

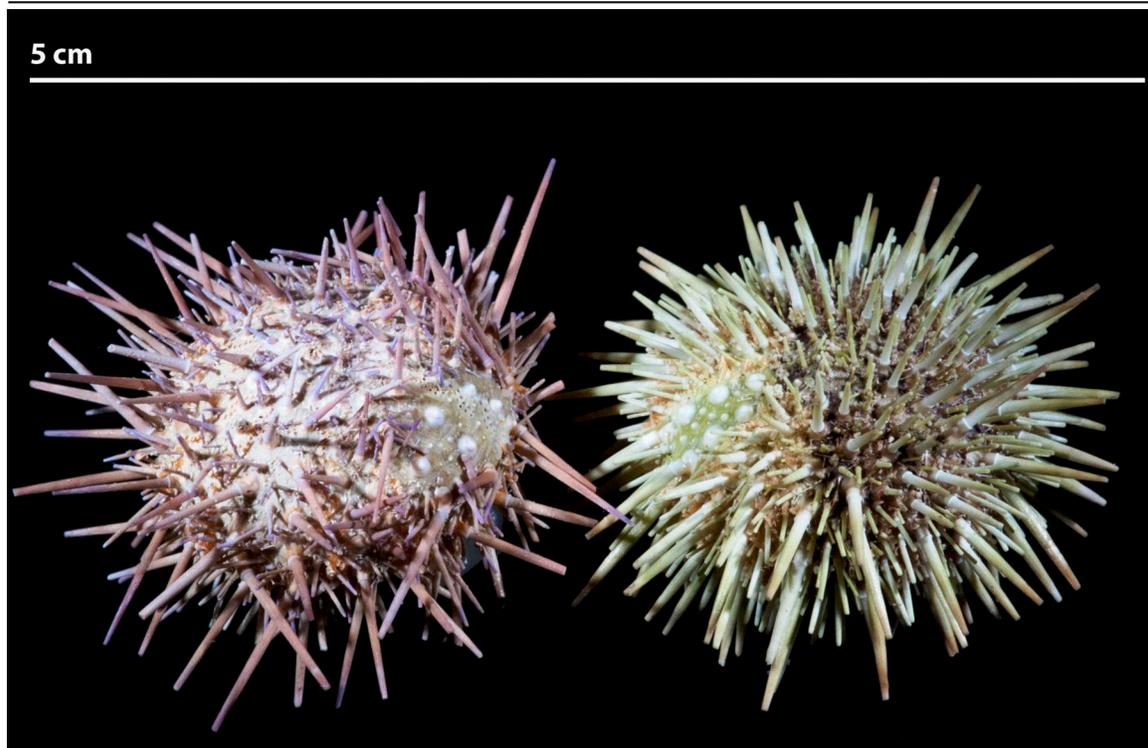
SOUTHERN
CALIFORNIA
ASSOCIATION OF
MARINE
INVERTEBRATE
TAXONOMISTS



Jan-Feb/March-April, 2011

SCAMIT Newsletter

Vol. 29, No. 5&6



Two forms of juvenile *Strongylocentrotus purpuratus*. The animal on the left is from CSD station 2074, 14 July 95, 100m. The animal on the right is from OCSD station T12(3), 18 Jan 2011, 57m.

This Issue

24 JANUARY 2011, ECHINODERM LIT. REVIEW AND ECHINODERM ISSUES, CSD.....	2
UPCOMING MEETINGS	2
14 FEBRUARY 2011, OTHER PHyla AND FLATWORM LIT. REVIEW, DCE	5
14 MARCH 2011, OTHER PHyla LITERATURE REVIEW PART II, OCSD	7
11 APRIL 2011, B'08 CNIDARIA, DANCING COYOTE ENVIRONMENTAL	10
BIBLIOGRAPHY	11
SCAMIT OFFICERS.....	14

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

24 January 2011, Echinoderm Literature Review and Various Echinoderm Taxonomy Issues, CSD.

Attendance: Megan Lilly, CSD; Don Cadien, LACSD; Ron Velarde, CSD (business only); Wendy Enright, CSD (business only); Cheryl Brantley, LACSD; Kathy Langan, CSD; Tony Phillips, CLAEMD; Dan Ituarte, CSD –retired; Katie Beauchamp, CSD; Larry Lovell, LACSD; Christina Thomas, OCSO; Laura Terriquez, OCSO.

The meeting was opened by Larry Lovell announcing upcoming meetings. 14 February 2011 will see SCAMIT members meeting at the Dancing Coyote Ranch also known as Dancing Coyote Environmental, home of John Ljubenkov. John will be reviewing pertinent cnidaria literature as well as some cnidaria taxonomy and Tony Phillips will lead a review of pertinent flatworm literature.

The 14 March 2011 meeting at Orange County Sanitation Districts will cover all the “left over” miscellaneous groups that have not had a literature or taxonomic review since the B’08 project. The topics covered and those reviewing them are as follows: Ascidiars – Megan Lilly; Echiurans – Megan Lilly; Sipunculids – Megan Lilly; Enteropneusts – Tony Phillips; Phoronids – hopefully Eric Hochberg; Sponges – Don Cadien; Brachiopods and Bryozoans – Don Cadien; Entoprocts – Kelvin Barwick; Cephalochordates – Wendy Enright; Nematodes – Don Cadien.

After the March meeting we will need to start our series of B’08 Specialty Taxonomy Group Workshops. Tony Phillips will be leading a workshop on the Ecnoplans based on his work during the B’08 project. John Ljubenkov will be leading a workshop in April on B’08 Cnidarians, and Ron Velarde will lead a workshop on B’08 Syllids, date TBD.

It was at that time Larry mentioned that the Species List Review Committee will need to start meeting as well, to discuss emends and additions for the upcoming Ed 6 of the Species List. These meetings will be held separately and are not considered general attendance SCAMIT meetings.

Larry suggested holding another Morphbank Image Workshop. Deb Paul at Morphbank has suggested a two part workshop. The morning would be devoted to inputting a few images using the older online system so participants could see exactly the kinds of metadata associated with each image. The afternoon would be an introduction to, and opportunity to use, the new

UPCOMING MEETINGS - 2012

June 11 - Polychaetes at NHMLAC, Education Room. We will be reviewing *Travisia* species (*T. brevis*, *T. gigas*, *T. pupa*), *Brada pilosa* vs. *B. pluribranchiata* and one additional polychaete group.

