SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

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Cover Photo: *Ampharete* sp TP1; Collected at Bight'13 Station 9395, 127m, eastern Santa Barbara Channel. Photo by Tony Phillips.

This Issue

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11 MAY 2014, BIGHT'13 POLYCHAETE FIDS AND METHYL GREEN STAINING COMPARISON, NHMLAC

Attendees: Leslie Harris (NHMLAC); Chip Barrett (EcoAnalysts); Bill Furlong, Larry Lovell (LACSD); Greg Lyon (CLA-EMD); Ricardo Martinez-Lara, Veronica Rodriquez, Ron Velarde, Kathy Langan (CSD); Kelvin Barwick, Rob Gamber (OCSD); Tony Phillips, Dean Pasko (DCE); Dot Norris (SFPUC).

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the latest upcoming meetings announcements.

Business

Larry reminded everyone to renew his or her SCAMIT memberships. He then introduced the topic of methyl green staining and cited Dan Ituarte's attachments from the List-server exchanges on the subject. Leslie passed around a flash drive with a table on methyl green products compiled from information sent in by members along with a folder for distributing voucher sheets to attendees.

Don Cadien had sent around an email calling for mollusk and echinoderm meetings for the purpose of calibrating identifications ahead of data submissions. Meeting dates for these taxa and more polychaete sessions were scheduled. We suggested that people working on the different groups (echinoderms, mollusks) send out a general email to the SCAMIT/B'13 List-server asking for a needs assessment. There was a short discussion encouraging everyone to use our Bight'13 List-server as the preferred method to collaborate on provisional species. Not communicating properly on provisional (or new) identifications has created situations in past regional surveys where certain taxa were dropped back to genus or family. The latter practice significantly reduces the value the Bight data, particularly if it becomes the norm for one or more labs.

Kelvin took the opportunity of the morning chaos to demonstrate his new eye-lash tool that he bought at an SEM site for $11. The eyelash is glued to the end of a stick (like a typical small brush). It is tapered and has a fine point that is also stiff. It is excellent for pointing out characters and therefore good for teaching, and for moving and disentangling appendages (e.g., syllid antennae, arthropod appendages). Two sources for eyelash, single deer-hair brushes, and single bristle holders are http://www.tedpella.com/brush_html/brush.htm and http://www.agarscientific.com/tweezers-tools/brushes.html

Leslie then shared one of her methods for photography – the use of glass petri dishes with black paint on the bottom, which provides a nice solid background without having to use black velveteen or Photoshop. Examples she showed were done with Martha Stewart Crafts multi-surface Satin Acrylic Craft Paint and Americana Gloss Enamels Black. These craft paints require some curing and/or baking. Both are thick enough that the dish can be dipped into the paint and turned upside down for drying without the paint running; however it has to dry for 4 days and then bake in an oven for ½ hour. She felt these didn't compare to her older dishes, which were done with glossy black house paint. While the enamels looked nice and black to the eye, the background in the images was too gray and there were obvious shadows. The dishes painted with house paint were much darker with little or no shadow.

Leslie also shared that The Korean Journal of Systematic Zoology website has excellent systematic and taxonomic information on various groups, and offers many articles as PDF files for download.

The meeting then began in earnest with Leslie explaining the history of methyl green usage and the reason behind our need of a comparative test of the products we use. In short, there are two substances, Methyl Green and Ethyl Green, three different formulas, and we're not sure if they result in the same staining pattern. Leslie compiled all the stain information from the different polychaete workers for comparison. Two of our labs had purchased aqueous solutions while others mixed their own dark solutions from powdered formulations. The City of San Francisco had a light solution but it was made from the powder form. The formulas were generally very similar differing only by a molecule or two. Some products included Zinc-Chloride, but most lacked it. Formulations had a color index of 42590 (=ethyl green) or 42585 (=methyl green). There were also slight formula weight differences. The aqueous solutions had a different hazard number but had the same color index. In summary, Leslie found clear differences in the formulas and formulations, and noted a one-methyl group difference between Methyl Green and Crystal Violet. Ethyl Green stains will eventually leach out and the color may change to purple during the transition. Chip (EcoAnalysts) and Sandy Lipovsky (Columbia Science) had the same product (the aqueous form), while most others had something slightly different, or at least from different manufacturers. Leslie's table showed at least four different CAS numbers. Kelvin mentioned that the CAS number was like a species identifier; he also looked up the color index, and found that the slight differences in color index were not likely a difference of any significance. The effort also revealed that several different solutions are available for purchase – i.e., not all "methyl green" dyes are the same – and that a 500mg bottle of powder will last for many years.

While Leslie spoke, Larry was busy pulling *Terebellides californica* specimens and placing them into the various stain batches to test staining results.

The review of the stained specimens showed that Chip and Sandy's 1% stain worked just as well as the very dark solutions made from powder. The specimens did not require rinsing and did not discolor the EtOH due to excess stain leeching off, a common occurrence with powder-based stains. The stain patterns and intensity were consistent across all the stains and specimens. It was very reassuring to know that the various stains used by SCAMIT members, whether solutions mixed from powders or provided by suppliers in aqueous form, produced equivalent results.

