

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



May/June/July/Aug, 2009

SCAMIT Newsletter

Vol. 28, No. 1&2



Ventral papillae of *Sthenelais berkeleyi* Pettibone 1971. LACSD Survey K (January 1977) station 1D rep 1. Photo by L. Lovell, editing by L. Lovell and D. Ituarte.

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

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**MAY 11 2009**

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This was a regular monthly SCAMIT meeting and President Larry Lovell open the meeting with announcements including a review of upcoming SCAMIT meetings, business of the organization, and other items of interest.

Before the details of the meeting are presented some basic information on the taxonomic database and its development is provided to update the membership. SCAMIT is developing an online taxonomic database, an easily accessible, comprehensive information source tool, for use by marine invertebrate taxonomists. This information tool is being built upon the recently updated SCAMIT species list, A Taxonomic Listing of Macro- and Megainvertebrates from Infaunal & Epibenthic Monitoring Programs in the Southern California Bight, Edition 5. The species list will be the backbone of the database links to a dynamic species page for each species in the listing. This dynamic species page would contain basic information such as author, synonyms, classification hierarchy, literature citations for the original description and other important publications, and historical depth/distribution records. It would also include links to existing electronic resources on the web and links to the SCAMIT website taxonomic tools with keys, tables, voucher sheets, and the newsletters. A diagram showing the components considered for inclusion and comprehensive nature of the taxonomic database is attached to the newsletter.

For public agencies and environmental businesses with taxonomic labs, the taxonomic database is an important tool for existing trained taxonomic personnel allowing them electronic access to information previously contained on paper in files and cabinets. It is especially important for the ongoing and future taxonomic training programs involving new taxonomists or those being trained in secondary taxonomic groups.

The Taxonomic Database group meets as necessary to review and discuss progress on specific goals since the last meeting. We also discuss direction and prioritization of future tasks as they relate to achieving our larger goal in a logical stepwise manner. The group is composed of representatives from every major POTW in Southern California (CSDLAC, City of LA, OCSO, City of San Diego), SCCWRP, and a database consultant. These POTWs all perform benthic studies that require invertebrate taxonomy and recognize the utility and need for an online taxonomic database that would bring together existing resources currently scattered in hardcopy format in various locations within a laboratory. Participation by Deb Paul from Morphbank, an image repository project at Florida State University, is necessary because of the planned database linkage to images stored at Morphbank.

#### UPCOMING MEETINGS

**July 2010** - No meeting scheduled as of the publishing of this newsletter.

**Aug/Sept/Oct 2010** - not yet scheduled but will most likely involve QA/QC for the B'08 samples.



The meeting started with presentations and discussion on progress towards a prototype version of the taxonomic database planned for release this fall. Key components are the Access version of the Ed 5 species list which serves as the backbone of the database, a dynamic species page containing basic taxonomic information and defined areas for links to other sources of information, active links to the SCAMIT website for taxonomic information from newsletters and voucher sheets, links to SCAMIT images at Morphbank, a list of outside links to other information websites (i.e. WoRMS, ITIS, uBio, Species 2000, EOL).

Key steps needing completion include finalization of the Access version of the Ed 5 species list, posting of scanned past issues of newsletters and voucher sheets, and a final decision on the design of the dynamic species page. The database tools planned for the future will be prioritized and added, as those data and other information are made available and developed. SCAMIT members will form taxonomic working groups to approve updates and input new information.

There was discussion on the new Morphbank grant to use the software, *Specify*, a specimen collections management program developed at the University of Kansas several years ago to submit metadata associated with images for submittal to Morphbank. Deb Paul suggested that SCAMIT provide a test case to Morphbank for the grant project. This test case would most likely be centered around one smaller taxa group on which SCAMIT has already collected information. It would just need to be organized and possibly restructured for acceptance by Morphbank and/or *Specify*.

