

Hawaiian Shell News

VOL. XXII NO. 5

MAY, 1974

NEW SERIES NO. 173

CASSIDAE OF THE NETHERLANDS ANTILLES

by PETER van PEL with photos by van PEL

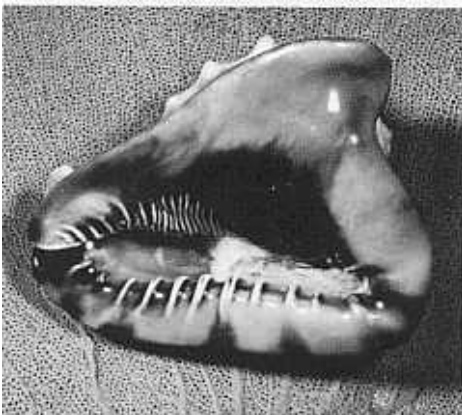
EGMOND AAN ZEE, Holland — One of my most favorite families in the Phylum Mollusca is certainly the Cassidae or helmet shells. In my travels I often try to acquire more species of this interesting group, which has a special place in my collection.

Looking for helmets in their natural habitat is a pleasure, but it sometimes is frustrating. At Curacao, the Dutch island in the Caribbean off the Venezuelan coast, local shellers told me that *Cassid flammea* Linne, 1758 abounded in the Spanish Water, an inshore bay, close to the entrance from the sea. So I went there as soon as possible after my ship arrived at the island. To my disappointment, I didn't find a single specimen.

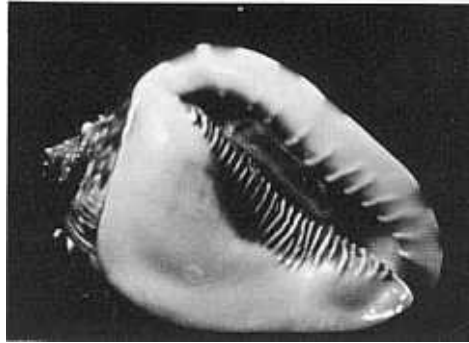
Later, I found out why. I had expected to find the shells in deep water, and I spent my time diving in twenty to thirty feet — to no avail. A couple of days later I tried again, but in shallow water — in as little as one foot, at times.

As I floated along with my face mask, I suddenly saw one, half buried in the sand in the turtle grass. It turned out to be a perfect specimen, without any coral or limey coat whatsoever.

I went on searching at that depth, taking care not to make an unhappy landing with my chest on the spiny sea urchins which were all over the place. In that area I collected quite a few *C.*



Cassid tuberosa with operculum from St. Martin.



Cassid flammea, Curacao.

flammea. Most of them were alive, but some were already freshly cleaned for me by an octopus.

In the photo you can see the horny elliptical operculum.

At St. Cruz Bay, also on Curacao, I made a spectacular find. While swimming along, looking for cone shells, I noticed some small stones on the bottom. I tried to turn them over with the small hand rake I was carrying. They did not move easily.

Suddenly I realized I was turning a beautiful ten-inch *Cassid tuberosa* Linne, 1758!

And that was not all. Six feet away was its mate!

Cassid tuberosa is regarded as a very rare shell at Curacao. A local check list, *Data on Marine Gastropods of Curacao*, published in 1965, said only three registered specimens had been found up to that date. Although I know that several specimens had been picked up since then, it still was surprising to find two in a single dive.

These helmets live on a mixed stone-and-sand bottom, into which they partly dig themselves. The parts that are visible are slightly overgrown with lime — not much, and easy to clean off later — which makes the shell look exactly like its environment. Only the actual shape of the shell, with tubercles on the dorsum, makes it distinguishable.

At St. Martin, one of the Windward islands of the Netherlands Antilles, *Cassid tuberosa* are

rather common. It is quite easy to spot ten good specimens in a day of skin diving. I have a perfect dark-brown beauty from there.

Judging from my experience, this species is most successfully collected in very shallow water.

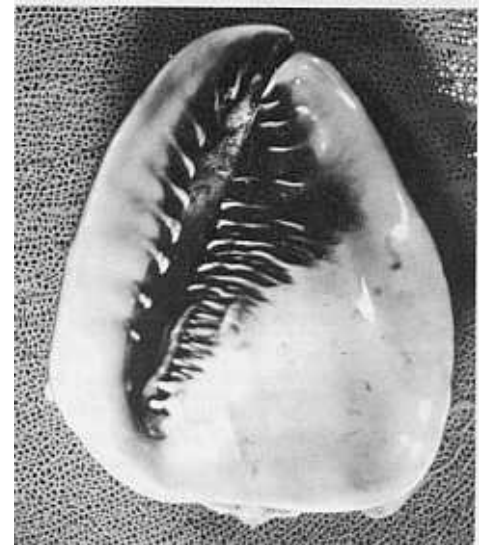
I find it hard to believe that these shells feed on the spiny sea urchin, as I have read in several publications. I have never seen them doing so, myself, nor have I even seen the concentrations of empty tests of the Echinoderm that should be the result.

A third Caribbean helmet is *Cassid madagascariensis* Lamarck, 1822. I have not found one of these myself, but have bought the shells from local fishermen at Cartagena, Colombia. Consequently, I didn't see how or where they live.

I have, however, collected a subspecies, *Cassid madagascariensis spinella* Clench, 1944, at St. Martin. Unfortunately, the shell was dead and heavily eroded. Nevertheless I kept it. It is interesting to note the differences between this variation and *C. madagascariensis*.

Dr. R. Tucker Abbot, in *Indo-Pacific Mollusca*, says that they might be male and female forms of the same species.

(Cont'd on Page 4)



Cassid madagascariensis



HAWAIIAN MALACOLOGICAL SOCIETY
(Founded in 1941)
P. O. Box 10391 Honolulu, Hawaii 96816

President **STUART LILLICO**
Vice President **OLIVE SCHOENBERG**
Treasurer **ROBERT PURTYMUN**
Recording Secretary **INKIE SHIELDS**
Corresponding Sec. **LORETTA RICHERT**

Directors

DR. THOMAS BURCH **FRANCIS HEE**
GEORGE COOK **ELMER G. LEEHMAN**
E. R. CROSS **DR. TOM RICHERT**
DEANE GONZALEZ **CHARLES S. WOLFE**
DONALD GRACE

The Society meets the first Wednesday of each month at the First United Methodist Church, 1020 S. Beretania St., Honolulu at 7:30 p.m.

VISITORS WELCOME!

Hawaiian Shell News

Editor-in-Chief **E. R. CROSS**
Editors **STUART LILLICO, RUTH FAIR**
Editorial Staff:

Elmer Leehman, Lyman Higa,
Genevieve Wheeler, Beatrice Burch
Corresponding Editors: Peter van Pel,
Dr. J. C. Astarty, A. G. Hamlyn-Harris,
Fr. Al Lopez S.J., Thora Whitehead,
William E. Old, Jr., Rick Luther

Hawaiian Shell News is issued free to members of the Society. Postage rates have been computed and added to membership dues. Single copies of any issue, \$1.00, postage included. Individual copies of any issue may be obtained, free of charge, by qualified individuals for bona fide research projects.