Kelvin raised some questions about the quality of methyl staining as a taxonomic character and our reliance on stain for taxonomic purposes. In particular, he noted that he is color blind and there is little information as to what is really being stained (i.e., what cells are targeted by the stains and the reliability of their consistent distribution among specimens of the same species). The resulting discussion suggested that color blindness is not a problem as the stain pattern is the same whether in full color or in shades of gray. According to Banse (1970), epidermal mucus cells take up the stain, and the pattern is fairly consistent within a species once allowance is made for differences between juveniles and older specimens. The size and distribution of glandular areas (the epidermal mucus cells) increases as animals increase in size and some times sexual maturity. A stain pattern may include what we call target stains (always visible) and secondary stains (variable).

Several folks noted that crystal violet is commonly used for bivalves to view muscle scars and such, while Alcian Blue is used for surface structures of polychaetes and other organisms.

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Bight'13 Specimen FIDs:
[Secretary's note: Several attendees brought presentations that included images and identifying characters of the various taxa discussed below. Whether or not these presentations make it to the SCAMIT website will be left with the originating taxonomist; however, please feel free to contact any individual directly for information regarding these taxa or their presentations.]

We then jumped into the review of specimens that were new, required verification, or represented provisional species. Several specimens of *Prionospio* sp A Blake were reviewed. Leslie mentioned that if an animal loses appendages prior to dying, it might not have scars. This can cause difficulty with the identification of spionids, cirratulids, syllids, etc. that rely on branchiae number or position on the appendage for proper identification.

OCSD brought a small terebellid that Leslie would leave at family Terebellidae. Kelvin left the specimen with Leslie to see if she could possibly get it to genus with more time. [Turns out that she couldn't – it was just too dang small.]

Larry discussed *Leitoscoloplos* and the problem of *Scoloplos armiger* Cmplx vs. *L. panamensis* based on the absence/presence of neuropodial acicular setae in small specimens. Specimens with subpodial lobes should be checked for neuropodial acicular setae.

Kathy shared *Spiophanes anoculata,* which only occurs in deep water. The specimen was from a sample collected off San Diego (Station 9041, 942m). It can easily be confused with members of the *S. bombyx-norrisi* group. This species has particularly distinctive long and U-shaped nuchal organs followed by discontinuous, smaller circular-shaped structures. Kathy's specimen also had eyes that were quite visible, giving question as to the suitability of the species name.

Leslie confirmed a specimen that Kelvin had brought, Trichobranchidae sp LA1 from 787m off Orange County (Station 9133).

Tony had a couple of FIDs: *Ampharete* sp TP1 (see cover photo), *Dialychone* sp TP1, *Monticellina* sp TP1, and *Naineris* sp TP1. He presented a slide show with photos and character states and distributed copies at the meeting.

Ampharete sp TP1 has 14 thoracic setigers and a smooth lower lip vs. 15–16 thoracic setigers and a ribbed lower lip for Apharetidae sp SD1. The staining pattern was also very different, and there were large laterally staining pigment spots on abdominal segments. The paleae are not huge, but distinctive.

Dialychone sp TP1 has a series of nearly uniform teeth in anterior abdominal segments placing it into *Dialychone*. The staining pattern includes a distinctive collar stain and white band in abdominal setigers. This was generally compared to *Chone* sp SD3. *Dialychone* sp TP1 differs by the presence of a pointed collar and the absence of the half-moon staining pattern on the collar.

Monticellina sp TP1 is distinguished by four peristomial annulations along with dorsal tentacles that insert anterior to setiger 1. There isn't much of a methyl green stain but there is a golden hue laterally between parapodia and golden banding on the ventrum. It has a very uniform width to the body, without anterior swelling.

Naineris sp TP1 is distinctive for not having a squared prostomium and no bifid or trifid lobes on parapodia. This species has a rounded prostomium with branchiae beginning on setiger 5.

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Leslie shared *Aphelochaeta* sp HYP6 Phillips 2009. It differs from *Aphelochaeta* sp LA1 Brantley 1999 by its prostomium stain and lateral speckling on anterior segments, while *Aphelochaeta* sp LA1 has a solid stain. This species raised several questions about how to distinguish these specimens from *A. petersenae*. For example, Kelvin was unsure of the differences in staining pattern.

Leslie presented a number of pictures of *Decamastus gracilis* that showed variations in staining pattern. There is a "target stain" which is always present and a secondary stain pattern that is sometimes present.

Leslie commented on *Mooreonuphis* sp SD1, noting that she had not seen it before finding some in her samples. She gave them a provisional name and prepared a character table only to find out the species had been previously named *Mooreonuphis* sp LA1 by Cheryl Brantley. Leslie presented her table (available in the SCAMIT toolbox: *Mooreonuphis* spp character table.pdf) because there is no voucher sheet for either *Mooreonuphis* sp SD1 or *Mooreonuphis* sp LA1, in part because Cheryl and Rick Rowe were unable to come to resolution on the two taxa. She found some slight differences (noted in the table) that probably represent intra-specific variation.

