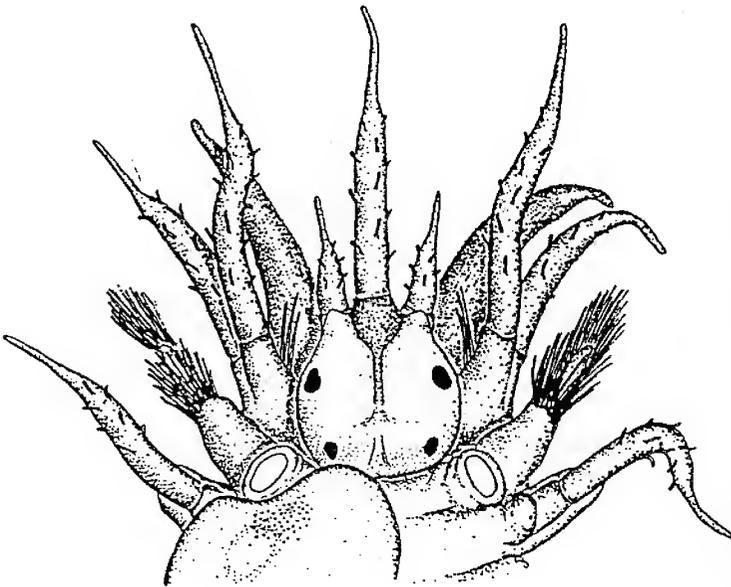


May, 1997

## SCAMIT Newsletter

Vol. 16, No.1

<b>NEXT MEETING:</b>	Scaleworms, Where do we Stand?
<b>GUEST SPEAKER:</b>	Ron Velarde, Discussion Leader
<b>DATE:</b>	9 June 1997
<b>TIME:</b>	9:30am - 3:30pm
<b>LOCATION:</b>	Worm Lab, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA



*Malmgreniella macginitiei* Ruff 1995

### 9 JUNE MEETING

Scaleworms again become the topic during the 9 June meeting. In the wake of Gene Ruff's section on the Polynoidae in Volume 5 of the MMS Taxonomic Atlas series most SCAMIT worm folk had to reexamine their material. This meeting is for us to compare notes and material to see if we agree or disagree with Gene, and to consider forms not included in his treatment. Other families of scaleworms are also suitable topics, but the emphasis will be on polynoids. Bring new, different, troublesome, or controversial specimens for comparison with the type materials in the Natural History Museum collections. The results of this meeting will be discussed with Gene at another meeting later in the year.

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*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

## MEMBERS?

While compiling the voting statistics reported in the last Newsletter it became apparent that I no longer had a good handle on who was, and who was not a member. I decided to do a little sleuthing through the mailing labels to find out who receives (and perhaps reads) the SCAMIT NL. Although the membership has expanded beyond the original group from Southern California we are still predominantly regional. Nearly 2 out of every 3 members is from the southern California region. Five members reside in northern California in the San Francisco Bay area. Another 14 members are from Oregon or Washington, with the majority in the Puget Sound region. Four more are from the same area, but from the Canadian side of the border. Eleven other members reside in other parts of the United States, mostly along the eastern seaboard. We also have a member in Japan. A new list of the membership, and their taxonomic specialties is attached.

With our expansion into the electronic arena we may or may not expand our membership, but we will almost certainly increase the exposure of the information and opinion presented in the SCAMIT NL. We will also (I hope) be able to broaden the opinion presented by eliciting comment from on-line readers. In the mean time the monthly SCAMIT meetings still serve the majority of the members. Suggestions on how to increase participation by members outside the radius of meeting availability would be most welcome. We aim to serve all the membership, but we need your ideas.

Treasurer Ann Dalkey will be sending us all an E-mail to ask if we still want to be sent the NL through the mail. Any members who feel they no longer need to receive the NL on paper, and are content with the online copy (downloadable and printable if desired), please notify her via E-mail (address on last page). She will then stop sending you a paper copy, and SCAMIT will begin to reduce distributional costs for the NL.

## SCAS MEETINGS

The 1997 Southern California Academy of Sciences meeting was held May 2-3 at Fullerton College. The symposia covered a wide range of topics: Larval Fish Recruitment, Marine Fishes, Marine Invertebrates, Coastal and Estuarine Biology and Processes, Southern California Deserts, Geology, Archaeology, Anthropology, Non-native Plants and Animals, Terrestrial Biology, and Environmental Justice and Land Use. Although, the 2 day meeting was sparsely attended, Fullerton College did an outstanding job at hosting the Academy and many of the presentations were very informative. While many SCAMIT members were not able to attend amongst the few that were several gave presentations. These are summarized below.

On Friday morning Dr. Jim Allen (SCCWRP) updated attendees on the recruitment in southern California soft-bottom fishes, a topic that he has studied extensively thru trawl surveys taken over the last 2 decades. Dr. Allen discussed size, spatial, and temporal information related to recruitment in this group of fishes. He discussed interspecific differences in length-at-recruitment and how sampling gear may bias estimations of size at recruitment. For instance a beam trawl with a 0.3cm body mesh is better for catching fish settling at 1 cm than a standard otter trawl. He also identified information gaps in this extensive database such as those in the size at age one and spawning times of adults.

