SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS

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Scolanthus triangularis nemathybomes at 600x. Photo by Dean Pasko

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BIGHT'13 TRAWL ECHINODERM FID, 29 JANUARY 2014, CSD

Attendees: Greg Lyon (CLAEMD); Ron Velarde, Megan Lilly, Matt Nelson, Kathy Langan, Wendy Enright (CSD); Kelly Tait (AMEC); Jim Mann (ABC); Seth Jones (MTS); Tony Phillips (DCE); Kelvin Barwick, Ernest Ruckman, Laura Terriquez (OCSD); Larry Lovell, Cheryl Brantley, Chase McDonald, Fred Stern, Don Cadien (LACSD).

UPCOMING MEETINGS

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

Business

Larry called the meeting to order by announcing that many of the 2014 meetings will likely focus on Bight taxonomic issues. The Monday February 24 meeting will be at CSD and will cover Bight'13 infauna miscellaneous phyla and Megan may include a short segment on sipunculids, specifically how to deal with small specimens.

Larry also called for more meeting topics for 2014.

We discussed the recent posts to the SCAMIT General list server emails dealing with *Nuculana minuta* (Mollusca: Bivalvia: Nuculanidae), an invalid taxon. There was also some discussion about the panopeid decapods, *Lophopanopeus bellus* and *L. diegensis,* now synonomized under *L. bellus*.

We then moved on to how to address juvenile specimens of *Cyclocardia crebricostata* (Mollusca: Bivalvia: Carditidae). The discussion came about because we had *C. crebricostata* on the list based on a John Ljubenkov identification from some regional material. Paul Scott (Santa Barbara Museum of Natural History) found this very unlikely and asked SCAMIT to review the ID if possible. We did, and the specimens proved to be something other than *C. crebricostata,* which eliminated the need for a considerable southern range extension. Paul was happy, and the SCAMIT List got simpler. Unfortunately, the five species within *Cyclocardia* remain difficult to distinguish, especially as juveniles. The recommendation is to leave juveniles at the generic level.

Tony announced that he had updated the Cnidaria presentation parts I and II, which will be posted to the SCAMIT website.

ID resolutions

Kelly announced that AMEC has partially worked up the SD Bay sponges, but the effort is ongoing.

Megan reviewed ophiuroid specimens for Kelly (AMEC) and confirmed many identifications.

There was some confusion and discussion as to the desired processing procedures for measuring *Brisaster* for the meeting. The idea was that individuals were to have arrived with some efforts to measure and identify their specimens prior to the meeting.

Brisaster measurements were reviewed for LACSD and CLAEMD. OCSD had already measured their specimens. Aquatic BioAssay Consulting (ABC Labs) and AMEC were fortunate enough to have none since their Bight'13 trawl stations were too shallow for the echinoid fauna.

ABC Labs and Vantuna Research Group (VRG) brought specimens of *Aphrodita* for review (a polychaeta – just for clarification!). ABC labs collected *A. castanea* and VRG specimens were identified as *A. negligans* and *A. japonica*.

Megan and Wendy assisted everyone with Asteroid identifications in the afternoon.

Bight'13 Miscellaneous Phyla, 24 February 2014, CSD

Attendees: Greg Lyon, Craig Campbell (CLAEMD); Ron Velarde, Megan Lilly, Wendy Enright, Nick Haring, Robin Gartman (CSD); Seth Jones (MTS); Tony Phillips (DCE); Ken Sakamoto, Laura Terriquez (OCSD); Larry Lovell, Don Cadien (LACSD); Chip Barrett (EcoAnalysts); Dean Pasko (DCE-presenter).

