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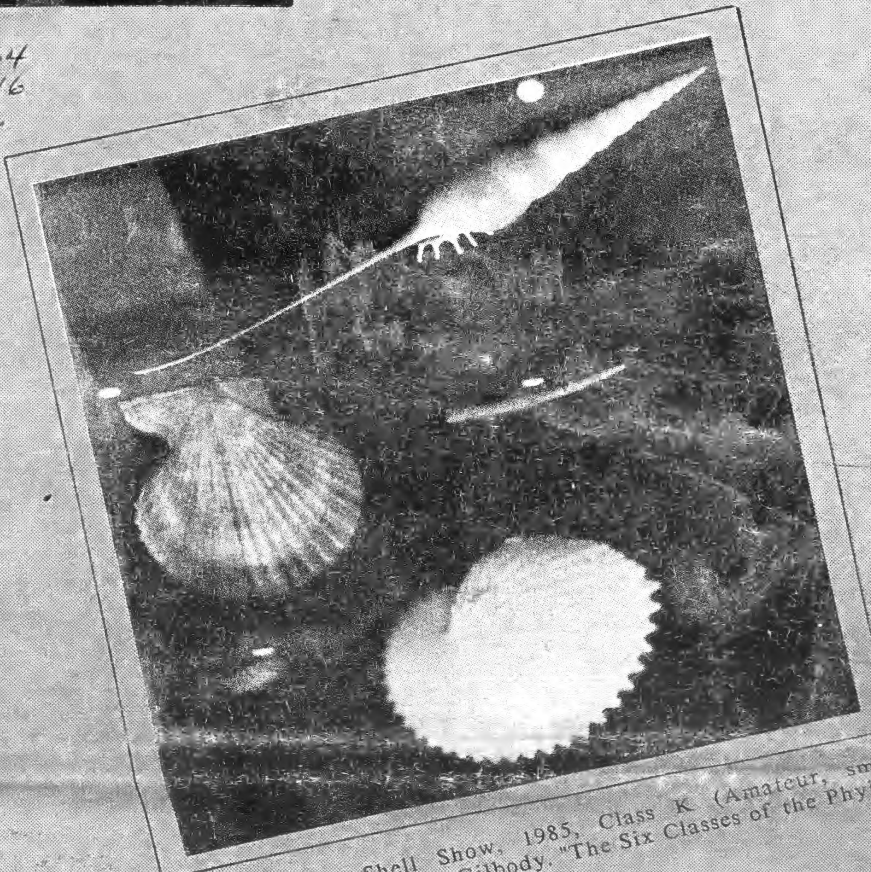
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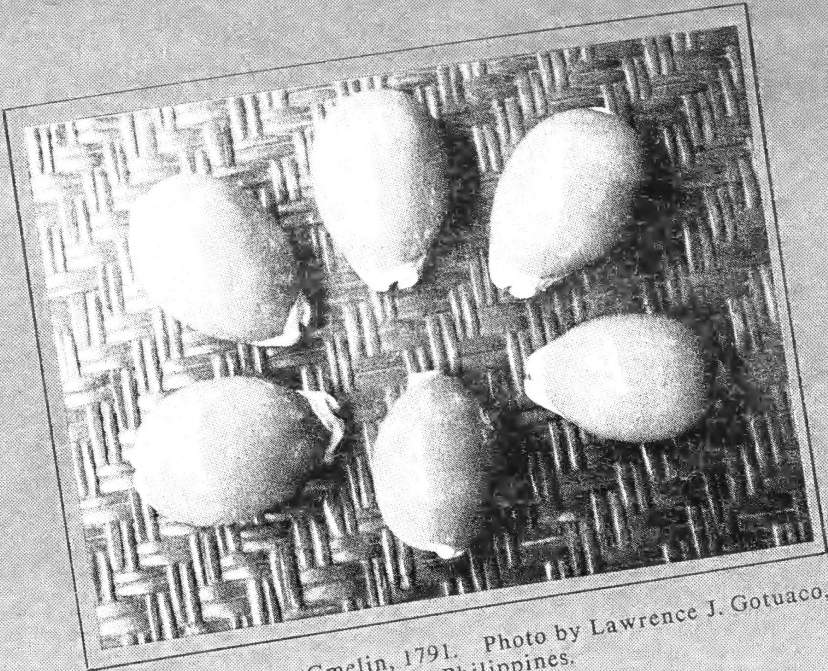


Santa Barbara Shell Show, 1985, Class K (Amateur, small exhibit), 1st Place, Jack Gilbody. "The Six Classes of the Phylum Mollusca"

This Month's Shows - see page 12

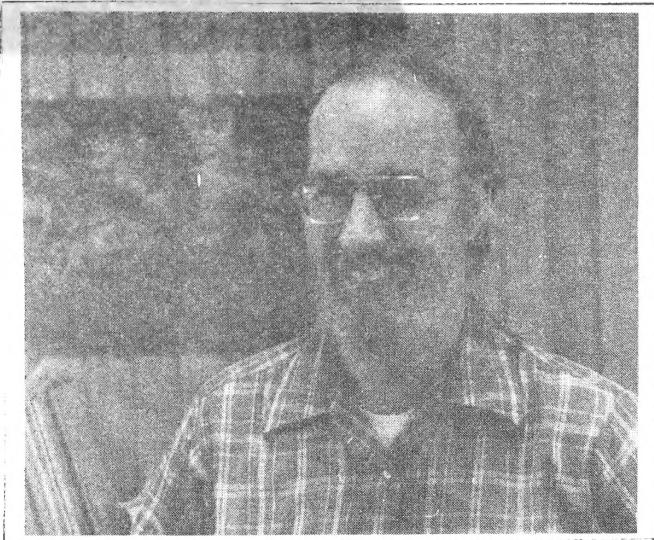
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*Cypraea aurantium* Gmelin, 1791. Photo by Lawrence J. Gotuaco, 777 Paseo de Roxes, Manila, Philippines.

Our 199<sup>th</sup> issue — Published monthly since 1969.



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January and February are the months for Florida shell shows and we hope that everyone will have a chance to see our publication there. Our apologies for not having more shell dealer ads for you in this issue — we have not had time to set them up. If you see your favorite here please tell them so — if they are not here please ask them why not.

Best regards,

## EDITOR'S NOTES

Here we go with volume 18 and our 199th issue. I appreciate the lessons in grammar provided by friends and will try not to repeat the same errors. I am certain to find sufficient new errors to keep everyone busy. It IS nice to know that some people read my ramblings (the last ones written about 3am the night before printing.)

It seems to be time to reiterate the basics of Shells and Sea Life. The magazines are produced wholly by Sally and me. We both quit our regular jobs! and are making this our life work. We do typesetting, layout, and mailing with occasional help from our two kids — Kristin and Jonathan. The Arcata Union, which will be 100 years old this June, does our printing for us. No one else is directly connected with Shells and Sea Life, although we are grateful to the many people who contribute articles and information.

When Tom Rice's *Of Sea and Shore* magazine failed, we decided to support conchology by publishing our own magazine, *Shells and Sea Life*, and providing the advertiser's and subscribers with equivalent advertising space and subscription issues for which they had paid Tom. We have at no time received any compensation for this — we haven't asked for any! It hurts a great deal when an advertiser or subscriber complains about how we are fulfilling *Of Sea and Shore's* obligations! Tom Rice's only association with *Shells and Sea Life* is submitting articles. He continues with his other *Of Sea and Shore* Publications and his *Of Sea and Shore* Museum.

With this issue, we have sent up to four year's worth of subscription issues to *Of Sea and Shore* subscribers FREE. We hope that you will now start to support us for our efforts over the past months. I have published 199 editions of this magazine over seventeen-plus years and intend to continue for many more years. I am not aware of any malacological publication in the world which has continued longer with the same editor.

We have continually added space and photographs to the magazine before we received the subscriptions and advertising revenues so that *Shells and Sea Life* can be the most useful to all of you! Help us -- we need your subscriptions, your articles and notes, and your advertising. We are not supported by any club or institution. Subscription now costs less than nine cents per page delivered to your door and must pay all of our expenses to continue and grow.

All independent publications require advertising revenue to function. We have been including a large section of book advertising as the only way to compensate for less-than-adequate advertising revenue from other sources. We also know that many of our readers are desperately searching for the books we include in our listings. Less than one-third of the magazine is advertising while most publications include up to fifty per-cent or more! Our advertising percentages are much more similar to *Hawaiian Shell News* and other "non-profit" publications.

## In Memoriam

We have lost several friends in the past month or so. Their contributions to conchology will be sorely missed and our sympathies go out to their family and friends.

A. MYRA KEEN  
TED PHILLIPS  
RUTH & BEN PURDY  
RAY UPTON

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## Notes on recent and fossil Neritidae, 13. Five times *Neritina spinosa*

Henk K. Mienis, Zoological Museum, Mollusc Collection  
Hebrew University of Jerusalem, 91904 Jerusalem, Israel

In a report on a collecting trip to the Solomon Islands, Boorman (1979) mentioned and figured a spinous Nerite from a freshwater creek near Munda, New Georgia, as cf. *Neritina spinosa* Lamarck. Although Lamarck has described several Nerites as new to science, none of them were named *Neritina spinosa*.

The name *Neritina spinosa* has been employed, however, five times by other authors as a new (sub)species name. They are enumerated and discussed here in chronological order.

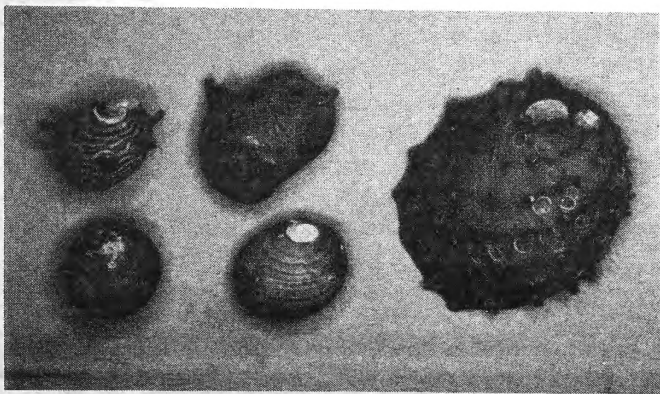


fig. 1 (top left) *Clithon spinosus* (Sowerby, 1825). fig. 2 (top center) *Clithon corona* (Linnaeus, 1758). fig. 3 (bottom left) *Clithon rarispina* (Mousson, 1849). fig. 4 (bottom center) *Clithon wallacei*. fig. 5 (right) *Neritina juttingae* Mienis, 1973.

### *Neritina spinosa* Sowerby, 1825 — fig. 1

This species is well characterized by the presence of dark spiral bands on a greenish to reddish-yellow background and by the well-developed spines on the shoulder of the last whorl (although they may be wanting sometimes). It is a species of the genus *Clithon* s.s. and its correct name reads: *Clithon (Clithon) spinosus* (Sowerby, 1825).

Originally the species was described from Otaheite = Tahiti. According to Starmuehler (1976) it is confined in its distribution to Tahiti. **Remark:** Budgin is often quoted as the author of this species. However, it was described by Sowerby, who apparently used a manuscript name by Budgin.

### *Neritina spinosa* Wood, 1828 — fig. 2.

This is actually the species figured by Boorman (1979). It is a junior synonym of the rather polymorphic *Clithon (Clithon) coronata* (Linnaeus, 1758).

This species is characterized by having a shell with an inflated last whorl. Its basic color is usually dull yellowish, greenish or sometimes violet, often with darker spiral bands and irregular

### *Neritina rarispina* forma *spinosa* Mousson, 1849 — fig. 3.

Also in this case we are dealing with a *Clithon* species. It is nothing else than a spinous form of *Clithon (Clithon) rarispina* (Mousson, 1849).

The shell is relatively small, smooth and globular. Usually it is grayish olive-green with numerous very small blackish spots. Spines, if present at all, are very short.

Both the nominal species and the spinous form were described from Java, Indonesia. It is, however, also known from New Guinea (Starmuehler, 1976), while there are specimens of *C. rarispina* from Camoguin and Negros Island, both Philippines in the author's collection.

### *Neritina aculeata* var. *spinosa* Recluz, 1850 — fig. 5.

Recluz based his description on a figure in Sowerby (1849, pl. 110, fig. 34), which shows a spiny form of *Neritina juttingae* Mienis, 1973 (= *Nerita aculeata* Gmelin, 1791 not Mueller, 1774).

The general shape is typical for the genus *Neritina* s.s. and is characterized by a very large last whorl and extremely wide aperture. The form *spinosa* is characterized by the presence of up to 9 spiral rows of blunt spines.

The exact systematic position within the genus *Neritina* is still unclear since the anatomy of the species remains so far unknown. The presence of spines on the shell is, however, unique in the genus *Neritina*.

The type locality of the spinous form was Sumatra. In its general distribution *Neritina juttingae* is confined to Singapore, Borneo, Sumatra and Palau Panaitan (Mienis, 1973).

### *Neritina wallacei* var. *spinosa* Schepman, 1919 — fig. 4.

This is again a *Clithon* species and represents the very rare spiny form of *Clithon (Clithon) wallacei* (Dohrn, 1861), which name was emended more correctly to *wallacei* by von Martens (1879).

It has a relatively small, smooth, high conic shell, showing numerous thin colored bands (often red) on a green, blue or violet background.

The type locality of the spinous form is Aru Islands, Bendjina River. Its general distribution is confined to New Guinea and the off laying islands (van Benthem Jutting, 1963).

The status of the five (sub)species originally described as *Neritina spinosa* can be summarized as follows:

- Neritina spinosa* Sowerby, 1825 = *Clithon (Clithon) spinosus* (Sowerby, 1825).
- Neritina spinosa* Wood, 1828 = *Clithon (Clithon) corona* (Linnaeus, 1758).
- Neritina rarispina* forma *spinosa* Mousson, 1849 = *Clithon (Clithon) rarispina* (Mousson, 1849).
- Neritina aculeata* var. *spinosa* Recluz, 1850 = *Neritina juttingae* Mienis, 1973.
- Neritina wallacei* var. *spinosa* Schepman, 1919 = *Clithon (Clithon) wallacei* (Dohrn, 1861).

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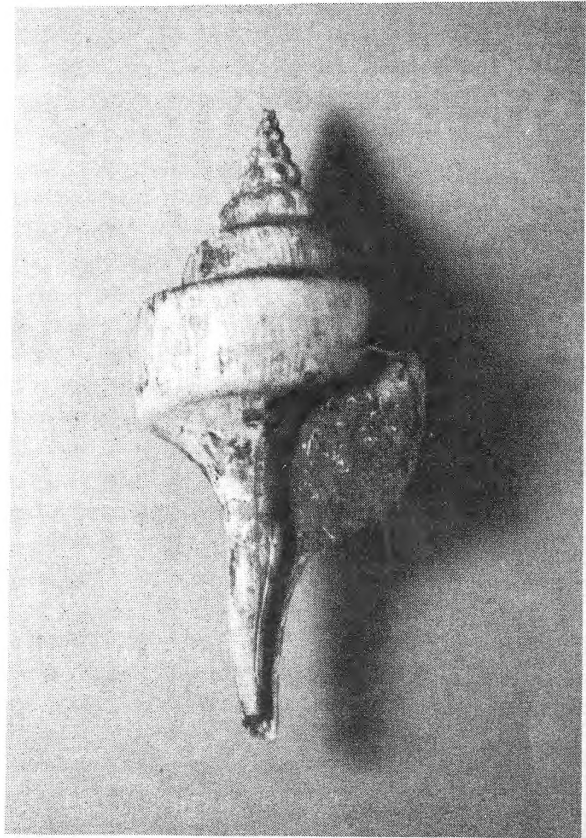
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***Clavilithes penrosei* (Heilprin) from the middle Eocene of Texas**

Christopher Garvie, 66 Higate West Hill, London N6 6BU England



While collecting recently in the middle Eocene (48 million year old) deposits of Texas, an almost complete adult specimen of *Clavilithes penrosei* (Heilprin, 1891) was found, lacking only the protoconch. I believe this to be the first complete specimen of this species from the area. Apart from the Reklaw formation, where *Clavilithes* is one of the more common large fossils, this species is rarely found complete in the Clairbornian. Just how rare this find is, may be judged from the fact that this is the first large specimen found in over 400 collecting trips and over a period of 15 years! Most collections though, do possess the large columellas and fragments of the body whorl. This specimen came from the top of the Viesca member, (Bureau of Economic Geology (Texas) No. 145-T-34) described as: "Navosota River, upper edge of clearing occupied by narrow clearing on valley slope east of river, about one half mile south of abandoned iron bridge, airline distance. J.A. Donahue 160 acre tract, middle of Jose Maria Viesca Survey." The sediment there consists of a soft yellow marl, beneath an indurated ledge, containing many rolled and worn molluscs: the Weches in east-central Texas has been regarded as a shallow-water near-shore deposit by Stenzel, 1938.

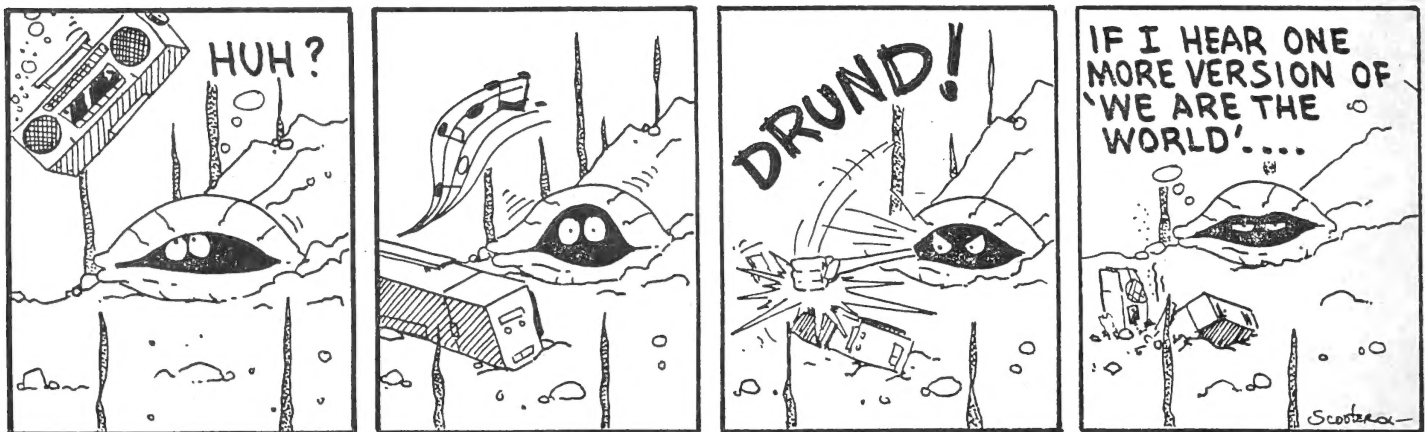
Redescription: Whorls: 7-1/4, length 165mm, maximum diameter 76mm. First whorl with 9 prominent costae, the next three with 6-7 costae. Spire whorls with 9 revolving lines, two subsutural ones close together and forming a weak subsutural collar, the rest wider and equally spaced. Suture deeply impressed, shoulder prominent and in later whorls concave. Body whorl with an almost rectangular cross-section. Heilprin, 1891, surmised, from comparison with most other *Clavilithes* species, that a posterior canal was present: this specimen shows little or no trace of such a feature. Outer lip thin, meeting the previous whorl at right angles. Beak long and slightly twisted, labral callus deposit thin.

Remarks: The thin outer lip of this specimen is not typical of *Clavilithes* s.s. According to Palmer, 1937, pl. 55, fig. 1, *penrosei* has a thickened outer lip at least posteriorly. Typical *Clavilithes* has usually a thick outer lip, which in the adult is often varix like. Perhaps the present species should be separated subgenerically but on a single specimen that is open to question. This adult is a smaller one, as columellas have been found indicating a maximum size perhaps twice the present 165mm.

*Clavilithes*, a typically Eocene genus, is known from the Cuisian (Paleocene) of the Paris Basin, and is represented there by *C. costarius* (Deshayes) and *C. parisiensis subscalaris* Grabau; the genus is very common in the Lutetian and Bartonian of England and France. In fact a day's collecting from the type Bartonian on the South Coast of England will almost certainly produce two or three 165-210mm specimens of *C. longchaevus* Solander. According to Wenz, 1944, the genus does range to the recent, being represented in the South Pacific by *C. (Cyrtilus) serotinus* Hinds.

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## PERSONAL NOTES

From Ellen J. Moore: It is my sad duty to inform you that our friend and colleague Myra Keen passed away at the age of 80 on January 4th. We all have our special memories of Myra and know that she left a legacy behind her of books, former students, colleagues, amateurs and dear friends. I would like to share with you some quotations of hers from interviews, tapes, and letters. May Myra's own words soften the news of her death and bring back to you pleasant memories of your own.

"My Mother used to think that February was the gloomy month, and that if she got through that she could look forward to the rest of the year, but I think of February as the month when the early spring flowers start to bud and bloom."

"I was not the warrior type of woman. It is the quiet going ahead and doing it, proving you can do it, so that after awhile (it takes a long time) but after awhile, it reaps its own reward. And I think it's a more solid reward than it is to get out with a hatchet and start battering down the door."

"I felt that war is no solution for any problem or conflict of any kind, but I'm not a peace activist. I don't get out and parade and march as some others do."

"I never let myself get angry. I'd rather be a martyr to unfairness than be looked at askance as a scrapper."

"I was never particularly adverse to the idea of marriage. I expected to marry some day if the right person came along, but I was never out searching. I was too interested in what I was doing."

"We had been brought up to be ladylike and proper, to do what was socially acceptable, and not to infringe on the rights of others. One should not have an appetite one cannot control which is likely to lead to excesses. One should avoid excesses of any kind. I avoided buying soda-pop and candy or frivolous luxuries."

"Live theater is artificial. It's holding a mirror to life, and I'd rather look at life. But music is something different: it feeds the spirit. Music continues to be one of the joys of my life."

"I was teaching an advanced paleontology course in which I demonstrated to students the proper way of wrapping shells for shipping. I'd pass out assorted shells to the students for them to wrap. Then I would climb up on a chair and tell them the story of the station agent who was asked by a young man if his trunk would survive the trip to London. The agent threw it off the platform and said, 'That's what it'll get in Edinburgh,' threw it down a second time and said, 'That's what it'll get in Glasgow,' and then dropped it a third time on behalf of London. The trunk fell apart and the agent said to the young man, 'I don't think it'll make it'. Then I'd start throwing packages of the students. The look on their faces would send me off into spasms. That was one course they remembered."

And we will remember Myra, the dedicated scientist and great lady who will continue to inspire us. Best wishes, Ellen J. Moore — U.S. Geological Survey, Branch of Paleontology and Stratigraphy - M/S 915, 345 Middlefield Road, Menlo Park, CA 94025

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Frederick Raymond "Ray" Upton, 56, died at home on Christmas Day. Ray spent 37 years in and around the military, almost all of that time as a civil service employee at Fort Huachuca, Arizona. He is survived by his wife Virginia (Ginny), who writes: "I have every intention of continuing with my collecting, but it may involve less dredging and my signing up for tours. Already, I have catalogued more than 18,000 shells just from the Panamic region, with 12 shoeboxes still to be added. My master inventory is listed according to shell in numerical order and location in geographical order. I also have compiled books of locality data, mine as well as that of other shellers. We were ready to seriously pursue this upon our retirement." "I may either consider teaching longer or retiring as planned in 1989. Not sure yet!"

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From Gene Everson: In the November issue there was a request in the Reader Forum for information about the "China clam." In case the other collectors are interested in this species, I am sending a copy of my reply.

Dear Karen,

There is a very good reason why you cannot find the scientific name of the china clam in your shell books. It is not there. The name is *Hippopus porcellanus* Rosewater, 1982. Since this species is so recently named, and since popular shell books take years to procrastinate, write & publish, the China clam is not easy for an amateur collector to find. However, it was through the efforts of an amateur that this common shell was named at all.

John Root is a shell processor in West Palm Beach, Florida. He gets large quantities of uncleaned shells and bleaches, acids, polishes, slices, buffs and packages the results for gift shops. For years he contended that the "China clam" was different than the "Bear Paw," *Hippopus hippopus* (Linnaeus, 1758). Although the Bear Paw in gem condition has strong flutes, red blotches and is heavy, and the China clam is rather smooth sculptured, grayish white lacking most of the characteristic strawberry color and is much lighter in weight, these two species were considered by professionals since the days of Linnaeus to integrate completely and were all called *H. hippopus*.

