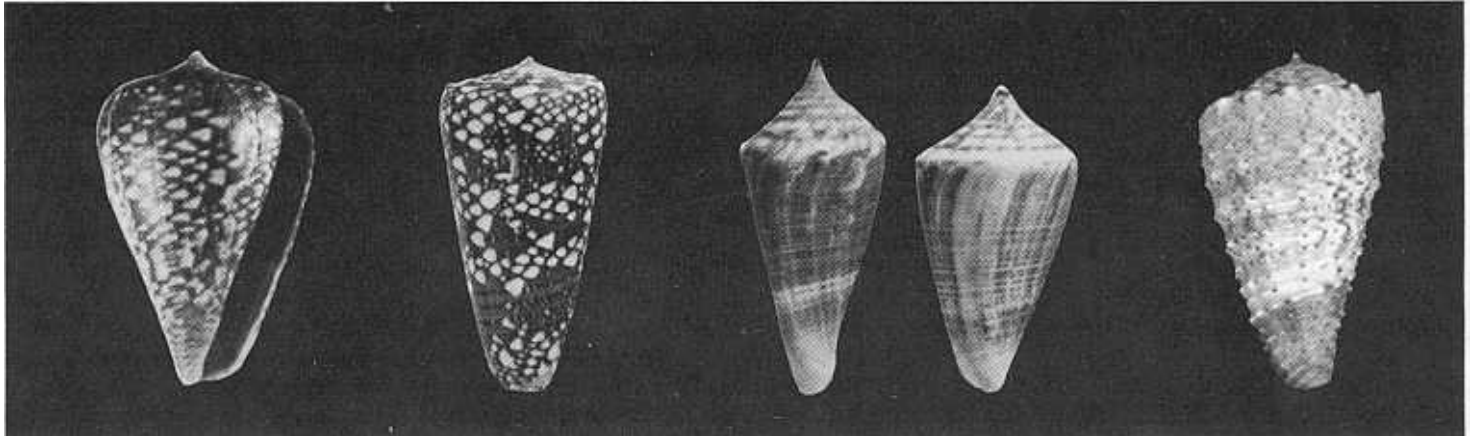


## WOULD YOU BELIEVE 18 NEW CONES?



*C. orri* – Gambia

*C. skinneri* – Bali

*C. garciai* – Honduras

*C. rogmartini* – Phil.

Four prominent members of the Hawaiian Malacological Society led by A. J. (Bob) da Motta of Bangkok have teamed up to describe and name no less than 18 new species and subspecies of cones. The collaborating authors are Taizo Ninomiya of Tokyo, Manfred Blocher of Duisburg, West Germany and Dr. Dieter Rockel of Darmstadt.

Seventeen names are presented in *Publicacoes Ocasionais da Sociedade Portuguesa de Malacologia* (Occasional Publications of the Portuguese Malacological Society) 1, dated Lisbon 1982. The eighteenth appears in the March-April 1982 issue of the Carfel's *Philippine Shell News*.

In his introduction to the descriptions, da Motta revealed that the proposed new taxa "result directly from the research process undertaken in the course of an in-depth review of the *Conus textile* complex" carried out by da Motta, the results of which have appeared in a series of articles in *La Conchiglia/The Shell*.

"The study entailed investigation into the origin of every single name within the tented-shell group," da Motta went on. "This led to the discovery that the popularly known *Conus episcopatus* (of authors) was still without a valid name.

"Two others — *Conus auratus* Hwass and *Conus vicarius* of authors — had been erroneously classified by subsequent authors and must therefore be renamed. Some of the remaining species were wrongly regarded as being conspecific with unrelated species, while several could not be identified with any already described previously known species."

In addition, according to da Motta, "several altogether newly discovered species" were described and named.

The author's descriptions have been summarized and occasionally paraphrased. Except where noted, all holotypes have been deposited with the Museum d'Histoire Naturelle in Geneva.

### 1. *Conus episcopatus* da Motta

The holotype was found in shallow water on Mahe Island in the Seychelles, but the species is "extremely prolific and is widely distributed throughout the Indo-West Pacific." Several color and pattern forms are noted. When fully mature the shell "tends to develop bulging shoulders."

This species has remained nameless, although popularly known as *C. episcopatus* of authors, wrote da Motta. "It is not to be confused with the species so named by Hwass in 1792 — an entirely different and distinct species."

The new *C. episcopatus* is said to be closest to *C. magnificus* Reeve. The latter is a more solid and heavy shell, with less tapering sides and much smaller tenting marks. *C. episcopatus* "occasionally is confused with *C. pennaceus* Born, but can be separated by the latter's flat spire and sharply pointed apex." It also can be separated from *C. aulicus* Linne by its having ventricose sides and an acute apex.

The holotype of *C. episcopatus* measures 82 x 36.5mm.

### 2. *Conus auratinus* da Motta

The author describes the new species as being "a much larger shell" than *Conus auratus* Hwass or the synonymous *C. aulicus* forma *aurantia* Dautzenberg, with a sharply pointed apex, weakly carinated shoulder and ventricose sides, which round

off to a constricted basal end. In color, pattern and structural morphology, said da Motta, "no affinity, beyond being congeneric, can be established between these two altogether different species." The new *C. auratinus* is said to be structurally closer to *C. auricomus* Hwass, but is generally smaller.

The holotype, which measures 82 x 29.5mm, was taken in shallow water on Fakarava Island in the Tuamotu group. Forms have been reported from other islands in the Pacific.

### 3. *Conus quasimagnificus* da Motta

The holotype of this new species was found in shallow water at Khor Fakkau in the Gulf of Oman, near the eastern tip of the Arabian Peninsula. It measures 68.5 by 38mm. The new species is found throughout the Middle East, in northeastern Africa and in the Seychelles.

*Conus quasimagnificus* resembles *C. magnificus* Reeve, "from which it can readily be distinguished . . . by the latter's pinkish ground color, straight sides which do not taper and more elongated body whorl." In its early growth stages, *C. quasimagnificus* is said to resemble *C. pennaceus*, with which it exists sympatrically, "thus proving their separate identities."

### 3. *Conus textile neovicarius* da Motta

This proposed subspecies of wide-ranging *C. textile* Linne was found in shallow water at Sharm-el-Shech (Sharm el Sheikh), near the tip of the Sinai Peninsula. It is said to be limited to the Red Sea and some areas of the Arabian Sea. The holotype measures 76 x 45mm.

According to da Motta, the new subspecies "was erroneously identified by Reeve, Sowerby and other authors as *Conus vicarius* Lamarck non Linne. The name, being preoccupied, was replaced by *C. abbreviata* Dautzenberg non Reeve. Lamarck's vic-

(Cont'd on Page 10)

# REEFCOMBING

The Hawaiian Malacological Society's plea for members' counsel on its financial dilemma — whether to increase the dues or reduce the number of HSN issues — got a remarkable response. As HMS president Mike Owens writes in his "On Board" column elsewhere, the vote was about four to one in favor of paying more. But the truly unexpected factor was the percentage of letters that said in effect, "Play it either way; we'll stay with you."

We are hopeful that the very modest dues increase, combined with an adjustment of postage differentials, will see us through.

\* \* \*

There have been rumors that Australia plans to ban shell collecting. HSN Corresponding Editor Thora Whitehead in Brisbane has sent in what seems to be the authoritative response:

"There is at present a ban on collecting molluscs in the Perth area and on collecting abalone and whelks (*Dicathais*) from south of Mandurah to the Moore River (all in Western Australia). This is in response to concern voiced about the over-exploitation of abalone and whelks on city reefs . . . in reach of the densely settled areas of Perth and its surrounds.

