

**S**OUTHERN  
**C**ALIFORNIA  
**A**SSOCIATION OF  
**M**ARINE  
**I**NVERTEBRATE  
**T**AXONOMISTS



May/June/July/August, 2011

SCAMIT Newsletter

Vol. 30, No. 1&2



Bursid larval shell. Probably juvenile *Crossata californica*.  
 Collected at OCS station SM\_31, 26 July 2010, 59m.  
 ID by Dr. Beu. Photo by K. Barwick. Scale bar = 1mm.

**This Issue**

16 MAY 2011, CYLINDROLEBERIDIDAE, CSD .....	2
UPCOMING MEETINGS .....	2
13 JUNE 2011, OLIGOCHAETA, NHMLAC .....	3
8 AUGUST 2011, MORPHBANK, SCCWRP .....	4
SCAMIT OFFICERS .....	10

The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

### 16 MAY 2011, CYLINDROLEBERIDIDAE, CSD

Larry Lovell started by announcing upcoming meetings: 13 June will be a meeting on Oligochaeta with Dr. Joshua Mackie from SJSU. The meeting will be held at the NHMLAC and Dr. Mackie will be speaking on the taxonomy, barcoding, and ecology of oligochaetes. There will be no meeting in July due to field sampling.

On 15 August members will meet at SCCWRP in the large conference room for a Morphbank image submittal workshop. Deb Paul will lead sessions on both Morphbank online, and spreadsheet, submittal systems. This will be a hands-on workshop and attendees are asked to bring 10-20 images to upload.

The 12 September meeting will be at Lilly Pad Environmental. Megan Lilly will conduct an Enteropneusta workshop. She asked potential attendees to collect specimens during their July survey work so that fresh material would be available for study.

17 October will be a presentation by Tony Phillips on the B'08 Ecnoplana fauna. We will be meeting at OCSD.

Ron Velarde will continue this theme at the 14 November meeting at CSD, where he will review the Syllidae of the Bight'08 project.

After upcoming meetings it was time for other announcements of interest. There will be an Ed 5 update meeting by the Species List Review committee. The initial meeting for this purpose was held Feb 28 at SCCWRP where Don Cadien was elected project lead. July 1 was set as the target date for release of the new edition, Ed 6.

SCAMIT continued its tradition of having an information table at the SCAS meetings this year (May 2011). Larry and Cheryl were able to recruit a few new members as well as catch up with current members who stopped by.

Other professional meetings include the WSM and SMMAC who will be having a combined meeting in La Paz, Mexico on June 27-30.

The WSN will be holding their annual meeting from November 10-13 in Vancouver, WA.

A call went out for future meeting suggestions. Don Cadien said he was working on recruiting Jim Thomas for a meeting on Leucothoidae. Dean Pasko suggested a meeting for establishing protocols and conventions for level of taxonomic effort for specific groups. This would address differing levels of expertise which can make it difficult to reach consensus amongst the agencies.

#### UPCOMING MEETINGS

**27 August 2012. 9:30-3:30.** Spionidae at NHMLAC (education classroom, second floor). Meeting lead visiting scientist Dr. Vasily Radashevsky.

**10 September 2012. 9:30-3:30.** Crustaceans and crustacean biodiversity at NHMLAC (Collaboratory / Marine Biodiversity Center, Ground Floor). Meeting lead visiting scientist Dr. Gary Poore from Museum Victoria in Melbourne (Australia).

**22 October 2012. 9:30-3:30.** Sponges at NHMLAC. Meeting lead visiting scientist Dr. Dave Elvin, co-author of "*The Sponges of California*".

**5 November 2012. 9:30-3:30.** Mollusks - *Lirobittium* and *Tellina* at OCSD. Meeting lead Kelvin Barwick.

**10 December 2012. 9:30-3:30.** Echinoderms - Amphiuroidae, Phylloporidae, and *Parastichopus* spp. at CSD. Meeting lead Megan Lilly.

**14 January 2013. 9:30-3:30.** Flatworms of the SCB at OCSD. Meeting lead Tony Phillips.



The Cylindroleberididae workshop at CSD was a review of species taken in the SCB, tools used to distinguish them, and character states to be evaluated. Ron Velarde provided some hand outs. The presentation began with the WoRMS website on the family. Subfamilies are in use, and will be added to the Ed 6 SCAMIT listing. Genera found locally include *Bathyleberis*, *Xenoleberis*, *Diasterope*, *Leuroleberis*, *Parasterope*, and *Postasterope*. The details of individual limbs, the general body proportions, and details of carapace ornamentation, are all needed for ID. Differences in male/female antennae and mandibles present a problem in defining species. Ron has investigated these differences and has files available for distribution (these will be posted in the Taxonomic Toolbox). Additionally, problems exist in the literature with regards to figures and defining views presented. There are also differences in setation of the inner and outer faces of the mandibles, and it is seldom clear in the literature which view is represented. Are setae on both sides or not??? Ron suspects that they are for some species, but the lack of view definition in the literature leaves this open to question. As a start, he will produce a matrix for people to fill in data for both sides (R and L) of local species. We can all contribute to confirmation of the R/L character symmetry or asymmetry. Please help complete the character table matrix. For additional information on these ostracods consult the Taxonomic Toolbox.

### 13 JUNE 2011, OLIGOCHAETA, NHMLAC

The first order of business was upcoming meetings, which were the same as those announced the previous month and are not repeated here.

Dr. Mackie of SJSU was then introduced as the guest speaker of the day. He gave a presentation titled, "Uncanning Worms – biodiversity and change in aquatic oligochaete communities". His PowerPoint presentation is available on the website in the Taxonomic Toolbox. His presentation was based on his published study, (Mackie, JA, *et al*, 2010) and the abstract from the paper is presented below.

#### Abstract

"The oligochaete *Limnodrilus hoffmeisteri* at Foundry Cove (FC), New York evolved genetic resistance to cadmium (Cd) and lost resistance after contaminated sediments were removed by dredging. Selection (on survival time in dissolved Cd) was used to generate tolerance to evaluate fitness cost, the commonplace expectation for evolutionary reversal. The hypothesis that gene flow from neighboring populations could "swamp" resistance was addressed by 16S rDNA sequences. In disagreement with the cost hypothesis, selected-Cd tolerant worms and controls showed no difference in total fecundity or growth rate in environments. Highly-Cd-tolerant worms of the FC-selected population grew rapidly at different temperatures and showed no growth impairment in the presence of Cd, indicating metabolically efficient resistance. Genetic structure at FC was consistent with invasion of genotypes from an adjacent population in the time since dredging. Applying selection to lines from FC and a reference site, demonstrated a more rapid increase in Cd tolerance in FC-origin lines, indicating standing allelic variation for resistance at FC (despite phenotypic erosion). The selection experiment supports the view that resistance is simply controlled--probably by one allele of large effect. Whether such rapid "readaptation" could occur naturally is an important question for understanding broad effects of pollutants."



Following his talk Dr. Mackie made some general comments regarding oligochaete diversity and systematics (which are also present in his PowerPoint presentation). There are about 5,000 described species of clitellates (earthworms, leeches), and around 3,700 megadrile oligochaetes, mostly terrestrial with the rest being aquatic. It is an open question as to how many undescribed aquatic species might exist.

Useful somatic characters for identification can be found in several papers by Erseus or Christofferson. Dr. Mackie commented on genetic work on oligochaetes; it is moving forward with 16s, 18s, and CO1 being the most used sites. Erseus now examines genetics with every new species he describes. So far, CO1 barcoding efforts with oligochaetes are promising. Kvist *et al* have a series of papers reporting well supported groupings with the CO1 locus only. A Mackie *et al* paper in prep will present work on California marine oligochaetes using CO1. He suspects there are at least 70 marine oligochaete taxa present in California, with 80-90 possible.

Examination of specimens brought by Dr. Mackie took place in the afternoon. We also reviewed local material of *Grania inserta*, and *Tubificoides* species.

## BIBLIOGRAPHY

Mackie JA, Levinton JS, Przeslawski R, Delambert D, Wallace W. 2010. Loss of evolutionary resistance by the oligochaete *Limnodrilus hoffmeisteri* to a toxic substance –cost or gene flow? *Evolution*. 64(1): 152-65.

## JULY 2011

There was no meeting in July due to the heavy field schedule for most of the local monitoring agencies.

## 8 AUGUST 2011, MORPHBANK, SCCWRP

Attendance: Larry Lovell – LACSD; Katie Beauchamp – CSD; Laura Terriquez – OCSD; Ken Sakamoto – OCSD; Tony Phillips - Independent; Kelvin Barwick – OCSD; Cheryl Brantley – LACSD; Wendy Enright – CSD.

