

# Hawaiian Shell News

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## Feeding Observations Of *Conus nussatella* (Linnaeus 1758)

by ALFRED R. CALABRESE JR.

A live *Conus nussatella* was found at Makaha recently. Although common throughout most of the Indo-pacific area, it is rare in Hawaii and a find worth keeping alive. Thanks to Neal Seamon's informative talk on "mini-tanks" at the August, 1970, HMS meeting, I was able to observe its behavior for 8 days in a 6" x 4" x 3" tank.

When first placed in the tank, *C. nussatella* was very active, and a good camera subject. The animal is a very pale yellow, with the only other color being a black tipped proboscis. The eye stalks are yellow and branched. This specimen was 36mm x 12mm, and its' proboscis extended another 12mm. Attached to the shell was one small *Hipponyx conica* (Schumacher) (See Photo). The operculum was not observed until the animal died and was cleaned. It was only 1mm in length, yellow, and quite thin. Periostracum is thin, yellowish and translucent.

Not knowing what to feed *C. nussatella*, I placed 2 live *Drupa granulata* (Duclos) in the tank. These were the only specimens from the days' collecting, that were small enough to try. Immediately, *C. nussatella* went to examine each of the newcomers. After inspecting both

drupas, it returned to the far side of the tank and ceased all activity.

The following morning, upon examination, the *C. nussatella* was semi-buried in the sand, and an empty *D. granulata* lay nearby, with the operculum missing. After work the next day, I returned with a live *Conus retifer* (Menke 1829) found in Makaha by Les McCracken. The *C. retifer* was 24mm long and showed little sign of activity. Before placing *C. retifer* in the tank, I inspected the second drupa, only to find it too, empty. But this time, the operc was lying in the sand nearby.

Desiring to catch the *C. nussatella* in the act, I spent most of the night watching to see which of the two cones would become aggressive. Morning came, and it was time to go to work, but neither cone appeared to move. Again after returning from work, remained a partially empty *C. retifer*, foot missing, but the soft parts still there. After two days of inactivity, I removed the *C. nussatella* from the tank and found it had died. Whether this occurred as a result of combat with *C. retifer* or from other causes is unknown.

The animal parts were soft, and it cleaned

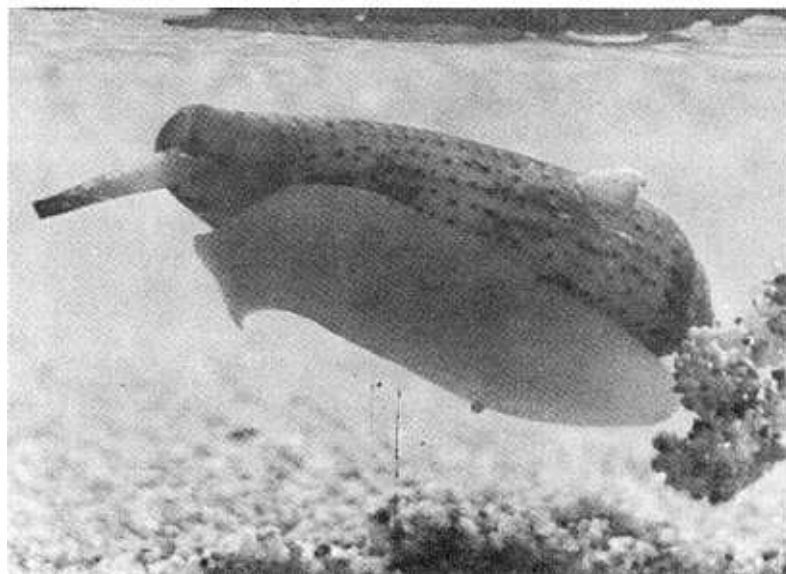
easily in one piece. After careful microscopic dissection, I found the missing *D. granulata* operculum. Although I have dissected many cones before for examination, no radula barbs were found. It is possible however, that they might have been missed.

A closing note of interest is that the *C. nussatella* fed twice during the day, and only once at night, indicating it might not be as nocturnal as most of the other *Conus* species.

*Ed. note: An article on C. nussatella appeared in the September, 1968, HSN (Vol. XVI, No. 9, New Series No. 105) describing the shell and animal. Researchers on this species should also consult Dr. Alan Kohn's description appearing in Pacific Science, Vol. XIII, for October, 1959. This shell is illustrated in color in Kira's Colored Illustrations of the Shells of Japan, Plate 37, No. 17 and in Melvin's Sea Shells of the World, Plate 20, No. 15.*

*The Hipponyx species shown attached to C. nussatella in the photo below has developed a commensal relationship with this and similar gastropods and feed on the fecal pellets secreted by the host shell.*

*Ed. note: HSN editor dissected a 50mm C. nussatella several years ago and found several small (1.3mm) radular teeth in the radular sac. The barbs were heavy in structure for their size. Photo below by Cross, approximately 50x.*





## Hawaiian Shell News

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Hawaiian Malacological Society  
(Founded in 1941)

2777 Kalakaua Avenue  
Honolulu, Hawaii 96815

The society meets the first Wednesday of each month at the Waikiki Aquarium at the above address, 7:30 P.M. Visitors welcome!

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Items of interest to shell collectors are solicited for publication in the Shell News. Deadline is 10th of the month preceding date of publication. Address all contributions, comments, suggestions, and other correspondence, including information and payments for ads to The Hawaiian Malacological Society, 2777 Kalakaua Avenue, Honolulu, Hawaii 96815. Advertisements are accepted at the rate of \$5.00 per column inch per issue. For special six or twelve time rate write The Editor.

## LETTER FROM AN IRATE DIVER

A letter was recently received from Mr. Fred Ziemendorf, 6154 Kalaniana'ole Highway, Honolulu, Hawaii 96821, which stated, in part, "Since my return (to Hawaii) I have made several dives with various members of the M. S. (HMS) and therein lies the reason for this letter. The methods used by the divers I was with consisted of demolishing coral heads as large as 4 to 6 feet in diameter with the aid of pry-bars and pick-axes in the hopes of finding shells. Considering the length of time required to grow these heads, they are for all practical purposes, irreplaceable. On one of the dives there were as many as eight heads destroyed. . . . Another (diver) was talking about the proposed deepening and dredging of the Hawaii Kai bay area which would kill off the coral so he might just as well get in their and get them while he can. Of course we were diving in 50 to 60 feet of water at the time so I doubt if they will deepen it there. It has been my belief that one of the aims of the Society has been conservation, but if this is an example of how it is practiced I want no part of it (the HMS)."

As Editor of HSN I receive a number of letters similar to Mr. Ziemendorf's during the year. Most of them have even less reason to condemn our Society than Mr. Ziemendorf does. I agree that shell collecting divers should not wantonly tear up coral heads. But not neces-

sarily because they are "irreplaceable". Experienced diver-collectors know there simply are so few shells in the large coral heads when compared with the number that might be found under smaller, loose, coral rubble type material. The question also comes up, what good is a coral head in 50 to 60 feet of water? Still other questions arise. If more species of marine life can exist in the rubble from a coral head than could exist in the original coral head, why not tear it up? Another thought, coral grows much faster than most people realize, at least some varieties do, and a coral head might easily be "replaced" in a matter of ten years or so. Coral heads in 60 feet are likely to be remnants of a past geological epoch since most corals do not grow at that depth. As for collecting in 50 to 60 feet in an area adjacent to a future dredging project and making the statement that they won't be deepening such an area is to not know the facts about dredging. Silt, fine and deadly, spreads for miles from the dredging site and envelopes all marine life in it's smothering blanket. My final thought on the matter is to wonder if a mature person, capable of constructive thought, would condemn a Society of 1,200 members because of the action of three or four persons. It seems to me Mr. Ziemendorf might get to know the marine environment, and our Society, a little better before beginning condemnation proceedings.

## BOOKSPEAKING FOR SHELL COLLECTORS

by E. R. CROSS

Many Journals of the multitude of Societies existent throughout the world are not the most interesting reading that comes across an editor's desk. One of a few journals that are exceptions is the Journal of the Malacological Society of Australia. Recently Vol. 2, Number 1, for August 17, 1970, was received. A great deal of work by the publications committee is evidenced in the quality and interest contained in this issue.

The aim of the Malacological Society of Australia is to promote the study of recent and fossil Mollusca and associated invertebrates. With this in mind the reader is presented with a variety of subjects and areas of malacology of interest to the serious collector. The excellent photographic illustrations of specimens and line drawings of parts of the shells and animals provide a means of greatly increasing a person's understanding and enjoyment of shells.