The group decided that any additional documentation in support of SCAMIT provisional species should be a priority. Additionally we should move forward on preparing images for submittal to Morphbank and prepare a bulk spreadsheet submittal with a target date of late summer. It was decided that the group should meet again in August to review progress and decide the next set of objectives.

On the following Friday, there was a one-hour conference call between database group members Larry Lovell and Cheryl Brantley (CSDLA), Dawn Olson and Wendy Storms (CSD), Katja Seltsmann and Deb Paul, to review Monday's discussion. Additional thoughts and information gathered regarding the planned tasks since the Monday meeting allowed further refinement of the timelines for immediate expectations and goals of the group.

### 26 MAY 2009

President Larry Lovell opened the meeting with announcements including upcoming SCAMIT meetings and other meetings of interest to members.

Scheduled SCAMIT meetings are - echinoderms 101 training workshop June 8 at CSD; photo editing workshop July 13 at CSD; cirratulid polychaetes August 17 at Hyperion; terebellid polychaetes September 14 at NHMLAC; and *Tellina, Nuculana, Boreotrophon* mollusks October 19 at OCS. Other meetings of interest include the upcoming SCAS annual meeting May 29-30 at Marymount College (SCAMIT membership/information table on the 29<sup>th</sup>), the WSM meeting June 23-27 to be held at CSU Fullerton, and the International Nemertean Conference hosted by UCSB and SBMNH in Santa Barbara June 28-July 3.

Business of the organization was discussed next. Larry announced that Katja Seltsmann has agreed to assist webmaster, Jay Shrake, with routine changes and uploads to the website. This is welcome news as we have been without a functioning website for several months. May is membership



month. All members are asked to rejoin and send their annual membership fee to Cheryl Brantley promptly. Information on levels of membership can be found at the website. SCAMIT is planning to have a 2010 calendar. Members are asked to submit images for consideration until October 2009. Last year's calendar was a success and received attention from biologists outside SCAMIT.

Following announcements and business, there was discussion on taxonomic training and SCAMIT's roll. There has been interest in SCAMIT offering lower level taxonomic training meetings, such as the Bivalve 101 workshop last year by Paul Valentich-Scott and the upcoming Echinodermata 101 workshop by Megan Lilly. Weston Solutions has offered to host such workshops. OCS D is developing a taxonomic lab with personnel in need of training and the City of San Diego will shortly have new personnel that need training. Other labs will be facing retirement of key taxonomic personnel in the coming years and have similar training needs. Larry has been discussing this with Vice-President Leslie Harris who is in charge of meetings. She agrees that this need should be addressed and that a series of training workshops across phyla should be organized. Those more senior members with many years of experience will be approached about leading such workshops in the future. It was, however, noted by Larry that Bight '08 taxonomy meetings and QA resolution/reconciliation meetings would be priority topics until the fall of 2010.

We then began discussion on the topic group of the day, the family Sigalionidae, which is one of the scale-worm families. They are carnivorous (with large jaws) and actively burrow in the sediments. There are four genera listed in the SCAMIT Ed 5 species list; *Pelogenia*, *Sigalion*, *Sthenelais*, and *Sthenelanella*. *Pelogenia fimbriata* (Hartman 1969) is found in shallow white or coral sand sediments. *Sigalion spinosus* (Hartman 1939) occurs in shallow shelf depths and is recognized by the small antennae on the prostomium and the bipinnately branched filaments on the outer margin of the elytra. *Sthenelanella uniformis* Moore 1910 is easily recognized by the long threadlike iridescent notosetae produced by the notopodial spinning glands and mottled elytra. *Sthenelais* has multiple species represented in the Ed 5 species list and was the topic group of the day.