MEMBERSHIP DUES:

U.S. (Includes Hawaii, APO, FPO) \$ 8.00
U.S. AIR (incl. Canada) 10.50
FOREIGN SURFACE 9.00
FOREIGN FIRST CLASS 10.00
FOREIGN AIR 16.00
ASSOCIATE MEMBERSHIP 1.00
(Each additional family member may join for \$1.00 but does not receive HSN.)

Articles of interest to shell collectors are solicited.

Advertisements are accepted at the rate of \$10 per column inch per issue. Special rates are available for six and twelve insertions.

HMS APRIL MEETING

Oahu members of the HMS were given the rare treat of having Dr. E. Alison Kay give a delightful and informative program on What Constitutes a Rare Shell? The discussion of comparative rarity of species and why they are rare in one area and relatively common in another area was most ably illustrated and discussed by Dr. Kay.

She also announced that her book on Hawaiian shells is nearing completion and showed several illustrative plates which will accompany this tome.

The evening ended with coffee and cookies and a general talk session which was enjoyed by all.

REEFCOMBINGS

The Northern California Malacozoological Club will be holding its annual Shell Show May 11th and 12th at the Hall of Flowers in San Francisco. They announce that there will be awards in several categories, as well as a fund-raising shell sale. If members are planning on being in Northern California during this period, they will enjoy including this activity in their plans.

And halfway around the world, the Museum National d'Historie Naturelle in Paris is preparing a large exhibition on Mollusca to be presented in the spring of 1975. They are looking for photographic information concerning living mollusca in their natural habitat or good aquarium reconstructions. They especially need color transparencies, 36mm, 6 x 6cm, or 4 x 5 in. for display. If you have any such slides to offer, please contact P. Bouchet, Laboratoire de Biologie des Invertébrés marins, Dept. de Malacologie, 55 rue Buffon, Paris (5) France. Please give precise information as to subject matter of the slides.

From Smoky Bay, South Australia, Mrs. Coral Willcox writes that she has found a most unusual *Mitra*. She found a sinistral *M. australis* washed up dead on a local beach in October of 1970. This shell has been featured in the *Australian Shell News* for July, 1973. She states that she has heard of no other sinistral *Mitra*, and is wondering if she is lucky enough to have been the first to have found a left-handed *Mitra*.

And speaking of strange or unusual shells, Mrs. Diana Wright of Croydon, Australia writes that, while on a trip through Indonesia last December, her nephew obtained some cone shells from the fish market in Jakarta for her. Among them one specimen of cone, 3½ inches long and covered with a heavy periostracum, revealed a white shell with pale violet bands around the body whorl when cleaned. The base

has a brown stain and the depressed areas of the spire are also brown. The shell has since been identified as an albinistic form of *Conus distans* (Bruguiere) by Mr. Lance Moore and Mr. John Singleton, Australian cone authorities. This, however, was a new form to both of the gentlemen who had collected cones in this same area but never one such as Mrs. Wright showed them. She would be interested to learn if any other HMS members have ever recorded an albino form of *C. distans*.

Ruth Fair is looking for some assistance in obtaining good photos of certain of the Muricidae. If anyone can supply photographs and collecting information for *Murex antelmi* Viader from Mauritius, *Muricopsis angolensis* Odhner from West Africa, *Muricopsis bombayanus* Melvill from India, *Pteropurpura dearmatus* Odhner from West Africa, *Muricopsis infans* E. A. Smith from the Indian Ocean or *Murex malabaricus* E. A. Smith from the Indian Ocean, she will be most grateful. Her address is 1418-3 Hunakai St., Honolulu, Hawaii 96816.

Most HSN readers will recall several highly interesting and informative articles in this publication written by John K. Tucker on the *Conus* family.

Tucker, presently a college undergraduate in Illinois, advises the Editors that he is making excellent and steady progress on his long planned book, but will still welcome additional information, as well as letters with suggestions from any reader interested in aiding his project. Especially welcome will be cone habitat range data, for inclusion on the maps. John plans to use a geographic approach to the keying of his book, which will be unique. John's latest address is: 808 S. Linden St., Apt. 26, Normal, Illinois 61671.

A statement by the incoming president of the Fiji Shell Club, Ken Gilchrist, is a reminder that Conservation must play a key role in Collecting.

"A word of advice to all junior members (and some seniors, too!) — Always think of reef conservation. Do not pick up every live shell you see. Collect only those you specifically require for your own collection (plus a few spares for swaps). Many shells of the bags full collected on outings are never utilized properly; they die, rot, smell, and are thrown away. Let us collect what we want (need), not 'what we can get'. The bulk collector is not wanted in this club."

The mail from Suva also brought word that, after nine years of anticipation, work is going forward at the Fiji Museum on a representative display of Fiji shells. The cases and cabinets are to be provided by the museum, and the fine collection donated long ago by Bob Browne of Nausori is to be uncrated, sorted and arranged by members of the Fiji Shell Club.

REEFCOMBINGS

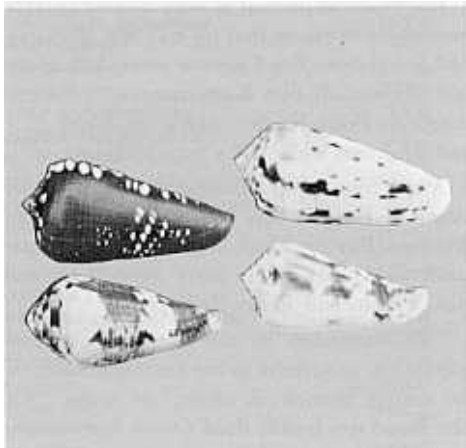
Your editors have received a letter and photographs of a *Conus* from Mr. Arun Chaiseri of Bangkok which agree with the photos of *C. julii* illustrated and described in the January, 1974, HSN, (p. 9). This specimen is apparently new to the particular area where it was found (Surin Island off the west coast of the southern part of Thailand). Chaiseri describes the specimen as having a blood-red interior with flesh tone at the inner lip, the body color being pink with very fine longitudinal red lines from the tip throughout the dorsum with three bands of red blotches around the body whorl. If the Mauritius islands are considered the locality of *C. julii*, then this report from the southern tip of Thailand extends the range of this rare cone considerably.

* * *

From Mr. C. D. Newcomer of Cleveland Heights, Ohio, comes a note that the "Rhyme for Shellers" which we printed in the February issue of HSN and credited as being "anonymous" is in actuality a poem by the well-known Sanibel resident, Kay Lawrence. Our apologies to Kay for not acknowledging her name but it was an honest omission.