"However, I have heard that the Commonwealth Government is planning to tighten regulations concerning the export of animal specimens and artifacts made from them. So perhaps this proposal is the basis for the rumors (of a ban of collecting)."

## Shells on Stamps

En route to New York from the Far East, HMS member H. P. Roussy of Djibouti passed through Honolulu early in June with news that the Postmaster in Djibouti plans to issue a new series of stamps featuring the seashells of that Red Sea port. To be shown are *Cypraea exusta* Sowerby, *C. erythraeensis* Sowerby, *C. pulchra* Gray, *Conus sumatrensis* Hwass, and *C. inscriptus* Reeve.

Roussy commented that the color pictures for the series are based on shells in his personal collection.

Inquiries about the stamps and first-day envelopes can be directed to Le Directeur des PTT, Djibouti, Republic of Djibouti.

## All About Terebra

Another recent visitor to Hawaii was Twila Bratcher of Los Angeles, poised between a flight from New Zealand and one to Manila. And how is she coming with her study of the Terebridae?

"The project is close to completion," said Mrs. Bratcher. No dates were offered, but the drift of the conversation pointed to late next year for publication. In New Zealand, she conferred with Walter O. Cernohorsky, of the Auckland Institute and Museum, who is collaborating on the book.

"I'd rather not say much about it yet, but the finished work will cover all the recent species," she concluded. "People all over the world have been very good about providing us with material."

## Rockets and Shells

The tourist industry is not big on Kwajalein, the mid-Pacific atoll that accommodates an important U.S. missile tracking and test facility. Despite the restrictions, however, Kwajalein has a significant number of shell collectors.

"Due to a marked increase in shell collecting

among our 250 members, the Kwajalein Scuba Club recently formed a shell committee which meets monthly," says a letter from Jeanette Hammon, who just happens to be chairman of the shell committee.

"Our goals include maintaining a species list, size measurements, habitat and rarity records and — most importantly — education of all island residents to good shelling practice and conservation.

"I will be happy to provide HMS members with information on local molluscs."

Mrs. Hammon's address is Box 1750, APO San Francisco 96555.

## Pleurotomaria, Anyone?

Patrick Anseeuw, Mispelstraat 18, 9220 Merelbeke, Belgium, is working on a study and possible revision of the Pleurotomaridae of the world. He needs the help of fellow members of HMS. Anyone with photos of specimens, information on the animals, data on range or habitats, or other information on these rare "millionaire shells" is asked to communicate with Anseeuw.

## Down in the Dumps

This note must start with the explanation that members of the Central Florida Shell Club at Orlando have a molluscan resource that they call the Scallop Dump. It's a depository for unwanted material at a scallop processing plant off the highway toward Cape Canaveral. A "recent finds" list compiled by Dale Lent had a very impressive number of desirable shells.

Now to the point of all this: Jim Cordy, outgoing secretary of the CFSC, known to friends as "Mayor of the Scallop Dump," has been elected as president of the neighboring Astronaut Trail Shell Club. He has been active in both clubs, and will continue to work the Scallop Dump.

## Versatile Vespertilio

When Associate Editor Elmer Leehman contributed photos and some notes on *Voluta vespertilio* Linne (HSN May 1982), he remarked that the species is generally accepted as endemic to the Philippines, "although there are reports of one or more specimens being found in northern Australia."

Carl Withrow, of St. Petersburg, FL, confirms the wider range. Citing specimens in his own collection, Withrow points to two from North Borneo "purchased from Mary Saul in August 1964," and one obtained several years ago from Alan Hinton with a data slip reading "Manus Island, Admiralty Group . . . Feb. 1965". A fourth shell — "a whopper, almost 114mm" — was said to have come from Rabaul.

It seems clear that *V. vespertilio* is not endemic to the Philippines.

## Travel Note: Where's Kohn?

Dr. Alan J. Kohn, the *Conus* expert from the University of Washington at Seattle, last was reported in these columns as spending a sabbatical leave in Okinawa, Japan. Now comes a letter from Suva, revealing that Kohn is with the Mineral Resources Department of the Government of Fiji for a few months, working with fossil molluscs. No details of duration, but the implications were that he would return to Seattle later this year.

## Hawaiian Shell News

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(Founded in 1941)

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The Society meets the first Wednesday of each month at the First United Methodist Church, Beretania & Victoria Streets, in Honolulu.

### VISITORS WELCOME!

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.

Members outside the United States are asked to pay with a bank cheque (not a draft) payable to HMS on a U.S. bank. (Be sure your name and address appear on the cheque.)

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## WELCOME TO HAWAII!!

HMS members visiting Hawaii are invited to contact the Society while in Honolulu. Please keep in mind, however, that the Society office is open irregularly, and that it does not have a telephone. Society officers are listed individually in the telephone book. If in doubt, ask the Waikiki Aquarium or the Bishop Museum for names. Better still, write to the Society in advance. The Museum's Karl Greene Shell Room has a good display of both Hawaiian and Indo-Pacific species.

# The Continuing Uncertainty About *Conus siamensis* Hwass

By DIETER ROCKEL

DARMSTADT — Populations of *Conus pulcher* Lightfoot from the Canary Islands differ strikingly from the populations of the West Africa mainland. This was the point I tried to make in my article, "The Rediscovery of *Conus siamensis*," in HSN July 1978, page 7.

Specimens from West Africa — so I explained — lack that impressive broad shoulder, the gently concave elevation of the spire and, above all, the multiplicity and colorful variations of the narrow fillets that characterize the offshore population.

My conclusion was that these *pulcher* populations from the Canaries agree with the description of *Conus siamensis* Hwass. Due to the obvious morphological differences between them and the mainland populations of *C. pulcher*, I regarded it as justified to consider *C. siamensis* to be a subspecies of *C. pulcher*.

W. O. Cernohorsky subsequently (HSN Sept. 1978) answered as follows:

"The lectotype of *C. siamensis*, which I personally examined in the Geneva Natural History Museum in 1968, is a large, broadshouldered individual of *C. pulcher* Lightfoot. There is no doubt in my mind that *C. siamensis* as defined by its lectotype as illustrated by Kohn is a synonym of *C. pulcher* Lightfoot, and not a rediscovered, valid geographical subspecies."

Some weeks ago I got some interesting new material from Ramon Gomez Rodriguez of Santa Cruz de la Palma in the Canary Islands, which could prompt further discussion on *C. siamensis*. Gomez Rodriguez sent juvenile specimens of *C. pulcher* from both the Canaries and the mainland. In this juvenile stage the morphological differences are much more pronounced than in maturity. Fig. B, below, shows a specimen from Senegal (exactly corresponding to specimens from Mauretania). Fig. G is a specimen from the Canaries. They seem to be two distinct species! Shape and ornamentation differ in all respects.

But medium-size specimens (C and D from the

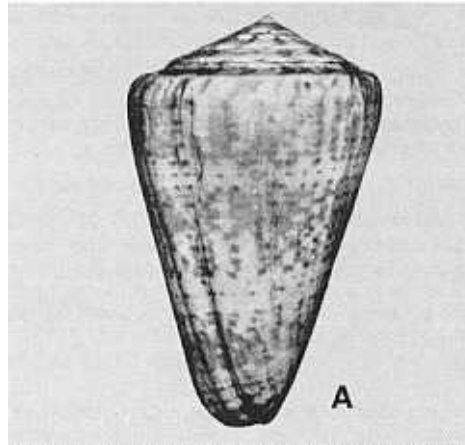


Photo from Kohn

The lectotype of *Conus siamensis* Hwass, in the Hwass collection at the Museum d'Histoire Naturelle, Geneva. It measures 102.5 x 62mm.

