Pacific Conchological Club

Volume 37 vol no. 3

Feb. '05– March '06

PACIFIC CONCHOLOGICAL CLUB

Las Conchas

## Presidents Message

It rained here a few weeks ago; it flooded the property quite a bit. The next dry day I inspected the damage out in the garage where I still hadn't unpacked all my cardboard boxes. Several contained books; naturally they got wet. Some weren't too valuable, but I felt more than a little sick when I noticed "COWRIES AND THEIR RELATIVES OF SOUTHERN AFRICA" was among them. My signed (not to mention expensive) copy was completely ruined. I consider this to be the best produced seashell book—ever! Well, it was my own fault; I wasn't a good steward. How ironic that my (waterproof) shells were safe and dry and my books were soaked. The incident brought to mind some musings I'd been having about shell collecting.

*Tonicella lokii*, Clark, 1999
Point Arenas, Mendocino Co., California
28 mm

There are essentially two aspects to any type of collecting: acquisition and curation. I know many of us are pretty good at acquiring shells. Some go field collecting, some find treasures in dealers catalogs and some like the challenge of auctions. What about the curatorial side?

One definition of a curator is 'One who manages or oversees' [a collection, as in a museum]. Manage is the keyword here. Acquisition is just the first part; the second is to get and keep collection data, then a good curator might go to the reference books to verify the data and make corrections. One must keep the collection in good order, organizing and storing things so they are easy to find,. taking care to protect everything from harm. The curator organizes displays and selects specimens for best effect. Once all this is achieved, the curator looks for ways to improve his collection.

I must have taken a wrong turn on my way to becoming an *evolved* collector. I just discovered yet another box of shells from some auction that I put away and forgot about. I've got more shells than room to keep them – I'll never get them organized let alone catalogued. Now I've ruined my favorite shell book! Does *any* of this sound familiar?

Terry Rutkas

## Contents

**Las Conchas is a publication of the Pacific Conchological Club**

**Pacific Conchological Club Officers:**

President: *Terry Rutkas*
Vice-President: *Shawn Wiedrick*
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Las Conchas Editor: *Phil Liff-Grieff*
Webmaster: *Terry Rutkas*

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).

# California Chitons; Visiting them at home (Part I– Northern CA)

## *a look at where our chitons live*

*by Phil Liff-Grieff*

We are fortunate on the west coast of North America to have an over-abundance of chiton species. Over 20% of the world's chiton species are found along the west coast, more than any other part of the world. This diverse group of mollusks can be found at great depths all the way into the high intertidal and, in the latter range, are easy to locate and observe.

In this and ensuing article, we will take a brief look at some of our California chitons, touching on where and how they live. Many of our species are found over a wide-ranging geographic area but have very specific habitat requirements.

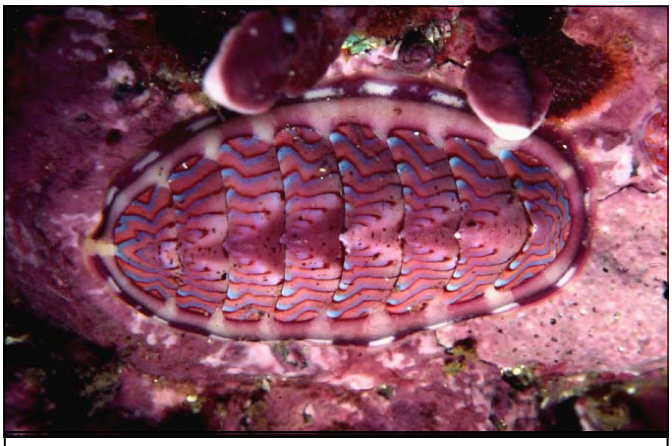
First, we will look at some of the more common intertidal species found in Northern California and, in our next article *(to be published in April, 2006*), we will explore the more common species to be found in the Southern California coastal habitats.

