Southern California Association of
Marine Invertebrate Taxonomists

May, 2003 | Vol. 22, No. 1

SCAMIT Newsletter

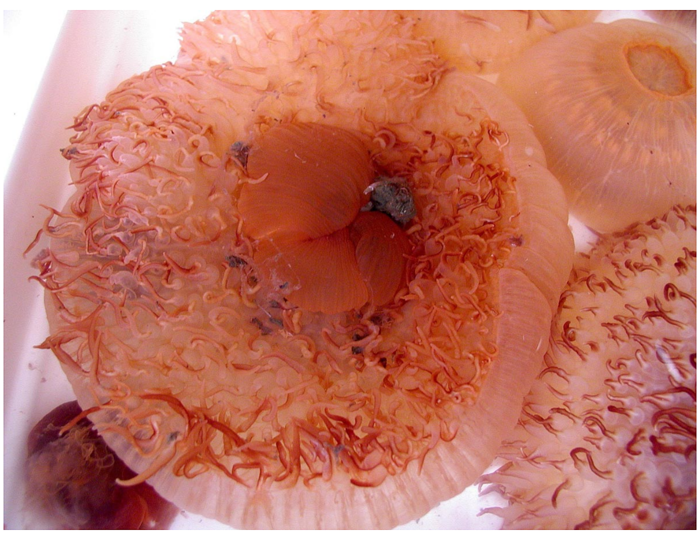
SUBJECT: **Bight 03 Polychaetes**

GUEST SPEAKER: **Larry Lovell**

DATE: **11 August 2003**

TIME: **9:30 a.m. to 3:30 p. m.**

LOCATION: **City of San Diego Marine Biology Lab**
4918 N. Harbor Dr. suite 201



Liponema brevicornis expanded in the laboratory. Note the inflated stomodeal lips. An upside down specimen is visible on the upper right; note the small basal disk.
- D. Cadien

APRIL MINUTES

The first to have the floor was Don Cadien, who wanted to discuss the concept of specialist taxonomy for the upcoming Bight'03 project. He felt that this option benefited the data during the B'98 project and was a worthwhile endeavor. He recommended the following groups be identified by a specialist - all Anthozoa, which we would need a volunteer for (this position has since been filled by John Ljubenkov), and the Aplacaphorans, which Don has volunteered to do with the help of Kelvin Barwick. The following three groups were also suggested - Nemerteans, Enteropneusts and Polyclads. The polyclads are pending with some tentative offers and to date, no brave soul(s) has stepped forth and offered to tackle the nemerteans and/or the enteropneusts, so they will be handled individually by the participating agencies.

As far as the type of samples to be taken, LACSD conducted some trial sampling using both 0.5mm screens and 1.0mm screens. The data between the two were analyzed, and it was deemed unneccesary to take .5mm samples as the resultant sorting effort was greater than the value of the data gathered. CSD and CLAEMD conducted the same sampling test and agreed with the results of LACSD. Therefore, a 1mm screen size shall be used when conducting benthic sampling for the B'03 project.

A brief discussion then arose as to whether we shall be using the Bight Listserver established by SCCWRP for the last Bight project, or if we would be using our new SCAMIT listserver to distribute information and questions regarding the project. It was decided that we will use the SCCWRP Bight server and then "CC" the SCAMIT listerserver in order to distribute the information as widely as possible.

Ron Velarde (CSD) then proceeded to tell us about the Marine Bioinvasions Conference at Scripps which he had attended (and presented at) earlier in the month. According to Ron, the primary theme of the meetings was early detection; how to develop techniques to discover invaders quickly and dispose of them as efficiently as possible. A second theme was the biology of the invaders themselves; what vectors are being used for transportation? What is their life history? One interesting subject for Ron to learn of was the technique of "molecular detection", where molecular markers are used to identify an invader and its place of origin. For example, an invasive Whelk found in Chesapeake Bay was thought to have been introduced from Japan. However, molecular marker work revealed that the animals had come from the Baltic, where they had previously been introduced.

Algal invasions have also become a big area of concern. In Hawaii invasive algae is harming coral reefs. And, we've all heard of the *Toxofolia* scare and the damage it can cause in an environment.