That afternoon Ken Schiff (SCCWRP) in a joint study with Dr. Allen discussed bioaccumulation in flatfish based on research done for the Southern California Bight Pilot Project. Ken compared the DDT and PCB concentrations in liver tissue from 3 commonly occurring flatfish species in the Southern California Bight; Pacific sanddab, longfin sanddab, and Dover sole. Ken had both "good news" and "bad news" for us. While he found that virtually 100% of these 3 fish populations were contaminated with total DDT and/or total PCB the tissue concentrations have

declined significantly when compared with historical surveys. In fact, DDT concentrations from reference areas have declined 10-fold since 1977.

On Saturday morning Jeff Armstrong (CSDOC) presented his thesis project from Cal State University, Long Beach on environmental factors affecting the phenotypic plasticity of *Capitella capitata* (Type 1). Jeff examined the effects of water temperature (15°-22° C) and food quantity (0.03-0.21 mg/worm/day) on the taxonomic characteristics used to identify this species of polychaete. He noted two distinct morphologies with respect to prostomium and pygidium shapes. One group exhibited lobed pygidiums while the other group didn't. Differences were also detected amongst egg size and shape. The group exposed to a lower temperature (15° C) produced larger sized eggs. He also noted 2 egg shapes; round and oval. So polychaete taxonomists can take heart there are environmental factors confounding the accurate identification of individuals within the *Capitella capitata* species complex.

Dr. Tim Stebbins (CSDMWWD) followed Jeff with a presentation on long-term changes in soft-bottom crustacean assemblages near a deepwater ocean outfall. This was a joint study with Tim's colleague and fellow SCAMIT member Dean Pasko. This study examined patterns and changes amongst the soft-bottom crustacean communities by comparing data from stations located 0.5 km of the City of San Diego's ocean outfall and stations located 9 km north of the outfall. The study period included two El Niño events and an outfall pipe break in 1992 with construction following thru 1993 and two years (1994-95) after the pipe was lengthened and no discharge was made to that same area. From the data no strong correlations could be made between the patterns observed in the crustacean assemblages and these events. Dr. Stebbins found that peracarids make up 75% of the crustacean assemblage over the 11 year study period except for the year 1990 where ostracods are the dominant crustacean group due

to an explosion of *Euphilomedes carcharodonta*. He also noted an increase in abundance and taxa in the years prior to 1990 with a small decrease and leveling off after 1990. He did not feel that this was due to an increase in the taxonomic ability of his co-workers to recognize more species but due to improved wastewater treatment (from primary to advanced primary treatment) and natural population fluctuations.

Two other presentations that may have been of interest to SCAMIT members were given on Friday morning by Ami Groce (CSDMWWD) and Jason Mubarak (MEC Analytical Systems) which described spatial and temporal patterns in juvenile recruitment of demersal fish populations over the last decade in the Southern California Bight. The data used was collected from otter trawl surveys taken as part of the City of San Diego's Ocean Monitoring Program and the Orange County Ocean Monitoring Program.

## NEW LITERATURE

The most recent issue of the *Veliger* has several articles which may be of interest to the readership. The first (Shimek 1997) is a description of a new scaphopod from the central north Pacific, which bears an anemone externally similar to the brown tent anemone we briefly examined at the Cnidarian Workshop. Given the depth range of the new mollusk species, it is unlikely that this is the same species we have observed at upper slope and outer shelf depths off California, but the similarities are intriguing. The scaphopod is a *Fissidentalium* much like the two currently known from our area, *F. megathyris* and *F. erosum*.

McDonald and Nybakken (1997) commence on a novel project of publishing the massive world-wide database on nudibranch feeding habits they have put together over the last decade or so. Of particular interest is the way they have chosen to do so. They will publish a series of short summary articles in the journal covering the

general patterns of feeding in the groups covered, but not the details of the individual records. This latter base data is offered as the first electronic supplement to the Veliger. It is available as a series of files which can be requested via anonymous FTP through E-mail. If this process were more widely adopted it might offer relief for publishers burdened with massive databases which provide the raw data other researchers need, but which are very expensive to print. In the past the most common solution has been for the authors to offer to provide the base data to those readers of a paper sufficiently interested to ask for it. The current solution is much easier, both for the originators and potential users of the data.

The third paper of particular interest in the current issue (Roginskaya and Grintsov 1997) demonstrates that problems with introduced marine species are not restricted to our waters. They trace the pattern of expansion in a population of nudibranchs invading the Black Sea from an origin on the Atlantic coast of the United States. This invasion is somewhat more typical than ours involving *Philine auriformis* in that the Black Sea is essentially a huge "estuary" with reduced salinity rather than a fully marine open coast. The scale of the affected area is large, and similar to that which has been covered by our own invader along the California coast. It is also useful for us to see our own fauna as a source for invading "alien species". There is a tendency to consider the process of introduction as one-sided, with exotics from other portions of the world ocean converging on our shores to take advantage of ecosystems perturbed by human actions. Far from one-sided, introductions are polymorphic, with constant movement in every possible direction of transport.

The use of radular teeth for establishment of gastropod intertaxon relationships was examined by Guralnick and de Maintenon (1997) using a case study of selected columbellids. They demonstrate that position of a tooth on the radular ribbon does not necessarily denote homology.

They found differing origins for "central" teeth which were assumed on the basis of position to be rhachidian teeth. Previously the reliability of radular teeth as taxonomic characters has been considered from the standpoint of wear, and of intrataxon variability in response to differences in food substrate. The present report also raises issues of interpretation of radular structure itself, and shows that homology is not necessarily determinable from relative radular position. At least in higher level taxonomic studies of genera, families or larger taxa, the derivation of radular teeth provides additional information, and should be examined.

