pl.316,fig.8	no type present	Chemnitz 1788,pl.141,fig.1306
<i>C. cardinalis</i>	pl.322,fig.6	holotype MHN 1106/52	Martini 1773,pl.61,fig.680

cies is too quickly relegated. Much more work must be done to disentangle the species. Meanwhile, like Kohn (1968), I will base the identity of *C. verrucosus* solely on the **Tableau** figure and Bruguière's description.

#### 5. *Conus dominicanus*

On basis of the **Tableau** figure and Bruguière's description, Vink & Cosel (1985-b) identified the nominal species *C. dominicanus* with a subspecies of *C. cedonulli* occurring in the Grenadine Islands and on Grenada. However, Clench's "type figure," Chemnitz (1788: Pl. 144A, fig. L), reproduced by Coomans et al. (1985b: fig. 648) could well represent *C. mappa mappa* from Trinidad and Tobago, and indeed the specimen pictured by Clench (1942: Pl. 4, fig. 4) which was originally obtained by Governor Rawson must be recognized as *C. mappa*. A similar specimen of *C. mappa* from the Tobago population is present in the British Museum, Natural History (BMNH (no. 1964477) ex coll. Rawson). Here is a clear example where Clench's "type figure" caused confusion. Indeed Coomans et al. (1985b) who follow Clench have come to a different identity of *C. dominicanus*. These authors stated that they traced the Chemnitz specimen in the Zoologisk Museum, Copenhagen, and they based the identity of *C. dominicanus* on that specimen. I agree that this cone must be identified with *C. curassaviensis* ex Aruba, which would make *C. dominicanus* a synonym of *C. curassaviensis*. However the specimen figured by Chemnitz was not noticed earlier by Cernohorsky (1974) who studied the type specimens in Copenhagen. It is not immediately obvious to me that the Aruban specimen is the same shell as shown in Chemnitz' figure (Coomans et al., 1985b: fig. 649 and 648). All these considerations, however, are of no importance if Clench's "type figure" is ignored.

#### 6. *Conus cardinalis*

Subsequent to Clench's selection of a "type figure" the holotype of *C. cardinalis* was found in the Hwass collection (Kohn, 1968:446). One might conclude, like Kohn did in the case of *C. ranunculus*, that Clench's designation of a "type figure" now no longer holds, but Coomans et al. (1983) considered Clench's earlier designation of a lectotype valid. On basis of the holotype, Vink (1984a) identified *C. cardinalis* with a population of *Conus*

occurring in the Bahamas. This population may be conspecific with a population from the Virgin Islands recognized as *C. speciosissimus*, but is quite distinct from a population of bright red cones found at Jamaica and Haiti and identified as *C. inconstans*.

Again Coomans et al. (1983) following Clench came to a different identity of *C. cardinalis*. They reproduced the "type figure" after Martini (Coomans et al., 1983: fig. 356), which can indeed be recognized as *C. inconstans* and showed Jamaica and Haiti as known localities of *C. cardinalis*. They rejected Clench's type locality, Tortola Id., Virgin Islands, and stated that his specimen (Clench, 1942: Pl. 4, fig. 1) was not conspecific with *C. cardinalis* and belonged to the species complex of *C. magellanicus*.

In my opinion Clench's specimen is *C. speciosissimus*, morphologically close to *C. cardinalis*, and quite distinct from *C. magellanicus*.

Summarizing the above I would conclude as follows:

- 1) Clench (1942) selected "type figures" from cited literature for all the Hwass species he dealt with, without mention at all of the figures in the **Tableau Encyclopédique**.
- 2) In most cases the "type figures" chosen do not have the advantage of higher diagnostic value when compared to those in the **Tableau**.
- 3) Whereas the specimens described by Bruguière and figured in the **Tableau** are from Hwass' collection, the cited references were added later by Bruguière, apparently independently from Hwass.
- 4) The term "type figure" has no meaning in zoological nomenclature.
- 5) For the above reasons Clench's "type figures" of Hwass' species must be ignored.
- 6) Disregarding Clench's "type figures" will not lead to confusion or name changes in the case of such well known nominal species as *C. columba* and *C. daucus*.
- 7) In the case of three nominal species, *C. cardinalis*, *C. dominicanus* and *C. verrucosus* belonging to complicated species complexes, i.e. respectively the *C. cardinalis* complex, the *C. cedonulli* complex and the *C. jaspideus* group, at least one unnecessary obstacle will have been eliminated for finally reaching a consensus as to their identity.



