



Hawaiian Shell News

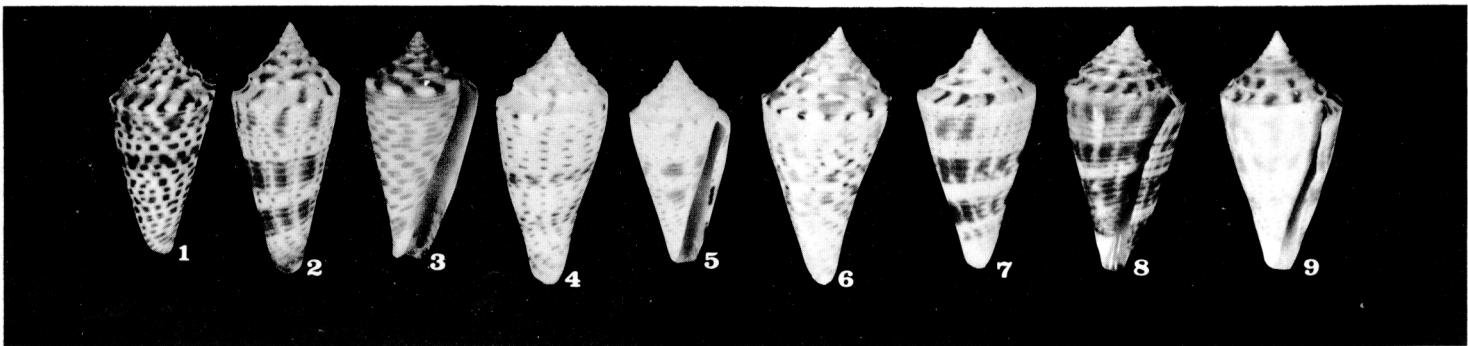
VOL. XXII NO. 12

DECEMBER, 1974

NEW SERIES NO. 180

A Close Look at the Subgenus *Conus (Conasprella)* Thiele, 1929

by TAIZO NINOMIYA



TOKYO — For years, one of my foremost malacological fascinations has been *Conus (Conasprella)* Thiele, 1929, and its unusually beautiful small cones. Most of these species are rare, but I have been able to gather adequate fine specimens to present and share some interesting data with other collectors. From a good shell friend in Hawaii, I have received a pair of the extremely rare *Conus eugrammatus* Bartsch and Rehder, 1943, which are used in my study. Oddly, one specimen is banded and the other not, which has been of no little interest. Comparison of the Japanese species with the others from the Pacific has been intriguing. It also has provided me with many hours of rewarding study and, I hope, accomplishment.

My study has encompassed the following species:

1. *Conus nasui* Kosuge, 1971. Collected in 1971 from 400 meters off the west shore of Midway Island by Japanese trawler. (figure 1)
2. *Conus eugrammatus* Bartsch and Rehder, 1943. Dredged from 400 fathoms, three miles south of Honolulu in 1970. (figures 2 & 3)
3. *Conus praezellens* A. Adams, 1854. Trawled from 300 meters off Kii Peninsula, Wakayama Prefecture, Japan in 1967. Ref.: Plate 99, figure 1, *Selected Shells of the World, Volume 1*, by Shikama and Horikoshi. (figures 4 & 5)
4. *Conus* species. (Not yet identified) Col-

lected in Tosa Bay, Kochi Prefecture, Japan from 200 meters by trawler in 1973. (figure 6)

5. *Conus japonicus* Hwass, 1792. Trawled from 300 meters in Kii Channel off Tanabe, Wakayama Prefecture, Japan in February 1972. Ref.: Plate 121, figure 187 and Plate 68, figure 14, *Selected Shells of the World*, by Shikama and Horikoshi. (figures 7 & 8)

6. *Conus wakayamaensis* Kuroda, 1956. Collected from 300 meters off Kii Peninsula, Wakayama Prefecture, Japan in 1967 by trawler. Ref.: Plate 99, figure 1, *Selected Shells of the World, Volume 1*, by Shikama and Horikoshi. (figure 9)

General Characteristics

These cones are small, rather thin with moderately elevated spires. The last whorl is elongate with nearly straight sides. Aperture is narrow, either white or orange. Outer lip is protracted, shoulder angular, spire elevated but slightly concave with the later whorls being smooth. The last whorl is white ornamented with brown subquadrate spots mainly confined to ridges and variably widely spaced or condensed to form two or three spiral lines around the body. Spires are ornamented with widely spaced subquadrate spots. Periostraca very thin, yellowish brown, translucent and smooth.

The individual species have these special characteristics:

1. *Conus nasui*. Has narrow striae on edge of shoulder. Body whorl has widely spaced ridges with brown quadrate spots confined to

the ridge and body whorl grooved from under the center of the body. Two obscure brown bands ornament the center of the body, and are directly below the shoulder.

2 & 3. *Conus eugrammatus*. The body whorl has spaced ridges with brown subquadrate spots all over the entire body. One specimen has three dark bands around the body, which are not present on the second.

4 & 5. *Conus praezellens*. Has evenly spaced ridges with narrow brown subquadrate spots and two brown bands around the body.

6. *Conus species*. Widely spaced ridges with strong brown dots and pale orange blotches all over the body whorl. Has three widely spaced bands.

7 & 8. *Conus japonicus*. Smooth body whorls, but with grooves downward on the center of the body, with blackish brown dots all over. Has three widely spaced bands.

9. *Conus wakayamaensis*. Has widely spaced ridges all over the body with small square brown dotting. Also three bands consisting of obscure irregular blotches.

Measurement Data

From the measurements, I have the following findings:

1. The D/A values of *C. eugrammatus* and *C. nasui* (See page six) are identical at 23mm. They also have the most elongate bodies. *Conus wakayamaensis* gives an appearance of burly shortness when compared.

(Cont'd on Page

REEFCOMBINGS

HAWAIIAN MALACOLOGICAL SOCIETY

(Founded in 1941)

P. O. Box 10391 Honolulu, Hawaii 96816

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 LILICO, RUTH FAIR

Editorial Staff:

Elmer Leehman, Lyman Higa,
Genevieve Wheeler, Beatrice Burch

Corresponding Editors: Peter van Pel,

Dr. J. C. Astary, 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.

HMS DUES FOR 1975

U.S. addresses, including Hawaii,
Alaska, Guam, American Samoa,
APO, FPO and all others using
U.S. Zip Codes \$ 8.00

Airmail delivery to the above,
plus Canada and Mexico \$11.15

Non-U.S. addresses

As "printed matter" \$ 9.50

As "Letter Mail" (recommended) \$12.00

Airmail delivery \$16.00

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.