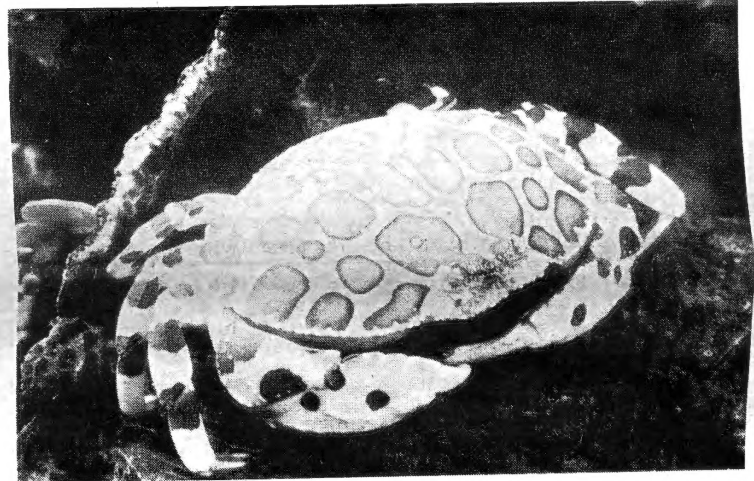
The description and the picture that you seek can be found in *The Nautilus* Vol. 96(1) January 25, 1982, pages 3-6. "A New Species of *Hippopus* (Bivalvia: Tridachnidae). Also, I just noticed that Abbott & Dance's *Compendium of Seashells* illustrates both *H. hippopus* & *H. porcellanus*. I believe that it was primarily through the efforts of John Root that Joe Rosewater reviewed the classification of this group, and the China clam, *Hippopus porcellanus* Rosewater, 1982, was belatedly named. — Gene Everson, 5703 Court View Drive, Charlotte, NC 28226

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From Rachel Imlah After October 1, my new address is 178 Summit St., New Haven, CT 06513.

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From Pam Scott: I want you to know how much I enjoy *Shells and Sea Life* in its new format — such a variety of information, both for the professional and the amateur. You're covering all bases and that's something that's been needed for a good long time. Hooray for you!



Now, I would like to identify "What Is It? #17." The photograph of the exceptionally attractive and colorful crab is *Hepatus ephelithicus* (Linnaeus); however, it is commonly called the Calico crab or, according to Voss' *Seashore Life of Florida and the Caribbean*, the Dolly Varden crab. I find sheds and dead crabs frequently along the shoreline of the bay waters of Sanibel and Captiva Islands here in Florida. The Audubon Society Field Guide to North American Seashore Creatures shows its range from Chesapeake Bay to Florida and Texas and the West Indies to Campeche. The Stone Crab *Menippe mercenaria* (Say) is a dark brownish red creature mottled with grey spots; its pincer fingers are black. They are most often found down here on dinner plates — the meat of their claws is absolutely delicious.

Keep up the good work! — Pam Scott, 16861 Davis Road SW #824, Ft. Myers, FL 33908.

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From Ralph E. Ferguson: "What is it #17" We have called them "Queen Crabs" for years in this business. — Ralph E. Ferguson, Ferguson's Marine Specialties, 617 N. Fries Ave., Wilmington, CA 90744

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**Notes from Hans Bertsch — Helping Science: The Thrill of Discovery:** Southern California is crowded. It is filled with roads, houses, stores, and bodies on the beach. But then, I'm spoiled, because I spent six weeks in Baja California Sur. Using 2 weeks to drive down and up the peninsula, I spent most of the summer on a very private beach which overlooks white sands, fossil shell reefs, Isla Cerralvo, and the incredible blue of the Gulf of California. I stayed at Hotel Las Arenas, 30 miles east of La Paz, on a rocky promontory between Punta Arenas lighthouse and Punta Perico. It is a locale for lovers and dreamers, for quiet moments, and for time leisurely spent dallying under the full moon. But I was there to work.

Really!

I was leading marine research expeditions under the sponsorship of Have Mule Will Travel. This is a non-profit educational corporation that advertises scientific research projects (such as my continuing investigations into the zoogeography, taxonomy, and evolutionary ecology of nudibranch mollusks). Interested individuals (such as yourself) joint a research team and spend a week or more helping a scientist conduct his or her investigations. Their fees cover their own expenses plus a share of the expedition costs (including those of the scientist-leader); their fee is tax-deductible. And it can be a great vacation. Have Mule (787 South Grade Road, Alpine, CA 92001) offers a variety of scientific trips, including archaeological, biological, and paleontological. Destination sites include Nuku Hiva in the Marquesas, Haiti, Antigua, Israel, and Paraguay — on land, on the sea, or underwater.

I had already led an expedition to the Punta Arenas region in April. I have spent 3 summers 20 miles up the coast at Las Cruces, and have visited other nearby collecting localities (some on California Academy of Sciences expeditions). So I knew the area, where the mollusk fauna might be the richest, and what animals I could expect to find. As a scientist I also knew to expect the unexpected: A manta ray swimming alongside the boat. Underwater lava cliffs covered with color. A giant purple sea star with orange tube feet. Stinging Portuguese man-of-war. The first record of a species of *Favorinus*, a white cold nudibranch with rose-pink cerata that eats the eggs of other nudibranchs. The dorid nudibranchs *Chromodoris baumanni* Bertsch, 1970, with its ruffly egg mass and 5 *Chromodoris norrisi* Farmer, 1963, all under one rock. Thousands of Cortez garden eels; they live in vertical sand burrows extending their heads and bodies two feet (until approached). Submerged basalt ridges totally hidden under a dense current-swayed covering of purple-stalked gorgonians with crystal white polyps.

During this expedition I was especially interested in documenting biological activities — egg-laying behavior and predator-prey relationships. I found the black sponge that *Chromodoris norrisi* eats; dozens of egg-laying *Epitonium billeanum* (DuShane & Bratcher, 1965) on their solitary coral prey *Tubastrea*; seasonal differences in the reproductive activity of various gastropods; and the nests of the frilly swimming clam *Lima hemphilli* Hertlein & Strong, 1946.

I was underwater almost daily during the summer expedition, and filling tanks with a portable compressor almost nightly. Then there were data to transcribe into my log books and discussions with my research team members. Still there was time for non-biological events. I judged a local beauty contest (helping to choose Senorita Los Planes) and was interviewed on the evening news program of the La Paz television station. The interview was conducted by the host of El Pulso del Mundo, Senor King; it was live and in Spanish. My good friend Agustino (one of the waiters at Hotel Las Arenas) accompanied me — and it was certainly reassuring when the TV cameras focused on me to know that a friend who did not know English was nearby....

As I write these lines, I am preparing for another Have Mule Will Travel research expedition. If any of you like to collect your own shells, these programs may be ideal. The team leaders usually encourage initiative by the participants — so you would certainly be able to find some exotic specimens. Moreover, you could also write it off for tax purposes. But best of all, you would be sharing first hand in the thrill of scientific discovery and helping scientists in their quest for the unknown. — Hans Bertsch, 6056 Beeman, No. Hollywood, CA 91606

\* \* \* \* \*

From Kirstie Kaiser: The Red Sea - '85 Expedition will be leaving Los Angeles International Airport on October 24 [1985]. This dive trip and journey into the ancient past is being hosted by Twila Bratcher who is orchestrating the trip for 12 members.

Our plans are to fly to Cairo, Egypt where we will go to Sharm el-Sheikh located at the tip of the Sinai Peninsula. There we will board the dive boat "Lady Jennie V" for a week of diving, studying and photographing the molluscan fauna of the Red Sea from Ras Muhammed to the isles of the Straits of Tiran.

Because the Red Sea Borders the extreme end of the vast Indo-Pacific province, there are a number of endemic species but the majority of species are closely related to the molluscan

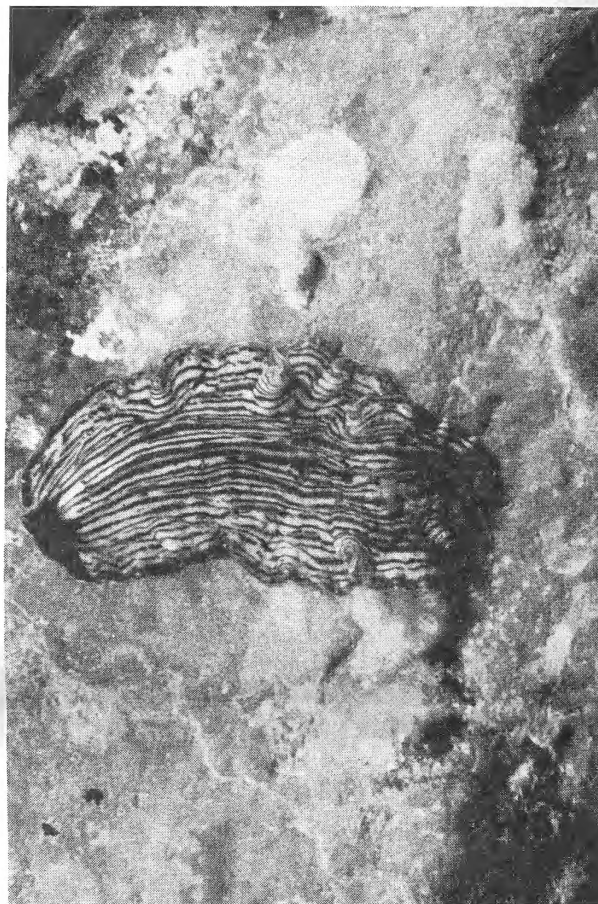
inhabitants of nearby waters, mainly those of Indo-Pacific faunal affinity.

We look forward to returning with greater knowledge of the land, the people, and the wide variety of molluscan life! — Kirstie Kaiser, 786 Starlight Heights Drive, La Canada, CA 91011 [ed. — our apologies for not getting this note in sooner. We hope to get a report on what happened on the trip and some photos of the resulting collections]

\* \* \* \* \*

## ***Prostheceraeus bellostriatus*: A Flatworm that's hard to forget**

Jim Gatewood, 7584 Amethyst St., Rancho Cucamonga, CA 91730



Every once in a while a part-time diver like myself gets a chance to see something that really makes a dive one to remember. In October of last year [1984], I had just such a dive at San Nicholas Island. I was diving off the west end of the island in about 30 feet of water searching for nudibranchs, when out of the corner of my eye I spotted something weaving its way in and out of a kelp holdfast. I swam over, with my camera at ready, to get a closer look. The object that had caught my attention turned out to be the flatworm, *Prostheceraeus bellostriatus*.

This beautiful flatworm is described as being up to 35mm long and 25mm wide. It can easily be identified in the field by its unique color pattern of alternating black and white longitudinal stripes across the dorsum with an orange mid-dorsal and border stripe. The range of *Prostheceraeus bellostriatus* is from Monterey Bay to Southern California as listed by Morris, Abbott and Haderlie (1980).

Photographing a flatworm can be a real chore. You see, these little guys don't just sit there like a clam; they can move surprisingly fast. Anyhow, after snapping off a half dozen photographs I looked up to see where my buddy was, thinking that maybe he'd like to see this flatworm. Now remember, I only looked away for a few seconds, and you guessed it, old *Prostheceraeus bellostriatus* was gone. When I tried to tell the other divers on the boat about the beautiful flatworm I'd seen, they all looked at me like I was telling a fish story. Well, lucky for me at least one of my photographs turned out to substantiate my story.

### REFERENCE

Morris, R.H., D.P. Abbott & E.C. Haderlie [Eds.] 1980. Intertidal Invertebrates of California. Stanford Univ. Press, Stanford, Calif., p.81.

\* \* \* \* \*

# St. Petersburg Shell Club, Inc.

We would like to let your readers know that on February 14-15-16, 1986, the St. Petersburg Shell Club will present its 39th Annual Shell Show. It will be held at the Community Center, 1 Park Place at 106th Ave. Treasure Island, Florida.

This show is put on by collectors who prepare museum quality exhibits from their private collections to show to the public. These exhibits are entered in categories and are judged for quality and correctness of presentation.

While the exhibits are judged by noted shell experts, the exhibitors prepare their exhibits with the public in mind. Ribbons and the enjoyment of the public are the only rewards the club members receive.

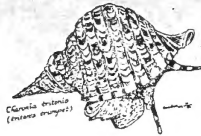
We are proud to be the only shell club in the continental United States that is able to present an award from the Smithsonian Institute. This award goes to the outstanding educational exhibit presented by an amateur. This is a very coveted award and collectors from all over the country come here to try for it.

Membership in the St. Petersburg Shell Club is open to anyone interested in shells and related subjects. This year marks the 50th Anniversary of the Shell Club's founding.

A moderate donation of \$1.50 for adults will be taken at the door to help the club defray the cost of putting on the show. Children under 15 are admitted free with an adult. There will also be shells and related items for sale during the show.

\* \* \* \* \*

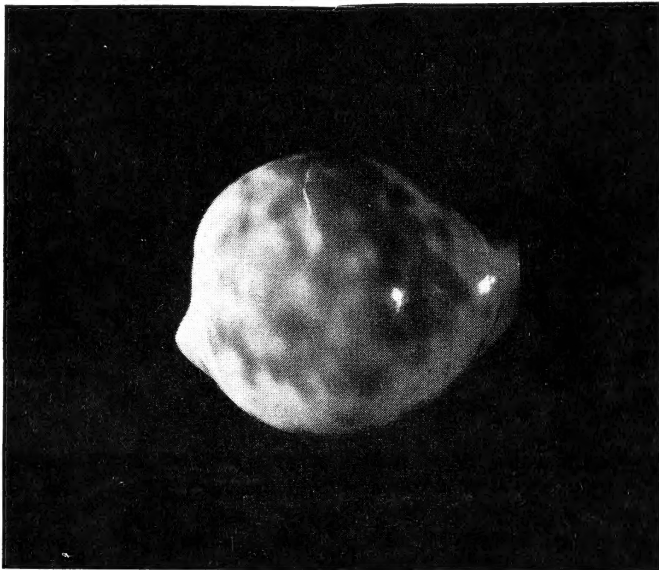
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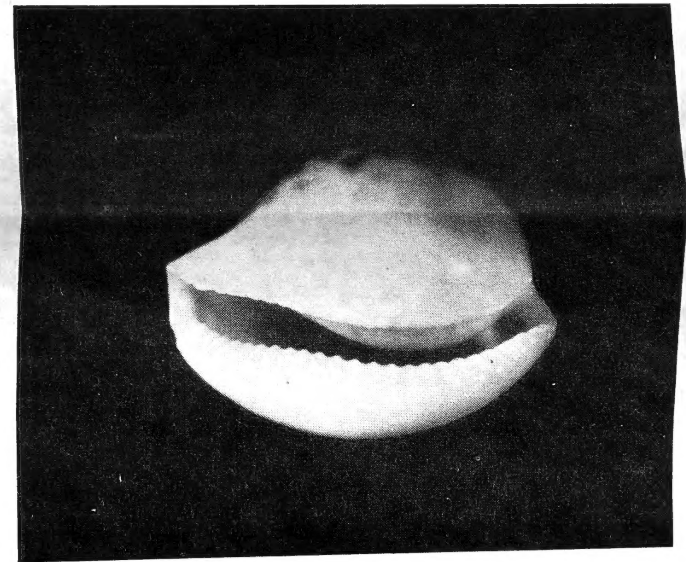
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*Cypraea iu-tsui* Shikama, 1974. Photos by Marty Gill, Shamaron Shells, 1306 East Forth-Eighth St., Brooklyn, NY 11234.



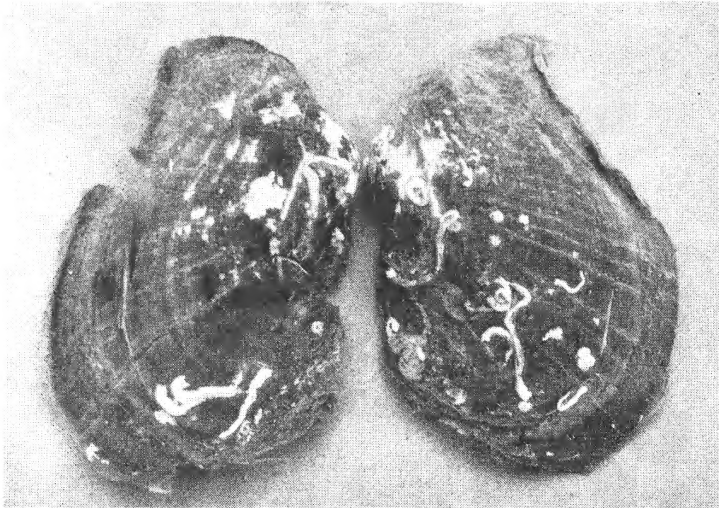
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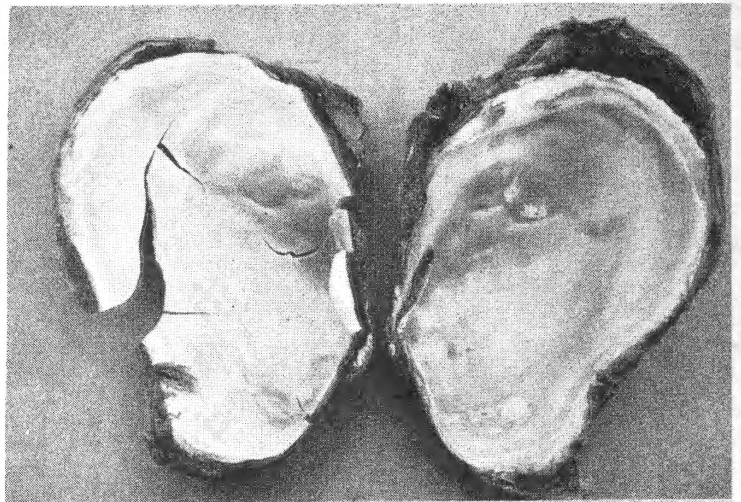
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Roland Anderson, The Seattle Aquarium, Pier 59, Seattle, WA 98101  
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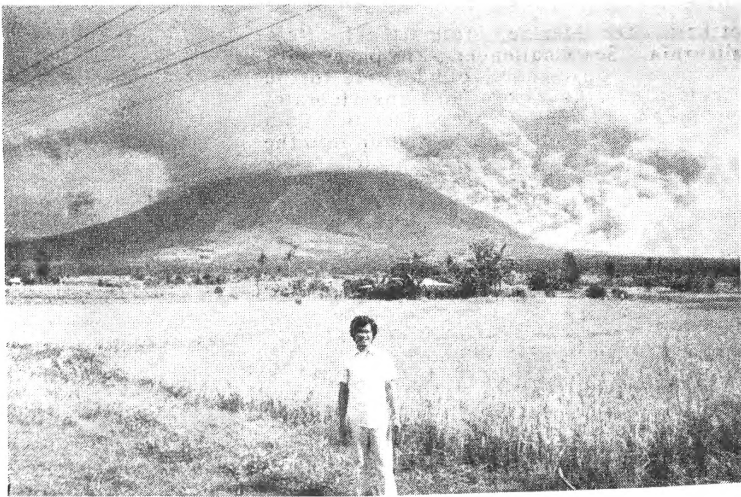
Preserved and unpreserved shells of the northwest ugly clam, *Entodesma saxicola*.

Shells with tight-fitting periostracums will frequently break when dried, destroying what otherwise might be an interesting or valuable shell. Collectors have overcome this tendency to break by either removing the periostracum or coating it with glycerin (expensive) or mineral oil (messy). Both coatings work adequately but shells prone to such breaking need periodic re-coatings. Removing the periostracum might improve the beauty of the shell, but keeping the periostracum intact is necessary for accurate identification of the shell and makes it more interesting to my mind.



After seeing a television commercial showing the beneficial effects of a moisturizing skin lotion on a dried leaf I tried several of these lotions on shells that are very prone to breaking in hopes of finding a more convenient, inexpensive coating. However, after three weeks all coated shells had dried and cracked.

A somewhat more successful treatment I have used is to soak the shells in a solution of buffered formalin, glycerin, and household sugar, a solution used to preserve the color in dried starfish (Furlong & Pill, 1972, *Starfish — Guides to Identification and Methods of Preserving*). After soaking for a month the shells can then be dried without fear of breaking. This solution is also expensive; we have still not come up with the ideal method for saving our periostracums.



Mayon Volcano when it erupted 23 September, 1984, Legazpi City, Philippines. Bue Antipora in foreground. Bevan Supplies, 1344-A Angono St., Makati, Metro Manila, Philippines.

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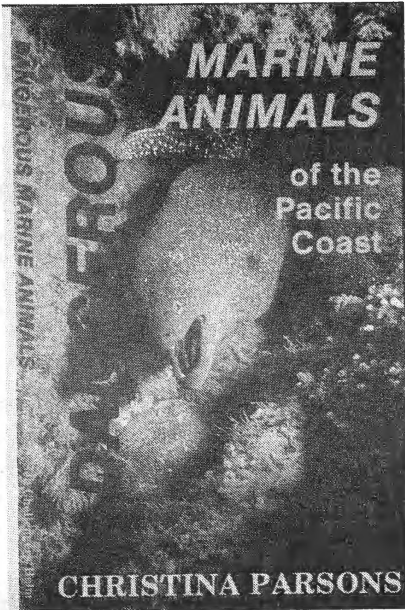
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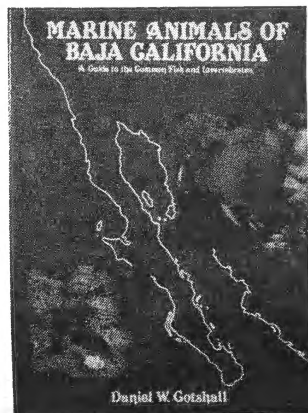
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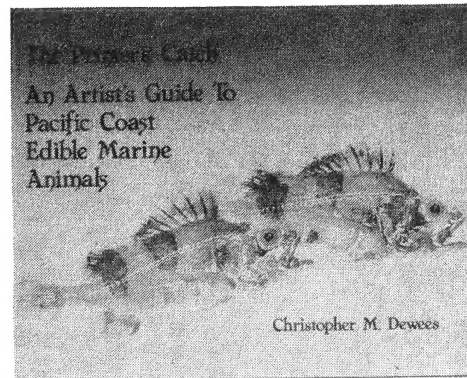
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# FEBRUARY 1986

## CURRENT EVENTS

### Schedule Shows & Conventions

1986

**Central Florida Shell Show** January 17-19, Orlando, Florida. Contact: Les Easland, 5803 Fernhill Dr., Orlando, FL 32808, or call 305-298-2813

**Southwest Florida Shell Show** January 17-19, Ft. Myers, Florida. Contact: John Vaughan, Box 05962, Tice, FL 33905, or call 813-693-1913

**Greater Miami Shell Show** January 23-26, Miami, Florida. Contact: Norris McElia, 905 N.W. 15th Ave., Miami, FL 33125, or call 305-642-1504

**Astronaut Trail Shell Show** January 24-26, Melbourne, Florida. Seventh Shell Show at the Melbourne Auditorium, 625 E. Hibiscus Boulevard, Melbourne, Florida. The show will be open to the public from 10 am to 6 pm Friday and Saturday and from 10 am to 5 pm on Sunday. Set up time for exhibitors and dealers will be on Thursday, January 23, 1986, from 9 am to 1 pm, with judging immediately following at 1 pm. Contact: Jim & Bobbi Cordy, 385 Needle Blvd., Merritt Island, FL 32953, or call 305-452-5736

**Broward County Shell Show** January 31-February 2, Pompano Beach, Florida. Contact: Jean Andrews, 451 S.E. 15th Ave., Pompano Beach, FL 33060, or call 305-782-2837

**Naples Shell Show** February 14-16, Naples, Florida. Contact: Terry Fitzgerald, 660 York Terrace, Naples, FL 33942, or call 813-598-2579

**St. Petersburg Shell Show** February 15-16, St. Petersburg, Florida. Contact: Bob & Betty Lipe, 440 75th Ave., St. Petersburg Beach, FL 33706, or call 813-360-0586

**Sarasota Shell Club** February 21, 22, and 23, Sarasota, Florida. Contact: Bet Hamilton, 1240 Primrose, Venice, Florida 33595, or call 813-497-2809.