Several new species of shells are described in the current issue. Other papers describe the morphology of various species of shells. One of the most comprehensive and, to me, informative was Dr. W. F. Ponder's discussion of the mor-

phology of four species of Marginellidae. Apparently marginella are poisonous shells. Dr. Ponder's 27 page discussion of this group of shells was most complete, well illustrated, and well referenced. Incidentally, the unusually complete references provided in each paper would be of considerable help to other workers.

This is an annual publication and copies are available at \$4.50 (Australian) each. Also back issues of Volume I are available. Write to The Journal Treasurer, Malacological Society of Australia, c/o Dr. B. J. Smith, National Museum of Victoria, Russel Street, Melbourne, Victoria, 3000, Australia.

### ALSO RECEIVED:

Description of a New Cowry from Taiwan, by Phillip W. Clover, describing *Cypraea (Lyncina) joycae* sp. nov. This was a reprint from Venus, the journal of the Japanese Journal of Malacology, Vol. 29, No. 2, for May, 1970. The shell was dredged from a depth of 280 meters (about 900 feet) off the coast of S. W. Taiwan. The shell is cream colored with slightly darker bands and light brown spots.





## THOSE WONDERFUL RARE SHELLS

by MICHAEL L. KLING

*Ed. note: In his forwarding letter to the HSN Michael Kling states, "I started collecting shells when nine years old when I bought a big beautiful Strombus gigas. I have been collecting and studying shells for four years now because I am 13 and ever since I have enjoyed shells very much. In a few years I hope to go on a one year shell collecting trip to Australia and the Philippines. The photo I am sending you (left) is nothing much but it was the best one I could find." Signed, Sincerely, Michael J. Kling. Now, Michael's thoughts on rare shells.*

Almost every collector wants a beautiful rare shell in their collection because of its rarity and beauty. Perhaps the first of these — and one still greatly admired and avidly collected, although no longer at astronomical prices — is *Epi-tonium scalare*, the precious wentletrap. A lovelier thing is hard to imagine. Christened by the Dutch with their word for "spiral staircase," it was the possession of royalty. Emperor Francis I, husband of Maria Theresa, payed 4,000 Austrian guilders for one in 1750 — a sum roughly translated into \$20,000 today. Catherine of Russia owned a large one; so did Queen Louisa Ulrica of Sweden. In recent years, as shell collectors have probed into the lairs of wentletraps near Sumatra and Australia and other parts of the Indo-Pacific, the price has fallen. One dealer, in 1958, listed two of these "very rare beautiful shells" for only \$5 and \$3 respectively. Still one must wonder how any price could truly reflect the wentletraps' intricate structure and beauty of design.

For more than two centuries collectors considered the rarest and most expensive shell in the world to be *Conus gloriamaris*. This beautiful shell resembles the common textile cones but their sides are much more rounded and their spires less elevated. *C. gloriamaris* with its tapered spire and its elegant color patterns, reticulated like the finest needlework, satisfies both the artist's requirement of exceptional beauty and the collectors demand for exceptional rarity. Before 1837 only a half a dozen were known to exist. In that same year a famous British collector Hugh Cuming, visiting a reef near Jagna, Bohol Island, in the Philippines, turned over a small rock and found two, side by side. He recalled that he nearly fainted with delight. When the reef vanished after an earthquake the world believed that the only habitat of *C. gloriamaris* had disappeared forever. So famous did this shell become that in 1951 the world was reminded of its continued value when someone, still unknown, broke into a display at the American Museum of Natural History and carried off a perfect specimen. Prices of *C. gloriamaris* still run into hundreds of dollars but there are now 70 of this rare shell residing in collections. A few other shells are now considered more valuable, such as the magnificent glory of India, *C. milneedwardsi*, of which only

a dozen have been found.

Among the cowries, *Cypraea leucodon* rules supreme; three are known — one in the British Museum, one at Harvard University, and one in the extensive private collection of John E. duPont of Newtown Square, Pennsylvania. Another very popular rare cowrie is *C. aurantium* which has a beautiful orange-gold shell and is a choice collector's item from Melanesia.

*Conus granulatus*, glory of the Atlantic cone, is a greatly sought rare species that is occasionally collected on the reefs off the lower and middle Florida keys. It is more common in the Caribbean.

Among the volutes *Scaphella junonia* is not so rare but is a collector's item from Florida. Its beautiful shell has brown spots with a cream background. *Volutoconus bednalli* is a very rare volute from Northern Australia. It is found only in important collections.

## REPORT CASES OF CONE STING TO DR. KOHN

In January, 1967, HSN referred to cases of *C. rattus* sting in HMS members. Those persons can not now be located. Dr. Kohn would like a report on these, and any other, cone sting cases. Send him information as outlined below to the address listed:

Name of person stung:

Date of sting:

Location:

Species of *Conus* responsible:

Length of shell:

Present location of specimen:

What part of body was stung?

What were the immediate effects  
of the sting?

How long did these effects last?

Were there any after-effects?

If so, how long did these last?

Was the wound treated in any way?

Was medical attention obtained?

Name and address of doctor and/or hospital:

Please return to: Dr. Alan J. Kohn, Department of Zoology, University of Washington, Seattle, Washington 98105 U.S.A.

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# MONSTROSITIES IN COWRIES

by F. A. SCHILDER

Most collectors like perfect specimens showing the ideal features of the species. But several collectors are also interested in monstrosities, i.e. in shells which show abnormal characters in color or shape caused by disease of the animal or by accidental injuries of the shell healed by the animal during its later life. The most instructive collection of such pathological cowries was gathered by the late Ph. Dautzenberg, Paris (The shells are now preserved in Brussels), but also Mr. K. Uetz in Vienna is keen to obtain monstrosities. In 1930, I tried to arrange systematically the causes of various deformations in cowrie shells (*Zeitschr Morph. Oekol. der Tiere*, 19:144).

The most frequent monstrosities and their causes can be arranged in one of the five following groups:

Group A: Shape normal, but dorsal markings unusual, as the uppermost layer of enamel is absent because of disease of the mantle and with the color of juvenile stages visible.

Group B: Shell accidentally broken chiefly along the right margin, but later healed by additional deposits of callus during the animal's life.

Group C: Foreign bodies, from mud particles

to barnacles, entered between the shell and the mantle that were coated by an accessory layer of enamel differing from the usual color.

Group D: The spire projects far more than in normal shells; this rare abnormality may be caused by internal parasites as has been shown in some land snails.

Group E: Rostration: extremities produced, outlets recurved, base concave especially in front, frequent tendency to melanism (markings confluent and blackish). But I doubt whether or not rostration should be called a monstrosity: its features are too regular, and the occurrence is too frequent in certain areas so that now I think it a natural mutation.

Recently I received the following specimens, the photographs of which may illustrate the five groups of monstrosities:

Group A (Fig. 1): *Erosaria caputserpentis*, Borogan, Samar, 26mm. Dorsum zonate as in juveniles, the brown network is restricted to three areas above the right side, margins and base pathologically tuberculate, but teeth normal.

Group B (Fig. 2): *Cypraea tigris*, Mactaan, Cebu, 72mm. The outer lip of the juvenile shell

had been broken off anteriorly but the denticulate outer lip of the adult was formed later, about 8mm inside of the rather sharp edge.

Group C (Fig. 3): *Mauritia arabica*, Corregidor, Philippines, 44mm. There is a barnacle attached to the dorsum above the left anterior extremity; one cornacle is entirely covered by a thick layer of greenish grey accessory enamel.