Microstructure of teeth, this time the teeth of ophiuroids, was discussed by Medeiros-Bergen (1996). She investigated a number of southern California species, using fresh collections from the San Diego Area, and museum specimens from the Natural History Museum of Los Angeles County. Although I doubt that many of us will be examining the teeth of brittle-stars in the detail she did, her findings regarding feeding method and tooth structure are interesting. The degree of fidelity to one type or another within families was also very interesting, and the apparent family mis-allocation (on the basis of tooth structure) of *Ophiocomina nigra* and *Ophiopteris papillosa* to the Ophiocomidae is suggestive. It will be interesting to see if further anatomical studies support transfer of these taxa to another family.

Dispersal, isolation, and speciation of deep-sea amphipods is considered by France and Kocher (1996). Their subject was the "cosmopolitan" abyssal scavenging amphipod *Eurythenes gryllus*. They examined mitochondrial rRNA sequences of specimens nominally belonging to this species from a broad selection of sources. The results indicated that genetic variability was generally higher along a bathymetric than along a geographical gradient. This was interpreted as indicating that isolating mechanisms which might form barriers to genetic exchange between individuals in this world-wide metapopulation were associated with differences in depth.

Using a value of 4% difference in genome as the lower limit for similar but genetically distinct species, the authors suggested the existence of 5-6 sibling species hidden within the samples they analysed. These had no obvious morphological correlates which would allow easy separation of phenotypes, although their genotypes were sufficiently distinct that they could be considered species. Differences in size seemed to be often associated with these cryptic sibling species.

Much of this cryptic speciation occurred at bathyal depths, with less both in shallower and deeper depth zones. Although this is comforting in the sense that such cryptic complexes may be less common in the depths of our sampling programs, they none-the-less occur. As has been suggested by many workers; "cosmopolitan" species are only cosmopolitan until the characters which separate the sibling species composing them are recognized.

We do live in an age, however, where human transport of larval forms is continual, and artificial bridging of speciation barriers is constant. Not only does the potential for true cosmopolitanism (although either caused or abetted by human activity) exist, but the potential of reestablishing gene flow between populations which were isolated and well on the way to species level divergence is very real.

Allozyme studies have proven invaluable in helping to sort out zoanthid cnidarians in northern and northeastern Australia (Burnett et al 1997). The zoanthids world-wide are a mess because they exhibit great ecophenotypic variability in colony morphology. In consequence these large and conspicuous members of reef communities have been heavily over described in terms of species, and under described in terms of characters. Many of the traditionally used characters have been demonstrated in recent studies to have no taxonomic significance.

Although the species considered do not occur in our area, the methods used to distinguish them

and the problems encountered in the process are quite instructive to workers on our local fauna.

Application of chemical taxonomic approaches to investigation of the history of life on earth continues in Cavalier-Smith et al (1996). The authors examine the nature of the relationship between early metazoans and their protozoan forebearers using the evidence contained in 18S rRNA mitochondrial DNA gene sequences. They analysed a series of sponges, and combined their results with published information on a variety of different forms for a cladistic analysis of animal, plant, fungal, and protoctist groups. Their analysis supports the monophyly of Kingdom Animalia, with choanoflagellate protozoans the most closely related protoctists. They could not fully resolve the question of whether or not sponges are homophyletic or paraphyletic, although they found them clearly monophyletic.

In the latest issue of *Marine Pollution Bulletin* Hiscock (1997) provides a viewpoint article which considers use of preexisting data in environmental evaluations. In some senses his comments are applicable to the regional monitoring effort currently underway in our area. He does, for instance, identify the continental shelf break as an area of concern from the standpoint of limited habitat area and vulnerability to impact. But most of his comments are directed at information needs which are not the same as ours. He is concerned with occasional, and often catastrophic, impacts such as oil spills, dredge spoil disposal, etc. Our concerns are for site predictable long term low level insults. Different types of data are required to address the differing questions these two situations require. Even so, his comments on data availability and the necessity of balancing acquisition of new data against the reanalysis of existing data are apropos. I think that our regional monitoring effort has shown that a well selected mix of pre-existing and newly acquired data can provide the answers to new questions.

Hiscock's viewpoint article did not offer detail in his statements about the necessity for data quality

control, an area we found of major concern during the Pilot Project. Mary Bergen and Dave Montagne have put together a full explanation of the problem, and the methods we used to address it in the SCBPP, for publication in the SCCWRP annual report (and probably also in another journal).

As funding levels for marine research and monitoring decline (a trend not likely to reverse soon if ever) use of "available data" and the problems such use entails will become more and more frequent. All data which can be brought into comparability with other data **should** be used. There is nothing like a broad temporal and geographic database to provide perspective in interpretation of new small scale and short-term datasets.

The precipitous decline of the black abalone population which occurred over the last decade in southern California has now been documented northward into central California (Altstatt et al 1996). Once again the culprit appears to be abalone withering syndrome rather than harvesting pressure, human disturbance in the intertidal, or general "pollution". The syndrome in turn has been related to epizootics of a rickettsia-like prokaryotic organism, and secondarily to warmer waters. The organism seems able to exist in cool waters, but affects the abalone population more severely as water temperature increases.

