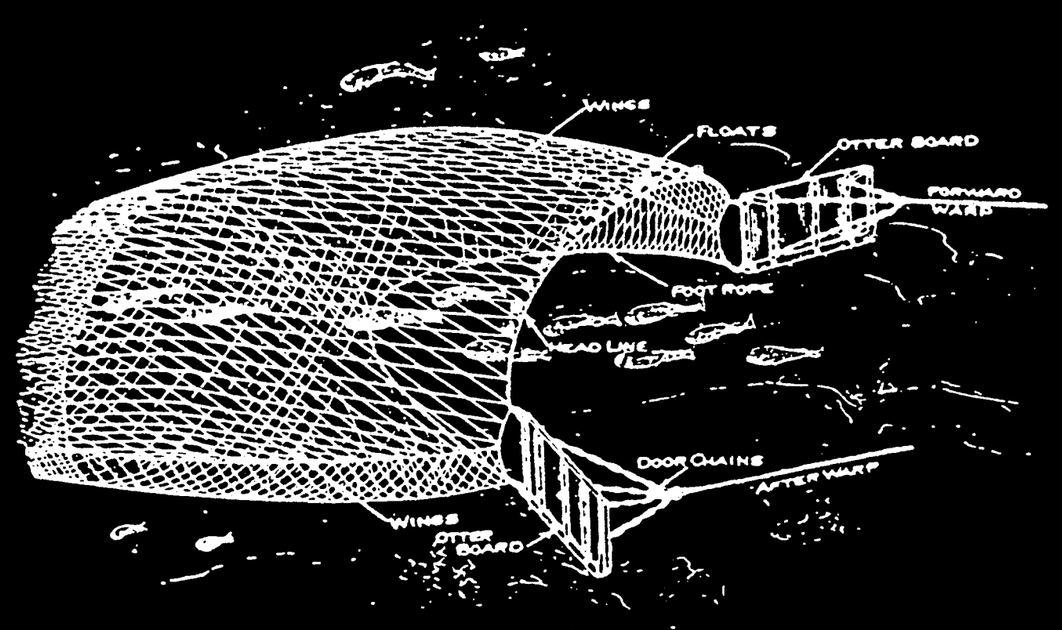
Southern California Association of Marine Invertebrate Taxonomists

3720 Stephen White Drive
San Pedro, California 90731

July, 1994 Vol. 13, No.3

NEXT MEETING:	SCBPP Trawl Caught Invertebrates
GUEST SPEAKER:	None
DATE:	August 8, 1994
TIME:	9:30am - 3:30pm
LOCATION:	Cabrillo Marine Aquarium 3720 Stephen White Drive San Pedro



(from Hedgpeth, 1957)

AUGUST 8 MEETING

This meeting will be on SCBPP trawl caught invertebrates. It will be a general meeting for members to bring any voucher specimens or problem specimens from their SCBPP trawl surveys for discussion and help with identification.

SEPTEMBER MEETING

The September meeting will be a polychaete meeting on the *Polydora-Boccardia* complex given by Larry Lovell. This meeting was postponed from earlier this year. Please be prepared to bring your *Polydora* and *Boccardia*

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specimens for discussion. This is still a SCBPP problem/workshop meeting, but is focused on the group in question. Problem SCBPP specimens from other groups should also be brought to this meeting.

MEMBER NOTES

SCAMIT recently received a letter from one of our long time members, Dr. Susan Williams. Since leaving her position as Polychaete Collections Manager at the Allan Hancock Foundation she has lived in the Ventura area. Working as a consultant, teaching at a number of local colleges, working with the Ventura Parks and Recreation Dept., and now serving as a National Park Ranger at Channel Islands National Park has kept Sue busy over the last few years. With three or four write-ups in local papers she is becoming a high-profile personality whose tide-pool, bird, and botanical talks are in demand. Stop and see her if you visit the National Park Headquarters in Ventura. Good luck Sue, and thanks for the letter.

