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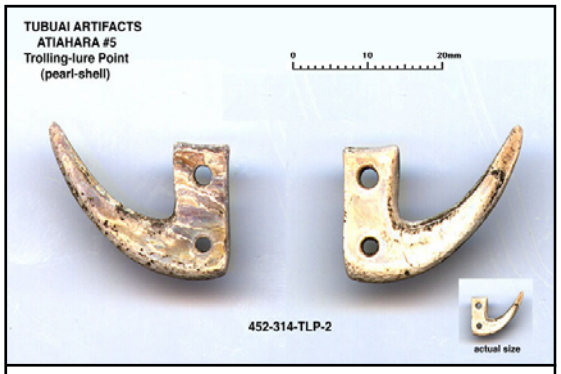
A publication of the Pacific Conchological Club

PACIFIC CONCHOLOGICAL CLUB
Las Conchas

President's Message

Summer is here and we close our season with a Shell Auction and Potluck Dinner. As always, this will be a good one. We've just finished organizing the auction material and there are lots of shells we're sure you'll want for your collections. The PCC thanks our donors: **The Abbey, Orcullo Enterprises, Ralph Ferguson, Lin Wong, Dave Bridgnell, Paul Kanner, Phil Liff-Grieff** and even I parted with some of my favorite shells. We still had several nice volutes and other material donated by **Hank Chaney** and the Santa Barbara Museum. If the shells alone weren't enough, there's the food! Janice Abdulian will provide fried chicken and Sammy Kram will provide drinks. Everyone else will bring their favorite dishes.



Pearl-shell artifacts help us understand the role mollusks played in the prehistory of Oceania.

Next: I'd like to recognize all those who have worked to make this another successful year for the PCC. First, the staff at the Natural History Museum, who are our hosts and sponsors. **Dr. James McLean** who keeps us apprised of the latest publications in Malacology and is our touchstone to the professional side of this field. **Lindsey Groves,** another NHM professional and past PCC president, is always there to help, advise and work for the club – always that extra mile. **Kathy Kalohi**, our treasurer who keeps our bank account in order and the much-appreciated job of keeping the auction totals straight. **Janice Abdulian**, our librarian who puts together the monthly raffle – we didn't realize how much we took for granted until she missed a meeting! **Dave Bridgnell**, vice president, who is responsible for booking the speakers for each month's meeting and, along with his wife Barbara, has graciously hosted our Christmas parties in their home. **Sammy Kram**, a steadfast member, hosts our yearly auction at the Oakwood Clubhouse – we're lucky we know you. A special recognition goes to **Phil Liff-Grieff,** our secretary and the editor of the newsletter. Phil has always been at the center of the action around here since before I joined the club. A few years ago he volunteered to edit Las Conchas. He had the vision to make it into a "popular" periodical that people could use as a reference about California shells and shell collecting in general. Since then we have received many compliments and requests to reprint articles from other clubs. A few years ago, he and Lindsey lead the merge of the PSC and CCSC into the PCC. In spite of a very busy personal and professional life, he still volunteers to organize and lead field trips. For all this, we are willing to tolerate his predilection for land snails!

To these people and to all of you who contribute help, articles, photos, presentations or just attend the monthly meetings or support us from afar: Thank you, none of this could happen without every one of you. Since this is starting to sound like I'm signing High School year books, I'll close by saying: "*To some really excellent Dudes and Dudettes, Keep on shellin'. Catch you in the Fall*".

Terry Rutkas
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Pacific Conchological Club Officers:

President: *Terry Rutkas*
Vice-President: *Dave Bridgnell*
Secretary: *Phil Liff-Grieff*
Treasurer: *Kathy Kalohi*

Membership Chairperson: Vacant
Field Trip Chairperson: Vacant
Librarian: *Janice Abdulian*
Raffle Chairperson: *Janice Abdulian*
Las Conchas Editor: *Phil Liff-Grieff*

The Pacific Conchological Club was organized in 2003 as a result of the merger between the Pacific Shell Club and the Conchological Club of Southern California. Its mission is to further the interest in shell collecting and malacology and to provide a forum for individuals who love shells and other marine life. The Club meets on the second Sunday of each month from October through June at the Los Angeles County Museum of Natural History (900 Exposition Blvd., Los Angeles).

Bob Howley: In Memoriam

By Bob Moore

Bob Howley, a long-time member of the Conchological Club of Southern California, passed away on May 12th, at the age of 69, of respiratory disease.