Anecdotal reports from abalone fishermen in Mexico suggest that the abalone population along the outer coast of Baja California was affected around 1992, after declines were significant in the Southern California Bight. It seems likely that the epizootic began somewhere in the Bight, and spread first south into warmer waters, then northward into cooler waters.

Evidence of withering syndrome is now beginning to show up at the northernmost sites investigated in the present study. The disease outbreak has not yet played itself out, but further expansion

northward may be delayed by cooler waters there. There is also some evidence that other abalone species are also beginning to show symptoms of withering syndrome. The end of this problem is not yet in sight, and the outcome in terms of both fishery and community ecology is still in doubt.

### MINUTES OF 6 MAY MEETING

During the business meeting the Treasurers Report covering the 1996-97 fiscal year was presented. A summary is attached. Our available funds continue to dwindle as the cost of newsletter production and distribution exceed revenue from dues by 100+ %.

We mentioned the necessity of finding individuals to work on Edition 3 of the SCAMIT list. The corrections and additions which have been accumulated so far were circulated. Individuals with expertise in particular groups are sought to examine Edition 2 for errors and omissions, and to incorporate taxonomic changes from the literature encountered since the current edition was released in February 1996. Any volunteers? If not we will be contacting you to step forward and contribute to the effort.

Our guest speaker was Dr. Doug Eernisse from California State University, Fullerton. I met him in the Malacology section prior to the meeting and he selected a series of museum specimens for reference during the meeting.

He actually gave two different presentations to us during the meeting. The first was based on his "Chiton Stack" a HyperCard based database he has designed and constructed for use with Macintosh computers. This is a very useful worldwide compendium of information on and description of chitons, their taxonomy, and their distribution. As the stack is copyrighted, I suspect that it is available from him for a fee (we did not ask during the meeting). The stack contains a huge amount of data, especially on distribution.

During its construction he thoroughly perused the literature, abstracting records he felt could be used with confidence and incorporating the range information they contained. The completeness of the database was enhanced by the availability of very recent monographic treatment of the world chiton fauna by Kaas and Van Belle (1985a, 1985b, 1987, 1990, and 1994).

The stack is also highly visual, with everything mapped on several scales, as well as illustrations of relevant aspects of each species. The amount of work which went into this was immense. Dr. Eernisse is, however, planning on porting his stack to the WWW in some form, to promote utilization of the information it contains, and to allow others to add new information to the base he has established.

During the presentation (which he ran off a laptop connected to an overhead projector) he demonstrated several related stacks, although he only mentioned, and did not show us his stacks designed for DNA sequence alignment and other chemotaxonomic tools.

He also told us how he had gotten interested in chiton taxonomy in the first place. It was a classic case of expanding effort. He first began an investigation of reproduction in one species, only to find several distinctly different reproductive modes in this "species". He later resolved this into a multi-species complex of siblings, describing several in the process. As he continued his investigations he found that taxonomy within the family was as confused as in the genus, then discovered this extended on into higher categories as well. Like many of us his simple question of "What is this species?" mushroomed into a revisionary view of the entire group.

After a break, he then proceeded to present a brief review of chiton structure, ecology, and systematics. We discussed his section of the MMS Taxonomic Atlas, and when it might be available (he did not know). Most of the chiton

fauna of California will not be covered in the section, as the collections from the Santa Maria Basin which form the nucleus of the text were all collected subtidally. Dr. Eernisse did, however, attempt to provide a complete guide to the offshore chiton fauna, something which has not been available previously. We attempted to key several of the species which Tim Stebbins had brought from San Diego, and found the key to function quite well.

Specimens of *Lepidochitona* (formerly *Ischnochiton*) *interstinctus* and *Placiphorella* sp. A were examined. The former keyed easily, while the identity of the later was not fully established. It seemed to be very like *Placiphorella atlanticus* (of which *P. pacificus* is now a synonym), but differed in color pattern. While this species is very wide-spread, the present specimens from off San Diego would represent a range extension north from Panama. This did not surprise Dr. Eernisse, who felt this sort of range extension was to be expected within the genus. Specimens of the animal are being sent to R. B. Clark (the most recent revisor of the genus) for verification, and are being retained as sp. A until he replies.

We hope to persuade Dr. Eernisse to present a meeting on the relationships between higher invertebrate taxa (from cladistic analyses based on DNA sequences) later in the year. He has been a major contributor to the subject of invertebrate phylogeny, and it is a continuing research interest of his.

**A BIG EASY ONE  
OR  
WHERE HAVE ALL THE LIMBATES  
GONE?**

The terebellid polychaete, *Amaeana occidentalis*, is widely reported from the Southern California benthos. It is easily recognized based upon its often brilliant purplish pigment, huge frilly prostomial structure, unique papillated thorax, and finger-like notopodia. The original description by Hartman (1944) merely lists the

notopodia with fine pointed setae. According to literature descriptions and illustrations in Uebelaker (Vol VII, page 52-26 and 52-27) and Imajima and Hartman (1964, page 347), *Amaeana* possesses both simple limbate and capillary hispid or pencillate notosetae. However Hutchings and Glasby (1986) list *Amaeana* with smooth capillaries and very narrow wings. Specimens I have seen from local waters (confirmable as *Amaeana* also by their rod-like abdominal spines) never possess these limbate setae but only exhibit capillaries that are hispid along their length. Can anyone provide a current description and illustration of *Amaeana* limbate setae based upon a specimen they have examined from local waters? If you can't find these setae either, do you have any idea who might have taken them? In our lab we typically blame the janitor when things can't be found, but that seems unlikely in this situation. -Tom Parker (CSDLAC)

now proceed. The museum also now operates a WWW site, <http://www.nature.ca>.