**Some Northern Californian Chitons**

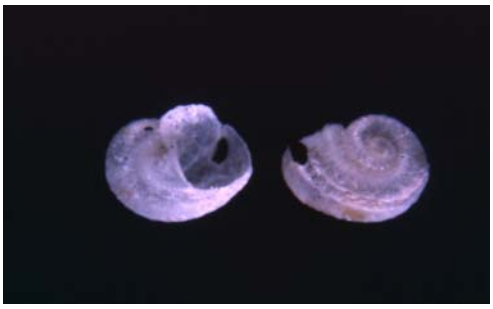
A recent conversation with a fellow collector about chitons brought the response, "Why do you like them? They are so ugly!!" While I don't agree with this appraisal, an overview of the most common Northern Californian intertidal chitons might be described as "Beauty and the Beast". Particularly, when examining the species that can be found in surf-swept coastal areas, exposed in the upper mid tidal zone, one encounters the most beautiful and the most homely of the west coast chitons.

My nomination for "most beautiful" is the genus *Tonicella*. Represented by three species in our coastal intertidal, these chitons live in the mid-tidal zone, on the sides of rocks, even during the day. Living specimens are beautifully marked with pink or orange, white and turquoise blue. lines. Once dead, the turquoise disappears and most pre-

*(Continued on page 3)*



*Tonicella lokii* Clark, 1999
Carmel Bay, Monterey County, California
*Photo © 2005 L. & L. Langstroth*



## ERRATA

The last issue of Las Conchas (37:2) contained an inverted photograph of specimens of *Sinezona rimuloides* that appeared to be sinistral. A correctly aligned photograph is shown at right.

served specimens seen in collections are marked orange and white.

Tonicellas feed primarily on the encrusting coralline algae which they inhabit and are among the most common chitons to be found in their preferred habitat.

Until recently, most of the animals seen on our shores were identified as *Tonicella lineata* (Wood, 1815). A new species, *Tonicella lokii* Clark, 1999 was described by Roger Clark in the American Malacological Bulletin (15[1]) as the predominant species in north-central California. A simple distinguishing character is the marking found on the head valve *(the valve at the anterior end of the chiton)* of these species.

*T. lineata* head valves are marked with concentric lines that form an undulating arch. *T. lokii* head valves are marked with concentric lines that create a zigzag pattern. See the photos below for examples.

*Tonicella lineata* head valve. Compare the markings with the photo below.

Tonicella lokii head valve. Compare the concentric markings with the photo above.

Living in the same zone as our Californian Tonicellas is the Black Katy Chiton, *Katharina tunicata* (Wood, 1815). This species is among the largest of the chitons, up to 120 mm in length and is easily identified by its leathery black girdle that almost covers the valves (see photo, top, right) This chiton gets top honors in the "Beast " category as it is anything but attractive but it is easily observed in the day time in its usual perch high on rocks in the middle littoral zone among clumps of algae and mussels. This species is common from Alaska to Point Conception and is often found in large colonies.

*Katharina tunicata* (Wood, 1815)
Big Sur Coastline, Monterey County, California
Photo– Doug Eernise

Cleaned *Katharina tunicata* valves

The absolute winner in the chiton "Beast" category is found in our northern waters and also happens to be the largest chiton species. *Cryptochiton stelleri* (von Middendorff, 1847) ranges in size up to 330 mm and has its valves completely covered by its brick-red to brown girdle. Looking

like some sort of strange relative of a sea cucumber, this chiton is found on at low tide on rocky beaches and larger rocks. Like most chitons, they eat a variety of red, brown

*(Continued on page 4)*

Cleaned valves of *Cryptochiton stelleri* (von Middendorff, 1847)
*Photo by Terry Rutkas*

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and green algae. They can live up to 20 years or more. At times, these are very abundant on northern rocky beaches.

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So far, we have dealt with chitons that are easily spotted through casual observation. The northern Californian fauna also contains many species that are to found in more cryptic locations, under rocks or otherwise hidden during the day.

Foremost among the genera found in more protected spots is Mopalia. The most abundant member of this genus in California is *Mopalia muscosa* (Gould, 1846), commonly known as the Mossy Chiton. The common name could refer to the extremely long bristle-like hairs on the girdle of this mollusk but I suspect that it has more to do with the fact that most exposed specimens are heavily covered with algae. This makes them very hard to spot as they are perched on the sides of sand-scoured rocks.

This species ranges from British Columbia to central Baja California and specimens can grow as large as 90 mm.

Other Mopalias are more common in the northern part of their range (British Columbia to Alaska) but some are still an important element of the Californian chiton fauna.

In areas somewhat protected from high surf , one can observe *Mopalia lignosa* (Gould, 1846) to be not uncommon under larger rocks.