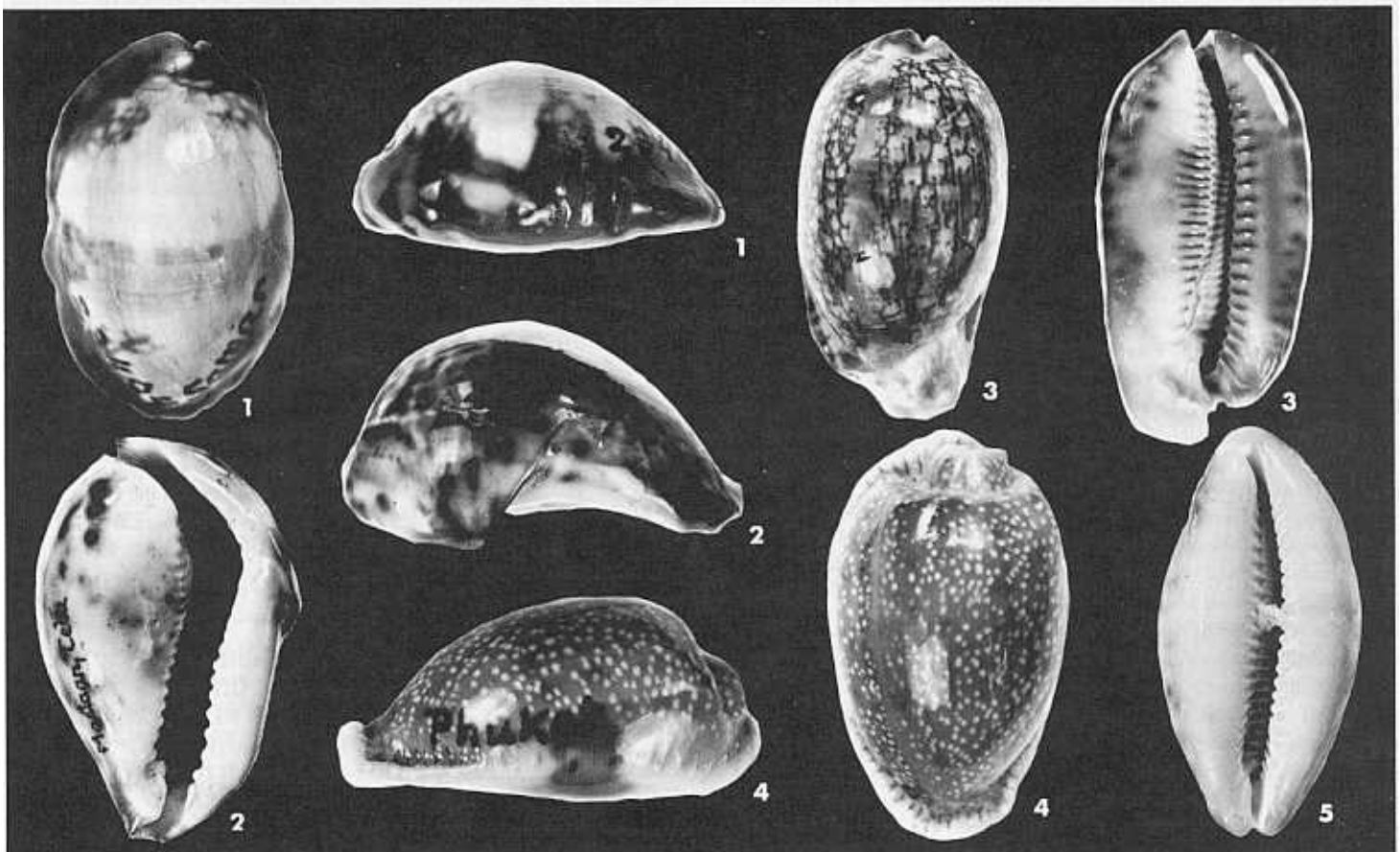
Group D (Fig. 4): *Erosaria erosa*, Phuket Is., the West Coast of Thailand, 33mm. The first and last whorls of the spire flattened as usual but the intermediate whorl excessively projecting; color normal (see also HSN 81:2, 1966).

Group E (Fig. 5): *Lyncia lynx*, Heron Is., Queensland (subrecent), 55mm. Extremities produced, outlets narrow, markings normal, but pale orange by beginning fossilisation. (This shell should be called "substrate" only.)

All figured shells are preserved in the writer's collection: the shells represented by the figures 1 to 4 were presented by Mr. J. Orr, Bangkok, and fig. 5 by Mr. W. H. Butcher, St. Kilda, Victoria.

Cowry monstrosities: Fig. 1: *C. caputserpentis*, 2: *C. tigris*, 3: *C. arabica*, 4: *C. erosa*, 5: *C. lynx*.

Photos: Floegel



# POLLUTION AND COLOR CHANGE IN COWRIES

by RUTH FAIR

From our observations of *Cypraea caputserpentis* at different locations about the Island of Oahu we have come to the conclusion that there is a definite relationship between water pollution and the coloring of *Cypraea*.

In the area of Sandy Beach on the southwest end of Oahu, for instance, the coloring, pattern and size of *C. caputserpentis* is "normal" for the species: (average size 25mm length X 20mm width). In this same area the coloring of *Ulva reticulata*, which appears to be a main staple of the Cypraeid diet, is a common chartruse or lettuce shade and of light distribution on rocks at, or just below, tide line. There is no outfall or potential pollution in this section which is washed clean by constant heavy currents from the Molokai Channel.

The northwestern tip of Sand Island near the entrance to Keehi Lagoon shows a definite pattern of water pollution. The "lingering odor" is a dead giveaway, of course. In addition to this, the *Ulva reticulata* is a heavy overgrowth on all the rocks and dead coral chunks and is of a deep blackish-green color. Referring to the map on Pg. 4, H.S.N. November 1964 edition, we see that in this area (marked Area 4) there is a sewer line leading out to sea and the water is comparatively shallow.

The *C. caputserpentis* observed in the Sand Island area are darker and generally larger, (from 29mm X 21mm to 37mm X 26mm) with some adults showing a definite dorsal stripe of

darker color and a general blurring of the dorsal spots, plus the absence of the usual whitish blotches at anterior and posterior ends and a quite blackish base.

During March and the early part of April, Area 4 at Sand Island appears to be a "nursery" for *C. caputserpentis*. Virtually every rock we turned over during our shelling trips in this time period had at least one "bulla" caputserpentis — and often there were as many as four juveniles attended by a full-grown adult.

During this same time we observed a heavy population of large sea hares tending egg masses, and an exceptional number of fire-worms (bristle worms) so caution is the word for littoral shelling at Sand Island, since the sting of these "pink sea-centipedes" is extremely painful.

A difference in the coloration of *C. teres* between the two afore-mentioned areas was noted during this same period of time. The two *C. teres* we collected at Sand Island were broader, larger and had a pinkish base, in contrast to the smaller, more slender white-based *C. teres* collected at Sandy Beach.

Since these observations are those of amateurs, and cover a limited area of one island in Hawaii, we would be interested in observations from other areas around the world — testing our theory of a direct relationship between water pollution and shell coloring.



*C. caputserpentis* collected at Sandy Beach, Oahu.



*C. caputserpentis* collected at Sand Island, Oahu, near sewer outfall.

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# Skin Diving For Shells

by BOB PURTYMUN

Shelling around the Island of Oahu, Hawaii, is a tough job. The bottom has been well combed, but there are gems that reward the persistent.

Last month, October, 1970, I spent 17 hours, 5 minutes in thirteen dives. (Skin diving). The first four dives brought only a few nondescript shells; but the fifth, **NOW THERE WAS A DIVE!** Fairly clean water, about twenty feet deep, off Makaha. The first specimen was a nice *Drupa speciosa*, 42mm high, taken on the roof of a coral cavern. A little while later, when I turned over a slab of dead coral, there was a fine *Conus textile*, 92.5mm high. Before heading for the beach, I added a high-domed *Cypraea maculifera*, 68mm high and a *C. helvola*, 18.5mm high to my bag.

My sixth dive off Diamond Head tallied five *Conus pulicarius*, one *C. flavidous*, one *C. lividus* and one *C. abbreviatus*. The water was fairly calm and clean.

The seventh dive, off Kahe Point, brought an excellent pair of *Cypraea mauritiana*; one 105.5mm high, 70mm wide, the other 89.5mm high, 66mm wide. These shells have very dark bases, with good dorsal spotting.

The eighth, also off Kahe point, yielded two *Thias aperta*, whith thick, heavy shells, 67mm and 57mm high. They were under water, on the face of a cliff, well-covered with aquatic growth.

On October 17th, I was back at Makaha for my ninth dive, spearing Octopus for pupus, when I found a 70.5mm *Conus distans*. It is a beautiful shell, with the brown shading to a lavender cast on the lip.

The tenth dive, at Kahe Point, drew a blank, except for the usual common shells, but the eleventh yielded a medium-sized *Terebra crenulata*, 65mm high, and four *Conus abbreviatus* off the rocks at Makapuu Beach.