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# A New Home for *Morum* with the Harpidae

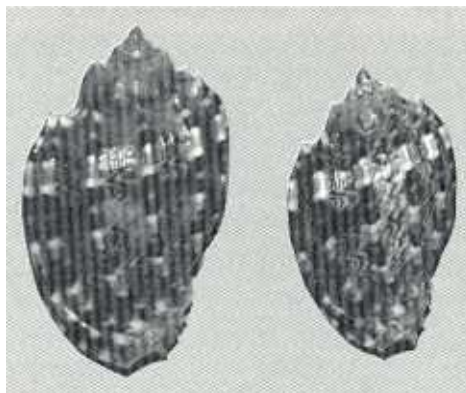
By J. C. CAILLIEZ\*

LAUSANNE — Long prized by collectors for their beauty, but actually left largely unstudied in recent years, the Family Harpidae faces a revolution in 1987. New research suggests that the 25 or more species of the genus *Morum* Röding, 1798 should be taken out of the Family Cassidae, the helmet shells, and placed in the Family Harpidae.

If and when the transfer is recognized, the Harpidae will include the present 11 species of *Harpa*, four species of *Austroharpa* and two dozen or so *Morum* species. The consequence is a substantially more impressive Harpidae.

Some excellent figures of the *Morum* shells are

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HSN has never figured *Harpa kajiyamai* Rehder, says Jean-Claude Cailliez who sent this photo to correct the oversight. The shell on the left measures 58.1mm, that on the right, 43.5mm.

included in Abbott & Dance's *Compendium o. Seashells* and in an article, "Les Morum," by Yves Demanuele and S. Pras in *Mappa* for April 1978. Text of the latter is in French — something of a challenge!

Roger N. Hughes, malacologist at the College of North Wales (U.K.), is the "originator" of this reclassification, which is offered on the basis of a comparison of dissected *Cassis* and *Morum* animals. His paper, "Anatomy of the foregut of *Morum* Röding, 1798 . . . and the Taxonomic misplacement of the Genus," appeared in *The Veliger* in July 1986.

The anterior position of the large salivary glands (rather than in the proboscis), the lack of jaws, the microscopic radulae armed with only one tricuspid tooth (instead of the previously assumed seven) are among the reasons cited by Hughes for moving the genus *Morum* from the Mesogastropod Superfamily Tonnacea to the Neogastropods, the Recent superfamily that includes the cones, olives, *Murex*, volutes and other popular collectibles.

*Morum* species' quickness of movement and their

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lack of an acid-secreting gland (which the cassisid find so useful in dining off Echinoderms), are other differences noted by Hughes. Just what the *Morum* do eat is not stated in the literature.

The question arises whether these differences should be recognized by erecting a new family or by creating a new genus in the existing Neogastropods. Study of the *Morum* foot with its protopodium for digging and metapodium for motion, the existence of a long siphon, and the *Morum's* ability to drop part of its foot as an escape mechanism convinced Hughes the *Morum* should be placed with the Harpidae.

A full taxonomic review is reported to be under way.

There is additional news of the Harpidae complex. The family name faces change. J.G.M. Raven has published a paper, "Homonymy in the Families Harpidae Hawle & Corda, 1847 and Harpidae Bronn, 1849," in the *Bulletin of Zoology Nomenclature* indicating that the name Harpidae was pre-empted by Hawle & Corda for a fossil trilobite two years before Bronn used the name for the present harps.

A more appropriate name for the family would be *Harpidae* Bronn, 1849, Raven feels. If accepted, the family would include the present genera *Harpa* Röding, *Austroharpa* Finley and *Morum* Röding.

It may be significant that no sinistral ("left-handed") *Harpa* specimens have ever been reported.

Looking back, we realize that conchologists are losing a nice, quiet, homogenous family with the transformation of the Harpidae. Do I detect an amused gleam in the eye of the mollusc?