MINUTES FROM MEETING ON JULY 11

At this meeting a cautionary note was addressed to those members working with the polychaete family Nephtyidae. The southern California species, *Nephtys ferruginea* may actually be *Nephtys signifera* Hilbig, 1992. Several SCAMIT members noticed upon re-examination of material originally identified as *N. ferruginea* that 20 distal papillae were found on the proboscis rather than 22, as described by Olga Hartman in her original description of *Nephtys ferruginea*. In Brigitte Hilbig's 1992 paper entitled, "New Polychaetous Annelids of the Families Nereididae, Hesionidae, and Nephtyidae from the Santa Maria Basin, California, with a Redescription of *Glycera nana* Johnson, 1901" that appeared in *Proc. Biol. Soc. Wash.* vol. 105 no. 4, she describes a new species, *Nephtys signifera,* and compares it to other Nephtys species, including *Nephtys ferruginea*. It was proposed that members should check the distal papillae counts of their *N. ferruginea* and report back their findings at the September polychaete meeting. If the proboscis was not extended during the preservation of your specimens a ventral slit can be made on the animals and setiger 8 or 9 can be examined for the distal papillae at the end of the proboscis.

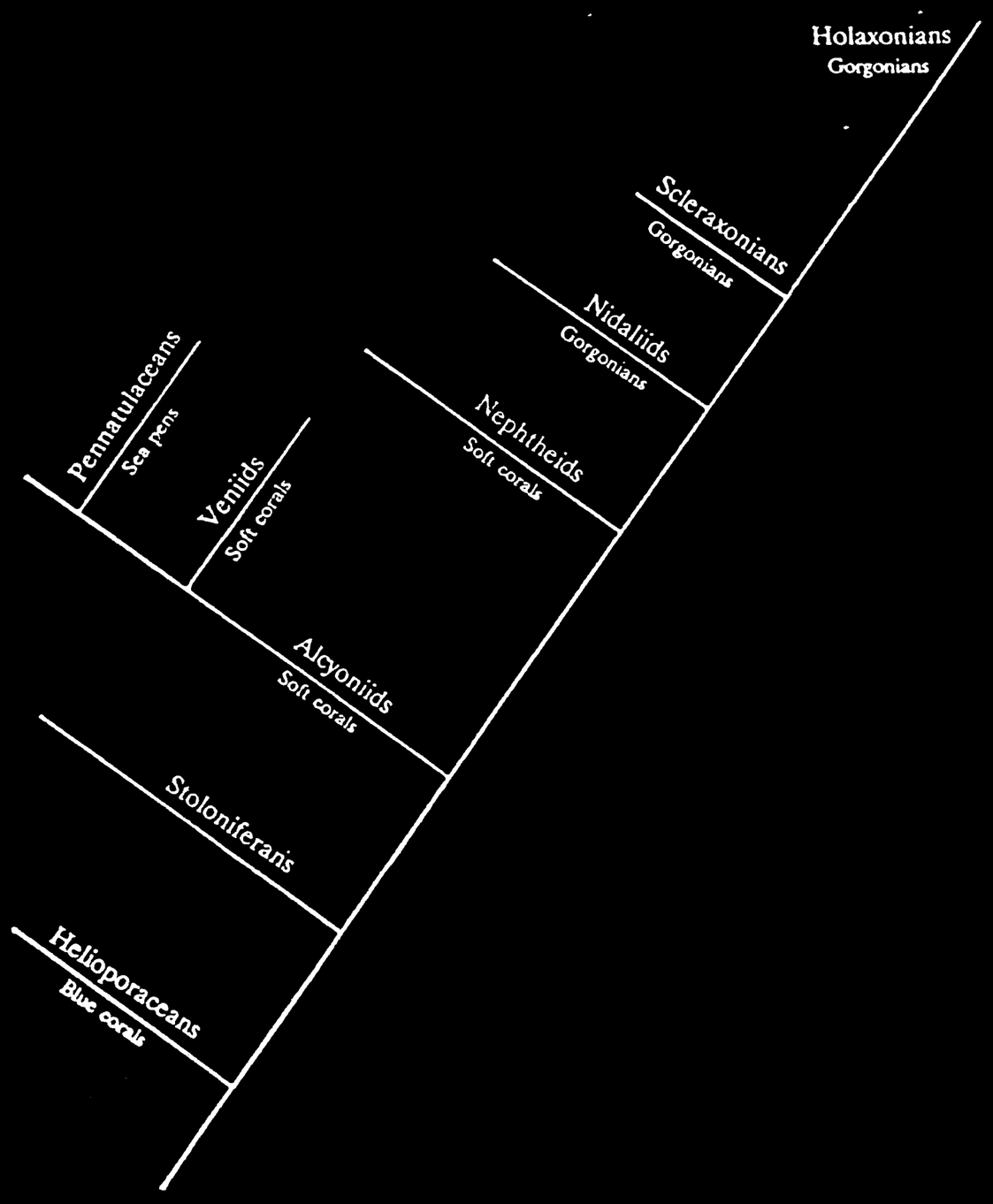
Dr. Terry Gosliner (Cal Acad of Sci.) and Dave Behrens (PG&E) dropped in for the beginning of the meeting. Terry indicated that he has found a "home" for Cephalaspidea sp. A in the genus *Parviplustrum*, and that this will be covered in his portion of the Santa Maria Basin Invertebrate Atlas due out later this year. The animal apparently will have to have it's own family. He will be examining other local cephalaspids, and, hopefully, will give a SCAMIT program on them in future.