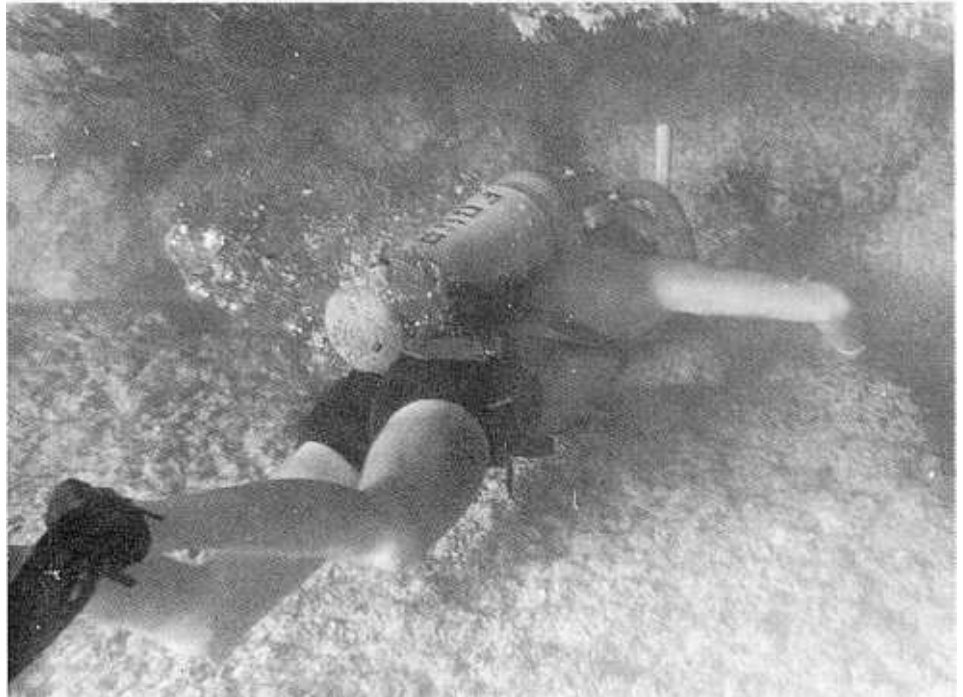
On October 24th, on the open reef, in about fifteen feet of Makaha water, the catch was two *Conus distans*, 93 and 83.5mm high. The smaller had a *Hipponix pilosus* attached to the spire, and, as it had moved a number of times, there was considerable erosion.

The thirteenth, and final dive of the month, off the rocks near the Makai Range yielded some fine exercise, as the water was fairly rough and not too clear.

So, it seems that my type diving nets about one good shell per water-hour. Wish every month was as good.

*Ed. note: HSN wants to welcome our new advertiser SKIN DIVING HAWAII (right). One of the oldest diving companies in Hawaii, this organization will soon have a specially built boat available for charter to shell collectors. More importantly their operators know where the shells are. Drop by their office.*

# SCUBA DIVING FOR SHELLS



As pointed out by Lyman Higa in Recent Finds, below, scuba diving offers the collector an ideal way to get those hard to find shells. The habitat shown above should produce olives, miters, and other shells in the sand found in such areas.

## Recent Finds

by LYMAN HIGA


I wonder how long satellite-live football games on TV will keep the diving shell collectors away from the many "favorite" collecting spots? Or the rains? And the air temperatures in the 60's? And water temperature at 78 degrees? Only a very few collectors reported finds this past month.

Wes Thorssen, George Cook, and Dave Gonsalve all found *Cypraea tessellata* plus many other good shells in Moanalua Bay. All were collected in 40 to 50 foot depth using scuba.

New collector Francis Shitabata found the

rare (for Hawaii) *Cypraea carneola* on his first collecting trip with scuba. Francis also collected a large *Terebra maculata* (uncommon during winter months) and *Cassis cornuta*. These too were found in Moanalua Bay in 40 to 50 feet while diving with scuba.

Scuba diving for shells gives the collector the opportunity to be selective in his collecting. The habitat can be studied and in a short time the place to look for each shell is known. Now, with charter boats available economically from the dive shop (see ad below) new, off-shore, areas for collectors are available.



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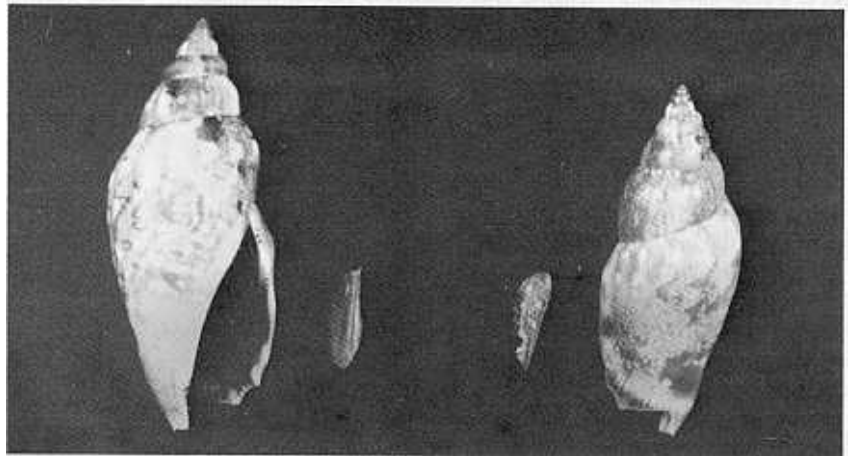
**CHARTERS:** COAST GUARD LICENSED: 4 BOATS DIVING CHARTERS FOR FULL DAY OR HALF DAY

**EQUIPMENT:** COMPLETE LINE OF DIVING EQUIPMENT SPORTSWAYS - DACOR - U.S. DIVERS VOIT - SCUBAPRO - HEALTHWAYS S.M.G. - SWIMMASTER & OTHERS

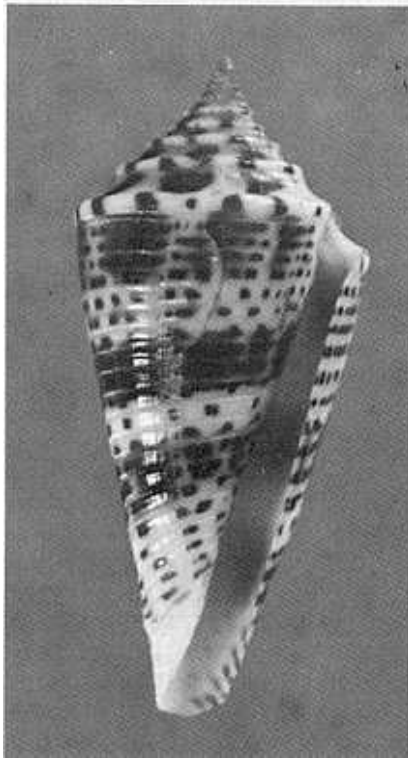
**COMMERCIAL:** SALVAGE, TESTING, SOUNDING, PHOTOGRAPHY HIGH PRESSURE PNEUMATIC SYSTEMS