July - NO MEETING - SUMMER VACATION

August 27 - Spionids at NHMLAC, Education Room. Dr. Vasily Radashevsky will be visiting NHMLAC. He is a world expert on the polychaete family Spionidae and will present on his current research interests. In addition, if anyone has problems in a particular area of spionid taxonomy, we will ask him to address it. Please send an email directly to Leslie or Larry with suggested spionid topics.

October TBD - Sponge meeting at NHMLAC. Dr. Dave Elvin, 2nd co-author of *The Sponges of California*, will be visiting the museum to review material in its sponge collection. The exact meeting content is yet to be determined, but a talk on his Oregon work, a sponge workshop, or computer session demonstrating the California and/or Oregon program are all possibilities.

November TBD - A review of *Lirobittium* and *Tellina* issues which arose during B’08. The meeting will be held at OCSO and lead by K. Barwick.

December 10 - A review of Amphiuroidae, Phylloporidae, and *Parastichopus* issues which arose during B’08. The meeting will be held at CSD and lead by M. Lilly



spreadsheet image uploading method. Kelvin Barwick used this method for the aplacophoran image uploading and helped work out some of the bugs.

Next a discussion ensued regarding having another Barcoding SCAMIT workshop. There was some concern among members present that many of us don't even know the results of the first workshop and whether or not the original effort was successful. To that effect it was decided that there should be a meeting which will give an over-view of the data produced from the initial barcoding effort and members can discuss the results.

Larry announced some upcoming non-SCAMIT meetings: The annual SCAS meeting will be held Friday and Saturday, May 6-7, 2011 at California State Polytechnic University, Pomona. SCAMIT will likely have a table at this venue. Another upcoming meeting, the WSM, will have an international flair this year. They are combining their 44th Annual meeting with the 12th biannual meeting of the Sociedad Mexicana de Malacología. The meetings will be held June 27-30, 2011, in La Paz, Baja California Sur, México at the Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas.

Next on the agenda was a discussion on the upcoming elections for SCAMIT officers. Larry put a call out for nominations which will be open until the end of February. He urged people to consider running for a position on the SCAMIT board. Once nominations close, ballots and candidate statements will be sent out in March.

The discussion regarding SCAMIT officers closed the business portion of the meeting and it was on to echinoderms.

The first echinoderm order of business was to touch briefly on the problem of juvenile *Molpadia intermedia*. Small *M. intermedia* have numerous and large anchor ossicles which actually pierce the skin and stick up and out of the individual. They are associated with "racquet-shaped" plates in the body wall. As adults, the animals have lost all the ossicles in the body wall and have only phosphatic bodies. Ossicles remain in the caudal appendage, however. Due to this change in ossicle nature, juveniles look very different from their adult counter-parts. It was suggested that people make an adjustment to the key in Bergen 1996 (MMS Atlas) to indicate the juvenile character state. The ossicles are illustrated nicely on page 212. This discussion of *Molpadia intermedia* lead to a perusal of the literature and it was briefly noted that we should perhaps be aware of the possibility of encountering *M. musculus*. To read more about *M. musculus* and ascertain its difference from *M. intermedia*, see Clark 1907 which is available on-line. Separation of the two species involves caudal appendage ossicles. There will be large, fusiform rods present in the tail of *M. musculus* but not present in *M. intermedia*. Megan stated that she will check the next few *M. intermedia* specimens she sees, just to be sure...

Pertinent echinoderm literature from the last 5 years was discussed next. A bibliography, created by Don Cadien, was distributed (and is attached to this newsletter) which lists only those articles that he feels could have some application locally. In some instances there are direct affects, as in the case of the paper by Claude Massin and Michel Henrickx (2010) where they state that the animal discovered during the B'03 project and identified as *Synallactes alexandri*, is actually their new species, *S. virgulasolida*.

In other instances, the articles chosen may have only an indirect connection to our fauna, but may have some potentially interesting life history information that is applicable to a local genus, or they could cover environmental concerns that are ubiquitous to the world oceans.



With that it was time to start discussing problematic specimens. Megan Lilly had encountered an abundance of small, unknown Phyllophorids from B'08 station 7527, which was near Santa Cruz Island at a depth of 42 m. A majority of the specimens did not meet the 1cm size criteria for an attempt at species level ID. However, sadly, a few of them did... There was a subset of darkly colored individuals (light to medium brown) and the rest were the classic "off-white" color and had similar gestalt. However upon ossicle examination, two distinct types revealed themselves within the white cohort. Megan created 3 provisional species based on ossicle, and external differences. She placed them all in the family Phyllophoridae due to the nature of the extensions on the calcareous ring and named them as follows: Phyllophoridae sp SD 2, Phyllophoridae sp SD 3 and Phyllophoridae sp SD 4. At the meeting Megan showed images of the ossicles from each provisional species and passed the animals around for perusal by those present. After some discussion, the possibility of *Stolus trachyplaca* was offered as a possible ID for Phyllophoridae sp SD 3. Megan will be reviewing the specimens and the available literature further. As for Phyllophoridae sp SD 2 and SD 4, no one present recognized them or had any suggestions. Part of the problem is the relatively small size of the animals. Most of the specimens are between 1-2 cm and quite possibly do not have adult ossicle morphology. These animals may be left at their family level provisional ID's until perhaps future Bight projects can sample larger adult specimens from the same area that may shed some light on their identity.

The next topic for discussion was the possible confusion of *Petamera populifera* with *P. rigida* if one is not careful. Externally, the gestalt of the two animals is dissimilar. However, there can be some mistakes made in recognizing the ossicles as there is some confusion in the literature. Lambert (1997) and Lambert (1998), makes multiple statements that he suspects *P. rigida* is being confused in collections with both *P. populifera* as well as *P. lissoplaca*. Specifically he feels that some of the specimens referenced in Bergen (1996) as *P. populifera* are actually *P. rigida*. If one looks at the ossicle drawings in Bergen (1996), page 240, they resemble, especially the supporting tables, those described for *P. rigida* in Lambert (1998). Megan just wanted to caution those present to be careful when identifying any of the *Pentameras*, and to reference the ossicle drawings and descriptions in Lambert (1998). She will be looking into this problem further and has plans to compare introvert ossicles from the various species.