SCAMIT was happy to have Deb Paul from Morphbank come in from Florida to talk about processing image submittals from the web and also how to use the bulk upload worksheet. She reminded us that the morphbank website has links for presentations from previous workshops. Got to: [www.morphbank.net/docs/Presentations](http://www.morphbank.net/docs/Presentations)

Deb started with some news items: Morphbank is working with Australia to catalog the life-forms of the entire country (Atlas of Living Australia). This will be a comparatively static site. The second news item was that Morphbank received a new grant to fund digitization of biocollections and to ensure that the data are interoperable. There are now 3 mirrors for Morphbank; Sweden, Finland, and Australia. Another change is that now there are fewer required fields and objects when submitting images via the web. Also there has been improvement on the name query feature. They are working on a new workbook validation tool which is almost ready! Future goals include allowing users to convert workbooks to xml themselves; Morphbank is also looking into further open source options.



With that Deb started the main topic of the meeting, image submittal best practices:

- gather your data beforehand
- make sure your file names are appropriate
- documents on SCAMIT workshop: manual, names/tsn/scamit\_id
- be sure uid #s are truly unique as appropriate
- try to put your EXEMPLAR image first in the list (this will be your thumbnail) and you may choose to submit it to the Encyclopedia of Life
- when submitting via the web, be sure you show as being part of the SCAMIT group (you can change your default group in your account settings)
- you can upload accessory data first and then your images or you can add the data from within the image upload form

For the workbook bulk image submittal, be sure to fill out all the stippled fields (these are required). Deb has written a very helpful instruction manual that will be placed on the SCAMIT site in the Taxonomic Toolbox along with the SCAMIT/Morphbank unique identifier worksheet and the station list for all Bight projects and regular stations from each major POTW.

To submit a workbook, go to the ftp site:

- hostname: [ftp.morphbank.net](ftp://ftp.morphbank.net)
- username: morphbank5
- password: LersarbOk6

Upload all images and your workbook. Deb will check them and let you know if there are significant edits to be made or if they are good to go.



Please visit the SCAMIT Website at: [www.scamit.org](http://www.scamit.org)

### SCAMIT OFFICERS

If you need any other information concerning SCAMIT please feel free to contact any of the officers at their e-mail addresses:

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Hard copy back issues of the newsletter are available. Prices are as follows:

Volumes 1 - 4 (compilation).....	\$ 30.00
Volumes 5 - 7 (compilation).....	\$ 15.00
Volumes 8 - 15 .....	\$ 20.00/vol.

Single back issues are also available at cost.

The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is \$15 for an electronic copy of the newsletter, available via the web site at [www.scamit.org](http://www.scamit.org), and \$30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is \$60. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT

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Sept/Oct/Nov/Dec, 2011

SCAMIT Newsletter

Vol. 30, No. 3&4



*Odontosyllis phosphorea*  
 Monterey Bay  
 (c) Leslie Harris, 1999

**This Issue**

12 SEPTEMBER 2011, ENTEROPNEUSTA, LILLYPAD ENVIRONMENTAL .....	2
17 OCTOBER 2011, B'08 ENOPLA, OCSD .....	3
14 NOVEMBER 2011, SYLLIDAE, NHMLAC .....	4
8 DECEMBER 2011, LEUCOTHOIDAE, NHMLAC .....	5
12 DECEMBER 2011, PARAONIDAE, NHMLAC .....	7
BIBLIOGRAPHY .....	8
SCAMIT OFFICERS .....	9

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**12 SEPTEMBER 2011, ENTEROPNEUSTA, LILLYPAD ENVIRONMENTAL**

Attendance: Megan Lilly, CSD; Dean Pasko, OCSD; Larry Lovell, LACSD; Terra Duvall, LACSD; Don Cadien, LACSD; John Ljubenkov, DCE; Wendy Enright, CSD; Ken Sakomoto, OCSD; Laura Terriquez, OCSD; Crissy Attardo, SCAMIT Intern.

The meeting was opened by Megan Lilly. She began by introducing Crissy Attardo, the new SCAMIT intern and discussed the project for which Crissy had been hired. Crissy will be working with biologists at the various agencies to collect personal ID or voucher

**UPCOMING MEETINGS**

Visit the SCAMIT website at: [www.scamit.org](http://www.scamit.org) for the latest upcoming meetings announcements.

sheets and information on species for which there is nothing in the Taxonomic Tools section.

Next to take the floor was Larry Lovell. He started with upcoming meetings. A new meeting has been added to the upcoming line-up. In October Jim Thomas will join us to work on Amphithoidae. He is planning a field trip to Newport Bay as it is the type locality for a rare local species. Also the date for the SCAMIT Christmas party is being narrowed down to either December 3 or 10. Final date will be announced in the future.

Larry then talked about topics for which we would like to have meetings in the future.

Dean Pasko's idea of having a meeting to address taxonomic conventions was raised again.

Additionally we would like to have a meeting to discuss curatorial and vouchering best practices. Maintenance, databasing, vouchering of specimens should all be covered. What are the various agencies doing? We could compare notes and ideas.

The taxonomic database project was covered at length with regards to the involvement of SCCWRP and how all the editions of the SCAMIT Species Listing will be available, back to the original Edition 1.

The annual SAFIT meeting will be 11 November in Davis, CA and Larry Lovell will be attending as the SCAMIT representative.

It was announced that emends for Ed 7 are being accepted. Members are asked to send any emend suggestions to Don Cadien. The suggestions will be discussed and reviewed by the Species List Committee before final inclusion in to Ed 7.

Dean Pasko then had the floor and talked about a presentation by Eric Stein at SCCWRP regarding the DNA project. Dean said it was a good, clear presentation which discussed such items as best preservation techniques for DNA work, and there was an emphasis on the continuing value of morphology based taxonomy.

With that it was time for the subject of the day, enteropneusts. Megan started out by discussing two papers she'd been reviewing (Cameron et al 2010 and Deland et al 2010) to try and determine if it would be possible, based on our current taxonomic abilities, to take our enteropneust specimens further than a genus level ID. Based on her research she felt there might be one or two characters that could be found without serial sectioning, but that they might be difficult to find and she was working on trying to test them out. At this point, Dean Pasko mentioned that some attendees might need Megan to back up a little and start with more basic enteropneust taxonomy and identification techniques.

Megan then stated that she felt the enteropneust chapter in the MMS Atlas (Woodwick 96) is the most useful literature for identifying specimens to genus level. She then reviewed the morphological features needed for identification and discussed the four common genera seen in the monitoring programs of most of the So Cal POTWs.



After reviewing the literature and discussing characters it was time to look at specimens. Most attendees had brought specimens for dissection and examination and the afternoon was spent looking at them. OCS D attendees had brought a very large specimen of the genus *Schizocardium* and it initially threw a few people. There is a “seam” or “groove” present in *Schizocardium* that becomes much more pronounced as they grow. If one is not careful it can at first glance be mistaken for a genital lappet or genital wing which would send someone the wrong direction in the key.

The other genus of interest was *Saccoglossus*, as some of the agencies don't see it often and wanted to clarify the circular muscle aspect of the proboscis. Additionally, this is one genus where species level ID might eventually be possible thanks to recent work.

All in all it was a productive afternoon and Megan hoped that most people returned to their offices with a better grasp of enteropneust morphology and taxonomy.

### 17 OCTOBER 2011, B'08 ENOPLA, OCS D

Attendance: Megan Lilly, CSD; Laura Terriquez, OCS D; Wendy Enright, CSD; Chase McDonald, LACS D; Don Cadien, LACS D; Tony Phillips, Independent consultant; Kelvin Barwick, OCS D; Larry Lovell, LACS D; Ken Sakomoto, OCS D; Dean Pasko, OCS D.

Larry started the day by announcing that the SCAMIT website has undergone some minor renovations and is currently up to date.

10 December has been decided upon as the date for the SCAMIT Christmas Party. It will be held again at the Cabrillo Marine Aquarium. It will be a joint holiday party between SCAMIT and SCAITE.

Don Cadien then took the floor to talk about the EPA's presence on the west coast to conduct a workshop during which they will begin to finalize a national benthic index for coastal reports. The EPA wants a standardized index for all coasts. There is a European index called AMBI. When AMBI was tested in southern California it did not work as well as in Europe, or as well as the local BRI index. The original premise was that an animal will behave the same regardless of location but this seems not to hold true. Larry and Don both are in the process of reviewing the national species list for taxonomic accuracy with regards to nomenclature.

With that it was time for Tony Phillips to start his presentation on the enoplans of the SCB based on his B'08 specialty taxonomist work. Tony had created thorough and useful voucher sheets for each species he encountered. His presentation consisted of discussing each of the species and showing us the information he had gathered on each one. He handed out a hard copy set of the sheets for each of the agencies represented at the meeting. Many of the sheets included colored drawings in addition to digital photos of the animal both in uncleared and cleared states. All of the information and sheets that Tony presented at the meeting can now be found on the SCAMIT website in the Taxonomic Tools section. Tony's voucher sheets on this notoriously difficult group will make it easier for us to maintain consistency in our identifications during the B'13 project.