Canaries; E and F from Senegal) little by little lose these heavy differences, although the number and kind of interrupted spiral lines still differ conspicuously. The shape is more elegant, less plump.

One fact in particular seems to me to be convincing: the characteristics of *pulcher* specimens from the Canary Islands differ from those of the mainland *pulcher* populations, and the differences are of such degree that a subspecies status is unquestionable. A second significant fact is that the authors of the 19th century used Canary Island specimens as reference for *C. siamensis* (see my article of 1978 with copy of Reeve's figure.)

But what about the lectotype of *siamensis* Hwass in Geneva? I examined it (Fig. A) two years ago personally. Unfortunately, it is adult (102.5mm) and faded; the attractive color variations of fresh specimens are no longer visible. But the broad-shouldered, straight-sided last whorl indicates that this specimen belongs to the Canary Island population.

Hwass was not at all a "splitter." His observations showed astonishing accuracy. It is simply not

reasonable to assume that his description of *C. siamensis* was based on a more or less identical specimen of *C. prometheus*. So I repeat my conclusion of 1978: the *C. pulcher* populations from the Canary Islands are the subspecies *siamensis* Hwass of *C. pulcher* Lightfoot.

## HOW TO DESCRIBE A NEW SPECIES

Dr. Alan J. Kohn, probably the world's leading authority on the Conidae, has been quoted to the effect that almost no cone species named in the past 30 years appears to be truly valid. Did he actually say that?

HSN queried Dr. Kohn on the question and got a substantial confirmation.

"Virtually all species of *Conus* described in the last 30 years are described in such an archaic, obsolete fashion, typical of the 19th and indeed the 18th century, that they cannot be considered valid without critical evaluation," he wrote back.

"The main problems, as I have indicated before in HSN, are:

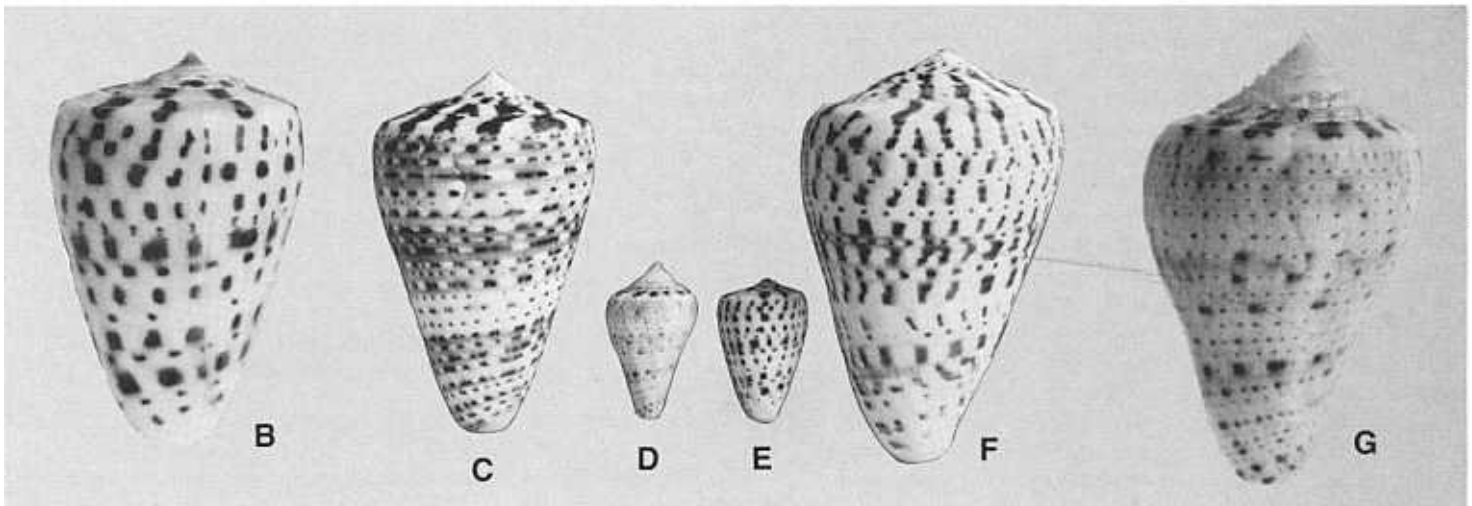
"A. Failure of authors to describe or estimate the range of variation of characters within the 'new' species and those with which they compare it.

"B. Failure of authors to distinguish within-species variation (A above) from between-species differences.

"C. Failure of authors to demonstrate convincingly that none of the 3,000 prior names proposed in the genus apply to their 'new' species.

"In the past two years, two quite independent methods have been published that facilitate overcoming A and B. I attempted to produce a 'model' description of the new species I described (*Conus kahiko*; see "Hawaii's Ancient Cone Finally Has a Name," by Wm. Bruce Wells: HSN Nov. 1980), including quantitative comparisons of shell morphology and sculpture with most closely known relatives. Independently, Carl Lewis published last year in *The Veliger* a method for distinguishing two similar *Conus* species. His approach is adaptable to new species descriptions.

"It seems to me that any proposer of a new species description in *Conus* should either apply one of these methods or clearly demonstrate that the method he does employ is superior or equal to these."



## Auction! Camera!



William Old of the American Museum of Natural History in New York City doubled as the auctioneer at the New York Shell Club's annual party in April. Offerings included some 20 rare and semirare molluscs, plus a nice variety at a bargain table and a shell raffle. Standing here with Elsy Thone, left, and Renate Wittig Skinner after the sale, Old appears to be wondering whether he should have accepted that bid for his elegant shell shirt.



Marcel Mailly, 18 Avenue Jean Jaures, 97200 Fort-de-France, Martinique, has two gem *Cypraea aequinoctialis* Schilder which he would like to trade for cones or other cowries of equal value.

Juan Antonio Contreras Gonzalez. C/Rio Genil Bloque 24 No. 3 Vivienda 5, Salub Alto, Santa Cruz de Tenerife, Canary Islands, Spain, has written to say he is a collector of marine shells and would like to contact other collectors. He does not indicate his particular interests.

Long-time HMS member Galen Chi-Tsair Lyn, P. O. Box 1046, Taichung, Taiwan, is a pharmacist by profession. On the side, he has a business in Taiwan butterflies, shark teeth and marine shells. In renewing his HMS membership for 1982, he added, "I wish to exchange worldwide with collectors and dealers. I am interested in the Pleurotomaridae, volutes, cones, cowries, *Latiaxis* and *Murex*." Anyone for Taiwan rarities?

Tom Pain, a frequent contributor to HSN, is making a study of buccinids of the North Pacific. He would appreciate receiving specimens for purchase or exchange, in particular *Beringius marshalli* Dall, 1919, *B. frielei* Dall, 1895, *Pryulofusus menonis* (Dall, 1891) and *Neptunea insularis* (Dall, 1895). Pain's address is 47 Reynolds House, Millbank, London SW1P 4HP.