Christina Thomas from OCS D had brought a juvenile *Strongylocentrotus* specimen for examination. It had been collected in their trawls and was associated with a kelp holdfast. It was green in color and while most people thought it might simply be a small, green *S. purpuratus*, not everyone was convinced. The color difference wasn't the only reason for the confusion (it is not uncommon to find green juvenile *S. purpuratus*), as upon comparison to a similar-sized voucher specimen of *S. purpuratus* there appeared to be a morphology difference of the spines as well as an over-all gestalt discrepancy (see cover photo). The specimen was then compared to images of *S. droebachiensis* and appeared similar, which caused a stir as *S. droebachinesis* is considered a strictly northern species. Light's Manual was then referenced and a few primary spines were removed to examine the structure of the spine tubercle. Based on the key in Light's and the morphology of the primary spine tubercle (no "neck") the animal was *S. purpuratus*. However, images comparing the OCS D specimen with the vouchered *S. purpuratus* were sent to Dr. Mooi at Cal Academy, and he kindly took the time to view them. He felt that the "mystery" animal was probably a juv *S. purpuratus*, but he couldn't say for sure. If Megan ever makes the journey to Cal Academy she will bring the specimen with her (with OCS D's permission) to have him examine it in person.



With time running out, the last specimen of the day was brought forth. It was the mystery Goniasterid from the B'08 trawls and was being revisited for a second time. Megan had very tentatively identified it to *Gephyreaster swifti* but wasn't willing to stake her reputation on the ID. Others present compared it to images and keys in Fisher 1911 and thought that species was a good possibility, but there was still uncertainty. Megan will try to get to the Scripps Benthic Invertebrate Collections and compare it to a vouchered specimen of *G. swifti*. If she is still unsure after that exercise the specimen will be sent to Dr. Christopher Mah at the Smithsonian for further examination and hopefully a final identification. This animal, whatever it may be, was present in high abundances at B'08 station 7615 which was in 400m of water off Santa Cruz Island. A final identification would be helpful if this is a common deep water species in the Southern California Bight. ***Follow up** – Since this meeting the animal was sent to Dr. Mah and he identified it as *Pseudarchaster pusillus*. This ID was not arrived at earlier as the animal had some features that Megan thought inconsistent with *P. pusillus*. Additionally it just didn't "look like" the "standard" *P. pusillus* seen in local samples. However, she was using Fisher (1911), and was advised by Dr. Mah that there are some inconsistencies in that publication and that Ludwig (1905) would have been more useful in this instance. The character differences noted by Megan are unexplained at this time.

14 February 2011, Other Phyla and Flatworm Literature Review, Dancing Coyote Environmental

Attendance: Larry Lovell, LACSD; Terra Duvall, LACSD; Tony Phillips, CLAEMD; Laura Terriquez, OCSO; Ken Sakamoto, OCSO; Don Cadien, LACSD; John Ljubenkov, DCE; Megan Lilly, CSD; Wendy Enright, CSD.

The meeting started with upcoming meeting announcements. Attendees were reminded that our next meeting will be 14 March at OCSO. We will complete, at that time, whatever we are unable to finish today. April 11 will see us back at Dancing Coyote Environmental to review Bight'08 cnidarian specimens. Larry then announced that he wants to schedule a cirratulid meeting for some time in 2011. This year's SCUM meeting will be March 5th at SCCWRP with the following year's being scheduled at the Cabrillo Marine Aquarium. Larry updated us on the current state of the SCAMIT elections. The current slate of officers were nominated and nominations are now closed. Ballots will go out in the following week and results will be announced next month. And with that it was time to move on to the purpose of the day, cnidarian and flatworm literature review.

John Ljubenkov started out on an aesthetic note by showing us a book titled - *Drawing Upon Nature: Studies for the Blaschkas' Glass Models* – (the following excerpt is copied from the website: <http://glassmarket.cmog.org/>) "Selected and introduced by Susan M. Rossi-Wilcox and David Whitehouse. Written as a supplement to The Corning Museum of Glass's 2007 major summer exhibition, "Botanical Wonders: The Story of the Harvard Glass Flowers," this book is a collection of brilliantly detailed drawings made by Rudolf Blaschka as studies for the delicate glass flower and invertebrate models that he and his father, Leopold, created for Harvard University in the late 19th century".

John then proceeded to recommend a few websites that he finds useful:

The world hydrozoa database - www.marinespecies.org/hydrozoa. This site has many of the name changes coming online and seems to be well-maintained by eminent experts on the various groups.



The biodiversity heritage library is another useful site - www.biodiversitylibrary.org

If you visit the hexacorallia of the world website, <http://hercules.kgs.ku.edu/hexacoral/anemone2/index.cfm>, you can search on taxonomic data and occasionally dig out descriptions of species. There are no keys but John still feels it's a useful tool.

John recommends <http://www.actiniaria.com/> for a plethora of good anemone images.

In the bibliography at the end of this newsletter are just a few of the papers from John's recommended literature list. The entire list will be posted on the SCAMIT website in the Taxonomic Tools box.

John recommends Peter Schuchert as a prolific author on things related to hydroids. And, author P.F.S. Cornelius is a good source of information regarding *Obelia* spp.

With the literature review complete we moved on to discussing cnidarians topics. John was asked to briefly review the differences between Ceriantharia and Actiniaria. Some of the primary features to note specific to Ceriantharia, and which distinguish the Order, are – two rings of tentacles; an absence of a foot or a physa although there will be a terminal pore at the base of the animal; a relatively long column, and no oral disk.

We touched on a new species of *Haliclystus* which attaches by its umbrella (upside down) to algae. Also in his sample processing John found a “cool critter” in the genus *Candelabrum* that looks like a baseball bat covered in capitate tentacles. He found this animal living on algae and also found it in the Long Beach breakwater.

We were then cautioned to watch out for *Halcampella* as it can be confused with *Halianthella* or *Edwardsia*.

We moved into a brief discussion on Edwardsiids, specifically differentiating *Scolanthus scamiti* and *Edwardsia californica* which can co-occur in marinas and bays. When in doubt, do pneumatocyst smears.