Another onuphid up for discussion was Leslie's *Nothria* sp DC1. It's close to *N. occidentalis,* but differences lie in length of antennae, types of hooks in first three setigers, and the start of intrafascicular hooks. She prepared and distributed a comparative character table.

Pista sp E Harris 2013 is related to *P. brevibranchiata*, but has a long lappet on setiger 1, and a large semi-circular lappet on setiger 2. The branchiae have a long stalk/base and are inserted distally on the prostomium. There are also two pairs of nephridia.

Prionospio sp J Harris 2014 looks a lot like *P. jubata*. The specimens are from the shallow shelf of Santa Monica Bay and Los Angeles Harbor at depths of approximately 60m. These present a problem in that they look a lot like the very common *P. jubata* except for their methyl green staining pattern, which is quite distinctive. She stained the NHMLAC paratype lots of *P. jubata* to be certain of the difference. *Prionospio* sp J also has dorsal crests/folds that don't fully cross the body until setiger 9 compared to setiger 6 in *P. jubata*. Leslie called it *Prionospio* sp J because of its resemblance to *P. jubata*. Blake's *P. jubata* came from more northern waters and deeper depths. Workers need to take another look at their specimens of *P. jubata* using methyl green to see if they really belong to that species. Unfortunately some agencies use Alcian Blue, which would preclude use of methyl green.

Next she presented images of two specimens that keyed out to *Spiophanes wigleyi* and matched the descriptions in both Blake (1996) and Meißner and Hutchings (2003), but their methyl green stains were different from that given in the latter paper and from each other. According to Meißner and Hutchings (2003) there is not a distinct stain; the darkest staining areas are the notopodial lamellae of setigers 9–15 and the posterior tip of the prostomium appeared darker than the surrounding area. Both specimens came from Santa Monica Bay, CLAEMD St. B7, 45m. On one the prostomium and peristomium were solid dark green dorsally and ventrally although the median portion of the lower lip's anterior edge did not stain, and there were some small spots on the mid-ventral portion of anterior setigers. The prostomium was even darker on the other specimen but the peristomium, while equally dark ventrally and laterally, did not stain dorsally, making the prostomium stand out quite distinctly from the pale flesh surrounding it; in addition to mid-ventral spots, setigers 1–8 each had a mid-ventrally interrupted transverse dark band running out to the parapodial bases and the inferior edge of the neuropodial lamellae was dark as well.

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Sigambra sp DC1 Harris 2014 from Los Angeles Harbor was compared to *S. tentaculata*. With the proboscis everted, the differences are clear. The serrations of the setae on the posterior spines are very fine, making them look smooth. The table that Leslie produced shows the differences in characters. Tony had also noticed the same characters in his specimens from Santa Monica Bay and LA Harbor, and it is likely that shallow water worms Larry identified as *S. setosa* from LB/LA Harbors and LACSD are the same. The same applies to specimens from San Francisco Bay, which are referred to as *Sigambra* sp SF1 Norris.

Up next, Veronica discussed some of the common species that she was seeing in San Diego, and presented several slides of various provisional taxa.

Aphelochaeta sp B13-1 is close in form to *A. tigrina*, but does not stain on the prostomium. Kelvin noted that he had created *Aphelochaeta* sp OC1 for a species within the *A. glandaria* Cmplx, but he has no formal description of it. Tony commented that Rick Rowe's *Aphelochaeta* sp A is not part of the *A. glandaria* Cmplx even though Rick had at one time suggested that they were the same. Tony has a *Monticellina* that has a similar staining pattern to *Aphelochaeta* sp OC1 and Veronica's provisional species (*Aphelochaeta* sp B13-1).

Thanks to the recent work on *Sternaspis* by Sendall and Salazar-Vallejo (2013) and Salazar-Vallejo and Buzhinskaja (2013) our local sternaspid fauna has been expanded. Veronica has found *Sternaspis affinis*, *S. princeps, S. williamsae, and Caulleryaspis nuda*. *S. williamsae* differs from *S. affinis* by the shape and margin of the plates, irrespective of size. The skin is delicate and thin, the animals are only a few millimeters in total length, and are found in deep water. They do not seem to co-occur with *S. affinis*. *S. fossor,* on the other hand, does not occur here.

Veronica explained that *Caulleryaspis nuda* was taken in a deeper water sample. *C. nuda* is small and distinctive, and has small sand grains embedded in the scutes. For more information on these sternaspids see Sendall and Salazar-Vallejo (2013), which is freely available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3677357/pdf/ZooKeys-286-001.pdf.

Therochaeta pacifica is a small flabelligerid species taken at a depth of 942m at station 9041. It has a distinctive constriction partway down the body.

Veronica reminded everyone of another provisional, *Pherusa* sp SD2 of Rodriquez 2008, that was erected from incomplete specimens but did not match other described species. It came from Bight'08 Station 7079, 465m.