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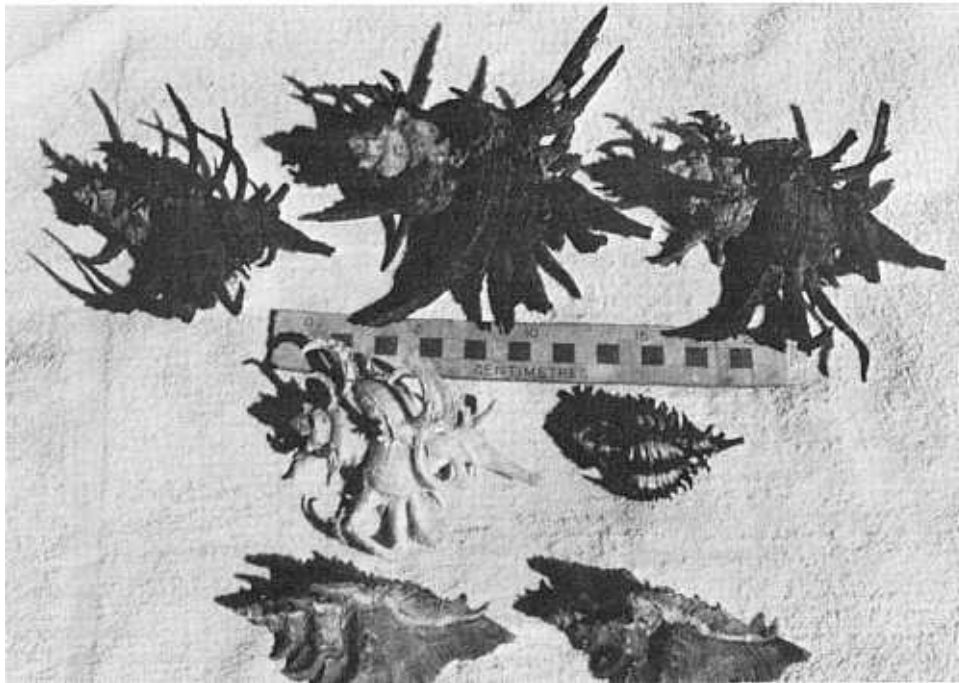


Photo: Board

Top row: *Murex cornicervis* Roding. Center: *M. cornicervis* (left) and *M. stainforthi* Lamarck. Bottom: *Pterynotus acanthopterus* Reeve.

DAMPIER, W.A. — *Lambis lambis* Linne is not a common species in the Dampier Archipelago of Western Australia. Nevertheless we do find very nice specimens here from time to time, sometimes at low tide and again while scuba diving.

None of the shells I have seen are less than 220mm. The longest I know of is 260mm. This is in the personal collection of my frequent diving buddy, Bill Currey. It was collected at low tide in an area that now is undergoing commercial development as a natural gas terminal.

The largest in my own collection measures 240mm. Another is 228mm, but has lost almost an inch since it was found. Unfortunately, it was dropped after being cleaned and lost part of its siphonal canal!

While I am discussing shell sizes, I offer the above photo of an assortment of local *Murex* specimens from the collection of Bill and Eve Cur-

rey. The large *Murex cornicervis* Roding is a shade over 15cm — a real giant. The largest *Pterynotus acanthopterus* Lamarck is just over 12cm, while the *M. stainforthi* Reeve is exactly 9cm.

Another size exception is a *Murex torrefactus* Sowerby from my own collection. It runs to 134mm. This shell was taken in 28 feet of water off Legendre Island, Dampier Archipelago. (This specimen is not figured here.)

The Dampier Archipelago has been heavily shelled by people with commercial interests in recent years, and large specimens are seldom found now. Shell population has dwindled also. The area is not the "hot spot" it used to be.

With massive industrial development already under way in one part of the archipelago, this trend is sure to continue. Shelling can still be very rewarding, but good specimens are few and far between.

P. W. Board

## ON BOARD

By MICHAEL OWENS, President  
Hawaiian Malacological Society

Members' reaction to the Society's concern over the dues vs. issues-per-year problem (HSN May 1982) was surprising, quick, thoughtful and voluminous. By about a four-to-one margin you prefer a dues increase. Many of you consider a reduction in the number of issues of HSN to be a reduction in quality — which you don't want!

In the light of these returns, the HMS Board of Directors voted at its May meeting to increase the basic dues by \$1 (from \$15 to \$16 a year) and at the same time to realign postage charges for the different classes of mail delivery available to members. An analysis by Treasurer Wes Thorsson made it clear that our financial crunch was primarily the result of recent increases in U.S. postal rates, which had not been passed through to members.

The revised dues structure will be reflected in the membership renewal notices for 1983 which will begin going out with the August issue of HSN.

Some excellent suggestions for increasing the Society's income were made by those who responded. These included selling the HMS membership list, creating special funds to which members could contribute selectively, establishing membership categories in addition to the present annual type, and so on. I was surprised, however, that among the letters I read there were no proposals for a membership drive. I believe that many of the Society's cash flow problems can be solved by an increase in numbers of members.


HMS can ill afford to continue with a static or declining membership. True, scattered efforts have been made in the past to attract new people, but they have generally been confined to Honolulu and weakly supported. The Society needs more members, both here in Hawaii and worldwide. How can this be accomplished?

The primary responsibility falls on the individuals who make up the Society. I challenge our members to hunt for potential recruits and actively to solicit their membership. At the same time, I call upon our Board of Directors to provide concrete support to such a drive.

Here are a few suggestions:

1. Let us offer a "bounty" — an endemic Hawaiian shell, for example — to the old member who brings a new person in, or, alternatively, annual awards to those who bring in the most new members.
2. Distribute HMS membership applications more frequently with HSN.
3. Provide handy forms on which the name and address of prospective members can be submitted to HMS.
4. Do some discreet advertising in other shell publications, dealers' lists, and nature-oriented magazines.

We need additional ideas.



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# The Many Faces of *C. armeniaca*

Although *Cypraea armeniaca* Verco no longer is regarded as one of the ten rarest members of the genus (as it was in the late 1960s) it remains a very uncommon shell. Restricted to the Great Australian Bight, from Cape Naturaliste eastward almost to Spencer Gulf, it obviously is closely related to *C. hesitata* Iredale and its subspecies. Walls, in fact, synonymized *hesitata* under *armeniaca*. Alan Hinton in his **Guide to Australian Shells** stopped short of that but put both in the subgenus *Umbilia*.

Whether one species or several, *C. armeniaca* displays considerable variation in color and pattern. The specimens figured here were trawled from deep water off the southwestern corner of Western Australia.

The pair figured at the top are in the personal collection of veteran HMS members Mr. and Mrs. Lawrence Thomas of Morro Bay, California. The shells are more than four inches long and have unusually fine color.

Below it is an unusually fine specimen trawled by A. J. "Tony" Gabelish of Esperance, W.A. It has strong reddish-brown coloring on a peach base. In gem condition, it measures 81 by 50mm. Gabelish called it the finest he had ever seen.

The third shell is somewhat bigger — approximately 90mm — but much lighter color. The base is ivory, the spots on the dorsum golden orange. It, too, is a gem.

*Cypraea armeniaca*, like several other southern Australian species, usually are a byproduct of fishing operations — trawling, in particular. The fishing industry is subject to frequent ups and downs, however, as a consequence of economic and ecological changes. As a result, the supply of these and other rare Australian shells is unpredictable. E.G.L.

## PUBLICATION NOTICE

The Oceanographic Institute of the Universidad de Oriente, Cumana, Venezuela has transmitted Vol. 16, Number 1 and 2 of its **Bulletin**, dated 1977. The contents — in English and Spanish — touch on a variety of topics, ranging from the ecology and distribution of foraminifera on the continental shelf of Venezuela to a study of the carotenoids of the red clam, *Lima scabra*.

Information on this and other publications of the Oceanographic Institute are available from the Library, Instituto Oceanografico, Apartado Postal 94, Cumana, Venezuela.