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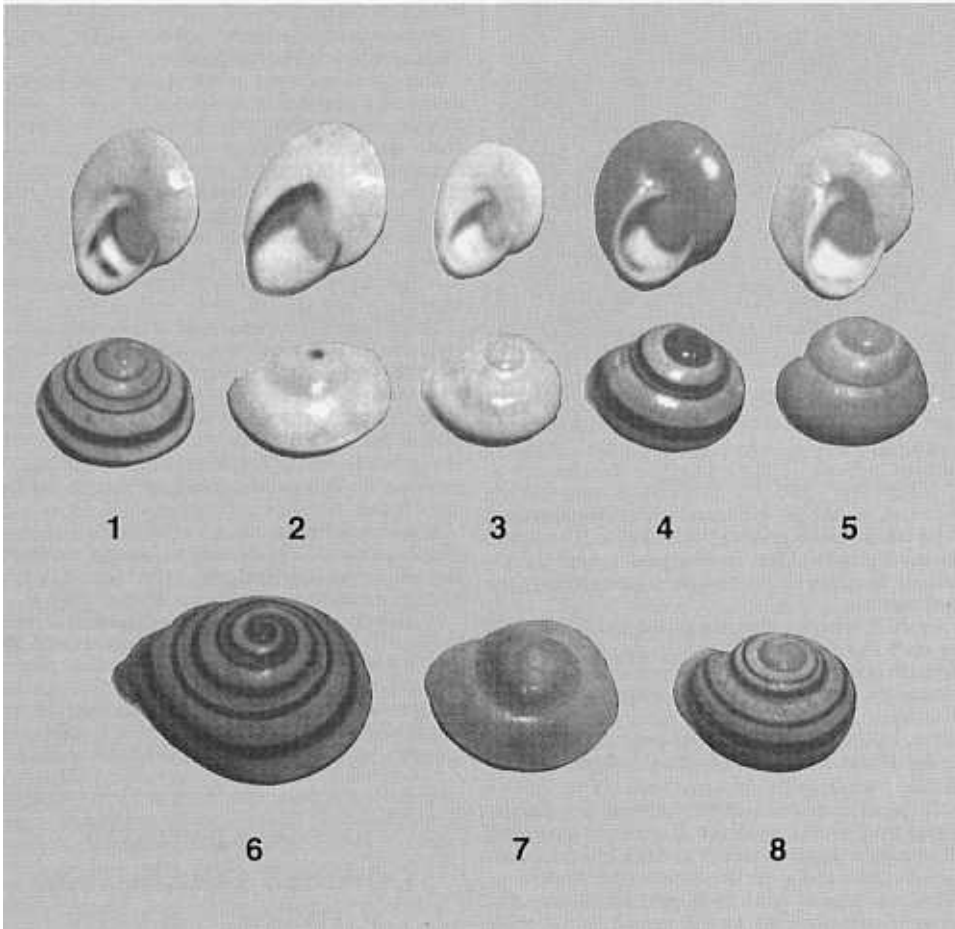
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# Never Too Small to Be Beautiful



By JAMES BARNETT

**BAGUIO** — Land snails from mountainous northern Luzon Island include both the largest and the smallest found in the Philippines (see "From the Philippines — Big and Beautiful," HSN October 1986). As noted in my last report, both are from the same subfamily — the Helicostylinae.

Members of the Genus *Chlorea* Albers, 1850, the smallest among the 10 genera in the Helicostylinae, are scattered throughout Luzon and, to a lesser degree, in some of the Visayan Islands of the Central Philippines.

Size ranges from about 14 to 27 mm. Shells are generally small, depressed-globose, with a high gloss and without hydrophanous periostraca. Ground color is usually white or yellow. Banding, where present, is brown. Whorls usually number four or five.

Contours of the final whorl range from sharply carinated to well-rounded.

Figure above are eight species in my personal collection.

1. *Chlorea hanleyi* Pfeiffer, 1845. Off-white with near-black banding, and sharply carinated. From Ilocos Sur, Northern Luzon. Average, 20 mm.

2. *C. constricta* Pfeiffer, 1845. White with red-brown apex and at edge of outer lip. Sharply carinated. From Mindoro. Average, 21 mm.

3. *C. hennigiana* Mollendorff, 1898. White with traces of yellow scattered throughout shell, and well-rounded periphery. From Tuguegarao, Cagayan, Northern Luzon. Average, 17 mm.

4. *C. sirena* Pfeiffer, 1842. Deep yellow with dark brown banding on top, and well-rounded

periphery. From Iloilo, Panay, Visayas. Average, 21 mm.


5. *C. sirena guimarensis* Pilsbry, 1891. Pale yellow on top and near-white on bottom, without banding, and with well-rounded periphery. From Guimaras Island, south of Panay. Average, 20 mm.

6. *C. thesites* Broderip, 1841. Light brown with dark brown banding, sharply carinated. The oval aperture is very long. The largest and most uniquely shaped *Chlorea* of the Philippine complex. From Mindoro. Average, 26 mm.

7. *C. caerulea* Mollendorff, 1888. Entire shell is a dirty white, and sharply carinated. From Morong, Bataan Peninsula, Central Luzon. Average, 21 mm.

8. *C. bifasciata hugeli* Pfeiffer, 1848. Pale yellow with light brown banding, and well rounded periphery. From Munoz, Nueva Ecija, Central Luzon. Average, 20 mm.