There are four species of *Sthenelais* on the Ed 5 list reported from Southern California; *Sthenelais berkeleyi* Pettibone 1957, *Sthenelais fusca* Johnson 1897, *Sthenelais tertiaglabra* Moore 1910, and *Sthenelais verruculosa* Johnson 1897. *Sthenelais verruculosa* lacks short-bladed falcigers found on the other three species and is typically collected in shallower depths. *Sthenelais berkeleyi* has a ventrum with obvious large dense papillae (see NL cover photo). The other species have very small papillae that are hard to see except under high magnification. *Sthenelais fusca* has 5–7 more stout compound neurosetae. *Sthenelais tertiaglabra* has 1-2 stout neurosetae. These stout neurosetae are best seen in median segments.

Larry showed images of *Sthenelais* with emphasis on the stout neurosetae. He found that the number of stout setae was more developed and consistent in the middle segments of the body and showed images of parapodia from different setiger counts along the body. Examination of early anterior segments for stout neurosetae and their counts cannot be relied upon. Ron commented that the structural lines at the point of articulation on the stout neurosetae of *Sthenelais tertiaglabra* are more tapered or rounded verses a more angular appearance for *Sthenelais fusca*. Images of lateral antennae dissections and elytral microtubercles were also shown. The microtubercles of the elytra are all very similar between species and are not useful in discriminating local species.



Larry commented that the *Sthenelais* species reported in Southern California by POTW's are not uniformly distributed. There are differences in the sediment type or other conditions of the sampling stations that drive what species occur. LACSD regularly reports *Sthenelais fusca*, but it is absent or rare at other POTWs. He also noted that some characters mentioned in the literature are not reliable. The degree and color of elytral pigmentation cannot be relied upon to discriminate between *Sthenelais fusca* and *Sthenelais tertialabra*. Illustrations of head regions are complicated and difficult to interpret. The terms lateral ctenidia and lateral antennae have been confused and inconsistently applied in the literature. The best review of the family and key to the local species can be found in Blake (1995). Voucher sheets for *Sthenelais tertialabra* and *Sthenelanella uniformis* can be found in the taxonomic toolbox on the SCAMIT website. Larry plans to produce additional voucher sheets of other reported species and post *Sthenelais* species images at Morphbank.

### 8 JUNE 2009

Attendance: Ron Velarde, Megan Lilly, Constance Gramlich, Lisa Gilbane, Robin Gartman, Cheryl Brantley, Larry Lovell, Wendy Enright, Maricarmen Necoechea, Christina Thomas, Laura Terriquez.

The meeting was opened by President Larry Lovell. He started with upcoming meeting announcements: July 13<sup>th</sup> will be a digital photo editing workshop at CSD, led by Dan Ituarte and Nick Haring; August 17<sup>th</sup> will be on miscellaneous cirratulid genera at Hyperion (Ed. note - this was later changed); Sept 14<sup>th</sup> will be Terebellids at LACNHM; Oct 19<sup>th</sup> we will look at *Tellina* and *Nuculana* at OCSO.

Non-SCAMIT meetings of interest were as follows: The AMS/WSM meetings will be June 23-27 at CSU Fullerton, contact Kelvin Barwick for more information. The 7<sup>th</sup> International Nemertean conference will be held June 29-July 3 in Santa Barbara, CA. The 10<sup>th</sup> International Polychaete Conference will be held in the summer of 2010 in Lecce, Italy. The CIAC meetings will be held in Vigo, Spain in September of this year.

We were sad to hear that our webmaster, Jay Shrake, has stepped down after many years of service to SCAMIT. SCAMIT will be seeking a replacement webmaster in the immediate future. In the interim we luckily have an assistant web master, Katja Seltmann, who will be dealing with uploading items, changing dates, etc. A big thanks to Katja for helping us out.

May was membership month, please rejoin and send your form with payment to Cheryl promptly. Larry wrapped up the business portion of the meeting by making another call for 2010 SCAMIT calendar images.