Dr. Judith Fournier is retiring as of 21 June 1997. We wish her well, and thank her for many kindnesses in the past. We also assume that, like many long-time taxonomists, she will continue to pursue her research goals in some sort of emeritus status. Correspondence which you might have previously sent to her should be directed to Dr. Jean-Marc Gagnon, Chief Collection Manager for Invertebrate Collections. He can be reached at

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## INDEX SCAMITALIA

We all owe member Faith Cole our thanks for another years worth of effort at keeping up the SCAMIT Newsletter Index. It now covers all of the first fifteen volumes in their entirety. She has asked us to pass on a request for corrections or additions to members who consult the index. She will be glad to make corrections and add in items which have been overlooked previously. Contact her via E-mail at [cole.faith@epamail.epa.gov](mailto:cole.faith@epamail.epa.gov). The new index is attached to this newsletter

## CANADIAN MUSEUM OF NATURE

The staff and collections of the Canadian Museum of Nature are all (as of mid-April) moved into new modern facilities just outside Ottawa. The inaccessibility of the collections for specimen loan and or examination which these facilities upgrades caused are at an end. All collections are now "open for business" and if you have requests, or have materials to return to the museum, you can

## OTHER NEWS FROM CANADA

In recent correspondence we received news of the impending retirement of Dr. E. L. Bousfield from active taxonomic work. After a career spanning over half a century - and extending into retirement from official positions, he is ending his professional career to concentrate on his personal life. It is sad, however, that this decision is due at least in part to ill health. Works-in-progress that could not be brought to completion in time have been turned over to co-authors or colleagues. *Amphipacifica* Volume II(3) is being printed, and has an expected publication date of 15 May. Fate of the journal is unclear following that issue. Hopefully someone has been selected or has stepped forward to take the reins as Managing Editor from Dr. Bousfield. Perhaps the situation will become clearer when issue 3 of volume 2 is received.

We hope that he will have a full recovery from his recent health difficulties, and a life of pleasant and well-earned relaxation. He leaves a legacy of

ideas and contributions which others will be using for a very long time.

### TAXONOMY AT NSF

Most of us feel that taxonomy, and especially alpha taxonomy, has increasingly become the unwelcome step-child in the biological establishment. This seems particularly odd in a period where the word "biodiversity" has achieved the status of a bureaucratic catch-phrase, and where concerns with species extinctions are expressed world-wide.

Well, at least for the next year, taxonomy will have a friend at court. Dr. Jody Martin, Curator

of Crustacea at the Natural History Museum of Los Angeles County, has been asked to (and has agreed to) become chairman of a committee reviewing grant applications at the National Science Foundation. He and his family will move to the Washington area for a year, beginning in June or July 1997.

He will return to his position at the museum after the expiration of his appointment. In the interim the business of the Crustacea Section will be continued by Collections Manager [and member] George Davis.

### BIBLIOGRAPHY

- ALTSTATT, JESSICA M., Richard F. Ambrose, John M. Engle, Peter L. Haaker, Kevin D. Lafferty, and Peter T. Raimondi. 1996. Recent declines of black abalone *Haliotis cracherodii* on the mainland coast of central California. *Marine Ecology - Progress Series* 142(1-3):185-192.
- BURNETT, W. J., J. A. H. Benzie, J. A. Beardmore, and J. S. Ryland. 1997. Zoanthids (Anthozoa, Hexacorallia) from the Great Barrier Reef and Torres Strait, Australia: Systematics, evolution and a key to species. *Coral Reefs* 16(1):55-68.
- CAVALIER-SMITH, T., M. T. E. P. Allsopp, E. E. Chao, N. Boury-Esnault, and J. Vacelet. 1996. Sponge phylogeny, animal monophyly, and the origin of the nervous system: 18S rRNA evidence. *Canadian Journal of Zoology - Revue Canadienne de Zoologie* 74(11):2031-2045.
- FRANCE, SCOTT C., and T. D. Kocher. 1996. Geographic and bathymetric patterns of mitochondrial 16S rRNA sequence divergence among deepsea amphipods, *Eurythenes gryllus*. *Marine Biology* 126(4):633-643.
- GURALNICK, ROBERT, and Marta J. de Maintenon. 1997. Formation and homology of radular teeth; A case study using columbellid gastropods (Neogastropoda: Columbellidae). *Journal of Molluscan Studies* 63(1):65-77.
- HARTMAN, OLGA. 1944. Polychaetous Annelids Part VI. Paraonidae, Magelonidae, Longosomidae, Ctenodrilidae, and Sabellariidae. *Allan Hancock Pacific Expeditions* 10(2 and 3):239-388.
- HISCOCK, KEITH. 1997. "Use Available Data". *Marine Pollution Bulletin* 34(2):74-77.
- HUTCHINGS, PATRICIA A., and Chris J. Glasby. 1986. The Polycirrinae (Polychaeta: Terebellidae) from Australia. *Records of the Australian Museum* 38:319-350.
- IMAJIMA, MINORU, and Olga Hartman. 1964. The Polychaetous Annelids of Japan. Part 2. *Allan Hancock Foundation Occasional Papers* 26:239-452.
- KAAS, P., R. A. Van Belle. 1985A. Monograph of Living Chitons (Mollusca: Polyplacophora). Vol. 1. Order Neoloricata: Lepidopleurina. E. J. Brill/W. Backhuys: Leiden. 240pp.