Business

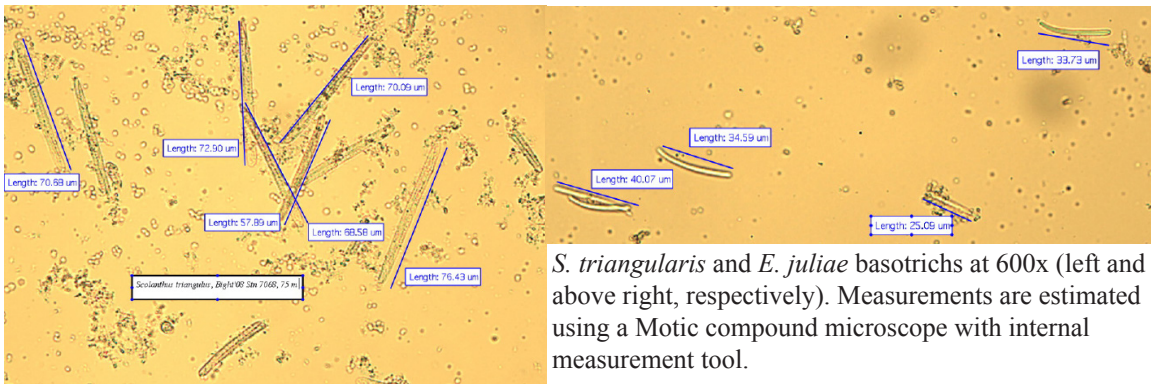
Larry called the meeting to order by announcing that there were no new meetings scheduled for 2014. Larry offered to host a SCAMIT Taxonomic Toolbox Workshop and Tony offered to help host a discussion workshop on *Chaetozone* (Annelid: Cirratulidae). Dean then suggested that he could try to manage an arthropod workshop, particularly if Don and Ron were willing to assist with FIDs. The two meetings were tentatively scheduled for April and March respectively. See the SCAMIT webpage and General Discussion ListServer for additional information.

Workshop

Larry then turned the meeting over to Dean who began by announcing that this was indeed intended to be a workshop since none of us were really "expert" in any of the various taxa that make up the Miscellaneous Phyla category. And with the recent passing of John Ljubenkov ("Big John"), we have an even smaller pool of people with broad ranging experience or expertise. Although several of us have tried hard to grasp these difficult groups over the years, they remain a challenge for all of us.

Dean then opened with a few slides and a short discussion of the Edwardsiidae, specifically *Scolanthus triangulus* and *Edwardsia olguini*. Dean had a couple of slides showing the difference in nemathybome basotrich size between *S. triangulus* and *E. juliae*. The difference in size is very clear (see comparison photo). He offered up the idea that the basotrichs can be used, in some cases, to separate species or individuals when there is a difference between specimens. However, he pointed out that he had had difficulty differentiating *S. triangulus* from *E. olguini* because the absence of a physa in *S. triangulus,* versus its presence in a very reduced form in *E. olguini,* was nearly impossible to differentiate. He wondered if the basotrichs could be used to distinguish between them, and though he had tried there did not seem to be a notable difference. On the other hand, he couldn't know for sure if this difficulty was the result of not having truly distinct species to examine or not. Additional work will be required going forward.

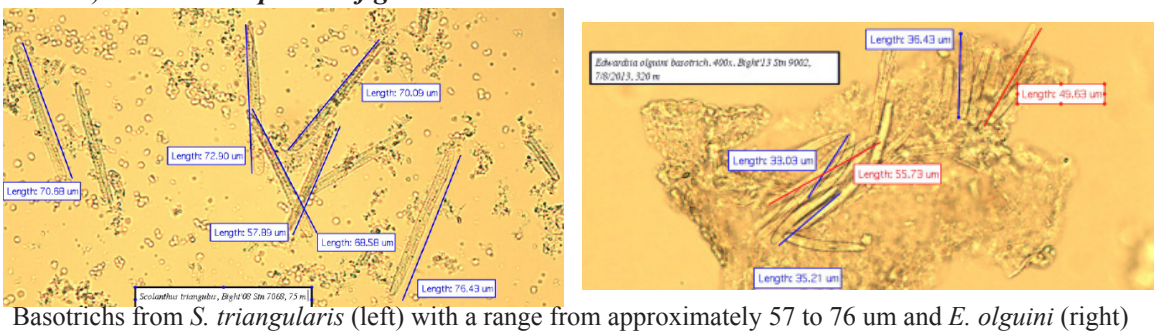
Dean then explained that he had found the nemathybome basotrichs less difficult to isolate and examine than he had thought. John had always sliced off a portion of the epidermis of his specimens, laid that piece on a slide, diced it up with a blade, smashed it under a coverslip, and examined the result for basotrichs. While trying to repeat the process, Dean discovered that the nemathybome tissue seems to dissolve readily in glycerin! So it became much easier to simply pinch off a nemathybome or two, place them into a drop of 50% glycerol on a slide, place a coverslip over it, and, using a dissecting scope, smash the material with the base or tips of his



S. triangularis and *E. juliae* basotrichs at 600x (left and above right, respectively). Measurements are estimated using a Motic compound microscope with internal measurement tool.

forceps. Doing the manipulation under a compound scope is not impossible, but more difficult because of the restricted working distance. In just a few seconds the tissue falls apart leaving the basotrichs mostly intact and ready for viewing. The slide can then be moved to the compound scope once the tissue is dissociated for examination of basotrichs. Hopefully sharing the simplicity of this process will facilitate a broader examine basotrichs for comparison by everyone.