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**14 NOVEMBER 2011, SYLLIDAE, NHMLAC**

Larry Lovell started the day with his usual business announcements regarding upcoming meetings. In addition, two new polychaete taxonomists-in-training who both were hired at the City of San Diego lab were introduced – Dr. Peter Vroom and Matt Nelson.

SCCWRP will now be partnering with SCAMIT on the development of the Taxonomic Database. Dr. Steve Steinberg, the new head of Computer Services and the CEDEN lead, will be directing their effort. Wendy Enright is getting the Ed 6 Species List into Access and ready for uploading. SCCWRP will then continue working with the Test Bed site Katja developed to further improve and add to it. Data being added to the database include historical Bight project data, POTW data sets, and website links. SCCWRP is particularly interested in developing a P-code name update tool and links to provide access to BRI and SQO instructions and tools.

There was discussion on the QA/QC effort to develop a unified QC plan for benthic sample processing (sorting and taxonomy) modeled on various in-house lab and past Bight program QC programs. SAFIT has a QC program in place with SWAMP for freshwater sample processing. We also discussed taxonomic QA and training/certification. SAFIT and SCAMIT both feel that certification is a weak approach to ensuring taxonomic sufficiency and that interaction at organizational meetings, workshops, and QC feedback are of more practical value to learning and staying current with taxonomic standard practice. CTAG has recently requested that SCCWRP become involved in helping POTW labs develop SWAMP compatible QA/QC protocols. Ken Schiff will be leading that effort.

Next Ron Velarde took the floor to begin his discussion of Bight'08 Syllidae. Ron had participated as a specialty taxonomist for Bight'08 identifying all Syllidae specimens collected. Ron was presenting information on the species identified.

Ron had handouts that he distributed to all present. He also provided digital files to those at the meeting with computers or thumb drives. Those digital files contained two major folders, one containing PDF's of many important published papers on the family, and the other with working folders on each subfamily with PDF's of pages from SCAMIT handouts and the local syllid literature pertaining to all the species in the current SCAMIT species list. Ron explained that there is ongoing revisionary work in the family and that he expects several changes to the species list next year.

Ron presented a PowerPoint overview of the family discussing the important character states and the subfamilies. What is a syllid? All syllids have a proventriculus. The Autolytinae are without ventral cirri. In Eusylline the dorsal cirri are not beaded and the proboscis is armed with a single tooth or trepan. Exogoninae is composed of smaller individuals and palps are fused in most. The Syllinae have beaded antennae, peristomial cirri, and tentacular cirri. The Anoplosyllinae, a newly erected subfamily containing *Syllides* and *Streptosyllis* locally, have a proboscis that is unarmed, curved dorsal simple setae, and dorsal cirri beaded or irregular.

Ron reviewed each subfamily commenting on all species, showing the PDF files with original descriptions or voucher sheets for provisionals. By afternoon's end, the group was thoroughly syllidized and requested that Ron follow up this literature review with a hands-on review of specimens ID'd from Bight'08. Ron agreed and an additional meeting will be scheduled for next spring.



**8 DECEMBER 2011, LEUCOTHOIDAE, NHMLAC**

Attendance: Ron Velarde, CSD; Chase McDonald, LACSD; Adam Wall, NHMLAC; Phyllis Sun, NHMLAC; Larry Lovell, LACSD; Katie Beauchamp, CSD; Doug Diener, Independent; Don Cadien, LACSD; Carol Paquette, MBC; James Thomas, NOVA

Jim Thomas presented his talk from the Aberdeen, Scotland Census of Marine Life meeting earlier this year. He then outlined the situation with the amphipod family Leucothoidae on the West Coast. Several species are reported to occur here, including *Leucothoe alata*, originally described from material collected in Newport Bay (J. L. Barnard in Barnard & Reish 1959). Earlier records also suggested *Leucothoe spinicarpa* occurred here, but following recent reinvestigations of this supposedly nearly “cosmopolitan” species by Jim, these records have fallen into question. Two other related species were also described from Newport Bay, *Leucothoides pacifica* and *Anamixis linsleyi*. These two are now recognized as the two sexes of one species, and should be reported as *Anamixis pacifica*.

In collections made in San Diego Bay in the spring of this year Jim Thomas had seen another unfamiliar color morph of *Leucothoe*, living in masses of *Ciona intestinalis* on buoys. He photographed this, and collected several individuals. Morphological examination confirmed that these were not the same as *L. alata*, but their identity was unclear. After further investigation and dissection they proved to be *L. nagatai* Ishimaru 1985, a species known from Japan, but not previously from California.

This species has an interesting nomenclatural history. It was originally reported by Nagata from Japanese waters as *L. alata* (Nagata 1965). Ishimaru (1985) later reexamined Nagata’s material and realized it was not true *alata*. He named the species after Nagata.

Early on the day of the meeting Jim Thomas, Don Cadien, Adam Wall and Phyllis Sun all ventured out onto the cold docks in Newport Harbor in an attempt to collect topotypic material of *L. alata* for comparison with the recent *L. nagatai* material and to confirm the details of Barnard’s original description. Numerous tunicates were examined on several different public docks in the Bay, although the original type location no longer exists. While there were not as many specimens collected as in San Diego, the docks did yield a number of *Leucothoe*. Initial examination suggested that several different color morphs were present, but existence of both *L. alata* and *L. nagatai* needed confirmation under the microscope. Upon return to the Natural History Museum for the meeting, we found that Ron Velarde had brought along a number of live specimens of leucothoids taken during sampling within San Diego and Mission Bays, and also offshore. The two samplings provided a fine base for reconsideration of the local fauna. Attendees also brought a number of preserved lots collected over the last few decades from the SCB.

#### General Ecology of *Leucothoe*

Species in this genus are commensal in all known cases. Usually the host is a solitary ascidian, but some species are associated with social or colonial ascidians or sponges. The amphipods sit inside the lumen of the host body (if a solitary ascidian), within the vascular system (if a sponge), or on the surface of the host (compound/social ascidians). They are usually present in pairs or in pairs with offspring. Presence of additional adults often results in agonistic encounters in which the extra non-paired individuals are driven out or killed.



Feeding is by filtering the host respiratory current with setae on the enlarged second gnathopods. No damage is done to the host, and host tissues are not consumed. The exception is with compound/social ascidians, where surface refuges are formed by pulling the host tissue over the nestling amphipod, possibly resulting in some damage to the host. Feeding individuals may remain motionless within the host for some time, but animals also actively exit and reenter the host when they so desire.

Hosts for specimens examined included *Ciona intestinalis*, *Haliclona* sp, *Aplidium californicum*, *Ascidia ceratodes*, and *Styela plicata*.

Examination of specimens from SD Bay and Newport Bay.

In the combined material we expected to find both *L. alata* and *L. nagatai* and we did. We also found representatives of two other taxa, both seemingly undescribed. The first of these was from a San Diego PLOO station offshore from Pt. Loma in about 35m of water (*L. sp* SD1). This was represented by a single individual similar to *L. spinicarpa* in general appearance, but different in detail. This may be the same species previously reported as *L. spinicarpa* locally, or only one of several species reported under that name. Specimens of *L. nagatai* were examined from the morning collections in Newport Bay, from the live San Diego Bay samples Ron contributed, and from preserved specimens from southern San Diego Bay earlier in 2011 (SPAWAR), and from Los Angeles Harbor samples taken in 1979 and 1994 (Carol Paquette).

The second species was represented by one specimen and a partial molt in living material from Mission Bay (*L. sp* LAN). This species was in between *alata* and *nagatai*, and exhibited some characters best represented by Nagata's original figure of *L. alata* from Japan. Partial descriptions follow:

*L. sp* LAN. Mission Bay material – Male

G1 head margin evenly oblique; right mandible incisor less dentate than *L. nagatai* - more dentate than *L. alata*; raker row spines a series of 14-15 robust spined setae, none flattened into a lacinia-like process.

G2 carpal lobe dentate bluntly serrate, not crenulate as in *L. nagatai*; palm oblique from insertion of dactyl with 5 strong protuberances with gaps in between followed by 4 small protuberances; basis of anterior margin has 19-20 short widely spaced setae, posterior margin lacking setae, distal margin slightly crenulate in the lower 1/3.

Maxilliped inner plate ventral margin has two very stout setal spines, proximal margin has three stout deeply imbedded setal spines on either side. Viewed at 40X.

*L. sp* SD1 – PLOO – G1 dactyl long. R. Velarde. Morphological notes on this species will be provided later

*L. nagatai* - SD Bay July 2011. D. Cadien via T. Phillips.