*Strombus dentatus* Linne — Hawaii

F. Adams

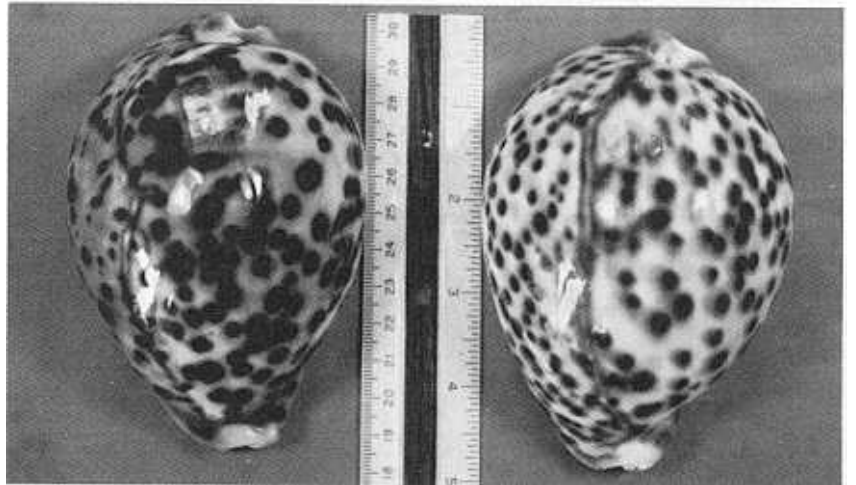


*Conus eugramatus*, B. & R. — Hawaii



*Cypraea tigris schilderiana* Cate — Hawaii

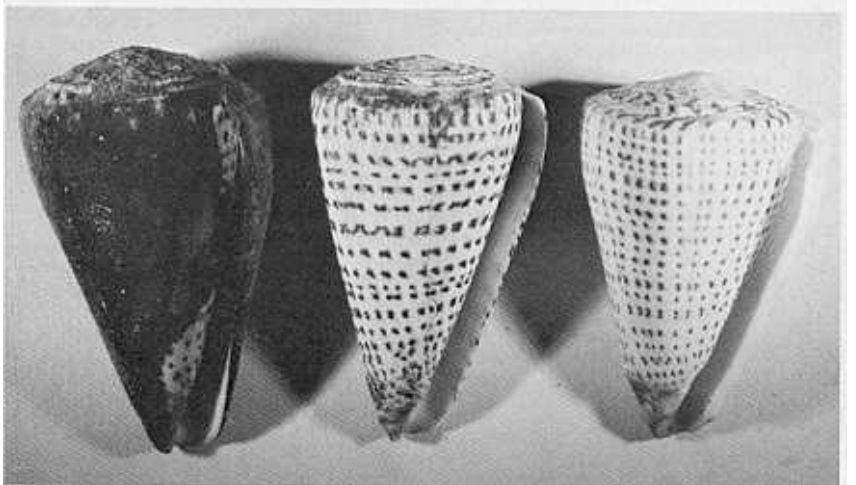
Cross



Holeman

*Conus leopardus* Röding — Hawaii

Cross



*Latirus polygonus* (Gmelin) — Kenya, Africa



Henicke

To use these illustrations, cut carefully along the dashed lines. Perhaps a bit of extra trimming may be necessary. Then carefully mount the illustration on a standard 3 x 5 inch file card. Additional data about shells of this species in your collection, sizes, etc., may be entered on the back of the file card.



## POETS AND SHELLS

When is a shell not a shell? When a poet looks at a shell it becomes more a thing of beauty. A beauty that can be described only in rhyme. Then shell, color, and words blend to make new and fascinating forms.

### CONCH SHELLS

Holding the pink conch shell  
to my ear,  
listening to resonant roar  
of the ocean,  
I wondered where the echoing water  
could be hidden —  
Carefully breaking through lime and lustre,  
probing into the spiral core,  
source of the roar  
was nowhere to be found . . .  
But, oh, the graceful design  
of the shell within!

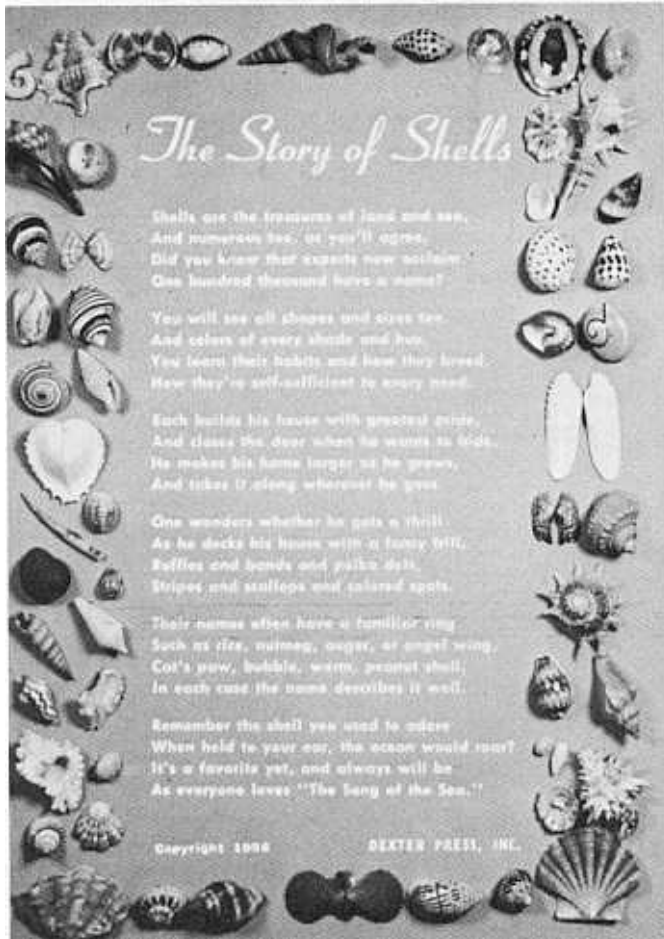
Nelle M. Stauss

Driftwood

### A COLLECTOR'S DREAM

Shells so beautiful that it can't be told,  
Are spread over the beaches of the world.  
Their splendour is displayed in the golden sand,  
Until they've been picked up by a collector's hand.  
Young and old admire their colours and design,  
Oh how I wish such beauty could forever be mine.

HUIBERT SABELIS.



## ANNOUNCEMENT

The Fourth Annual Meeting of the Western Society of Malacologists will be held at Asilomar, Pacific Grove, California, from June 16th to June 19th, 1971. Symposia and contributed papers will be presented on a wide spectrum of malacological topics.

Inquiries about the meeting should be made no later than May 15th and should be directed to the Secretary, Mrs. Mary D'Aiuto, 804 Fielding Drive, Palo Alto, California 94303. Applications for membership should be directed to the Treasurer, Mr. Ralph O. Fox, Dept. Invertebrate Zoology, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118. Dues are \$250 for Regular Members and \$1.00 for Students.

Executive Board members for the year are: President, Dr. Eugene V. Coan; First Vice-President, Mrs. Beatrice L. Burch; Second Vice-President, Dr. Warren O. Addicott; Secretary, Mrs. Mary D'Aiuto; Treasurer, Mr. Ralph O. Fox; Members-at-Large, Mr. Barry Roth and Dr. James H. McLean; the three most recent Past Presidents, Dr. David K. Mulliner, Dr. William K. Emerson, and Dr. Myra Keen.

### HMS PROGRAMS FOR 1971

You have undoubtedly had some good ideas for a program you would like to see produced for one of our HMS monthly meetings. If you have, the incoming Officers are most anxious to hear from you without delay. The Program Chairman will be happy to carefully consider any and all ideas which have club interest. If your idea is accepted, you will be appointed the Chairman for "your meeting" and we hope there will be substantial member participation in the coming months. See or call Elmer Leehman at 488-4028.

Here is your chance to help your Society and actively participate in the 1971 program schedule.

### Fernando Dayrit Announces Philippine Shell Exhibit

I would like you to please plug for our forthcoming Shell Exhibit in the Hawaiian Shell News in its next issue. Our Shell Exhibit will be held from Feb. 16-28, 1971 at the Philamlife Lobby in Manila. One of the main features of the exhibit is to show in one special case some of the rarest shells we have in local collections. We will exhibit the rare *Cypraea valentia*, 2 *Cyp. leucodon*, 6-8 *Conus gloriamaris* all collected in Philippine waters, a new species of *Angaria* and maybe six Golden Cowries. This case will be the piece de resistance of our exhibit. We will also show various families of Philippine shells like *Conus*, *Cypraea*, *Volutes*, *Mitras*, *Murex*, *Strombus*, etc. The other major part of the exhibit will be the commercial exhibit in which we will show the various products made from shells like Kapis shell products, shell frames, shell jewelries and the like. The Shell Co. of the Philippines is sponsoring the show and maybe the wife of our president who is an avid collector will open the show. I hope you can come to the Philippines at that time. By the way is there any possibility of anyone from Hawaii or from your club who would like to put up a small exhibit of purely endemic Hawaiian shells in this show of ours? I am asking the Taiwan Shell Club to put up such an exhibit and it seems they might send some endemic Taiwan shells.

*Ed. note: The card and poem (opposite) The Story of Shells is reproduced by permission of Dexter Press, Inc., West Nyack, N.Y. Dexter Press has a total of eight post cards that feature shells plus four others featuring other marine life. In Hawaii the post cards are available from WW Distributors, Ltd., 1132 Auahi Street, Honolulu, Hawaii 96814.*



# Conchological Housing Shortage OR All About A Pushy Hermit Crab

by TWILA BRATCHER

There is a housing shortage everywhere, but at Los Almitos Bay, California it was so critical that this hermit crab moved in before the original tenant moved out. This double occupancy *Polinices altus* (Pilsbry, 1929) shell, complete with animal, operculum, and hermit crab, was collected intertidally in sand at low tide by Dot Myhre of Lake View Terrace, California.

I have never heard of this happening before. Have HSN readers?



*Polinices altus* (Pilsbry, 1929) with animal, operculum, and hermit crab.



*P. altus* with animal and hermit crab.