Later on, after lunch and during the workshop portion, we were able to take specimens identified as *E. olguini* by Megan and *S. triangulus* by Big John and compare them. We noted differences in the external appearance that, although apparently clear in these two specimens, remain potentially difficult to apply. *S. triangulus* has nemathybomes that are sunken into the wrinkled mesoglea/ epidermis of the animal, while the nemathybomes of *E. olguini* tend to be more bulbous and protruding (blister-like) out of a smoother epidermis. When we mounted the basotrichs however, we were able to distinguish the *E. olguini* basotrichs (approximately 25 micrometer units at 400x) were about one-half the size of those from the *S. triangulus* specimen (about 80 micrometer units at 400x). ***See the comparison figure***.



Basotrichs from *S. triangularis* (left) with a range from approximately 57 to 76 um and *E. olguini* (right) at ≤40 um. Magnification is 600x. Measurements are estimated using a Motic compound microscope with internal measurement tool.

Dean then gave a short presentation on the corymorphines (Cnidaria: Hydrozoa: Corymorphidae). Big John had been working with this group for a while and helped prepare the MMS Atlas Volume 3 Cnidaria section on Hydrozoa. He created a key to the southern California corymorphines in about 2004, which Dean later revised to incorporate Corymorphidae sp SD1. During the presentation we were able to add distribution information to the key, and clarify and correct the usage of certain terms. The revised key is included in this NL. This key was distributed via the Bight'13 taxon list server and should be used for all Bight'13 identifications.

We then moved on to a presentation of Nemertea that had been modified from Megan Lilly's 2006 presentation: "Palaeonemertea of the SCB." The presentation began with a short description/ discussion of the differences between Heteronemertea and Palaeonemertea, and Carinomidae

and Tubulanidae within the latter. Dean emphasized the need to perform cross-sections to confirm musculature and/or clear the specimens as necessary, particularly for the Enopla, which were not discussed. Throughout the presentation we made additions and clarifications to the pictured and referenced taxa. Nick Haring shared his preferred blade for making nemertean cross-sections: Feather Hi-stainless double edged razor blades. You can get packs of 10 for about $5 from Amazon. All of these additions to the presentation and more were incorporated into a final presentation that will be posted to the SCAMIT website and distributed via the Bight'13 Listserver for use during Bight'13 sample processing.

After lunch we dove into a review of specimens. Dean started by showing a few slides of a large polyclad flatworm that he could not identify cleanly. The specimen was about 20 mm long, had eyes within the tentacles, and a small group of eyes between the tentacles and extending anteriorly. No marginal eyes were present. There was some discussion of potential taxa, and Tony suggested that the specimen was a stylochoplanid and perhaps *Emprosthopharynx gracilis*. Though the number of cerebral eyes was small by comparison, the shape of the general body structure was suggestive of *E. gracilis*. [**Editor's note**: Dean was able to confirm the ID.]

We had a more lengthy discussion of Heteronemertea sp SD2, Heteronemertea sp HYP1, and what Laura, Dean, and Ken had called Anopla sp OC1. Laura and Megan had already considered Heteronemertea sp SD2 and Anopla sp OC1 and determined them to be the same. Some question remained in Dean's mind because he had not yet seen a specimen of Anopla sp OC1 with a caudal cirrus. Unfortunately, there is little to distinguish the two taxa since both have the same distinctive C-shaped cerebral sense organ (CSO), accompanied by a group of cells lining the CSO invagination with a unique sheen or glistening characteristic to them that make the CSO stand out. And both have the same musculature that includes a narrowed band of outer longitudinal muscle. The only character that could be used to distinguish them was the presence/absence of the caudal cirrus; but that remained an elusive character since only one damaged complete specimen of "Anopla sp OC1" had been collected. On the other hand, there was also a fair amount of debate about whether Heteronemertea sp SD2 and Heteronemertea sp HYP1 are the same. After quite a lively discussion, we decided to attempt to separate them based on differences of the musculature. Heteronemertea sp SD2 musculature includes a very narrow outer longitudinal muscle band that is not much wider than the middle circular muscle band, if at all. Heteronemertea sp HYP1, on the other hand, has a quite large, noticeable outer longitudinal muscle band that is about 1.5 to 2 times as thick as the inner circular muscle band. Heteronemertea sp HYP1 also has a different presentation than Heteronemertea sp SD2. The former does not have the characteristic "puckered" mouth opening, nor the glistening C-shaped CSO – it is typically round in form. In addition the head seems to preserve with a ventral furrow.