Veronica also showed voucher sheets for some paraonids, such as *Aricidea* (*Acmira*) *rubra*. This prompted Kelvin to remind everyone that *Aricidea* (*Acmira*) sp SD2 (long median antennae) is not equivalent to *A.* (*Acmira*) *lopezi* (short median antennae). Larry commented there has been some confusion in the literature regarding antennal length of *A.* (*Acmira*) *lopezi*. He examined the holotype at USNM and confirmed that it has a short median antenna.

Another species that occurs in the deeper Bight stations is *Ophelina pallida*. Veronica distributed a sheet for this as well.

Ricardo then took center stage and showed *Chone* sp SD3 with its crescent moon-shaped collar staining pattern. It was from Station B'13 9020, 525m. There was discussion of the distinction between *Chone* and *Dialychone*, which was originally based on SEMs. Larry and Tony confirmed that they could be distinguished using a compound microscope to examine uncini.

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Ricardo also distributed an identification sheet for the deepwater species *Euchone velifera* Banse 1972. The sheet includes juvenile and adult photos with staining patterns.

He also discussed *Maldane californiensis,* which can be mistaken for *M. sarsi* if not carefully examined. *M. californiensis* possesses a ventral collar on setiger 1 that *M. sarsi* lacks.

Another deep-water maldanid, *Sonatsa carinata,* has a very distinctive staining pattern and unique pygidium (see Green 1987).

Bill Furlong then showed a polynoid that he has been wrestling with…and losing, unfortunately. The specimen from station B'13 Station 9241 (770m) was referred to ? *Eucranta* sp It looked to be the same as a specimen that Ron Velarde collected in B'08 that he left in subfamily Polynoinae, with *Eucranta* as a possible ID. Ron's specimen was from ~800m, and so they are likely the same. Bill had a voucher sheet that he kindly distributed.

Bill also had a *Harmothoe* sp, which he keyed to *H. multisetosa*, but he questioned the identification because of differences in elytra and the eyes, the latter being more distinctive in ventral view. The neurosetae have a large secondary tooth. The elytra are colorless, including the papillae, and parapodial lobes are long. Bill placed it into *Harmothoe* because of the transverse cusps on the notosetae. We noted that it had triangular prostomial peaks on prostomial lobes.

Larry then discussed his several new provisional species. *Aphelochaeta* sp LA3 came from B'13 Station 9210, 700m. It has an interesting dorsal staining pattern and palps ahead of the first setiger. He noted the banding on the head region. Veronica thought it was similar to her *Aphelochaeta* sp SD15, but it differs in that *Aphelochaeta* sp SD15 has staining that goes all the way down. In *Aphelochaeta* sp LA3, the anterior setae are very long with the posterior setae being about one-third the length of the anterior.

Arcteobia sp LA1, which co-occurs with *A. cf anticostiensis,* lacks prostomial peaks and pigmentation on the entire ventrum. It also has notosetae with transverse cusps. This character difference with *A.* cf *anticostiensis* brings into question the generic definition of *Arcteobia* notosetal types and the placement of these two species with differing notosetal ornamentation.

Arcteobia cf anticostiensis SCAMIT 1990 is distinguished by several characters: (1) a prostomium with peaks; (2) four eyes in trapezoidal arrangement; (3) a centrally located pigment band in the rear of prostomium; (4) posterior dorsum and ventrum with dusky pigment in posterior setigers; (5) elytra with a dark pattern in central and posterior lateral margins; (6) papillated dorsal cirri; (7) notopodial lobes with acicular (superior) and capillary (inferior) setae with longitudinal spinose rows; and (8) bifid neurosetae with a subdistal spinose region.

After all this discussion and review of species it was time to call it quits, thankfully!

9 JUNE 2014, BIGHT'13 CNIDARIA FIDS, OCSD

Attendees: Larry Lovell, Terra Petry (LACSD); Megan Lilly, Wendy Enright, Ron Velarde, Robin Gartman (CSD); Laura Terriquez, Ken Sakamoto (OCSD); Greg Lyon (CLA-EMD); Matt Hill (EcoAnalysts); Tony Phillips, Dean Pasko (DCE).

Business

President, Larry Lovell, opened the meeting reviewing the purpose of these Bight'13 taxonomy meetings. He made a plea for everyone to send in their Mollusca voucher listings via the B'13 taxon List-server early so that they could be consolidated before the next meeting.

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Larry also reminded everyone that it is membership renewal time, and encouraged members to request that their agencies purchase institutional memberships in addition to individual memberships.

There are no meetings scheduled for July, although Laura suggested that we consider holding an echinoderm meeting. After some discussion, July 21 at OCSD was suggested as a possible date/location. There was additional discussion about a non-cnidarian Miscellaneous Phyla meeting, perhaps on July 28 at LACSD. And not to be left out, the polychaete folks in the room suggested a polychaete-specific meeting on August 4 and/or 18 at NHMLAC.

Although there was some resistance to all these meetings, their purpose is to help answer questions ahead of time, before data gets submitted. There will be additional opportunities to change data with the Synoptic Data Review and Taxonomic QC, but that doesn't take place for some 4–6 months after the fact. For example, Taxonomic QC won't take place until spring 2015. QC samples have been pre-selected so that once data has been submitted, the selected stations will be announced and may then be transferred for processing.