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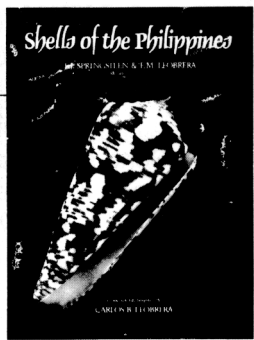
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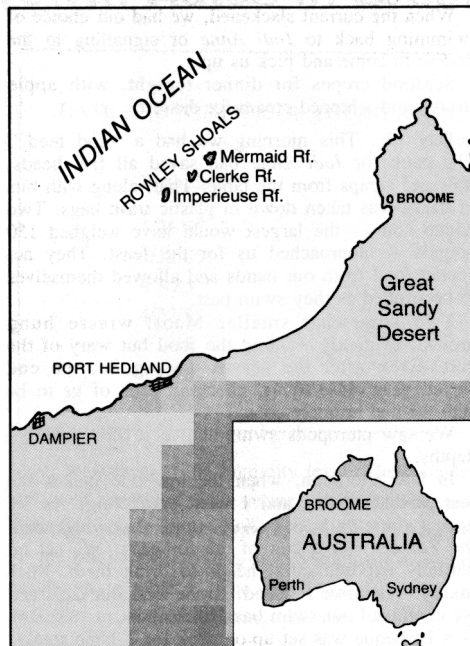
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tomorrow morning to catch the plane for Broome  
some 1700 kilometers to the north.

Day 4. BROOME. Although we arrived at 9:35  
a.m., we couldn't sail for the Rowley Shoals until  
the tide comes in. [HMS member] Kerry Sharpe left  
a message with the Captain of the *Jodi Anne*, our  
expedition boat, for me, so we visited her shell and  
pearl shop. She had successfully raised *Murex bed-  
nalli* in her home aquarium, taking photos of the  
entire process. She lent me the slides which I will  
examine while aboard *Jodi Anne*.

Kerry also had a letter to me from a Perth shell  
club member who had been in Broome recently. It  
contained some excellent specimens of a new *Has-  
tula* sp. I am getting ready to describe and name.

We had time for a little tour of Broome while  
waiting for the tide to rise. Broome formerly was a  
big pearling center and is still very much like a  
routin' tootin' frontier town of the American Old  
West. Most cars have sturdy "kangaroo bumpers."

The uniform of the day for both men and women  
seems to be khaki shorts and tee-shirts.

Day 5. MERMAID ATOLL. *Jodi Anne*, a 72-foot  
motor sailer built in 1981, is the nicest, most beau-  
tiful dive boat on which I have ever cruised. One  
stateroom even has a queen-size bed and sofa. One  
of the "heads" has a bath tub. Meals are gourmet  
level.

We sailed from Broome about 4 p.m. yesterday  
and arrived at this northernmost of the Rowley Sho-  
als group, about 9 this morning. At low tide, the  
rim of the atoll reef is visible.

We had a good first dive, just looking around.  
The bottom is beautiful. A big potato cod followed  
me for at least five minutes, staying just out of my  
reach. Billee found a *Thyca crystalina* (Gould,  
1846) on a blue *Linkia* sea star and a *Vanikoro  
cancellata* (Lamarck, 1822). Neither had been col-  
lected at Rowley Shoals by the W.A. Museum  
group.

For dinner we had beef wellington and cauli-  
flower with cheese sauce and carrots and brussels  
sprouts and white burgandy. Mary, Jeanette and I  
abstained in favor of a night dive.

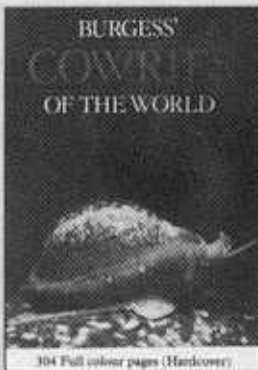
On the bottom, my weight belt came undone. In  
trying to refasten it while holding my flashlight, I  
cut my thumb quite deeply. Back on deck, there  
was no one to suture it. Knowing that I am not  
going to stay out of the ocean, we decided to  
administer a series of penicillin to avoid infection.\*

Day 6: I took my camera down today with my  
15 mm lens to photograph some fish working a  
cleaning station. I realized I needed a different lens  
for that, so I just watched as one fish after another  
moved in to be cleaned by the little wrasse.

Day 7: On our morning dive, collected some  
shells and some "grunge" for the museum at 60 to  
65 feet.

Mid-afternoon we had a visit by people from a  
small yacht whose skipper earlier had radioed us for  
directions to get through the channel into the Mer-  
maid Atoll lagoon where we have been spending the  
nights. Delivering the yacht from Perth to Cairns,  
Northern Queensland [about in the class with sailing  
from Corpus Christi, TX to Buenos Aires], they  
decided they spending a day off to visit Rowley  
Shoals.

We sat around talking until it was too dark to see  
their yacht. John, our skipper, told them he could  
direct them home when the stars come out. In the  
\*The penicillin worked. No infection, but my hand did not  
heal until I began keeping it out of the water — after the  
trip was over.