**Sanibel Shell Fair** March 6-9, Sanibel, Florida. Contact: Dorothy Putnam, Sanibel Community Center, P.O. Box 72, Sanibel, FL 33957, or call 813-472-2155

**Marco Island Shell Show** March 12-13, Marco Island, Florida. Contact: Vera Wooley, 930 Montego Court, Marco Island, FL 33937, or call 813-394-1098

**Palm Beach Shell Show** April 3-6, West Palm Beach, Florida. Contact: Phyllis Diegel, 143 Alcazar St., Royal Palm Beach, FL 33411, or call 305-798-5351

**Georgia Shell Show** April 11-13, Atlanta, Georgia. Contact: Carl & Rene Beeler, 1868 Gainsborough Dr., Chamblee, GA 30341, or call 404-451-2221

**St. Louis Shell Show** April 18-20, St. Louis, Missouri. Contact: Alan Gettleman, 4045 Central Lane, Granite City, IL 62040, or call 618-931-1312

**2nd International Symposium on Indo-Pacific Marine Biology** Guam, Truk & Ponape, Sponsored by the Western Society of Naturalists, June 22 - July 9. Contact: David H. Montgomery, WSN Secretary, Biological Sciences Dept., California State Polytechnic University, San Luis Obispo, CA 93407.

**American Malacological Union**  
**Western Society of Malacologists**  
Joint Meeting, July 2-7, Monterey, California. Contact: Paula Mikkelsen or Margaret S. Mulliner

**North American Paleontological**  
Convention August 10-17, Boulder, Colorado. Contact: Norman L. Gilinsky, Dept. of Geological Sciences, VPI and SU, Blacksburg, VA 24061

**Unitas Malacologica** Ninth International Malacological Congress, August 31-September 6, Edinburgh, Scotland. Contact: Congress Office, Royal Scottish Museum, Edinburgh, Scotland EH1 1JF

| MONDAY                                                                                                                      | TUE                                                                                                                          | WED | THU | FRI | SAT   | SUN |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-------|-----|
| JANUARY<br>M T W T F S S<br>1 2 3 4 5<br>6 7 8 9 10 11 12<br>13 14 15 16 17 18 19<br>20 21 22 23 24 25 26<br>27 28 29 30 31 | MARCH<br>M T W T F S S<br>1 2<br>3 4 5 6 7 8 9<br>10 11 12 13 14 15 16<br>17 18 19 20 21 22 23<br>24 25 26 27 28 29 30<br>31 |     |     |     | 1     | 2   |
| MONDAY 3                                                                                                                    | 4                                                                                                                            | 5   | 6   | 7   | 8     | 9   |
| MONDAY 10                                                                                                                   | 11                                                                                                                           | 12  | 13  | 14  | 15    | 16  |
| MONDAY 17                                                                                                                   | 18                                                                                                                           | 19  | 20  | 21  | 22    | 23  |
| MONDAY 24                                                                                                                   | 25                                                                                                                           | 26  | 27  | 28  | MARCH |     |



**Broward County Shell Show**  
January 31-February 2, Pompano Beach, Florida. Contact: Jean Andrews, 451 S.E. 15th Ave., Pompano Beach, FL 33060, or call 305-782-2837

Groundhog Day



Valentine's Day

**Naples Shell Show** February 14-16, Naples, Florida. Contact: Terry Fitzgerald, 660 York Terrace, Naples, FL 33942, or call 813-598-2579



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February 15-16, St. Petersburg, Florida. Contact: Bob & Betty Lipe, 440 75th Ave., St. Petersburg Beach, FL 33706, or call 813-360-0586



**Sarasota Shell Club** February 21, 22, and 23, Sarasota, Florida. Contact: Bet Hamilton, 1240 Primrose, Venice, Florida 33595, or call 813-497-2809.

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Daglish, E.F. 1956. **The Seaside Nature Book.** The Country Book Club, London, i-viii + 231p., 8 col. pls., 8 b/w pls., 78 text figs. Includes 3 color & 2 b/w pls. on shells of Britain. 110 x 175mm, clothbound. Order No. 8822 - \$18

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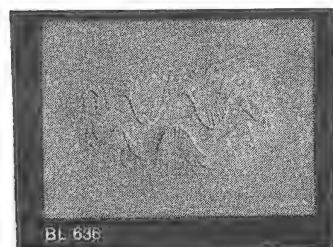
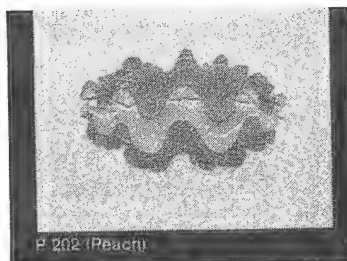
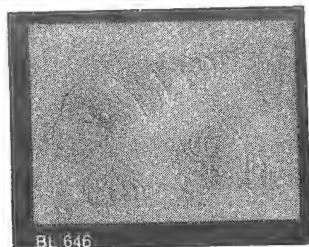
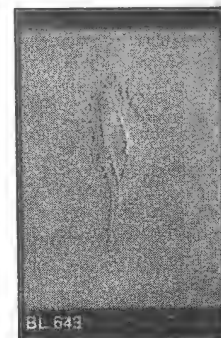
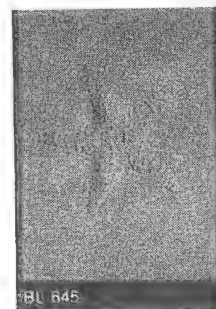
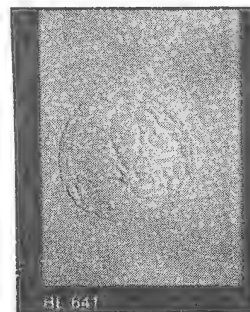
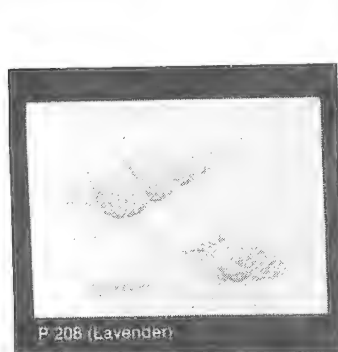
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*Thanks for your help. Sally.*



## READER FORUM

From I.S. Roginskaya: I have some nomenclatorial difficulties with the taxonomy of two species of CORYPHELLIDAE, described from the Pacific Coast of North America. And I cannot solve the problems by means of the literature available.

For some years already, I suspect that *Coryphella fusca* O'Donoghue, 1921, described from Vancouver Island region (O'Donoghue, 1921, pp. 195-197, pl. 3(9), fig. 28, pl. 5(11), fig. 60; from the depth 10-25 fathoms (=18.3 - 45.7m) is to be regarded as a junior synonym of *Himatella trophina* Bergh, 1894, the coryphellid species, described by Bergh, basing on a single specimen, collected by Dall in 1880 near Port Althorp, Alaska, from the depth of 5 fathoms (=9.1m, Bergh, 1894, pp.134-136, Taf. 1, figs. 16-18; Taf. 2, figs. 1-5).

I agree with O'Donoghue (1921 op. cit.) that *Coryphella* sp. Bergh, 1879, described by Bergh, basing only on a single bulbus pharyngeus, dredged by W.H. Dall from the depth 9-16 fathoms (=16.5 - 29.3m) near Adakh Island, Aleutian Islands (Bergh, 1879, p.78, pl. 1, figs. 13-18; pl. 2, figs. 7-8) and *Coryphella fusca* O'Donoghue, 1921 belong to the same species.

Now, to my eye, the similarity of the radular teeth and mandibles of *Himatella trophina* Bergh, 1894 and *Coryphella* sp. Bergh, 1879, is striking. Just only compare the radular teeth: Bergh, 1894, op. cit. Taf. 1, fig. 18; Taf. 2, figs. 4-5 with Bergh, 1879 op. cit. pl. 1, fig. 14, and the jaws and masticatory processes: Bergh, 1894 op. cit. Taf. 1, fig. 16; Taf. 2, figs. 1, 3, with Bergh, 1879 op. cit. pl. 1, fig. 13, pl. 2, fig. 7. The resemblance of the external appearance of *Coryphella fusca* O'Donoghue, 1921 and *Himatella trophina* Bergh, 1894 is very strong: the projecting dorsal brim, broad head, three pairs of long tentacles: oral, propodial and the perfoliated rhinophores, bearing 35 (Bergh, 1894 op. cit.) or 32-38 (O'Donoghue, 1921 op. cit.) delicate ringlets etc. The figure of one row of radular teeth, published by O'Donoghue (1921 op. cit.) for his *Coryphella fusca*, is also very similar to the pictures of radular teeth of *Himatella trophina* Bergh, 1894 and of *Coryphella* sp. Bergh, 1879. The latter, as it was already mentioned was recognized by O'Donoghue (1921 op. cit.) as a synonym of his *Coryphella fusca*.

The perfoliated rhinophores, distinguishing *Himatella trophina* from other coryphellids (known at that time), with simple smooth dorsal tentacles, seemed to Bergh a decisive argument for establishing a separate genus *Himatella* Bergh, 1890, with type species by monotypy *Himatella trophina*, Bergh (1890 p.36). (I don't understand, by the way, why in Russell's "Index Nudibranchia" (1971 p.79) and in Thiele, 1931, p. 453 earlier, the genus is cited as *Himatella* Bergh, 1891? and in "Index to the Opisthobranchia ..." of Behrens and Long (1981, p. 33) as *Himatella* Bergh, 1892? [ed. — each of us tried to pick the proper date; normally the actual publication year rather than the year printed on the publication]. In consequence of this Bergh had enlarged the diagnosis of his CORYPHELLIDAE including the following phrase: "Rhinophoria simplicia, elongata, raro perfoliata" (Bergh, 1890 op. cit. p.35), or "The Coryphellidae have long, simple (not perfoliated) rhinophores (*Himatella* only forming an exception in this respect" and "the genus *Himatella* finally is separated from the others by its perfoliated rhinophores" (Bergh, 1900, p.30-31) (the same in Danish: Bergh, 1899, p.29).

And naturally the question arises, why O'Donoghue (1921 op. cit.), who synonymized his *Coryphella fusca* with perfoliated rhinophores with *Coryphella* sp. Bergh, 1879, considering only the shape of radular teeth, hadn't discovered the identity of his species (perhaps to my eye only?) with *Himatella trophina* Bergh, described basing on the whole specimen and not only on the bulbus pharyngeus as *Coryphella* sp. Bergh, 1879? The work of Bergh mentioned (1894 op. cit.) was included in the list of literature in O'Donoghue, 1921 op. cit. Later on O'Donoghue (1926) placed the two species: *Coryphella fusca* and *Himatella trophina* in the two separate genera (*Coryphyella* and *Himatella* of the family FLABELLINIDAE. What is even more odd — that is why Bergh himself never indicated his *Coryphella* sp. 1879 as a synonym of his *Himatella trophina*?

The generic name *Himatella* later on was suppressed by Thiele (1931, op. cit., p.453) as nomen preoccupatum, for the new name *Himatina* Thiele, 1931, with type species — *Himatella trophina* Bergh, 1894 (*Himatella trophina* Bergh, 1890 abandoned, being a nomen nudum).

But all these nomenclatorial changes have only historical significance, as later on *Himatina* Thiele, 1931, was synonymized with *Coryphella* Gray, 1850, and *Himatina trophina* (Bergh, 1894) transformed to *Coryphella trophina* (Bergh, 1894) (Marcus, 1961, p.48), and afterwards (Gosliner et Griffiths, 1981) even to *Flabellina trophina* (Bergh, 1894). (But I persist in considering CORYPHELLIDAE as a taxon distinct from FLABELLINIDAE, and *Flabellina* Voigt, 1834 distinct from *Coryphella* Gray, 1850.)

If we only consider the literature for the last 20-25 years, we shall find the specific name *fusca* often used by the specialists (Marcus, 1961 op. cit.; Steinberg, 1963; Hurst, 1967; Bernard, 1970; Sphon, 1972b op. cit.; Robilliard, 1974; Gosliner et Griffiths, 1981 op. cit. etc.). *Coryphella trophina* (Bergh, 1894) was mentioned rather rarely (Marcus, 1961 op. cit.; Marcus et Marcus, 1967 (in the discussion of *Flabellina telja*); Sphon, 1972 op. cit.; Gosliner et Griffiths, 1981 op. cit.), separately, though simultaneously in the same work with *Coryphella fusca* O'Donoghue, 1921. So it is clear that the authors cited admitted the existence of two separate species.

In my material I had six specimens of so-called *Coryphella fusca* O'Donoghue, 1921: one animal provided from Bering Sea, and 5 — from the Sea of Okhotsk (from depths 20-115m) (Roginskaya, 1964, 1969). In the latter work I tried also to prove, that *Aeolis camchatica* Volodchenko, 1941 from Avatcha Bay (East Kamchatka) (Volodchenko, 1941, p.59-60, p.67 (English translation), pl. 3, fig. 6; pl. 4, fig. 6) had to be regarded as a junior subjective synonym of *Coryphella fusca* O'Donoghue, 1921. *Aeolis camchatica* was described basing on a single specimen with highly worn obliterated radular teeth.

In 1974 Robilliard (op. cit.) reported the live *Coryphella fusca* O'Donoghue, 1921 from Alaska. And while the specimens of O'Donoghue (1921 op. cit.) in preserved state were less than 20mm in length, and the specimen of *Coryphella trophina* of Bergh (Bergh op. cit. 1894) — only 8mm, the examples of Robilliard were of a considerable length (from 20-45mm up to 120-140mm), more approaching the lengths of specimens from my material, attaining from 25.5 up to 40mm in length in preserved state (Roginskaya, 1969 op. cit.).

As I had already shown on the material from the Sea of Okhotsk and from the Bering Sea (Roginskaya, 1969 op. cit.), the radular teeth of so-called *Coryphella fusca* O'Donoghue are most variable within one animal as well as among several specimens. But almost invariably I could find 1-2 typical rows of teeth (throughout each radula, identical with the teeth of *Coryphella trophina* (Bergh, 1894) and with *Coryphella* sp. Bergh, 1879, while the other rows sometimes demonstrated the high degree of obliteration. It is a pity that Robilliard (1974 op. cit.) doesn't discuss the radulas of his specimens.

And if we assume *Coryphella fusca* O'Donoghue to be a junior synonym of *Coryphella trophina* (Bergh), it would seem quite natural to expect the numerous specimens of this species at the coast of Alaska (Robilliard, 1974 op. cit.), as the type locality of the latter is exactly Alaska (Bergh, 1894 op. cit.). And if moreover we agree that *Coryphella* sp. Bergh, 1879, as well as the specimens of so-called *Coryphella fusca* O'Donoghue from the Far East of the USSR belong to *Coryphella trophina* (Bergh), we can put together the distributional range of a typical Pacific boreal species, widely distributed throughout the northern part of the Pacific Ocean. His range extends along the north-western coastline of North America from Alaska (Bergh, 1894 op. cit.; Robilliard, 1974 op. cit.) up to Oregon (Sphon, 1972a op. cit., 1972b op. cit.). The species is reported from the Aleutian Islands (Bergh, 1879 op. cit.) and from the eastern coast of the Pacific Ocean: in the Bering Sea (near Kamchatka) (Volodchenko, 1941 op. cit.; Roginskaya, 1969 op. cit.) and in the Sea of Okhotsk (Roginskaya, 1964 op. cit., 1969 op. cit.).

It is interesting to mention one observation of Bergh in connection with this species. Bergh had found in the mouth of the bulbus pharyngeus of *Coryphella* sp. from Aleutian Islands (1879, op. cit. p.78) "half hanging out ... a fine *Caprella*, the body having the length of 6mm." (The whole length of this bulbus pharyngeus was 5mm.) The specimens from my material do not yield to Aleutian animal in voracity. The stomachs of two specimens from the Sea of Okhotsk also contained the food-objects most unusual to *Coryphella* species, known mainly as coelenterate-feeders: the pharyngeal bulbs of small sized Nudibranchia (CUTHONIDAE and CORYPHELLIDAE) (Roginskaya, 1964 op. cit.) In one stomach (the body length of the specimen = 25.5mm) the pharyngeal bulbs of

swallowed nudibranchs numbered as much as ten! The usual food-objects — hydroids, were also present in the stomachs of these cannibalistic *Coryphella trophina* (Bergh, 1894).

The dentition of radular teeth of the specimens of the Far East of the USSR demonstrated the high degree of splitting and obliteration — apparently the result of contacts of radular teeth with hard parts of the swallowed prey. The similar variability of teeth was reported for *Coryphella stimpsoni* (Verrill, 1879), from Maine (Morse, 1971) and from the deep-sea basins of the Sea of Japan (Roginskaya, 1978), feeding on hard-skinned burrowing sea-anemones.

What do you think about it all? Perhaps somebody had already synonymized *Coryphella trophina* (Bergh, 1894) and *Coryphella fusca* O'Donoghue, 1921? Or there exists the opposite opinion defending the validity of both species? But, to my regret, this literature had completely escaped from me.

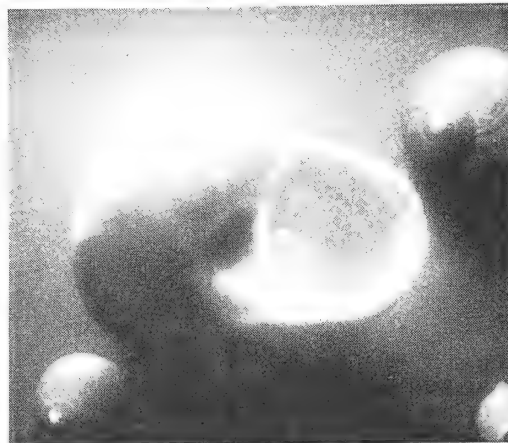
I want to add that in my six specimens of *Coryphella trophina* (Bergh, 1894) two types of spermatozoa were present in the hermaphrodite gland. The sperm dimorphism in my opinion is a very perspective diagnostic feature of *Coryphella* (Roginskaya, 1963). It would be interesting to know if Alaskan specimens of Robilliard (1974 op. cit.) and the specimens of so-called *Coryphella fusca* O'Donoghue, 1921 from the other parts of the coast of North America demonstrate the two types of spermatozoa? For instance, perhaps, Dr. Sandra Crane, who, according to ON, 1975, vol. 7, no. 3, p.9, had collected in 1975 some *Coryphella fusca* in the Vancouver region, had already studied the histology of hermaphrodite glands of her specimens and can answer?

Note: In the first issue of "Shells and Sea Life" for 1985 just arrived, the two species: *Coryphella fusca* and *Coryphella trophina* are also placed separately in the same list! And the common name of *C. fusca* "predatorious aeolid" — isn't it the hint on the voracious and carnivorous habits of this species, first noted by Bergh for *Coryphella* sp. Bergh, 1879, then for the specimens from our Far East (Roginskaya, 1964 op. cit., 1969 op. cit.).

And here is the list of citations I used in the letter: 1. D. Behrens & S. Long 1981. ON, 13(7):27-38; 2. Bergh, R. 1879. Sci. Res. Expl. Alaska, 1(1):127-188; 3. Bergh, R. 1890. Zool. Jahrb. Abt. Syst., Band 5, Heft 1, s.1-75; 4. Bergh, R. 1894. "Albatross". Bull. Mus. Comp. Zool. Harv., 25(10):125-233, pl. 1-12; 5. Bergh, R. 1899. Den Dansk. Ingolf-Exped., Bind 2, no.3:1-46, taf. 1-5; 6. Bergh, R. 1900. The Danish Ingolf Exped., 2(3):1-49, pl. 1-5; 7. Bernard, F. 1970. Syesis, 3:75-94; 8. Gosliner, T. & R. Griffiths 1981. Ann. S. Afr. Mus., 84(2):105-150; 9. Hurst, A. 1967. Veliger, 9(3):255-288; 10. Marcus, Er. 1961. Veliger, 3(suppl.):1-85; 11. Marcus, Ev. & Er. Marcus 1967. Stud. Trop. Oceanogr. Miami, 6:vii+256p.; 12. Morse, M.P. 1971. Biol. Bull. 140(1):84-94; 13. O'Donoghue, C. 1921. Trans. Roy. Can. Inst. 13(1):147-209; 14. O'Donoghue, C. 1923. Ibid. 14(1):123-131; 15. O'Donoghue, C. 1926. Ibid. 15, pt. 2(34):199-247; 16. Robilliard, G. 1974. Can. J. Zool., 52(8):989-992; 17. Roginskaya, I. 1963. Dokl. Akad. Nauk, SSSR, Biol. Sci., 152(5):1256-1259; 18. Roginskaya, I. 1964. Zoologicheskii Zhurnal, 43(11):1717-1719; 19. 1971. Index Nudibranchia. Del. Mus. Nat. Hist., 141p., 21. Sphon, G. 1972a. Veliger, 15(2):153-157; 22. Sphon, G. 1972b. O.N., 4(10-11):53-79; 23. Steinberg, J. 1963. Veliger, 6(2):68-73; 24. Thiele, J. 1931. Handb. Syst. Weichtierekunde. Teil 2, s. 377-778; 25. Volodchenko, N. 1941. Explor. des Mers de l'Orient Extreme de l'URSS, 1:53-68. — Dr. I.S. Roginskaya, P.P. Shirshov Institute of Oceanology, Academy of Sciences of the USSR, 23, Krasikova St., Moscow, USSR, 117218  
\* \* \* \* \*

## The Beautiful *Norrisia norrisii* (Sowerby, 1838)

Stephanie Prince, 24242 Via Aquara, Laguna Niguel, CA 92677



Subfamily Gibbulinae  
Genus *Norrisia* (Bay 1880)  
*Norrisia norrisii* (Sowerby, 1838)

This is the only species in the Genus *Norrisia* on the West Coast. It can be found from Monterey, California to Baja California, from shore to 13m, living on kelp and other brown algae in the kelp beds.

*Norrisia norrisii* is a heavy, solid shell orbicular in shape, and reaching a diameter of from 35 to 50mm and 25mm high. The umbilicus is ovate and quite wide and deep, and on the columellar side it is tinged with light green; in great contrast to the glossy black-brown coloring of the shell. Immediately encircling the umbilicus the shell is black. The top part of the shell is generally not as glossy as the underside, and its coloring is more of a faded chestnut brown, particularly in the larger specimens (50mm diameter). Sun bleached specimens turn an orange-tan color, and they are quite attractive.

The interior of the aperture in my younger specimens is pearly, but the older and larger specimens have a rust color in the aperture. The outer lip is bordered by a thin margin of brown and the lip itself is quite sharp and thin. The operculum is round and the outer side is covered with spiral rows of bristles. The inner side is a glossy and smooth black-brown color.

I observed two live 50mm *Norrisia norrisii* on some shoreline rocks at a very low tide in Laguna Beach last winter. They were in a tide pool attached together on the side at the bottom of a pool where there was a clump of brown kelp. The snails were bright red with a cream colored foot. They looked much like our common garden snails, except that their color was red, and they had four evenly spaced tentacle-like hairs on the sides of their bodies.

The juvenile shells (my specimens being 4 to 10mm diameter) are dark brown with white dots starting at the apex and going around the sutures eventually fading into brown on the body whorl. The aperture, again, is pearly and the umbilicus has a hole as do the adult shells. They were found dead, stuck to a sea anemone on the shoreline rocks.

This shell was formerly quite abundant, but it is not so commonly found now because of the disappearance of the kelp beds from large areas along the Pacific Coast of Southern California.

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**Anatomical information on *Placida* sp. = *Hermaea dendritica* of Baba, 1937 and 1955, from Japan.**

Kikutaro Baba, Shigigaoka 35, Minami-Il-jyo, Sango-cho, Ikoma-gun, Nara-ken, Japan 636

*Placida* sp. cf. *P. dendritica* (Alder & Hancock, 1843; *Calliopa*); Midori-amamo-umiushi (Japanese name)  
Pls. I-II; Text-fig. 1.

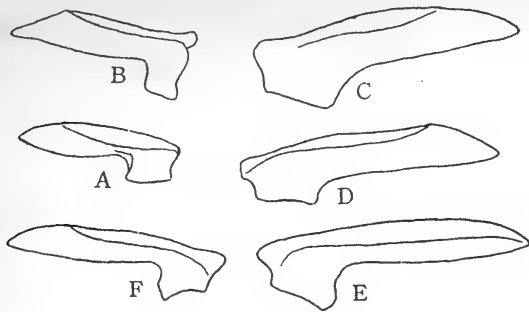
*Placida babai* Marcus, 1982: 25, f. 32 (n.n. for *Hermaea dendritica* of Baba, 1955).