We also discussed Dean's specimens listed as Heteronemertea: Lineidae, which only added to the confusion discussed above between Heteronemertea sp SD2 – Heteronemertea sp HYP1. Megan and a few others thought they might represent *Zygeupolia rubens* because of the tapered head, wrinkled anterior region, and caudal cirrus. However, Dean's specimens have a distinct, though shallow, cephalic slit and a less strongly tapered head. These specimens also do not have a strong cerebral sense organ, like that found in *Z. rubens*. Dean mentioned that, in his experience, finding the CSO on *Z. rubens* is often difficult due to the contracted/wrinkled nature of the head; it is not an obvious character of the species. In the end, Dean renamed the species as Lineidae sp LAH1 in recognition that the specimen was collected from Bight'13 samples collected from Los Angeles Harbor/Port of Long Beach area.

A specimen of Tubulanidae sp C that Dean had brought was also confirmed.

Finally, Megan confirmed an echiurid specimen from 363 m off the Santa Barbara Channel. Dean had identified it as *Listriolobus hexamyotus* at first, but then changed his mind to *Arhynchite californicus* because he could not distinguish the muscle bands. However, upon additional dissection and review, Megan was able to confirm the long nephrostomal lips of *L. hexamyotus*.

Please visit the SCAMIT Website at: www.scamit.org

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

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A Key To Corymorphine Polyps

Modified from J.Ljubenkov (2004) by D.Pasko 26Feb2015

1. Both tentacle whorls filiform (smooth) to serially bulbous, tips bulbous; papillae at base of hydrocaulus ..... *Corymorpha* **2**
— Aboral and/or oral tentacles moniliform (beaded) **3**
2. [Note: 3 choices] Gonangia are cryptomedusae (elongate, fusiform bodies); hydrotheca transparent ... . *Corymorpha palma*
— Gonangia are quadrate eumedusoids with one tentacle longer; hydrotheca transparent .... *Corymorpha bigelowi*
— Hydranth equal to or larger than hydrocaulus; hydrotheca not transparent, rugose ... *Corymorpha* sp A
3. Oral tentacles moniliform, tapering distally, 10 in number; aboral tentacles filiform, up to 12 in number; papillae above oral tentacles at base of hypostome; San Diego Bay ..... Corymorphidae sp SD1
— Oral tentacles filiform or moniliform and capitate; aboral tentacles moniliform; papillae below oral tentacles at top of hydrocaulus ..... *Euphysa* **4**
4. More than 10 oral tentacles; oral and aboral tentacles long, moniliform, capitate; hydrocaulus short and relatively thick, not tapering; hydranth tapering distally; gonosome formed by quadrate eumedusoids with 4 equal tentacles; from Point Arguello ..... *Euphysa* sp B
— Less than 10 oral tentacles; hydrocaulus long, thin for entire length or tapering; gonosome of medusoids or buds without 4 equal tentacles **5**
5. Oral tentacles typically 4 in number, short and capitate; aboral tentacles about 10 in single whorl; hydrocaulus tapering; hypostome short and blunt; quadrate hydromedusa with 1 longer tentacle .... *Euphysa* sp A
— Oral tentacles 3-7, short and capitate; aboral tentacles 4-12 in two alternating whorls; hydrocaulus thin with uniform diameter; hypostome elongate, ovoid; buds polyps that often contain one aboral tentacle of parent ..... *Euphysa ruthae*

References:

Barwick, K. 1993. Common Hydrozoa off Point Loma. http://www.scamit.org/taxontools

Hochberg F.G. & J.C. Ljubenkov. 1998. Chapter 1. Class Hydrozoa. In: Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and the Western Santa Barbara Channel, Vol. 3: Cnidaria. Scott PV & Blake JA, eds., pp. 55-1 12. Santa Barbara Museum of Natural History, Santa Barbara, California.

Ljubenkov, J.C. 2004. A Key to Corymorphine Polyps. SCAMIT NL Vol 23, No 1&2, May/June 2004.

Norenburg, J.L. and M.P. Morse. 1983. Systematic implications of Euphysa ruthae n. sp. (Athecate: Corymorphidae), a psammophilic solitary hydroid with unusual morphogenesis. Transactions of the American Microscopical Society 102(1): 1-17.