With the business meeting concluded Kelvin Barwick launched into an extensive and thorough examination of the Eulimids. However, his notes, tables and voucher sheets are not yet ready for publication and are still under review. They will hopefully be complete by the time the June newsletter is published.

ELECTION RESULTS

Surprisingly enough, the current suite of officers were re-elected by a land-slide. I know, hard to believe, but true. SCAMIT members will have another year to come up with good write-in candidates for next year's election….

OBSERVATIONS ON CAPTIVE *LIPONEMA BREVICORNIS*

D. Cadien, CSDLAC 28 February 03

On 24 February a test trawl made at 501m (mean depth, depth range 498-510m) on the slope below the San Pedro Sea Shelf yielded some unusual animals. The trawl was taken to demonstrate that the nominal deepest depth included in the random draw for the B'03 trawling program could be reached by our sampling vessel and gear. The mud on the head ropes and the contents of the cod-end of the net were proof that we did indeed fish on the bottom at that depth.

The catch was small, but included a number of dome shaped cnidarians which proved to be anthozoans. They looked like large mushrooms with the stems broken off (except for the lack of gills on the underside). We didn't know what these were in the field, so brought them back to the lab for further investigation. We kept them in refrigerated sea-water on board, and moved them into the sample receiving cold-room at our lab (temperature maintained at 3-4 degrees C). Many of the animals had very irregular distribution to the numerous small tentacles on their oral disks, some being “bald” over a good portion of the disk. This lead to the conclusion that the tentacles were easily lost, and probably voluntarily autotomized by the anemone.

My reference resources were exhausted without providing me a clue as to the identity of the animals, so I called John Ljubenkov. I told him what I knew about the creatures, and the combination of numerous deciduous tentacles and small pedal disk (only 30-40 % of oral disk diameter) led him to suggest that this was probably *Liponema brevicornis*, commonly referred to as the “barrel anemone”. I checked out this name on the anemone website, and was able to match a photograph of the holotype to the field appearance of our animals (thank you Daphne!). Having put the identification on a firmer basis I snapped a few digital pictures and went home.

The next day we got fresh seawater to place the animals in, prepared a larger container to receive them, and moved them to new quarters. Overnight they had expanded enormously in the cold room. I expected their tight quarters and limited access to oxygen (there were three large, two medium-sized, and 2 small individuals in a 6 inch diameter plastic bowl) to have taken a toll. To my amazement and delight they were quite happy (at least the larger individuals). The two smallest had been largely smothered under the expanded disks and columns of the larger individuals and never recovered. The smallest individuals expanded size is estimated at 1.5 inches disk diameter.

Once transferred to an 18x12" plastic tray they could continue to expand and spread out. The two medium sized individuals (disk diameter 2-2.5 inches when measured later) had assumed an entirely new and unfamiliar form. Their oral disks essentially disappeared from view. This resulted from the great inflation of the column which caused in-rolling of the oral disk. The result was reminiscent of a beach ball with a sizeable pore at one end (where the in-rolled oral disk was) and a pedal disk rim at the other. The swollen column between them was so distended that the paired mesenteries were clearly visible through the body wall. In some areas gonadal material was also visible along the mesenterial pairs. The pedal disk was clearly defined in photographs of these animals. A central pore was discernible in one of the two individuals, and also seemed indicated in the second. Even when columns were fully distended the pedal disk was demarcated by a raised rim. The inflated form was retained by these two individuals until they spent another night in the cold room in the larger container. During that period they reduced the inflation of the column, revealing once again their oral disks. At no time during observations were any of the animals seen to make an effort to attach to any substrate. This could have been a result of being placed on an unfamiliar surface (plastic), but there was no evidence of attempted and rejected attachment.

All further comments are on the three largest individuals (expanded disk diameter 4-5 inches), which had retained the majority of their tentacles and seem to have suffered least during capture. In the field, and in the smaller dish immediately following return to the lab, the animals had a convex oral disk, and a completely retracted column. Now, as they expanded in their new quarters, the oral disk lost its convexity, becoming first flat and later concave. This concave state resulted from expansion of the column by uptake of seawater. The column began to extend, separating the oral and pedal disks. It became more and more inflated in the middle, causing in-rolling of the edges of the oral disk. This never proceeded as far with these larger specimens as it had with the medium sized ones described above. In the large individuals the oral disk was always visible, even if the edges became slightly in-rolled with the sides of the column expanded out beyond the disk edge as viewed from above. It was clear, however, that these animals could also completely in-roll the oral disk if they wished by continued inflation of the column to attain the beach ball shape which their smaller brethren had assumed.