*Hermaea dendritica*. Baba, 1937: 223-224, pl. 4, f. 8, tf. 9. - Tomioka, Amakusa; Baba & Hamatani, 1952: 89, f. 3, pl. 7, f. 3-7. - Sugashima, Shima (spawn); Baba, 1955: 10-11, 41, pl. 3, f. 9, tf. 9. - Sagami Bay. See also Marcus, 1982: 25, comment on *Hermaea (Placida) dendritica* of Thompson, 1973: 243-244 from Australia; Burn, 1966: 105, comment on *H. dendritica* of Baba, 1955: 10-11, 41 from Sagami Bay, Japan; Gascoigne, 1976a: 160, f. 4, anatomy of *H. dendritica* from Australia; Gascoigne, 1976b: 537-539, anatomy of *H. dendritica* from England.

**Material:**

Sp. No. A. Kasajima near Tamano, the Inland Sea of Seto, IV-2901957, 7mm (dorsal view).  
Sp. No. B. Tannowa, Osaka Bay, VI-6-1962, 6mm (ventral view and a branchial papilla in fresh).  
Sp. No. C. Tannowa, II-18-1961 (anatomy of the vessel system, radula and nerve center).  
Sp. Nos. 1-3 (H.S.). Tannowa, VI-6-1962, 4-5mm.  
Sp. No. 4 (L.S.). Tannowa, VI-6-1962, 5mm.  
Sp. Nos. 7-8 (T.S.). Tannowa, VI-6-1962.  
The animals were usually found living *Codium*.

The ground color of body yellowish-green, the grass-green liver system and its tributaries show through the integument of the branchial papillae, dorsum, head and rhinophores. Additional opaque white dots occur on the rhinophores, branchial papillae and tail. Sole colorless. The general grass-green tint of the body may slightly vary according to specimens.



Text-fig. 1. Radular teeth in *Placida*. A-C. *P. dendritica*; D-F. *P. sp. A*. From Thompson, 1976, f. 98d; B. from Gascoigne, 1976b, f. 1C; C. from Schmekel & Portmann, 1982, Taf. 29, f. 6; D. from Baba, 1937, tf. 9 (Tomioka, Amakusa, II-1935); E. from Baba, 1955, tf. 9B (Kasajima, Sagami Bay, IV-25-1951); F. this paper (Tannowa, Osaka Bay, II-18-1961).

The radular formula 9+30x0.1.0; the teeth blade-like rather than chisel-shaped. The visceral loop consisting of a supra-intestinal ganglion and a visceral (= abdominal) ganglion, see Gascoigne, 1980: 28, f. 8E; 1985: 12 and 16.

Genital system nearly as in *Ercolania boodlea* (Baba, 1938; *Stiliger*); see Baba & Hamatani, 1970: 218-219, pl. 7, f. 1-7; see also Schmekel & Portmann, 1982: 302-304, Abb. 7. 100b and Taf. 36-10 for *Placida dendritica* (Alder & Hancock, 1843; *Calliopa*); Sanders-Esser, 1984: 205, Abb. 13a for *P. dendritica*. The vagina is closed in order to receive foreign sperm hypodermically.

The membrane gland (= capsule gland, see Gascoigne, 1980, f. 7B; 1985: 20, f. 9B) is in the center of the fertilization region. It is laden with sperm conducted at the proximal end (x) from the vaginal vestibulum (= vagina + spermatocyst). The fertilized and encapsulated eggs presumably pass forward at the distal end (y) into the mucous gland. Also, the membrane gland is associated with a number of different structures. The branches of the albumen gland are contained in the branchial papillae.

The prostate gland of the vas deferens is single, not divided into 4 parts as in *Placida dendritica* from the Mediterranean Sea (cf. Schmekel & Portmann, 1982: 303, Abb. 13a). Penis with a short stylet as usual in *Placida* (and the *STILIGERIDAE*, see Gascoigne, 1985: 13 and 19).

The Japanese specimens of *Placida* most closely resemble the English *P. dendritica* in the external form and coloration of the body (see especially Thompson, 1976: 174-176, pl. 8) to which they were formerly referred. However, Marcus, 1982:25 considered that our specimens differed from the European (English) species, *Placida dendritica*, by reason of having a different shape of the radular teeth (that is, these are not so apparently chisel-shaped as in the latter species, see Thompson, 1976, f. 98d; Gascoigne, 1976b, f. 1C; and Schmekel & Portmann, 1982, Taf. 29, f. 6).

Our specimens differ also from the Mediterranean *dendritica* in the simple formation of the prostate gland as mentioned above. More discussion seems necessary for identifying our specimens exactly with *Placida dendritica*, the type locality of which occurs in Torbay, England.

(P.S.) Lately, Dr. Eveline Marcus, Brazil, doubted the validity of *Placida babai* owing to the variability of the radular teeth in the European and Mediterranean *dendritica* in literature (personal communication).

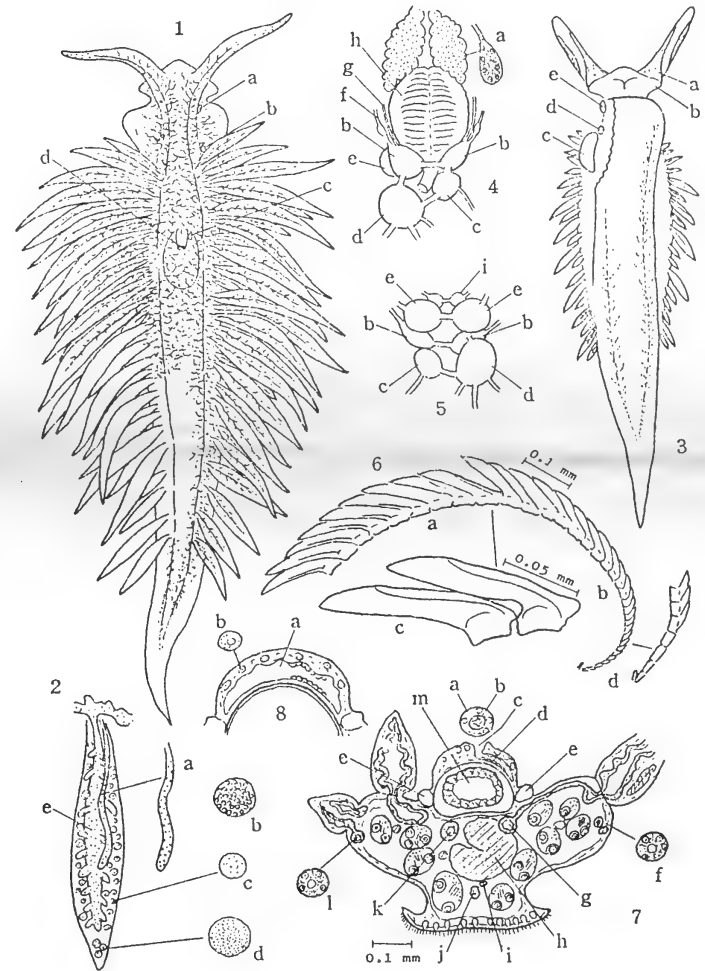


Plate I. *Placida* sp. cf. *P. dendritica* (Alder & Hancock, 1843).

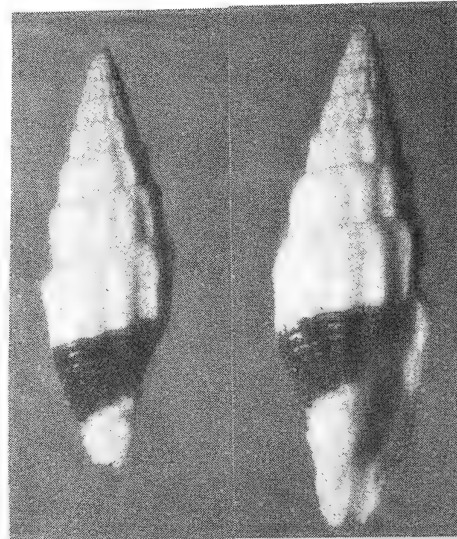
- Fig. 1. Live animal from above, 7mm (Sp. No. A). a. penial orifice, b. oviducal orifice, c. pore of melanin black vesicle, d. anus.
- Fig. 2. A branchial papilla (Sp. No. B). a. albumen gland, b. liver cell with yellowish green granules, c. mucous gland cell, d. opaque white cell, e. liver diverticulum.
- Fig. 3. Live animal from below, 6mm (Sp. No. B). a. rhinophoral lobe, b. oral lobe, c. vaginal ridge, d. oviducal orifice, e. penial orifice.
- Fig. 4-5. Central nervous system from above and below (Sp. No. C). a. oral (= buccal) gland, b. cerebral ganglion, c. supra-intestinal ganglion, d. visceral (= abdominal) ganglion, e. pedal ganglion, f. rhinophoral nerve, g. optic nerve, h. pharynx, i. buccal ganglion.
- Fig. 6. A radular ribbon from the right side. a. ascending series, b. descending series, c. teeth in row, d. teeth in the ascus.
- Fig. 7. Transverse section of the body passing through the nephroproct (c). a. anal papilla, b. rectum, d. kidney, e. sinus, f. right main duct of the albumen gland, g. main canal of the right liver, h. hermaphrodite duct, j. salivary gland, k. main canal of the left liver, l. left main duct of the albumen gland, m. ventricle.
- Fig. 8. Transverse section of the pericardial prominence. a. kidney, b. liver tributaries in the ingegument.

Terminology: loop = small oviduct; membrane (= capsule) gland; mucous gland = large oviduct; oesophageal diverticulum (= pouch); vaginal ridge = copulation pad.

\*\*\*\*\*

## ON THE REEF WITH BOB PURTYMUN: *Terebra* & *Vexillum*

Bob Purtymun, P.O. Box 643, West Point, CA 95255



*Vexillum militaris* (Reeve, 1845), 23mm, Grubb Reef, Great Barrier Reef, Australia. Photos by Bob Purtymun.

Current is always a concern of the diver-collector. It can be like the Molokai Express, the current that flows generally south-westward between Molokai and Oahu. This current varies with wind and tidal conditions. Sometimes running at speeds too fast to swim against, again it can be flat, and on rare occasions it will reverse itself. If you are caught down stream of the boat when this current starts to run, take heart in the fact that Hawaii has an excellent helicopter rescue service.

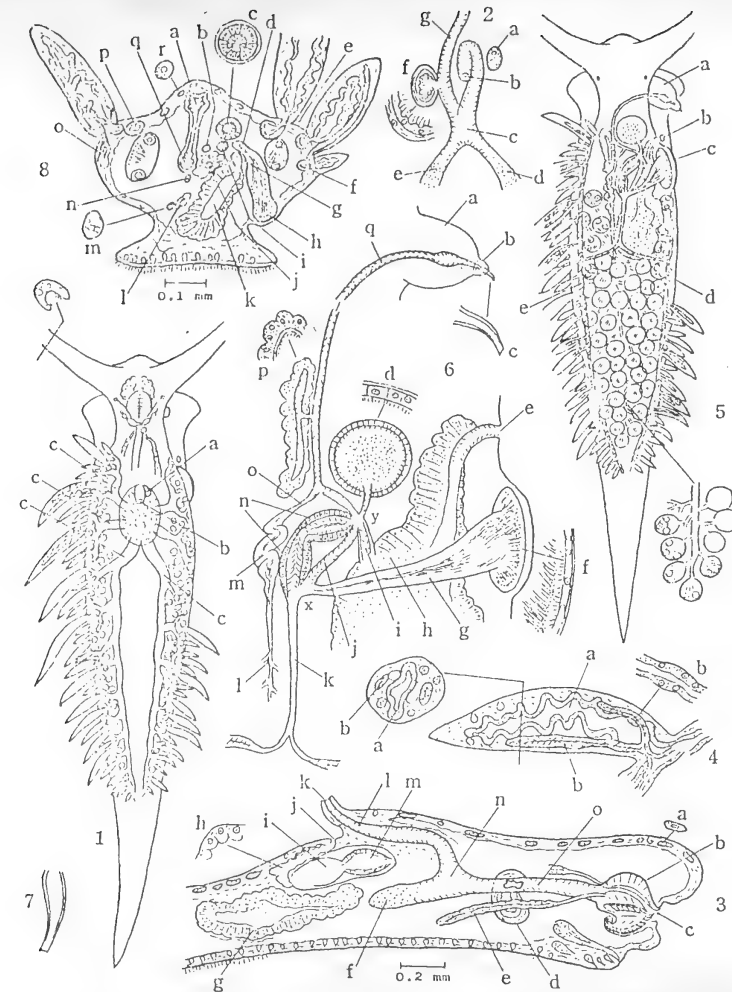
My query to our skipper around our next dive site, Grubb Reef (Great Barrier Reef, December, 1983), was nonchalantly answered with, "oh, just a gentle northward drift, nothing to worry about." Later, near the bottom about 75 feet deep I found this to be true.

On the northern side of the large coral heads that were scattered over the sandy bottom I found long comet-like tails of fine silty sand. This condition occurs when the current always flows in one direction. Often, I have found that some mollusks prefer this habitat to the coarser sand of the open bottom.

I picked a big comet-tail behind a 10-foot diameter coral "bommie" and started to systematical fan the sand to a depth of 2 to 3 inches, planning to cover the whole "tail". Two *Terebra affinis* Gray, 1834, a small *T. crenulata* (Linnaeus, 1758), and a *Vexillum exasperatum* (Gmelin, 1791) were found.

Later while still fanning away, out rolled a sight for sore eyes -- a *Vexillum militaris* (Reeve, 1845). This species is not large for VEXILLIDAE but few are as spectacular. The shell is pure white with a dark red band on the body whorl. My find was 23 mm long. It may be a range extension, as I cannot find any record of this shell being collected on the Great Barrier Reef.

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### Plate II. *Placida* sp. cf. *P. dendritica* (Alder & Hancock, 1843).

Fig. 1. Dorsal vessel system (Sp. No. C). a. melanin black vesicle, b. anus, c. vessels (= veins)

Fig. 2. Part of the digestive system from above (Sp. No. 3). a. melanin black vesicle, b. rectum, c. stomach, d. right liver, e. left liver, f. oesophageal diverticulum, g. oesophagus.

Fig. 3. Median longitudinal section of the body (Sp. No. 4). a. liver tributaries, b. pharynx, c. mouth, d. oesophageal diverticulum, e. salivary gland, f. right liver, g. mucous gland, h. kidney, i. auricle, j. nephroproct, k. anus, l. rectum, m. ventricle, n. stomach, o. oesophagus.

Fig. 4. Longitudinal section of a branchial papilla (Sp. No. 4). a. liver diverticulum, b. branches of the albumen gland.

Fig. 5. Genital system, diagrammatic (Sp. Nos. 1-3). a. produced penis, b. oviducal orifice, c. vaginal ridge, d. right main duct of the albumen gland, e. left main duct of the albumen gland.

Fig. 6. Main part of the genital system from above, reconstructed (Sp. Nos. 1-3). a. everted penial sac, b. penis proper, c. stylet, d. spermatheca, e. oviducal orifice, f. vaginal duct, h. mucous gland, i. connection between the membrane gland and mucous gland, j. loop, k. common duct of the albumen gland, l. hermaphrodite duct (1), m. ampulla, n. membrane gland, o. hermaphrodite duct (2), p. prostate gland, q. vas deference.

Fig. 7. Penial stylet (Sp. No. 2).

Fig. 8. Transverse section of body passing through the vaginal ridge (Sp. No. 8). a. base of the anal papilla, b. hermaphrodite duct (2), c. membrane gland at the point x, d. vaginal duct, e. main canal of the right liver, f. right main duct of the albumen gland, g. connection between the membrane gland and the mucous gland, h. vaginal vestibulum, i. loop, j. prostate, k. mucous gland, l. ampulla, m. left salivary gland, n. right salivary gland, o. left main duct of the albumen gland, p. main canal of the left liver, q. stomach, r. liver tributaries.

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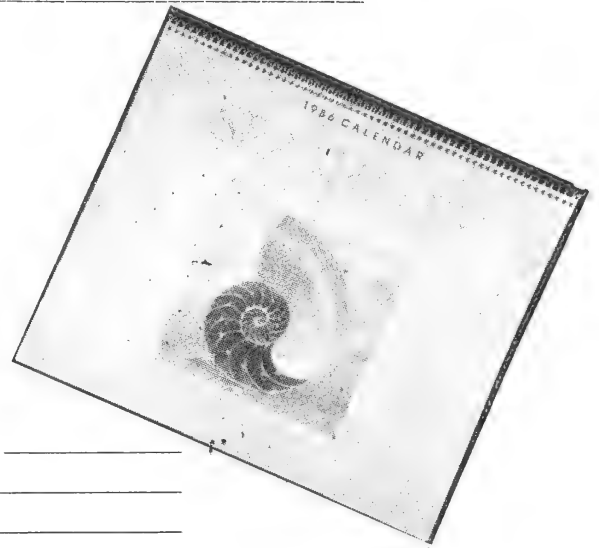
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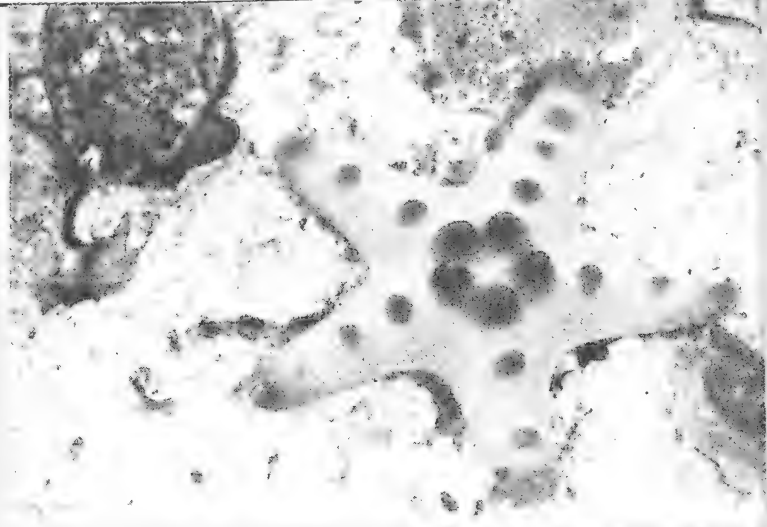
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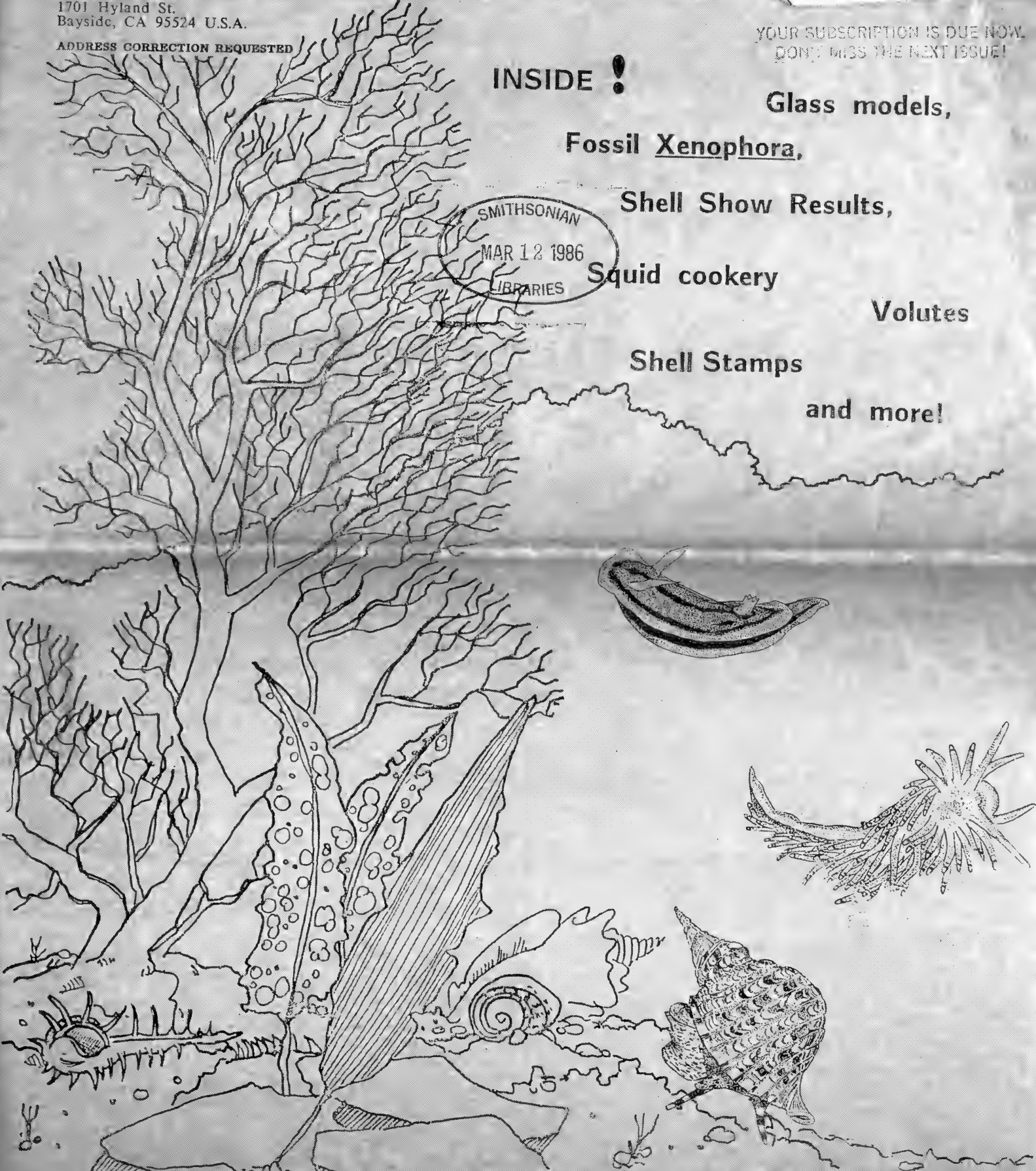
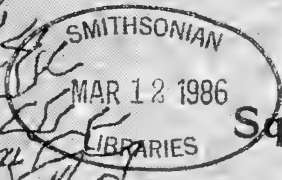
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We need an angel (or several angels) among you out there. We have been able to add a lot of new software and hardware to improve this publication during the past few years and have always done it on our own. Now we want to add one more piece of equipment which will cost \$5,000.00. Please consider donating to this need. We will be able to increase the size of the titles, add several more type styles, and more foreign language accent characters. We know the result will be worthwhile. I would be happy to trade typesetting for the money if someone has a book they want to publish.

For the first few years I could edit, type, print, fold, label, stamp and mail the entire issue in one long day and all by myself. With close to 5,000 copies going out each month things have changed. Simply sorting and printing out the mailing labels takes a couple of days along with day or two for preparing the foreign mail copies. I haven't counted how many countries receive *S&SL* lately but I know that several countries receive one or more postal BAGS of issues now.

We will print information in a timely manner. Notes and information on shows and meetings should reach us at least 60 days prior to the meeting to be included in *Shells and Sea Life*. If your club or organization is hosting a show or meeting please notify us at least 60 days in advance with an estimate of attendance. We will be pleased to provide you with quantities of *Shells and Sea Life* for distribution at your gathering.

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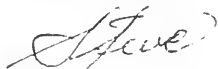
Every publication fills a need - or it eventually fails. Some club publications are simply meeting notices. Others include articles, and still others are complete technical journals. Technical journals often take 12 to 18 months to edit and print an article and cannot think of allocating space for novice questions and shell show notices. Club publications are regional interest at best and very limited in space for general interest or scientific articles. The printing and mailing costs are horrible and rising all the time.