Four From New Caledonia

Four rare cones from New Caledonia, two of which have not been fully identified, appear in this photo. All are in the collection of Dr. R. Pierson of Noumea.



Upper left is *Conus lamberti*, and lower right is *C. merleti*, both newly named. The lower left specimen appears to be one of the variations of *C. floccatus* Sowerby, 1839, but there is no certainty. Assistance in identifying the two strangers will be welcomed.

E.G.L.

DO A FRIEND A FAVOR!

HMS Members: Non-members will receive a complimentary copy of Hawaiian Shell News (with a membership application) if you send the Corresponding Secretary their full name and address.

Kwajalein Shell Club

Jane T. Colburn, Secretary of the Kwajalein Malacological Society, writes that since September of 1971 when the club was re-organized they have had an active membership.

Their recent 2nd Shell Show was a terrific success, writes Jane: "I'm sure there will never be another show with as many *Cypraea aurantium* on display." She added that member Wayne Hiller recently found the first live *Cypraea martini* from that area.

KMS Officers are: Pres. Bill Ince; Vice Pres., Bob Beatty; Treas., Bob Baer, and Sec., Jane Colburn.



Photo: Schoenberg

CONE PREDATION

by JIM McDOWALL

While diving the "General Store" area near Koloa, Kauai recently, Ernesto Paden and I witnessed an interesting case of predation by a cone shell. I spotted a *Conus marmoreus bandanus* on top of the rubble, turning it over for inspection revealed that it was attached to a live *Conus bullatus*. The body of the *C. bullatus* was still intact, but probably had been "stung" by the *C. marmoreus* already, for it hardly showed any movement. There was also a slimy muscous on the shell of the *bullatus*. We evidently had interrupted a meal which had just begun.

Previously, we have found a few crabbed, but perfect, *C. bullatus* in the area. This was only the fourth live specimen. This evidence seems to indicate that *C. marmoreus* is doing us a big favor by finding the living *bullatus* under the sand and cleaning them for us. Needless to say, the *marmoreus* was left on the bottom to find another prey.

C. bullatus also seems to be a favorite meal of a large sting ray which inhabits the area. Occasionally shells are found with a large bite taken out of them.

Luckily the breeding population under the sand must be fairly abundant to account for the crabbed and broken shells we have found. Thanks to *C. marmoreus* we are hopeful of finding an occasional fine crabbed specimen. Who knows, there may also be another live *C. bullatus* under the next *C. marmoreus*.

THE BURDEN

by ANDERSON BUTLER

On a Sunday afternoon dive at 135 feet in Maunaloa Bay, Honolulu in 1972, Martin Redlich, Mrs. Dorothy Wendt and I found ourselves on a sloping sandy bottom without distinguishing features except for some dead and broken pen shells. Scattered around were a few large *Conus leopardus* Roding, 1798 and *C. quercinus* Lightfoot, 1786. We did not collect these, but we swam around flipping them over for examination, half expecting the unexpected — a *C. marmoreus bandanus* Hwass, 1792 or, even better, a *C. spiceri* Bartsch and Rehder, 1943. We got little for our efforts.

Marty returned to the boat, however, with a most unusual helmet shell, *Cassis cornuta* Linne, 1758. The live helmet had a living *Pocillopora sp.* coral cluster the size of a large cauliflower firmly attached to its dorsum.

On examining it, we found that the lip of the shell was thick and enlarged — obviously deformed from supporting the weight of the coral. Subsequently, I checked with Dr. Rick Grigg at the University of Hawaii on the average growth rate of *Pocillopora sp.* He told me that it grows about half an inch a year, varying with environmental conditions. Calipers showed the coral to be five inches high and seven inches wide. This suggested that that helmet was at least ten years old.

The helmet appeared to be slightly undersized for that age, but otherwise normal.

The shell and coral together weighed seven pounds. We found another helmet of comparable size. It weighed three pounds. Thus Marty's poor *Cassis cornuta* had been carrying a four-pound load for nearly a decade — more than its own weight. A heavy burden for so small a creature.

Perhaps strangest of all was the company the shell was keeping when found. It was in a tight cluster with four unadorned helmets. None of us had ever seen *C. cornuta* in such groups before; normally they are scattered singly. Why they were gathered so closely around the conspicuous helmet boggles the mind!

 Shells of the Seas, Inc.
 FLORIDA
 The Friendly Dealer
 Write for FREE List

 SPECIMEN SHELLS
 BOUGHT & SOLD
 Each Specimen Complete
 With Accurate Location
 Date
 Shells graded according to HMS-ISGS

 P. O. BOX 1418
 FT. LAUDERDALE, FLA. 33302
 U. S. A.

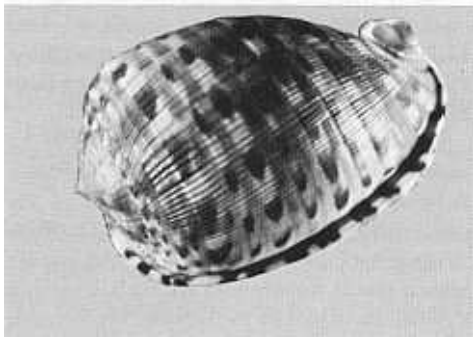
CASSIS of ANTILLES
(Cont'd from Page 1)



Cassis madagascarensis spinella, from St. Martin, Netherlands Antilles.

The last species in the Netherlands Antilles — also hard to find — is *Cypraeassis testiculus* Linne, 1758, a dark red shell. When I observe the shape, I can understand why the author gave it that name.

I would not say that *C. testiculus* are rare, but they certainly are hard to find. They hide completely under the sand and are almost impossible to spot. I have collected two shells — both fresh dead and cleaned for me by a friendly Cephalopod. Both were found in St. Michaels Bay, Curacao. The sea bottom there is littered with small stones — a good hiding place for a smart helmet!



Cypraeassis testiculus from St. Michaels Bay, Curacao.

HAWAII

Seashell Paradise

(Formerly Paradise Shells)

WORLDWIDE SHELLS OF
SPECIMEN QUALITY
— Hawaiian Specialty —
WE BUY, SELL
AND TRADE
WANT LISTS INVITED

Shells graded according to HMS-ISGS

KING'S ALLEY

131 Kaiulani Ave., Honolulu, HI 96815

NEW LOCATION — Expanded Stock

A. M. U. MEETING

The 40th Annual Meeting of the American Malacological Union will be in Springfield, Massachusetts, August 4-7, 1974.

Traditionally, the convention utilizes one evening of its program for Shell Club Night. During the evening, an appropriate representative of each Shell Club attending the convention can give a 15 minute report on behalf of the club. This year's Shell Club Night will be at 7:30 p.m. on Tuesday, August 6.