This species has shorter antennae than the following, and the condition of the basal article of the flagellum of the first antenna provides a useful separatory criterion for the two. In *L. nagatai* this article is much smaller than in *L. alata*, being half or less the length of the second article. There are also differences in the relative proportions of the articles of the maxilliped. The two are definitively separated, however, on the structure of the mandibular raker row. In *L. nagatai* the distal 5 spines are flattened and broad, a condition not seen in *L. alata*. There are also differences in the mandibular incisor and in the lacinia mobilis of the right mandible. These differences were found in all examined material, including material from the Introduced Species Sampling (ISS) from throughout southern California, the live material from Newport, San Diego and Mission Bays, and historic collections from San Diego and Los Angeles Harbor.



*L. alata* - Redondo Beach intertidal. In *Haliclona* sp. May 1972.

Longer Ant 1 and 2.

G1 nail of dactyl longer, carpus anterior margin is minutely crenulate along entire margin, inflated per the figure, posterior margin of propodus minutely crenulate.

G2 - mesial side without setae, mediofacial with single row of sparse seta running whole length of carpal axis, carpal lobe marginally smooth, anterior margin of the basis with 3 very short widely separated setae, anterior ventral margin with 2 setae.

Maxilliped strongly alate, inner margin of outer plate not crenulate.

We also examined specimens closely matching the description of *L. alata* from Pequegnat's Reef, southeast of the mouth of Newport Bay off Laguna Beach in 1976. These collections contained fully adult males and females, and a good growth series of *L. alata*, allowing all details of the original description to be confirmed from other material. No specimens of *L. nagatai* were present in this sample, so it is assumed that the introduction of *L. nagatai* most likely took place sometime between 1976 and 1979. Examination of other historic samples in museums should allow this to be refined or verified.

### 12 DECEMBER 2011, PARAONIDAE, NHMLAC

Attendance: Ron Velarde, CSD; Larry Lovell, LACSD; Michael Reuscher, Texas A&M – Corpus Christi; Veronica Rodriguez-Villanueva, CSD; Cheryl Brantley, LACSD; Brendan Barrett, EcoAnalysts, Inc.; Leslie Harris, NHMLAC; Mike McCarthy, OCSD; Dot Norris, CCSF/PUC; Peter Vroom, CSD; Kelvin Barwick, OCSD; Kathy Langan, CSD

President Larry Lovell opened the meeting with announcements of upcoming meetings and other SCAMIT business.

The topic for the day was Paraonidae, and Dr. Michael Reuscher from Texas A&M, Harte Research Institute, gave the morning Power Point presentation. His work was performed in the Gulf of Mexico where paraonids make up 37.5% of the total macrofauna. Polychaetes occur in high densities, up to 10,000/sq. m. Paraonids can be motile or semi-sedentary and surface or subsurface feeders. Most species have separate sexes.

Michael described characteristics of the largest genera, *Aricidea*. Some species have long antennae; branchiae start on setiger 4; the first 2 segments have small notopodial lobes; some species have well developed neuropodial lobes; the notopodial lobes are usually well developed, except in the first 2 segments.

The differences in the modified setae in the post-branchial ventral fascicle were explained for the subgenera of *Aricidea*. In *Allia*, there are stout modified neurosetae and some species have spines. In *Aricidea*, some species have pseudocompound setae and some have a subterminal spine. In *Acmira*, there is a regular transition between the capillary setae and the spines. The spines can have hoods or different ornamentation. There are no modified setae in the subgenus *Aedicira*. A discussion ensued about the transition setae, variation within some species of *Aricidea*, and how wear and tear can affect the morphology of modified setae making species identifications difficult. Michael expressed an interest in using Scanning Electron Microscopy to aid in resolving some of these issues. There are problems with light microscopy regarding angle of view of the setae, e.g. bidentate versus 2 teeth.



The next two genera discussed were *Cirrophorus* and *Paradoneis*; species of both genera possess lyrate “harp-shaped” setae. They often start around setiger 3 or 4 and extend posteriorly. An inferior posterior view is the best for viewing the lyrate setae. There is no terminal sensory organ present on the prostomium. One difference between these genera is that *Cirrophorus* has a median antenna and *Paradoneis* has no antenna.

*Levinsenia* was the next genus addressed. Species have a terminal sensory organ at the tip of the prostomium which is sometimes withdrawn so the edge looks uneven. There are saber-type modified setae which can be fringed. SEM images reveal fibers splaying from the blade to create a fringed appearance. There are a variable number of pre-branchial setigers, but always more than three.

Characters of *Paraoides* include a terminal sensory organ on the prostomium, limited pairs of branchiae, and posterior segments with long notopodial lobes. There is some disagreement as to the presence of modified setae in the post-branchial neuropodial fascicles. The capillary setae become long, thin, and brittle. Some taxonomists consider these “modified”; others do not. There are only two species in the genus *Paraonis*. Branchiae start on setiger 6. Michael showed us images of the very unusual modified setae where the spines have thinner spines extending from the terminus, similar to an *Arista*.

There is one species of *Sabidius*, and the prostomium has 3-4 lobes. It is common in the Gulf of Mexico and specimens are small. It often has an everted proboscis and acicular setae.

To summarize, Michael listed the useful characters for generic diagnoses: 1) presence of an apical sensory organ, 2) presence of a median antenna, 3) development of notopodial lobes (distinguishes *Aricidea*), 4) presence of modified notosetae, and 5) presence and type of modified neurosetae.

The rest of the day was spent examining and discussing specimens of Paraonidae which attendees brought to the meeting.

Dr. Reuscher’s informative and entertaining PowerPoint presentation can be found (as a pdf document) on the SCAMIT website in the Taxonomic Tools section.

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Please visit the SCAMIT Website at: [www.scamit.org](http://www.scamit.org)

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The SCAMIT newsletter is published every two months and is distributed freely to members in good standing. Membership is \$15 for an electronic copy of the newsletter, available via the web site at [www.scamit.org](http://www.scamit.org), and \$30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is \$60. All correspondences can be sent to the Secretary at the email address above or to:

SCAMIT

C/O The Natural History Museum, Invertebrate Zoology

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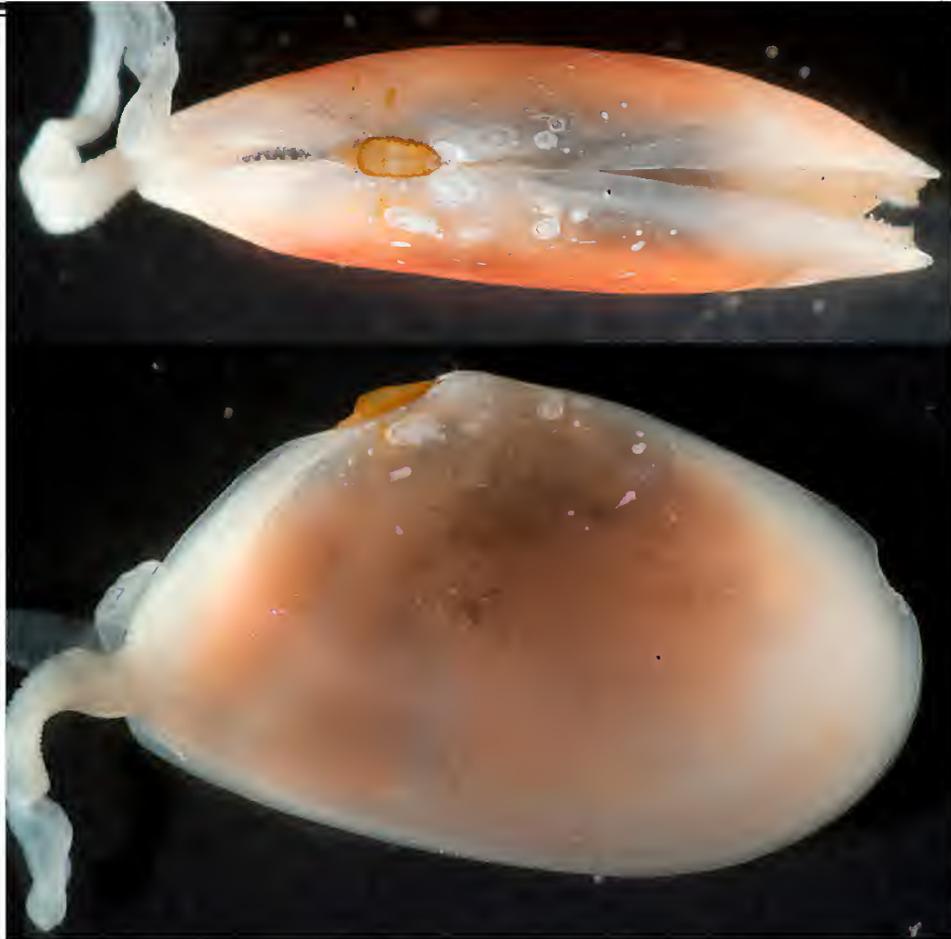
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**M**ARINE  
**I**NVERTEBRATE  
**T**AXONOMISTS



Jan/Feb/March/April, 2012

SCAMIT Newsletter

Vol. 30, No. 5&6



*Tellina cadieni*; Santa Monica Bay, CLA,EMD Station FB15, 46m, 18 July 2012;  
 Image by K. Barwick; Identified by Tony Phillips; Specimen 10 mm

**This Issue**

13 FEBRUARY 2012, ISOPODS, CSD .....	2
19-20 MARCH 2012, BIVALVES, GORGONIANS AND PHORONIDS, SBMNH.....	3
9 APRIL 2012, SCAMIT CURATORIAL PRACTICES AND THE SPECIFY DATABASE, NHMLAC...	7
IN MEMORIAM .....	9
VOUCHER SHEET .....	11
BIBLIOGRAPHY .....	11
SCAMIT OFFICERS .....	12

The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes.