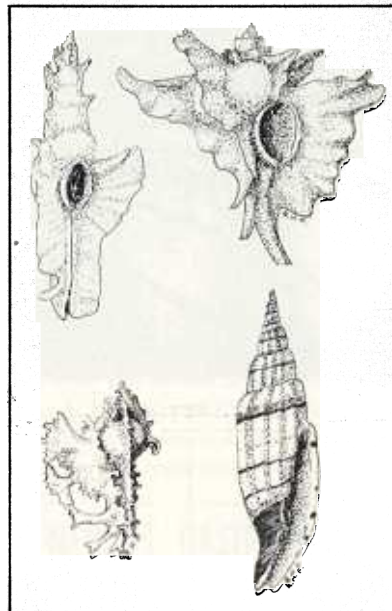
## Something New Has Been Added

Only rarely is a stationery presented that warrants an extra something besides what is said in an advertisement. FAIRCRAFT'S four shell designs on elegant pastel bond is such a stationery. The art work of the shell design is so accurate the illustrations could be used for biological illustrations. The artists' enchantment with muricidae is evident. The stationery is available with either of the four designs shown at right.

### SHELL STATIONERY

HAND DRAWN ILLUSTRATIONS  
ON 8½ by 11 STATIONERY  
FOUR DESIGNS — *Murex pele*, *M. elongatus*, *M. eurypteron*, and *Mitra tilagrina*.  
\$3.25 for 24 sheets, 12 envelopes.  
Special designs for dealers, clubs.

FAIRCRAFT ENTERPRISES  
1445 Kupau St., Kailua, Hawaii 96734



Roy M. L. Pang, Box 8292, APO San Francisco 96555 would like to trade Marshall Island shells, including *Strombus taurus* for *Conus*, *Cypraea* and *Terebra*.

AMSC Lawrence J. Kelly, DEFWP Box 33, FPO San Francisco, Calif. 96554 has a beach-worn but intact *Cypraea martini*, Schepman to trade for the best live-taken cowry offered.

Henry T. Asano, HQ 2nd Log Command., Compt. IRD, APO San Francisco, Calif. 96248 would like to trade *Cypraea* collected around Okinawa for *Cypraea* and *Oliva* with worldwide collectors. He is a native of Hawaii and would prefer trading for other than Hawaiian *Cypraea* and *Olivas*.

If you are looking for deep water shells from Mozambique, write to C. P. Fernandes, P.O. Box 1430, Lourenco Marques, Mozambique — P.E.A. He would like to exchange for *Cypraea*.

From Israel comes a note from the Rapoport Family that they are shell collectors who would like to exchange worldwide and offer shells from Akaba bay. Would like to receive *Cypraea*, *Voluta* and *Murex*. Address is 18 Hashnayim St., Givatayim, Israel.

Bob Brown, P.O. Box 74, Yeppoon, Queensland, Australia 4703 has a *V. guntheri* (*adcocki*) for sale or trade. Bob says this is a beautifully marked shell with no growth marks.

Capt. Edward T. Schelling, 106-1 Glacier Drive, Minot AFB North Dakota 58701 would like to exchange Okinawan, Taiwan and U.S. shells for South American shells.

Roy L. Hudson, 1215 Monterey Blvd., San Francisco, Calif. 94127 is trying to fill out his olive collection. He has perfect specimens of limpets, littorina, tegulas and smaller shells to exchange.

*Ed. note: Remember, one of the fringe benefits of being a member of HMS is the exchange section of HSN. List one shell or a collection for exchange. As long as you are a member; no charge.*

## Bishop Museum Book Store

The Bishop Museum book store has received several new malacological publications which they are now offering for sale. In our December 1969 issue we ran a more complete listing to which the following should now be added.

- The Living Volutes — Weaver & DuPonte \$55.00
- The Living Cowries — Burgess \$30.00
- Shell Life and Collecting — Murray \$ 4.95
- Australian Great Barrier Reef — Gillett \$ 5.50
- Mollusks — Bartsch \$ 2.00

In addition to the above publications there is a complete supply of HMS member Virginia Dennis's attractive shell prints available. These are offered in several sizes and with numerous shell subjects.

HMS members are invited to come into this shop at any time and browse among the large inventory. In addition to the books and prints, other shell items are offered for sale. Manager Sandi Goveia and Asst. Manager Sinoto are always most cooperative and helpful.

## CORRECTION PLEASE

It was previously reported in HSN that the Ostergaard collection was at the California Academy of Sciences at San Francisco. This was an error and the collection is still part of a private collection.

Mr. Barry Roth, Technical Curator at the California Academy of Sciences also wrote as follows:

"One point I think worth mentioning is that the Academy of Sciences does not store individual collections intact. All material is catalogued and dispersed throughout our general collection which is stored in systematic order."

## SHELLS FOR SALE

E. R. CROSS

P.O. Box 212, Pearl City, Hi 96782

- Cypraea tigris schilderiana*, over 4¾" . . . \$15.00
- Same . . . 5" . . . \$30.00; Same, 5½" to 5¼" . . . \$40.00
- Cypraea tessellata*, beauties, over 1¼" . . . \$40.00
- Same, 1½", live but not perfect . . . \$20.00; Same, beach specimens but good markings . . . \$6.00 each

# Voluta fulgetrum Sowerby, 1825

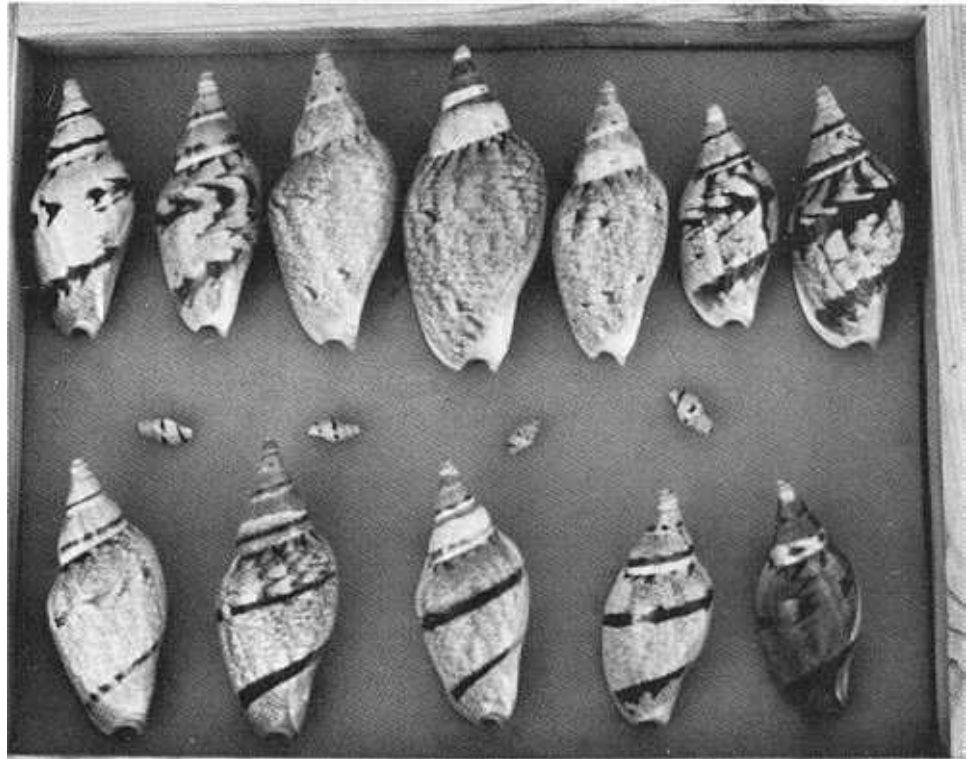
by ELMER LEEHMAN

One of the most attractive of the spectacular volute family is *Voluta fulgetrum* Sowerby, 1825. However, most collectors are not fully aware that there are many variations of this shell.

The accompanying picture shows twelve varieties. The shells are from the collection of Mr. H. Bull of Port Lincoln, Australia. From left to right in top row are two *V. tricincta*; three of *V. dictua* variety; and the last two are of *V. connectens* type. In the bottom row the first and fifth are *V. uncinata* variety; the second, third and fourth are *V. bicinctas*. It is interesting to observe the distinct difference in the banding of these fine volutes. Colors also are quite variable; there are over 30 variations already identified.

HSN thanks Mr. Castle of Flindersian Shell Traders for this data and fine picture.

*Ed. Note: This shell is now listed as Ericusa (Ericusa) fulgetra (Sowerby, 1825) in Weaver and Dupont, The Living Volutes. The five species listed in Mr. Leehman's article are considered color variations of E. fulgetra (See Plate 19 of The Living Volutes).*



## SHELLS FOR SALE

### WESTERN AUSTRALIAN SHELLS

Box T 1738, G.P.O.