With cnidaria wrapped up for the time being Tony Phillips took the floor and handed out literature lists of pertinent Nemertea and Polycladida papers. He did us all a favor by organizing them with reference to whether or not they were locally applicable, whether they contained useful keys, whether they were more of a general resource, etc. The electronic versions of these lists are unavailable at this time, but should be posted on the SCAMIT website at some point in the near future.

Tony emphasized the fact that researchers working on polyclad systematics serial section the reproductive structures. However, these features are not of practical use for applied taxonomy in a monitoring program. Tony relies more heavily on eye pattern and key morphological characters. He then informed us that his Enopla presentation this fall and will not only cover the B'08 enoplans, but will cover all of the Southern California Bight and what he's learned over his years of working on them (or them working on him...).



14 March 2011, Other Phyla Literature Review Part II, OCSD

Attendance: Larry Lovell, LACSD; Don Cadien, LACSD; Terra Duvall, LACSD; Laura Terriquez, OCSD; Ken Sakamoto, OCSD; Megan Lilly, CSD; Wendy Enright, CSD; Kelvin Barwick, OCSD; Tony Phillips, CLAEMD.

The theme of the meeting was the continuation of a review of Other Phyla literature updates including, nematodes, kinorhynchs, entoprocts, ectoprocts, sponges, urochordates, hemichordates, and cephalochordates.

During the business portion of the meeting Kelvin gave a report on March's SCUM meeting. Larry then provided an update on SCCWRP's Barcoding project. Peter Miller will be leaving SCCWRP at the end of March to work at BOLD. There is an upcoming information meeting later this month where Peter will explain his new role at BOLD and introduce Eric Stein, who will now lead the SCCWRP Barcoding effort. Eric Pilgrim (EPA Cincinnati Lab) will be



at the meeting to discuss progress on barcoding SCB specimens. The idea of SCCWRP and/or SCAMIT hosting a barcoding seminar at a SCAS annual meeting was also discussed. And lastly, Kelvin reminded those attending of the upcoming WSM/AAMA meeting in La Paz, Mexico.

Megan started off the main meeting by telling us that she had not been able to put together anything on the urochordates, but would send around something via e-mail shortly. Kelvin then said that he had nothing to circulate or report on either kinorhynchs or entoprocts, and that, although there was some potentially interesting literature available, he had not yet received it. There are no apparent changes to the Ed. 5 list or local practice in either of these groups. Our string of strike-outs continued with Wendy, who reported nothing new in cephalochordates, and no new literature of any applicability.

Tony Phillips finally had something to circulate on the enteropneusts. He passed out a list of literature for the group, including 16 titles. He specified four of these as being particularly noteworthy. He included Keith Woodwick's section of the Taxonomic Atlas on the group, and also his treatment in the Light and Smith Manual in 2007. He also mentioned two papers which have local applicability: one, a revision of the family Harrimaniidae (Deland 2010) and the second, a revision of the genus *Saccoglossus* (Cameron 2010). Using these we can now probably move beyond the current level of generic identification in some cases. Tony indicated that he believes the local shallow-water *Saccoglossus* is *S. pusillus* based on several characters. We need to have a meeting concerning these new resources, and how they apply to our material. Megan Lilly offered to hold an enteropneust meeting, but suggested that we should try and gather as



much material as possible from our collections to aid in our examination of the group. Most of the specimens taken are too incomplete for any detailed analysis, so a pool of more adequate material needs to be established. A tentative date of June was set for an enteropneust meeting. All potential participants need to examine their material, and select specimens for examination from archival and new material. Once the amount of material available from each agency is known, the information should be forwarded to Megan.

Don Cadien then proceeded with a discussion of updates for four groups: sponges, nematodes, ectoprocts, and brachiopods. But before we tackled these groups some new general literature on higher level relationships in the invertebrates was mentioned. A grand overview from 2007 (A modern look at the animal tree of life), and a look at the lophotrochozoa (Assembling the lophotrochozoan tree of life), also from 2007. In the following year an overview of the Ecdysozoa (The Evolution of the Ecdysozoa) was published. These help view the relationships between the phyla under consideration during the meeting, and were recommended to those present as useful overviews.

We started the discussion of individual phyla with the Nematoda. This is a group that none of the members identify past “nematoda” in their samples. The SCAMIT Ed. 5 list does not have specific nematode IDs, and they were not identified in Bight’08. There is, however, a good new treatment of many of the Southern California Bight species. This, by Dwayne Hope, came out in 2007 in the new Light and Smith Manual. Well illustrated, and fairly comprehensive for the shallow-water to intertidal forms, it none-the-less fails to provide coverage of many subtidal forms. Still, a useful addition to our local literature. Those interested might begin to attempt identification of nematodes taken in their monitoring. The first nematode to be added to the SCAMIT listing would have to be *Bolbella californica*, an enormous species taken not uncommonly in shallow shelf depths in the SCB. Although originally described by Allgen in 1951, it was redescribed by Gil Jones in 1964. Size alone will serve to characterize adults of this species, but juveniles will be more difficult to separate. It seems unlikely that much work will be done on the group locally until new requirements are instituted in monitoring permits, but at least now there is a valuable new tool available to help us.

The phylum Brachiopoda has not had significant new literature added since issuance of Ed. 5 of the SCAMIT Species List. Hochberg did a treatment of the group in the new Light and Smith Manual, but this had significantly fewer species included than did his treatment in the Taxonomic Atlas series a decade earlier. Since the Manual dealt only with intertidal forms, and few brachiopods extend that shallow, it is far better to consult the Taxonomic Atlas brachiopod treatment than that in the new Manual. One additional reference was brought forward dealing with the ecology of *Terebratalia transversa* (Tomasovych 2008). Otherwise no change in either nomenclature or available literature in the last few years.