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*Jodi Anne, the Rowley Shoals expedition's yacht, lies at anchor in the calm water of Mermaid Atoll.*

meantime, dinner was ready — lobster with mayonnaise and caviar, huge prawns, crab in the shell, fried scallops, fried shrimps, French fries, watermelon cubed with chopped onion and herbs. Marvellous!

Day 8: This morning, the wind was up and the water too rough to permit diving outside the reef. So we stayed in the lagoon today. We can see in the distance that the little yacht is trapped there, too. The situation is not too bad for us. The lagoon is 35 to 50 feet deep, with beautiful scenery and good shells. Although the surface is rough, the water is calm underneath — except in the entrance channel.

This is an unspoiled place. The *Tridacna* are the largest I have ever seen, several specimens reaching 5½ to 6 feet in length. They make no effort to close their valves when I touched their shells. Fish are beautiful and unusual, too. Today I saw a dragonette and a leaf fish.

Chinese food for dinner tonight. Australian wine is good. It is served each evening to those not going night diving.

Day 9: The wind is still up, so we and the little yacht remain in the protection of the lagoon. Today we dived in the lagoon's entrance channel, a place the skipper calls Fairyland. We can do it only at slack tide. The water is not quite as clear as it would be if there were no wind.

I did some dredging at about 15 meters with my new hand scoop with good results.

Day 10: Still in the lagoon. There are schools of green parrot fish and Moorish idols.

On a night dive, my flashlight picked up what looked like a rather large sea urchin moving across a stretch of sand. I could see the shadow of the spines against the light sand. Closer, I could see that it was a large tiger cowry, plowing across the sand, its mantle completely exposed. All the tiger cowries here seem to have completely white backgrounds. This one measured a little over four inches — large for a specimen outside Hawaii.

Day 11: The weather has cleared somewhat and we made a drift dive. *Jodi Anne's* Zodiac took us to the lagoon entrance. We dropped into the water with our scuba gear and just let the current take us back

into the lagoon. With my arms outstretched, I felt like an eagle soaring. A great feeling!

When the current slackened, we had our choice of swimming back to *Jodi Anne* or signalling to the Zodiac to come and pick us up.

Seafood crepes for dinner tonight, with apple strudel and whipped cream for dessert.

Day 12: This morning we had a "cod feed." The cook for *Jodi Anne* had saved all fish heads, tails and scraps from the table. That, along with bits of meat, was taken down in plastic trash bags. Two potato cod — the largest would have weighed 150 pounds — approached us for the feast. They accepted food from our hands and allowed themselves to be stroked as they swim past.

Two somewhat smaller Maori wrasse hung around, evidently wanting the food but wary of the cod. Even after the scraps were gone, the cod stayed very close to us, checking each of us to be sure we had no more food.

We saw pteropods swimming at several different depths.

In late afternoon, when the low tide makes the reef visible, Billee and I went snorkeling. As we were swimming back to *Jodi Anne*, Bruce met us in the Zodiac with a cup of tea for each. We sat on partially exposed coral heads to drink them. Such luxury! When we finished, Bruce took our cups and we continued our swim back to the boat.

A barbeque was set up on deck for T-bone steaks. Cherries jubilee for dessert. This is a gourmet dive trip.

Day 13. CLERKE ATOLL. After a final dive outside the Mermaid Atoll reef, we sailed to Clerke Atoll, just over the southern horizon. Here the beach is always visible, even at high tide. The underwater scenery differs from that of Mermaid Atoll but is equally beautiful.

Billee found a most unusual sea urchin, chartreuse with bright peach-color mushroom-shaped "caps" on each spine (right). None of us has ever seen anything like it before. We photographed it both underwater and on deck, and Billiee preserved it in alcohol for the Scripps Institute of Oceanography in California.

Day 14. BROOME. Overnighting at Clerke Atoll, we made two dives before heading eastward to Broome after nine days of marvelous diving.

As our plane for Perth did not leave until 7 p.m. we decided to visit a local bird park started and operated by a British nobleman. It has all but two of Australia's many species of cockatoos and parrots. One of the missing pair cannot live in Broome's climate; the other is almost impossible to secure. All are as colorful as the tropical fish we have been seeing. While we were walking around the park, a big grey crane came up to me and put his beak in my handbag. I don't know what he was looking for; I haven't any fish.

Winding up the wait for our plane, we had a beer in one of Broome's loud and friendly saloons.

Day 15. PERTH. We had just time to visit the Western Australian Museum again and add 14



*Photos: Bratcher*

*This strange echinoderm was found in Clerke Lagoon. It still has not been identified.*

names to the list of species collected on the earlier WAM expedition. We also left 16 lots of unidentified gastropods for the staff to figure out, add to the list, and mail to us later.