The author of the article on the *Conasprella* subgenus of *Cones* appearing on page one of this issue — Taizo Ninomiya of Tokyo — is one of the foremost shell collectors in Japan. He has been a member of the Society for several years, and reports that he hopes to visit Hawaii in the coming year.

In addition to owning what is reputed to be one of the finest and most extensive shell collections in the world, Ninomiya is a keen student of malacology, as his article shows. When not working with shells, he runs his Ninomiya Biological Laboratory in Tokyo.

In submitting the material for his article, Ninomiya expressed hope that it would assist HMS members in recognizing the differences among the *Conasprella* species. He offered to do his best to answer questions. (His address: Taizo Ninomiya, 10/12 Himonya 2, Meguro, Tokyo, Japan.)

Remember the report in HSN (Jan. 1974) about the six-inch *Cypraea tigris* collected by Gabby Kawelo of Kailua, Oahu? Was it real?

HMS past president Charles Wolfe recently measured the prize with vernier calipers and got a reading of 152.88mm. (6.019 inches) — clearly a world record. Despite repeated reports

of sales at fabulous prices, Gabby still has the prize specimen and says he intends to keep it!

+ + +

"For the past few years I have heard repeated complaints regarding an unusual scarcity of good shells offered for sale from Taiwan and the Philippines," HMS past president Elmer Leehman commented recently. "HMS members travelling to those areas reported that the preponderance of rare and gem-quality specimens were being bought for spot cash (mostly with U.S. dollars) by well-financed Japanese. Since these sales produced immediate payment and involved no mailing, the sellers understandably gave them preference.

"The shells being bought up apparently were for a ready market in Japan, since few were exported. I understand that there has been a huge increase in shell collecting among the Japanese — probably a natural trend in view of their great interest in the sea. The Emperor is a world recognized malacologist and shell collector.

"Recently, however, several reliable people have told me that the Japanese no longer are engaged in their massive buying, and in most cases have recalled their buyers. One important U.S. dealer says he has been offered export shells from Japan for the first time in years, although at greatly increased prices. Others tell me they have again had normal offers from Taiwan and Philippine sellers.

"I was unable to learn the basic reason for this change, which might be the result of either an economic decline or a saturation of the market. Whatever the cause, this should be recognized as a development that favors collectors in other parts of the world. Taiwan and the Philippines long have been recognized as two of the most prolific and important shell-producing areas. The resumption of normal market conditions will result in more rare shells being available and probably at better prices."

+ + +

Everet C. (Easy) Jones, former HMS director, marine biologist and ardent conservationist, has been appointed an assistant professor in the Department of Science, Oceanography and Biological Inquiry at the North East Missouri State University at Kirksville. "Professor" Jones' many friends in Honolulu — where he made his headquarters before retiring from the U.S. National Marine Fisheries Service a year ago — would guess that he dreams of the warm blue Pacific as he braves the wintery blasts en route to his classes.

The message from the Jones family said that Easy is thrilled with his teaching job; we know that his students must enjoy associating with a man so well versed concerning the ocean.

The Jones' address is Route 2, Box 29-A, Norwood, Missouri 65717.

+ + +

Lyman Higa, who conducts the "Recent Finds" column each month, was not responsible for a slip in reporting a *Cypraea langfordi* from Japan (HSN, Oct. 1974) measuring 60mm. It was noted that C. M. Burgess reports a size range up to 41.4mm. The sentence should have read "56.6 to 41.4mm."

In calling attention to the error, *Cypraea* expert Ray Summers wrote: "My largest one from Queensland is 59.5mm, about the largest I have seen. The Japanese specimens, I believe, are usually smaller than those from Queensland, so 60mm is large — and larger than any that Burgess knew of at the time the book was written."

Perhaps this is a good time to remind HSN readers to report suspected record-size shells to Bob Wagner, Route 1, Box 21, Marathon, Fla. 33050, for confirmation and possible inclusion in the next issue of the *Standard Catalog of Shells*. Include information on the origin of the shell and who did the measuring.

+ + +

Dr. R. Tucker Abbott has written to comment on Enrico Romagna-Manoja's article in HSN for October 1974 ("*Strombus (Lentigo) fasciatus elegans*: a New Subspecies").

"The subspecies . . . is probably invalid on three counts," he says. "Firstly, the name *elegans* was previously introduced by Sowerby in 1842. Secondly, the 'new subspecies' was already given a name (*flavigula* Tryon, 1885) and, thirdly, it is probably only a minor form of a very variable species."

While he is at it, Abbott supported HSN Corresponding Editor Thora Whitehead in her discussion with Bob Purtymun whether *Nassa sarta* is synonymous with *N. francolinus*.

"Regarding *Nassa* Roding (not *Nassa* Lamarck which is now *Nassarius*), Mrs. Whitehead is correct in following Virginia Maes (Proc. Acad. Nat. Sciences, vol. 119, p.132, 1967) who considers *N. francolina* (Bruguiere) the Indian Ocean species, and *N. sarta* (Bruguiere) as the Pacific Ocean species. The latter has a valid Red Sea subspecies, *situla* (Reeve). We need an Indo-Pacific Mollusca number on this genus."

DO A FRIEND A FAVOR!

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

RANGE EXTENSION FOR EPITONIUM SCALARE

by HENK K. MIENIS

JERUSALEM — The precious wentletrap, *Epitonium scalare* (Linnaeus, 1758), was in the seventeenth and eighteenth centuries a much sought after collector's item, fetching high prices at auctions. There was even a period that this species was so rare that faked specimens made of rice paste appeared on the market. Today, it is still a popular species, but prices dropped considerably.

Epitonium scalare has been considered for a long time a typical Sino-Japanese species, since most specimens originated from the Far East. However, specimens have also been found elsewhere — in the Philippines, Indonesia, New Guinea and Queensland. According to Cernohorsky (1972) this species is moderately uncommon in the Western Pacific.

Hardly known or maybe overlooked is the fact that this species has also been reported from the northwestern part of the Indian Ocean. Melvill & Standen (1903) reported it from the Persian Gulf, the Mecran Coast and from Bombay, while Jousseume (1912) mentioned it from Aden.



During our current revision of the Red Sea molluscs present in the collection of the Hebrew University of Jerusalem, we found two additional samples from this area.

A fine but empty shell was collected in 1957 near Massawa, Ethiopia, while a second specimen was dredged in the harbor of Eilat. The latter specimen was found alive. Unfortunately, however, there is no data about exact depth and the year in which it was collected.

These two finds in the Red Sea and the literature records of *Epitonium scalare* from the Gulf of Aden, the Arabian Sea, the Gulf of Oman and the Persian Gulf, indicate that the precious wentletrap lives not only in the Pacific Ocean but that it is also widely distributed in the northwestern part of the Indian Ocean.