Octocorallia

Dr. Gary Williams, curator of invertebrates at the California Academy of Sciences gave a very informative talk on octocorals and then examined several of our local species to help resolve some of the taxonomic problems SCAMIT members have found working within this group.

The Octocorallia includes soft corals, sea pens, and gorgonians, all of which have polyps with 8 pinnate tentacles. Since there are very gray lines between sea pens, gorgonians, and soft corals it is best to just refer to them all as octocorals.

Here is a **cladogram** of the Octocorallia.



4 Kinds of Corals

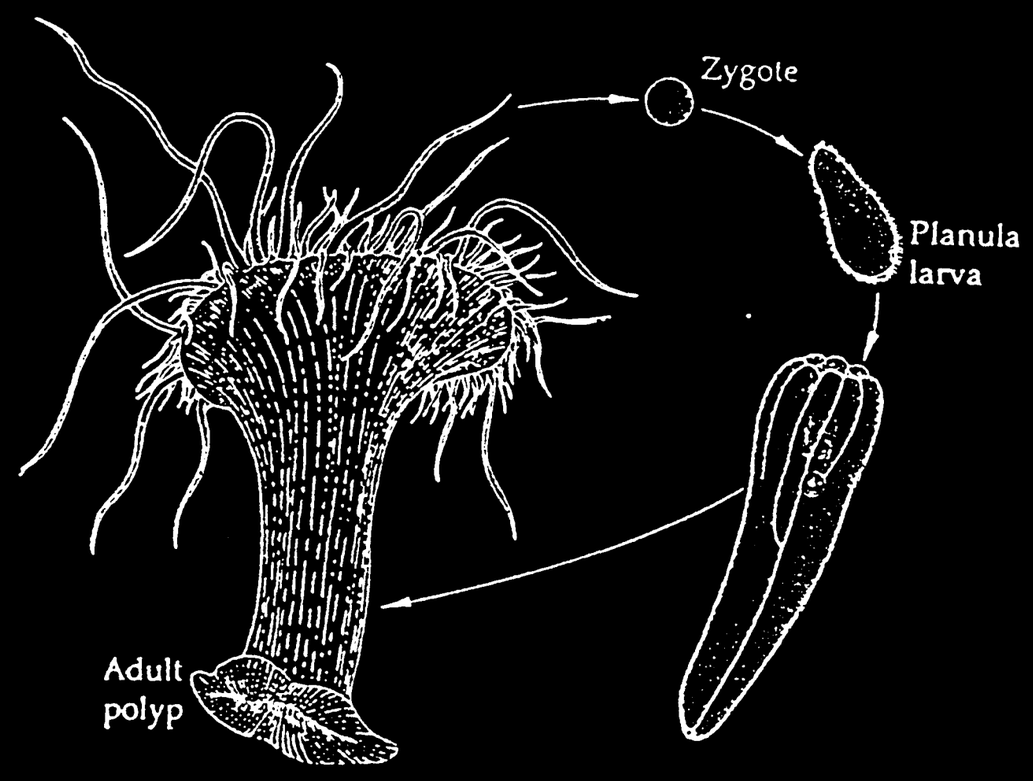
1) **Hydrocoral** - a hydrozoan which is composed of colonies of hydroidlike polyps that build rock-hard, massive skeletons of calcium carbonate