## 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 to the Corresponding Secretary for information.

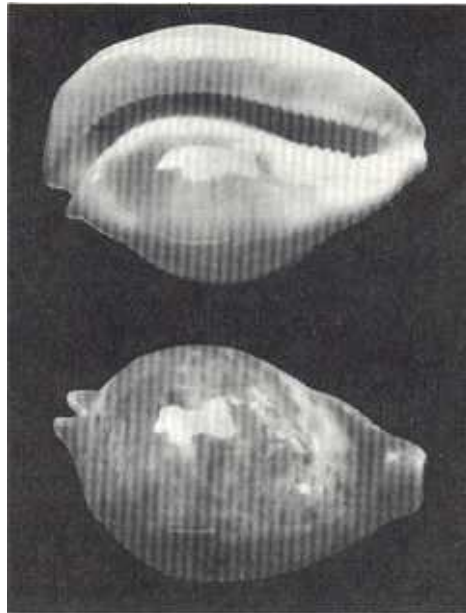
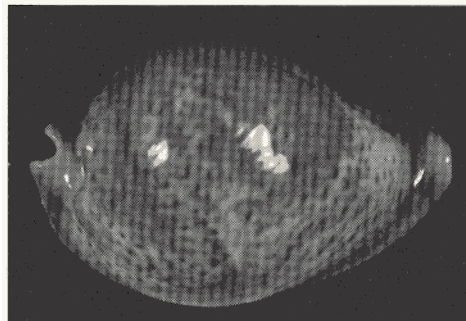
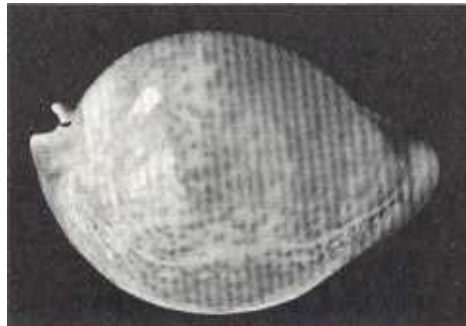


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# Recruitment Seen as Way Out Of Club 'Crisis'

By WALTER SAGE III

LOUISVILLE — The Louisville Conchological Society has perhaps 45 local members. About half actively participate in most club activities. I thought of these members when I read with great interest Elmer Leehman's article, "The Crisis in Club Membership" (HSN March 1982). The following comments are offered from a perspective of a smaller, but rather active shell club.

I would agree with Leehman's observation that many groups depend on "a handful of willing, veteran members" to carry out their programs and achieve their goals. These members are the heart of any organization. They put the most into the group and therefore also receive the greatest benefit.

The Louisville club in recent years has lost to death and moving away six of these "old timers." Their loss has been felt very deeply. We have been fortunate in gaining some new people who have taken up important tasks, but we have not yet replaced the experience and knowledge of those no-longer-active local members.

It is this problem that is really at the core of Leehman's message. We must cultivate new members, help them over the early hurdles, and prepare them to take the reins from those who have held them for so long. We can afford numerical losses, particularly of inactive members, but we cannot long survive without knowledgeable leaders.

If we veterans have worked carefully to broaden our base of active membership, then we can ease out of our leadership roles and turn them over to those with new ideas.

The greatest danger in lack of change in leadership is this loss of new ideas. Most creative ideas are tried out relatively early in one's tenure of office. If new members are persuaded actively to participate, their fresh perspectives can revitalize an organization and create an atmosphere in which the expertise of long-time members can be used to best advantage.

Leehman is correct in stating that the obvious remedy is a "vigorous campaign of education and recruitment." Clubs must reach out and share with new comers the information necessary to learn and become active. Membership committees must diligently promote their respective clubs through the media, with talks to civic groups and schools, and "talking up" the society wherever and whenever possible.

The health of a club depends on the membership

## RECENT FINDS

By LYMAN HIGA

Athens, GA

Dear Lyman,

The range map published by Dr. C. M. Burgess in *The Living Cowries*, (1970, p. 342) specifically excluded the Marshall Islands in the observed range for *Cypraea annulus* Linne. In the spring of 1946, while stationed with the U.S. Navy on Eniwetok Island in the Marshalls, I collected live *C. annulus* in shallow water and on the beaches of Eniwetok at low tide.

About 250 meters off the northeastern shore of Eniwetok Island in a northeasterly direction is a small island that is unnamed on the U.S. Army ordinance map for this area (Eniwetok Island, S.W., sheet 6656 II S.W.), but was nicknamed "Pig Island" by the Navy men. On the south beach of this island, at 11° 22' 2" N.; 162° 21' 14" E., I collected, on sand and under rocks, at low tide in 0 to 2 feet of water, about 100 live specimens of *C. moneta* and about a dozen live *C. annulus*. Most of the latter specimens, which ranged in size from 11.3 to 21.6mm, are still in my collection. They appeared to be much less prevalent than *C. moneta*, occurring in a ratio of about one *C. annulus* for every 10 *C. moneta*. I also collected five specimens of *C. caputserpentis*, *C. depressa* and *C. erosa* on the "Pig" Island beach.

S. William Pelletier

as a whole sharing responsibility for its growth. All must be willing to spend time and effort in increasing the knowledge and commitment of all members. If vigorous attention is paid to the new or less active members, the veterans will have secured the future of the club because of the influx of new ideas and broadened goals.

Lastly, it is important to remember that size or numbers are not the ultimate criteria of success. One good, active new member is worth a dozen who come to meetings merely to be entertained. The former will be prepared to accept responsibility and take up the challenge to become vital factors in the organization.

If all cooperate in working toward a better informed membership, the "crisis" will be replaced by a revitalized, more fully participative group that can make a great contribution to shell collecting.

# 'FLYING SNAILS?' THE GREAT OCEAN IS FULL OF THEM

By VIRGINIA LEE

MIAMI — Pteropods of the family Cavolinidae live in astronomical hordes in ocean communities around the world. Pteropod, which means "wing footed" in Greek, are popularly called sea butterflies or flying snails. The foot of these fragile little animals has been modified to form expanded, diaphanous "wings" with which they flit through the water — rapidly, if necessary.

The snails are bilaterally symmetrical, having lost their spiral form in evolution. Their glossy transparent shells are variously shaped. Some are globular, others vase, bottle or needle shape. All are minute, the largest measuring less than one inch.

Pteropods are omnivorous. In a daily vertical migration through the water column they flutter to the surface at twilight when they feed on the teeming millions of microscopic organisms there. At dawn, they fold their wings and sink.

The wings also form an important part of their feeding mechanism. Their surfaces are ciliated. When moving, the cilia send diatoms, crustaceans and even smaller pteropods streaming toward the mouth.

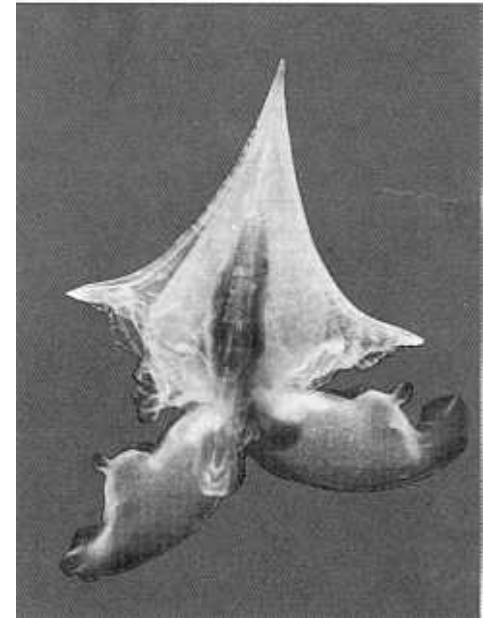


Photo: Burch

The pteropods, in turn, are part of the diet of many other creatures, large and small. Some inhabitants of the abyss subsist on the rain of pteropods from above.