- . 1985B. Monograph of Living Chitons (Mollusca: Polyplacophora). Vol. 2. Suborder Ischnochitonina Ischnochitonidae: Schizoplacinae, Callochitoninae, Lepidochitoninae. E. J. Brill/W. Backhuys: Leiden. 196pp.
- . 1987. Monograph of Living Chitons (Mollusca: Polyplacophora). Vol. 3. Suborder Ischnochitonina Ischnochitonidae: Chaetopleurinae, & Ischnochitoninae (pars). E. J. Brill/W. Backhuys: Leiden. 302pp.
- . 1990. Monograph of Living Chitons (Mollusca: Polyplacophora). Vol. 4. Suborder Ischnochitonina Ischnochitonidae: Ischnochitoninae. E. J. Brill/W. Backhuys: Leiden. 298pp.
- . 1994. Monograph of Living Chitons (Mollusca: Polyplacophora). Vol. 5. Suborder Ischnochitonina Ischnochitonidae: Ischnochitoninae (concluded). Mopaliidae. E. J. Brill/W. Backhuys: Leiden. 402pp.
- KRITZLER, HENRY. 1984. Family Terebellidae Grube, 1850. Chapter 52. *In*: Uebelacker, Joan M., Johnson, Paul G., Vittor, Barry A. (eds.), Taxonomic Guide to the Polychaetes of the Northern Gulf of Mexico. Volume 7. Minerals Management Service: Metairie, Louisiana.
- MCDONALD, GARY, and James Nybakken. 1997. A worldwide review of the food of nudibranch mollusks. Part I. Introduction and the suborder Arminacea. *The Veliger* 40(2):157-159.
- MEDEIROS-BERGEN, DOROTHY E. 1996. On the stereom microstructure of ophiuroid teeth. *Ophelia* 45(3):211-222.
- ROGINSKAYA, IRINA S., and Vladimir A. Grintsov. 1997. Range expansion of an alien invader - the nudibranch mollusk *Doridella obscura* Verrill, 1870 (Opisthobranchia: Corambidae) in the Black Sea. *The Veliger* 40(2):160-164.
- RUFF, EUGENE. 1995. Family Polynoidae Malmgren, 1867. Pp. 105-166 *IN*: Blake, J. A., B. Hilbig, and P. H. Scott (eds.). Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 5- The Annelida Part 2. 377pp.
- SHIMEK, RONALD L. 1997. A new species of eastern Pacific *Fissidentalium* (Mollusca: Scaphopoda) with a symbiotic sea anemone. *The Veliger* 40(2):178-191.

#### SCAMIT OFFICERS:

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

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## SCAMIT TREASURY SUMMARY, 1996-97

During the past fiscal year, April 1996 through March 1997, costs for producing the newsletter, \$3532.09, (including printing, postage, and supplies) remained approximately the same as during for last fiscal year (\$3399.61). SCAMIT hosted a polychaete workshop with Dr Danny Eibye-Jacobsen in May (\$286.83). Although at least one publication is presently underway, no publication grants were issued during the year. SCAMIT's primary source of income, \$1410.00, came from membership dues which covered half the costs for producing the newsletter. Grants and workshops will continue to be funded from the money collected for creating the Taxonomic Listing for SCCWRP during the 1994-95 fiscal year. The following is a summary of the expenses and income:

### Expenses

Newsletter	\$3532.09
Publications (Voucher reprints)	188.02
Grants	0.00
Miscellaneous	530.98
<b>Total</b>	<b>\$4251.09</b>

### Income

Dues	\$1410.00
Interest	322.06
T-Shirts	0.00
Donations	0.00
Miscellaneous	0.00
<b>Total</b>	<b>\$1732.06</b>

### Account balances (March 31, 1997)

Checking	\$ 535.34
Savings	15390.46
<b>Total</b>	<b>\$15925.80</b>

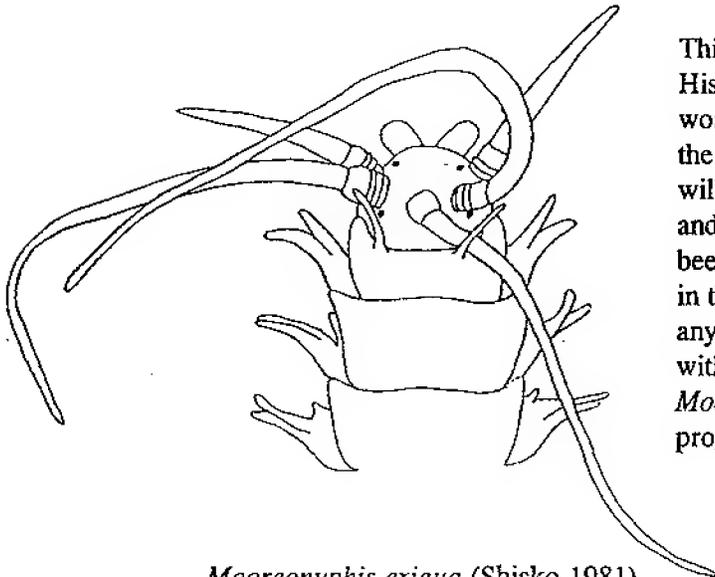
June, 1997

## SCAMIT Newsletter

Vol. 16, No.2

<b>NEXT MEETING:</b>	Onuphids, particularly <i>Mooreonuphis</i>
<b>GUEST SPEAKER:</b>	Ron Velarde
<b>DATE:</b>	Monday, 14 July 1997
<b>TIME:</b>	9:30 AM to 3:30 PM
<b>LOCATION:</b>	Worm Lab, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles CA. 90011