With that it was time for the presentation of the day, Echinodermata 101 by Megan Lilly, CSD. In the morning each of the five Classes were discussed with an overview of which major taxonomic characters are used in the identification of each group (caveat - the taxonomic characters of importance that are listed for each Class are those that are meaningful from a morphology-based, functional taxonomy perspective; they are not meant to imply any order of systematic or phylogenetic significance; they are also not exhaustive). She also touched upon how to specifically identify some of the more common species seen in our sampling programs, but tried to stay general as the workshop was supposed to be an overview of the five Classes, not a detailed study of any one group. Additionally a list of the more commonly used literature was distributed.



The Class Crinoidea was dealt with initially and only briefly touched upon, as to date the Southern California monitoring agencies have only sampled one species, *Florometra serratissima*. But, a cautionary note was given that there is always the possibility of seeing the more northern species, *F. asperrima*, or even one of the deeper water species, if we continue to move down the slope in our regional sampling surveys. See Clark, A.H. and A.M. Clark 1967 for more information on this topic.

Second up was Asteroidea. Major characters used for taxonomic identification in this Class are: gestalt; arm spines; jaw structure - marginal/apical spines; other calcareous plates and their associated spines; pedicellaria; and paxillae, to name a few. To find good diagrams detailing these structures (which can get confusing), see Lambert, 2000. Images of local asteroid species were used to high-light and explain some of the characters discussed above. Different genera were compared and contrasted to reveal character differences.

Third in line were the Echinoidea. Primary focus was on the heart urchins (Spatangoida) as they are the predominant group sampled. A few major taxonomic characters are as follows: test shape; spine morphology; petaloid shape and proportions; presence/absence of fascioles – internal, peripetalous and subanal; presence/absence of an anterior ambulacral notch. Again, images of local species were shown to display various character states. The Order Clypeasteroida was only given a single slide, as we only sample one species in our offshore efforts, which is *Dendraster terminalis*. However, *D. excentricus* is quite common in shallower habitats and examples of that species were available for examination. The third species of concern is *D. vizcainoensis* which has yet to be sampled, but is a possibility. See Mooi 1997 for a thorough discussion of *Dendraster* spp.

Ophiuroidea was covered next and was probably the Class on which the most time was spent as they are often a majority component of many benthic samples. Some of the primary characters used (but definitely not all) in identification are: oral papillae/teeth; arm spines, arm plates, tentacle scales, pigment (with caution), disc scales/ornamentation. More specific detail was given with regards to identifying down to a species level for some of the commonly sampled ophiuroids and images of common species were used to show examples of various morphological characters. A warning was given about the fact that oral papillae patterns change with growth, and many keys are based on this character, so caution needs to be taken with juveniles. Additionally, pigment can be a tenuous character as it often fades quickly once the animals are preserved, and it is Megan's personal belief, that it can be influenced by habitat/diet as she has seen evidence for this while doing consulting work from various areas of the NE Pacific. A good place for generalized illustrations of ophiuroid morphology and terminology is the Ophiuroid chapter by G. Hendler in the MMS Taxonomic Atlas, Volume 14.

Last, but certainly not least, were the Holothuroidea. The primary characters used for identification are: presence/absence of tube feet; body shape (i.e. vermiform, encrusting, etc); ossicles; the nature of the calcareous ring; polian vesicles; structure of the feeding tentacles. Caution is definitely needed when dealing with ossicles in this group as they change, in some cases disappearing, with growth/age. Juveniles of many species will have very different looking ossicles from those of their adult counterparts. Time was mostly spent on the Dendrochirotida as the Apodida holothuroid taxonomy is in flux and most in that Order are left at a genus level ID. Descriptions and images of the various types of ossicles were discussed. It is important when looking at holothuroid ossicles to know where and how to properly dissect the tissue for an ossicle mount. One of the more mystifying, (personally), tasks is determining dorsal/ventral on



an animal that is shaped like a cylinder, with a hole at either end...but this can be of importance when trying to determine where to remove tissue. The proper dissection and observation of calcareous ring morphology was also reviewed as this is a character of importance. The Holothuroid chapter by M. Bergen in the MMS Atlas, Vol 14 and Lambert 1997, are both good sources of information and an excellent place to start.