When the "flying snails" die, their empty shells drift slowly to the bottom, where they form a "pteropod ooze" characteristic of the tropical ocean floor. This plain is estimated to cover 500,000 square miles. How could one estimate the number of sea butterflies buried there?

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# Standards for Malacological Collections

Four distinguished American malacologists — Alan Solem of the Field Museum of Natural History in Chicago; William K. Emerson, American Museum of Natural History, New York City; Barry Roth of the California Academy of Sciences, San Francisco; and Fred G. Thompson, Florida State Museum, Gainesville — collaborated in preparing a report to the U.S. Council of Systematic Malacologists on the important question of standards for malacological collections.

The report was adopted by the Council in July 1980 and released in December of last year. *Hawaiian Shell News* (with several other club publications) printed excerpts. The report deserves serious study by all conscientious collectors.

The group's recommendations of data requirements, priorities and philosophies of acquisition, and storage standards provide a yardstick to measure the performance of an individual institution or a private collection in meeting its responsibilities to the future needs of science and society in accumulating and preserving materials for the second most diverse phylum in the animal kingdom.

In presenting their report, the scientists expressed the hope that their recommendations would be viewed as minimum requirements.

The final section of their text follows:

The definition of what constitutes adequate locality data differs with the habitat sampled and the ecology of the organisms involved. The general guidelines presented below for land, fresh-water, and marine taxa are supplemented by a strong recommendation that collections made in a specific area be documented in the form of stations marked on a map of appropriate scale. The map should be deposited with the specimens and kept either: 1) directly with the catalogue entries for that collection; 2) in a special file of field maps and field notebooks associated with the collections; or 3) in a library support facility of that collection. This is the best way of enabling future reproducibility of collecting stations.

## Marine Stations

Open ocean stations require latitude and longitude, depth, type of gear used, length of tow, time of day, bottom type if sampled, and as much basic oceanographic data as can be recorded. Near shore localities can be more precisely located by providing compass references to prominent landmarks in addition to the above data.

Shore localities should make use of landmark reference points, direction and exposure, tide mark points, substrate, and approximate distance from a point locatable in a general atlas, plus the standard latitude and longitude reference points.

Less geographic precision is needed for planktonic taxa or for material taken from a 50-mile-long beach or mud flat than for taxa from a rock reef or coral platform that is isolated from the nearest similar habitat by miles of mud or sand. The more restricted and limited the habitat is locally, the more precise must be the "locator data" needed to enable future finding if the habitat is other than a prominent geographic feature.

## Fresh-water Stations

Fresh-water bodies are isolated islands (permanent or temporary ponds, marshes, swamps, small lakes) or thin strips (creeks, streams, rivers) in an ocean of land. A combination of distance and direction from a reference point, altitude and stream gradient, latitude and longitude, map grid reference where available, township and section reference in the United States will provide basic data.

For rivers and streams, the use of "river mile" citations combined with distance from a reasonably permanent, man-made feature (town, highway, bridge, etc.) will be satisfactory, when combined with a state or county reference. For other bodies of water, an indication of which shore sector, combined with ecological data on vegetation, depth and substrate, is usually adequate when combined with the basic township and section or latitudinal and longitudinal data.

## Terrestrial Stations

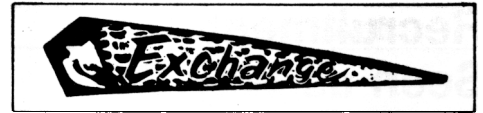
The reproducibility of stations is relatively easy in areas of high topographic relief with prominent landmark features that can be used as locators, and most difficult in areas of little topographic relief without prominent local landmarks. Reference to distance and direction from a body of water, altitude, use of township and section numbers, relationship to a man-made feature, plus the basic county and state locator in the United States, is usually adequate, but the provision of marked maps is perhaps most essential for terrestrial stations.

## Fossil Localities

Fossil locality descriptions typically proceed from the general to the specific, beginning with the name of a large, well-established geographic feature, often the name of the topographic quadrangle, proceeding to smaller and more local features, and finally describing the immediate landmarks and the outcrop itself. Measured distance and direction from a permanent feature (a benchmark is ideal) permit rediscovery of the collecting station. In the United States, township and section references are widely used and are recommended.

In addition to geographic location, a fossil locality description should include stratigraphic data, expressed, if possible, in terms of distance stratigraphically above or below a prominent feature such as a contact or conspicuous bed. The basic rock type (e.g. sandstone or limestone) should be recorded, and a statement of the main rock types and their disposition within the outcrop sampled is desirable.

Observations on the occurrence of fossils sampled at the station — their abundance, orientation, and distribution in the rock — increase the value of the sample and are analogous to ecological data on modern mollusks.



Mrs. Glenda Rowse, 19 Farrell Street, Kirwin, Townsville 4814, Queensland, writes that she would like very much to exchange with collectors, particularly in Japan, who have "quite a large range of shells we cannot get here in Australia." Her specialty is the *Murex* family, but she collects all shells and is willing to exchange any families.

"I would like to exchange common to rare species such as *Lyropecten nodosus*, *Conus delesserti*, etc. for the same worldwide," is the message from John J. Brandyberry, 133 N. Poplar St. (Apt. 7), Elizabethtown, PA 17022. "I am especially interested in exchanging with serious collectors from Hawaii, Japan, the Caribbean, Guam, West Africa, the Indian Ocean and Australia. Or I will exchange with those who have shells from those areas.

"Please send your exchange list with first letter. I will send my list with my first letter."

## PUBLICATION NOTICE

**Thais: 2**, a publication of the Sociedad Panamena de Malacologia in Panama, consists of a "Preliminary List of Bibliographical References of Panamanian Malacological Fauna," written by Prof. Miguel C. Aviles E of the University of Panama. Although the narrative portion is in Spanish, the bibliography itself is in the original language (English in many instances) and should pose no language problems. Citations begin with R. P. Lesson's description of a new genus in 1827 and run through 1976.

**Thais: 1**, received at the same time although published about one year ago, is an annotated list of gastropods, bivalves and polyplacophors collected principally by Prof. Aviles at Punta Paitilla, on the shore of the Bay of Panama near the western entrance to the Panama Canal. Synonyms are included for most species. The author lists 87 species of gastropods, 36 bivalves and three chitons, plus ten scattered species reported by other authors.

Again, the narrative is in Spanish.

The copies of **Thais** received by HMS included nothing about price, but information on this and other aspects of Panamanian shelling is available from Prof. Miguel C. Aviles E., Apartado 6 - 765, Zona Postal El Dorado, Panama, Republic of Panama.



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**Pramparti — Leehmani — Frauenfeldi**

By **ROGER MARTIN**

CEBU — The complex relationships of "Conus pramparti," *C. leehmani* da Motta & Rockel, and *C. frauenfeldi* Crosse evade easy settlement. It is pretty well agreed now that "pramparti" is a *nomen nudum*, but what of the other two? Are *C. leehmani* and *C. frauenfeldi* separate valid species? Or is *leehmani* a synonym of *frauenfeldi*? A wide range of opinion is apparent.

Joe Hayes of Washington, D.C. in HSN Feb. 1982 referred to an earlier article by Dr. G. Richard of the National Museum of Natural History, Paris (*Xenophora* March 1981) on this subject. After quoting from Crosse's original description of *C. frauenfeldi*, Richard (according to Hayes) asserted:

"It is for certain that this was the species which da Motta and Rockel have described under the name of *C. leehmani* because (their description fits) Crosse's original description."

But did it really?

Here is a translation of Crosse's description of *C. frauenfeldi*, together with da Motta and Rockel's original on *C. leehmani*:

*C. frauenfeldi*

as described by Crosse

Shell turbinated, rather stocky and solid, shoulder rather bluntly carinated.