References

Cernohorsky, W.O., 1972. *Marine Shells of the Pacific*, II. 411 pp. Sydney.
 Jousseume, F.P., 1912. "Faune malacologique de la Mer Rouge." *Mem. Soc. Zool. France*, 24 (3-4): 180-246.
 Melvill, J.C., & R. Standen, 1903. "The genus *Scala* (Klein) Humphrey, as represented in the Persian Gulf, Gulf of Oman, and North Arabian Sea, with descriptions of new species." *J. Conch.*, 10: 340-351.

More than 2,000 shell species from warm and cold seas—classified, described, and exquisitely illustrated in color!

THE COLLECTOR'S ENCYCLOPEDIA OF SHELLS

—edited by internationally renowned authority S. Peter Dance—is the most useful overall reference on shells ever published! It presents:

- Full descriptions of all the world's commonly collected species and some rarer ones—including their common and scientific names, and their geographical distributions. They are arranged according to an up-to-date classification system.
- Vivid color photographs of each species—over 1,500 especially taken for this volume—often showing several specimens to illustrate variations.
- A valuable discussion of the biology, classification, identification, and zoogeography of mollusks.
- The history of shell collecting—with sound advice for collectors.

Complete bibliography and index. 7" x 10". An invaluable guide for the dealer and serious collector. And an endless delight for the amateur—or for anyone who loves beautiful, colorful designs. **\$19.95**



At your bookstore, or use this coupon

HSN

McGraw-Hill Book Company
 Dept. PL, 25th floor
 1221 Avenue of the Americas
 New York, N.Y. 10020

Please send me _____ copy(ies) of *The Collector's Encyclopedia of Shells* @ \$19.95.

Name _____

Address _____

City _____

State _____ Zip _____

Check or money order enclosed. Please add applicable taxes.

Rev 09

WHAT'S NEW IN SHELL IDENTIFICATION?

The Hawaiian Shell News Shell Identification Pages, about which some misgivings were expressed early in 1974, appear to have established their popularity. Reader response was fairly good and almost 100 per cent positive. Criticisms were directed at the use of color vs. black-and-white, the ratio of Hawaiian to worldwide specimens, and the eternal question of what to print on the reverse page. On the basis of the mail (and a few oral comments), the HMS Directors recently authorized ten color pages for the next year or so, along with black-and-white for intervening months.

Charles Wolfe, who has been in charge of the ID page, has been asked to continue. He also writes the brief notes that accompany the feature on a separate page.

"I invite HMS members — in fact, you might say I plead with them — to assist in this feature," Wolfe declares. "Send me photos that you think should be included, or send the specimen and I will photograph it here.

"My need is not for the very common species, nor for the excessively rare. The object of the ID page is to assist collectors to identify and separate the specimens that give them trouble.

"For the moment I need black-and-white, rather than color, but I am willing to try to reproduce color in B/W if that is what you have. Give me two views of the shell — dorsal and ventral — at the same scale. It is helpful to include a strip of paper or tape indicating length, either metric or in inches (see the current ID photos).

"The primary concern is not with artistic merit, but with clarity of detail. I need a clear illustration of the characteristic features — exterior sculpturing, distinctive markings, columnellar peculiarities, and so forth.

"If you are not absolutely sure of the identify, please say so. In any event, report the source of your name — your local expert on the genus, a shell book, or another publication. In some instances, I may ask you to send me the original shell for additional study. Needless to say, the shell will be returned safely and as quickly as possible. A brief writeup on the species — its habitat, range, rarity, etc. — will be helpful, also.

"Full credit will be given to the owner of the shell as well as to the photographer."

The Shell Identification Page should not be confused with the "Little Stranger" photos that appear frequently in HSN. The latter are specimens that cannot, or have not been identified by the owner and his immediate circle. Nor is the ID page competing with the occasional pictures of remarkable shells — the world record sizes, the aberrant colors, the monstrosities, etc.

A final word on submitting photos to Hawai-

ian Shell News — identify them fully. Be sure your name, the species name and the locality are written legibly on the slide or the back of the print. Even if you send a separate sheet with details, give us the above information on each item.

Except in special instances when a photo is to be run in color, HSN prefers to receive a color print. If you have any choice in the matter, a print that shows the shell alone (rather than with a lot of background or border) is best. But clarity of detail is vital. Bad focus, uneven lighting, shaky camera — impossible!

COMING EVENTS

The January 1975 issue of Hawaiian Shell News will feature a remarkable report by David Thomas, of Morro Bay, California, on his recent visit to remote Easter Island, home of *Cypraea engleri* and *C. caputdraconis* as well as of the famous stone men. Be sure your HMS dues for 1975 are paid up, to avoid delay in delivery.

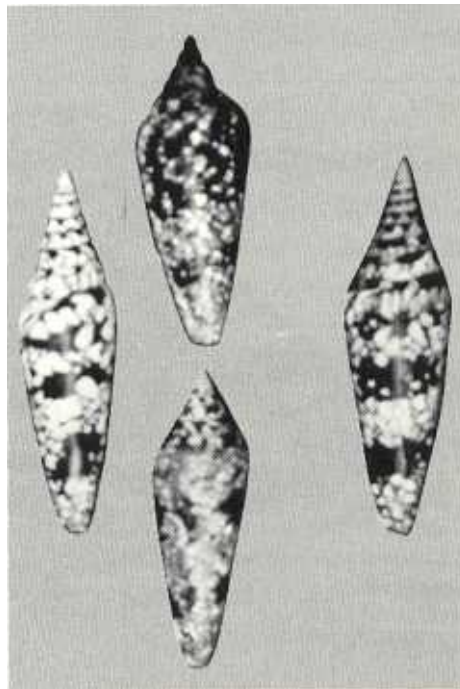


Photo: Christensen

RARE CONUS

Figured in the above picture are four of the rarest of the cone family. These fine shells are from the personal collection of Olaf Christensen of North Brighton and are all of gem quality. Top is shown a *Conus gloriamaris* and bottom a *Conus bengalensis*. They are flanked by two *Conus milneedwardsi*, one with dark brown pattern and the other with light brown.

by CHARLES WOLFE

Cymatium trilineatum (Reeve, 1844). This triton seems to be fairly common in the Red Sea and Persian Gulf areas. Reeve's type locality was the Philippine Islands, but I have never seen a specimen from anywhere in the Pacific. The spire is markedly longer in relation to the body whorl than in the following species.

Cymatium boschi Abbott & Lewis, 1970. I have seen this uncommon triton only from the Gulf of Oman. It differs from *C. trilineatum* in having a decidedly shorter spire and in the tabular appearance of the subsutural area.