On a final note, we discussed the usefulness of internet sources for identification assistance. Internet resources are constantly expanding and there is some valuable information to be had, especially as now some of the museums are scanning in old literature collections and making them available. However, always use caution when viewing images on-line and their associated species names. Unless you know the source (person/agency) of the taxonomy, you should not assume the identification is correct.

The afternoon was spent examining specimens.

### **JULY 13 2009**

Larry Lovell opened the meeting with business of the organization. Larry announced that webmaster Jay Shrake was stepping down after many years of service to SCAMIT. Jay developed the SCAMIT website years ago and has maintained it ever since. Dean Pentcheff (NHMLAC) has agreed to become the new webmaster and will be assisted by Katja Selmann. They are currently reworking some behind the scenes aspects of the website pages to make it easier to update in the future. This means the website will remain unchanged and out of date for a period of time. Treasurer, Cheryl Brantley has submitted the treasurer's report for the past fiscal year for inclusion in the next newsletter, it details funds available for grants. We will begin taking applications for Taxonomic Publication Grants from June until the end of December. See the website Grants toolbar for more information regarding the application process.

The July 13 meeting was a digital imaging workshop by Dan Ituarte and Nick Haring, CSD. The minutes from that meeting are going to be combined with the minutes from the most recent digital imaging workshop, also by Dan Ituarte and Nick Haring, and which just took place on June 14 2010. It is thought that in this way a clean, composite, synopsis of information can be created and provided to members.

### **AUGUST 17 2009**

The meeting was held at the Orange County Sanitation District marine biology lab. President Larry Lovell opened the business portion of the meeting with having everyone introduce themselves. Larry will be sending out an e-mail to assess interest in having a class on packing specimens for shipping purposes.

Upcoming meetings were then announced:

September 10<sup>th</sup> – Taxonomic database meeting with consultant Katja. We would like to use SPECIFY as a test case with the aplacophoran images from Don Cadien and Kelvin Barwick's work during Bight '03

September 16<sup>th</sup> – Barcoding colloquium at SCCWRP with Dr. Paul Hebert

September 21<sup>st</sup> – Bight '08 trawl invertebrate meeting at SCCWRP

October 5<sup>th</sup> – Terebellids with Dr. Joao Nogueira from Brazil, at Los Angeles County Museum

October 19<sup>th</sup> – *Tellina* and *Nuculana* at Orange County Sanitation Districts



November 2<sup>nd</sup> – possible meeting on Bight '08 problem animals (non-polychaetes)  
November 16<sup>th</sup> – Decapoda 101 with Lisa Haney at Los Angeles County Sanitation District  
December 5<sup>th</sup> – Christmas Party at Cabrillo Museum; 5-9pm; SCAMIT will provide ham and sodas. Please bring a potluck dish.

Larry then gave us an update about the website. The webmaster is doing work behind the scenes and Larry will let us know when the facelift is complete and will ask for feedback.

We all then received a gentle reminder to pay annual membership dues.

LACSD recently had a visitor, Jingchun Li from the University of Michigan. Jingchun went out on trawls with the staff for a few days. She is studying *Neaeromya rugifera*, a commensal clam that lives with *Aphrodita*. The clams can attach to the ventral side of the worm by byssal threads. More commonly, the clams are inside the branchial chamber of the worm. Jingchun is requesting specimens that are preserved in 95% ethanol.

Larry announced that SCAMIT will produce a new calendar for 2010; if anyone has images they'd like to submit for consideration please send them to Larry (llovell@lacsds.org). Animals are not restricted to Southern California invertebrates.

Tony Phillips brought in an interesting animal for show and tell. It was an entire specimen of *Cerebratulus marginatus* that was 4 feet long when it came up hanging from a benthic grab. The body color was reddish-brown, and the lateral margins were yellow. The animal was captured at Station HM9 in Los Angeles Harbor at a depth of 23m.