The phylum Ectoprocta has a similar history in local literature. There is a new treatment of the group in the Light and Smith Manual by Soule et al, but this is less complete than their treatment in the Taxonomic Atlas. There appear to be no nomenclatural changes flowing from the new publication to species reported by SCAMIT member agencies. Some useful discussion is presented in the paper concerning endemism and the application of European species names to the local fauna. As molecular information accumulates, and as redefinitions of older European forms proceed, fewer of the original identifications of Eastern Pacific species appear supportable. While Osborn and other earlier workers attributed many of the local forms to known European species, this appears to often not be accurate. There are, of course, introductions (particularly in



bay and estuarine situations) of European species into local waters, and so some of those forms can legitimately be reported from the area. The native fauna, however, seems to have few if any circum-arctic species distributions which place species in both the North Atlantic and the temperate Eastern Pacific. For instance, identifications of *Alcyonidium* species taken in California and attributed to European stem forms are, according to Ryland [quoted by Soule et al 2007], inaccurate. The local forms probably represent a cluster of at least 5 new species, not allied with the European nominate species they have been identified as in the past. One ecological paper (Barnes et al 2007) discussing growth rate and variability was also mentioned, although it used Antarctic species as its basis. It may assist in interpreting these issues in the local biota.

Last but certainly not least were the sponges. One of the papers mentioned supports the paraphyly of the traditional “Porifera” and thus the separation of the Phyla Silicea and Calcarea from that morphological grade (Sperling et al 2009). This is the position followed in the SCAMIT Ed. 5 list. Most of the literature presented dealt with family level reviews from other areas, and integration of more molecular data along with morphological data in sponge systematics. There are no apparent nomenclatural issues raised in any of these citations that affect the Ed. 5 list, or the basis for future regional sponge identification. While not listed among the titles of interest, the core and essential sponge identification guide to our area was mentioned at the meeting - Lee, Welton L., David W. Elvin, and Henry M. Reiswig. 2007. *The Sponges of California. A guide and key to the marine sponges of California*. Monterey Bay Sanctuary Foundation. 395pp. The sponge portion of the Light and Smith Manual, also from 2007, by Lee et al is useful, but completely overshadowed in utility by the Sponges of California volume. De Laubenfels has finally been superceded by a work both quite comprehensive and well constructed. While extensive descriptions of all the species considered are not provided, their essential morphological features and methods of distinguishing among related forms are carefully presented. Fortunately the reference was available in time for inclusion of changes embodied in it in the Ed. 5 list. Despite this, a number of additional species were added subsequent to the Ed. 5 list based on collection in Bight '08, or agency monitoring. These are currently among the emendations to be addressed in preparation of the upcoming on-line Taxonomic Listing due in July of this year.

After completion of discussion on these groups, their literature, and current status, we broke for lunch. Following lunch we were informed of some exciting new species records from recent sampling by the City of San Diego. On kelp collected locally and brought into their lab for use in kelp toxicity testing, two species of live stauromedusae were obtained. While most specimens were of a species well known from local waters, *Manania gwilliami*, one was quite different. It turned out to be a new southern record of *Manania handi*, known previously from Puget Sound and northward. Megan Lilly showed us photos of both animals, as well as what appeared to be a basal outgrowth interpreted as a forming planula larva budding from the distal end of the stalk. Neither of these forms is currently on the SCAMIT Ed. 5 list, so they represent two new species additions, as well as the first inclusion of the Class Scyphozoa on the list; the others being holoplanktonic and thus excluded.

Speaking of new species to the list... a discussion then ensued concerning species being found in the ISS (Invasive Species Survey) in San Francisco Bay. The SCAMIT Species List will be expanded to include species outside our previous range of coverage with the caveat that the species considered for addition are identified and/or verified by a SCAMIT member or local expert in good standing.



We then repaired to the lab for consideration of a number of different specimens of mollusks, platyhelminths, and urochordates.

11 April 2011, B'08 Cnidaria, Dancing Coyote Environmental

Attendance: Megan Lilly, CSD; Larry Lovell, LACSD; Terra Duvall, LACSD; Tony Phillips, CLAEMD, Wendy Enright, CSD; John Ljubenkov, DCE; Don Cadien, LACSD

Larry Lovell opened the meeting with the first order of business which is always upcoming meetings: May will be a Cylindroleberididae workshop at CSD. The workshop will review species, the tools used to identify them, and character states. In June we will hold another Taxonomic database meeting at SCCWRP. There will be no meeting in July. Another Morphbank image submittal workshop is being considered for August but Larry needs to contact Deb Paul and check her availability. In September Megan Lilly will lead an Enteropneust workshop at Lillypad Environmental. Megan has asked that participants collect specimens for the meeting during their respective July survey work. October will have us enjoying an *Enopla Bight'08* review with Tony Phillips at OCSD. November will be a review of the B'08 Syllidae with Ron Velarde at CSD.

With upcoming meetings covered, Larry then announced that Leslie had received the ballots and the current officers were reelected for another year. The initial meeting of the SCAMIT Species List Review committee was held Mon Feb 28 at SCCWRP. Don Cadien was elected Committee Chair. At the meeting we reviewed the purpose and goals of the group and set a July 1 target date for release of the Ed 6 species list.

With that it was time for John to review the B'08 Cnidaria. The bay species *Diadumene* sp and *Edwardsia californica* were dominant. John had put together a PowerPoint presentation on species he had identified and which will be available on the website. He also handed out a species list with abundances, images of primary species (whole body, dissection, pneumatocysts).

All in all in was a very informative presentation and hopefully we are that much more prepared for the Cnidaria of B'13.



BIBLIOGRAPHY
Echinoderms (the complete echinoderm bibliography distributed by D. Cadien at the January meeting dealing with recent, (2006-20010), literature is at the end of the NL)

- Bergen, Mary. 1996. Class Holothuroidea. *In*: Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14. Miscellaneous Taxa. pp: 195-247. Santa Barbara Museum of Natural History. Santa Barabara, Ca.
- Clark, Hubert Lyman. 1907. The Apodus Holothurians. A Monograph of the Synaptidae and Molpadiidae. Smithsonian Contributions to Knowledge. Part of Volume XXXV. City of Washington. Published by the Smithsonian Institution.
- Fisher, Walter Kenrick. 1911. Asteroidea of the North Pacific and Adjacent Waters. Part I. Phanerozonia and Spinulosa. Smithsonian Institution. United States National Museum. Bulletin 76.
- Lambert, Phillip. 1997. *Sea Cucumbers of British Columbia, Southeast Alaska and Puget Sound*. University of British Columbia Press/Royal British Columbia Museum.
- Lambert, Phillip. 1998. *Pentamera rigida* and *P. pediparva*, two new species of sea cucumber from the west coast of North America (Echinodermata: Holothuroidea). *Proceedings of the Biological Society of Washington*. 111(3): 535-550.
- Ludwig, H. 1905. Asteroidea. In Reports on an Exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in Charge of Alexander Agassiz, by the U.S. Fish Commission Steamer "Albatross," during 1891, Lieut. Commander ZL. Tanner, U.S.N., Commanding. And Reports on the Scientific Results of the Expedition to the Tropical Pacific, in Charge of Alexander Agassiz, on the U.S. Fish Commission Steamer "Albatross," from August, 1899, to March, 1900, Commander Jefferson F. Moser, U.S.N.. Commanding. *Memoirs of the Museum of Comparative Zoology at Harvard College*, 32:1-292, 35 plates, 1 chart.
- Massin, Claude and Michel E. Henrickx. 2010. A new species of deep-water Holothuroidea (Echinodermata) of the genus *Synallactes* from off western Mexico. *Scientia Marina* 74, no. 3: 599-603.