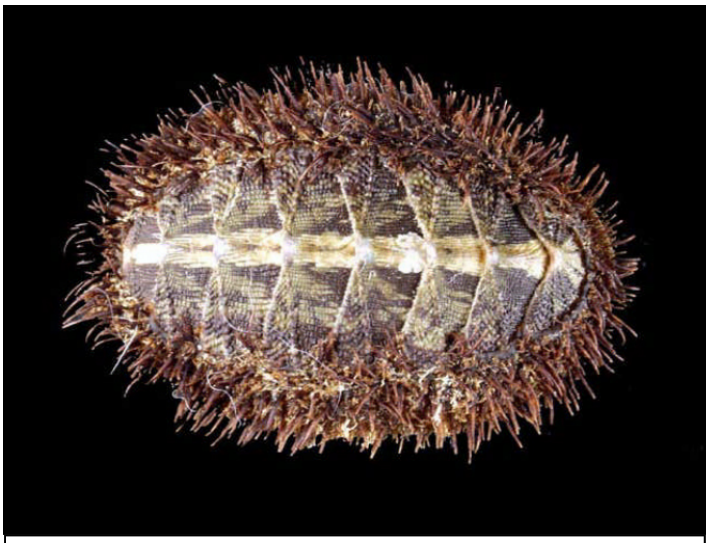
*M. lignosa*, commonly known as the Woody Chiton, is characterized by a seemingly smooth surface on the plates and long, soft hairs on the girdle. It ranges north to Alaska with a white-streaked form found at the

*(Continued on page 5)*

The white-streaked form of *Mopalia lignosa* found in British Columbia and Alaska

*Mopalia lignosa* (Gould, 1846)
Monterey County, California
*Photo by Doug Eernise*

A dried, 50 mm specimen of Mopalia muscosa still covered with algae. Any guesses as to why this chiton has been given the common name, Mossy Chiton?



*Mopalia muscosa* (Gould, 1846) An unusually clean specimen.
*photo by Terry Rutkas*

Visit the Pacific Conchological Club on the World Wide Web:

*pacific-conch-club.org*

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northern end of its range. Californian specimens tend to be dark green and brown or streaked with greyish green or slate blue as in the photo (below, left).

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If this small sampling proves interesting, the references listed below may be useful in helping the collector to identify their specimens. Finally, it is important to point out two things-

1) To enjoy the beauty of chitons, they must be prepared properly. For a detailed discussion of chiton preparation, refer to *Las Conchas*, vol. 35, #5 (February, 2004)- this issue can be obtained as a pdf.
2) Chitons live their lives in a highly restricted range. Please be careful not to over collect in any given area so as not to seriously impact the local faunal community.

Some Chiton References:

Burghardt, Glenn And Laura, A Collector's Guide to West Coast Chitons, San Francisco Aquarium Society, Special Publication No. 4, November 1969

Kaas, Piet Monograph of Living Chitons, Brill Academic Publishing, 2006

Slieker, Frans J. A., Chitons of the World, Mostra Mondiale Malacologia, Italy, 2000

While not a chiton reference specifically, Between Pacific Tides (Ricketts and Calvin, fourth edition edited by Joel W. Hedgpeth, 1969) provides an excellent treatment of chitons in the intertidal of the west coast of the continental United States.

Excellent photographs and information about chitons can also be found at a number of websites including:

Royal British Columbia Museum Chiton Key:
*http://royalbcmuseum.bc.ca/nh_papers/chitonkey/intro.htm*

Living Chitons: *http://fjas.nl/livingpolyplacophora.htm*

Worldwide Chitons:
*Http://biology.fullerton.edu/eernise/chitons/index.html*

**Minus Low tides** provide great conditions for observing mollusks and other marine life on Southern Californian shores. Listed below are some minus 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.) For details, check out the club's website at* ***pacific-conch-club.org****.*