Wendy mentioned the Mollusk Meeting of the Americas in Mexico City. It is being hosted by four organizations, with many concurrent sessions in multiple languages (Spanish, Portuguese, English). The meeting starts on Sunday, June 22 and runs through Thursday, June 26.

Ron reminded everyone that WSN will be held in Tacoma Washington, November 2014.

The Species Review Committee met in late May and has been working to update Ed 8 to Ed 9, especially with the polychaete hierarchy. The Committee determined that we would not list species added as a result of B'13 benthic identifications, but B'13 trawl inverts new to the list will be included.

Dean started the workshop by re-emphasizing the need for these cnidarian meetings to calibrate our identifications in John Ljubenkov's absence. Since John identified all cnidarians in each of the prior Bight surveys, it was critical to spend a little extra time now to make our data as consistent as possible. He started the day with a review of the current B'13 cnidarians that had been reported as having been vouchered and also reviewed the Edwardsiidae, including images of basotrichs. The images were taken from Tony's February presentation, cut down to include only those that had been vouchered from Bight'13 samples. [Secretary's note: Several attendees brought presentations that included images and identifying characters of the various taxa discussed below. Whether or not these presentations make it to the SCAMIT website will be left with the originating taxonomist; however, please feel free to contact any individual directly for information regarding these taxa or their presentations.]

Dean had slides of the various nemathybome basotrichs, which helped us sort out several taxa by demonstrating some of the differences between species. *Scolanthus triangulus* has basotrichs that are clearly large; while those of *Edwardsia juliae* are clearly small relative to the other species. In other cases, differences in shape such as straight in *Scolanthus scamiti* vs. straight and curved in *Edwardsia olguini*. In addition, some species had only one type or size of basotrich and others had two (e.g., *E. californica*, *E. olguini*). We also confirmed the "stacked banana" basotrichs of *Scolanthus triangulus* that John had so often talked about. Dean had a picture that showed this well. The slide show was made available to all in attendance, and will be posted to the website soon.

Dean also attempted to demonstrate his glycerin technique for dissolving the periderm and breaking up the nemathybomes to reveal the basotrichs.

We had a brief discussion about *Peachia* during which Tony explained that the mesenteries of *Peachia* extend the entire length of the animal. Tony also talked about the one "Ceriantharia" in the slide presentation as likely representing *Pachycerianthus*.

Matt showed a specimen of *Flosmaris* for FID. The specimen had a rounded, bulbous physa encrusted with sand grains, was wrinkled anteriorly (towards the tentacles), and had tentacles with slight coloration at their base. We compared Matt's specimen to Megan's voucher sheet for *Zaolutus* and pictures from the presentation, and were able to rule-out *Zaolutus* by the relatively fewer tentacles for the size of the specimen. The specimen had about 20 confirmed macronemes (relative to the 12 pairs reported for *Flosmaris*) and about 27 tentacles. We also compared the specimen to the description in Hand and Bushnell 1967, and everyone felt comfortable confirming Matt's identification. The specimen came from Station 8295, in Bolsa Chica Lagoon, at about 3m depth. The specimen was about 3 mm across and 15 mm in total length.

Matt also had a specimen of *Pentactinia*, which was not encrusted with as much sediment/shell hash as we are used to seeing. The single specimen was from Station 9482 (20m) in the Western Santa Barbara Channel that included another 20 specimens with more encrusted periderm. A cross-section showed it to have 12 mesenteries, and many tentacles. After some discussion and review, we determined the specimen to represent *Halianthella* sp A.

Matt also had a penatulid that he called *Stylatula elongata*. However the specimen had only 5–6 polyps per leaf, alternating leaves, 6–8 siphonozoids, and 6–8 sclerites at the base of each leaf. The group referred to Hochberg and Ljubenkov (1998) for documentation and determined the specimen to represent *Stylatula gracilis*, and suggested getting the specimen to Beth Horvath for confirmation.

Dean brought out a specimen of what he called *Stylatula elongata*. This specimen also had too few polyps to be *S. elongata*. It had ≤10 polyps/leaf, with the leaves arranged opposite each other on the stem. There were about seven sclerites/leaf that were thin, clear, and straight. While there was some color to Matt's *S. gracilis*, the polyps from this specimen were without color, and the siphonozooids either absent or very tiny. We referred the specimen to *Stylatula* sp DC1 and planned to also give it to Beth for review.

Wendy then brought out a specimen of *Urticina* sp from CSD samples. We compared it to Actiniaria sp 1 to assess whether or not Actiniaria sp 1 might represent an immature form of *Urticina*. We discovered several differences between the two, the presence of a spiraling ridge running along the disc margin in *Urticina* (where the tentacles emerge from the oral disc) that was absent in Actinaria sp 1, and the presence of verrucae in *Urticina*, which are absent in Actiniaria sp 1. It was great for many of us newbie cnidarian identifiers to see verrucae.