Mitra (Dibaphus) edentula Swainson, 1823, is found throughout most of the Pacific, including Hawaii where it is extremely rare. The peculiar recurved siphonal canal is distinctive. Like most of its genus, it is a sand-dweller.

Conus suratensis Hwass in Bruguiere, 1792. Some authorities consider this a form of *C. betulinus* Linne, 1758. However, *C. suratensis* is a smaller, more slender shell with a sharper edge at the shoulder. The spots on *C. suratensis* tend to line up axially; this feature is never seen in *C. betulinus*.

Phalium (Semicassis) umbilicatum (Pease, 1860). This Cassid is endemic to Hawaii. Although crabbed specimens are occasionally taken by divers, the shell apparently lives below scuba depth. Live specimens have been taken by dredging and in crab traps, the most recent by HMS member George Donner in November, 1974. Its heavy spiral cording is distinctive and continues to the inside of the lip.

Year end wrap-up: Since this is the final issue for 1974, the editors asked for an up-dating of name changes, errors, etc., for the last twelve shell identification pages. Following are the necessary corrections of which we are aware at this time.

In the photo captions, parentheses around the author and year should be removed for the following species: (April) *Lambis scorpius indomaris*, (August) *Murex rectirostris* and *Strombus marginatus marginatus*, (September) *Conus moreleti* and *Codakia thaanumi*.

From the May issue: The name *Mitra nigricans* has been found to be a synonym of *Mitra luctuosa* A. Adams, 1853. From the June issue: Correct the generic designation to *Scabricola (Swainsonia) newcombii* (Pease, 1869). From the July issue: Correct the generic designation to *Cancilla (Domiporta) granatina* (Lamarck, 1811). *M. gracilis* has been found to be an invalid name and the species shown is now named *Cancilla (Domiporta) gloriola* Cernohorsky, 1970. My apologies to Walter Cernohorsky for overlooking his 1970 study, and my thanks to numerous members who caught my error!

Voluta fulgetrum

by W. PAUL TRENBERTH

Voluta fulgetrum Sowerby, 1825 and its many forms has often been quoted as a between-tides volute, but study has disclosed that this is not correct. Some justification for this contention is given by the fact that most specimens have been taken at low tide. This only occurs during certain months of the year, however. The fact that *V. fulgetrum* is normally a deep-water species has been established by the taking of specimens by trawlers when working at depths of around forty fathoms. Thus, from the experience of trawlers and collectors and the compiling of the data so accumulated, the following pattern has evolved.

During the months from late January to early October the common habitat of *V. fulgetrum* is in deep water. The close inshore migration usually starts in October, when it is obvious that the egg-laying season commences. In the shallow water the action of the tides and the sun on the exposed sands creates an ideal incubation temperature for the eggs. The shell comes in on the high night tide and burrows in such a position, that, when the tide recedes in the morning, it is left buried in the sand a few feet above the low water mark. When the tide again turns and begins to make, the shell breaks out of the sand and slowly makes its way to meet the incoming water, then by stages, back to the deep water again.

It has been observed that soon after the first shells are found, very juvenile specimens, some no more than the protoconch, but unmistakingly that of *V. fulgetrum*, can be found in the area. These are always empty of any animal and it must be presumed that the immature animal has fallen prey to some marauder.

In most cases the buried shell cannot be detected, the tide having levelled out the sand above it. But where the shell has gone a little too high and buried in the less compacted sand, a small mound may be seen. When the top of this is scraped off, the shell is plainly visible.

There does not seem to be any pattern to the area chosen for egg laying. Seldom is the same site used in consecutive years. Quite often there is a lapse of six or seven years between visits to any given area.

Just how many eggs are laid in a sitting has not been established, as the temptation to excavate the nest has so far been resisted. One of my collector friends asserts that each shell lays but one egg. This I find hard to believe, in view of the obvious mortality rate.

The inshore migration has been substantiated by skin divers, who have taken *V. fulgetrum* at free-diving depths during this period of egg-laying in the vicinity.

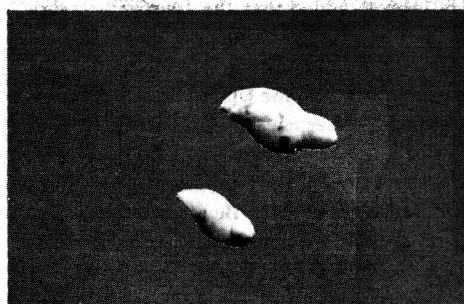


The adult *Voluta fulgetrum* Sowerby, 1825, approximately actual size.

Photos: Trenberth

After the middle of January, all activity ceases and no more specimens are to be found in the area. A few dead specimens, up to 1½ inches, may be found, but no adults, so obviously the young shells, as well as the adults, have again made it to deep water. The smallest of the adult shells taken during this period would be about four inches in length, but smaller specimens are trawled, so it would seem that this is the length when they reach adult status.

Although specimens are trawled at times, this is the exception rather than the rule. When this happens the trawler is not getting the best results with prawns and promptly resets his otter board, so that the net works some distance above sea bed level. In a correctly set net, no shells are obtained.



Immature *V. fulgetrum*, same scale as above.

Photos: Trenberth

Comments on *Cribraria*

by RAY SUMMERS

PETALUMA — Jerry Donohue's recent note, "A Key to the *Cribraria*" (HSN June 1974), states that *Cypraea catholicorum* has lateral spots on the right side only and that *C. cribraria* does not have lateral spots. This may result in some confusion in identification, which the following constructive comments should help to prevent.

I am aware that the original description of *Cribraria (Cribraria) catholicorum* Schilder and Schilder, 1938, (or *C. catholicorum*, whichever one may choose to call it) only mentions lateral spots on the right side. This was evidently constant on the sixty-six specimens from Mope and Karlei, New Britain that the Schilders had studied at the time it was described in their very fine Prodome. I am grateful for the vast knowledge it contained.

I have not checked specimens from all localities, but the specimen from New Caledonia on plate 13, figure A of Burgess' *Living Cowries* has several lateral spots on the columellar (left) side with a few faint spots extending over the base. Through the generosity of CMSgt. Edwin L. Fobes, this specimen is now in my collection. Specimens from Lau lagoon, Ataa, Malaita island, British Solomon Islands, sometimes have lateral spots on the columellar side as well as on the labial side.

During the several years that elapsed between the writing *The Living Cowries* and its publication, *Cypraea catholicorum* was collected quite often on Malaita by J. van der Riet, a personal friend of mine. Previously, it has been extremely rare, particularly in fine condition. I had only seen the very fine paratype I obtained through the generosity of Dr. F. A. Schilder, and three specimens from New Caledonia (two of which were in the Fobes collection).