Perth, Western Australia 6001

The best quality Australian Shells come from Western Australia. We sell *Cypraea marginata*, *C. venusta venusta*, rare cones, Volutes and Murex. Color slides of breeding cones, cowries, and murex.

SHELLS-SLIDES-AUSTRALIAN SHELL BOOKS

### NEW ZEALAND

Worldwide shells for sale in top quality at fair prices. Many rare items seldom offered before in stock. Also large range of land shells from many countries. Wholesale rates to dealers. Orders over \$25.00 airmail free. Free price lists.

Suppliers to some of the world's biggest museums.

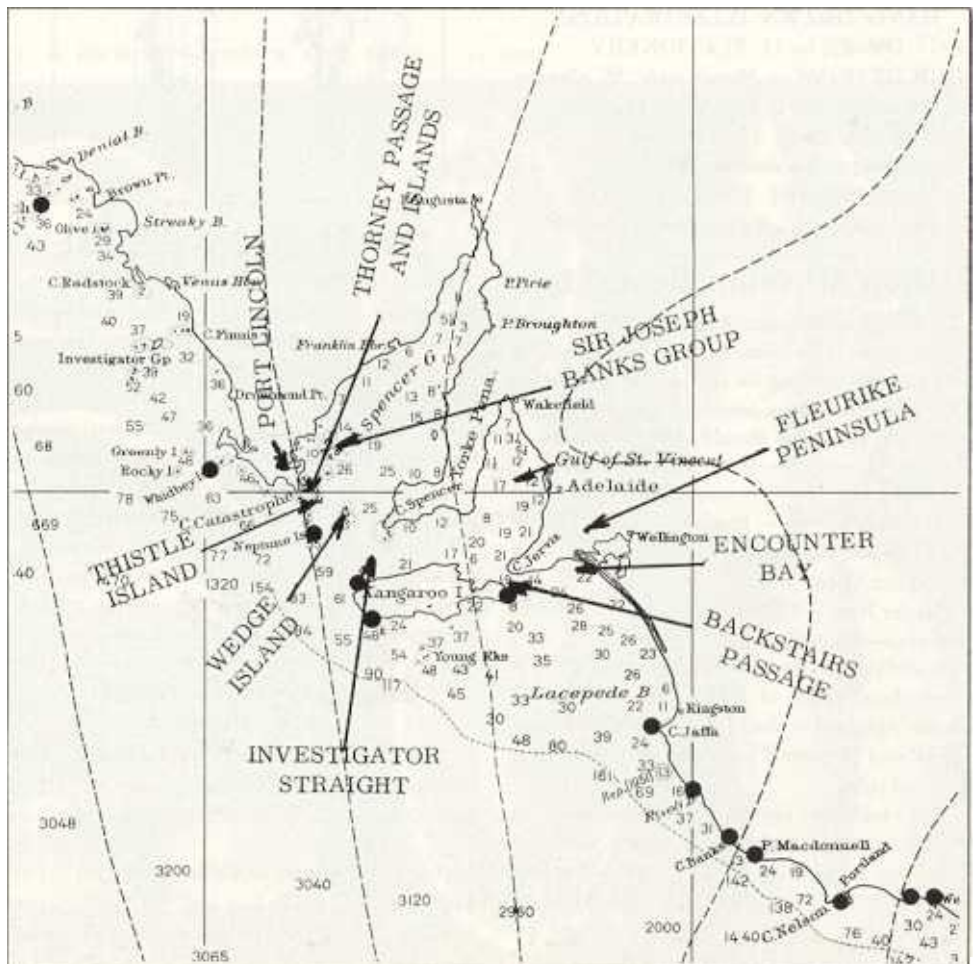
John Hood Alexander Ltd., 61 Chequers Ave., Glenfield, Auckland 10, NEW ZEALAND.

## Wants To Buy Shells

### SPECIMEN SHELLS WANTED

I want to buy rare *Conus*, *Murex*, *Voluta* and *Cypraea*. Can use *Cypraea aurantium* and I will pay good prices. Only live collected perfect specimens considered.

SIMON De MARCO, World's Largest Dealer, P.O. Box 1664, Fort Myers, Florida 33902, U.S.A.





# Voluta (Amoria) exoptanda (Reeve, 1894)

The common name for this shell, the beautiful or much-desired volute, aptly describes this fine shell. Fortunately for volute enthusiasts an increased number of this variety are being collected. Supply still remains far less than the demand, however.

Most of the shells of this rare species being collected are the usual variety. But Trevor Castle informs us that four pure white ones have been taken. These are the only known specimens of this form at present. The white form has a white background with red to black tent-shaped markings all over the surface. It does not have the usual pink background or any salmon-pink bands. The usual orange spot where the whorl joins the body whorl is entirely absent. This shell is figured in Weaver and Dupont, The Living Volutes as *Amoria (Amorena) exoptanda* (Reeve, 1849) on Plate 66. **EDITOR.**

## THE BEAUTIFUL or MUCH DESIRED VOLUTE by Trevor Castle

AMORIA Gray 1855. Proc. Zool. Soc., vol. 23, p. 64. (turneri G.&P.) Exoptanda Reeve 1849. VOLUTA. Conch. Icon. vol. 6, p. 10, fig. 22. S.W.A., S.A. Port Lincoln (type).

Locality: Spencer and Saint Vincent Gulfs, Investigator Strait, Backstairs Passage, Thorny Passage, and Encounter Bay, SOUTH AUSTRALIA (See map page 10).

Length: to 130mm, but generally around 100m to 110m. A 114mm specimen has a circumference of around 165mm and a diameter of 60mm with the body whorl taking up 24mm

and the mouth (opening) 90mm.

Spire: 7 whorls.

Plait: 4 ridges strongly raised.

Protoconch: negligible

Colour: Lip cream to orange with black markings along the edge body whorl cream with red to black tent shaped markings all over, where the whorl joins the body there is an orange spot, about 5 to 20mm along the outside of the lip there is a band of cream with black marks (tent shaped) (visible in lower shell in photo).

There are two salmon pink bands around the shell. Apex is plain pink.

Shape: A robust shell with a flattened area on the back (dorsal surface).

Animal: The animal is very bright reddish orange with pale orange to lemon spots, the eyes are minute and black, they have a very long siphon apx. as long as the shell. It appears to lay one egg a year, which it carries around with it while the egg is soft (similar texture to turtle eggs), the egg is buried in the sand when it has a hard shell (equivalent to birds) where it stays until it has developed the protoconch and 1½ whorls about 10mm in length. The egg is generally 15mm in diameter. The juveniles appear to live in the same area until they are in an advanced stage of growth, it also looks like the adults return to the same area after feeding which they left earlier. They live in small colonies which can easily become extinct if fished heavily.

A photo of the living animal of *Amoria (Amorena) exoptanda* was shown in HSN for December, 1966, page 8.

## SHELLS FOR SALE

### AUSTRALIA

Lance Moore Marine Specimens Pty., Ltd.  
27A George St., Sydney, NSW, 2000, Australia  
The shop where the rarities were and are; such as *gloriamaris*, *fultoni*, *teremachi*, *aurantium*, and *teuleri*. Free price list now available.

### AUSTRALIA'S FRIENDLY SHELL DEALER.

OLAF CHRISTENSEN,  
405 Bay St., Nth. Brighton, Victoria, 3186.  
Australia

Handles only the highest quality in Shells. Tell him which Families interest you and he will quote you current prices from current stock. Many Rare Specimens available; Shell books also.