We then examined a specimen identified as Hormanthiidae from deep water station 9035 (465m) collected by the City of San Diego staff. It was a fairly large specimen with four cycles of tentacles, with ~30–40/cycle (close to 120 total). The periderm had rows of pustules leading from the top of the column below the tentacles down to the posterior end (See Fauntin 1998).

The CSD staff also brought a cerianthid FID that turned out to be what Tony and Dean might have called Ceriantharia sp C Ljubenkov, except that the specimen did not have tentacles with

color, a character John had listed in his notes for this provisional taxon. The CSD specimen was entirely without color (tentacles and body alike). Like Ceriantharia sp C, the mesenteries stopped mid-way down the column.

We then examined Matt's *Virgularia agassizi* and determined that it did not have enough of the rachis to get an accurate polyp count. But, because there were no sclerites, we agreed that it would be best left at the family Virgulariidae.

Dean had brought a group of small, bulbous "*incertae sedis*" which he thought might be anthozoans. Megan assisted with the review and agreed that they were indeed small anthozoans, some completely retracted such that there was little to no sign of an oral disc, mouth, or tentacles. Dean will review and enumerate them.

Dean also had some jumbled mass of material that was either an anthozoan or a very damaged ascidian. Megan and Dean determined it to likely be some sort of colonial ascidian that was badly damaged and not countable.

There was a discussion regarding countable vs. non-countable/partial specimens. We collectively decided that the taxonomists should try and "piece together" tentacle end and bases of anemones as best they can, but should make certain not to double count.

23 JUNE 2014, BIGHT'13 ARTHROPOD FIDS, CSD

Attendees: Chase McDonald, Larry Lovell, Don Cadien, (LACSD); Andrew Davenport, Katie Beauchamp, Ron Velarde (CSD); Danny Tang, Ken Sakamoto (OCSD); Craig Campbell, Erin Oderlin (CLA-EMD); Matt Hill (Eco-Analysts); Tony Phillips, Dean Pasko (DCE).

Business
Larry listed the upcoming meetings through August, all Bight'13 taxonomic meetings. Don then asked for a general understanding from each lab on how far they had progressed on their benthic identifications.

LACSD – They have completed their identifications and are working on their data entry

DCE – DCE has completed all of their POLA/LB samples, most (about 70%) of the RHMP, and have yet to begin the CLA-EMD and OCSD samples

OCSD – Arthropod IDs are on-going and are likely to be completed on time. Danny and Ken did not have any information on the other groups.

CSD – All of their deep samples completed, and other samples in progress

EcoAnalysts – Initial IDs on everything but arthropods have been completed. They are on track to finish by end of July.

We then got into discussing some ways to improve Bight'18 and will recommend the following to the Bight 13 Benthic Committee:

Secondary review of sorting to include some inter-laboratory exchange of samples for outside, independent check that would supplement the internal QA that takes place.

Perform a review of the benthic voucher collections.

We thought the idea of a voucher review was excellent, but discussed the practicality of reviewing each lab's voucher collections. Such a task would require a substantial effort. There are as many as six agencies involved in the identification process, with each producing up to 400+ voucher specimens. Perhaps SCAMIT could take it on as a workshop issue. The meetings that SCAMIT has been holding are, in part, intended to address some of the identification issues that a voucher review would also address. Ron suggested a compromise that involved a subset of those that are "common" along with all those that are new. Andrew suggested that we prioritize vouchers by abundance and distribution (frequency of occurrence). A lot of attention is given to the rare taxa at our meetings, where many of the common species receive little attention. Perhaps the SCAMIT meetings can focus on these abundant taxa to ensure that those species are being identified correctly, with a voucher review focusing on a percentage of the less common taxa.

Larry brought up the idea of having monthly training meetings based on a review of voucher materials.

Andrew asked about whether SCAMIT could consider PayPal as an opportunity for membership payments. Larry mentioned there was concern about PayPal taking their percentage, and whether we have enough membership to warrant the effort. However, PayPal does offer some considerations for Non-profits. We could offer Paypal with the option that the member pays the fee. Larry agreed to bring it up for discussion at the Executive Board's annual meeting in September.

Don then summarized the Species Review Committee meeting on May 28. The Committee was able to work through the entire emend list in one day. In addition they decided that new taxa encountered in Bight'13 infauna samples would not be added to the Ed 9 list since they will not have been submitted or QC'ed when Ed 9 is released. On the other hand, the new trawled species will be added since that data has been submitted and vouchers have been QC'ed. The annelid hierarchy will receive a major change in Ed 9 going back in time with Errantia and Sedentaria reappearing as Subclasses.

[Secretary's note: Several attendees brought presentations that included images and identifying characters of the various taxa discussed below. Whether or not these presentations make it to the SCAMIT website will be left with the originating taxonomist; however, please feel free to contact any individual directly for information regarding these taxa or their presentations.]