Cnidaria

- Collins AG, Schuchert P, Marques AC, Jankowski T, Medina M, Schierwater B. 2006. Medusozoan phylogeny and character evolution clarified by new large and small subunit rDNA data and an assessment of the utility of phylogenetic mixture models. *Syst Biol*. 55(1): 97-115.
- Daly, MaryMegan, Mercer R. Brugler, Paulyn Cartwright, Allen G. Collins, Michael N. Dawson, Daphne G. Fautin, Scott C. France, Catherine S. McFadden, Dennis M. Opresko, Estefania Rodriguez, Sandra L. Romano and Joel L. Stake. 2007. The phylum Cnidaria: A review of phylogenetic patterns and diversity 300 years after Linnaeus.* *Zootaxa* 1668: 127–182. * *In*: Zhang, Z.-Q. & Shear, W.A. (Eds) (2007) *Linnaeus Tercentenary: Progress in Invertebrate Taxonomy*. *Zootaxa*, 1668, 1–766.
- Mapstone, G. M. 2009. Siphonophora (Cnidaria, Hydrozoa) of Canadian Pacific waters. NRC Research Press, Ottawa, Ontario, Canada. 302 pp including 65 figs.
- Petersen, K. W. 1990. Evolution and taxonomy in capitate hydroids and medusae (Cnidaria: Hydrozoa) *Zoological Journal of the Linnean Society*. Vol. 100, Issue 2, pages 101–231.



Sponges

- Erpenbeck, Dirk, Sandra Duran, Klaus Rutzler, Valerie Paul, John N. A. Hooper, and Gert Worheide. 2007. Towards a DNA taxonomy of Caribbean demosponges: a gene tree reconstructed from partial mitochondrial CO1 gene sequences supports previous rDNA phylogenies and provides a new perspective on the systematics of Demospongiae. *Journal of the Marine Biological Association of the United Kingdom* 87, no. 6: 1563-70.
- Erpenbeck, Dirk, John N. A. Hooper, Sue E. List-Armitage, Bernard M. Degnan, Gert Worheide, and Rob W. M. van Soest. 2007. Affinities of the family Sollasellidae (Porifera, Demospongiae). II. Molecular evidence. *Contributions to Zoology* 76, no. 2: 95-102.
- Erpenbeck, Dirk, Sue List-Armitage, Belinda Alvarez, Bernard M. Degnan, Gert Worheide, and John N. A. Hooper. 2007. The systematics of Raspailiidae (Demospongiae: Poecilosclerida: Microcionina) re-analysed with a ribosomal marker. *Journal of the Marine Biological Association of the United Kingdom* 87, no. 6: 1571-76.
- Heim, Isabel, Michael Nickel, and Franz Brümmer. 2007. Phylogeny of the genus *Tethya* (Tethyidae: Hadromerida: Porifera): molecular and morphological aspects. *Journal of the Marine Biological Association of the United Kingdom* 87, no. 6: 1615-27.
- Kober, Kord M., and Scott A. Nichols. 2007. On the phylogenetic relationships of hadromerid and poecilosclerid sponges. *Journal of the Marine Biological Association of the United Kingdom* 87: 1585-98.
- Lee, Welton L., Willard D. Hartman, and M. Cristina Diaz. 2007. Porifera. Pp. 83-117 IN: *The Light and Smith Manual: Intertidal Invertebrates from Central California to Oregon. 4th edition.* James T. Carlton, ed. 1001pp. Berkeley, California, U.S.A.: University of California Press.
- Soest, Rob W. M. van, John N. A. Hooper, E. Beglinger, and Dirk Erpenbeck. 2006. Affinities of the family Sollasellidae (Porifera, Demospongiae). I. Morphological evidence. *Contributions to Zoology* 75, no. 3/4: 133-44.
- Sperling, Erik A., Kevin J. Peterson, and Davide Pisani. 2009. Phylogenetic-Signal Dissection of Nuclear Housekeeping Genes Supports the Paraphyly of Sponges and the Monophyly of Eumetazoa. *Molecular Biology and Evolution* 26, no. 10: 2261-74

Ectoprocts

- Barnes, David K. A., Karen E. Well, and Katrin Linse. 2007. Growth rate and its variability in erect Antarctic bryozoans. *Polar Biology* 30: 1069-81.
- Soule, Dorothy F., Soule John D., Penny A. Morris, and Henry W. Chaney. 2007. Bryozoa. Pp. 866-904 IN: *The Light and Smith Manual: Intertidal Invertebrates from Central California to Oregon. 4th edition.* James T. Carlton, ed. 1001pp. Berkeley, California, U.S.A.: University of California Press.



Enteropneusts

- Cameron, C.B., C. Deland and T.H. Bullock. 2010. A revision of the genus *Saccoglossus* (Hemichordata: Enteropneusta: Harrimaniidae) with taxonomic descriptions of five new species from the Eastern Pacific. *Zootaxa* 2483: 1–22.
- Deland C., C. B. Cameron, K. P. Rao, W. E. Ritter and T. H. Bullock. 2010. A taxonomic revision of the family Harrimaniidae (Hemichordata: Enteropneusta) with descriptions of seven species from the Eastern Pacific. *Zootaxa* 2408: 1–30.
- Woodwick, Keith and C. Cameron. 2007. Hemichordata. Pp. 909-912 IN: *The Light and Smith Manual: Intertidal Invertebrates from Central California to Oregon. 4th edition.* James T. Carlton, ed. 1001pp. Berkeley, California, U.S.A.: University of California Press
- Woodwick, Keith. 1996. Hemichordata. Enteropneusta. In: Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14. Miscellaneous Taxa. pp: 251-258. Santa Barbara Museum of Natural History. Santa Barabara, Ca.