Ron Velarde is identifying all the syllids for Bight '08 samples, and he requested that everyone gather and deliver their syllids to him.

Larry passed around three new polychaete articles, which are listed below:

- Reuscher, Michael, Dieter Fiege, and Thomas Wehe. 2009. Four new species of Ampharetidae (Annelida: Polychaeta) from Pacific hot vents and cold seeps, with a key and synoptic table of characters for all genera. *Zootaxa* 2191: 1-40.
- Aguirrezabalaga, Florencio and João Gil. 2009. Paraonidae (Polychaeta) from the Capbreton Canyon (Bay of Biscay, NE Atlantic) with the description of eight new species. *Scientia Marina* 73(4): 631-666.
- Tovar-Hernández, María Ana. 2008. Phylogeny of *Chone* Kroyer, 1856 (Polychaeta: Sabellidae) and related genera. *Journal of Natural History* 42(33): 2193-2226.

The rest of the meeting was dedicated to examining unusual and problematic specimens that have been encountered in Bight '08 samples.

First up was a specimen of *Sonatsa carinata* (Moore 1923) provided by Larry that was collected from the N. Channel Islands. Ricardo Martinez-Lara and Veronica Rodriguez-Villanueva had a similar specimen that was larger than Larry's specimen. The uncini counts did not match; Ricardo will investigate further and get back to us about his specimen.





Next Kathy Langan showed us a Trichobranchid from Station 7121 at a depth of 861m. There was a main branchia that split into 4 branches; the two outer ones were fimbriated and well developed, and the two inner ones were less developed. This specimen was not Cheryl Brantley's Trichobranchidae Genus A. Kathy will take the specimen back to the lab for further investigation.

We examined a nice specimen of *Glycera branchiopoda* that Larry found at Station 7200 at a depth of 836m.

Then Larry showed us a specimen of *Dodecamastus mariaensis* from Station 7296, depth 610m. The specimen was entire and had arborescent branchiae starting on setiger 16. *D. mariaensis* is described in Hartman's Atlas as having 10 setigers with capillary setae; Larry's specimen had nine setigers with capillary setae. There were 12 thoracic setigers with hooded hooks.

The next specimen was *Glyphanostomum pallescens* which Larry found at Station 7250 at a depth of 609m. It is described in the MMS Atlas. There were no palae and the lower lip area was very compressed. The specimen also had a unique methyl green stain pattern.

We examined several specimens of *Anobothrus* that had an unusual suite of characters. They were found by Kathy at station 7082 at a depth of 1023m. They had 12 thoracic uncinigers and raised glandular bands on setigers 5 and 10. There were 3 pairs of branchiae, and the palae were splayed out similar to *Eclysippe trilobata*. We considered the possibility that they were *Anobothrus bimaculatus*; however, this species has 11 thoracic setigers and 4 pairs of branchiae. We went through a couple of keys and didn't come up with anything like these specimens. So they will be a provisional species, *Anobothrus* sp SD 1, and Kathy will create a voucher sheet.

Larry showed us a specimen of *Mexamage longibranchiata* from station 7288, the San Pedro lower slope, at a depth of 806m. *M. longibranchiata* is described in the MMS Atlas and has a distinct raised area on the prostomium.

Both Veronica and Larry had specimens of *Aricidea (Acmira) rubra* Hartman 1963. Larry's specimen came from station 7250, depth of 609m, and Veronica's specimens came from stations 7104 (556m) and 7109 (870m). We viewed the papillary protuberances which were quite prominent in one specimen.

The next specimens examined were *Levinsenia oculata* (the real one, not *L. sp B*). They had large eyespots and 8-11 pairs of thin branchiae. The specimens were provided by Larry (station 7200, depth 836m) and Veronica (station 7022, depth 653m).