**February, 2006**

| Date | Time | Ht. |
|---|---|---|
| Wednesday, Feb. 1 | 5:27 pm | -0.5 |
| Wednesday, Feb. 8 | 1:27 pm | -0.6 |
| Thursday, Feb. 9 | 2:03 pm | -0.8 |
| Friday, Feb. 10 | 2:34 pm | -0.8 |
| Saturday, Feb. 11 | 3:01 pm | -0.8 |
| Sunday, Feb. 12 | 3:25 pm | -0.7 |
| Monday, Feb. 13 | 3:48 pm | -0.5 |
| Tuesday, Feb. 14 | 4:09 pm | -0.2 |
| Thursday, Feb. 23 | 12:40 pm | -0.5 |
| Friday, Feb. 24 | 1:19 pm | -1.1 |
| Saturday, Feb 25 | 1:55 pm | -1.4 |
| Sunday, Feb. 26 | 2:31 pm | -1.5 |
| Monday, Feb. 27 | 3:05 pm | -1.4 |
| Tuesday, Feb. 28 | 3:39 pm | -1.0 |

**March, 2006**

| Date | Time | Ht. |
|---|---|---|
| Wednesday, March 1 | 4:12 pm | -0.5 |
| Wednesday, March 8 | 12:20 pm | -0.2 |
| Thursday, March 9 | 1:02 pm | -0.4 |
| Friday, March 10 | 1:34 pm | -0.5 |
| Saturday, March 11 | 2:01 pm | -0.5 |
| Sunday, March 12 | 2:24 pm | -0.4 |
| Monday, March 13 | 2:45 pm | -0.2 |
| Thursday, March 23 | 11:16 am | -0.1 |
| Friday, March 24 | 12:04 pm | -0.6 |
| Saturday, March 25 | 12:44 pm | -0.9 |
| Sunday, March 26 | 1:20 pm | -1.0 |
| Monday, March 27 | 1:54 pm | -0.9 |
| Tuesday, March 28 | 2:27 pm | -0.6 |
| Wednesday, March 29 | 2:59 pm | -0.1 |

# SCUM X– Santa Barbara


Every January, Southern Californian professional malacologists, students and a few amateurs gather for an informal meeting where they share their interests, report on their achievements and network. This year's meeting was hosted by the Santa Barbara Museum of Natural History.

Participants included (*in alphabetical order*): John Alderson (Natural History Museum of L.A. County, Research Associate) , Alvin Alejandrino (California State University, L.A.), Don Cadien (L.A. County Sanitation District), Curtis Cash (City of L.A.), Henry Chaney (Santa Barbara Museum of Natural History), Paul DeFlorio (Pacific Conchological Club), Doug Eernisse (California State University, Fullerton), Wes Farmer (San Diego Shell Club), Christina Fernandez (University of California, Santa Barbara), Daniel Geiger (Santa Barbara Museum of Natural History), Lance Gilbertson (Orange Coast College): Jeff Goddard (University of California, Santa Barbara), Carole Hertz (San Diego Shell Club), Jules Hertz (San Diego Shell Club), William Hewson (California State University, Fullerton), Eric Hochberg (Santa Barbara Museum of Natural History): George Kennedy (Brian F. Smith & Associates, Poway), Phil Liff-Grieff (Pacific Conchological Club), Brandon Lincicum (California State University, Fullerton), John Ljubenkov (Pauma Valley) Jim McLean (Natural History Museum of L.A. County), Tony Phillips (L.A. Co. Sanitation District), Chuck Powell (U.S. Geological Survey), Albert Rodriguez (California State University, Fullerton), Scott Rugh (San Diego Natural History Museum), LouElla Saul (Natural History Museum of L.A. County, Research Associate), Jay Shrake, Bob Sinclair (Natural History Museum of L.A. County, Research Associate; Pacific Conchological Club), Bob Stanton (Natural History Museum of L.A. County, Research Associate), Carla Stout (California Polytechnic, Pomona), Kent Trego (San Diego Shell Club), Ángel Valdés (Natural History Museum of L.A. County): Paul Valentich-Scott (Santa Barbara Museum of Natural History), Ron Velarde (City of San Diego): Mike Vendrasco (University of California, Santa Barbara), James Weaver (University of California, Santa Barbara), Shawn Wiedrick (Pacific Conchological Club)

# Breadfruit Peelers, old technology but still high tech

Dirk H.R. Spennemann (1998).
*Essays on the Marshallese Past* Second edition. Albury:

The traditional material culture in the Marshall Islands has come under heavy pressure. Many western items and products have replaced the traditional ones, in some cases even if the western ones are inferior or economically less sound.