## 24 JANUARY 2012, DIVING AND COLLECTING ADVENTURES WITH ANDY LAMB & TRAWL QA/QC WITH SCAMIT AND SCAITE, CABRILLO MARINE AQUARIUM

There are no minutes from this meeting, but it was reported as enjoyable and informative.

### 13 FEBRUARY 2012, ISOPODS, CSD

Larry Lovell opened the meeting with the usual SCAMIT business during which he briefly discussed the most recent meeting of the Taxonomic Database Committee. Steve Steinberg and Shelly Moore at SCCWRP are now involved with the project and are revamping the architecture of the database. Additionally SCAMIT has hired an intern to find voucher sheets, keys, ID sheets, etc from taxonomist's personal notebooks not yet posted to the website. The intern will visit the various labs scanning new docs and compiling them for adding to the website's taxonomic tool box.

#### UPCOMING MEETINGS

Visit the SCAMIT website at: [www.scamit.org](http://www.scamit.org) for the latest upcoming meetings announcements.

With business over it was time for Tim Stebbins to take the floor and talk about isopods, which he covered in three separate presentations. Tim's first presentation, *Coastal Marine Isopods of the Southern California Bight*, provided an illustrated guide to the isopods known from Southern California Bight ocean monitoring programs or surveys. Coverage included all species listed in SCAMIT Ed. 6 (with corrections) plus additional species recommended for inclusion in SCAMIT Ed. 7. Included in the presentation was a brief discussion of the higher taxonomy of the Isopoda as proposed by Brandt and Poore (2003), followed in WoRMS, and as adopted by SCAMIT in 2011. This included reassignment of the families within four previous long-standing suborders (i.e., Anthuridea, Epicaridea, Flabellifera, and Gnathiidea) to the new suborders Cymothoidea, Limnoriidea and Sphaeromatidea.

Tim's second presentation was a detailed review of the *California Valviferan Isopods (Crustacea, Isopoda, Valvifera)*. Coverage included 35 species confirmed to occur in California waters, plus two additional species. The talk included an overview of the general valviferan body plan, as well as variation in several key characters useful for distinguishing genera (e.g., degree of pleonal fusion, number of articles in the maxillipedal palp, and morphology of antenna 2). This was followed by individual slides for each species that included detailed annotations of distinguishing traits. Tim also provided a new key to the valviferans and sample specimens were available after lunch for attendees to take through and test the new key. This exercise proved very useful in providing feedback to Tim on ambiguous or confusing couplets, which in turn led to a revised key being distributed the following month (March 2012).

Tim's third talk was titled *California "Epicaridean" Isopods, Superfamilies Bopyroidea and Cryptoniscoidea (Crustacea, Isopoda, Cymothoidea)*. Illustrated slides were presented for 21 species in the superfamily Bopyroidea, including 19 species of Bopyridae, one species of Dajidae, and one species of Entoniscidae. Also covered were three species within the superfamily Cryptoniscoidea (one each in the Cabiropidae, Cryptoniscidae, and Hemioniscidae). A handout of the Bopyridae was also provided, which included information on the decapod hosts and range for each species.



In addition to hard copies of each of the above presentations, the following three handouts were distributed at the workshop. PDF copies of the presentations and handouts are also available in the Taxonomic Tool Box on the SCAMIT website.

- Stebbins, T.D. 2012. Key and Notes to California Valviferan Isopods (Crustacea, Isopoda, Valvifera). 24 pp.
- Stebbins, T.D. 2012. California Bopyridae (Crustacea, Isopoda, Cymothoidea, Bopyroidea). 6 pp.
- Stebbins, T.D. 2011. *Probopyria* sp. A (Order Isopoda, Suborder Cymothoidea, Family Bopyridae, Subfamily Bopyrinae). Provisional Species Voucher Sheet. 3 pp. [September 29, 2011]

With Tim's presentation complete, Regina Wetzer mentioned an important image reference source at the Natural History Museum of LA County: <http://isopods.nhm.org>. If you follow this link, choose the Database option from the top menu, and from there proceed to image databases. This isopod image database includes original line drawings for thousands of taxa. These images are from the primary literature and the image itself may contain outdated names, but they are representative of the original designation. You can also get pdf files of the literature.

### 19-20 MARCH 2012, BIVALVES, GORGONIANS AND PHORONIDS, SBMNH

#### Day 1 Bivalves

**March 19 Attendance:** Megan Lilly, CSD; Carol Paquette, MBC; Jeff Goddard, MSI, UCSB; Don Cadien, LACSD; Kelvin Barwick, OCSO; Terra Duvall, LACSD; Bill Power, LACSD; John Ljubenkoy, DCE; Paul Valentich-Scott, SBMNH; Tony Phillips, Independent; Larry Lovell, LACSD; Gene Coan, (Calif Acad of Sci); Bob Dees, SDSC; Dan Ituarte, CSD retired; Wendy Enright, CSD; John Pfeiffer, EcoAnalysts; Eric Hochberg, SBMNH

The first day of the two day SCAMIT meeting dealt with bivalves. SCAMIT members were lucky enough to enjoy the beautiful venue offered by the SBMNH. Attendees met in a small building along the back of the museum property that was surrounded by oak trees and sat above the creek.

There were many new faces so Larry Lovell wanted us to start with "round robin" introductions. Larry then opened the floor for nominations for the upcoming SCAMIT election. Kelvin Barwick nominated the current suite of officers which was promptly seconded by others present.

With that it was time to start discussing bivalves. Gene Coan and Paul Valentich-Scott started off the day with a presentation dealing with their newly published bivalve tome – *Bivalve Seashells of Tropical West America. Marine Bivalve Mollusks from Baja California to Northern Perú*. This newest addition includes a revision to the organization of many of the bivalve families and other systematic changes. It contains a great deal of new information and is a "must have" for those in the bivalve world. And it just so happened that the authors had copies "hot off the presses" for sale.



The first animal to be discussed was *Ennucula tenuis* which is familiar to those of us in the So Cal Bight, but it also ranges in to the Panamic region. The more interesting species was *Nucula exigua*. This is a new animal to their literature. Paul said we should be finding it in our area and its depth range of occurrence is 10-600m. He found and verified a specimen at the Smithsonian which had been collected in San Pedro. However, no one present had seen this animal and Paul asked us to be on the look-out for it. (Its existence in Ed 7 of the SCAMIT Listing is based on the animal Paul examined in the Smithsonian collections).

Our local *Solemya reidi* was synonymized with *S. pervernicosa*. *S. pervernicosa* is found from southeast Alaska to Perú. The authors stated that they have not directly observed this species in the Panamic province. The genus *Solemya* is of particular interest to the monitoring agencies as it is an “indicator” species and can be indicative of disturbed areas. It houses sulfur-oxidizing bacterial symbionts, allowing it to live in areas that would be unpalatable for other mollusks due to hypoxic or anoxic conditions.

The family Nuculanidae has undergone further revision which is evident in the “new” bivalve book. We briefly discussed *Jupiteria pontonia* which can range as far north as San Diego, but is found at depths of 1000 m or more.

Some other specifics that were mentioned:

*Rochefortia grippi* is in fact a valid species, now in the genus *Kurtiella*, but the illustrations in the Taxonomic Atlas and the NEP Bivalve book are actually for a new species: *Kurtiella garfinkleae*.

Also the authors cautioned us to be on the look-out for the two species of *Lyonsia* depicted in the book; *L. californica* and *L. nesiotetes*. We have been too comfortable in assuming that *L. californica* is the only species we could encounter.

After discussing the new book further we spent the rest of the day examining specimens from the various agencies as well as taking a well-earned lunch break.

All in all, a very productive day for bivalve enthusiasts.