Mrs. Constance (Connie) Boone of Houston, Texas will be the Convenor of Shell Club Night. If you plan to have a report before the convention, you should have your representative see Mrs. Boone during the convention to finalize the program, or contact Mrs. Boone, 3706 Rice Boulevard, Houston, Texas 77005.

Dr. Harold D. Murray, President of the A.M.U. writes: "I hope as many of you as possible will be able to attend this, our 40th annual meeting to enjoy the friendship of many outstanding malacologists."

WHERE ARE THEY GOING?

Several opportunities for organized shelling trips for Summer 1974 are being offered to HMS members.

In the Caribbean, Kirk Anders Travel offers two separate journeys; 4 days and 3 nights at Bimini from June 26 to 29 at the Sunshine Inn where, he says, you will be near a shellers paradise. From Ft. Lauderdale or Miami the cost is \$125. The second trip is to the Bahamas for 5 days and 4 nights at the Grand Bahama Hotel & Country Club from July 18 to 22. Price from West Palm Beach is \$150.00.

West Coast and U.S. Shellers can take a special opportunity for U.S. and Canadian shelling following the Conchologists of America 1974 Convention in Seattle, which will be held June 13 to 16. Tom Rice is planning a three-day shelling tour beginning June 17th which will include Padilla Bay, north of Seattle, the southern shore of the Strait of Juan de Fuca and other areas. Reservations for this trip, which will cost about \$80. per person, must be made immediately to: Tom Rice, c/o Of Sea and Shore, Box 33, Port Gamble, Washington 98364.

In the Pacific basin, two trips are offered:

Ruth Fair will be taking a group to Savusavu, Fiji which she says, is an untouched shellers heaven, from June 15-30, with an optional lay-over in Suva from June 30-July 5th. Cost for Savusavu is all-inclusive from Honolulu at \$808.52 with the Suva option being an additional \$61.50 for hotel. Reservations for the Fiji trip must be received no later than May 25th. Write: Ruth Fair, 1418-3 Hunakai St., Honolulu, Hawaii 96816.

RECENT FINDS

by LYMAN HIGA

Diving in about seventy feet of water off Diamond Head recently, Richard van Horn found a fresh-dead *Cypraeassis clandestinum*. On subsequent dives he got a *Bursa bufonia* in shallow water off Makapuu, and a second in sixty feet at Haleiwa, Oahu's North Shore. Both the two latter specimens were alive.

Ed Bangman had to descend 120 feet off Makua, Leeward Oahu, to find a live *Conus spiceri*. In the same area he got a crabbed *Conus bullatus*.

Also diving in the Makua area, Randy Stevens got a live *Murex torrefactus* in sixty feet of water.

Don Corn reports a crabbed *Phalium umbilicatum* from seventy feet near Haleiwa. And Ed Konopka found a live *Murex elongatus* in sixty feet off Hanauma Bay — an extremely rare find in Hawaii. We have Ed's word for it that he found the shell outside the Natural Park boundaries!

Another *Murex elongatus* has been reported by Robert C. Erb of Ewa Beach, Oahu at sixty feet in coral rubble. At last report the specimen was residing happily in Bob's aquarium.

Not all the prizes were brought up by the males. Ellen Owens recently exhibited two *Strombus hawaiiensis* she collected off Makua. Both were dead. Ellen also got a pair of *Conus spiceri* off Waikiki.

Jim Nicholas phoned in with understandable excitement to report that he and Bill McGarry had found three live *Cypraea semiplota* in six feet of water off Fort Kamehameha, at the entrance to Pearl Harbor. Jim's measured 20.9 and 18.2mm, while Bill's was 19.5mm.

A note from Keith Zeilinger, of Kailua, on the island of Hawaii, tells of a successful visit to Maalaea Bay on Maui in search for *Fusinus undatus*. Others in the party were Loren and Sue Wilson, and Peggy Zeilinger.

"We succeeded in collecting several gem specimens, sometimes to the accompaniment of the singing Humpback whale," he wrote. "We also found two freshly dead *Conus hammatius*, a live *Harpa conoidalis*, some large *Cypraea tessellata*, *C. gaskoini*, *C. talpa*, *C. leviathan* and *C. teres*, a fine four-inch *Conus vexillum*, large *Terebra guttata* and many other *Terebra*."

The Club Mediterranee at Moorea, Tahiti, is the base for Kirk Anders' Pacific outing from August 22 to Sept. 1. Reports of shelling in Tahiti are excellent, and the package includes many other activities besides shelling. This is an all-inclusive package priced at \$1,200 in Miami or \$910.00 from Los Angeles. For all Kirk Anders tours, write Kirk Anders Travel, P.O. Box 1418, Ft. Lauderdale, Florida 33302.

Photographing Shells

by JIM FAIR

In the last column we discussed electronic flash as the light source. This time we will cover the use of tungsten light.

When using photoflood lighting, I use a No. 1 photoflood bulb in each of the reflectors on the copy stand (see HSN Feb. 1974, pg. 11 for set-up).

You should remember the normal life of a photoflood bulb is approximately 3 hours. As this lamp ages it may be necessary to make exposure compensations and it is possible that there will be some shift in color rendition due to loss of light intensity.

Black and white film can be exposed either under daylight or artificial light with no correction necessary.

Color films are balanced in manufacture for exposure to light of a certain quality, i.e. daylight, photoflood light or tungsten light, so you get the best results when you use a film balanced with the proper lights. If used under other types of lighting, you must use filters to compensate. For example, if you are using daylight Kodachrome X while taking pictures with the No. 1 photoflood bulbs it would require the use of an 80-B filter over the lens to compensate for the difference in the color of the light. Therefore, when using any color film, check the film information sheet which is packed with each roll and this will tell you which filters you must use.

When I use photofloods, I use High Speed Ektachrome (tungsten) with an 81-A filter. The color rendition is normally fair.

For black-and-white photos I use Plus X. Both of these films have the same ASA rating, so exposure generally is the same for either film.

For both of these films my normal exposure is 1/2 second at F16 and then bracket one stop on either side. For this type of photography I always use an exposure meter since the lights can vary in intensity and lighting will vary with lamp-to-subject distance.

It is hard to state a definite exposure to use; the best thing is for you to set up your lights and then expose a test roll of film at various settings.

One problem which occurs more in using flood bulbs than with electronic flash is reflections. If the shell is placed on glass, extra care must be taken to be sure that the light does not reflect from the glass into the camera.

Remember, within a few minutes the photoflood bulbs and reflectors get very hot, so take care to not burn yourself on them.

As you can gather, I much prefer electronic flash, but have taken many good pictures using photoflood or tungsten lighting.