One tool is an exception: the breadfruit peeler or *Libbukwe in kabwiro*. The peeler is a cowrie shell with a ground edge on one end and a hole punched into the other end (see figure). It is held with the basal (slotted) side towards the palm of the hand, it is moved downward and away from the body and basically

functions like a carpenter's plane or a modern potato peeler. The sharp edge cuts off the skin, which leaves the shell through the hole in the other end. These tools are remarkably rapid and effective, superior to any European tool for peeling breadfruit.

The peeler, which can be made from a clean shell in about 15-20 minutes, takes just as much rind off the breadfruit as needed, but not too much. Thus, not only is it easy to use and non-corroding in the harsh climate, it is also the most economical tool, far superior to western iron knifes.

The raw material for [peelers] are either tiger cowries (*Cypraea tigris*) or their close allies in size and ornamentation, Mauritian cowries (*Cypraea mauritiana*) which are amongst the most popular shells of the tropics and adorn mantelpieces worldwide. *Cypraea tigris* has a distribution throughout the Indo-Pacific

region. The mollusks feed mainly on sponges but also browse on other tiny animals and plants. Their habitat is predominantly sandy patches between rocks and corals on the reef. During hours of intensive sunshine the cowries hide under overhanging boulders.

In the ethnographic record of Micronesia two main types of breadfruit *peelers* can be distinguished: The dorsal side of the shell has a large hole ground into it at both the anterior and posterior end. Usually the hole at the posterior end is larger than the one at the anterior end. A variation is to grind only one hole and to knock in the second one, thus giving only one working edge, the ground one. Specimens are known from the Marshall Islands, from the Marquesas, from Hawaii and the Society Islands.

For the other version the anterior (front) end of the shell is cut off cleanly. The columellar side is broken off at the posterior end to allow the breadfruit peel to emerge. Such specimens are known from Chuuk, and atolls in the Eastern Carolines, such as Pulowat and Satowal, but apparently also from Mangareva (Eastern Polynesia).

**Bibliographic citation**

URL: http://marshall.csu.edu.au/Marshalls/html/essays/es-tmc-4.html
Photo credit: Digital Micronesia http://marshall.csu.edu.au

**Pearl Shell Coconut Scrapers:** Terry Rutkas

The coconut tree (*Cocos nucifera*) is the supermarket of the tropics. More useful products are produced from this single plant than there is room to mention in this article, but one has been a staple in Oceanian diets from time immemorial: *coconut cream*. Not the drinkable coconut water you first think of, but the milky liquid squeezed from coconut flesh.

A Pearl shell blade, often with a serrated end, is used to rasp the flesh from inside a coconut half-shell. The fine white shavings are squeezed to produce a creamy liquid that is used in cooking or as a condiment. The scraper blade is fastened to a short stick or board, sometimes as part of a special stool so the "cook" can sit on the board leaving his hands free to scrape the inside of the nut against the blade.

## HOLD THE DATE

*upcoming shell club meetings*

Sunday, February 12

Sunday March 12

Sunday, April 9

Sunday May 7th :

**NOTE:** ***This is the FIRST Sunday***

Sunday, June 11

Sunday, October 8

Sunday, November 12

Sunday, December 10

**February Meeting: SUNDAY, February 12, 2006**
**1:30 pm — 4:00 pm**

**PROGRAM: Shelling in Puerto Nuevo**
**"Sweating the Small Stuff"**

**Shawn Wiedrick** will present his recent shell collecting trip to Puerto Nuevo, Baja California.

**March Meeting: SUNDAY, March 12, 2006**
**1:30 pm — 4:00 pm**

**PROGRAM: An Easter Island Experience**

**Paul Kanner** traveled to Easter Island in January and will share his diving and shelling experiences with us.

**Location: Natural History Museum of Los Angeles County**

900 Exposition Boulevard, Los Angeles (Exposition exit from the 110 Freeway–follow the signs). Park in the west parking lot or, if it is filled, in the pay lot immediately west of the museum (the pay lot will cost $5).

Enter at the staff entrance which is located at the bottom level of the museum, on the left side of the main Museum entrance on Exposition Boulevard. The security guard can direct you to the Times-Mirror Room.

***refreshments are potluck***



Pacific Conchological Club

2447 Kemper Avenue
La Crescenta, CA 91214

**DATED MATERIAL**