The Living Cowries states that lateral spotting occurs in varying degrees on both sides on some specimens of *C. cribraria* from all areas. Although I have not observed this, it seems logical.

In certain parts of the Philippines the large heavily calloused variation of *C. cribraria* often has distinct lateral spots on the labial side, at least. I have not seen this on the type of *C. cribraria* most commonly found in the Philippines, although it may occur. Those from Ceylon and East Africa sometimes have lateral spots on each side, but rarely on the columellar side of those from East Africa. I believe that those from the Ceylon area are the most likely to have lateral spots.

In short, the difference of lateral spots noted by Donohue is not constant, and should not be regarded as an infallible key to identification.

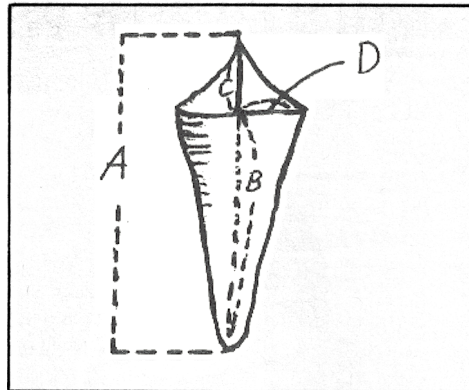
CONASPRELLA (Cont'd from Page 1)

shortness when compared.

2. The D/B value of *C. eugrammatus* is 28.5mm and the smallest of the six species. *Conus praecellens* measures 30mm in D/B value. *Conus japonicus* proves to have the most blunt profile.

3. The D/C value of *C. nasui* shows it to have the most elevated spire, which indicates a value of .92mm. Next in order is *C. praecellens*. *C. wakayamaensis* has the flattest spire of the six species.

4. The D/C value of these shells approximates thirty percent. In other words, a little less than one third of the length consists of spire. All specimens render the impression of fine balance



and all are very attractive.

5. All measurements are to .1mm in accuracy.

A = Whole Length B = Length of Aperture C = Height of Spire D = 1/2 Width
Scale: mm

	A	B	C	D	C/A	D/A	D/B	D/C	C/B
<i>C. nasui</i>	27.8	20.8	7.0	6.45	.25	.23	.31	.92	.34
<i>C. eugrammatus</i>									
1.	30.1	23.3	6.8	6.50	.23	.22	.28	.96	.29
2.	28.2	23.0	5.2	6.75	.18	.24	.29	1.30	.23
Ave.					.20	.23	.285	1.13	.26
<i>C. praecellens</i>									
1.	29.4	23.2	6.2	6.95	.21	.24	.30	1.12	.27
2.	29.5	23.0	6.5	6.80	.22	.23	.30	1.05	.28
3.	20.5	14.6	5.9	4.55	.29	.22	.31	.77	.40
Ave.					.24	.23	.30	.98	.32
<i>Conus sp.</i>									
	32.6	25.2	7.4	8.10	.23	.25	.32	.09	.29
<i>C. japonicus</i>									
1.	31.0	23.6	7.4	7.75	.24	.25	.33	1.05	.31
2.	30.0	22.9	7.1	7.50	.24	.25	.33	1.06	.31
Ave.					.24	.25	.33	1.05	.31
<i>C. wakayamaensis</i>									
1.	30.9	23.6	7.3	8.00	.24	.26	.34	1.10	.31
2.	27.2	22.8	4.4	7.00	.16	.26	.31	1.59	.19
3.	29.4	25.6	3.8	8.00	.13	.27	.31	2.10	.15
Ave.					.18	.26	.32	1.60	.22

TWO STRANGERS RECOGNIZED

The October issue of *Hawaiian Shell News* carried a photo sent by Luisa Berzigotti, of Rimini, Italy, of an unidentified bivalve from Lake Garda. Did anyone recognize it?

At least two top-level experts did. Both Dr. R. Tucker Abbott, of the Delaware Museum of Natural History, and Henk K. Mienis, curator of the mollusc collection, Hebrew University of Jerusalem, called it *Dreissena polymorpha* (Pallas), a recent arrival in northern Italy.

"Since about three years it has been living in Lake Garda, Mincio River and the Lake of Ledro," Mienis wrote. "It is a well known fact that *Dreissena* can cause extensive damage to water pipes transferring cooling water to electric

power plants. It is therefore considered a pest in many places."

Dr. Abbott added that the freshwater zebra clam is "the scourge of industrial plants in Asia Minor and Russia. There is a \$500 fine for importing them into the United States. A harmless brackish water cousin, *Mytilopsis*, lives in the eastern United States."

The photo from Italy included other shells that had stumped Ms. Berzigotti. Both Dr. Abbott and Mr. Mienis recognized them as *Cepea nemoralis* (Linne), a common European garden snail that is occasionally found in North America, also. The latter apparently were brought across the Atlantic by early immigrants.

SHELLS FOR SALE

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

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.



PANAMIC SPECIMEN SHELLS *West Mexico to Panama*

FREE PRICE LIST

3846 E. HIGHLAND / PHOENIX, AZ. 85018 USA

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

TIDEPOOL!

22762 Pacific Coast Highway
Malibu, California 90265

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

DELAYED FERTILIZATION

by OLIVE SCHOENBERG

Occasionally a mollusk will lay eggs shortly after it has been placed in a home aquarium. Sometimes these eggs hatch into tiny velliger shells after an incubation period. More often, however, the eggs never hatch — either because they have never been fertilized or because of contamination in the egg cases prior to hatching.

On rare occasions gastropods have been observed laying fertile eggs when no other similar species has been around.

In 1973 John Drury found a *Cypraea tigris* while scuba diving off Oahu's shores. He put the cowry in his aquarium where, a few weeks later, she laid eggs under a rock. It wasn't ascertained whether the eggs hatched as the Drurys were away at the time.

Then the unusual occurred. About six weeks later, the same *C. tigris* laid another batch of eggs. These hatched into a grayish-white cloud of ciliated, swimming velligers. No other *C. tigris* lived in this aquarium to fertilize these eggs. How, then, were they fertilized?

In the Cypraeidae (and many other gastropod families), the sexes are separate. Dr. Alison Kay worked on *C. caputserpentis*, a very common shell, and noted that females have a seminal receptacle that has several diverticulations or pockets.

"More sperm are ejected during copulation than are utilized in fertilization of eggs deposited at one time, and these sperm are accumulated (stored) in the seminal receptacle," she reported. "The sperm remain active in the receptacle for at least eleven days following copulation."