2) **Black or thorny coral** - an anthozoan which gets its common name from the black color of the thorny or spiny internal skeleton; the polished black skeleton is used for making jewelry

3) **Hard or stony coral** - solitary or colonial polyps with massive calcium carbonate exoskeleton; mostly these are tropical reef builders

4) **Octocorals** - this group of corals is composed of the sea pens, soft corals, and gorgonians; all of which have polyps with 8 pinnate tentacles

Anthozoan Life Cycle



No free swimming medusa stage.

(from Bayer and Owre, 1968)

Octocorals are found at all latitudes and depths because they are well adapted to a variety of environments since they feed on plankton and detrital matter that rains down from the water above. They are able to catch the plankton with the pinnules of their polyps outstretched. Octocorals also have siphonozooids, which are a type of polyp that drives currents of water through the colony.

Where octocorals live depends on their type of holdfast. Some gorgonians and soft corals need to attach to hard substrates because their holdfasts are simple disk shaped structures, so most live in shallower water where rocky, hard substrate occurs. Other soft corals and gorgonians have more of a rootlike structure

and can attach to deeper, soft bottoms. Sea pens, however, are best adapted to soft substrates because they have a peduncle. Although sea pens are adapted to a variety of substrates they are not very speciose. The greatest majority of species is on the continental shelf, 0 - 100m depth. Few range into the intertidal zone.

Shallow water endemic species are often just different color morphs of the same species, but aren't always recognized as such and sometimes appear in the literature as separate species.

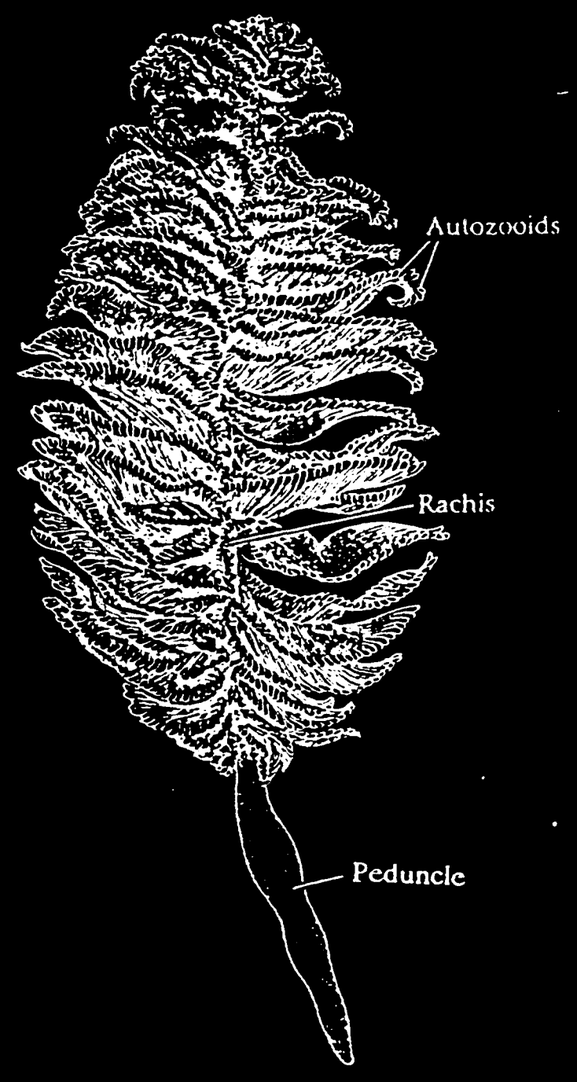
In the Indo-Pacific the triangular area of most diversity for octocorals is between the Philippines, Borneo, and Papua New Guinea. There is ten times the diversity here than there is in the Caribbean.