## Day 2 – Gorgonians and Phoronids

**March 20 Attendance:** Megan Lilly, CSD; Wendy Enright, CSD; Kelvin Barwick, OCSD; Jeff Goddard, MSI,UCSB; John Pfeiffer, EcoAnalysts; Bob Dees, SDSC; Dan Ituarte, CSD retired; Kan Sakamoto, OCSD; Laura Terriquez, OCSD; Larry Lovell, LACSD; John Ljubenkov, DCE; Terra Duvall, LACSD; Bill Power, LACSD; Don Cadien, LACSD; Carol Paquette, MBC; Eric Hochberg, SBMNH; Beth Horvath, Westmont College.

The second day of the meeting started with Gorgonians. We were privileged to have Beth Horvath of Westmont College (Santa Barbara, CA) present to share her knowledge on this group. Beth had prepared an excellent PowerPoint presentation which is available on the SCAMIT website in the Tools section. She started by talking about some of the current or on-going work to the Order Alcyonacea.

- Many *Clavularia* species should probably be moved to the genus *Anthothela*; this is a genus that requires extensive review
- *Muricella* is under review
- *Lophogorgia* is synonymized with *Leptogorgia*



- *Eumuricea pusilla* is still up in the air
- *Muricea* is a valid genus but is only represented by a VERY few species in California
- *Psammogorgia* is not found in California; comparable-looking species from CA are either in the genus *Swiftia* or could be *Chromoplexaura marki*
- *Heterogorgia* and *Thesea* are two distinct valid genera

In deeper waters the number of families and newly described species is growing quickly. The most common deep water genus is *Plumarella*, primarily as *Plumarella longispina*. We don't encounter this species in our normal monitoring as we don't sample deep enough, but we will have to watch for it during Bight projects.

During her years of work, missing type specimens have been a frustration for Beth. Some species for which the types are missing include: *Leptogorgia chilensis*, *Thesea filiformis* and *T. variabilis*.

The next genus to be discussed in detail was *Leptogorgia*. Beth explained that there is little sclerite diversity in this genus (usually just one type) despite external morphological variation. For example, *L. filicrispa* can be highly variable in color (white, beige, yellow, pink, fuchsia) but sclerite morphology is consistent.

The “red whip” gorgonian that we see in southern California is *Leptogorgia chilensis*, but Beth warned us that north of Pt. Conception this species is rare. In this northern region the diversity of species forms goes up sharply and the common name “red whip” can apply to more than one species. North of Pt. Conception the “red whip” possibilities are *Chromoplexaura marki* (used to be *Euplexaura*; see Williams 2013), and *Swiftia* spp. There are some external gestalt differences to help; for instance, our southern California *L. chilensis* has red coenenchyme and white polyps while *Swiftia simplex* has polyps that are the same color as the coenenchyme.

As for *Thesea*, when looking at sclerite mounts from members of this genus you will find large spheroidal bodies or “plate-like” sclerites. They look like “little chunky footballs” and are distinctive for this genus. They are not always abundant but they are always present. Beth found two species of *Thesea* in Smithsonian collections – *T. variabilis* and *T. filiformis*.

Our two local *Thesea* species, *T. sp A* and *T. sp B*, differ a bit in color and in polyp arrangement. They were examined by Beth and found to have slightly different types of spicules so she agreed that they may well be distinct species; Beth thinks that a full review of the genus as represented in southern California is going to have to be done sometime in the near future—she will be asking for input from us all when she begins that project. Beth then gave us a note of caution regarding *Heterogorgia* and *Thesea*; there is an error in the literature, (Harden 1979), where she discovered that some *Heterogorgia* were mistakenly referred to as *Thesea* (and vice versa).

Beth does not necessarily agree with the synonymy of *Muricia apressa* and *M. californica* suggested by Haderlie, Hand, and Gladfelter 1980. The synonymy was also rejected by Hardee and Wicksten 1996. Two species of *Muricea* we could encounter are *M. californica* which has yellow polyps and *M. fruticosa* which has white polyps. The sclerites of the two are a bit different; *M. fruticosa* has some really BIG, heavily ornamented sclerites (with dense, rounded warts), not seen in *M. californica*.



Beth took a moment here to remind us that colony form might not always be the best diagnostic character as it can vary with environmental conditions and habitat type.

With that we spent some time learning how to do a proper sclerite prep. People who brought voucher specimens were able to do sclerite mounts and have their ID's verified by the expert present. (Beth says that while she might know these creatures better than some, she sure doesn't feel like an expert!)

We broke for lunch after a morning of looking at Gorgonians and resumed in the afternoon with the final phylum of the two day meeting, Phoronida, presented by Dr. Eric Hochberg of the SBMNH. Eric started by telling us that the group is basically in a horrible state from a systematic and taxonomic stand point. The Class, Order, Family are all invalid much less trying to determine genus and species. Not all hope is lost however; habitat and tube type can be helpful taxonomic characters, and if possible one should check to see if the animal is mature which can be determined by looking for the presence of ovaries or testes. Another morphological character of importance is the number of muscle bands. You can take a cross-section of the body and then stain the section with Alcian blue to make it easier to see and enumerate the bands. The muscle bundles will be divided into 4 quadrats separated by septa. The dorsal quadrats will have more muscle bundles. It can also be helpful, if possible, to count the tentacles.

Eric then went on to discuss a few described species that might be in our area. *Phoronis muelleri* has been recorded in Canada. However, it is originally described from Germany so the record is in question. Out of the species listed in his presentation, he stressed that almost no type specimens exist and/or are available for examination. *Phoronis vancouverensis* has a small, horse-shoe shaped lophophore and is white. It is found attached to hard substrates. *Phoronopsis californica* is large, has 1500 tentacles, and lives in straight tubes in soft sediment. Another potential species in California is *Phoronopsis harmeri* of which *P. viridis* is now a synonym. Eric questions this synonymy since *P. harmeri* is described from the Atlantic. Eric took this example to recommend that we try to use West Coast names, not European or Atlantic, as he doubts the suggested "cosmopolitan" distribution for some of these species.

After discussing the numerous difficulties and questions with the group, Eric summarized that unless someone is willing to do serial sections, the ID should be left at genus. And it just so happens that this is the practice of most of the So Cal monitoring agencies. With the exception of *Phoronis* sp SD 1 which has some distinctive features, such as magenta or purple pigment spots at the base of the lophophores. See the attached ID sheet at the end of this newsletter.

After Eric's talk we looked at a few specimens, particularly *Phoronis* sp SD 1 which Megan Lilly had brought. Eric did not recognize it as a described species.

With that we wrapped up a wonderful two days in Santa Barbara and came away with a better understanding of the three taxa addressed.



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**9 APRIL 2012, SCAMIT CURATORIAL BEST PRACTICES AND THE SPECIFY DATABASE, NHMLAC**

Larry Lovell started the day by discussing upcoming meetings and other SCAMIT business. In an effort to plan for upcoming SCAMIT meetings Larry has been reviewing the Bight'08 data and noting taxa groups where the data was lumped due to inconsistent standardization of taxonomy between labs. These problematic taxa groups are a ripe topic for SCAMIT meetings. On this day he started by listing the polychaete groups that are in need of additional assessment. The first group will be addressed at the August 2012 meeting and it includes species of both *Travisia* and *Brada*. Other groups in need of some "refinement" amongst the agencies are:

- *Marphysa* – provisional species
- *Lumbrineris/Scoletoma* issues
- *Pholoe* sp A and sp B, both need voucher sheets
- *Eumida*
- Polynoidae
- *Malmgreniella*
- *Eteone* – there are 8 species reported; is everyone being consistent?
- *Polycirrus* – a continuing problem area!

At this point Larry brought up a point that made all the polychaete workers in the room very happy – Tony Phillips has offered to work on all the B'13 Cirratulids as a "specialty taxonomy group". Speaking of B'13 specialty taxonomy groups, Larry also mentioned that Josh Mackie is willing to work up the Oligochaetes. Of course specialty taxonomy approval is dependent on Bight budget available to support it.

Kelvin Barwick then had the floor and he suggested that polychaete workers meet for half a day and bring their respective literature that they use for the identification of *Travisia* and *Brada*. It would be an afternoon (or morning) of simply comparing literature (no specimens) to see if everyone is on the "same page", both literally and figuratively. Leslie offered to check with Sergio to see if he'd be willing to allow us to pull some information from his manuscript.

Larry then gave a brief update on the work of the SCAMIT Species Review Committee. Don Cadien is in the process of parsing out the various errors, additions and emends into separate categories and will be distributing them for review when complete.

It was then announced that the current suite of SCAMIT officers were re-elected for another year of service.

Larry then mentioned an interesting prospect for SCAMIT. Henry Lee with the EPA office in Newport, Oregon contacted the SCAMIT officers to see if our organization would be interested in participating/leading a workshop review of the abundance and distribution of specific organisms from the Beaufort Sea south and up into the Gulf of California. The workshop, for now, would be targeting Bivalves, Brachyuran crabs, and Chitons as these are all taxa groups which are likely to be impacted by rising sea temperatures and levels and/or are of commercial interest. The



workshop is tentatively scheduled for late August or early September of 2012. It is hoped that if it is successful it will continue in future years and would address other taxa.