When first handled in the field these animals were flesh colored with variously lightened or darkened tentacles. In the laboratory upon recovery and expansion they proved to have a more pronounced pinkish cast than was initially visible. The tentacles were in some cases dark brown colored, in others much the same color as the base color of the animal. On some of the more flattened tentacles near the edge of the disk the color was that of the body, but the tentacles were bordered in black.

Tentacles were very numerous in those specimens least affected by capture. There were too many for direct counts on the living specimens, but based on quadrant counts of photographed individuals, an estimated 150-225 tentacles were present. These had a slight taper from base to tip in the tentacles around the stomodeum, and a more pronounced taper accompanied by flattening in those along the edge of the disk. Tentacles were slightly sticky to the touch. There was no "sting" from unprotected contact with tentacles or any other part of the animals. No arrangement was evident, either circular or radial, in the placement or relative sizes of the tentacles. The tentacles were lost relatively easily, and many were seen floating free in the water of the tank into which the catch was transferred on the vessel. These were examined at the time and had very expanded bases, which made them look like sipunculans. According to John Ljubenkov, the deciduous nature of these tentacles results from each being equipped with a basal sphincter which is capable of pinching off the tentacle at will. In one of the photographs taken in the laboratory such sphincters seem clearly visible in an area of the oral disk where tentacles had been autotomized.

In the photographs taken soon after return from the field, when the oral disk was still convex, the stomodeum appears small and circular, and the stomodeal lips uninflated (indeed, not evident). Once relaxed in the laboratory the stomodeum enlarged and elongated, and the lips were inflated and everted. At their most everted, the siphonoglyphs were clearly visible at each end of the elongated stomodeum, and were lighter in color than the stomodeal lips.

While the animals were sensitive to touch, and would respond by localized retraction to a poke on the edge of the oral disk, all reactions were slow and measured. Lightly touching a tentacle elicited only slight movement of the tentacle away from the stimulus and no reaction on the disk itself. Mucous was produced by the animals (whether from the column or disk was not clear) but not copiously. After three days of maintenance in the cold room the animals were showing signs of distress despite water changes, and were formalin fixed. During handling preparatory to fixation they readily and rapidly dewatered, releasing the seawater with which the columns and disks were inflated.

Please visit the SCAMIT Website at: **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	Kelvin Barwick	(619)758-2337	kbarwick@sandiego.gov
Vice-President	Leslie Harris	(213)763-3234	lharris@nhm.org
Secretary	Megan Lilly	(619)758-2336	mlilly@sandiego.gov
Treasurer	Cheryl Brantley	(310)830-2400x5500	cbrantley@lacsd.org

Back issues of the newsletter are available. Prices are as follows:

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

Single back issues are also available at cost.

The SCAMIT newsletter is published monthly and is distributed freely through the web site at www.scamit.org. Membership is $15 for the electronic copy available via the web site and $30 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is $60. All new members receive a printed copy of the most current edition of "A Taxonomic Listing of Soft Bottom Macro- and Megainvertebrates … in the Southern California Bight." The current edition, the fourth, contains 2,067 species with partial synonyms. All correspondences can be sent to the Secretary at the email address above or to:

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

Poecilochaetus sp A SCAMIT 2003 SCAMIT Vol. 22 No. 1

CSDLAC specimens 0797-0C & 0798-0C March 2003

Examined by T. Parker

Literature: Blake, J. A. 1996. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 6, The Annelida part 3: pp 225-232.

Imajima, M. 1989. Poecilochaetidae (Annelida, Polychaeta) from Japan. Bull. Nat. Sci. Mus. Series A (Zoology) 15: 61-103.

Martin, M. 1977. Proc. SCCWRP Taxonomic Standardization Prog. Vol. 5 No 3. May 1977.