Dean started the workshop portion by reviewing a couple of taxa. A caprellid amphipod that Dean referred to *Paracaprella cf alata* came from Dana Point Harbor in 5m of water. The sample also had *Malacoplax* (Decapoda: Xanthiidae), *Monocorophium* and *Sinocorophium* (Amphipoda: Corophiidae). Dean consulted an electronic version of Mayer 1903 to obtain his identification. The *Paracaprella cf alata* specimen had the following characteristics:

- Generally smooth body and head, except for antero-lateral projections on pereonites II and III
- Vestigial mandibular palp represented by single seta.
- 2-segmented pereopods III and IV, each with basal article about twice the size of distal article (see Mayer 1903, Fig 41)
- Although pereopod 5 was missing, its junction with the pereon was represented by a large indentation and did not appear to accommodate the small 2- or 3-articlate pereopods of *Mantacaprella* or *Mayerella*.

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- Pereonite II with large antero-lateral, triangular projection (see Mayer 1903, Fig 41)
- Gnathopod 2 as illustrated in Mayer 1903, Fig 41
- Antenna 2, flagellum 2-segmented
- Gnathopod 2 basis without posteriorly directed bump (process)

The specimens were listed as *P.* "*cf*" *alata* because the mandibular palp is represented by a single seta instead of two (my translation of Mayer seems to suggest that *P. alata* has two setae) and the basis of gnathopod 2 is without a bump on the posterior margin.

Dean also showed a couple of images of the antennae of *Monocorophium acherusicum* and *M. uenoi* that he created for Dr. Christine Whitcraft (CSULB) in order to demonstrate the setal pattern used to discriminate the few species of *Monocorophium* with fused urosomites.

We then moved on to discuss the upper lip complex of *Aruga* and *Dissiminassa* (Amphipoda: Lysianassidae). Dean showed Plate 29, H and I from J.L. Barnard 1955. Tony had originally considered the specimens to be *Dissiminassa* based on the notched uropod, which was thought to be absent in *Aruga*, according to Don's [2011] Lysanassidoidea document. Dean demonstrated an easy way to distinguish the two genera by the size and shape of the epistome.

Ron showed a specimen of *Vemakylindrus* (Cumacea: Diastylidae) from CSD, as well as *Ampelisca amblyopsoides* (Amphipoda: Ampeliscidae) from deep water.

Ron then brought up a question about the legitimacy of characters used to distinguish deep water *Byblis*, particulary *B. barbarensis*. Ron indicated that the identifications based on antenna length, as used in Dickinson (1983), is questionable. In particular, couplet 6 of Dickinson's key is "broken" and does not work. Don suggested using Barnard's 1966 key, but the key is only applicable to males. Don found that *B. barbarensis* male antennae 2 are described more completely in Barnard (1960), which we then tried to apply to the information in Dickinson, with little success. *B. barbarensis*, *B. tanerensis*, *B. teneris* are the three eyeless species. Barnard describes the serrate inner ramus of uropod 3 in *B. barbarensis* as being distinctive, but *B. tanerensis* also have serrate uropods. Only *B. teneris* has a smooth uropod 3. We reviewed the uropod peduncle relative sizes and found potential differences based on the figures in Barnard (1960). *B. barbarensis* have uropod 2 and 3 peduncles terminating equally, with uropod 1 being shorter; whereas *B. tanerensis* has uropods 1, 2, and 3 terminating in a stepwise fashion. Also *B. tanerensis* uropods do not terminate together.

Paranthura japonica Cmplx specimens from LACSD and DCE were reviewed and appeared to be the same. We noted a difference in urosomite coloration that affected the ability to distinguish the suture lines. Don suggested Dean email Nomura from Japan or Gary Poore in Australia and ask if either has a method of distinguishing the two.

Ron then brought a specimen of *Atylus tridens* (Dexaminidae at the time of this meeting, but as of Ed 10 this genus is now in the family Atylidae) for review. Dean tried to take it through his key to the families of amphipods, but ran into a problem with couplet 30. This couplet relies on distinguishing whether or not urosomites 2 and 3 are fused, but this is difficult to interpret in some of the dexaminids (e.g., *Atylus*). Ron's *A. tridens* did not seem to key out because urosomites 2 and 3 seemed to be separate when examined with a needle. One must be careful when examining for this character.

We then considered a specimen that Dean called *Nebalia kensleyi* (Leptostraca: Nebalidae) from Station TMDL4 to compare it to *Nebalia pugettensis* Cmplx from Dean's collection and *N. pugettensis* from Matt Hill. We determined them to be indistinguishable and the notable differences seemed to be based on size or sex. Dean's specimens were then left at *N. pugettensis* Cmplx.

Finally we examined Tony's specimen for FID from B'13 Station 9305 that we believed to be *Valettiopsis*, but not *V. dentata* (Holmes 1908) nor the *V. concava* described by Hendrycks (2007).

Tony also had a specimen that appeared to be an Oedicerotidae, but no one present could offer any assistance. So this specimen was left for another meeting or some more digging by Dean and Tony.

Dean then brought out a mysid, *Amblyops*, for confirmation. Don suggested he look in Gerken et al (1997) for assistance.

30 JUNE 2014, BIGHT'13 MOLLUSCA FIDS, LACSD

Attendees: Ron Velarde, Megan Lilly, Wendy Enright (CSD); Tony Phillips (DCE); Kelvin Barwick (OCSD); Larry Lovell, Don Cadien, Terra Petry, Chase McDonald (LACSD); Angela Eagleston (EcoAnalysts); Pam Neubert (Stantec).