### AUSTRALIA

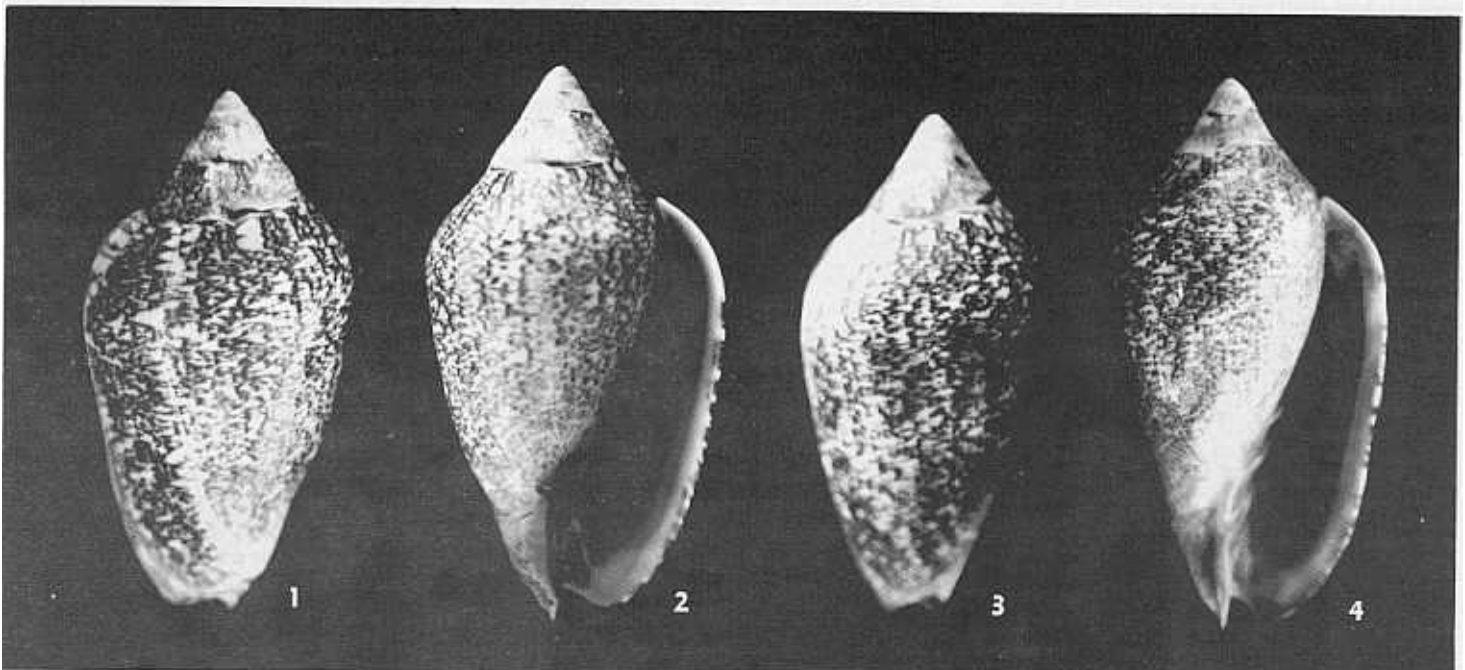
### FLINDERSIAN SHELL TRADERS

Trevor J. Castle, P.O. Box 460  
Port Lincoln, South Australia 5606  
Rare South Australian cones, cowries, and volutes — Buy, Sell or Exchange.

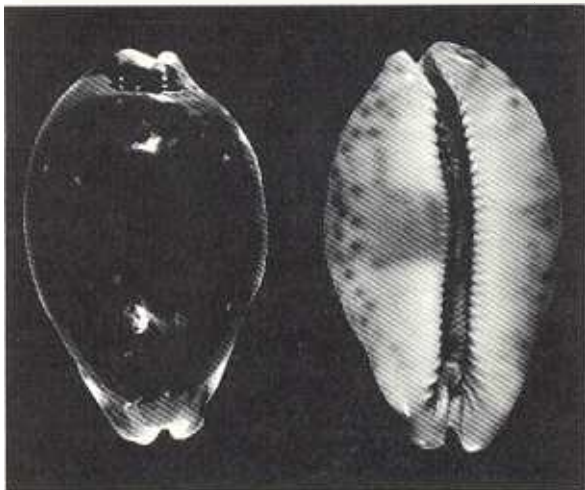
### Yeppoon Shell Museum

R. T. & D. A. Brown,  
Box 74, Yeppoon, Q. Australia

The largest dealers of Specimen Shells in Australia. Fine and rare specimens bought and sold. Will exchange for rare shells. Prices to suit all pockets. On hand at present, choice shells from New Guinea, Australia, Philippines and Africa. Write for free Price List.



## Dick Kurz Has Rare *Cypraea mappa niger*



A letter recently received from dealer Dick Kurz (see ad at right) said, in part, "Enclosed are photos of *Cypraea mappa niger* which I thought HSN readers would enjoy. I believe this variation of *C. mappa* has never before been published. This is probably the rarest of the black cowries from New Caledonia. This specimen, which I recently received, measures 2½" long and has an extremely black dorsum, a beautiful purple base, and yellow teeth. It was collected at night in a cave in about 40 feet of water of the west coast of the island."

Photo by John Holeman

## Dealer Of The Month

KIRK W. ANDERS  
Ft. Lauderdale, Florida

The saga of Kirk Anders beginning and success in the specimen shell business reads somewhat like an endorsement of the opportunities available under our American free enterprise system.

Kirk was still in high school when he organized a small shell mail order business. His inventory was Florida shells, which he had mostly personally collected during the previous eight years. This small beginning rapidly gained momentum and steadily grew.

During October 1965, with financial assistance from the elder Anders, Shells of the Seas Incorporated was formed. Since then, it has grown substantially each year. (See add column 3 this page). Kirk Anders has managed to continue his higher education and in 1969 graduated from the University of Southern Florida with bachelor degrees in Biology and Education. He is presently teaching Oceanography, Biology and Earth Science at the Mills School in Fort Lauderdale. He naturally spends every other minute of available time working at Shells of the Seas with the other members of the Anders family.



## HMS MEMBERS MOVE

Two of our members have changed addresses and would like to notify all of their shelling friends of same.

Capt. J. A. Buyse, RNCMC has an address change to UNTSOP APO 09253, New York, New York, U.S.A. He is with the United Nations Truce Supervision Organization and is now assigned to Damascus at present. He can be contacted at the above address.

John Orr would like to notify his friends that he can be reached at British Consulate General, P.O. Box 10101, Johannesburg, South Africa. John will be in South Africa for the next three years.

## CORRECTION PLEASE

In the June, 1970, issue of HSN, H.-H. Heinicke reported the collection of a living specimen of *Conus varius* Linnaeus from Upolu, Western Samoa, as a new locality record and geographic range extension. However, this species has been known to occur in Samoa for nearly a century. Andrew Garrett collected it there and reported this in his "Annotated Catalogue of the species of *Conus*, collected in the South Sea Islands," in the Quarterly Journal of Conchology, vol. 1, pp. 353-367, 1878.

Signed, sincerely,  
Alan J. Kohn, Dept. of Zoology,  
University of Washington  
Seattle, Washington 98105

The accompanying picture (left) shows Kirk Anders in his office surrounded by some of his fine Florida shells in which he specializes. Kirk promises twenty-four hour service on all orders received.

## SHELLS FOR SALE

*Seashell Treasures*  
715 GLOVER AVENUE,  
CHULA VISTA, CALIFORNIA 92010

*World Wide and Rare Shells*  
WIDE SELECTION OF WEST MEXICO,  
PANAMA AND CALIFORNIA SHELLS

COMPLETE BOOK SERVICE FOR SHELLERS  
PRINTING AND PUBLICATION SERVICE

★ SELL      ★ BUY      ★ EXCHANGE  
FREE SHELL, BOOK AND ACCESSORY  
CATALOGS ON REQUEST

### WISCONSIN

RICHARD M. KURZ  
1575 North 118 St., Wauwatosa  
Wisconsin 53226, U.S.A.

Dealer in fine and rare specimen shells. Shells bought, sold and traded. Extra fine quality. Write for free price list.

### FOR SALE

The D'Attilio Collection

The list is portfolio form, including prices and prints of D'Attilio drawings. The first 10 pages will be ready 15 Nov 1970. Price of first 50 pages, \$1.00.

L. J. Bibbey  
490 Citrus Avenue  
Imperial Beach, Cal. 92032

### STIX DISPLAY STANDS FOR SALE ENHANCE THE BEAUTY OF YOUR FAVORITES

Rare shells, precious minerals and an endless list of valued treasures are exhibited to their maximum advantage and safety in the patented STIX STAND. Available through many fine shops, or write for specifics: STIX, 13 Vandam Street, New York, N.Y. 10013.

### FLORIDA SHELLS OF THE SEAS, INC.

P.O. Box 1418  
Ft. Lauderdale, Fla. 33302  
The Friendly Dealer

Specimen shells, world wide, with special emphasis on Florida and Caribbean specimens. Write for free list. If air mail is desired, please enclose 50 cents. Buy-Sell-Trade.

### RESEARCH PROJECT: CYMATIIDAE HAROLD LEWIS

I am interested in obtaining worldwide specimens of the family *Cymatiidae*: *argobuccinum*, *apollon*, *mayena*, *ranella*, *distorsio*, *charonia*, etc. Anyone wishing to donate, sell or exchange specimens with good data, slides, photographs or habitat information contact me at 125 McClenaghan Mill Road, Wynnewood, Pa. 19096.