Oahu Observations

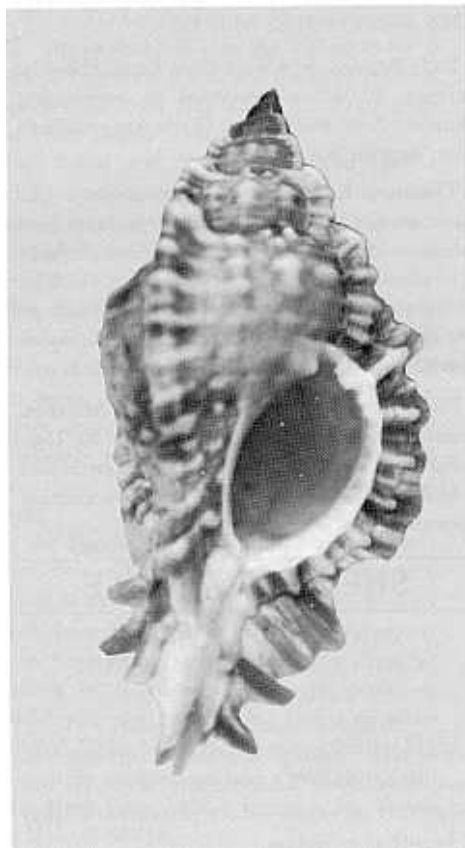
by BOB PURTYMUN

From the Order Neogastropoda, Sub-order Rachiglossa, Super-family Muricea, Family Muricidae, we find the Genus *Nassa* represented in Hawaii by the attractive, little *Nassa sarta* (Bruguere 1789), sometimes called *Nassa sertum*, or *Nassa francolinus*.

I have found four in as many years on Oahu; one in the surf, at Kahana Bay, one off Waikiki, in two feet of water, and two off Kahe Point, in about 20 feet of water. All were under rocks or coral slabs. Sizes ranged from 37mm to 58mm, in length. In each case, there was a *Cymatium* under the same rock. The two smallest were accompanied by *C. gemmatum*, the largest by a 65mm *C. pileare* (Madame Fifi), and the last by a 40mm *C. rubeculum*. Due to the fact that none of these mollusks are common here, I feel that there must be some reason for this association; just coincidence?

This last *N. sarta*, a 42x21mm beauty, became the newest resident in my aquarium. Things were fine for a few days, then, "Auwe!" I came home to find it devouring my largest *Cypraea sulcidentata*. In the weeks that followed, it added *C. isabella*, *C. helvola* and *C. caputserpentis*, to its diet.

This makes me feel that we should find a new classification for this fellow. Perhaps the Order of Super Villain.



ABOUT THE I.D. PAGE

by CHAS. WOLFE

Oliva hirasei Kira, 1959, is a Taiwan and Philippine shell. Although close to *O. tremulina* Lamarck, 1810, it may be separated by its characteristic color and pattern, and by the channeled suture which is usually marked by a dark purple line. Occasionally a specimen is seen which lacks the dark wavy lines and is instead a solid brownish yellow. This may be a juvenile coloration retained by an occasional adult.

Conus nicobaricus Hwass in Bruguere, 1792. This cone, found in the Philippines and Indonesia, is immediately separable from the various forms in the *marmoreus* complex by the yellowish suffusion within its aperture. The figured specimens show the characteristic smudging of the pattern at the shoulders.

Cymatium lotorium (Linne, 1758). This attractive Triton is found in most areas of the tropical Pacific (not in Hawaii). Adult shells are heavy and massive. The aperture is large but quickly narrows down to a small cavity for the animal's body. As a result, the operculum always seems ridiculously small for the size of the shell. The specimen on the right is a juvenile; these are sometimes mistaken for *Cymatium grandimaculatum* Reeve, 1844.

Mitra nigricans Pease, 1865 may be identified by its small size, the punctate spiral lines and the yellowish line below the sutures. It is found through the tropical Pacific, including Hawaii.

Terebra chlorata Lamarck, 1822 has a wide range through the Pacific. It is a sand dweller in both shallow and deep water.

Another *Murex barclayi*?

by ELMER LEEHMAN

Most readers will recall several articles published in this periodical on the confusion in identification of *Murex barclayi*. Opinions were printed by Dr. Emily Vokes, Jerry Harsewych, both recognized *Murex* experts, also by several of the staff of the Hawaiian Shell News. The general consensus seemed to be that there were only two valid specimens of *Murex barclayi*, these being the ones found near Mauritius by Dr. Barclay, for whom the species was eventually named.

Several months ago, a young man from South Africa brought a specimen into the shop of Lawrence Thomas of Morro Bay, California which appears to be a true *M. barclayi*. The shell (left) was collected ex-pisces from a deep water fish, but is in good condition. It has the reddish orange coloring of the shell figured in "Rare Shells" and fits the description closely. Mr. Thomas is holding this shell for the owner, but if any of our readers are especially interested, he will gladly give all details.

PAN FRIED by JOHN PHILLIPS

SANTA BARBARA — One of the finest delicacies to come out of the sea is pan-fried San Diego scallop, *Pecten diegensis* Dall, 1898 — a gourmet's delight that few have sampled, unfortunately. I sincerely wish I could convey the flavor of this mollusk to every food lover in the world.

A veteran of the commercial abalone-diving business, I have spent countless hours in Southern California waters searching for our tasty *Haliotis* and other desirable shellfish, including the elusive *P. diegensis*. I swam long and hard before I found my first one in 105 feet of water off Coho anchorage, southeast of Point Conception lighthouse.

I generally collect *Pecten diegensis* in forty-five to 140 feet of water, but the species seems to concentrate on the levels below eighty feet. Many feel that Pectens can only be collected on sandy or silty bottoms. This may be true for some species, but I find *P. diegensis* on a variety of bottoms — silt or mud with rock rubble, coarse sand with rock rubble, silt or mud pockets in rock reef areas, and coarse sand pockets in rock reef areas. Seldom are they in strictly sand or silt bottoms. Quite often I find them among large rocks or boulders with no sand or silt anywhere nearby.

It is a fairly gregarious species. Generally, I find more than one at a time. Once I collected eight fully adult shells (three inches and up) within a ten-foot radius. There probably were more of them hiding in the silt.

The best way to spot *Pecten diegensis*, I find, is to swim along slowly ten or fifteen feet above the ocean floor — water visibility permitting, of course! The scallops do not seem to see a diver this way. If you blunder along the bottom, however, this clever mollusk will spot you almost every time and will simply disappear.

Generally speaking, *Pecten diegensis* will be buried in the sand or silt, unless he has propelled himself onto a rock reef, in which case he will be lying there fully exposed. In sand or silt he relies on camouflage for protection against his foes. He is an absolute master of this art. Even the trained eyes of seasoned Pecten collectors often will not distinguish the faint silhouette of this shell beneath the bottom.

When Pectens are at ease they slightly open their two valves and extend their many eyes along the outer edge of the shell. I have no idea what they are looking for with all those lovely eyes, like so many grains of iridescent sand among all the other sand on the ocean floor.