Bob spent the last 40+ years of his life studying and collecting the shells of the west coast of North America, exclusively. He spent hundreds of hours at UCLA and other libraries, gathering as much information as he could find, and eventually produced five personal notebooks, which he organized taxonomically and recorded everything! In these treasured notebooks, which he originally typed and organized by genera, and continually updated with hand written notes, he recorded species names, synonymies, photocopies of descriptions, and pictures /illustrations, ranges, record sizes, locations where collected, among other data.

In his early years, Bob collected intertidally, up and down the coast from Monterey to San Diego. Locally, one of his favorite places was White's Point where he would take a few buckets-full of tidepool "grunge", and then spend weeks separating and identifying minute specimens. In his later years, Bob developed a friendship with Ed Tarvyd, a marine biology instructor at Santa Monica City College, and he rarely missed a field-trip opportunity to collect material dredged by the R/V *Vantuna*.

Bob had a fantastic memory for the fine details of the species he studied, and he was very kind and patient to explain these to me, on the many occasions when we would sit down to "talk shells". He was not a collector of worldwide shells... "pretty shells", as he would call them. He preferred to concentrate on a limited area. His personal collection was not large, because he saved only a few representative specimens of the more common species, but in the many years of collecting he did acquire a few rare-to uncommon, local shells

I think it is the goal of every amateur to somehow contribute to the bank of knowledge, in whatever field he/she collects. ...and so it was with Bob. Every once-in-a-while he would take some shells that had "stumped him" to Jim McLean, to see if he could get an identification; and sometimes these shells would be left behind for" further study". A month before he died, Bob learned from Dr. McLean, that some *Turbonilla*s that he had collected off Palos Verdes Peninsula, represented a new species, and would bear his name in the upcoming book on the Marine Gastropoda of the Northeastern Pacific.

Bob Howley did not leave any family, as far as I know. He spent most of his life living alone ... but he will long-be-remembered by those of us who knew him. Bob Howley shared with me his knowledge and passion for collecting West Coast shells ... but most of all, he shared his friendship.

Low tides provide great conditions for observing mollusks and other marine life on Southern Californian shores. Listed below are some extremely low tides that occur during daylight hours:

(Please be sure that you are familiar with the California Department of Fish and Game regulations regarding the collecting of live mollusks.)

June, 2005

Date	Time	Ht.
Thursday, June 9	6:05 am	-0.5
Friday, June 10	6:46 am	-0.3
Saturday, June 11	7:29 am	-0.1
Friday, June 24	6:10 am	-1.5
Saturday, June 25	6:59 am	-1.2
Sunday, June 26	7:49 am	-0.7
Monday, June 27	8:38 am	-0.1

July, 2005

Date	Time	Ht.
Friday, July 8	5:41 am	-0.5
Saturday, July 9	6:12 am	-0.3
Sunday, July 10	6:43 am	0.0
Saturday, July 23	5:44 am	-1.3
Sunday, July 24	6:25 am	-0.8
Monday, July 25	7:06 am	-0.2

August, 2005

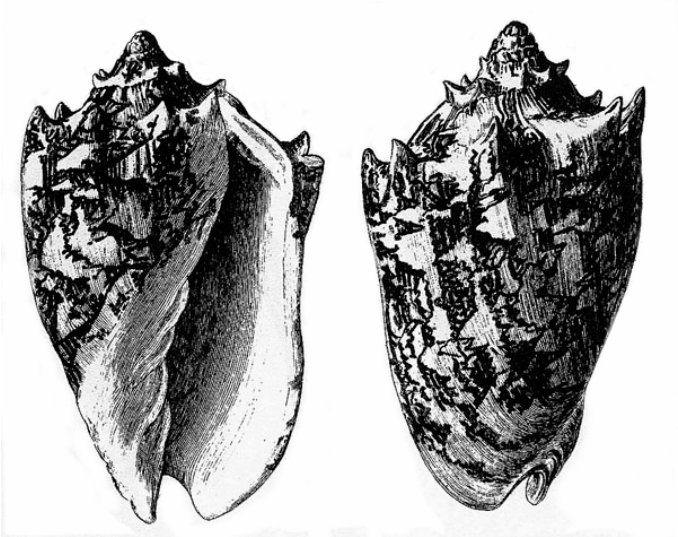
Date	Time	Ht.
Monday, August 22	5:43 am	-0.1

2005 Pacific Conchological Club Shell Auction

Sunday, June 12
1:30-4:00 pm
Oakwood Apartments, Toluca Lake

(3682 Barham Boulevard– between Cahuenga and Forest Lawn Drive)

Voice Auction includes a large selection of unusual Volutes from an old collection and some exceptional Muricids, in addition to a wide range of other specimen shells.