Leon-Gonzalez, J. A. 1992. Soft bottom polychaetes from the western coast of Baja California Sur, Mexico. II. Poecilochaetidae. Cah. Biol. Mar. (33) 109-114.

Miura, T. 1989. Two new species of the genus *Poecilochaetus* (Polychaeta, Poecilochaetidae) from Japan. Proceedings of the Japanese Society of Systematic Zoology No. 39: 8-19.

Synonymy: *Poecilochaetus* sp A Martin 1977.

Diagnostic Characters:

1. Ampullaceous or Òbottle shapedÓpost setal lobes begin on setigers 7-13.

2. Branched branchia on posterior face of parapodium begin at setiger 14. L. A. harbor specimens may begin at 12. Branchial filaments partially retractable, increasing in number in more posterior segments. (Figure 1)

3. Without blunt spines in setigers 22-46. Spinose setae and plumose setae both present. (Figure 2).

4. Lacks chitinous brown triangular tooth on dorsum of setiger 9 found on *P. johnsoni*.

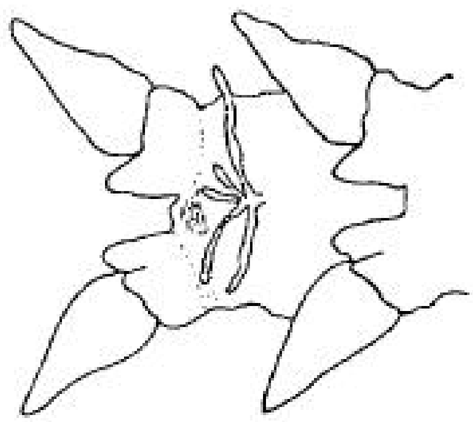
Related Species and Differences:

Poecilochaetus johnsoni: Lacks parapodial branchia. Blunt spines with hirsute tips. Segment 9 with mid-dorsal chitinous tooth.

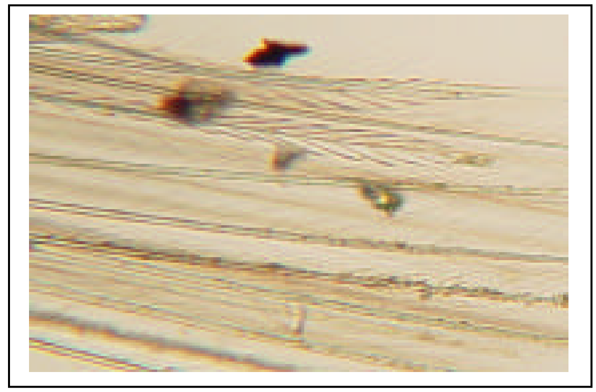
Poecilochaetus multibranchiatus: Branchial filaments begin setiger 12 with both dorsal and ventrally placed groups. Initially each group with 2-4 filaments increasing posteriorly to maximally 11 filaments.

Poecilochaetous sp A Blake 1996: Lacks branchia. Probably juvenile *P. johnsoni*.

Distribution: Southern California coastal bottoms in depths of 30-60 meter (10 M L.A. harbor).
Poecilochaetus sp A SCAMIT 2003 SCAMIT Vol. 22 No. 1



Parapodia 25 posterior view w/branchia. From Martin 1977
Figure 1.



Plumose and spinose setae
Figure 2

Table 1. Setiger number with feature. (after de Leon-Gonzalez)

	ampullaceous lobes	first setiger w/ branchial	max # branchial filaments	nuchal organs to setiger #
P. serpens	7-13	21	2	3
P. tropicus	7-13	19	2	9
P. modestus	7-11	18	2	3
P. exmouthensis	7-13	19	2	5
P. branchiatus	7-10	20	4	1
P. trilobatus	7-13	18	2	8
P. clavatus	7-10	20	2	3
P. spinulosus	7-13	17	4	3
P. tricirratus	7-11	13-17	3	3
P. multibranchiatus	7-11	12	11	3
P. sp A of SCAMIT	*7-13*	*14*	*5-6*	*4-5*
P. sp A of Blake	*7-11*	*none*	---	*<4*
P. johnsoni	*7-13*	*none*	---	*4-5*