### JULY 14 MEETING



*Mooreonuphis exigua* (Shisko 1981)

This meeting will be once again be at the Natural History Museum in the worm lab. This month's worm topic will be onuphids, especially those of the genus *Mooreonuphis*. President Ron Velarde will once again be leading the discussion. Ron and his colleagues at the City of San Diego have been finding all sorts of different *Mooreonuphis* in their benthic sampling program. Please bring any odd onuphids that you may need assistance with and examples of the species of *Mooreonuphis* that you see in your sampling programs.

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ARCO FOUNDATION, CHEVRON USA, AND TEXACO INC.

*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

### SANTA MARIA BASIN ATLAS

Two new volumes of the *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel* series have just been released by the Santa Barbara Museum of Natural History. Volumes 10 and 11 complete coverage of arthropods, dealing with decapods, pycnogonids, mysids (Volume 10), isopods, tanaids, and cumaceans (Volume 11). Their production path has been long and frustrating, but is now at an end. A number of new taxa names are established in Vol. 11 for species long known under local provisional names. To aid in the conversion of past data we have attached a list of the old provisional name and the equivalent newly described species to this newsletter. If you are a series subscriber you will soon be receiving these two volumes together, if you have not already received them. Other interested parties can order the volumes from the Santa Barbara Museum of Natural History at

2559 Puesta del Sol Road  
Santa Barbara, California 93105-2936

### NEW LITERATURE

The relationship between exponential larval (and early juvenile) mortality and the onset of first reproduction was examined by Gosselin and Qian (1997) using data from a variety of invertebrates. They compiled data from numerous sources and found that, while there was a full-spectrum of age-to-maturity periods represented, the distribution was distinctly bimodal. Modes corresponded to early reproducing r-adapted species centered around 45 days after settlement (22% of the taxa); and to late maturing k-adapted species at 1+ years (60% of the taxa).

Exponential mortality within the period following settlement affects the former group more strongly, as for nearly all studied populations mortality dropped to low levels after the first 4 months of post-settlement life.

This pattern of dependence of mortality rate on age in juveniles is often not incorporated into population modeling. This is the case in a recent examination of *Cancer magister* population cycling by Higgins et al. (1997). It is not clear how the failure of their assumption of independence between juvenile survivorship and age would affect their results, but since they found small variations in vital rates (such as mortality) can cause wide swings in population density, we assume the non-independence would not affect their conclusions. They found that population histories with both chaotic and non-chaotic behavior were predicted by their model, and that switching between these domains was not entirely predictable.

Their focus was on a more realistic modeling of populations with density-dependence in recruitment and age structure. The sorts of major density excursions and changes in population cycle period they demonstrated both for very minor changes in vital variables, and for stable environmental conditions, point up the difficulty in management of invertebrate fisheries. Similar population characteristics may have been responsible for some noteworthy recent failures in resource management.

Crabs of the family Calappidae were cladistically analyzed by Bellwood (1996). She found that some of the current allocations of genera to sub-families, or even to families, were questionable and provided revised classifications of the Calappidae and Oxystomata based on the analysis.

The symbiosis between hermit crabs and sponges was reexamined by Sandford and Kelly-Borges (1997). Their main focus was on a poorly known association from the Gulf of Mexico between several hermit crabs in the genera *Pagurus* and *Paguristes* and the sponge *Spongosorites suberitoides*. They also summarize world-wide associations between suberitid sponges and hermit crabs, including the northeast Pacific *Suberites ficus* and *Suberites domuncula* associations.

An association between the isopod *Edotia doellojuradoi* and mytilid mussels was described from the Falkland Islands (Gray et al 1997). This is the second *Edotia* - clam endosymbiosis known. The first involved *Edotia magellanica* and both *Mytilus chilensis* (Jaramillo et al 1981), and *Mulinia edulis* (Gonzalez and Jaramillo 1991). While all three of these instances are southern ocean, they raise again the possibility that our local *Edotia* are also associated in some fashion with bivalves. Neither of the *Edotia* found inside clams has specially adapted appendages, or is visibly modified for residence within bivalve mantle cavities. In the intertidal beds of mussels inhabited by *E. doellojuradoi*, it was not found free-living, while a second species (thought to be *E. tuberculata*) was. It seems unlikely that either of our local species are clam-associates, but we should remain alert to the possibility, and observe accordingly.

The hydroid genus *Staurotheca* was reconsidered based on recent Antarctic collections (Peña Cantero et al 1997). They describe six new species in the genus, and redefine both *Staurotheca* and *Thuiaria*. Species formerly placed in *Selaginopsis* were reallocated; to *Staurotheca* (southern hemisphere species), or to *Thuiaria* (northern hemisphere species).