Blue coral is restricted to the shallow waters of tropical Indo-Pacific. The live colonies look brown because of all the zooxanthellae they contain, but the skeleton is blue.

Primitive sea pens look more like soft corals because they are unbranched. The autozooids, or feeding polyps, and reproducing polyps are directly on the rachis rather than on the branchs.

In the most primitive sea pens (for instance the Veretillida) the pattern of symmetry is still radial. As we move towards more advanced forms in the Echinoptilidae we find a combination of radial and bilateral symmetry. In families such as the Virgulariidae symmetry is always bilateral, with leaves arranged laterally and the rachis naked along the dorsal midline.

Here is a diagram of a typical sea pen showing the peduncle, rachis, and autozooids.



(from Bayer and Owre, 1968)

Spicules, or sclerites, as they are referred to in octocorals are the calcium carbonate structures that provide skeletal support. Most are under a tenth of a millimeter in size. When identifying octocorals to species level you must look at the sclerites. This can be complicated by the fact that there is a high degree of variation and degradation in the sclerite types. Because the sclerites are made of calcium carbonate care must be taken not to leave octocorals in formaldehyde for long periods of time because the sclerites will dissolve.

There are basically 2 types of sclerites in sea pens.

1) dog biscuit shaped 

2) needle shaped

(from Kukënthal, 1915)

Most of the variation in sclerite shape is between these two.

There is a very useful guide in French, German, and English on literature terms used to describe octocorals. It is the *Illustrated Glossary of Morphological and Anatomical Terms Applied to Octocorallia*, 1983, F. M. Bayer, M. Grasshoff, and J. Verseveldt (eds.)

It is theorized that sea pens probably developed in shallow water tropical areas and then adapted to deeper water. Evidence to support this theory comes from the fact that primitive sea pens don't have a central axis from which "leaves" of polyps branch off. Primitive sea pens are also restricted to continental shelfs. Over time sea pens developed a better system of adapting to deeper water and soft bottoms. The ability of sea pens to retract their polyps is a much more highly developed adaptation. In fact, many voucher specimens in alcohol retract so much they look nothing like their living forms. Sea pens also developed bilateral symmetry from radial symmetry. *Renilla*, the sea pansy, found only in North and South America, is a representative of a sea pen that has started to show bilateral symmetry.

Dr. Williams has done a world-wide revision of pennatulacean genera due out next year in the Journal of the Linnean Society.

He had a list of 31 species of pennatulids which have been reported to occur along the Pacific coast of North America. A number of these do not occur north of Mexico, and nearly a third are known only from deep water.

In the afternoon we adjourned to John Ljubenkov's office to examine specimens of the sea-pens most often taken by the SCAMIT membership. We found that there had probably been some confusion in the use of the name *Virgularia bromleyi*. Several agencies had been applying this name to the large robust form normally encountered on the shelf, and had been using the name *V. sp A* for the smaller more gracile form. Gary Williams suggested that *V. sp A* corresponded to the description of *V. bromleyi*, and that *V. galapagensis* was the correct identity of the larger form which had been called *V. bromleyi*. Although Gary intends to examine types (where available) to support this, the case seems sufficiently strong for SCAMIT to accept the revised usage now.