\* \* \*

Three months after our return to the United States, the strange sea urchin remains unidentified.

Among the lots of shells left with the WAM for identification, seven species proved to be new records for Western Australia and some apparently are new to Australia. They include: *Cypraea ursellus* Gmelin, *C. beckii* Gaskoin, *C. childreni* Gray, *Mitra assimilis* Pease, *Vexillum coronatum* (Helbling), *Colubraria muricata* (Humphrey) and *Bursa lamarcki* (Deshayes).

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## NEWS OF NEW SPECIES

## A Heavy Rush Of Muricids

By WALTER SAGE

*Typhis (Typhina) jardinreinensis* Espinosa, 1985 (Poeyana 300: 2-5) was described from a single specimen taken off Camaguey, Cuba in 8 meters. Espinosa compared it to the Florida fossil, *T. siphonifer* Dall, 1915. Two other muricids, *Orania alexanderi* Houart, 1985 and *Typhis (Typhis) wellsii* Houart, 1985 (Journal of the Malacological Society of Australia 7 (1-2): 89-93), were described from Sri Lanka and Western Australia, respectively.

Houart also named eight new species of Muricidae from the southwestern Indian Ocean (Venus 44 (3): 159-171, 1985) — *Chicoreus (Chicoreus) cloveri*, *Chicoreus (Chicoreus) crosnieri*, *Pterynotus (Pterynotus) guillei*, *Poirieria (Pazinotus) brevisplendoris*, *Poirieria (Flexopteron) primanova*, *Aspella thomassini*, *Murexsul reunionensis*, and *Siphonochelus (Siphonochelus) stillacandidus*. Also named by Houart (Mar. Res. Indonesia 24: 83-87, 1984) was *Nipponotrophon makassarensis*, from Indonesian waters.

In a year notable for new members of the Muricidae, the following have been described at the time of writing (Sept. 1986): by Houart (Mem. Mus. natn. Hist. nat., ser. A, Zool. 428-455) from New Caledonia and the Philippines — *Poirieria (Paziella) vaubanensis*, *Poirieria (Paziella) acerapex*, *Poirieria (Paziella) spinacutus*, *Trophon (Trophonopsis) minirotundus*, *Nipponotrophon regina*, *Typhis (Typhina) virginiae*, and *Siphonochelus (Laevityphis) tillierae*; by D'Attilio and Myers (The Nautilus 100 (2): 78-84) from the Sol-

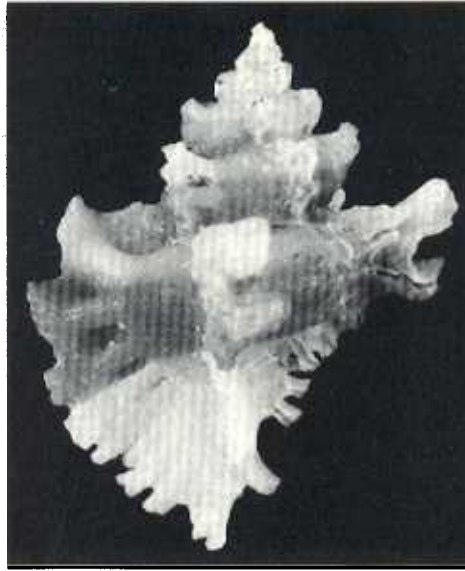
*Favartia leonae* Holotype

Photo: Mulliner

omon and Philippine Islands — *Favartia robertsoni* and *Favartia trivariocosa*; and by Vokes and Houart (Tulane Studies in Geology and Paleontology 19 (1-2):63-89) from Curacao and Senegal, respectively — *Muricopsis (Risomurex) withrowi* and *Muricopsis (Risomurex) seminolensis*.

In Bollettino Malacologico, Supplement 2, 1986. P. Bouchet and Warén, continuing their revision of the northeastern Atlantic bathyal and abyssal Gastropoda, have described the following as new species. Except as noted, all are in the Melanellidae.

*Eulima incolor*, 6.6 mm in height. *Eulima*

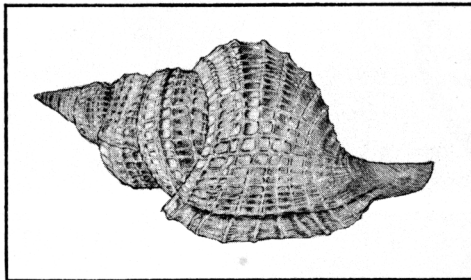
*grimaldii*, 6 mm. *Sticteulima lata*, 2.6 mm. *Fuscapex major*, 6.5 mm. *Fuscapex talismani*, 5 mm. *Fuscapex cabiochi*, 3.7 mm. *Fuscapex microcostellata*, 2.8 mm. *Bathyeulima thurstoni*, 4.4 mm. *Haliella canarica*, 2.2 mm. *Halielloides ingolfiana*, 2.9 mm (new genus). *Halielloides fragilis*, 2.7 mm. *Rectilabrum lanceolatum*, 5 mm.