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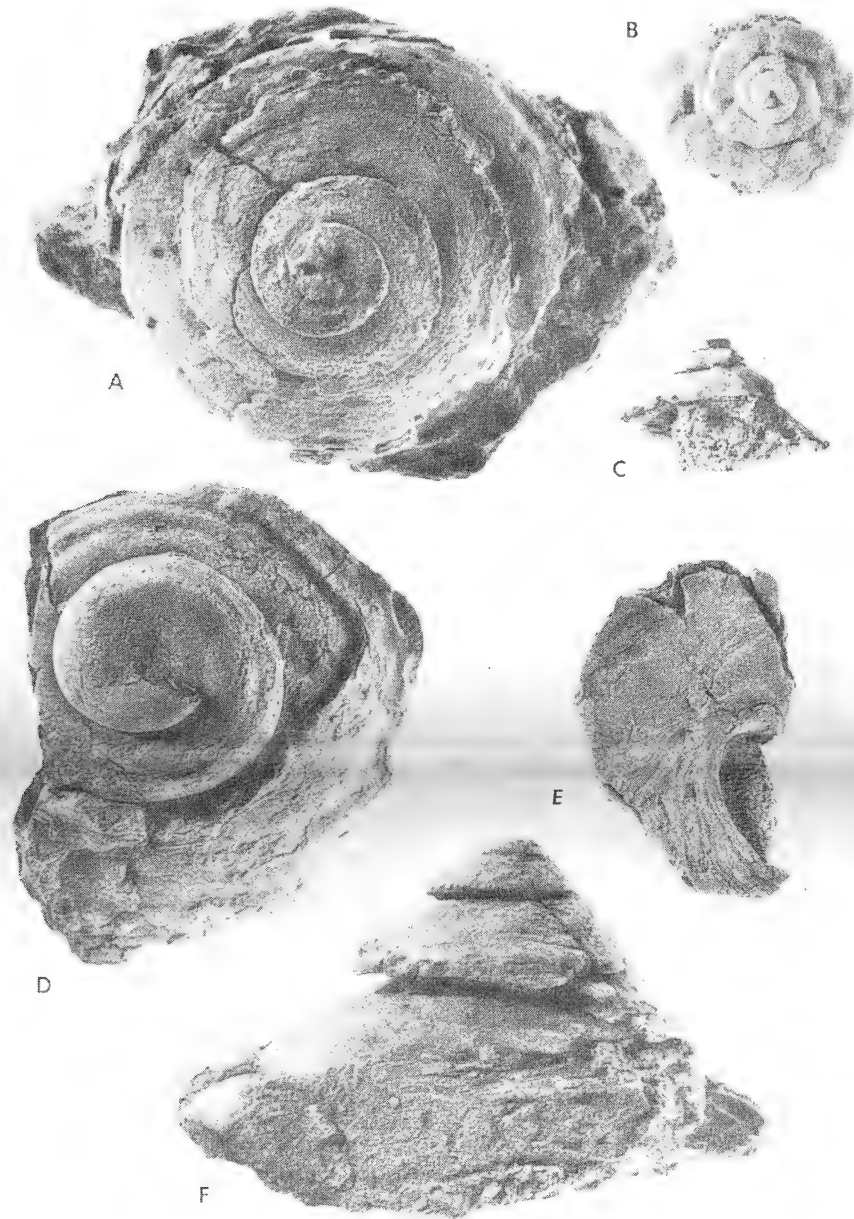
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# Fossil Xenophora of Baja and Alta California

Kate St. Jean, Longview, Washington

CRETACEOUS GASTROPODS FROM MEXICO

1093



*Xenophora willisi* Webster, 1983 (From Jour. Paleontology 57(5))

The northwest coast of Baja California is desolate and rugged, with steep coastal slopes and numerous high cliffs eroding into the sea. Between these areas are arroyos and stretches of pebbly or sandy beaches. The origin of the landscape is primarily volcanic and ancient sea floor deposition.

Below one of the steep cliffs, a beautiful and unique specimen of *Xenophora* was found by Brad Riney of San Diego, California. This is significant because it represents only the third known fossil *Xenophora* species from the Baja California peninsula. Five species are known from "Alta" California. Mr. Riney's find prompted me to survey the fossil species of *Xenophora* reported from the three Californias.

## Baja California Sur, Mexico

*Xenophora* sp. A

Beal (1948: 50) reported the first fossil *Xenophora* from Baja California peninsula. The specimen was collected from an Eocene or Paleocene formation north of San Ignacio Lagoon (Baja California Sur), and identified as *X. zitteli* Weaver, 1905. However, *X. zitteli* was named from Paleocene specimens collected in Contra Costa County, California. This unfigured and undescribed San Ignacio specimen needs further study before it can be assigned accurately to a species.

Baja California, Mexico

*Xenophora willisi* Webster, 1983

Melvin Webster, formerly a research associate of the Los Angeles County Museum of Natural History (LACM), collected specimens of a fossil *Xenophora*. His description of this species was published posthumously (Webster, 1983) with the following preface by Dr. Edward Wilson, Curator of Invertebrate Paleontology at LACM: "When Melvin L. Webster died he left a manuscript concerning the Upper Cretaceous gastropod fauna at Arroyo Santa Catarina. At the request of his widow, I extracted the accompanying paper from his manuscript, making minor additions for unification."

The fossil was found over 200 miles south of the U.S.-Mexican border, 5 miles inland from Santa Catarina landing, along the banks of an arroyo, in the Upper Cretaceous Rosario formation. The species was named *Xenophora willisi* in honor of Willis Parkinson Popenoe "in recognition of his contributions to the study of the Cretaceous of the west coast of North America."

The shell is large for the genus. Attaining a diameter as large as 110mm, it exceeds any other known Cretaceous *Xenophora*. Broadly conical, the shell has 5 to 7 low, flat-sided whorls. The shell surface is lamellose, with low axial folds curving convexly to the aperture. The base is broad and concave, and the umbilicus is completely closed. The ovate aperture is about 4 times wider than high, and is inclined at about 115° from the shell axis.

"*Xenophora willisi* is the most common large gastropod in the study area, but was collected only from beds on the west side of Arroyo Santa Catarina. Of the more than fifty specimens collected, most are fragments of natural casts, consisting of one to three whorls. The shell surface is poorly preserved and sculptural details have been lost .... Many shells are bored by unknown organisms and a few are encrusted with large serpulid (?) worm tubes. A small specimen of *Gyrodes* was the only possible accreted object noted on any of the shells, but the embayed whorl margins of the body whorl and deep cicatrices in the early whorls are suggestive of typical xenophorid agglutinating habits" (Webster, 1983: 1092).

*Xenophora willisi* is the first report of the genus in the Cretaceous of North America.

*Xenophora* sp. B

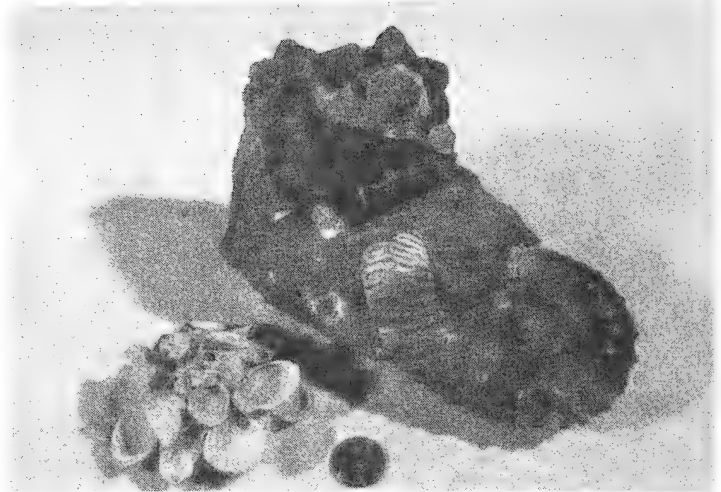
This *Xenophora* was collected by Brad Riney from a boulder beach 2 1/2 miles south of Salsipuedes, B.C., about 40 miles south of the international border. The beach is accessible by a very steep, dirt construction road. While he was opening a boulder from above the high tide line, it split open and numerous black pebbles fell out, revealing the *Xenophora*.



*Xenophora* sp. nov., Salsipuedes, Mexico, Photo by George St. Jean)

The matrix in which the fossil is implanted is composed of quartz and feldspar grains. The large pebbles are the only attachments. They are the same material as the matrix, and are black or dark gray with flecks of other materials. The attachments cover most of the shell, but an occasional space reveals a break in the calcareous material of the shell, showing granitic material filling the cavities. The shell measures 46mm in diameter and 44mm in height. This is the only known specimen from this location, but in a letter Mr. Riney stated, "If someone were to study the area in detail another *Xenophora* just might pop up." The shell is in the private collection of George Lee, Jr., of Costa Mesa, California.

In association with the *Xenophora* was found the uncoiled ammonite *Nostoceras sternbergi* Anderson & Hanna, 1935.

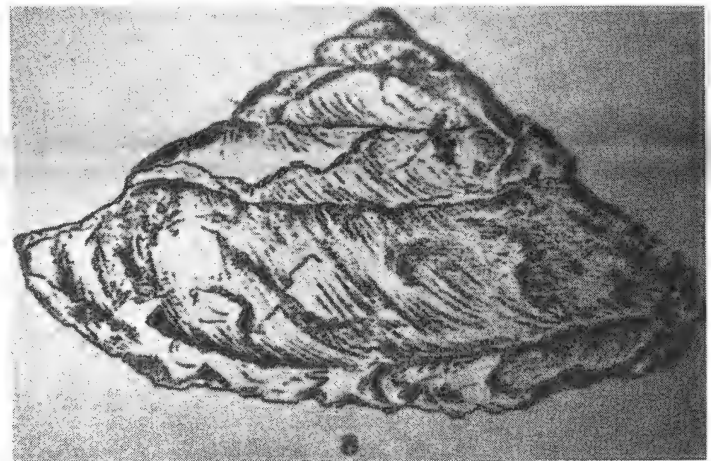


*Xenophora* sp. nov., Salsipuedes, Mexico (Photo by George St. Jean)

California, U.S.A.

*Xenophora zitteli* Weaver, 1905

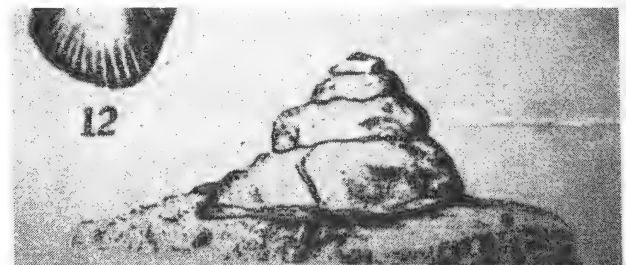
The original material consisted of 3 specimens. The largest has 7 flat whorls, a low spire, and a nearly flat base. The whorls are covered with extraneous objects which appear to be pebbles of quartz, ranging up to 13mm in diameter. The holotype is in the Museum of Paleontology, University of California, Berkeley. It measures 87mm in diameter and 57mm in height. The shells were collected southwest of Martinez, Contra Costa County, California, on the west side of the Del Hambre canyon road. The species was found in the lower beds of the Martinez formation, Eocene period.



*Xenophora zitteli* Weaver, 1905 (From U.C. Publ. Dept. Geol., Photo by George St. Jean)

*Xenophora stocki* Dickerson, 1916

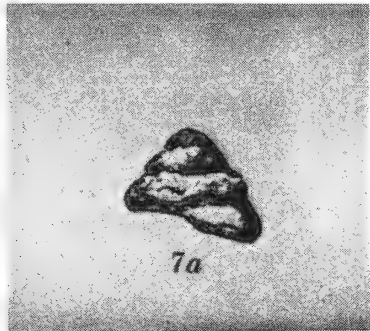
"Shell, low trochiform with six whorls; shell substance thin. Whorls are medially shouldered, with steep slope from a wavy, linear suture to the shoulder. The space between the shoulder and the next whorl is parallel to the axis of the shell. This space is further decorated by about seven roughened nodes whose apices are at the shoulder. The shell surface is pitted in several places. These round pits were once occupied by pebbles which the animal had agglutinated to its shell. Only the type specimen and a fragment are known" (Dickerson, 1916: 502-503). The specimens were collected in the Eocene Tejon formation, Rose Canyon, La Jolla (San Diego County), California.



*Xenophora stocki* Dickerson, 1916 (From U.C. Publ. Dept. Geol., Photo by George St. Jean)

*Xenophora simiensis* Nelson, 1925

This is another rare fossil xenophorid. The known specimen was collected from the Eocene Martinez formation, near Santa Susana, Ventura County, California. "Shell small; number of whorls, 6; suture depressed. Whorls strongly convex near the base, slightly convex and sloping inward at a low angle above. Sides of whorls irregularly flattened giving spire a rude polygonal pyramidal appearance; flattening disappears on body whorl. Base of body whorl making a rather sharp angle with side, flattened at the margins, convex and sunken toward center. Surface of shell smooth except for fine growth lines. On side of body whorl these lines slope backward at a very low angle from the suture. Growth lines of base semicircular, parallel to the margins of aperture. Aperture broad, oval. Height of type specimen, 11mm; diameter at base of body whorl, 15mm; apical angle, about 78° (Nelson, 1925: 422).



*Xenophora simiensis* Nelson, 1925 (From U.C. Publ. Dept. Geol., Photo by George St. Jean)

*Xenophora hawleyi* Loel & Carey, 1932

This species has been found in abundance in the western Santa Ynez mountains of Santa Barbara County and in Corral de Piedra Creek, San Luis Obispo County, California. It occurs in Lower Miocene deposits, near the base of the Vaqueros horizon. At the type locality (2.5 miles southwest of Buellton) it is in association with *Tivela inezana*, *Turritella inezana*, and *Olivella pedroana*.



*Xenophora hawleyi* Loel & Carey, 1932 (From U.C. Publ. Dept. Geol., Photo by George St. Jean)

The medium-sized shell is trochid and wider than high. There are eight low whorls, with the upper five moderately convex and ornamented by faint vertical costae. The last four whorls are very irregular because of the impression of small shells, pebbles, and other particles. The base is moderately concave, and is sculptured by many fine, uneven threads which are parallel to the lip. The holotype is 33mm high and about 40mm wide.

*Xenophora* sp. C ("*Xenophora* new species Vokes, 1939")

Small, probably immature specimens of a *Xenophora* were collected from the Eocene Domengine formation of Fresno and Kings County, California (north of Coalinga and south of Avenal). The portions of the shells found suggest that the animal attached shell fragments only. Dr. Harold Vokes wrote that "They differ from *X. stocki* Dickerson in lacking the median shoulder on the whorl, and there is no evidence of nodes ornamenting the shell" (Vokes, 1939: 167).

Discussion

How many species of fossil *Xenophora* have there been in the Californias? It may be fewer than mentioned in this article! A recent statement by Winston Ponder (1983: 22) suggests that speciation in *Xenophora* may not be as rapid nor as extensive as in other taxa: "Comparison of the shells of east and west coast [of Central America] specimens [of *X. conchyliophora*] does not reveal any significant differences. This is not particularly surprising as both populations were probably continuous as recently as late Pliocene because of the sea connection that existed up to that time. Insufficient time has elapsed to enable morphological differentiation to occur, as *X. conchyliophora*, like most species of *Xenophora*, is apparently very conservative. Woodring reduced [the eastern Pacific] *X. robusta* to subspecific status.

"*Xenophora conchyliophora* has been recorded as a fossil from several localities in the central American region and in the south-eastern United States, perhaps dating back as far as the Eocene. *Xenophora zitteli* Weaver from the Martinez Group, California (Upper Paleocene) is poorly described and figured but appears to have a general similarity with *X. conchyliophora* as has *X. stocki* Dickerson from Rose Canyon, California (Upper Eocene) and *X. hawleyi* Loel and Corey from the Vaqueros Formation, California (Lower Miocene)."

There is still much research needed to clearly understand the evolutionary relationships and history of fossil *Xenophora* from Baja and Alta California.

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THOMAS HONKER

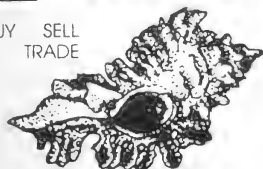
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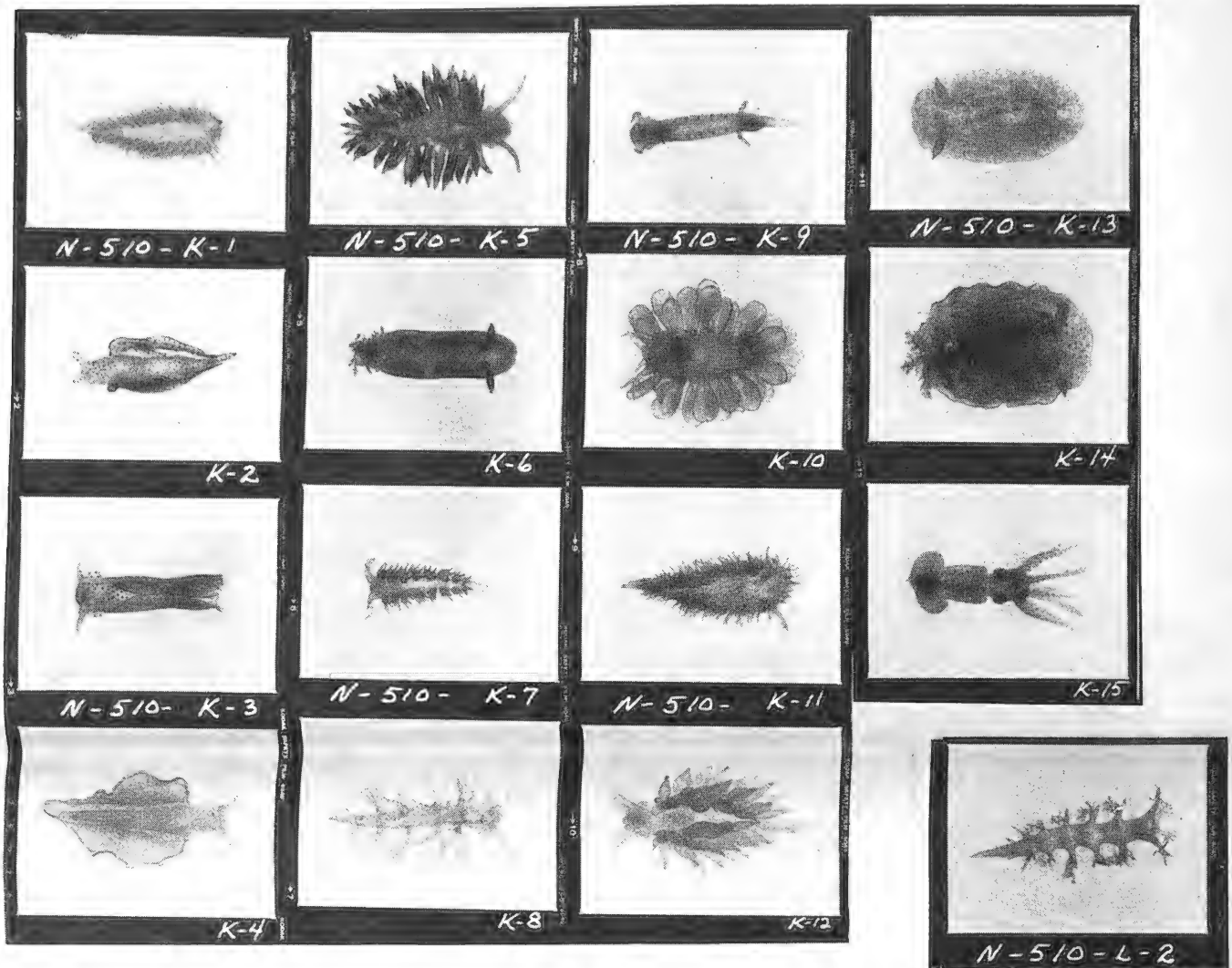
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# Milwaukee Public Museum Blaschka glass models, per Ward's "Catalogue..." of 1888

Joan P. Jass, Assistant Curator, Invertebrate Zoology Milwaukee Public Museum, Milwaukee, WI 53233



## PHOTO CAPTIONS

- |                                                             |                                                      |
|-------------------------------------------------------------|------------------------------------------------------|
| N-510-K-1 <i>Coryphella salmonacea</i> (Ward's #391)        | N-510-J-2 <i>Onychia platyptera</i> (Ward's #582)    |
| N-510-K-2 <i>Pterogasteron nigropunctatus</i> (Ward's #477) | N-510-J-3 <i>Onychoteuthis krohnii</i> (Ward's #584) |
| N-510-K-3 <i>Placobranchus variegtus</i> (Ward's #470)      | N-510-J-4 <i>Verania sicula</i> (Ward's #594)        |
| N-510-K-4 <i>Elysia grandis</i> (Ward's #433)               | N-510-J-5 <i>Loligopsis zygaena</i> (Ward's #566)    |
| N-510-K-5 <i>Stiliger ornatus</i> (Ward's #481)             | N-510-J-6 <i>Aeolis militaris</i> (Ward's #368)      |
| N-510-K-6 <i>Montaguia picta</i> (Ward's #463)              | N-510-J-7 <i>Aeolis diversa</i> (Ward's #364)        |
| N-510-K-7 <i>Facelina coronata</i> (Ward's #441)            | N-510-J-8 <i>Doriopsis clavulata</i> (Ward's #398)   |
| N-510-K-8 <i>Embletonia pallida</i> (Ward's #436)           | N-510-J-9 <i>Syellaea marmorata</i> (Ward's #478)    |
| N-510-K-9 <i>Caecinella luctuosa</i> (Ward's #377)          | N-510-J-10 <i>Melibe australis</i> (Ward's #461)     |
| N-510-K-10 <i>Cyerce elegans</i> (Ward's #393)              | N-510-J-11 <i>Doris concinna</i> (Ward's #409)       |
| N-510-K-11 <i>Janus sanguineus</i> (Ward's #456)            | N-510-J-12 <i>Chirodota purpurea</i> (Ward's #265)   |
| N-510-K-12 <i>Actinodoris australis</i> (Ward's #361)       | N-510-J-13 <i>Corallium rubrum</i> (Ward's #5)       |
| N-510-K-13 <i>Doris pardalis</i> (Ward's #424)              | N-510-J-14 <i>Sepia bisserialis</i> (Ward's #591)    |
| N-510-K-14 <i>Doris elliotii</i> (Ward's #413)              | N-510-J-15 <i>Rossia macrosoma</i> (Ward's #588)     |
| N-510-K-15 <i>Loligo meneghini</i> (Ward's #562)            | N-510-L-2 <i>Bornella digitata</i> (Ward's #375)     |
| N-510-J-1 <i>Loligo bianconii</i> (Ward's #561)             | N-510-L-3 <i>Flabellina newcombi</i> (Ward's #444)   |

The Milwaukee Public Museum owns glass models of seventy invertebrates which were created by Leopold Blaschka and his son Rudolph in the late 1800's. These were offered for sale in the United States through Ward's Natural Science Establishment, Inc., and it was from Ward's that the Museum acquired these models. The MPM Conservators have recently discussed cleaning and repair of the models with the staff who curate the Ware Collection of Glass Models of Plants, also created by the Blaschkas, at Harvard University. Unfortunately, the chemical nature of surface materials applied to the glass is unknown and seems to vary somewhat from piece to piece, so that no safe formula for cleaning the delicate models has been found. Therefore, it has been decided to forgo any refurbishing and simply display to the public a selection of those models presently in the best condition. The occasion for this temporary exhibit is the simultaneous showing of a Smithsonian Institution Traveling Exhibition "Unfamiliar Fauna of the Open Sea," a series of photographs of planktonic, pelagic animals taken by Jonathan Trent of the Scripps Institute of Oceanography and his colleagues. Since it was the glass-like nature of such members of the plankton which first inspired Leopold Blaschka, while on a sea voyage to America, to attempt the reproduction of these creatures (Kessler & Russell, 1978), the Museum has decided that it is appropriate to bring together these two most zoologically faithful means for capturing the morphological features of fragile marine invertebrates: the historically unique glass models of the Blaschkas and modern photography. Many of the species names as listed in Ward's catalog are no doubt now long out-of-date and I therefore hope to be aided in my attempts to write labels for our upcoming Blaschka exhibit by specialists who may be able to offer some information on current synonyms and life habits of these species.

REFERENCE

Kessler, C.G. & H.D. Russell 1978. Leopold and Rudolph Blaschka's Nudibranch Glass Models. *Nautilus*, 92(4):167-172.