We also examined the two local species of *Stylatula*. There appeared to be no problems with the identity of *Stylatula elongata*, but *Stylatula sp A* provided some controversy. Gary equated it with *Stylatula gracilis* even though there was a considerable difference in number of zooids per leaf in the two taxa. Pending examination to type material SCAMIT will continue use of *Stylatula sp A* for the form which has only a few zooids per leaf and between 5 and 8 leaves per inch of rachis. *Stylatula columbiana*, which was also a potential senior synonym of *Stylatula sp A*, has even more zooids per leaf than *S. gracilis* and is not equivalent to *S. sp A*.

The species of *Acanthoptilum* require clarification only available by examination of types. Gary was of the opinion that there were only two species on the Pacific Coast, and that both of Nutting's 1909 names will fall as synonyms. SCAMIT will continue to use *A. annulatum* and *A. gracile* for the two forms we take here, but these names may change once the types are examined.

The collections of the California Academy of Sciences, which had been placed in storage during a renovation and earthquake retrofit of the facility, are now back at the Academy in Golden Gate Park. Arrangements to work in them as a visiting investigator should be made with Collections Manager Robert Van Syoc at the Department of Invertebrate Zoology and Geology, California Academy of Sciences, Golden Gate Park, San Francisco, CA., 94118

[telephone (415)750-7080]. They have full facilities for the use of visitors, and encourage use of the collections. Communications for Terry Gosliner, Gary Williams, Dustin Chivers, and Rich Mooi use the same address and telephone given above.

Review of Diagnostic Differences between the Genera *Amphisamytha* and *Mooresamytha* (Ampharetidae, Polychaeta)

Thomas Parker
Marine Biology Laboratory
L. A. County Sanitation Districts

During a recent SCAMIT meeting, several ampharetid specimens were examined which previously were labeled as similar to, but not matching, either *Mooresamytha* or *Amphisamytha*. A more extensive examination of 26 different specimens collected from 30 meters depth in silty-sandy sediments is now completed.

Williams (1987) erected *Mooresamytha* as a new genus. She stated: "The most striking difference between *A. japonica* and *M. bioculata* is the branchial arrangement.....as being inserted in three anterior and one posterior pair"(i.e., *Amphisamytha*). "*Mooresamytha bioculata* has the branchia arranged in two anterior and two posterior pairs. Branchial configuration seems to be a consistent generic character within the Ampharetidae and is the main reason for removing Moore's species from *Amphisamytha*." In addition, Williams commented that *Amphisamytha japonica* lacked dorsal abdominal cirri, while *Mooresamytha bioculata* had distinct glandular cirri on the abdominal notopodial rudiments.

Nearly half of the 26 specimens examined here (from 8 different samples) possess the branchial arrangement of two anterior and two posterior(2+2), while the remainder had branchia arranged with 3 anterior and 1 posterior(3+1). Interestingly, in almost all cases the 2+2 arrangement was found in specimens with robust and stout (from base to tip) branchial shapes. The 3+1 arrangement was typical for specimens with branchia that have narrow bases and thin walls along their length, thus giving them a thin appearance.

Additionally, none of these specimens seem to possess notopodial rudiments and all clearly lack distinct dorsal abdominal cirri. Diagnosis between these two genera is currently based upon branchial insertion and local specimens may need to be re-examined and interpreted to better fit the published description of the taxa. The diagnosis of described species such as *M bioculata* or *A. japonica* does not match well some local specimens. These need to be collected in greater number and differentially compared for taxonomically significant features.

SCAMIT OFFICERS:
If you need any other information concerning SCAMIT please feel free to contact any of the officers.

President	Ron Velarde	(619)692-4903
Vice-President	Don Cadien	(310)830-2400 ext. 403
Secretary	Cheryl Brantley	(310)830-2400 ext. 403
Treasurer	Ann Dalkey	(310)648-5611