Veronica showed us a specimen of *Aricidea (Allia) hartmani* collected at SBOO station I-3 Rep 2 at a depth of 27m.

Larry had an unusual specimen of *Arcteobia* sp from station 7298, depth 43m, from San Pedro mid-shelf. There were both acicular and capillary setae in the notopodia; the capillary setae were in the inferior position. It had fairly long dorsal cirri and pigment on the posterior edges of the elytra. Ron and Tony commented they have seen this worm too. Under the compound scope, we viewed the long, thin tips of the capillary notosetae and the acicular notosetae with a row of hooks. Larry added that *Arcteobia* can be commensal with the echiuran *Listriolobus*.



Next we refreshed our memories regarding Cheryl's Trichobranchidae sp LA1, described from B'03 and compared it to Kathy's Trichobranchid that we viewed earlier in the day. They are clearly different beasts. Larry had a specimen of Trichobranchidae sp LA1 from a B'08 station 7200, depth of 836m. On this specimen there were 4 pairs of branchiae and a vascular loop under the branchiae, which is described and photographed in Cheryl's identification sheets. These sheets are available on the website under the taxonomic tools section.

Next up was a specimen of the Orbiniid *Califia calida* provided by Larry. It was collected at station 7206 at 598m. The branchiae started on setiger 9 and continued on, almost to the end of the body.

Larry then showed us *Naineris cf grubei*, which was collected at station 7298 at a depth of 43m. The specimen had a smaller, rounded prostomium that looks similar to a regenerating anterior end. The branchiae started on setiger 5.

Next to be examined was a specimen of *Leiochrides hemipodus* Hartman 1960 provided by Larry. It was collected at station 7206, San Pedro lower slope, at 598m. Setiger 1 is uniramous and there are 12 setigers with capillary setae. Setigers 5 and 6 stain darker in the thorax region. Ricardo also found *L. hemipodus* at station 7079 at 811m.

Then we viewed a specimen of *Spiophanes fimbriata* brought by Kathy and collected at station 7096 at a depth of 318m. The nuchal organs were obvious and had a wide space in between them as compared to *S. kimballi* where the nuchal organs are much closer together.

Dot Norris gave us a tip for staining cirratulids; she first rinses them in freshwater and then places them in the methyl green stain. She said the stain is more pronounced this way.

Larry finished up the meeting by giving us some pointers on identifying anterior ends of lumbrinerids and Euclymeninae sp A. Noting the type of hooks, acicular color, and the structure of the setal lobes can identify Lumbrinerid anterior ends. Combinations of those three characters will allow species level identification with good confidence. For example, composite hooks, black acicula, short pre and post-setal lobes = *Lumbrineris ligulata*; composite hooks, yellow acicula, short pre and post-setal lobes = *Lumbrineris cruzensis*. Get familiar with the look of lumbrinerid anterior ends by examining and comparing complete specimens of the different species to one another and to fragmented specimens. The staining of the ventrum of anterior ends of Euclymeninae sp A differs from *Praxillella pacifica* and *Petaloclymene pacifica*. A comparison of images by Kelvin Barwick illustrates the differences (see the website toolbox, "3 maldanid staining patterns" in the Maldanidae folder). There is a deep and wide non-staining gap at the ventral midline of setiger 1 on Euclymeninae sp A. The setiger 1 ventral staining patterns for *Praxillella pacifica* and *Petaloclymene pacifica* are very similar, but those species can be separated by their anterior neuropodial uncini - acicular spines in *Praxillella pacifica* and rostrate uncini in *Petaloclymene pacifica*. When seen side by side on the same page, the staining patterns of these three species are very distinct when at least 3 setigers are present.