Silent Auction will take place in two rounds with bids starting as low as 50¢. You will be able to find great deals on all sorts of gastropods, bivalves, fossils, land snails, and books.

THIS IS AN INCREDIBLE OPPORTUNITY TO ACQUIRE SOME OUTSTANDING SHELLS AT AN UNBELIEVABLE BARGAIN PRICE WHILE SUPPORTING THE CLUB.

The afternoon will include feasting on chicken supplied by the Club; participants are asked to bring the other foodstuffs potluck. Contact Janice Abdulian at *818-876-8538* to RSVP and to indicate what you will be bringing.

(**Please note:** RSVP's are necessary to confirm the amount of chicken to purchase)

DON'T MISS OUT!!

LA County Science Fair Produces 2005 PCC Award Winners

Rea Anna Embrador and Ella Almazan were selected as the Pacific Conchological Club Prize winners from the 2005 Los Angeles County Science Fair. Winners are selected from exhibitors that present projects related to mollusks, marine biology or ecology.

Rea Anna and Ella entered a joint project entitled ***Horn Snails: The Effect of Location on Size, Distribution and Parasitic Prevalence.*** They studied how the location of Horn Snails (Certhidea californicus) relative to the intertidal zone impacts the variables described in the project's title.

Each prize winner receives a check for $50 and is invited to present their project at the June meeting of the Pacific Conchological Club.

Come to the auction to meet these young, aspiring scientists as they present their project and their findings.

Nudibranchs: Beyond the Wildest Imagination

by Ángel Valdés

No one can deny that nudibranchs are among the most beautiful marine invertebrates; some have suggested that nudibranchs are to mollusks what butterflies are to arthropods. Their spectacular contrasting colors and astonishing variation of shapes go beyond the wildest imagination.

But, what are nudibranchs? Nudibranchs, or sea slugs, are a group of gastropods, closely related to land snails, which lack a shell in the adult stage. Free of having to spend lots of energy in producing, maintaining, and transporting a heavy shield on the back, nudibranchs have evolved an amazing array of shapes and have been able to colonize all marine environments, from the surface of the open ocean to the deep sea, from tide pools of rocky shores to sandy abyssal flats, from the frigid polar oceans to the tropical coral reefs. Every single marine ecosystem, including hydrothermal vents, has nudibranchs.

Micromelo undatus (Bruguière, 1792) is a species of opisthobranch with an external shell.

The loss of the shell in nudibranchs has been a gradual process and there are numerous groups of other extant gastropods related to nudibranchs that have small or internal shells, showing the evolutionary trend towards the reduction and final loss of the shell. All these groups plus nudibranchs are classified in a larger taxon called Opisthobranchia. Additionally, nudibranchs have shells during their larval stage, and nudibranch veligers are not so different from those of other gastropods.

Now, how do nudibranchs can get away with crawling around with no apparent protection? Nudibranchs have developed alternative defensive systems, mostly derived from the usage of chemical weapons. Numerous species of nudibranchs feed on sponges and tunicates; many of these organisms are protected by toxic chemicals to which nudibranchs are not only immune

Aeolid nudibranchs like this specimen of ***Dondice occidentalis*** (Engel, 1925) take stinging cells from their cnidarian prey and use them for their own defense.

but they have learned how to accumulate or even modify them and use them for their own defense. Some species of nudibranchs have developed their own chemical defenses independently from their prey. Many nudibranch defensive chemicals have promising properties for medical research. For instance, dolastin-10, a compound extracted from the opisthobranch *Dolabella auricularia* (Lightfoot, 1786), has excellent potential for development as antineoplastic agents and is now in clinical trials.

A similar, but physiologically different defensive system has been developed by aeolid nudibranchs. These mollusks feed on cnidarians, and have learned to take the stinging cells (nematocysts) from their prey and use them for their own de-

The bright coloration of ***Phyllidia elegans*** Bergh, 1869 is a warning of the species' toxic chemical defenses.

fense or to kill more prey. It is a mystery how nudibranchs manage to carry intact stinging cells through their digestive tracts to the specialized organs in which the nematocysts are accumulated and fired at nudibranch's will. Understanding this physiological mechanism can help to prevent jellyfish stings, which only in the tropical Indo-Pacific affect around 10,000 people a year, and some end up in severe envenomation or death.

Nudibranchs also possess unique adaptations to deal with energy issues, and they are the first mollusks to have developed renewable energy policies. Many nudibranchs have evolved ways of keeping whole single-celled plants (zooxanthellae) alive in their bodies. In most cases the zoxanthellae are obtained from their food, often cnidarians, which already have symbiotic zooxanthellae in their bodies. Therefore, these nudibranchs can crawl around while their symbiotic zoxanthellae are processing nutrients and sun light to produce energy, reducing the nudibranchs' need to eat.