Delayed fertilization sometimes occurs. It appears that the female will use only part of the sperm at any one time, storing the rest for fertilization of future eggs at widely spaced intervals. This would explain the phenomenon that took place in Drury's aquarium where a lone female laid a fertile batch of eggs after she has been in an aquarium many weeks with no other *C. tigris* and also after she had laid a previous batch of eggs. This too, would explain the fertile eggs laid in Bob Purtymun's aquarium a second time by a *Cymatium nicobaricum* without the presence of a male. (HSN Oct. 1974).

Species employing the delayed fertilization phenomenon seem to be found over a wide area of ocean. This may explain why such shells as *Cypraea tigris*, *S. caputserpentis*, and *Cymatium nicobaricum* are found over much of the Indo-Pacific.

References:

Abbott, R. T.: Kingdom of the Seashell. p. 150.

Bartsch, Paul: Mollusks. p. 155-156.

Kay, Alison: The Functional Morphology of *Cyp. caputserpentis* . . . Int. Revue ges. Hydrobiol. 45. p. 187-191.

SINISTRAL CYPRAEA

A "left-handed" cowry is rare under any circumstances, and doubly so when it is a scarce species. Mrs. Gwenda Pini, HMS member in Queensland, has a specimen of what she believes is *Cypraea capensis* Gray, 1828 that is unquestionably sinistral.

"How many other members have sinistral cowries in their collection?" she asks. "I am led to believe that the abnormality is extremely rare in *Cypraea*."

Members may write her at P. O. Box 780, Innisfail 4860, Queensland.

GROW YOUR OWN

CONUS GLORIAMARIS (Cont'd.)

Iain Gower of Guadalcanal, whose successful attempt to raise a *Conus gloriamaris* from a tiny juvenile into a healthy adult specimen was reported (HSN July 1974), writes that the shell is still hale and hearty, but that he fears it has reached maximum size without threatening any world records.

Iain did not report its actual present length, however. The shell still lives happily, with plenty to eat, in a cage on the bottom of Marau Sound, Guadalcanal, in the British Solomon Islands.

It has been proposed that the food supply be continued, in hopes that the shell will continue to grow, and that when the specimen dies the animal be preserved for scientific study by William Old, Jr. of the American Museum of Natural History in New York, Dr. R. Tucker Abbott, of the Delaware Museum of Natural History, or Dr. Alan Kohn, of the University of Washington — all of whom are cone experts. The opportunity to study this rare species would be most welcome, I suspect.

The *Conus gloriamaris* of the Solomon Islands have never approached the Philippine specimens in size. The world record is 155mm. Of the numerous specimens found off Guadalcanal in 1968, none exceeded 120mm. No larger ones have been recovered since then.

Elmer G. Leehman

Stranger from Thailand

Arum Chaiseri's malformed "Little Stranger" from Thailand (HSN Oct. 1974, p.5) is a not uncommon malformation of *Latirus polygonus* (Gmelin), "possibly the subspecies *barclayi* Reeve," according to Dr. R. Tucker Abbott. "Umbilicate forms are due to growth injuries, sometimes resulting in double siphonal canals," he adds.

SHELLS FOR SALE

DIRECT FROM DIVER

RARE NEW CALEDONIAN SHELLS

Melanistic *Cypraea*, *Voluta rossiniana*, rare *Conus (lienardi, merleti, nigrecens, etc..)* gem quality specimens.

Write for price list or send needs to:

M. J. BOTA, B.P. 3163

Noumea, New Caledonia

(Black *lienardi* available now).

SPECIAL BOOK LIST

AUSTRALIAN SHELLS, Wilson & Gillett, A\$12.95.

SHELLS OF NEW GUINEA & the CENTRAL INDO-PACIFIC, Hinton, A\$4.95.

MARINE SHELLS OF THE PACIFIC, Cernohorsky, Rev. FIRST Ed. A\$7.00. New SECOND Ed. A\$13.00

Postage is additional at A\$1.10 Payment requested with order, in Australia Currency, by Bank-draft to:

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

Shells of the Seas, Inc.

FLORIDA

The Friendly Dealer
Write for FREE List

SPECIMEN SHELLS
BOUGHT & SOLD
Each Specimen Complete
With Accurate Location
Data

Shells graded according to HMS-150S

SOURCE FOR RED SEA SPECIMEN AND COMMERCIAL SHELLS DOV PELED

Hazalafim 6, Haifa, 34-739, Israel

Buys, sells and exchanges shells. Price list on request. New price list for 1974-75.

CARFEL SHELL EXPORT CARFEL SEASHELL MUSEUM

1786 A. Mabini St.

Malate, Manila, Philippines

We offer quality specimens, ornamental, commercial shells & handicrafts. Write for free price list. Visit us and see our permanent display of beautiful collection.



**KIRK ANDERS
TRAVEL**

Write for Free Itinerary for 1974 Season.

P. O. Box 1418

Ft. Lauderdale, Florida 33302

Personally Guided Shelling and Diving Tours
Around the World. Tried and Proven.

COME JOIN THE FUN!

A STRANGE FOOD PREFERENCE OF CONUS AURANTIUS

by DANKER VINK

CURACAO — Several studies on the structure of radula teeth of cones have been published recently. Bernhard Zelazny selected *Conus miles* Linnaeus for his studies (ref. 1); Kohn, Nybakken and Van Mol elucidated the structure of the radula tooth of *C. imperialis* Linnaeus (ref. 2). In both cases the tooth was typical for a small group of closely related *Conus* species with a very specialized diet, consisting almost exclusively of polychaetes of the family Amphinomidae. According to Peter Percharde in Trinidad, *C. mappa* (Lightfoot) and *C. regius* Gmelin also live on a diet of amphinomid worms.

Does *Conus aurantius* Hwass from Curacao (which according to some authors is only a variety of *C. mappa* (Lightfoot) (ref. 3) have the same strange food preference?

It was one of those peculiar coincidences in life that at about the time this question arose I got a phone call from my friend Pieter Stoel, who had found a *C. aurantius* on Curacao with remains of fireworms in its "gullet". The find was quite exceptional, not only because of the rarity of *C. aurantius*, but also because of the scarcity of *Conus* specimens with food in the gut that can be identified. When he was so lucky to find another specimen of *C. aurantius*, Pieter took the initiative to put it in an aquarium together with fireworms. Before long the *Conus* attacked a worm and started to swallow it. Since then we have kept the specimen alive on a regular supply of fireworms.

When the *Conus* is hungry, say after five to seven days without food, it gets excited as soon as a fireworm walks nearby. Its proboscis becomes very long and a "tongue" appears, pointing in the direction of the worm. (photo 1). When the "tongue" touches the worm the radula tooth is suddenly injected into the prey. (2). The worm reacts violently and wriggles while venom is conveyed through the tooth into the wound. The worm then tries to walk away but the barbs on the tooth hold it firmly.