When the Pecten senses danger approaching his domain he immediately draws in his eyes, closes his shell tightly, and somehow causes a small trickle of sand to settle along the once-visible outer perimeter of his shell. Thus he seals

himself off from the "outside" world and its dangers.

He has even managed to encourage the growth of a colony of Algae on his flattened top valve, and this can be easily mistaken for common bottom growth. Actually, it gives him the appearance of a tiny scallop-shaped forest of seaweed, standing out against the drab backdrop of a rock reef or a sandy-silty bottom. Once you have learned to spot this little forest, however, the rest is comparatively easy. You are well on your way to your first meal of pan-fried San Diego scallop.

Tom Montgomery Retires

by DON HIATT

Charles T. Montgomery (Tom to all who know him) started his shell collection in 1951 when the island of Guam was a collector's paradise. At that time he probably could not foresee the varied, traveled and adventurous life he was to live within the confines of the Pacific Ocean.

Tom was raised in British Columbia, Canada and moved to Los Angeles, California in 1930 with his wife, Louise, to start an office machine business. In 1951 Tom started working for Naval Civil Service as a business machine repair man on Guam, and for two brief periods in Hawaii. In 1968 he made the big step and bought the Bronson family-owned shell shop, Shells of Micronesia, which he has built into a thriving business.

For the past twenty-three years on Guam, Tom has been a well-known figure. He has seen some wondrous things and had a few memorable adventures of his own, but was always courteous in listening to another's tales of adventure. If Tom shelled with you, you enjoyed it. When meeting nature's obstacles his sense of humor made the outing a pleasure. Similarly, when meeting the "O.O.G.'s" (Only on Guam happenings) that make life on Guam different from any other place, he has survived with just a touch of wryness that keeps him still in love with living and people.

Tom has traveled to Fiji, Taiwan, Okinawa and the Philippines pursuing his hobby of shell collecting. He was one of the first visitors at the famous "Bump Hotel" of Mr. Evaristo Zambo in Cebu. (The Bump Hotel was so named because the roof was so low that your head had been well bumped by the time you left.)

He has been honored by having a shell named after him; *Terebra montgomeryi* R. D. Burch, 1965. He is a charter member of the Guam Shell Club and has been a long time member of the Hawaiian Malacological Society.

In addition to Tom's fabulous Guam collection of shells and some of the rare shells of other

SHELLS FOR SALE

MONTILLA ENTERPRISE

Specimen Shells of the Philippines — Free List — Shell & Seed Necklaces — Monkey Pod & Wooden Wares — Black Coral Bracelets & Earrings — Fibercraft — Artificial Flowers — Shell Craft — Windchimes, etc.

59 Maria Clara
Quezon City D-503
Philippines

JAPAN SPECIMEN SHELLS WANTED

I can use all the varieties from worldwide, both sea and land, from common to rare. Offer best prices with information on sizes, quality and available quantities. Sho Yasuda, Box 30, Fujisawa, Kanagawa, Japan.



Photo: Hiatt

areas, Tom has an outstanding stamp collection, particularly of British stamps.

I am happy to write about Tom, but regret to report that he is retiring and leaving Guam, probably to settle in California. He has meant many things to many people, helped numerous collectors with their collecting and identification problems. He is unique in his own way. We on Guam will miss him.

A VISIT WITH THE CLAVUS KING OF CEBU

by FR. AL LOPEZ, S.J.

I was on the evening flight from Manila to Cebu, and as the twinkling lights of the Islands glided by far below us, I wondered what pleasant surprises the next five days would bring. My previous visit had been three years before, and a lot of things can happen in that time.

We landed exactly on time, and my good friend Evaristo Zambo was on hand to greet me warmly with effusive Filipino hospitality. The next day I visited with him, his wife, daughter and son in law and swapped shell news. As usual, most of the news came from his side.

Zambo has an extensive territory assigned as his exclusive shelling grounds, for which privilege, he pays a yearly fee to the Philippine Government. He is very conservation minded, and tries to exploit his concession in such a way that marine life is not depleted. His divers are trained not to take defective or juvenile shells, and will also form colonies by grouping shells of the same species in their natural habitat.

He has had considerable success with transplanting corals and algae. Most adaptable have been lettuce and tree coral (*Acrophora echinata*), and among the algae, *Euclima spinosus* and *E. cottoni*. Stems are firmly planted in the sea bottom and nature takes care of the rest. The algae are ready for harvesting within two months, when they are "mown" and will sprout again for successive cuttings. Out of these algae "agar agar" is made, a jelly-like substance that is used extensively in the food industry.

Part of his shelling territory close to his home in Mandaue is Mactan Island, well known to many U.S. servicemen from the days of an American Air Base there. There is a spanking new steel bridge now, joining Mactan to Mandaue, and arching high above the channel between them.

Mactan Island is shaped like a meat cleaver, and the handle is known as Punta Enganio; in Spanish it means Treachery Point. The name was given because it was said that Magellan and some of his men were killed by treachery. This has been shown to be historically false. Magellan was slain there in 1521, but it was in a fair battle, and because he badly under-estimated his brave native foes.

All this section of the island may have been the world's most fabulous shelling reef for *Murex*. Besides the more common species, Zambo has obtained any number of *M. scorpio*, *H. anatomicus*, *palmarosae*, *bipinnatus*, *triqueter*, *tripterus*, *laciniatus*, *sau-lee* . . . etc. This, of course, is the home of *M. zamboi*, named after Evaristo, but above all, this is *M. elongatus* territory. *Murex* "clavus."

as it is locally known, is found here in all its magnificence. In size it goes to a good 4", and in colour to all shades of white, lavender, brown, pink and orange. Talking about his display, Zambo jokingly said: "I am the Clavus King of Cebu". This year he had a new species to add to the list: the exquisite *Murex aculeatus*, found in very limited numbers.

I asked him the reason for such a profusion in *Murex* at this particular locality. He smiled and his eyes twinkled. "You know, Father, people here say that it is because Magellan is buried there, and the *Murex* like the taste of his bones . . ."

Over the years, Mactan Island and other parts of his concession have yielded a number of rarities such as *Cypraea valentia*, *C. guttata*, a number of *Conus gloriamaris*, *C. circumcissus*, *C. bullatus*, some *Cypraea aurantium*, and a *Voluta tibiaeformis* spec. The first golden cowry Zambo obtained was found in an interesting way. One of his divers was chasing a large octopus for the pot, and when cornered it dropped something it was carrying and jetted off in a hurry. That something was a live *C. aurantium*.

Some of the methods his divers use for collecting shells are quite ingenious. One of the ways is to use gill nets baited with dead fish on the bottom. They are laid out in the deep channels between islands three hours before dawn, at which time the shells presumably call it a night and scurry back to their hideouts. On the way home they come across the free meal laid out for them and became ensnared in the nets. This past year Zambo got a *C. gloriamaris* this way.