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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:

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

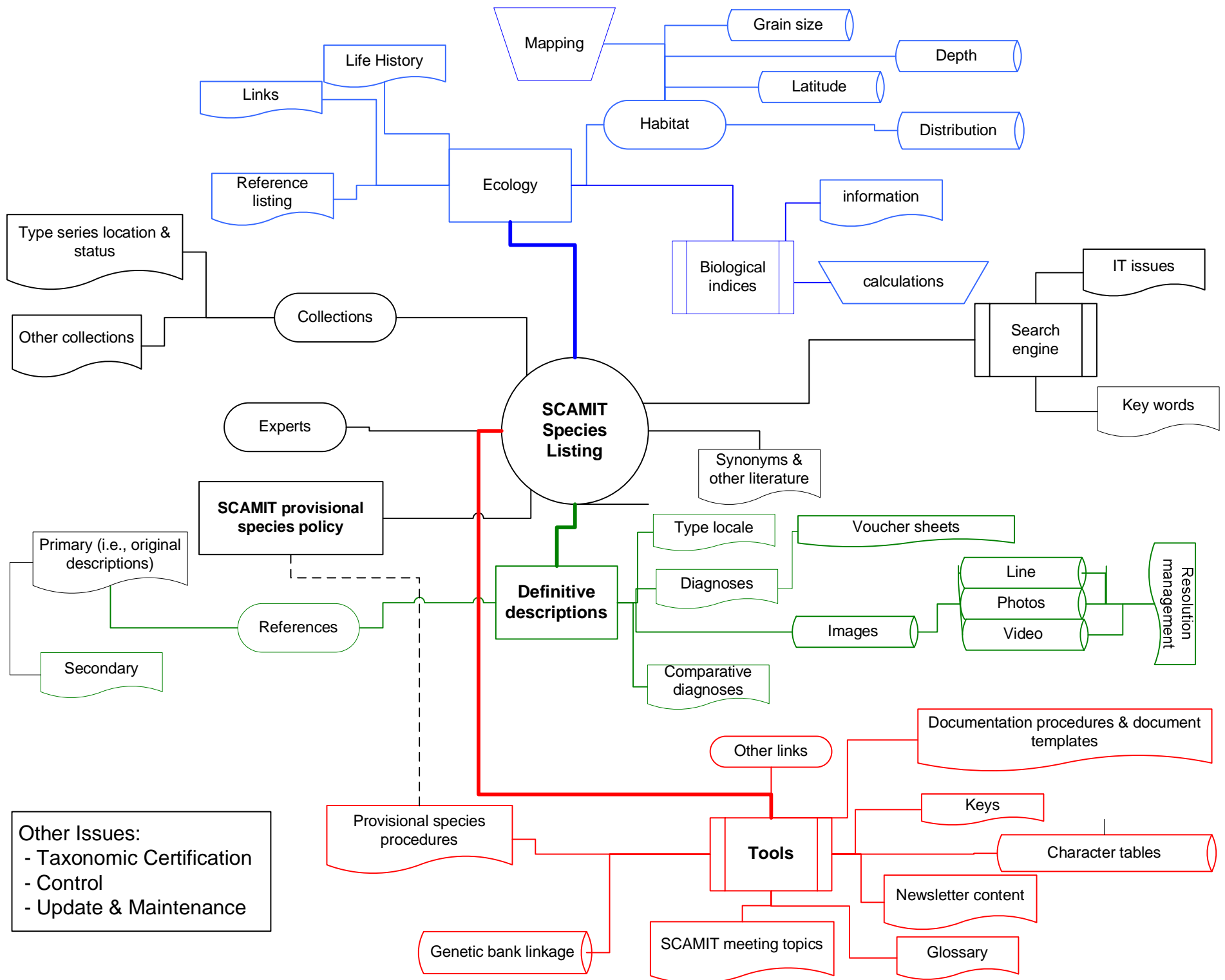
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SCAMIT  
C/O The Natural History Museum, Invertebrate Zoology  
attn: Leslie Harris  
900 Exposition Boulevard  
Los Angeles, California, 90007



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 - Taxonomic Certification  
 - Control  
 - Update & Maintenance