Milwaukee Public Museum Blaschka glass models per Ward's "Catalogue..." of 1888

TYPE -- COELENTERATA

Class - Anthozoa

Order - Alcyonaria

1. *Corallium rubrum* Lamarck

Order - Zoantharia - Actiniaria

2. *Anthea cereus* var. *alabastrina*, Gosse

3. *Sagartia ornata* Holdsworth

4. *Tealia gemma* Drayton

Class - Hydromedusae

Order - Hydroidea

5. *Clava squamata* (O.F. Mull.) Allman

6. *Heterocordyle bonybearei* Allman

7. *Obelia sphaerulina* Per. (medusa)

8. *Syncoryne frutescens* Allman

Order - Siphonophorae

9. *Diphyes sieboldii* Kolliker

10. *Halistemma rubrum* Vogt

11. *Rhizophysa eysenhardti* Gegenbr.

TYPE -- ECHINODERMATA

Class - Asteroidea

Order - Ophiuridea

12. *Ophiocoma nigra* O.F. Mull.

13. *Ophiomastix annulosa* Lam.

Class - Holothuriidea

14. *Chirodota purpurea* Lesson

15. *Holothuria immobilis* Semp.

16. *Sporadipus tremula* Gunn. (*Holothuria elegans*, M.)

17. *Synapta (Chirodota) lumbricoides* Esch.

TYPE -- VERMES

Class - Platyhelminthes

Order - Turbellaria - Rhabdocoel

18. *Typhloplana fulva* O.F. Muller

Order - Turbellaria - Dendrocoela

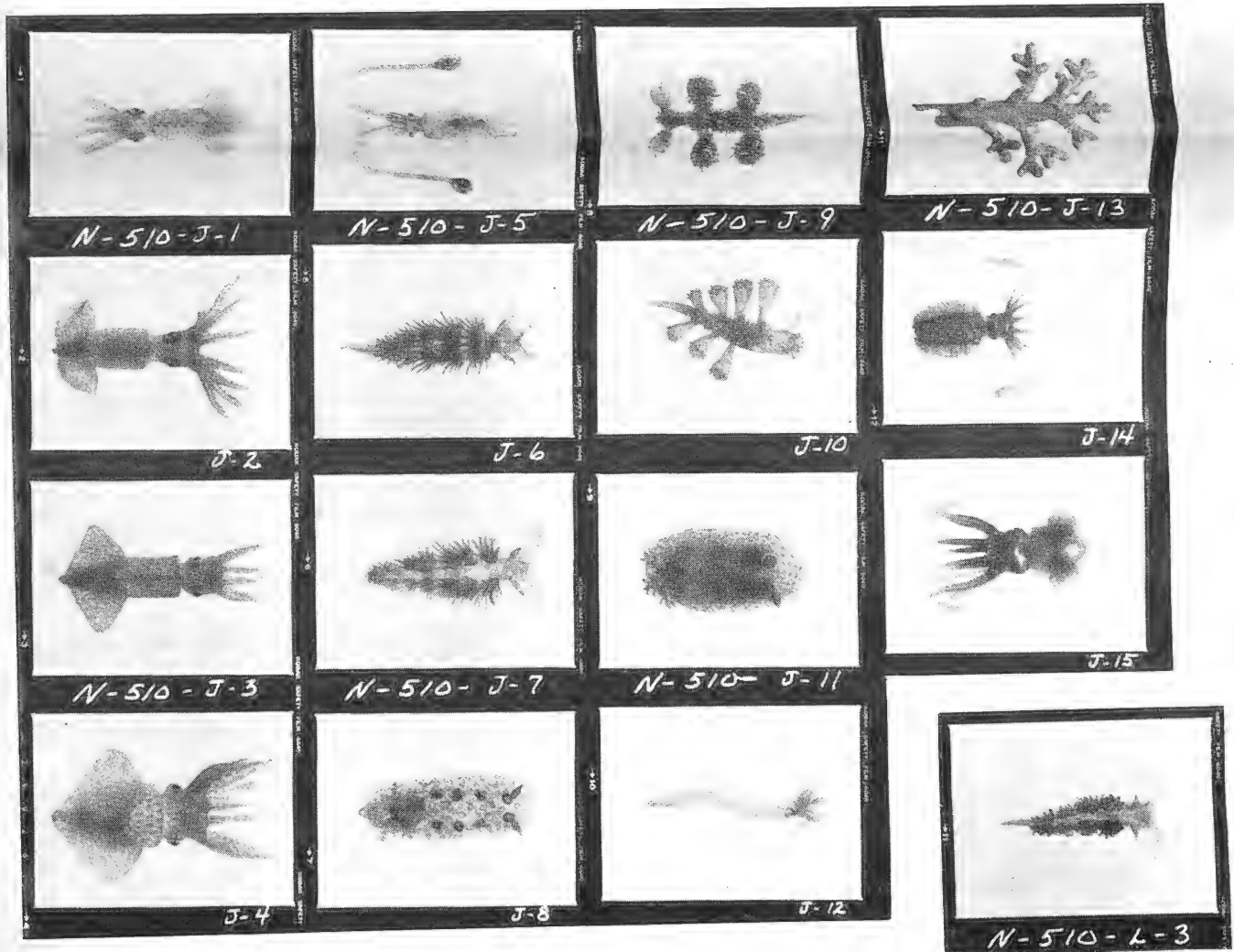
19. *Eurylepta auriculata* O.F.M.

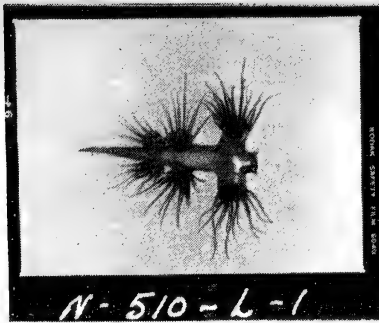
20. *Polycelis microsora* Schm.

21. *Proceros latissimus* Schm.

22. *Proceros viridis* Schm.

23. *Tetracelis marmorata* O.F.M.





N-510-L-1 *Glaucilla briareus* (Ward's #446)

TYPE -- MOLLUSCA

Class - Gasteropoda

Subclass - Opisthobranchia

Order - Elysiidae

- 24. *Elysia grandis* Bergh
- 25. *Placobranchus variegatus* Pease
- 26. *Pterogasteron nigropunctatus* Pease

Order - Aeolididae

- 27. *Aeolis diversa* Couthouy
- 28. *Aeolis militaris* Alder & Hancock
- 29. *Coryphella salmonacea* Couthouy
- 30. *Embletonia pallida* Ald. & Hanc.
- 31. *Facelina coronata* Forbes
- 32. *Flabellina newcombi* Angas
- 33. *Montaguia picta* A. & H.
- 34. *Stiliger ornatus* Ehrenberg

Order - Glaucidae

- 35. *Glaucilla briareus* Reinhardt

Order - Proctonotidae

- 36. *Janus sanguineus* Angas

- Order - Nelibacidae & Tritonidae
- 38. *Bornella digitata* Ald. & Hanc.
- 39. *Caecinella luctuosa* Bergh
- 40. *Doto coronata* Alder & Hanc.
- 41. *Melibe australis* Angas
- 42. *Scyllaea marmorata* A. & H.

Order - Dorididae

- 43. *Actinodoris australis* Angas
- 44. *Ceratostoma gracillimum* Semper
- 45. *Doriopsis clavulata* A. & H.
- 46. *Doriopsis tuberculosa* Quoy & Gaymard
- 47. *Doris concinna* Ald. & Hanc.
- 48. *Doris elliotii* Ald. & Hanc.
- 49. *Doris pardalis* Ald. & Hanc.

Class - Cephalopoda

- 50. *Enoplateuthis owenii* Verany
- 51. *Enoplateuthis veranii* Ruppell
- 52. *Histioteuthis bonelliana* Ferussac
- 53. *Loligo bianconii* Ver.
- 54. *Loligo meneghini* Ver.
- 55. *Loligopsis zygaena* Ver.
- 56. *Octopus macropus* Risso
- 57. *Octopus tetracirrhus* D. Ch.
- 58. *Octopus tuberculatus* Blainv.
- 59. *Octopus vulgaris* Lam.
- 60. *Ommastrephes acquipodus* Rupp.
- 61. *Ommastrephes sagittatus* Lam.
- 62. *Onychia platyptera* D'Orbigny
- 63. *Onychoteuthis krohnii* Verany
- 64. *Philonexis catenulatus* Fer.
- 65. *Rossia macrosoma* D. Ch.
- 66. *Sepia bisserialis* Montf.
- 67. *Sepioteuthis sicula* Rupp.
- 68. *Tremoctopus velifer* Fer.
- 69. *Tremoctopus violaceus* D. Ch.
- 70. *Verania sicula* Krohn.

**Illustration:**

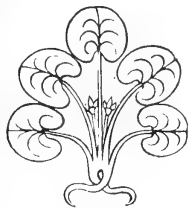


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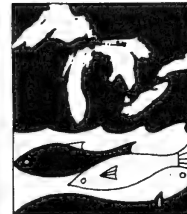
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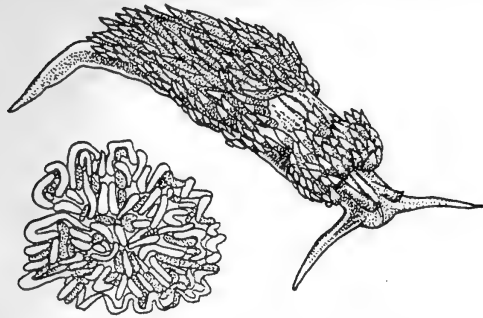
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## READER FORUM



*Phidiana crassicornis* (Eschscholtz, 1831)  
Animal & egg mass. Drawing by Scooter Beers

From I.S. Roginskaya: G.R. McDonald has recently (1983) summarized the wide-spread north Pacific distribution of *Phidiana crassicornis* (Eschscholtz, 1831) (formerly *Hermisenda crassicornis*). According to McDonald, *P. crassicornis* is reported along the Pacific coast of North America from Sitka (Alaska) up to Point Eugenia (lower California, Mexico), and from Japan (Baba, 1937, Niigata, Sea of Japan). The author doesn't mention the presence of this species in the seas of the Soviet Far East. However, in the most quoted works of Soviet malacologist Nina Volodchenko (Volodchenko, 1941) (provided with the detailed English summary), *Hermisenda crassicornis* was included in the general list (unfortunately not translated into English) of the Nudibranchs of the Far East of the U.S.S.R. Though we cannot consider this citation of full value, as in the list not only the references on the exact localities were omitted but also the indication of the concrete sea of the Far East were absent.

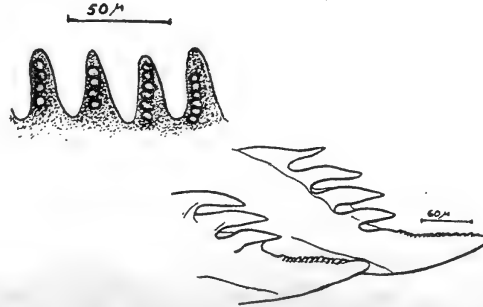
At the end of September, 1969, while conducting subtidal studies of the benthic Nudibranchia of the south Primorsk (Sea of Japan) I got at my disposal one living specimen of *P. crassicornis* collected by diving method in the Possjet Bay of the Sea of Japan (Troitsa Cove).

When fully extended the animal was 31.5mm, the long tapering tail (l=9.4mm) almost tentacular in appearance (serving the animal in captivity for grasping the twigs of *Ahnfeltia* [sp.?] and swinging on it, monkey-like). Anterior angles of the foot - produced into sharp tentacular lobes. Oral tentacles -- long (about 9.4mm), strong, tapering about twice as long as the perfoliate rhinophores (l=4.1mm), bearing some 13 transparent rings. The color pattern typical for the species (characteristic bluish, almost fluorescent parallel lines on the rhinophores, on the middle part of the back, on the tail, on the oral and propodial tentacles, on the flanks of the foot; the bright orange-red median stripe, beginning near the frontal margin of the head, narrowing between the rhinophores, expanding to the spindle-form area up to the beginning of the cerata of the first group, disappearing and once again reappearing on the back between the first and the second groups of papillae.) The bright orange cerata with brick-orange cores and opaque white tips, rather long (the longest equal to the length of the rhinophores, tapering, cylindrical-conical, are in constant fast movement, especially when the overturned animal attempts to restore the normal position. The cerata arranged in 6 groups, were easily autotomized, and after preservation in 70% alcohol were completely detached from the body (in tufts). The white ovotestis was visible through the semitransparent integument. The dorsal anus was situated between the second and the third group (nearer to the third). The genital opening -- on the right side below the first group of dorsal papillae. Mandibles yellowish-brown, elongate-oval, concave (narrower than those figured by MacFarland, 1966, pl. 71, fig. 1). Masticatory

processes well developed, bearing about 52 denticles, each with 4-6 round tubercles on the inner face. The uniseriate radula with 24 rows of transparent yellowish teeth, with horseshoe shaped base, strong, long, rather blunt median cusp (serrulated on its inferior face) and 4 finger-like lateral denticles on each side of it.

The histological study of the ovotestis disclosed almost empty male follicles with a fringe of spermatids and spermatozoa at the wall of acini, and the female follicles filled with yolky ovocytes. No sperm dimorphism, similar to that of *Coryphella* (Roginskaya, 1963).

The animal lived in captivity for 10 days, crawling on the twigs of *Ahnfeltia* [sp.?] The form of the single egg mass, deposited September 30, 1969, on the wall of the the aquarium, was typical for the species (Hurst, 1967): the white cord, twisted in scalloped spiral coil, with closely packed white eggs. Not having seen, the data that permitted Volodchenko (1941) to make her allegation, I dare not speak about the range extension, but about the more precise definition of distribution of this amphipacific species, and all the same about the confirmation of her forgotten statements.



*Phidiana crassicornis* side view of 2 radular teeth (11th & 12th from the old end) along with masticatory process detail. Drawing by I.S. Roginskaya

Two pictures of the details of proc. mast. and two radular teeth are included to prove that my species is really *P. crassicornis*. -- Dr. I.S. Roginskaya, P.P. Shirshov Institute of Oceanology, Academy of Sciences of the U.S.S.R., 23, Krasikova St., Moscow, USSR 117218

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From Dave Montgomery (Western Society of Naturalists): If you didn't go you missed a GOOD one! The 1985 meeting in Monterey was the largest (over 900 attendees), the best (quality of papers) and the smoothest (no projectors blew up) in the history of the current Secretary (1966-1986). Besides the Symposia and the Contributed Papers, the highlights were the AAH at the Monterey Bay Aquarium, the field trip to Elkhorn Slough and the memorable Presidential Dinner. Presentations of the marine facilities within California added to the excellence of the gathering....

The Outstanding Paper Awards: CATHERINE AGEGLIAN, University of Hawaii. The Biogeochemical Ecology of the Coralline alga *Porolithon gardneri* (Foselle). TED CRANFORD, University of California, Santa Cruz. Quantitative Morphology of the Dolphin Head. MATHEW GROBER, University of California, Los Angeles. Luminescence in *Ornithopella risei*: a Test of Possible Functions. STEVE NORTON, University of California, Santa Barbara. Factors Influencing Diet in a Sculpin Community. (This paper was awarded the Atlantic-Richfield Environmental Award for the best paper dealing with the environment.) STEVE RUMRILL, University of Alberta, Canada. Recruitment of *Pateria miniata*: A Post-larval Assessment of Larval Predation, Settlement and Post-larval Motility. MICHAEL RUSSELL, University of California, Berkeley. Gastropod Larval Ecology: To Feed or Not To Feed, That is Not the Question.

Our congratulations to these rising young scientists. We sincerely hope they continue in their graduate careers and the Society. Young scientists deemed worthy of HONORABLE MENTION in the Outstanding Awards are: KIRK APT, University of California, Santa Barbara. KENNETH CLIFTON, University of California, Santa Barbara. LEE W. COOPER, University of Alaska, Fairbanks. ANNETTE OLSON, Oregon

State University. JANET VOLTZOW, University of Washington. SALLY WALKER, University of California, Berkeley. DEENA DEUTSCH, Cuesta College and Cal Poly, San Luis Obispo. -- David H. Montgomery, Secretary, The Western Society of Naturalists, Department of Biological Sciences, California Polytechnic State University, San Luis Obispo, CA 93407.

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From Vi Hertweck: The Sarasota Shell Club began in March, 1963 with a meeting at the Palmer Bank Building. Twenty-two people had responded to an ad placed in the Sarasota Herald Tribune. Jack and Helen Oberle had placed that ad to see if anyone was interested in organizing a shell club.

A month later on April 12, 1963, the first meeting was held at the home of Mrs. June Hamilton, 2918 Gulf of Mexico Drive, Longboat Key, Florida. At that time Jack Oberle was elected President; John Stone, Treasurer and Winifred Leonard, Secretary. Dues were \$1.00 and the meetings were held in the afternoon, in members' homes.

The first show was held the following year, in April at the Lido Beach Casino. Since the expense for that first endeavor was \$119.64, the dues were raised to \$2.00 to cover them. However, we realized a profit of \$199.71 and we were off to the start of something big. The shell of the show that year was a Golden Cowrie, *Cypraea aurantium* Gmelin, 1791.

Our presidents through the years have been: Jack Oberle, 1963-65; Louise Danforth, 1965-67; Bliss Rink, 1967-68; Jack Oberle, 1968-69; Thomas Robertson, 1969-1970; Evelyn Bradley, 1970-72; Jack Oberle, 1972-74; Charles Hertweck, 1974-80; Peggy Williams, 1980-82; Vi Hertweck, 1982-84; Dick Forbush, 1984-85 and June Bailey, 1985-86. The club was incorporated March 28, 1975, with the late Mr. Al. Avellant heading that committee.

When the late Jim Moore was dredging in the Gulf of Mexico in the early sixties, a rare and beautiful shell, *Murex beaultii* (Fischer & Bernorði, 1857) was receiving much attention. IT was adopted as our logo. One of our charter members, Ree Rathburn, designed it. However we have changed, still the *beaultii*, but a drawing by the late Neil Helper, of a beautiful webbed specimen.



We have one hundred seventy-six members, from all walks of life. World travelers to armchair collectors, consisting of beginning amateurs, advanced collectors and professionals.

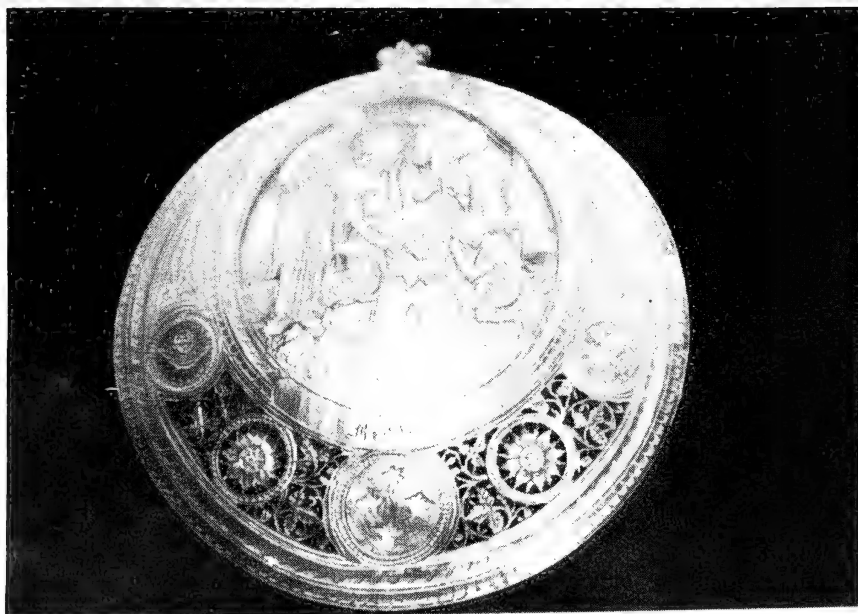
Anyone interested in shell or shell art is welcome to attend our meetings and join our club. Meetings are held the 2nd Thursday of each month, September thru May, at 7:30 pm at the Mote Marine Science Center. Programs are varied to cover all interests.

We sponsor a shell show each year the 3rd week-end in February, at the Sarasota Exhibition Hall, which includes both artistic and scientific exhibits. Proceeds are donated to schools, libraries and museums. Since 1978 we have donated nearly fourteen thousand dollars. -- Mrs. Charles Hertweck, 637 Sheridan Drive, Venice, FL 33595.

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### The Editor Goofed - Again!

Santa Barbara Shell Show, 1985, Class K (Amateur, small exhibit), 1st Place, Jack Gilbody. "The Six Classes of the Phylum Mollusca" photo in the January issue did not acknowledge Jack Brookshire again for the photograph. You may recall that I forgot to acknowledge Jack's photos in the November issue.



From Miriam L. Cooke: Hope the photo of my shell will reproduce clearly enough for someone to be able to give me some information regarding age, origin and/or carvers.

Based on information available the number of figures and the delicate carving indicates it was possibly carved by cameo carvers about the mid 19th century. However, it was suggested that it might have been carved by an Israelite. Does someone have any information or knowledge regarding this?

It was purchased at a flea market from a man who said it was part of an estate that he had purchased. He further stated that it was carved by the "Cameo Carvers" but maybe that was just a selling point.

If any readers have any knowledge of the above or know where it is available please write. - Miriam L. Cooke, 13330 3rd N.E., Seattle, WA 98125

ERRATUM

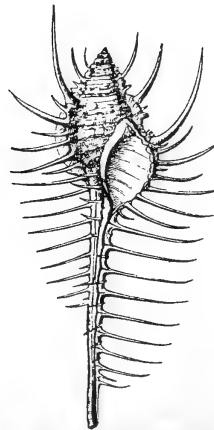
In the January issue, Page 3 (H.K. Mienis), the bottom portion of this section became separated from the remainder of the article. Our apologies to the author and our readers

*Neritina spinosa* Wood, 1828 — fig. 2.

This is actually the species figured by Boorman (1979). It is a junior synonym of the rather polymorphic *Clithon (Clithon) coronata* (Linnaeus, 1758).

This species is characterized by having a shell with an inflated last whorl. Its basic color is usually dull yellowish, greenish or sometimes violet, often with darker spiral bands and irregular triangular spots or zigzag lines. The shell is coarsely sculptured by axial wrinkles. Spines are usually present on the shoulder.

The type locality of Wood's *Neritina spinosa* is unknown. The species has a very large distribution from the Nicobar Islands in the west to Fiji in the east (van Benthem Jutting, 1956; Starmuehner, 1976).



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**Marco Island Shell Show** March 12-13, Marco Island, Florida. Contact: Vera Wooley, 930 Montego Court, Marco Island, FL 33937, or call 813-394-1098

**National Science Teacher's Association National Convention**, March 25-30, San Francisco, California. Contact: Marjorie Gardner, Program Chairman, San Francisco National Convention, National Sciences Teachers Association, 1742 Connecticut Ave. N.W., Washington, DC 20009, or call 202-328-5800

**Palm Beach Shell Show** April 3-6, West Palm Beach, Florida. Contact: Phyllis Diegel, 143 Alcazar St., Royal Palm Beach, FL 33411, or call 305-798-5351

**Georgia Shell Show** April 11-13, Atlanta, Georgia. Contact: Carl & Rene Beeler, 1868 Gainsborough Dr., Chamblee, GA 30341, or call 404-451-2221

**St. Louis Shell Show** April 18-20, St. Louis, Missouri. Contact: Alan Gettleman, 4045 Central Lane, Granite City, IL 62040, or call 618-931-1312

**Southern California Academy of Sciences**, May 2-3, California State University, San Bernardino, California. Contact: Program Chairman, Southern California Academy of Sciences, 900 Exposition Blvd., Los Angeles, CA 90007, or call 213-744-3384

**2nd International Symposium** on Indo-Pacific Marine Biology Guam, Truk & Ponape, Sponsored by the Western Society of Naturalists, June 22 - July 9. Contact: David H. Montgomery, WSN Secretary, Biological Sciences Dept., California State Polytechnic University, San Luis Obispo, CA 93407.

**American Malacological Union Western Society of Malacologists Joint Meeting**, July 2-7, Monterey, California. Contact: Paula Mikkelsen or Margaret S. Mulliner

**Conchologists of America Convention** July 15-19, Fort Lauderdale, Florida. We will provide more information as we get it.