Phyllodesmium briareum (Bergh, 1896) is a solar-powered nudibranch with symbiotic zooxanthellae, single-celled plants, alive in their bodies

Nudibranchs also constitute a great model-organism for the study of the physiology of the nervous system, owing to the large size of their nerve cells and their relatively simple central nervous systems. Eric Kandel, winner of the 2000 Nobel Price of Medicine conducted part of his research on learning and memory using nudibranchs of the genus *Tritonia*, and most of his breakthrough discoveries came from his work on the nervous system of *Aplysia*.

Dendrodoris azineae Behrens & Valdés, 2004 is a recently described species from Southern California.

Species of *Tritonia* like this ***Tritonia bayeri*** Marcus, 1967 have been used to study the chemical basis for learning and behavior.

Chemical weapons ..., renewable energy sources ..., breakthrough discoveries ..., one may wonder why nudibranchs do not make it more often to the headline news!

There are about 3,000 described species of nudibranchs, but there is probably a similar number of undescribed species. The 20 or so nudibranch specialists in the world are constantly discovering new species and increasing our knowledge on this group. Most new species are found in tropical regions that have been poorly explored or in the deep sea, but there are also new species in very well studied areas such as Southern California. Two new species of nudibranchs: *Doriopsilla spaldingi* Valdés & Behrens, 1998 and *Dendrodoris azineae* Behrens & Valdés, 2004, have been described from San Diego in the last few years.

Nudibranchs are a truly fascinating group of mollusks. Their study has already contributed a wealth of new information with applications in several fields of biology and medicine. No one knows how many secrets are still waiting for us to be discovered in these amazing organisms.

Ángel Valdés is the Associate Curator of Malacology
Natural History Museum of Los Angeles County,
900 Exposition Boulevard, Los Angeles, CA 90007

The Use of Shell in Oceanic Material Culture II

Terry Rutkas

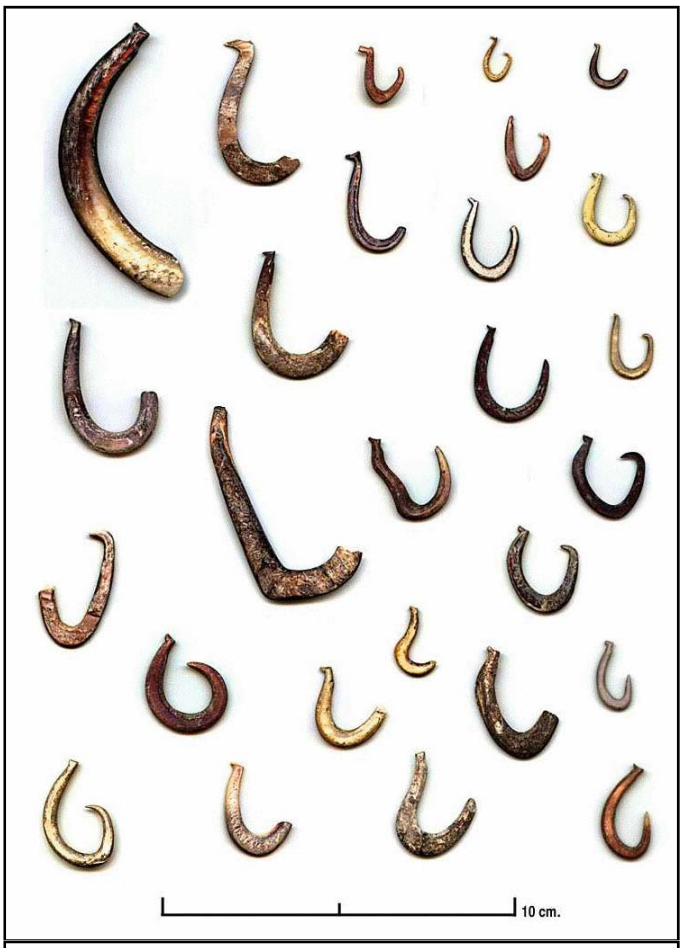
Oceanic people (i.e., Polynesians, Micronesians and Oceanic Melanesians) harvested the oceans bounty to survive. Mollusks were a significant part of the Oceanian's diet, as evidenced by the many shell middens found at archaeological sites. All species of mollusk were consumed, including: *Cypraea, Lambis, Turbo, Trochus*, various Limpets and bivalves. Gathering shellfish was women's work but *fishing* was men's work!