Glossy and appearing smooth albeit, when seen closely, showing a weakly marked cancellated network of growth striae and a number of transverse obsolete lines crossing at right angle.

Rather high and striated and white with a few brown blotches, culminating in a rather sharp pink apex. Number of whorls 11, with 2 nuclear whorls which are smooth and pinkish, while the following 5, more or less pinkish, show particularly to be crowned by a circle of weak granulations (1). The suture is well marked and sunken between two circular ridges.

Grooved at the base.

White. The outer lip strongly notched next to the sutures (2).

Color pattern shows large brown flamules, with angular bending patterned like fulgurations, contrasting on a pure white base. In some of these flamules one can distinguish small indistinct white dots.

42mm X 23mm  
1.82

(1) By this, Crosse obviously meant that the whorls are weakly beaded. Da Motta, in his remarks, says that the 4/5 post embryonic whorls are finely pustulose in the young *C. leehmani*.

(2) This refers to the anal notch.

Now, if we compare the pictures in Dr. Richard's article in *Xenophora*, pages 9 and 11, the following may be noted:

Page 11. The spires of the lectotypes and paralectotype of *C. frauenfeldi* appear to be straight, with the top of the whorls also flat or even slightly convex. On the basal end of the specimen shown on bottom right, despite the periostracum, grooves are discernable. In pictures, showing ventral sides, the apertures appear to be straight, the outer lip parallel to the inner edge of the aperture.

Page 9. The two *C. "frauenfeldi"* figured differ from the lectotype and paralectotype shown on page 11. Obviously, they are specimens of what da Motta describes as *C. leehmani*. The shoulder appears more rounded and bulging, the spire obviously de-

*C. leehmani*

as described by da Motta & Rockel

**Body shape:** Shell solid and turbinated, with bulging shoulder, straight sides.

**Body surface:** The body surface is smooth but finely striated, more pronounced longitudinally.

**Spire:** Depressed spire consisting of 11 whorls, the earlier seven being conic with a sharp apical point, sloping down to four flattened, wider, deeply channeled whorls, having about five fine threads to each volution, all marked with reddish-brown wormlike maculations in a radial pattern.

**Body sculpture:** Obsolete spiral incisions at the base, noticeable only on very close examination.

**Aperture:** Porcelaneous white and narrow beginning from the posterior end, but very gradually widening towards the base.

**Color pattern:** The body whorl has two belts of fawn superimposed with irregular figurations of chocolate brown between three plain dividing areas of cream, with some patches of fawn.

**Size:** 65.3mm X 34mm  
**L** 1.92  
**W**

pressed and concave, the top of the whorls concave.

The aperture of the specimen on the left shows noticeable widening towards the base without any visible grooves.

Did Crosse and da Motta really describe the same shell? Are the differences noted above, particularly the spire and color pattern, insignificant as criteria of distinction? That seems to be Dr. Richard's opinion.

And, yet in his comparison (in the same article) of *C. gauguini* Richard and Salvat, 1973 and *C. barthelemyi* Bernardi, 1861, Dr. Richard stresses differences in spire and, at some length, the differences, in ornamentation to make his point of distinction between the two almost identical shells.

Crosse, himself, in his remarks at the end of *C. frauenfeldi*'s description, pointed out "la disposition des flamules" as a decisive element of distinction from other species. On the evidence, I submit it is very questionable to feel "for certain" that *C. leehmani* can possibly be *C. frauenfeldi*.

## WOULD YOU BELIEVE 18 NEW CONES? (Cont'd from Page 1)

*arius*, in any event, is not a variety of *C. textile* Linne but is a form of *C. ammiralis* Linne."

The new taxon, *C.t. neovicarius*, is proposed as a substitute for *C. vicarius* of authors and not for *C. vicarius* Lamarck non Linne.

### 5. *Conus textile dahlakensis* da Motta

A subspecies apparently endemic to the Dahlak islands of the Red Sea off Massawa, Eritrea (Ethiopia), *C. textile dahlakensis* was taken by local divers in shallow water. The holotype measures 87 x 40mm.

*Conus textile dahlakensis* differs from the typical *C. textile* in lacking the usual concave spire, ventricose sides and oval contours.

### 6. *Conus rubropennatus* da Motta

Seemingly endemic to Reunion Island in the Indian Ocean, *C. rubropennatus* is described as the smallest member of the subgenus *Darioconus* Iredale. In the past it has mistakenly been identified as *C. stellatus* Kiener, according to da Motta, who adds that the new identification necessitates selection of a new name for what in Hawaii has been called *C. elisae* Kiener. But Hawaii's *elisae* has been shown pretty convincingly to be merely a color form of *C. pennaceus* Born so, if da Motta's new species is generally accepted, that problem is probably moot.

*Conus omaria* Hwass is said to be the closest relative of the new species. *C. pennaceus* Born has a more depressed and concave spire, with much broader shoulders. *C. canonicus* is closer in general appearance but differs structurally.

Da Motta refers to *C. rubropennatus* as "a distinct and uniquely beautiful species."

### 7. *Conus patonganus* da Motta

Another shell with a restricted distribution, *C. patonganus* was brought up from about 100 feet off Raya Island, near Phuket, Thailand. It also is similar to *C. omaria*, but is said to be a much heavier shell, not so cylindrical or elongated. The holotype measures 54 x 27mm.

"The species has been under observation for six years," da Motta wrote. "The conclusion to separate it as a distinct species was reached after studying growth series and a considerable number of specimens at different times, all of which have shown that it consistently possesses the same morphological characteristics, quite different from any of its several congeners."

### 8. *Conus skinneri* da Motta

This new cone was named in honor of HMS members Renate and Edwin Skinner of North Carolina. The species appears to be endemic to the vicinity of Nusa Tenggara, on the east coast of Bali, Indonesia, where Mrs. Skinner lived for several years and did extensive field work.

*Conus skinneri* is compared with *C. nobilis* Linne, *C. corigera* Sowerby and *C. victor* Broderip, from all of which *skinneri* differs in color pattern, shape or size, according to da Motta. This is particularly true of *C. victor*, which is closest morphologically but which it greatly exceeds in size (50mm vs. 70mm).

### 9. *Conus krabiensis* da Motta

Another Raya Island shell that has been under observation six years, *C. krabiensis* appears to be a dwarf of *C. generalis* Linne. The holotype measures 45 x 19.5mm.

### 10. *Conus kantanganus* da Motta

Named for the Thai port of Kantan, *C. kantanganus* is found on both sides of the Andaman Sea, as well as in the Bay of Bengal off Madras,

South India. Da Motta noted that it has been identified mistakenly in the past for *C. longurionis* Kiener, which in turn is mistaken for *C. aculeiformis* Reeve.

"Neither of these two species resembles the exquisite flowing lines of the new species, which is also remarkable for having the same sculptural characteristics covering the entire surface from the apex to the base without any apparent interruption," da Motta wrote.

### 11. *Conus samiae* da Motta

Part of the bounty from the Balut Island area off Davao, in the Southern Philippines, *Conus samiae* honors another HMS member, Mrs. Samia Martin of Cebu, who with her husband Roger has been an active collector and student of Philippine molluscs for many years. It was brought up in bottom nets from about 200 meters and so far has been certainly found only in the Balut area.

*Conus samiae* is close in general appearance to *C. batheon* Sturany, but has a lower and somewhat convex spire, with flatter, smaller nodules. It also is compared with *C. bocki* Sowerby, but differs in its smooth body whorl.

The holotype measures 57.5 x 34mm.