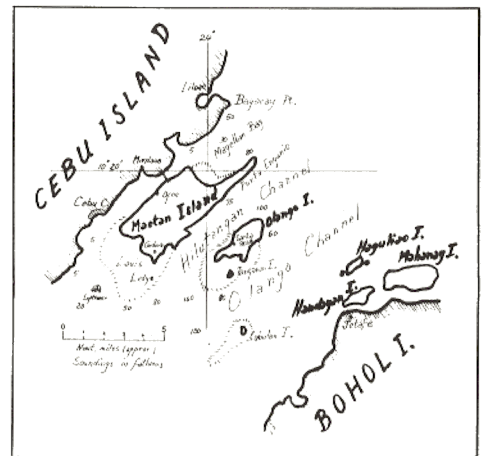
Another trick is a fine mesh net strung between two iron hoops and slung on a long line from the surface. The upper iron hoop is open and has some bait strung across it. The contraption is lowered to the bottom and left for a time. When raised it is full of crabs and shells, hopefully. In fact if the right technique and just the right bait is used, this method will take *Nautilus*. For this, the upper hoop is held a few inches off the bottom, and the nautilus swim to the bait. Their feeding can be sensed on the surface, and then the basket is winched to the top. As it comes up quickly, the nautilus is forced to the bottom of the net. Zambo says it took some time to get all the details right. For one thing he claims it is useless to try except over a muddy bottom and precisely between 55 and 60 fathoms, and then of course there is the question of the bait. It seems the nautilus is a finicky eater and will turn its nose up at anything but chicken legs (what else!)

One of the highlights of my visit was a shelling trip to Laus Ledge off Cordova, on Mactan (see map). Zambo supplied me with his trim, fast

outrigger "Josuel" and a couple of his divers. At low tide this reef is uncovered, so part of our shelling was in inches deep water. Later we moved to the edge and snorkelled in a few feet of water among coral, rocks and sand pockets in between. Practically every stone turned over would have two to a dozen shells underneath it. This way we got cones, cowries, pectens, bivalve, murex, rock shells, trochus, nerites, oysters, tridacna and in the sand pockets miters, strombus, lambis, clams and ceriths.

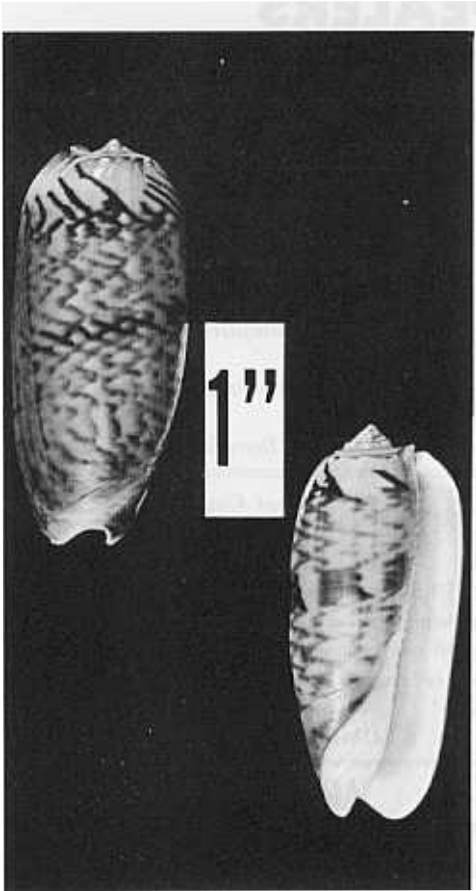
My most interesting find was an isabella cowry on its egg mass. The shell was about an inch and a quarter, and the diameter of the cluster was about an inch. What struck me was the fact that the mantle spread over the shell and over the eggs as well. When I lifted the whole thing out of the water I could not imagine what it was. It looked like a jet black blob of something. It was only when the mantle started to withdraw I could tell it was a cowry, and that the eggs were revealed. There seemed to be about one hundred pale yellow, long oval capsules. Needless to say I carefully replaced the whole thing as I found it.

Two days later I was back in Manila, considerably sunburned by the exposure to the elements but much refreshed in spirit by this intimate contact with creation.



INDEX OF SHELL PHOTOS

"Another index, compiled by Lloyd Dempster, 1633 N. Fifth St., Ft. Hueneme, Calif. 93041 is nearing completion. This index will provide alphabetical entries for either genus or species for the approximately 1,000 species of mollusks which have been illustrated in the *Hawaiian Shell News* in the period from January, 1961 through December, 1973. Orderly access to such a large and select assembly of illustrations should prove to be a valuable reference." *Molluscan Digest*, Vol. 3, Nos. 5 & 6, September 1, 1973.



Oliva hirasei Kira, 1959

Taiwan

Photo: Kemp

Conus nicobaricus Hwass in Bruguiere, 1792

Philippines

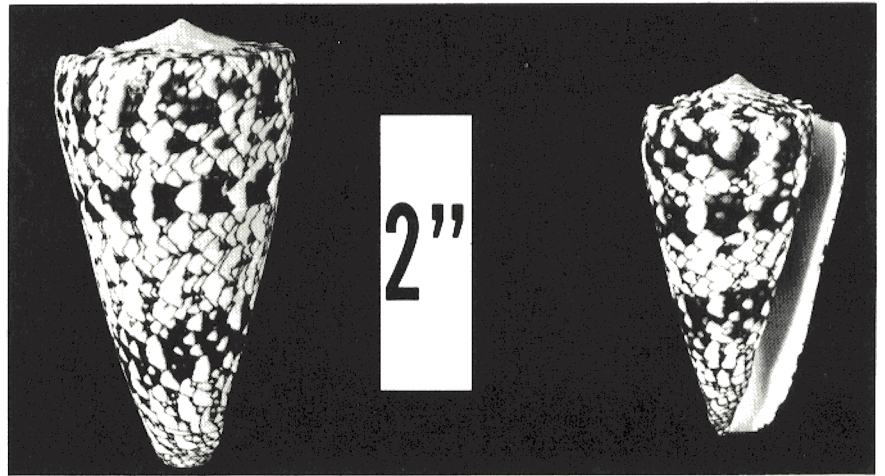


Photo: Kemp

Cymatium lotorium (Linne, 1758)