*Ophiolamia (?) fragilissima*, 2.3 mm. *Melanella obtusoapicata*, 4 mm (new name). *Melanella turrita*, 6.1 mm. *Melanella reticulata*, 5 mm. *Melanella densicostata*, 5.2 mm. *Melanella glypta*, 4.1 mm. *Melanella similior*, 3.2 mm. *Melanella turbonilloides*, 2.3 mm. *Melanella gagei*, 3.2 mm. *Melanella insculpta*, 3.3 mm. *Melanella microsculpta*, 3.2 mm. *Melanella planisutis*, 3 mm. *Melanella (?) myriotrochi*, 2.8 mm. *Crinolamia angustispira*, 2.5 mm in height. *Crinophtheiros* Bouchet and Warén, (new genus).

*Curveulima marshalli*, 4.4 mm. *Curveulima obliquistoma*, 4.1 mm. *Curveulima eschara*, 4.2 mm. *Bathycrinicola micrapex*, 4.2 mm (new genus). *Bathycrinicola macrapex*, 4 mm. *Bathycrinicola media*, 3.4 mm. *Fusceulima thalassae*, 1.8 mm. *Fusceulima projectilabrum*, 1.8 mm. *Fusceulima ingolfiana*, 2.4 mm. *Pelseneeria striata*, 1.3 mm. *Eulitoma josephinae*, 3.6 mm. *Eulitoma obtusiuscula*, 2.5 mm. *Eulitoma arcus*, 6.2 mm.

The following new species were assigned to the Family Epitonidae:

*Eccliseogyra monnioti*, 4 mm in height. *Eccliseogyra sericea*, 26 mm. *Eccliseogyra exquisita*, 6.9 mm. *Papuliscala tavianii*, 3.7 mm. *Papuliscala cerithielloides*, 3.6 mm. *Epitonium pseudonanum*, 2.2 mm. *Epitonium dendrophylliae*, 5.6 mm. *Cylindriscala thalassae*, 16 mm. *Cylindriscala aurantia*, 19.2 mm. *Periapta* Bouchet and Warén (new genus). *Alora retifera*, 3.8 mm. *Gregorioiscala exfoliata*, 15.9 mm. *Opalia fortunata*, 3 mm.



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# SAXON REEF REVISITED

By MIKE HART\*

CAPE TOWN — Saxon Reef is a large reef complex near Arniston, close to the southernmost tip of South Africa (top, right). After several attempts over the past few years, we finally got our act together recently and had several successful dives on the reef. Conditions were ideal. A mild northerly wind blew throughout the weekend, flattening out the swell. The sea was turquoise and crystal clear.

Once in the water we found that the topography of the reef varied quite considerably from flat, barren, relatively lifeless areas to the more typical Cape West Coast type with gullies, small drop-offs and abundant hard and soft corals.

The variety and number of reef fish amaze even the most hardened spearfisherman. This is almost certainly due, in part, to the lack of commercial fishing in the area but also due to the rather unpredictable surface swell. Huge 'blindens' appear from seemingly nowhere, break and disappear without trace. Large red stumpnose, *Chrysoblephus gibbiceps*, were ever in attendance as were a host of smaller reef fish.

The rather common *Santer-Cheimerius nufar* would dart in under the boulders we lifted to retrieve some morsel of food before the slab could be returned.

Sharks were also quite common, usually the small *Vaalhaai* or liveroil shark, *Galeorhinus galeus*, measuring 4 to 5 feet. However, about 100 meters up the reef, a weekend fisherman boated a rather aggressive 2.5 meter (7-foot) hammerhead shark, *Sphyrna zygaena*, while we were in the water on one of our dives. Needless to say, we took more cognizance of our surroundings on subsequent dives. We did not encounter any related problems.

The shells from the reef were few but interesting enough to prompt this short account. We found one species of cowry and three species of cones.

## *Cypraea fuscudentata* Gray, 1825

The shell here is dwarfed by its False Bay counterpart (center) and it is far more difficult to find. It does not live in association with black sponge, *Lisodendoryx ternatensis*, as it does in False Bay (in the lee of the Cape of Good Hope). Even the immature shells which in False Bay are invariably in close proximity to the sponge, on Saxon Reef were found under boulders and coral blocks far from sponge. The black sponge does occur on the reef but possibly not in such great abundance as in False Bay.