### 12. *Conus fulvobullatus* da Motta

This new species "appears to be congeneric with *Conus bullatus* Linne (but *bullatus* has a narrower shoulder (and) more ventricose side, but the color and pattern have no resemblance." Ground color is white with large golden-yellow maculations, occasionally daubed with dark brown, in two broad vague bands, encircled with continuous rows of brown-dot interrupted spiral lines.

The range includes the Strait of Formosa, Palawan and Jawa Timor, Indonesia. The type specimen, trawled off the east coast of Malaysia, measures 52.5 x 25mm.

### 13. *Conus gabelishi* da Motta & Ninomiya

As the name suggests, *C. gabelishi* comes from the Great Australian Bight, where the species was first pointed out by HMS member A. J. "Tony" Gabelish. Specimens were trawled in 400 to 700 feet of water off Esperance and Albany, W.A. They are known only from that area.

The new species is closest to *C. suturatus* Reeve, but does not have a nodulose shoulder or a lavender stain at its base. Color and pattern somewhat resemble *C. infrenatus* Reeve but the shapes differ. Otherwise, *C. gabelishi* "appears to be quite a distinct species."

The holotype, which is deposited in the National Science Museum, Tokyo, measures 35.5 x 19.3mm.

### 14. *Conus orri* Ninomiya & da Motta

This new species has body contours resembling those of *C. africanus* Kiener, but does not have its very convex spire. Color and pattern are similar to the unusual reticulated form of *C. mercator* Linne

found in N'Gor, Senegal. *C. orri* usually can be singled out from among West African cones by its broad shoulder and squat appearance.

The holotype, which was found under rocks on an exposed reef at Bojol Island, Gambia, West Africa, is deposited with the National Science Museum, Tokyo. It was named for HMS member John Orr, a former resident of Gambia.

### 15. *Conus gracianus* da Motta & Blocher

Size is an important characteristic of *C. gracianus*. The holotype measures 44 x 15mm and the maximum is said to be 60mm. *Conus aulicus* Linne, found in the same area and strongly resembling the new species when young, attains lengths in excess of 130mm.

*Conus gracianus* is found on the seaward side of the "Grand Recife" at Tulear, Southwestern Madagascar. Shells are most often collected after a few days of heavy swells against the coast.

An unfortunate typographical error in publishing the new name probably will require emendation.

### 16. *Conus lenavati* da Motta & Rockel

*Conus lenavati*, taken in approximately 200 meters of water near Punta Engano, Cebu, in the Central Philippines, is described as "allied" to *C. sugimotonis* Kuroda which, however, is a much larger and longer shell. The periostracum is light brown and transparent. Da Motta compares the new shell with *C. tribblei* Walls, a narrower shell with straight sides and a more cylindrically elongated body whorl.

The species is named for HMS member Phairot Lenavat of Bangkok, who first noted the distinct morphological characteristics.

### 17. *Conus garciai* da Motta

Known only from the area off Punta Patuca, Honduras, *C. garciai* somewhat resembles *C. cingulatus* Lamarck. In structure, however, it is much like *C. cancellatus* Hwass. Base color of the body whorl is a uniform coffee brown, "as if painted in arching longitudinal brush strokes."

The species was named for HMS member Dr. Emilio Garcia of Lafayette, LA. The holotype is 59 x 28mm.

### 18. *Conus rogmartini* da Motta

Writing in Carfel's *Philippine Shell News*, da Motta has proposed *Conus rogmartini* as a new species from the deep water (120 fathoms) off Balut Island in the extreme southern Philippines. Known so far only from that area, it measures 32 x 17mm. The intricate sculpture is evident in the figure on page 1 of this issue. Da Motta compares *C. rogmartini* with *C. adonis* Shikama, *C. raoulensis* Powell and *C. floridulus* A. Adams & Reeves, from all of which it can be separated, he says.

The name recognizes Roger Martin of Cebu.

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## HMS JUNE MEETING

It was Treasure Hunter's Night at the June meeting of the Hawaiian Malacological Society. Spencer Tinker, veteran HMS member and former director of the Waikiki Aquarium, recalled his sabbatical-year visit to Bermuda in the 1960s and the treasures from sunken ships on display then. Most of them were at the Bermuda aquarium.

His slides illustrated not only the gold coins, bronze cannons, glass bottles and iron artifacts recovered from fifteenth and sixteenth century ships lost on Bermuda's reefs, but they also showed some of the methods used to locate them. One bit of advanced technology was the use of a tethered balloon to give the treasure hunter a better view of the reef. A photo taken from aloft clearly showed the outline of an ancient ship.

Not to be outdone, several other members showed their own treasures from the sea. The prize undoubtedly was a Spanish silver 'piece of eight' carried by Dr. Tom Richert. It had been recovered from a sunken galleon off Indonesia.

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## 1001, 1002, 1003 . . . Job Goes Forward On Big Shell Sale

Sounding pretty tired, HMS auction chairman Wes Thorsson announced in mid-June that he had passed the 1,000 mark in pricing items for the Society's 1982 Shell Auction, scheduled for the afternoon of 18 September in Honolulu.

"I still have between 2,000 and 3,000 lots to go," he added resignedly, looking from his work-room window at the sparkling waters of Maunaloa Bay.

The biennial HMS Shell Auction and Sale is the principal source of funds for the Society's scholarship program which this year awarded a total of more than \$5,000 to eight advanced students in malacology. The bulk of this year's sale material is from the collection of Bessie Arnold, an early HMS member who died two years ago at the age of 102.

About 100 lots of the material for which there is likely to be stiff competition will be auctioned. The remainder are to be put on sale at fixed prices. There also will be a "silent auction" of other items.

"The variety and scope of the land-snail collection has made it desirable to retain most of the collection as a unit," Thorsson went on. "Consequently, we will be selling the land snails in three parts — two, containing representatives of most of the species, at auction, and a smaller remainder including triplicates at table sales.

"The two auction lots contain 50 to 60 species each, usually in packets of two or more shells. The collection is worldwide."

The expense and manpower involved in preparing individual printouts of the table sale lists make it impractical to distribute such lists. Thorsson has a master list, however, for inspection.

A similar situation prevails with the limpet like shells. The list contains four assortments of 50 to 60 species each.

"No limpet fan can afford to miss these surprise packages," warned Thorsson.

"And, by the way, remember that the auction list includes a virtually complete set of HSN from the early 1950s through 1978, plus a number of popular and useful shell books. You can write for a list of auction material. If you can't attend the auction in person, select the items you want and arrange to bid by proxy."

Proxy bidding can be set up by writing to Wes Thorsson, Auction Committee Chairman, 122 Waialeale St., Honolulu, HI 96825, or in care of HMS, P. O. Box 10391, Honolulu, HI 96816. State your opening bid and the maximum you are prepared to pay.

As he prepared to insert more little labels and little shells in little bags, Thorsson asked to have the auction committee's thanks conveyed to all donors.

"They, and the people who help with the sorting and selling, make the scholarship program possible," he added. "Among the latter I include Bob

## THIS MAY BE THE WORLD'S BIGGEST



Purtymun, of West Point, California, who came to Hawaii last week for what he thought was a rest. He knows now that accepting an invitation to visit the Thorssons amounts to taking on a work detail for the auction."

Purtymun was impressed with the extent and variety of the offerings, but his comments were largely unprintable.

*Photo: Jackie Marsall*  
Along with the rare shells, the national shell-of-the-show winners, the color forms and examples of "The Shell in Art and Decor" at the recent fifth annual show at Ruth Greenberg's Tidepool Gallery in Malibu, California was what is probably the world's largest gastropod shell — this 36-inch *Syrinx aruanus* Linne owned by HMS member Don Pisor of San Diego.