The victim sometimes succeeds in freeing itself. Strangely enough, the *Conus* is not capable of catching its prey again immediately after a failure. It attacks the worm but cannot hold it. It could be that not enough venom is produced in time or that a second radula tooth is not quickly available if the first one is lost with the prey.

Normally the partially paralyzed worm is slowly hauled in and swallowed whole (3). Only on a few occasions the worm is not consumed completely. It is remarkable how big a prey can be gobbled up. Some time later, slimy packages of bristles of the fireworm are expelled (4).

We also verified that *Conus regius* feeds on fireworms. This species seems more active and

aggressive. It even crawls towards its prey, whereas normally *C. aurantius* patiently waits, partly buried in the sand, for its victim to pass by. Feeding time is late in the afternoon or at night, earlier on cloudy days. Photographing with natural light and Kodachrome II is almost impossible at such times.



... it is remarkable how big a prey can be gobbled up.

References:

1. Zelazny, Bernhard 1974, "A close look at the radula tooth," *Hawaiian Shell News*, Vol. XXII, No. 9 (New Series No. 177):3.
2. Kohn, A. J., Nybakken, J. W. & Van Mol, J. J. 1972, "Radula tooth structure of the gastropod *Conus imperialis* elucidated by scanning electron microscopy," *Science*, Vol. 176: 49-51.
3. Holeman, J. & Kohn, A. J. 1970, "The identity of *Conus mappa* (Lightfoot), *C. insularis* Gmelin, *C. aurantius* Hwass in Bruguieres, and Hwass's infraspecific taxa of *C. cedonulli*," *J. Conch.*, Vol. 27: 135-137.

HAVE YOU RENEWED YOUR MEMBERSHIP?

The Hawaiian Malacological Society's membership year ends on 31 December. If you have not sent in your renewal, delivery of *Hawaiian Shell News* will be delayed, involving extra manpower, expense and nervous energy. Send your dues at once!

Oahu Observations

A few of our shells seem to thrive on the muddy conditions that have prevailed around Oahu this past year. The erosion from our land has been extremely bad, due to the fact that a number of heavy storms have hit the island when the sugar cane fields and subdivision grading were vulnerable. Even now, the silt is in evidence out where the water is sixty to eighty feet deep.

Still, other mollusks cannot tolerate this condition — a fact about which much has been written, without naming any specific shell. I would like to name a victim. It is the beautiful little member of the *Cribraria* group; *Cypraea gaskoini* Reeve, 1846. Rarely has it been found alive outside of the Hawaiian Islands, and here, in the past, it has been a rather uncommon mollusk. Now, it appears to have disappeared. Areas which usually produced a few are now covered by swirling mud. Several years ago, the hard coral flats of Haleiwa, in forty to sixty feet of water, were home for several thriving colonies. In October and early November the little "mother hens" could be observed brooding a cluster of orange-yellow eggs, but not this year. During the past five months of hard week-end diving we have observed only three small specimens.

Very few shells can equal the brilliance of this little gem. It has a bright orange-red dorsum, contrasted by a white base, with small dark-brown lateral spotting.

Other *C. gaskoini* hot spots on the island do not seem to be much better. Just a short time ago, during a Kona storm, a group of us dove the windward side. Eureka! Everyone came up with *C. gaskoini*, nine specimens in all. Closer observation proved only one small specimen was alive.

Dr. Burgess, in his *Living Cowries*, rates this magnificent little jewel with number (7) on his scale of rarity. If conditions continue as they are, we may have to give our almost endemic *Cypraea gaskoini* Reeve, 1846, an X rating.

Bob Purtymun

WORLDWIDE SHELL DEALERS

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

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



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

Contact the reliable supplier in Taiwan for your collection or for retail of shells:

JOVIAL ENTERPRISES, LTD.

P. O. Box 1046

Taichung 400, Taiwan

Rare & Common Shells, Wholesale & Retail, Handicrafts & Novelty also in our line.

WORLDWIDE

Quality Shells

Rare and Common

BUY, SELL, EXCHANGE

K-Zeit Rym

146 Kien Tek Street

Taichung 400, Taiwan

SPEAKING OF BOOKS:

SEASHELLS OF HAWAII, by Stephen J. G. Quirk and Charles S. Wolfe. Photography by Larry Witt. Honolulu, W. W. Distributors Ltd. \$2.50.

A new volume by Steve Quirk and HMS past president Charles Wolfe meets a real need for information on the most common species of shells found in Hawaii. *Seashells of Hawaii* goes considerably beyond the earlier *Hawaiian Seashells*, to which Quirk was an important contributor. It illustrates some 380 species — about twice the number in the other volume — and it lists them in handy form. All photos are in color.

Shellers planning to visit the Fiftieth State — and even nonvisitors who want to check the completeness of their collections — will do well to consult the new publication. It is not complete, in the sense that some rare species are not listed, but Quirk and Wolfe have brought together information on just about every Hawaiian shell that is likely to be encountered in casual collecting.

Included are a couple of apparently new species — an olive and a cerith — found recently in deep water east of Oahu. The authors give them popular names, but carefully abstain from describing them scientifically.

Stuart Lillico

Sally Diana Kaicher's Card-Pack of Mitridae II has been received and welcomed by those of us struggling with identification. Cataloging of Mitridae is becoming a complicated process, however, necessitating a system of cross-indexing with so many listed subgenera: *Austromitra*, *Costellaria*, *Cancilla*, *Neocancilla*, *Subcancilla*, *Dibaphus*, *Domiporta*, *Imbricaria*, *Mitra*, *Pusia*, *Pterygia*, *Strigatella*, *Scabricola*, *Swainsonia*, *Thala*, *Vexillum*, *Ziba*, *Zierliana* and probably more.

If any HMS members has been able to develop an effective and (hopefully) simple method of cataloging, please share it with us.

Bunnie Cook

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.

RECENT FINDS

Thora Whitehead of Brisbane, Australia reports several recent finds by Australian collectors. Two *Cypraea martini* have been taken from North Queensland waters — one *ex pisce* in the vicinity of Sudbury Reef, off Cairns, and the second taken by a diver on a reef off Townsville, N. Queensland. Both specimens were in good condition and the *ex pisce* shell still had a bit of the animal in it.

Another unusual find in the Cairns, Australia area was a live-collected *Cypraea testudinaria*. And a report of two specimens of *Conus crocatus*, (one dead, one alive) taken by divers off Townsville, could be a new record for Queensland.

On Kauai, Keith Zeilinger was excited by his find of a crabbed specimen of *Cymatium cingulatum* . . . rare in Hawaii.

And finally, Steve Carr of Honolulu recently collected a second live specimen of *Murex fenestratus*, thus definitely establishing the presence of this species in Hawaiian waters.