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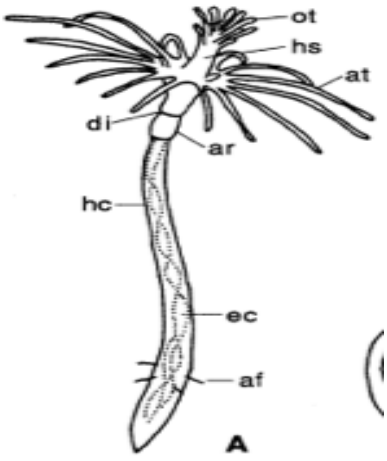
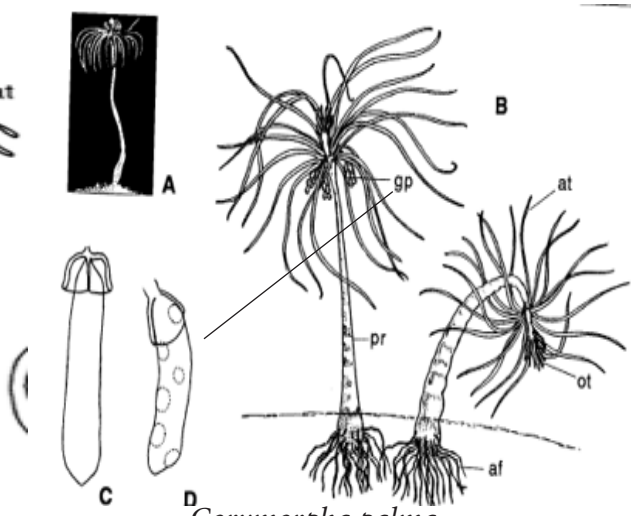
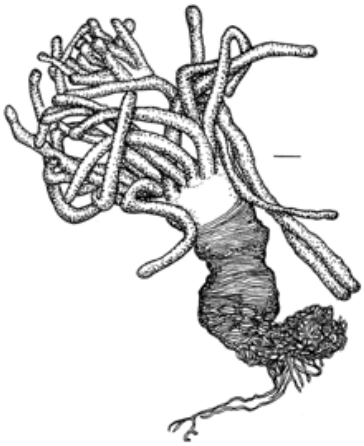


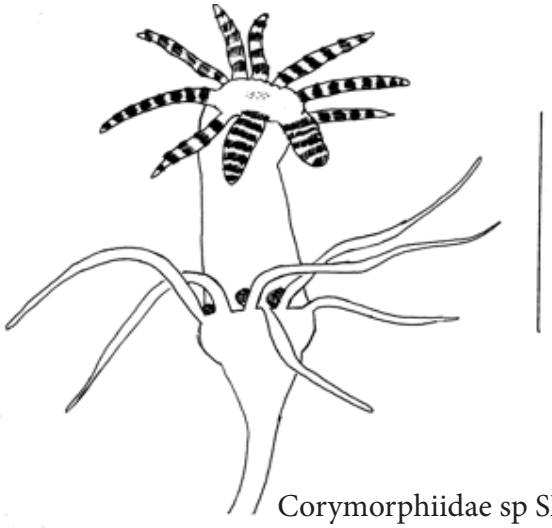
Corymorpha bigelowi



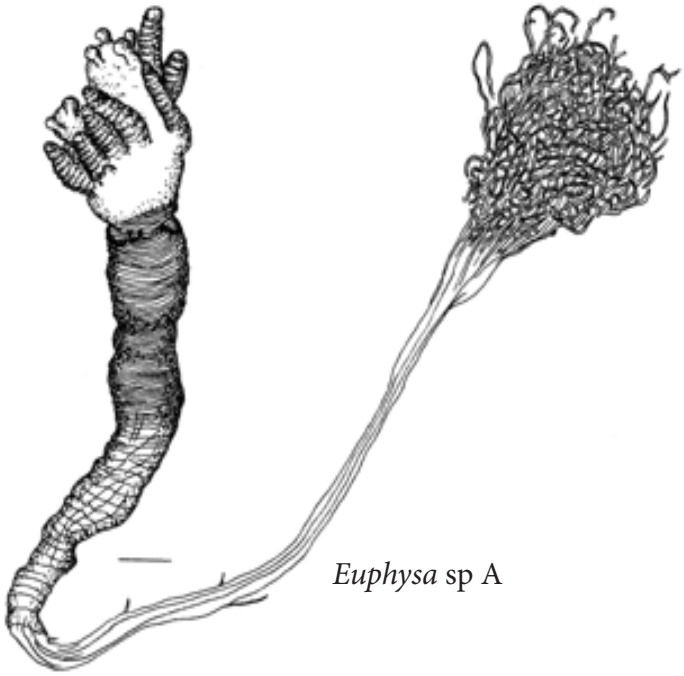
Corymorpha palma



Corymorpha sp A



Corymorphiidae sp SD1



Euphysa sp A

Euphysa sp B

Euphysa ruthae