Philippines

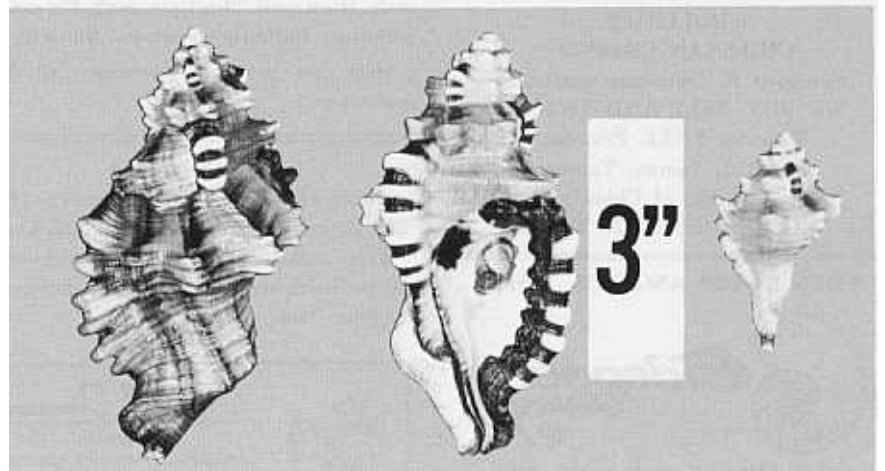


Photo: Kemp



Terebra chlorata Lamarck, 1822

Hawaii

Photo: Kemp

Mitra nigricans Pease, 1865

Hawaii

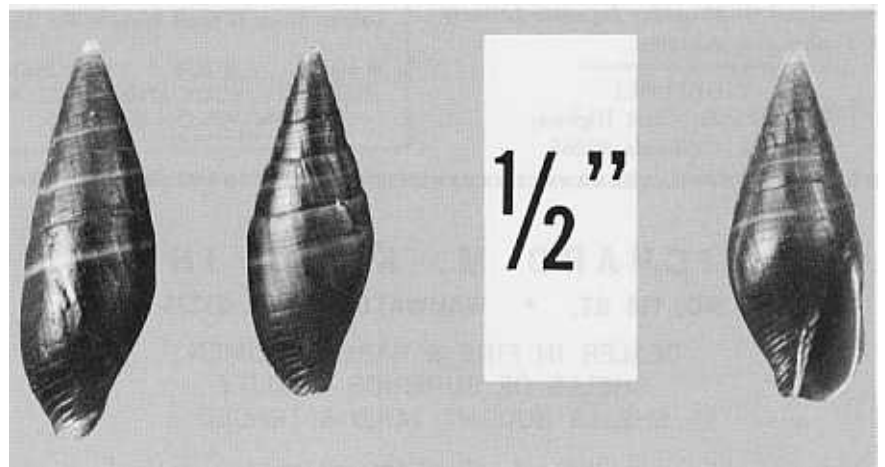


Photo: Kemp

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. (See page 6 for more about these shells.)

INTERNATIONAL SHELL DEALERS

SHELLS FOR SALE

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.

MAURITIUS

Buy-sell-exchange worldwide specimens
MIKADO SHELL HOUSE
6, Sir William Newton Street
Port-Louis, Mauritius

FORMOSA SHELLS WHOLESALE

CHU-SHAN CHIANG
Specimen & commercial seashells
WE BUY, SELL AND TRADE
Write for FREE Price-list
Box 332, Tainan, Taiwan
Republic of China
TELEPHONE: 50520 Tainan

WHEN IN LOS ANGELES, VISIT



FINE SHELLS AND FINE ART
We do not publish a list but we will answer specific requests for Rare Shells — our specialty.

Exceptional GEM quality Japanese *Latiaxis* and *Typhis* now available.

Shells graded according to HMS-ISGS

TIDPOOL!
22762 Pacific Coast Highway
Malibu, California 90265

SHELLS FOR SALE

U.S.A.

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.

Chien Shen Company Reliable Shell Dealer

P. O. Boxes 1-28 and 01128
Kaohsiung, Taiwan

Specimen Shells, Shell craft, Coral craft, Jade craft, Horn craft, Shark jaw craft, Pig craft, Oil paintings, Butterfly specimens, Butterfly craft.

Over ten years in business. Satisfaction guaranteed.

AUSTRALIA

Lance Moore Marine Specimens Pty., Ltd.
27A George St., Sydney, NSW, 2000, Australia
Free catalogue on request. All specimens cannot be listed, our stock too comprehensive. Ask for your "wants".



Seashell Treasures
P. O. BOX 730
OAKHURST, CALIFORNIA 93644 USA

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

Largest Stock of Shell Books in the World!

★ SELL ★ BUY ★ EXCHANGE
FREE SHELL, BOOK AND ACCESSORY
CATALOGS ON REQUEST
Shells graded according to HMS-ISGS

SHELLS FOR SALE

WESTERN AUSTRALIAN SHELLS

Box 71738, G.P.O., Perth,
Western Australia, 6001
Fine shells from the Australian west coast and other interesting areas of the world. Specimens for the beginner and advanced collector such as *Cyp. rosselli*, *jeaniana*, *marginata* and *Voluta nodiplicata*, *irvinae reevei* and many others.

Also book list and over 200 different colour slides.

Send for our fine price booklet.

West Coast Curio Co.
1940 Maple Avenue
Costa Mesa, Calif. 92627

"13 miles south of Disneyland". Longest established shell dealer in the world. More than 2,000 species stocked regularly. No lists — No mail order. Buy or browse — you're always welcome!

COME IN AND SEE US

WANTED

HIGH QUALITY SPECIMEN SHELLS

Individual pieces, lots, or
entire collections.

All particulars and price to:
CMJ Natural History Company
2630 62nd Ave. South
St. Petersburg, Florida, U.S.A.
Zip 33712

WESTERN AUSTRALIA

Merv Cooper of Perth Shell Distributors avails you of his New List No. 6.

— FREE —

Write to:
PERTH SHELL DISTRIBUTORS

P. O. Box 186
Mt. Hawthorn, Western Australia 6016
The Home of *Cypraea rosselli*
Phone 815-542

SPECIAL BOOK LIST

AUSTRALIAN SHELLS, Wilson & Gillett, A\$12.95, 180 pp, 11½" x 9", excellent plates, true color.

SHELLS OF NEW GUINEA & the CENTRAL INDO-PACIFIC, Hinton, A\$4.95, 98 pp, 11" x 8", treating nearly 300 cones and other families. True color.

MARINE SHELLS OF THE PACIFIC, Cernohorsky, Rev. FIRST Ed. A\$7.00, 248 pp, 9" x 16", 444 b & w photo-plates; New SECOND Ed. A\$13.00, continues vol. 1, 412 pp, 9¼" x 6¼", color and b & w, 68 pls, 600 species.

Postage is additional at A\$1.10 (except where noted). Payment requested with order, in Australian Currency, by Bank-draft to:

**OLAF CHRISTENSEN, BOX 124
NORTH-BRIGHTON, 3186, AUSTRALIA**

RICHARD M. KURZ, INC.

1575 NO. 118 ST. • WAUWATOSA, WIS. 53226 U.S.A.

DEALER IN FINE & RARE SPECIMEN
SHELLS OF SUPERIOR QUALITY
SHELLS BOUGHT, SOLD & TRADED

Write for Free Price Lists

House of Quality and Service
Largest Mail Order Shell Dealer in the U.S.A.