**National Marine Education Association, 1986 Annual Conference**, August 4-9, John Carroll University, Cleveland, Ohio. Contact: Ohio Sea Grant Education Program, The Ohio State University, 059 Ramseyer Hall, Columbus, OH 43210, or call: 614-422-1078

**North American Paleontological Convention** August 12-15, Boulder, Colorado. Field trips are planned for Aug. 4-11 and Aug. 16-17, along with workshops and access to collections. Contact: Norman L. Gilinsky, Dept. of Geological Sciences, VPI and SU, Blacksburg, VA 24061

**Unitas Malacologica Ninth International Malacological Congress**, August 31-September 6, Edinburgh, Scotland. Contact: Congress Office, Royal Scottish Museum, Edinburgh, Scotland EH1 1JF

**Western Society of Naturalists**, December 27-30, University of Hawaii at Hilo. Dr. John Chan will be the local chairman.

1987

**Western Society of Naturalists**, December 27-30, California State University, Long Beach, California. Dr. Don Reish will be the local chairman.

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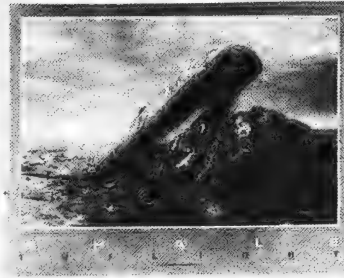
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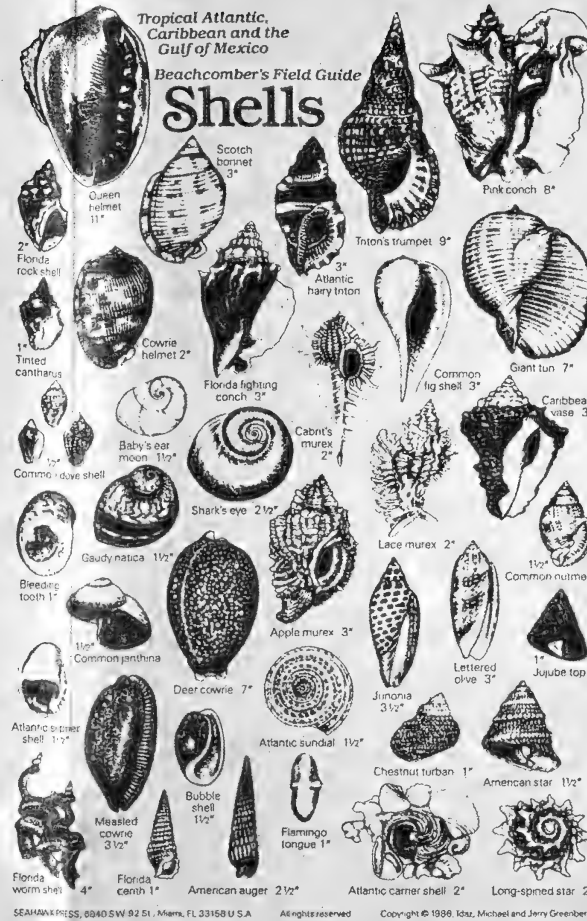
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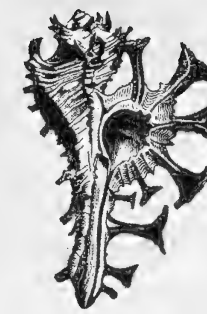


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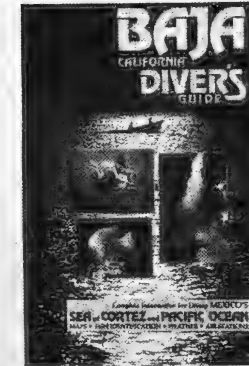


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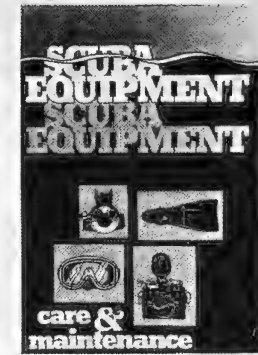


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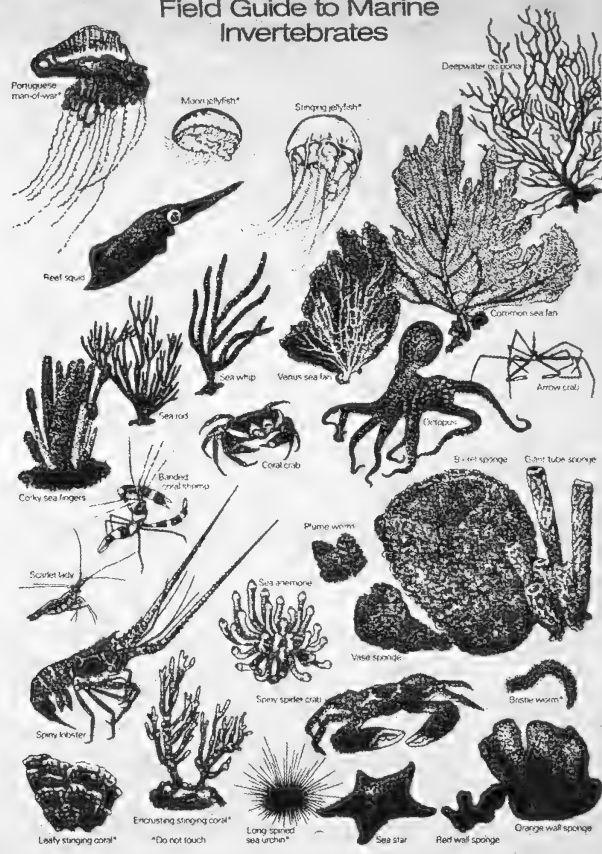
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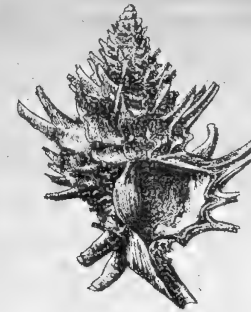


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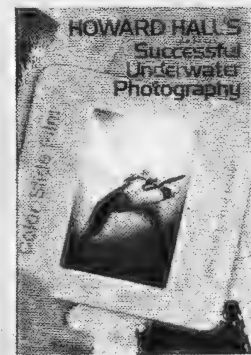
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# Mollusks on Stamps

Tom Rice, P.O. Box 219, Port Gamble, WA 98364

To commemorate the 125th Anniversary of their first stamps, the Bahamas issue, on February 22, 1984, two shells-on-stamps issues, the 5-cent showing the 1861 4-penny stamp and the \$1, the 1849 1d stamp. Both these old stamps have a small conch in the border.

Greenland, on March 19, 1984, issued a set of stamps, one of which -- the 2.70 kroner -- shows pearls and whales.

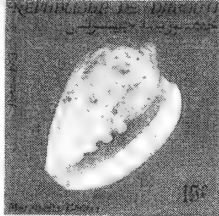
The South American country of Surinam issued a set of shell stamps on February 22, 1984. Included are *Arca zebra* on the 40-cent stamp, *Trachycardium egmontianum* on the 65-cent stamp, *Tellina radiata* on the 70-cent issue and *Vermicularia knorri* on the 80-cent stamp.

The Faroe Islands, in Europe, issued a set of stamps January 30, 1984. The 300 ore stamp features a shield with crossed keys above St. Jacob with a pilgrim's staff and hat, on the hat is a *Pecten jacobus*, the Saint's symbol.

Djibouti continues to issue stamps with mollusks as their theme. A set issued on December 20, 1983, shows *Marginella obtusa* on the 15fr, *Conus jickelli* on the 30fr, *Cypraea macandrewi* on the 55fr, *Conus cuvieri* on the 80fr and *Turbo petholatus* on the 100fr. All of the photographs were taken by our subscriber, Henry Roussy. He has recently moved back to France and will be moving again soon, to Thailand

## MARGINELLA OBTUSA (SOWERBY 1846) :

Pratiquement seule représentante de cette famille en Mer Rouge. Couleurs variables du vert clair au brun, lignes longitudinales en pointillées et deux bandes de couleur plus soutenue. Trouvée dans sable ou vase entre 20/80 cm.



## MARGINELLA OBTUSA (SOWERBY 1846)

Practically the only representative of this family in the Red Sea. Variable colouring from light green to brown with longitudinal dotted lines and two bands of darker colour. Found in sand or mud at 20/80 cm.



## CONUS JICKELLI (WEINKAUFF 1873) :

Zone d'habitation Est Océan Indien, mais plus particulièrement Mer Rouge, depuis DAHALAC au Golfe d'ADEN. Léger, de 30/40 mm, conique, avec spire pointue. Blanc parfait, ou crème très clair. Lignes pointillées avec taches brunes parfois inexistantes.

## CONUS JICKELLI (WEINKAUFF 1873) :

Zone of habitation, East of Indian Ocean but more particularly the Red Sea from DAHALAC to the GULF OF ADEN. Light, 30/40 mm. Conical with a pointed spire. Perfect white or very light cream. Dotted lines of brown markings are sometimes absent.



## CONUS CUVIERI (CROSSE 1858) :

Cone "roulé" très léger et fin, de 25/45 mm. Mélange de couleurs nébuleuses de blanc à marron bleutés. Ouverture très large. En eau peu profonde, mais seulement Mer rouge. Peu commun.

## CONUS CUVIERI (CROSSE 1858) :

A very light and delicate rounded cone of 25/45 mm. A mixture of cloudy colours from white to bluish brown. Very wide aperture. Shallow water, in the Red Sea only. Uncommon.



## CYPRAEA CAMELOPARDALIS (PERRY 1811)

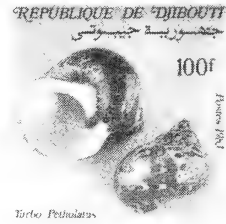
Obock - Relativement rare - Couleur blanc crème avec points blancs. Dorsalement très souvent striée par croissance irrégulière. D. 40/60 mm.

## CYPRAEA CAMELOPARDALIS (PERRY 1811)

Obock - rather rare - Colour cream white with white spots. Back very often streaked due to irregular growing. D. 40/60 mm.

## TURBO PETHOLATUS (LINNÉ 1758) :

Commun dans Pacifique et Océan Indien. Reste de taille moyenne en Mer Rouge (30/50 mm). Généralement brun, vert foncé avec lignes spirales sombres et marques blanches. Assez brillant, intérieur nacré. Opercule "OEIL DE TIGRE".



## TURBO PETHOLATUS (LINNÆUS 1758) :

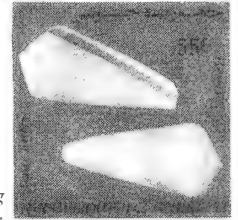
Common in the Pacific and Indian Oceans. Reaches only medium size in the Red Sea (30/50 mm). Generally brown or dark green with spiral lines of dark and white markings. Quite shiny, pearly interior. "TIGER'S EYE" operculum.

## CONUS TEREBRA (BORN 1780)

Plage Arta - Commune - Forme allongée, fond pâle avec deux bandes. Couleur soit bleutée surtout jeune, soit jaune pâle. Periostracum toujours important. D. 50/70 mm.

## CONUS TEREBRA (BORN 1780)

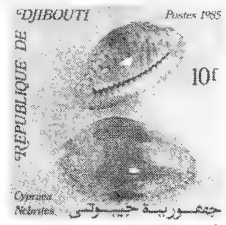
Arta beach - common species - Oblong form, inside pale with two stripes. Colour either bluish, when young, either pale yellow. Periostracum always important. D. 50/70 mm.



A second set of Djibouti stamps, issued July 15, 1985, shows *Cypraea nebrites* on the 10fr, *Cypraea turdus* on the 15fr, *Conus acuminatus* on the 30fr, *Cypraea camelopardalis* on the 40fr, and *Conus terebra* on the 55fr. There are also color post cards with each of the shells.

## CYPRAEA NEBRITES (MELVILLE 1888)

Plage de Dorale - Commune - Base crème avec lignes des dents labiales brun rouge. Tâches brunes sur chaque côté dorsal. D. 30/35 mm.



## CYPRAEA NEBRITES (MELVILLE 1888)

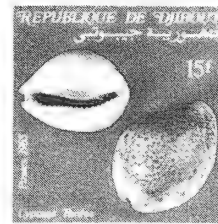
Dorale beach - common species - Cream base with lines of jags of labial form, coloured with reddish brown. Brown spots on each dorsal side. D. 30/35 mm.

## CYPRAEA TURDUS (LAMARCK 1810)

Ile de Maskali - Assez commune - Base blanche avec dents très marquées. Dos déprimé fond vert clair avec nombreuses tâches vert olive et brun. D. 20/30mm.

## CYPRAEA TURDUS (LAMARCK 1810)

Island of Maskali - rather common - White base with very apparent jags. Low back. Background light green along with a lot of olive green and and brown spots. D. 20/30 mm.



## CONUS ACUMINATUS (AWASS 1792)

Plage de Dorale - Assez commun dans cette zone - Spire très régulière. Bande claire sur fond noir avec petits triangles blancs limités par ligne marron clair. D. 30/50 mm.



## CONUS ACUMINATUS (AWASS 1792)

Dorale beach - rather common in this area - Very regular whorl. Clear stripe on black background with small white triangles limited by light brown line. D. 30/50 mm.

## CYPRAEA MACANDREWII (SOWERBY 1870) :

9 à 25 mm, sans parenté reconnue, spécifiquement de Mer Rouge. Cylindrique, avec points marrons et plus petits blancs sur le dos. Dents extérieures soulignées de marron, dents de levre intérieure pratiquement non apparentes. Assez rare.

## CYPRAEA MACANDREWII (SOWERBY 1870) :

9 to 25 mm. No known relatives. Specific to the Red Sea. Cylindrical with brown spots and smaller white spots on the back. Exterior teeth underlined in brown. Teeth on inner lip practically undetectable. Quite rare.



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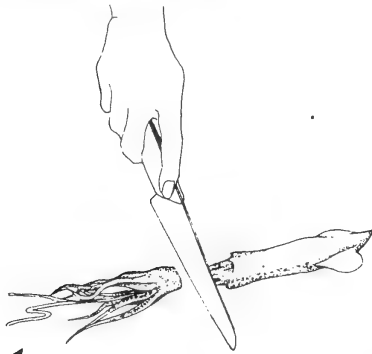
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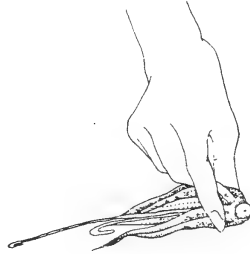
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# Squid

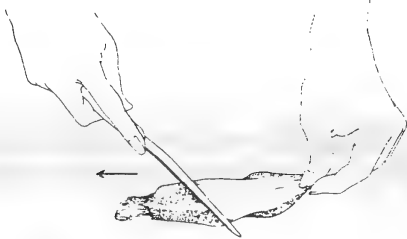
## Cleaning Squid



**1** Cut off the tentacles just above the eye. Save them.



**2** Squeeze out the beak, the squid's mouth, which looks like a garbanzo bean. Discard it.



**3** Holding the blade of a chef's knife almost flat, scrape along the body from the tail to the opening. Press down hard to squeeze out the



entrails, but be careful not to break the skin. Don't worry about removing the skin, which is edible.



**4** With the point of the knife, stab the transparent quill which protrudes from the body and hold it fast. Pull the body away. The quill should remain under the knife.

my cats. (No cats? Just leave the stuff in a bowl by your back door. A cat will find it within five minutes.) It's easy to imagine throwing out the tentacles, but most recipes suggest chopping them and adding them to the sauce or stuffing. In small pieces they look edible.

Next, taking no chances that my squid might be tough, I pounded the meat with a wooden mallet.

Squid cooks very quickly, about a minute or two seems sufficient, it toughens with longer cooking, a fact easily demonstrated in my kitchen. Dipped in egg and bread crumbs and quickly sauteed, the squid meat was white and tender with a flavor resembling abalone, although not quite as delicate. From start to finish, the whole process took no longer than making a salad.

With its mild flavor, squid is versatile and can be added to sauces for pasta, stir fried (add at the last minute), stuffed or fried. Tackling squid made me feel brave and confident in my kitchen.

## The First Step is the Hardest

By Bernice Kagan

Not being particularly adept with kitchen knives, I wondered at the wisdom of featuring squid as a low cost main dish. But the recipes looked good, friends assured me cleaning squid was easy and at \$1.49 a pound, the price was right. Still, I was feeling apprehensive when I arrived home with several pounds of squid. Could I transform these slimy mollusks into a palatable dinner?

Working with squid is like being in high school biology. Step one: "Cut off the tentacles just above the eyes." This assumes you've taken the *real* first step: touching the squid. Whack! Tentacles cut. Oops, I failed to assess which end was which and cut below the eyes. Squid eyes are quite soulful. The tentacles are in front. Steps 2 and 3 were quite easy. The transparent quills (Step 4) in my squid were so small, I had to slit the bodies to find them. They came out easily once located. I never did find an ink sac although I examined everything I found with interest. I gave all these interesting entrails to

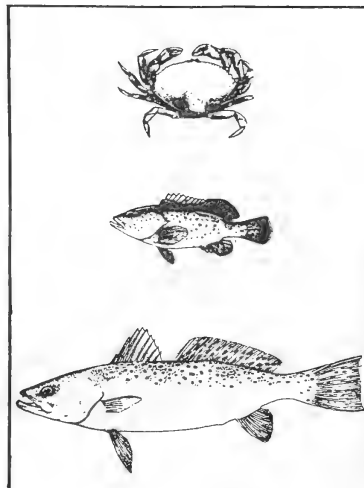
Discard the quill. The squid is now ready for stuffing. If you want to cook smaller pieces, cut rings crosswise  $\frac{1}{2}$  to 1 inch wide.

## Cookbook Review

### Looks Like a Great Book

*The California Seafood Cookbook*, Isaac Cronin, Jay Harlow and Paul Johnson, Aris Books.

Order No. 602-90 - \$12.95



by Bernice Kagan

Thumbing through *The California Seafood Cookbook*, is a frustrating treat on a day when winter weather prevents a selection of fresh fish. Subtitled, "A Cook's Guide to the Fish and Shellfish of California, the Pacific and Beyond," this well illustrated encyclopedia of seafood is divided into three sections:

Part I, a cook's introduction to seafood which covers purchasing fish, cleaning and cutting fish, cooking methods and explanations of special ingredients.

Part II, the body of the book is the wonderful alphabetical encyclopedia with recipes and cooking ideas for each fish.

Part III, a miscellany, contains a portrait of a fishmonger, information about wines, California oysters and the health risks of fish and seafood.

But of course, it is the recipes that shine. If most of your fish has come out of a can or the deep fryer, you can learn a lot from this book.

## Fried Squid

from James Beard's *New Fish Cookery*

Cut the tentacles into small pieces, dust them with flour, and dip in beaten egg and crumbs or in batter. Fry quickly in oil heated to 375 degrees. Drain on absorbent paper and salt and pepper to taste. Serve with tartar sauce.

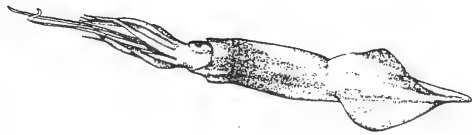
These are excellent as part of a "mixed fry" in the Italian style. Use a selection of small bits of fish, all fried and served with a highly seasoned sauce.

## Fried Squid II

from James Beard's *New Fish Cookery*

Cut the tentacles into small pieces and dust well with flour. Saute in plenty of olive oil. It's wise to cover the pan. Salt and pepper to taste.

## Squid



### Squid with Black Rice

from  
*The California Seafood Cookbook*  
Serves 4

- 2 pounds squid, cleaned, bodies cut into rings, with tentacles and ink sacs reserved
- 2 Tablespoons olive oil
- ¼ cup chopped yellow onion
- 1 Tablespoon chopped garlic
- 1 cup white rice
- 1 teaspoon fresh thyme or oregano, or ¼ teaspoon dried
- 1 bay leaf
- Salt to taste
- 1 cup chicken stock and 1 cup water (if using canned chicken broth, decrease salt)

In a sieve placed over a bowl, crush the ink sacs with the back of a spoon. Pour the stock and water through the sieve to extract the rest of the ink.

In a medium-sized casserole, saute the onion and garlic in the olive oil over medium heat; do not brown. Add the rice, stir and saute a few minutes longer until the rice just begins to color. Add the seasonings and the stock. Cover, bring to a boil, reduce heat and simmer

for 15 minutes or until most of the liquid has been absorbed. Taste for seasoning. Add the squid and cook 5 minutes more or until squid is opaque and rice has absorbed the remaining liquid.

Serve from the casserole or transfer to a serving dish, arranging the squid on top. Serve with an assortment of colorful vegetables.

### Squid Stuffed with Spinach

from  
*The California Seafood Cookbook*  
Serves 4

- 2 pounds large squid, cleaned for stuffing
- 2 Tablespoons olive oil
- 1 medium yellow onion, chopped
- ½ pound spinach, washed, drained, stems removed and leaves chopped
- ¼ cup bread crumbs
- 1½ ounces Pernod or other anise liqueur
- Salt and pepper to taste
- 2 Tablespoons olive oil
- 1 cup cream

Chop the tentacles and set aside.

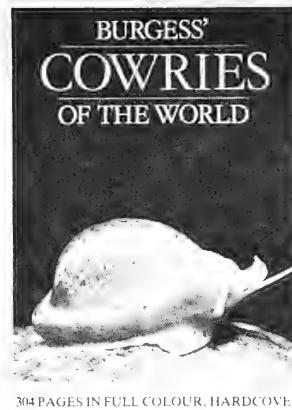
Saute the onions in olive oil until soft. Add the spinach and cook until wilted. Add the tentacles and bread crumbs. Saute for 2 minutes. Add half the Pernod and remove from the heat. (It is best to let the stuffing cool to room temperature before adding it to the squid. If this is impossible, make the stuffing and stuff the squid immediately before cooking.) Stuff the squid loosely with the spinach mixture, using a pastry bag, small spoon or your fingers. Seal each with a toothpick.

Heat 2 tablespoons of olive oil in a skillet large enough to hold all the squid in one layer. Add the squid and saute until the bodies are opaque, about 4 minutes. Remove to a heated serving dish. Deglaze the pan with the remaining Pernod. Add the cream, turn up the heat, and reduce by two-thirds. Return the squid to the skillet to reheat.

Arrange the squid on a warm platter, removing the toothpicks in the kitchen if desired. Pour the sauce over and serve.



Thanks to Kathy Ehnebuske & Bernice Kagan, Co-op, 811 "I" Street, Arcata, CA 95521, for the squid recipes and book review on pages 20 and 21.



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The cowrie animal and its habits, as well as the shells, is the subject of this book by the author of *The Living Cowries*, C.M. Burgess. Over 200 are discussed — species, distribution and synonymy — all are illustrated in full colour of which over 150 show the living animal. In addition, there are 18 plates showing significant variations within a species, two plates showing species described since 1970, and schematic drawings of conchological and anatomical characters of the cowries.