With this we wrapped up the business portion of the morning and Dean Pentcheff then took the floor to speak with us about the program Specify. Specify is a specimen databasing system that was created by the University of Kansas and is supported by that organization as well. The program was developed with funding from an NSF grant. It was created with tax dollars and is therefore a free download. It is designed to allow the tracking of specimens along with associated locality info and can be used by many different groups. It was written by biologists for biologists with the benefit of much feedback. It is generalized so that it can be used for specimens ranging from fossils, birds, invertebrates, fish, etc. It also allows for easier data transfer between institutions than many of the other specimen tracking programs.

Next, instead of trying to “talk” us through a database, Dean ran us through a demo installation of Specify and showed a few of its more useful features. Since Specify is free Dean recommended that people should at least download it and “try it out”.

With that we broke for lunch and after a satisfying meal of good food and small talk we returned for an afternoon discussion on best curatorial practices lead by Leslie Harris.

Leslie started by discussing specific requirements for the processing of the upcoming B’13 samples and vouchers. Some things will be changing. For instance she now wants all vouchers double vialled (for instance a ¼ dram vial with animals contained within a 4 dram vial) with the label being in the larger external vial. The size of the internal vial will be determined by the size of the animal being vouchered. For bulk samples, vials housing taxa lots can be stored in 8,16, or 32 oz mason jars with polyethylene foam-lined lids. There will be no more combining of a label and animals in the same vial. If for some reason there is an original “in-house” label it should be moved to the outer vial in combination with the museum label. Labels should be placed in the larger exterior vial so that they read left to right and bottom to top, long-wise. The museum will print up sheets of labels and send them to the participating agencies.

Due to many smashed animals during the last Bight project a new protocol is being developed for how much space animal biomass should occupy in a vial. At a maximum the volume of the inner vial (the one housing the animals themselves) should be no more than 50% specimens. A preferable ratio would be 1/3 biomass to 2/3 ethanol. Sterile cotton balls are still preferred as the “stopper” mechanism for the internal vials. It is better if the cotton is torn, not cut. Pre-formed cotton balls can be ordered from Fisher. The cotton should not touch the animals and make sure there are no air bubbles in the vial after insertion of cotton.

It was suggested that there needs to be a spreadsheet created which shows how the bulk lots are sorted with the same taxa levels for each agency. The agencies still need to agree on how to divide up the taxa lots. It is preferred by the Museum that the bulk samples be sorted at the Family level.

A good example of how LACMNH wants samples curated was accomplished by Moss Landing during their Invasive Species Study. For the voucher lots the Museum created the labels and sent them in sheets. Moss Landing then double vialled the specimens, put the labels in the exterior vial, put the collective vials into Mason Jars, and then drove them down and delivered them to the Museum, basically in a state ready to be accessioned.



NOTE: Since this discussion, the museum has decided that it will only accept future Bight specimens that are vialled by species (voucher lots). That said the vialling protocols outlined above are excellent vialling protocols and should be considered whenever long-term storage of voucher collections and bulk samples is required.

### IN MEMORIAM

In March of this year, 2013, (the newsletter publications are currently running almost a year behind schedule) SCAMIT lost a valuable colleague and dear friend in the passing of John Ljubenkov, or as he was affectionately known by many, “Big John”. SCAMIT will be glad to accept and publish any thoughts, remembrances, stories, etc, that anyone would like to share. We will start the series with reflections on a life-long friendship by our own Don Cadien. If you would like to submit something for publication please email it to either Megan Lilly at: [mlilly@sandiego.gov](mailto:mlilly@sandiego.gov) or Dean Pasko at: [deanpasko@yahoo.com](mailto:deanpasko@yahoo.com).

*“Big John”*

by D. Cadien

I first met John in Junior High School. We were nearly the same age (I under a month older), so we continued to run into one another. While I liked him then, we didn’t become really good friends until High School. We were both members of a group of intellectual geeks that hung out together, and shared a fairly stiff disdain for the common socialization of most members of our class. Not entirely pariahs, but definitely outside the norm. Sports phobic and unable to dance, we had little to interest us in the usual high school social whirl. John lived not too far from the campus, and I used to visit him at home, coming to know his parents and grandfather, his younger brother George and younger sister Yvonne.

Both of us were already very interested in the natural world, and shared observations and questions frequently. From high school we both migrated to Cal State Long Beach and pursued degrees in the Biology Department with Dr. Don Reish as our major professor. While there we both also worked as Recreation Assistants for the City of Los Angeles at the Cabrillo Marine Museum (yes, before it became the aquarium) under the tutelage of John Olguin, and Myra Hess. I eventually left to work in the Malacology Section of the Los Angeles County Museum with Jim McLean.

At Cabrillo we became good friends with Bill Samaris, and participated in the exhumation of Raquel the gray whale near the Union Oil Refinery off the Harbor Freeway. Not only did we lead tours through the tidepools, but we hung out there ourselves in areas up and down the coast. During our tenure at Cabrillo the marine mammal researcher Robert Brownell was also there, and started both John and I on long careers of accumulating scientific literature. We cut our teeth on early Wheldon & Wesley Catalogues, but neither had enough money to buy much (the raise in our hourly wage to \$2.85 was cause for celebration). We also encountered Jay Shrake at Cabrillo, who came to volunteer when John and I worked there. Apparently we were helpful in pushing him towards his career in natural and environmental science, and he remains a dear friend.

At Cal State Long Beach we made many friendships with others in the Biology Department, including Jack Word, Eric Fisher, Jan Findley, and her brother Lloyd, and Rick Brusca. We were both involved with SCIBR (Sea of Cortez Institute of Biological Research), largely an excuse



for students and faculty to get together, exchange stories, and drink beer. John and I made multiple trips to Mexico during this period, usually to Puertecitos, but also to Puerto Peñasco on the mainland side of the gulf. At least once we served as Naturalist Docents for the Sierra Club on a field trip to Puerto Peñasco, teaching a number of interested environmentalists what they were seeing among the invertebrates encountered. Later we performed the same function for the same group on a trip to Punta Piedras Blancas in Central California, an even more memorable trip. Because of cephalopods, John was very interested in bioluminescence, and this trip was permeated with luminescent events. We were trapped in the old coast guard barracks, associated with the lighthouse, by a very heavy storm. The weather curtailed our intertidal explorations, but after it passed provided other benefits. While trapped we discovered the piezoluminescent behavior of wintergreen Lifesavers, and some glues used in product packaging (the electricity had failed, and we were in the dark). Later, in the aftermath of the storm, we discovered luminous insects and earthworms in the wet topsoil during a night-time walk through the adjacent fields. These, added to the luminescent plankton in the surface waters, produced a truly magical experience.

Even life in San Pedro was not without its interesting moments. When not studying or working, John and I used to hang out. During one particularly bored day I remember chasing him around my house, hopping on one leg, with a paring knife gripped between the toes of my other foot. How this came to pass I don't know, but it was fun and led to no damage. In the evenings we would often cruise around in whatever car was available. We were in the habit of seeking out Der Wienerschnitzel locations, pulling up outside, stopping and yelling at the top of our lungs "It's DAS!" in a vain attempt to correct the commercial misuse of German word gender. Often we would listen to music together, sharing new enthusiasms and discoveries, and discussing the pros and cons of composers and performers. At one point, returning from a day-long excursion to the Scripps Library in La Jolla, we heard a strange piece of music on the car radio. Neither of us was familiar with it, or could place it with a composer, or even a century of composition! It proved to be the Queen Mab scherzo from Hector Berlioz's *Romeo & Juliet*. We were galvanized by this piece, and hunted down recordings of it to cherish. Both John and I retain vivid memories of this event; I discussed it with him in the hospital shortly before his death.

For a while our paths diverged, while I went into the army and John didn't. By the time I returned he was still at Cabrillo, and not too long after I went to work for a consulting firm in Costa Mesa. I soon got married, and our mutual social life was curtailed. I still saw John, but less frequently. We would still make trips together; to the desert, to the tidepools, to libraries or museums, to see Jim Lance in Pacific Beach, and to visit Dr S.S. Berry at his home in Redlands. Diminished frequency of contact did nothing to lessen the strength of our friendship. We didn't work together at one place again either, having different employment trajectories. We often saw one another professionally, however, as both were involved in environmental monitoring and research in Southern California. We got a chance to visit at SCAMIT meetings, and both he and I are charter members of the organization. John finally found his soul-mate in Julie, and he married too.