Brachiopods

- Hochberg, Frederick G. 2007. Brachiopoda. Pp. 864-865 IN: *The Light and Smith Manual: Intertidal Invertebrates from Central California to Oregon. 4th edition.* James T. Carlton, ed. 1001pp. Berkeley, California, U.S.A.: University of California Press.
- Tomasovych, Adam. 2008. Substrate exploitation and resistance to biotic disturbance in the brachiopod *Terebratalia transversa* and the bivalve *Pododesmus macrochisma*. *Marine Ecology Progress Series* 363: 157-70.

Nematodes

- Hope, W. Dwayne. 2007. Nematoda. Pp. 234-266 IN: *The Light and Smith Manual: Intertidal Invertebrates from Central California to Oregon. 4th edition.* James T. Carlton, ed. 1001pp. Berkeley, California, U.S.A.: University of California Press.

General References

- Giribet, Gonzalo. 2008. Assembling the lophotrochozoan (+spiralian) tree of life. *Philosophical Transactions of the Royal Society of London, B. - Biological Sciences.* 363: 1513-22.
- Giribet, Gonzalo, Casey W. Dunn, Gregory D. Edgecombe, and Greg W. Rouse. 2007. A modern look at the Animal Tree of Life. *Zootaxa*, no. 1668: 61-79.
- Telford, Maximilian J., Sarah J. Bourlat, Andrew Economou, Daniel Papillon, and Omar Rota-Stabeli. 2008. The evolution of the Ecdysozoa. *Philosophical Transactions of the Royal Society of London, B. - Biological Sciences* 363: 1529-37.



Please visit the SCAMIT Website at: 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:

President	Larry Lovell (310)830-2400X5613	llovell@lacsds.org
Vice-President	Leslie Harris (213)763-3234	lharris@nhm.org
Secretary	Megan Lilly (619)758-2336	mlilly@sandiego.gov
Treasurer	Cheryl Brantley (310)830-2400x5605	cbrantley@lacsds.org

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, 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
attn: Leslie Harris
900 Exposition Boulevard
Los Angeles, California, 90007

Bulletin of Marine Science is now on-line FREE
Records of the Australian Museum now on-line and FREE

Echinoderm Lit 2006-2010

- Bates, Amanda E., Brett J. Hilton, and Christopher D. G. Harley. 2009. Effects of temperature, season and locality on wasting disease in the keystone predatory sea star *Pisaster ochraceus*. *Diseases of Aquatic Organisms* 86, no. 3: 245-51.
- Booth, J. Ashley T., Henry A. Ruhl, Lawrence L. Lovell, David M. Bailey, and Kenneth L. Smith Jr. 2008. Size-frequency dynamics of NE Pacific abyssal ophiuroids (Echinodermata: Ophiuroidea). *Marine Biology* 154: 933-41.
- Brooks, R. Allen, Martha S. Nizinski, Steve W. Ross, and Kenneth J. Sulak. 2007. Frequency of sublethal injury in a deepwater ophiuroid, *Ophiacantha bidentata*, an important component of western Atlantic *Lophelia* reef communities. *Marine Biology* 152: 307-14.
- Byrne, Maria, Frank Rowe, and Sven Uthicke. 2010. Molecular taxonomy, phylogeny and evolution in the family Stichopodidae (Aspidochirotida: Holothuroidea) based on COI and 16S mitochondrial DNA. *Molecular Phylogenetics and Evolution* 56, no. 3: 1068-81.
- Campos, Ernesto, Alma Rosa de Campos, and Jesus Angel de Leon-Gonzalez. 2009. Diversity and ecological remarks of ectocommensals and ectoparasites (Annelida, Crustacea, Mollusca) of echinoids (Echinoidea: Mellitidae) in the Sea of Cortez, Mexico. *Parasitological Research* 105: 479-87.
- Clark, Dana, Miles Lamare, and Mike Barker. 2009. Response of sea urchin pluteus larvae (Echinodermata: Echinoidea) to reduced seawater pH: a comparison among a tropical, temperate, and a polar species. *Marine Biology* 156, no. 6: 1125-37.
- Clark, Roger N., and Stephen C. Jewett. 2010. A new genus and thirteen new species of sea stars. *Zootaxa* 2571: 1-36.
- Coppard, Simon E. 2008. A comparative analysis of the spatangoid echinoid genera *Brissopsis* and *Metalia*: a new genus and species of spatangoid (Echinodermata: Echinoidea: Brissopsidae) from the Philippines and the reassignment of *Brissopsis persica* to *Metalia*. *Zootaxa*, no. 1760: 1-23.
- Dashfield, Sarah L., Paul J. Somerfield, Stephen Widdicombe, Melanie C. Austen, and Malcolm Nimmo. 2008. Impacts of ocean acidification and burrowing urchins on within-sediment pH profiles and subtidal nematode communities. *Journal of Experimental Marine Biology and Ecology* 365, no. 1: 46-52.
- Dupont, S., B. Lundve, and M. Thorndyke. 2010. Near Future Ocean Acidification Increases Growth Rate of the Lecithotrophic Larvae and Juveniles of the Sea Star *Crossaster papposus*. *Journal of Experimental Zoology Part B Molecular and Developmental Evolution* 314B, no. 5 : 382-89.
- Dupont, Sam, O. Ortega-Martinez, and M. Thorndyke. 2010. Impact of near-future ocean acidification on echinoderms. *Ecotoxicology* 19: 449-62.
- Eckert, Ginny L. 2007. Spatial patchiness in the sea cucumber *Pachythyone rubra* in the California Channel Islands. *Journal of Experimental Marine Biology and Ecology* 348, no. 1-2: 121-32.
- Eernisse, Douglas J., Megumi F. Strathmann, and Richard R. Strathmann. 2010. *Henricia pumila* sp. nov.: a brooding seastar (Asteroidea) from the coastal northeastern Pacific. *Zootaxa* 2329: 22-36.
- Frontana-Uribe, Sarita, Jorge De la Rosa-Vélez, Luis Enríquez-Paredes, Lydia B. Ladah, and Laura Sanvicente-Añorve. 2008. Lack of genetic evidence for the subspeciation of *Pisaster ochraceus* (Echinodermata: Asteroidea) in the north-eastern Pacific Ocean. *Journal of the Marine Biological Association of the United Kingdom* 88, no. 2: 395-400.
- Harris, Jennifer L., Kevin MacIsaac, Kent D. Gilkinson, and Ellen L. Kenchington. 2009. Feeding biology of *Ophiura sarsii* Lutken, 1855 on Banquereau bank and the effects of fishing. *Marine Biology* 156, no. 9: 1891-902.
- Hendler, Gordon, and Masahiro Dojiri. 2009. The contrariwise life of a parasitic, pedomorphic copepod with a non-feeding adult: ontogenesis, ecology, and evolution. *Invertebrate Biology* 128, no. 1:

- Honey-Escandon, M., F. A. Solis-Marin, and A. Laguarda-Figueras. 2008. Echinoderms (Echinodermata) from the Mexican Pacific. *Revista De Biologia Tropical* 56: 57-73.
- Kroh, Andreas, and Andrew B. Smith. 2010. The phylogeny and classification of post-Palaeozoic echinoids. *Journal of Systematic Palaeontology* 8, no. 2: 147-212.
- Lambert, Philip, and William C. Austin. 2007. *Brittle Stars, Sea Urchins, and Feather Stars of British Columbia, Southeast Alaska and Puget Sound*. Victoria, British Columbia, Canada: University of British Columbia Press/Royal British Columbia Museum.
- Lester, Sarah E., Elizabeth D. Tobin, and Michael D. Behrens. 2007. Disease dynamics and the potential role of thermal stress in the sea urchin, *Strongylocentrotus purpuratus*. *Canadian Journal of Fisheries and Aquatic Sciences* 64, no. 2: 314-23.
- Mah, Christopher. 2007. Phylogeny of the Zoroasteridae (Zorocallina; Forcipulatida): evolutionary events in deep-sea Asteroidea displaying Palaeozoic features. *Zoological Journal of the Linnean Society* 150, no. 1: 177-210.
- . 2007. Systematics, phylogeny and historical biogeography of the *Pentagonaster* clade (Asteroidea: Valvatida: Goniasteridae). *Invertebrate Systematics* 21: 311-39.
- Mah, Christopher, Martha Nizinski, and Lonny Lundsten. 2010. Phylogenetic revision of the Hippasterinae (Goniasteridae; Asteroidea): systematics of deep sea corallivores, including one new genus and three new species. *Zoological Journal of the Linnean Society* 160, no. 2: 266-301.
- Massin, Claude, and Michel E. Hendrickx. 2010. A new species of deep-water Holothuroidea (Echinodermata) of the genus *Synallactes* from off western Mexico. *Scientia Marina* 74, no. 3: 599-603.
- Messing, Charles G. 2008. A new species of five-armed feather star, *Pentametrocrinus paucispinulus* n. sp., from the eastern Pacific (Echinodermata: Crinoidea: Comatulida). *Proceedings of the Biological Society of Washington* 121, no. 2: 269-75.
- Mironov, A. N., and A. B. Dilman. 2010. Effect of the East Siberian barrier on the echinoderm dispersal in the Arctic Ocean. *Oceanology* 50, no. 3: 342-55.
- Pawson, David L. 2007. Phylum Echinodermata. *Zootaxa*, no. 1668: 749-64.
- Pincebourde, Sylvain, Eric Sanford, and Brian Helmuth. 2008. Body temperature during low tide alters the feeding performance of a top intertidal predator. *Limnology and Oceanography* 53, no. 4: 1562-73.
- Raimondi, Peter T., Raphael D. Sagarin, Richard F. Ambrose, Christy Bell, Maya George, Steven F. Lee, David Lohse, C. Melissa Miner, and Steven N. Murray. 2007. Consistent frequency of color morphs in the sea star *Pisaster ochraceus* (Echinodermata: Asteroidea) across open-coast habitats in the Northeastern Pacific. *Pacific Science* 61, no. 2: 201-10.
- Riedel, B., Michael Stachowitsch, and M. Zuschin. 2008. Sea anemones and brittle stars: unexpected predatory interactions during induced *in situ* oxygen crises. *Marine Biology* 153: 1075-85.
- Staehli, Annette, Rolf Schaerer, Katharina Hoelzle, and Georg Ribi. 2008. Temperature induced disease in the starfish *Astropecten jonstoni*. *JMBA2 - Biodiversity Records* 5846: 1-5.
- Stohr, Sabine, and Michel Segonzac. 2006. Two new genera and species of Ophiuroid (Echinodermata) from hydrothermal vents in the East Pacific. *Species Diversity* 11, no. 1: 7-32.
- Trego, Kent D. 2007. A western Pacific record for the eastern Pacific deep sea asteroid species *Dytaster gilberti*. *JMBA2 - Biodiversity Records* 5985: 1.
- . 2008. New distribution information for eastern Pacific asteroid and holothuroid species. *JMBA2 - Biodiversity Records* 6125: 1-2.
- Vopel, Kay, Angelika Vopel, David Thistle, and Nicole Hancock. 2007. Effects of spatangoid heart urchins on O-2 supply into coastal sediment. *Marine Ecology Progress Series* 333: 161-71.
- Wakabayashi, Kaori, Miéko Komatsu, Manabu Murakami, Isao Hori, and Tsutomu Takegami. 2008. Morphology and gene analysis of hybrids between two congeneric sea stars with different modes of development. *Biological Bulletin* 215: 89-97.
- Wood, Hannah L., J. I. Spicer, D. M. Lowe, and Stephen Widdicombe. 2010. Interaction of ocean acidification and temperature; the high cost of survival in the brittlestar *Ophiura ophiura*. *Marine*

Biology 157, no. 9: 2001-13.

Zulliger, Deborah E., and H. A. Lessios. 2010. Phylogenetic relationships in the genus *Astropecten* Gray (Paxillosida: Astropectinidae) on a global scale: molecular evidence for morphological convergence, species-complexes and possible cryptic speciation. *Zootaxa*, no. 2504: 1-19.