HMS November Meeting

In accordance with the Bylaws, members of the Hawaiian Malacological Society met in November for their official annual meeting. Officers for 1975 were elected. They are:

President: Olive Schoenberg.

Vice President: Ruth Fair.

Treasurer: Bob Purtymun.

Corresponding Secretary: Ellen Owens.

Recording Secretary: Lucy Kwiatkowski.

Four Directors were elected: Don Grace, Ed Konopka, George Cummings and Inkie Shields. Four more directors will be named by the incoming president. The editor of *Hawaiian Shell News* and the outgoing president are *ex officio* directors.

The new officers will take office on 1 January.

The shells remaining from the September auction were sold at the November meeting, adding approximately \$300 to the total.

The January membership meeting will be held on 8 January at the First United Methodist Church, Honolulu, rather than on 1 January.



Photo: Kemp

Cymatium trilineatum (Reeve, 1844)

Ethiopia

Cymatium boschi Abbott & Lewis, 1970

Gulf of Oman

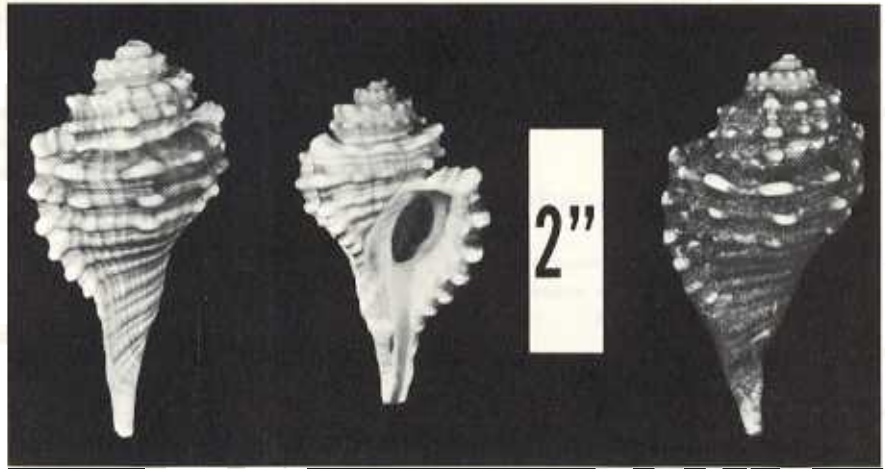


Photo: Kemp

Conus suratensis Hwass in Brugiere, 1792

Philippines

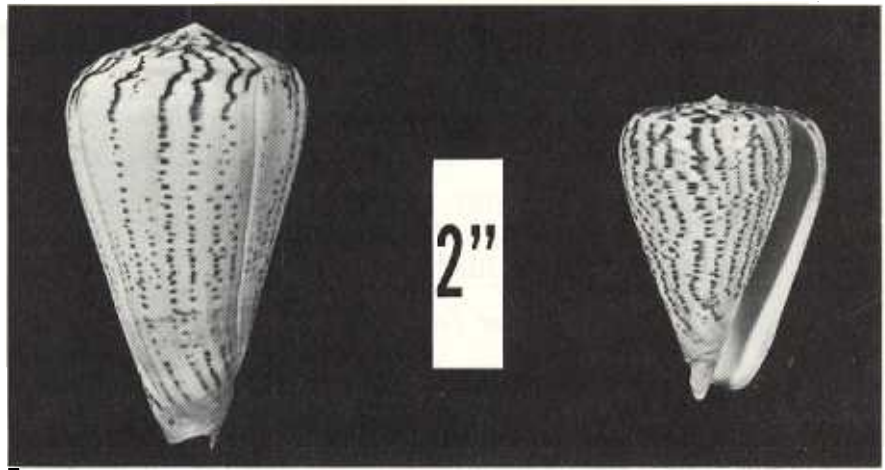


Photo: Kemp

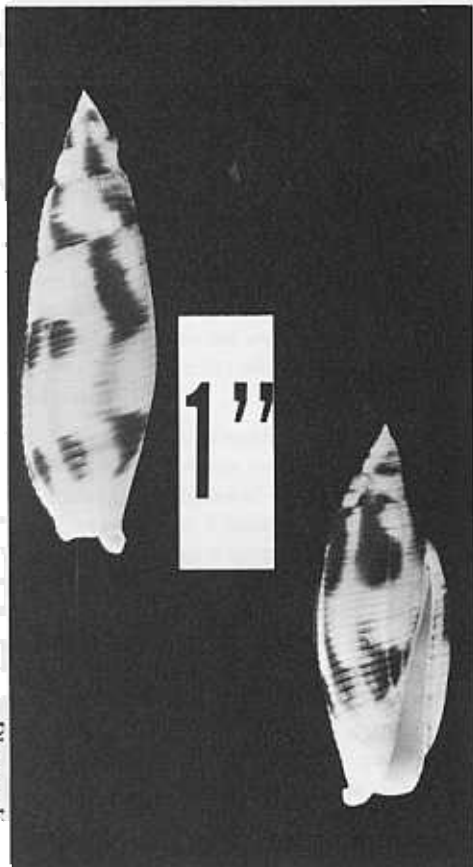


Photo: Kemp

Mitra (Dibaphus) edentula Swainson, 1823

Philippines

Phalium (Semicassis) umbilicatum (Pease, 1860)

Hawaii

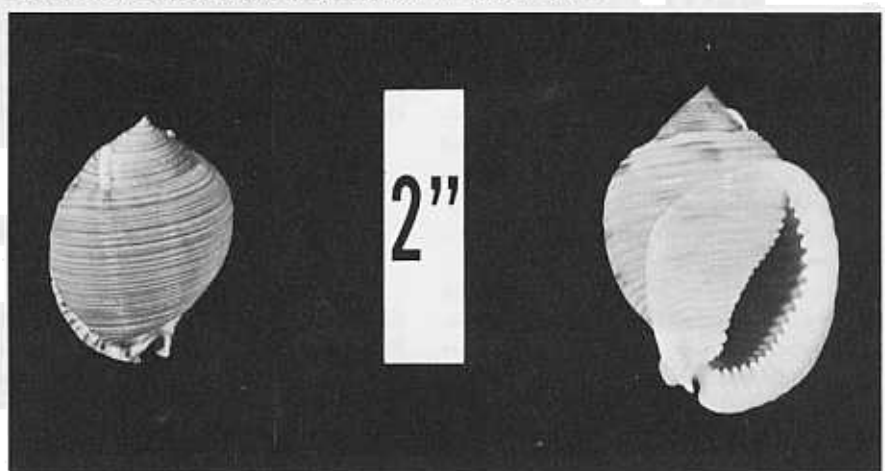


Photo: Kemp

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.