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| STROMBUS       | gollath Sch, w/o, w/perlo, great lip, Brazil           | 300mm+ | F     | 110.00 |
| "              | plicatus sibiloidi Sow, lovely jewel, Mauritius        | 13mm   | G     | 40.00  |
| TEREBRA        | anilla Rod, slender, golden brown, Nicobar Is.         | 27mm   | G     | 3.00   |
| "              | argus Hinds, tan, pale spots, Mauritius                | 24mm+  | F/F+  | 3.25   |
| "              | babylonica Lam, great sculpture, peach/tan, Mauritius  | 52mm+  | F+/G  | 1.50   |
| *              | "duplicata L, large and shiny, India                   | 40mm+  | F+/G  | 1.75   |
| "              | rephanula Lam, tan/orange/brown, "                     | 45mm+  | F+/G  | 1.25   |
| TIBIA          | cancelata Lam, attractive sculpture, Thailand          | 29mm+  | F+    | 3.50   |
| "              | fusus L, w/o, fantastic siphons, Philippines           | 246mm+ | F     | 6.50   |
| TRIVIA         | adriatica Mont, cute, tan/pink, Italy                  | 8mm+   | G     | 2.25   |
| "              | monacha deCosta, pink with brown spots, England        | 9mm+   | F     | 1.50   |
| "              | pediculus L, live, pink/grey/brown spots, Florida      | 10mm+  | G     | 1.00   |
| VEXILLUM       | regina Sow, striking orange/black/white bands, PI      | 60mm+  | F+/G  | 8.00   |
| *              | "rubrocostata HGC, stunning red/black, Solomon Is.     | 24mm+  | G     | 11.00  |
| "              | tayloriana Sow, lovely, Indonesia                      | 52mm+  | F     | 8.50   |
| *              | "vilpecula L, black form, Indonesia                    | 40mm+  | F+/G  | 4.00   |
| *VOLUTA        | brusina Light, w/o, great color, rare, Maldives        | 62mm   | F     | 115.00 |
| "              | cylindroformis Sow, w/o, live, good color, Bahamas     | 10mm+  | F/F+  | 22.50  |
| "              | dampiera Weaver, a beauty, W Australia                 | 25mm   | G     | 30.00  |
| "              | dufreinei Don, orange aperture, nice glaze, Brazil     | 116mm+ | F     | 8.50   |
| "              | loris Val, peach, dark lines, Nicobar Is.              | 67mm+  | F+    | 22.50  |
| "              | olls L, w/perlo, large and nice, Portugal              | 103mm+ | F/F+  | 7.50   |
| GLOSSUS        | humulus L, some w/perlo, unusual coiled umbo, Italy    | 61mm+  | F     | 4.50   |
| GLYCNERIS      | glycymeris L, striking pattern, beach, England         | 30mm+  | F     | 1.00   |
| *PECTEN        | gemmulata Ave, variable, lovely shades, New Zealand    | 12mm+  | F/G   | 9.00   |
| SPONDYLUS      | gaderopus L, maroon, good apices, Italy                | 60mm+  | F-    | 5.50   |

## Southwest Florida Conchologist Society



From William Shaw, Recording Secretary, The Southwest Florida Conchologist Society, Inc.:  
Dear Mr. Long:

Attached is a summary of the categories and winners in our club's Shell Show held on January 17, 18 and 19 at the Fort Myers Exhibition Hall. ...

The judges for the scientific divisions of the show were R. Tucker Abbott and William Lyons. The judges for the artistic divisions were Cecelia Abbott and Anne Joffee.

We had an excellent show this year and the overall quality of the exhibits was unusually high. The three entries in Category C, One Large Family, of Division III, World-wide Marine Shells, were of special interest because the judges agreed that all three were of such outstanding quality that it was difficult to choose a winner.

Division X, S.W.F.C.S. Masters Division, is unique, I believe, among U.S. shell shows. Only exhibits which have previously won any one of the top three shell show awards (C.O.A., DuPont, and the Smithsonian) in any U.S. shell show are eligible for entry in this division. The three entries in this division were also of outstanding quality. ...

**List of categories, entries, and award winners in the 19th annual shell show of the Southwest Florida Conchologist Society at the Exhibition Hall, Fort Myers, Florida, January 17, 18 and 19, 1986.**

Division I. Educational. One entry: Charles and Vi Hertweck, "Do You Know?"

The theme of each of 16 cases was to ask the viewer if he knows some interesting fact about mollusk life that is not known generally, and illustrates the answer with actual specimens of mollusks and with pictures. For example, in one case the question is "Do you know that the Sea Hare is a mollusk?" Color photographs of live Sea Hares (*Aplysia*) are shown beside actual specimens of the small internal "shell" that looks more like a large fish-scale than a shell, along with printed information about the species. Awarded the DuPont trophy.

Division II. Marine Shells (Florida & Caribbean)

Category A. One region, self-collected. Two entries.

Entry #1. Don Moody. 12 cases entitled "Down in the Dumps: Shelling at the Scallop Dumps of Cape Canaveral." Included specimens of 42 of the more interesting of the mollusk species found at the great dumps near Cape Canaveral where are discarded the shells left after processing by the scallop fleet that operates out of Port Canaveral. The exhibit included interesting printed information about the dumps and the shells to be found there. Awarded the Shell Factory Trophy, for the outstanding exhibit of marine shells of the Florida & Caribbean area. Entry #2. Betty & Al Karius. 4 cases of Florida shells. Awarded second place.

Category B. One region, any source. One entry: Betty Hamilton. 6 cases of Florida shells entitled "Evolution of an Exhibitor, 1981-1985," showing the progress as a collector and exhibitor from a non-winning exhibitor to a trophy-winner. Awarded a blue ribbon.

Category C. One family. No entries.

Category D. One genus. No entries.

Category E. One species. One entry: Barbara & Rob Masino. 3 cases of beautiful specimens of the Lion's Paw, *Lyropecten nodosus*. Awarded a blue ribbon and a Special Merit Award (Green Rosette). Also awarded a Purple Rosette for Shell of the Show for a large yellow pair of Lion's Paws in the exhibit.

Category F. Miniatures. No entries.

Division III. World-wide Marine Shells.

Category A. World-wide. No entries.

Category B. One region (other than Florida & Caribbean). No entries.

Category C. One large family. Three entries:

Entry #1. Al Bergman. 19 cases entitled "Around the World in Cones." Included 1456 specimens of 457 species, sub-species and forms of CONIDAE, including almost all of those accepted as valid, and most of the rare species. The exhibit included detailed data on each species and information about each of the regions into which the exhibit was divided. Awarded a blue ribbon and the C.O.A. trophy.

Entry #2. John & Barbara Vaughan. 15 cases of STROMBIDAE containing 465 specimens of 107 species, sub-species and forms, with detailed data. (The judges agreed that the exhibit represented as complete coverage of the family as is possible.) Awarded second place.

Entry #3. Chip & Edie Chippeaux. 18 cases of CYMATIDAE, with 403 specimens of 140 species, representing about 80% of the valid species. Awarded third place. Also won a Special Merit Award (Green Rosette). Category D. One small family. One entry: George Runkle. 2 cases of OLIVIDAE. Awarded third place. (No first or second.)

Category E. One genus. One entry: Sony Ochsner. 4 cases of *Chicoreus*. Awarded the blue ribbon.

Category F. One species. One entry: Janet & Bill Paddison. One case of 5 specimens of a Volute, *Amoria grayi*. Awarded a blue ribbon.

Category G. Miniatures. No entries.

Category H. Beautiful shells, any source. Two entries.

Entry #1. Virginia Lee. 8 cases of gem specimens of beautiful shells. Awarded first place.

Entry #2. Joy Nilson. One case of "The True Heart Cockle," *Corculum cardissa*, showing variations in color & pattern of 23 specimens. Awarded third place. (No second place.)

Category I. Self-collected, except Florida & Caribbean. One entry: Anna Marie & George Nyquist, 4 cases, "Shelling in Fiji." Awarded a blue ribbon.

Category J. Shell stamps with mollusks. One entry: Joy Nilson. 3 cases of the shell stamps issued by the U.S. Postal Service in 1985, alongside the specimens of the shells. An outstanding feature of the exhibit was a series of 24 fine specimens of the Frilled Dogwinkle, showing the great variation in form & color of the species. Awarded a blue ribbon.

Division IV. Land and Freshwater Shells.

Category A. World-wide, any source. One entry: Joy Nilson. 5 cases of U.S. freshwater bivalves, with examples of buttons made from certain species when the shell-button industry thrived in the U.S., before the advent of plastic buttons. Awarded a blue ribbon.

Category B. One region, any source. No entries.

Category C. One family, any source. No entries.

Category D. Self-collected, any area. No entries.

Division V. Fossil Shells.

Category A. World-wide. One entry: Helen Asher. 8 cases of fossils, with explanatory printed data. Awarded a red ribbon. (No blue ribbon).

Category B. Florida. One entry: Betty Lawson. 4 cases of fossil shells from the large Macaspahat quarry near Sarasota. Awarded the blue ribbon.

Division VI. Adult beginners.

Category A. World-wide marine, any source. No entries.

Category B. Florida marine, any source. No entries.

Category C. Florida marine, self-collected. No entries.

Category D. Land and freshwater shells, any area, any source. No entries.

Division VII. Students (Florida Shells). No entries.

Division VIII. Marine Fauna (other than Mollusca). Two entries.

Entry #1. LaVerne Runkle. 7 cases of Sharks' Teeth self-collected at the famous Sharks' Teeth Beach at Venice, Florida. Awarded first place.

Entry #2. Joy Nilson. One small case of a Long-clawed Hermit Crab, *Pagurus longicarpus*, in a Philippi's Nutmeg *Trigonostoma tenerum*. Awarded third place. (No second place.)

Division IX. Popourri. 3 entries.

Entry #1. Mary & Bart Zanarini. Two cases of albino gastropods. Awarded first place.

Entry #2. Ruth Love. A large *Strombus gigas* covered with fire coral caught on a fishing pole at Marathon Key in the Florida Keys. Awarded second place.

Entry #3. Joy Nilson. A tiny Cuban gastropod, *Blaesospira echinus*. Awarded third place.

Division X. Masters Trophy, Scientific Divisions. Three entries.

Entry #1. Sue & Bill Vaughan. "Living Mollusks from Around the World." 8 cases of shells, plus a large simulated aquarium showing shells in their "natural" habitats at various ocean depths, along with large display panels of color photographs of living shells, and a video cassette with a slide program of color photos of living shells running continuously throughout the show, with audio commentary on each shell by Bill Vaughan. Awarded the Masters Trophy.

Entry #2. Maryellen and Olin Bell. "Marine Mollusca -- The Animal/Shell/Taxonomy," 50 linear feet of display with specimens of 195 shell families, showing details of the anatomy, construction, development, etc., of mollusks, with the actual specimens. This exhibit won the DuPont Trophy at the S.W.F.C.S. Shell Show in January, 1985, and the C.O.A. Trophy at the Sarasota Shell Show in February, 1985.

Entry #3. Edith Ochsner. 3 cases of shells and descriptive material in the sub-family Simniinae. This exhibit won the C.O.A. trophy in the Marco Island, Florida, Shell Show in 1984.

William Shaw, 3900 Villmoor Lane, S.W., Fort Myers, Florida 33907

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**PHILLIP W. CLOVER**

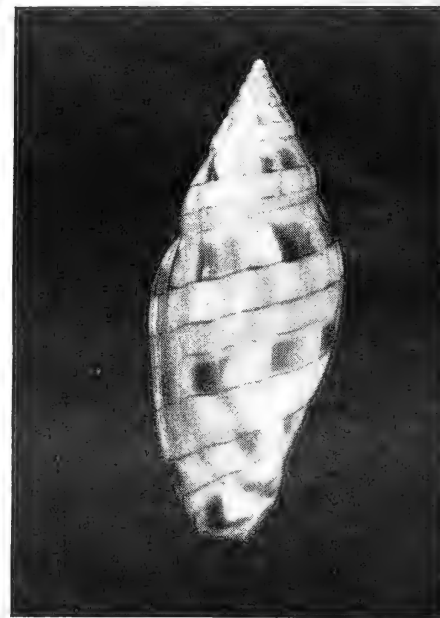
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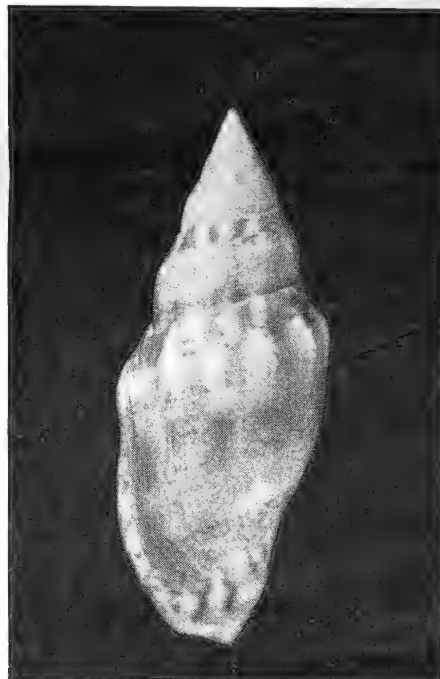


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*Lyria leonardi* Emerson, 1985  
Photo by Marty Gill



*Lyria russjenseni* Emerson, 1985  
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PERSONAL NOTES

From Stu Lillico: Have been meaning to write you for some time. As an editor, you will recognize my explanation that I never seem to have time for personal correspondence.

About 10 years ago, the H[awaiian] M[alacological] S[ociety] Directors adopted a policy of not exchanging (for other publications). In the case of S&SL, of course we want to receive it, and a subscription check is somewhere in the pipeline. I already have a personal subscription, which I plan to continue.

We have been following your ups and downs with interest. I imagine you will be getting out of newsprint in due course. I find it a bit offputting. A glossy (or at least white) paper would look more impressive. The format rather appeals to me. S&SL can't easily be mistaken for any other shell paper -- and that's good. As one editor to another (here I go again), I suggest a bolder headline style. Can your computer produce? With the present gray newsprint, the pages really don't have the contrast that the contents deserve.

I hope to attend the AMU meeting in Monterey. If I make it, perhaps I can make a quick visit to Bayside for a chance to talk shop. My wife and I are planning to visit Australia and New Zealand in April, on what I laughingly call a business trip. - Stu Lillico, Editor, Hawaiian Shell News, P.O. Box 10391, Honolulu, HI 96816

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From Peter L. Haaker: "I received a call from Jack Engle, Director of the Channel Islands Research Program at the Catalina Marine Science Center. He has come up with an answer to my "What is it?" photo that appeared in the Volume 17, Number 4 Shells and Sea Life.

Jack is 95 percent certain that the goblet shaped object is an egg capsule of Fusinus kobelti, which occurs relatively commonly in southern California.

On another matter... the new format for Shells and Sea Life. I understand that the old format was expensive, and I can sympathize with you wanting to get back on schedule. But I believe you are going to lose articles and papers of a serious nature because of your new newsprint format. The new format does not convey the feeling of seriousness, or permanence that should be striven for in even quasi-scientific journals. Nor does the new format store well. I hope you will soon consider going back to the Volume 17 type format, even if you must cut back on much of the color. [ed. - I will return to the volume 17 type format as soon as a minimum of 2,500 subscribers agree to pay a minimum of \$75 per year for subscriptions. Any lesser amount would be unable to support the costs involved with ANY color. I need additional equipment to keep improving this format and will appreciate any donations toward that end. The first step, after we are on schedule and have many more subscribers, will be to improve the whiteness and durability of the paper we use for printing.] - Peter L. Haaker, Marine Biologist, California State Fisheries Laboratory, 1301 W. 12th Street, Long Beach, CA 90813.

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From Tom Shepherd: Here is the information gleaned from the questionnaire. ... 58% of respondents belong to a shell club. The number of shells in the average collection was 1,522. The low number was 44. Two respondents in the United States have 7,000 or more shells in their collection. One European has 10,000 shells in his collection.

The groups collected in order of popularity: Cypraea, Conus, Pecten, Strombus, Murex, Voluta, Oliva, fossils, then Epitonium, Harpa, Lambis, and Spondylus listed equally, then Marginella, miters and Cymatium listed equally, then HALIOTIDAE, Xenophorae, Cassis and Bursa, followed by everything else.

Fifty-three percent expressed an interest in freaks, 64% expressed an interest in shells from unusual locations. ... I don't know if the information would hold true for the majority or not. My gut feeling is that it would.... - Tom Shepherd, Specimen Shell Dealer, 2222 Beech St., Virginia Beach, VA 23451

\*\*\*\*\*

From R. C. Willan: I'm coming to the Opisthobranch Symposium in July [A.M.U.], so hope to meet you there. P.S. I was elected President of the Malacological Society [of Australia] in July last year. Only now I realize how much time is required to run a large society. - Dr. R.C. Willan, Zoology Department, University of Queensland, St. Lucia, Brisbane, Queensland, Australia 4067

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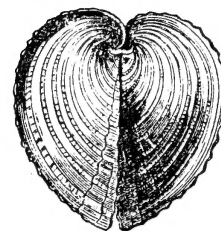
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## Directory of Publications

We will list currently published periodicals of interest to our readers here as time and space permit. Where we have information on subscription rates and order addresses we will give it but, please verify with the publishers as rates are subject to frequent changes. Publications received by the editor will be reviewed for inclusion in this section and in the annual directory.

**AMU News** published by the American Malacological Union, Corresponding Secretary, Paula M. Mikkelsen, Harbor Branch Foundation, Inc., RR 1, Box 196, Fort Pierce, FL 33450. Published quarterly along with the *Bulletin* and available with membership. Rates: Regular \$20; Corresponding (outside Western Hemisphere) \$23 surface, \$26 air; Student \$15; Affiliate (institutional) \$22 - \$28. Format: 215 x 280 mm, about 16 pages per issue, corner-stapled.

**Argonata, The International Journal of Malacology.** Published by Associazione Malacologica Internazionale (A.M.I.), Editor, Roberto Ubaldi. English and Italian parallel edition. Published in 6 numbers per year starting, 1985. Number 1, separate, and Nos. 2-3 together. 60 pages in the first 3 numbers with excellent color. Format 210 x 295 mm, saddle-stitched. Rates: Seamail \$16; Airmail: Europe, Americas, Asia, Africa \$20; Australia & Pacific \$23 per 6 numbers.

**Australian Shell News.** Published quarterly by the Malacological Society of Australia. Format: 190 x 255 mm, 8-12 pages per issue. Provided along with the annual *Journal of the Malacological Society of Australia* for the annual membership fee of A\$13.

**Gloria Maris** tijdschrift uitgegeven door de Belgische Vereniging voor Conchylologie V.Z.W., published bimonthly, by the Belgian society for conchology. Format: 150 x 215mm, about 28 pages per issue. Subscription \$12 US to the Belgian Society for Conchology, 610-4465950-64 Handelsbank, Antwerp, Belgium. Bank costs must be paid by the applicant. If preferred, you may simply send \$12 to S&SL and we will handle the subscription. Allow at least 8 weeks for the subscription to start.

**Hawaiian Shell News.** An educational publication of the Hawaiian Malacological Society, P.O. Box 10391, Honolulu, HI 96816. Published monthly, 8-16 pages per issue with color 2-3 times per year. Format 215 x 280 mm, loose. Rates: First Class \$20; Airmail \$24.50 to 29; Bulk mail to US Zip codes \$16.

**Iberus, Revista de la Sociedad Espanola de Malacologia.** Annual volume published by the Sociedad Espanola de Malacologia, c/o Museo Nacional de Ciencias Naturales, Pº de la Castellana, 80 Madrid 6, Spain. Format: 170 x 242 mm, volume 4 (1984) 136 pages, perfectbound. At last word, the volume was available by airmail for \$20 per year.

**Informativo SBM.** Published by the Sociedade Brasileira de Malacologia, Departamento de Zoologia, Instituto de Biotecnologia, U.S.P., C.P. 20.520, CEP 01000, Sao Paulo-SP, Brazil. Published monthly. Editor Kaoru Hiroki. Portuguese language. Format 150 x 210 mm, about 20 pages per issue, 1 color plate. No pricing information available.

**Journal of the Malacological Society of Australia.** Published by the Malacological Society of Australia, c/o Queensland Museum, Gregory Terrace, Fortitude Valley, Queensland 4006, Australia. Format: 175 x 245 mm, side-stitched and wrap cover, about 96p. per issue and 4 issues per

**Journal of the Malacological Society of Australia.** Published by the Malacological Society of Australia, c/o Queensland Museum, Gregory Terrace, Fortitude Valley, Queensland 4006, Australia. Format: 175 x 245 mm, side-stitched and wrap cover, about 96p. per issue and 4 issues per volume. Each year includes 4 issues (usually over a two-year period). Rates: A\$13 per year which includes the *Journal and Australian Shell News Shells and Sea Life* is a subscription agent.

**Keppel Bay Tidings.** Published by the Keppel Bay Shell Club, P.O. Box 5166, Rockhampton Mail Centre, Queensland, 4702. Quarterly available with membership in the Keppel Bay Shell Club. A\$15 per year, airmail also available. Format 220 x 280 mm, 8 pages per issue. Excellent halftone illustrations.

**La Conchiglia, The Shell.** Published by Mrs. Kety Nicolay, Via C. Federici, 1, 00147 ROMA (Italy). English or Italian editions. Originally a monthly publication, two numbers included in each issue. Normally 6 issues per year, each 32 pages with excellent color. Format 210 x 300 mm, saddle-stitched. Rates: Seamail: US \$17 anywhere in the world; Airmail: N. & S. America, Africa & Asia \$20, Australia & Polynesia \$27 per year. *Shells and Sea Life* acts as subscription agent.

**Las Conchas, Meeting Notice and Newsletter of Pacific Shell Club.** Monthly publication edited by John T. Boyd, 11813 Morning Ave., Downey, CA 90241. Available with club membership. No rates available. Format: 215 x 280 mm, about 8 pages per month.

**Rossiniana, Bulletin de l'Association Conchyliologique de Nouvelle-Caledonie.** B.P. 146, 18, rue Henri-Bonneaud, Noumea, New Caledonia. French and English text. Quarterly, 32 pages per issue, color in part. Format 210 x 300 mm, saddle-stitched. Rates: Airmail \$20 or 110 FrFr. Checks not on New Caledonian bank in francs must add \$8. *Shells and Sea Life* is a subscription agent.

**Southwestern Malacological Society, Monthly Meeting Notice and Newsletter.** Published about 10 times per year, Editor, Nancy Decker, c/o 3846 E. Highland Ave., Phoenix, AZ 85018. Rates: \$3 per year with club membership. Format: 215 x 280 mm, 4 pages per month.

**Suncoast Shorelines.** Published bi-monthly by the Suncoast Conchologists, Editor Bob Pierson, P.O. Box 1564, Palm Harbor, FL 34273-1564. format 215 x 280 mm, about 12 pages per issue. Rates: \$10 with membership.

**The Connoisseur of seashells.** Published by Dr. Luigi Raybaudi Massilia, P.O. Box 561, ROMA (00187) Italy. English and Italian parallel edition. Published bimonthly, 6 numbers per year. Issue no. 5 (September, 1985) is 36 pages with excellent color. Format 200 x 265 mm, saddle-stitched. Rates: Surface \$18; Airmail \$24; Sample copy \$4; Backnumber \$5. *The Connoisseur* is primarily a sales catalog for specimen seashells.

**The Festivus.** Publication of the San Diego Shell Club, Editor, Carole M. Hertz, 3883 Mt. Blackburn Ave., San Diego, CA 92111. Issued monthly except December. Format: 215 x 280 mm, 8-16 pages per issue. Membership and subscription \$7 in US; \$10 overseas surface mail. Loose sheets, corner stapled. Halftone illustrations.

**The Nautilus,** published by American Malacologists, Inc., P.O. Box 2255, Melbourne, FL 32902. Editor: R. Tucker Abbott. Quarterly publication. Rates: \$15 US; \$18 foreign; \$20 institutional. Format: 215 x 265 mm, 36-48 pages per issue, saddle-stitched with heavy cover. Includes halftones and occasionally color.

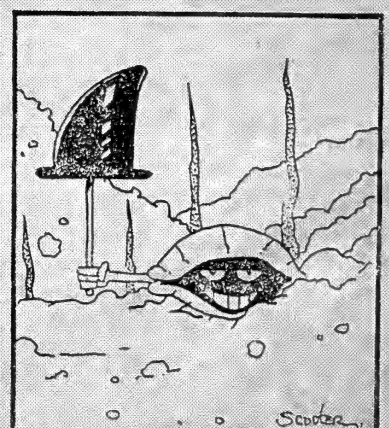
**The Slit Shell.** Newsletter of the Indianapolis Shell Club, Paula D. Knoebel, Editor, 3846 Woodridge Court, Plainfield, IN 46168. Publication sent to members of the club.

**Tide-ings, The newsletter of the Crown Point Shell Collectors Study Group, Inc.** Newsletter editor, Carol Bodine, Box 462, Crown Point, IN 46307. 712 numbers per year with club membership. Format: 215 x 280 mm, 6 pages, corner stapled.

**Underwater The Diver's Journal.** Published by Neville Coleman's Sea Australia Productions Pty. Ltd., P.O. Box 419, Caringbah, NSW 2229, Australia. English language quarterly. Issue No. 14 (3rd Quarter 1985) is 84 pages with the finest color I have seen anywhere. Includes a lot of good articles and photos on the marine life of Australian waters. Subscriptions: in Australia A\$18; elsewhere A\$25 per year.

**The Veliger.** ISSN 0042-3211, A quarterly published by the California Malacozoological Society, Inc., c/o Department of Zoology, University of California, Berkeley, California 94720. Format 215 x 280mm. Subscription rates for volume 28 are \$22 for affiliate members and \$44 for institutions and non-members. Overseas postage is \$3 additional.

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