So we were two San Pedro boys with parallel life interests in natural history and music. Both of us also had diabetes after we reached adulthood. So many similarities, but still completely different people. Of the two, John was the more social, and had a broader range of interests and friends. The one time we united in a social action we testified in opposition to the plan to build an island airport in San Pedro Bay. You could tell it was us, we were the ones in the suits and flip-flops. Other than that I always avoided politics, while John found it a major source of both blood pressure and mental stimulation. Every so often I would visit overnight at the ranch, and



would invariably find John up very early watching political news and opinion programs in the wee hours. While I was busily chasing consciousness through caffeine he was already vibrating - railing at the latest fatuity offered up in the political arena. John and I also diverged musically, he devoted to the opera repertoire, and I to new electroacoustic and computer music genres. We still shared many joint passions: the rich sonority of Brahms chamber music, J. S. Bach in general, Berlioz, Beethoven's symphonies and piano sonatas, and the harpsichord sonatas of Domenico Scarlatti to name a few.

He always was, and will always remain a very dear life-long friend, one of a number I've been privileged to have. My memories of him will keep him alive for me, although I will miss seeing him, discussing with him, sharing enthusiasms, and hearing his laugh. He should still be here; he left many interests under-explored and many projects incomplete. But it wasn't to be. Still, his life was very fully lived, if too short. He leaves behind a large group of friends and acquaintances who grew from interaction with him, and will always think of him fondly.

#### VOUCHER SHEET

Attached you will find Kelvin Barwick's voucher sheet for *Nuculana* sp B. This animal has been discussed in previous issues but it is now being formally published as a SCAMIT species herein.

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## SCAMIT Voucher Sheet

Species: *Nuculana* sp B SCAMIT 2013

Group: Nuculanidae

Vol. 30 No. 5&6

Date examined: January 3, 2013

Vouchered by: P. Valentich-Scott & K. Barwick

Material Examined: 1 spm: LACSD Bight 2003 Sta. 4378, 271 m, 18AUG2003  
1 spm. CSD Bight 2008 St. 7045, 261 m, 18JUL2008  
2 spm. CLA,EMD SMB, Sta 7428, 400 m, 15JUL2008  
3 spm. CSD Bight 2003, Sta. 5034, 394 m, 4AUG03, K. Barwick Cat. #1862.1  
1 spm. OCSD Sta, ?, 300 m JUL2004, OCSD Voucher #1573

Synonyms: *Nuculana leonina* of authors SCB not (Dall, 1896)  
*Nuculana navisa* of OCSD not (Dall, 1916)  
*Nuculana* sp B SCAMIT 2010 *vide* SCAMIT, 2012 (see Comments below)

Description: Shell compressed with an elongated narrow rostrum. Rostrum slightly recurved (in largest specimens); truncated posteriorly. Sculpture of evenly spaced raised commarginal ridges ending abruptly at postero-dorsal slope. Prodisoconchs large, smooth and intact. Adherent periostracum silky; gray-tan in color (Fig. 1). Prominent narrow escutcheon. Shallow, narrow lunule. Length to 15 mm.

Related Species: It most closely resembles *Nuculana navisa* (Dall 1916). Coan, et al. (2000) describe *N. navisa* as, "Large specimens inflated; small specimen compressed." All specimens of *N. sp B* are compressed and have a less recurved rostrum. *Nuculana leonina* (Dall, 1896) is less elongated with a more rounded rostrum. It has much wider spaced commarginal sculpturing which is often eroded in larger specimens. The dehiscent preiostracum is darker (Fig. 2) than *Nuculana* sp B.

Distribution: Point Loma to Santa Monica Bay, California; 261 – 400 m.

Comments: *Nuculana* sp B was first proposed at a SCAMIT meeting on October 19, 2009. The minutes from this meeting were actually published in 2010 (SCAMIT, 2009), which included the first publication of the images in figure 1, herein. This is a date change only.

Literature: **Coan, Eugene V., Paul Valentich-Scott and Frank R. Bernard. 2000.** Bivalve Seashells of Western North America: Marine Bivalve Mollusks from Arctic Alaska to Baja California. Santa Barbara Museum of Natural History, Santa Barbara, California. 764 pp.

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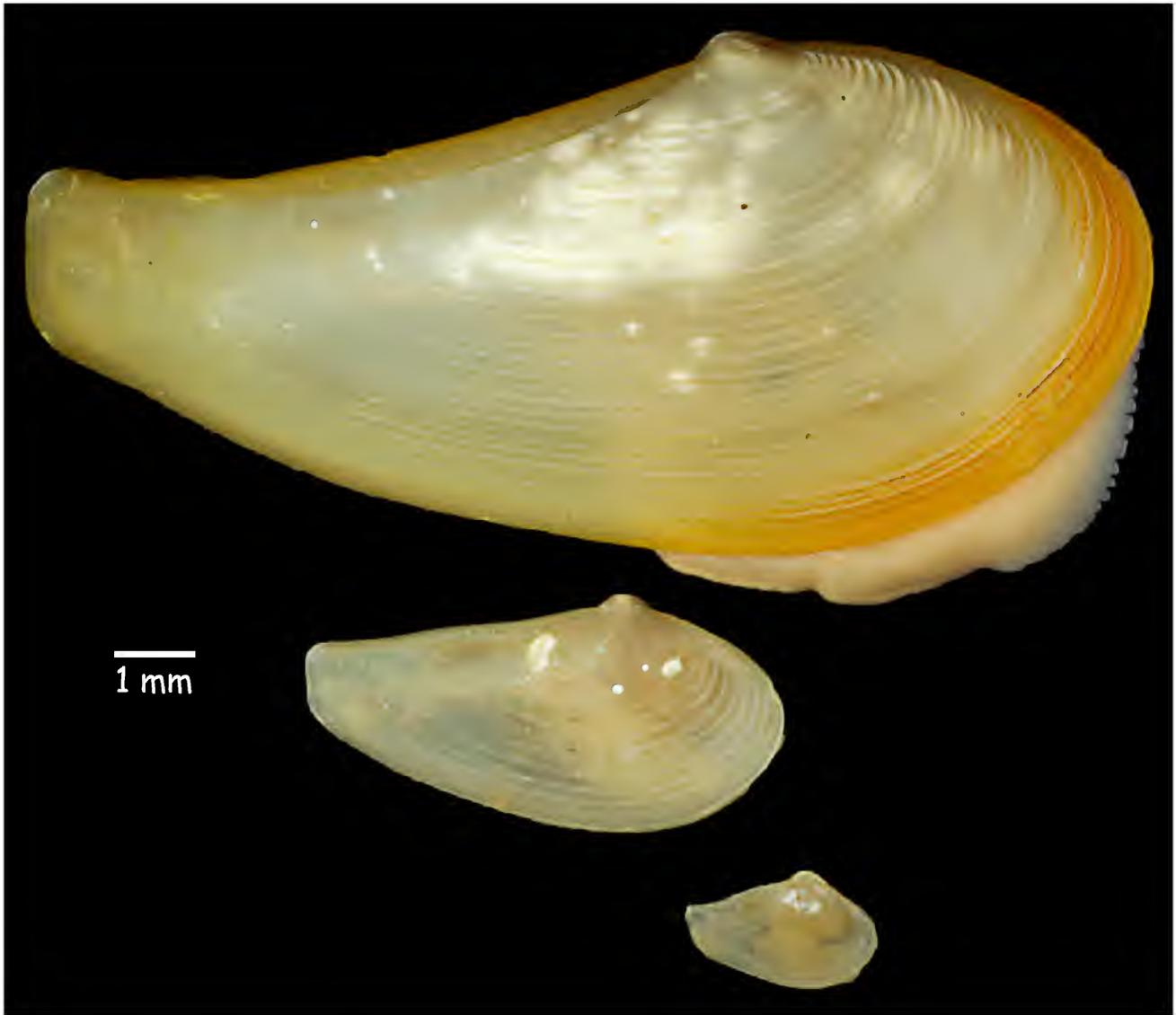


Fig. 1—*Nuculana* sp B, CSD Bight 2003 Sta. 5034, 394 m, 4AUG03, K. Barwick Cat. #1862.1 (from SCAMIT, 2009)



Fig. 2 – *Nuculana leonina*, Cascadia Slope, EBS-64, 950 m, K. Barwick personal collections (from SCAMIT 2009)

# *Phoronis* sp SD 1



This species is most often found at CSD's southern ITP stations between 30m and 60m, in sandy sediments. It can co-occur with *Phoronis* sp (which has no evident pigment). The pigment, as seen above, can be variable in placement and intensity/color but is usually found as two "spots" at the base of the lophophores.

Be cautious when looking for this species as the pigment does fade with time and can become more difficult to see. The animal in the top image had been preserved for 2 months at the time of the photograph. The animal in the bottom image had been preserved for 1 year.

In addition to the pigment being a noticeable difference from other *Phoronis* sp sampled, this species also has a "delicate" gestalt, with a low number of "wispy" lophophores and a thin trunk. It is found in tubes of fine sand.

I have yet to determine if this pigment pattern could possibly be a temporary seasonal/reproductive character or if it is a diagnostic morphological character.