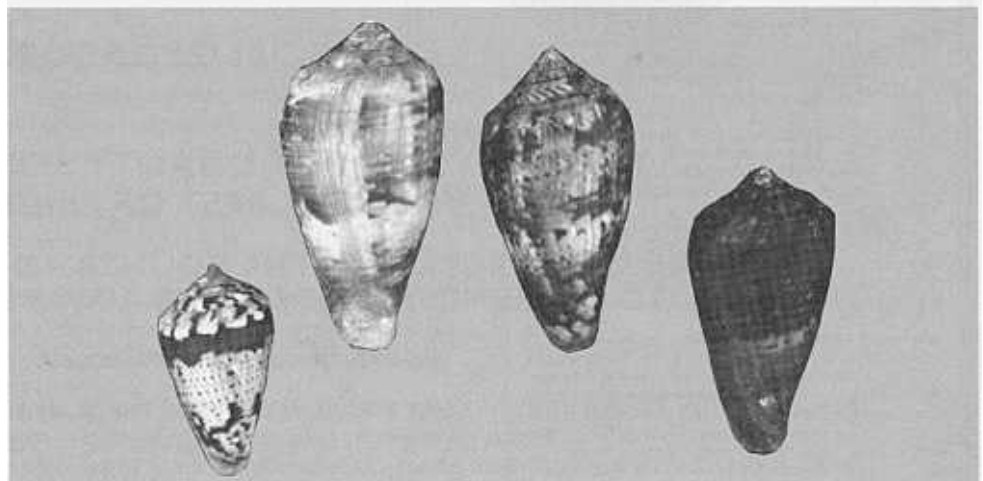
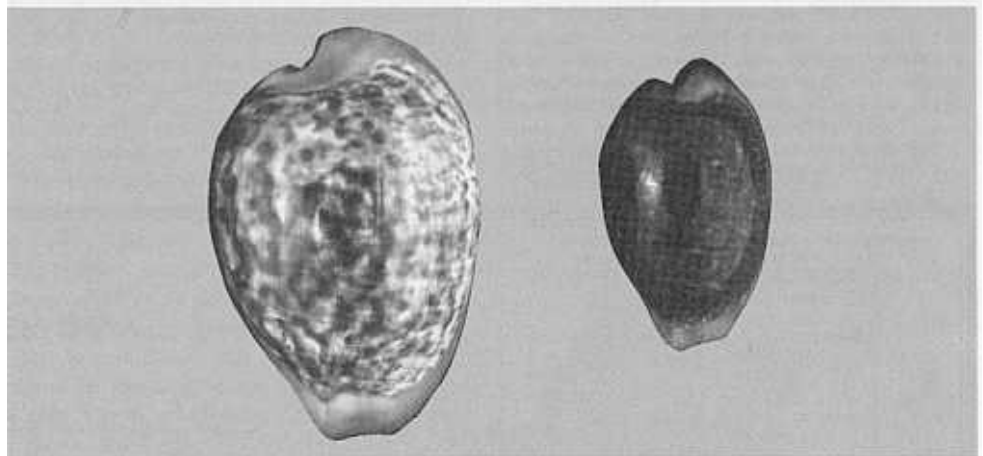
In False Bay, three basic mantle forms — black, the most common; orange and, rarely, salmon pink with or without white flecks or papillae — are found. The mantle of the Saxon Reef *C. fuscudentata* is totally different. Here the mantle is a constant rather drab, dirty orange brown with or without papillae.

## *Conus tinianus* Hwass, 1792

Both the purple-brown and the red-white color forms were present (bottom, right). This probably represents the shell's most westerly distribution. These shells apparently have not been found west of Struis Bay, a few kilometers west of Arniston. The animals were red, regardless of the shell color.

## *Conus algoensis scitulus* Reeve, 1849

A single shell was found, probably representing the most easterly range of *C. a. scitulus*. Well rolled beach specimens have been found as far east as Jeffreys Bay. (*C. a. scitulus* is found together with *C. a. algulhasi* intertidally in the Struis Bay-Cape Agulhas region.)



Photos: Ced Robertson

## *Conus mozambicus mozambicus* Hwass, 1792

This also occurred on the reef. We found only the dark forms with no evidence of the albino form which is relatively common at nearby Cape Agulhas. All the animals appeared black or dark brown.

Other shells found on the reef included *Haliotis*

*parva*, several Fissurellidae species, *Turritella carinifera*, *Cymatium doliarium*, and *Chlamys tinctus*.

Despite all the frustrations of the past, Saxon Reef was well worth the revisit. I am sure, in the not-too-distant future, we will be there again, weather permitting.

\*7 Montreal Ave., Mobray 7700, Cape Town, R.S.A.