Business:
The business meeting opened with upcoming meeting announcements (please see website for the upcoming meetings as well as those that have already occurred). If attending a polychaete meeting at the NHMLAC, wear your winter gear, as some of these meetings will be in the usually cold collection room.

Everyone was asked to submit his or her voucher lists in advance of these meetings. This practice has been extremely helpful by allowing leaders to prioritize specimens for review and allow taxonomists from the participating laboratories to see what other folks have been collected thus far.

As of right now, there is nothing scheduled for September. We will likely return to our regular schedule of once per month and are looking for topics. One possible topic suggested was tanaid crustaceans with David Drum, with the hope of resolving issues with *Leptochelia dubia* Cmplx and *Zeuxo normani* Cmplx, among other taxa.

Wendy reported on the recently held Mollusca 2014 joint meeting of the four major malacological societies in the western hemisphere. The meeting was very exciting, attended by over 350 people from five continents with the main part of the congress held at the National University in Mexico City. Every day, four concurrent sessions were held with symposia including Bivalvia of the Americas, Opisthobranchia, Archaeology, Cephalopoda, Aquaculture and Invasive Species. Next year's WSM meeting will be at California State University Fullerton at the end of June. Danielle Zacherl is the new president.

Bight'13 Lab update: Almost all agencies feel they are on track to meet the August 31 data submission deadline although Kelvin expressed some doubt in light of the OCSD staffing shortage.

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The topic of a voucher collection review was re-visited briefly as a possible alternative to the current 10% re-identification process for QA/QC of the taxonomic efforts. We are reviewing vouchers on a small scale in these Bight'13 review meetings, but a more extensive review may be more valuable. One suggestion is to target specific taxa/vouchers for review based upon their frequency of occurrence. At this time, there are no plans to implement this strategy for the current project, but the idea will be suggested for the next Bight project and may be suggested for the current project if funding is available. Also, there was mention of including an external sorting QA/QC step for the next Bight project.

With membership month having past, the idea of opening a PayPal account for SCAMIT members to pay online was reintroduced. Treasurer Laura Terriquez is supportive and has already done some initial research into implementing this tool. It will be discussed at the next SCAMIT Executive Committee meeting.

Edition 9 of the species list should be ready and on the website for download this week after which Wendy will update the Access tables and distribute them to all interested parties. Only new Bight'13 trawl species will appear in Ed 9.

Species review:
Don's arrival with collated printed voucher lists signaled the start of the taxonomy portion of the meeting. [Secretary's note: Several attendees brought presentations that included images and identifying characters of the various taxa discussed below. Whether or not these presentations make it to the SCAMIT website will be left with the originating taxonomist; however, please feel free to contact any individual directly for information regarding these taxa or their presentations.]

Kelvin and Wendy kicked off the specimen show-and-tell with two "Turrid"-type gastropods that mystified all present. Kelvin's specimen was possibly a *Pseudomelatoma* but would require further investigation. No one had any real guesses for Wendy's specimen.

Angela Easton from EcoAnalysts brought a number of lovely animals including *Epitonium sawinae*, *Amphissa bicolor*, *Venerupis philippinarum*, *Crepidula onyx*, and an unusually proportioned *Falcidens longus*. This last one was identified with the help of Pam Neubert and Kelvin removing the radular cone so that the distinctive triangular plate and very large denticles could be viewed. Angela also brought a *Boonea* (possibly *B. suturalis* or *B. fetellum*), a juvenile Eulimidae, *Ocinebra*, and a *Haminoea* that appeared to be *H. virescens* but for which the habitat was wrong.

After much discussion and rotating of the specimen, Megan's *Vitreolina* was determined to be *V. macra*. Despite a lively discussion regarding Mytilidae and the size at which you can safely ID a specimen, Megan decided to maintain her small specimen at Modiolinae and double-check with Paul Valentich-Scott on his recommendations for subfamily name usage in this regard.

We also discussed *Alia tuberosa* and examined a specimen Megan had brought which showed the characteristic sculpturing (or "wings") in the periostracum.

Wendy brought out a number of specimens from a bay sample showing the wide range of color morphs for *Nutricola tantilla* including chestnut brown, white with brown maculations and pure white. From the same station, she also showed examples of *Diplodonta serricata* and *Leukoma staminea*. An offshore sample near Point Conception contained *Crepipatella orbiculata*, *Crenella decussata*, *Nuculana penderi*, and yet another unidentified "Conoidea".

The last part of the day was devoted to discussing chaetoderms. Tony Phillips had a specimen of *Falcidens hartmanae* confirmed but then had other specimens that appeared similar but had slightly different body spicules and an incised oral plaque. He also had an unusual *Spathoderma* that Pam felt sure was a new species for us.

We looked briefly at one of Terra Petry's *Chaetoderma* provisionals but didn't make a determination. Without the use of birefringence to examine the spicules, further work would not be definitive and with that, the meeting came to a close.

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