In the thousands of years Oceanians inhabited the Pacific, they developed sophisticated fishing techniques that are still valid today. As stone-age people, their fishing gear was manufactured from the only material available: wood, bone, shell and fishing line, hand-made from coconut and other plant fibers. Even modern day oceanic people who have access to modern materials will adapt them to their traditional designs.

Oceanians preferred pearl shell, the Black-lipped oyster, *Pinctada margaritifera,* as the material of choice to make fish hooks and lures. It's hard and strong but the feature that makes it perfect for fishing is the luster. A shining white hook, glistening at the end of a line, can attract fish to bite even without bait. The Oceanians exploited slight variations in color and iridescence, changing hooks as conditions required.

Fishhooks and lures were considered to possess *mana*, an intrinsic power or effectiveness. Successful lures were given names, worn as jewelry when not in use and passed from father to son, sometimes for many generations. Fishermen were careful not to lose their hooks, as it required a good deal of work and skill to craft a successful one.

'Makau paweo', Hawaiian jabbing hook, *Pinctada margaritifera*. A faithful reproduction of a classic type, 27mm. Collection of James Ebiner



Pearl shell fish hooks excavated on Tubuai, French Polynesia by Lawrence Miller, www.implementology.org.pf.

Special lures were used to catch Bonito, a shank of pearl shell, a hook of bone or shell, tied together with a line of natural fiber. When the fish were in a feeding frenzy they would bite as soon as the shining lure was cast into the water. In one motion the fish was lifted out – caught by its own weight on the barb-less hook – directly into a waiting basket where it shook off the hook and the lure was cast again. In New Zealand (*Atearoa*) where pearl shell is not found, wood and bone were combined with the colorful and iridescent *paua* abalone, *Haliotis iris*, to achieve the same result.

Shell plays an important part in understanding the pre-history of Oceania: (1) Shell middens can tell what species flourished when the first immigrants arrived and how the eco-system changed due to human influence. (2) The design of shell fish hooks can tell where immigrants came from and how they adapted to local conditions. (3) Broken pieces of shell can tell how fish hooks were manufactured and how life changed from subsistence living to cultures that supported specialists in tool making and fishing.

Pinctada margaritifera, Black-lipped Oyster. Manikiki, Cook Islands. Taken by pearl divers, free diving to 120 feet. Best known as a pearl oyster, Oceanians found the shell itself to be more useful. Flashing iridescence of black, gray, rose, yellow, and white; fishermen selected hooks and lures for the most effective hue in varying light conditions.

Solomon Islands Lure. Shank is notched to hold the line. Traditional design and traditional materials, still used today.

The reproduction Hawaiian hooks shown here were made by an artist known as "Louie the Fish", an avid saltwater Fly fisherman and guide. Louie studied art at the University of Hawaii and lives in American Samoa. As a talented sculptor, fisherman and scholar of the genre, his reproductions are historically accurate as well as aesthetically pleasing.

'Pa hi aku', Hawaiian Bonito Lure. *Pinctada margaritifera,* bone, feather and fiber. Modern reproduction of traditional design.

'Pa atu', Tongan Bonito Lure. Shank and hook made from pearl shell. Tongans sometimes use turtle shell for the hook.

'Pa kahawai', Maori Trolling Lure, New Zealand***.*** *Haliotis iris*, wood bone and fiber. Probably circa 1850—1900.

June Meeting: SUNDAY, June 12, 2005 1:30 pm — 4:00 pm

Final Party and Annual Shell Auction!

Location: Oakwood Apartments, (3682 Barham Boulevard) Toluca Hills

(ask the guard for directions to the clubhouse where the party/auction is being held)

Directions:

from the Hollywood freeway (northbound), exit at Barham Boulevard. Travel north on Barham until you see the Oakwood Apartments on your right. Turn right onto South Coyote Canyon Drive. Stop at the access gatehouse and inform the guard that you are with the Pacific Conchological Club. Follow the yellow line to the South Clubhouse.

From the Hollywood Freeway southbound, exit at Cahuenga. Turn left on Cahuenga to Barham. Turn left onto Barham and follow the direction above.

You can park in guest parking or wherever you there is a single space. Do not park in reserved or double spaces.

(If you have questions about the location of the meeting, contact Sammy Krams at 323-876-8538)

Both silent and voice auctions will be held– a great way to acquire new shells for very little $!

This meeting will be devoted to three of our favorite things: **food, shells, and good company**. The club will be supplying chicken and members are asked to bring everything else potluck. Please contact Janice Abdulian (818-876-8538) to RSVP and to indicate what you will be bringing.

Pacific
Conchological
Club

2447 Kemper Avenue
La Crescenta, CA 91214

DATED MATERIAL