Application of molecular phylogenetic techniques continue with examination of mitochondrial DNA sequences from vestimentiferans taken off Japan (Kojima et al 1997), and with cephalopods from numerous sources (Bocher-Rodoni and Bonnaud 1996, Bonnaud et al 1996, and Bonnaud et al 1997). Five vestimentiferans, species of either *Lamellibranchia* or *Escarpia*, were compared using sequences from the cytochrome oxidase I gene. These species had proven to be variable in morphology in the past, and presented problems in their phenetic differentiation. They were distinctly separated in the present analysis. All five had close molecular similarities to an outgroup pogonophoran, supporting earlier findings of close relationship between vestimentiferans and pogonophores based on

other gene sequences. An outgroup polychaete was much less similar in gene sequence to the five vestimentiferans.

Both cytochrome oxidase III and 16S rDNA sequences were used in examination of coleoid cephalopod phylogeny (Bonnaud et al 1996). Results were interesting, but inconclusive. They suggested that the Idiosepiidae were perhaps incorrectly placed amongst the Sepioidea, as they grouped consistently with the oegopsids in this analysis. The authors thought these results, which run contrary to all previous interpretations of this group, required further confirmation with an analysis of a larger suite of species. The results of the larger analysis (Bonnaud et al 1997) confirmed the placement of the Idiosepiidae. This broader analysis included a chiton, a bivalve, and a gastropod as outgroups. Although the analysis proved successful for the cephalopods, molluscan class relationships were not elucidated. Several groups proved more similar to *Drosophila* in this analysis than to other molluscan classes. This result suggests that the sequences used are not appropriate for class level investigations of molluscan phylogeny.

A combination of eye-lens protein and haemocyanin electrophoresis, immunologic, and mtDNA sequencing data were used in a further analysis (Boucher-Rodoni and Bonnaud 1996). The authors found that while electrophoretic and immunologic data were useful in separating species and grouping related species, they did not help generate phylogenetic hypotheses. Sequencing data, on the other hand, was quite useful for cladistic analysis.

Meyer and Bartolomaeus (1996) report on the ultrastructure and derivation of the hooked setae in oweniid polychaetes, and use these and associated characters to postulate a new annelid phylogeny. The suite of 8 characters they used in their analysis suggest that the Oweniida, along with the Terebellida, the Sabellida, and the Pogonophora comprise a clade differentiated from the remaining annelids. While this result is of

interest, an analysis based on so few characters is hardly persuasive.

The nomenclature of the worm-snail taxa proposed by Mörch has been reexamined and arduously clarified by Bieler (1996). Taxa in the families Vermetidae, Siliquariidae, and Turritellidae are included; and several names of California species are discussed.

Feeding behavior in the ophiuroid *Amphiura filiformis* was investigated by Loo et al (1996). They found the passive suspension feeding activities of this species difficult to model because of the complexity of flow around the arms, and the uncertainty of particle retention efficiency measurements. Their findings suggest that particle aggregates may be especially important as food sources for this species. Local species in this genus probably use a similar suspension feeding strategy under appropriate current conditions.

### JUST PASSIN' THROUGH

Long-time SCAMIT friend and noted podophile (please note - this is the correct spelling) Dr. Jim Thomas was in Los Angeles recently, stopping on his way home to Florida from Australia. He had been down under for the previous month teaching a class, as he does every year, on a small island in the Great Barrier Reef. Although no longer associated with the Smithsonian, he remains very active in taxonomic pursuits. He is teaching at Nova University in Ft. Lauderdale, and conducting research at its Oceanographic Center in Dania, Florida. He can be contacted there at 8000 N. Ocean Dr., Dania, FL, 33004 or at thomasjd@ocean.nova.edu via e-mail. Jim now has the J. L. Barnard reprints. Those interested in them should contact him with requests.

During his visit he managed to meet with several local cronies, and was anxious for us all to see the new imaging system he has set up for working with amphipods (other applications are also possible). He may be able to give SCAMIT a

presentation of the system later in the year. He also mentioned that his website now sports an interactive amphipod key. Try it at <http://www.nova.edu/ocean/jthomas/apod.html>.

### 1995 POLYCHAETE CONFERENCE

The collection of papers and abstracts from the 1995 Polychaete conference that was held in Qingdao, China are now available in the *Bulletin of Marine Science*, Vol. 60:2. It is available from:

The Editorial Office  
Bulletin of Marine Science  
Rosenstiel School of Marine and Atmospheric Science  
4600 Rickenbacker Causeway  
Miami, Florida 33149-1098

For those of you not getting a free copy the cost is \$35.00 plus \$5.00 handling and shipping. The issues will be shipped upon receipt of a check or money order.

### FIT TO BE THAI-ED

While member Leslie Harris is just back from a trip to the MCZ and to France (notes on her trip will appear in a future issue), and Kirk Fitzhugh has just returned from a month in Taiwan, several other local worm-folk are preparing to head off to Thailand in August. Kirk will be going on this trip too, along with members Karen Green and Larry Lovell. All three will be participants in the joint Danish/Thai sponsored workup of the fauna of Phuket and environs. They are due to return at the beginning of September.

Danny Eibye-Jacobsen of the Zoological Museum, Copenhagen, is in charge overall. Large collections of shelf-benthos are already in existence, with more cruises planned. The shelf fauna was sampled last year, this year's target are slope depth communities. Preliminary

examinations show that perhaps 70% of the fauna remains undescribed. The joint project is designed to provide the taxonomic push necessary to get at least a majority of the fauna into the published literature.

Rapid descriptions and publication are required (the project expects submission for publication within one year). Another project priority is information exchange. Local taxonomists will work alongside the foreign ones to facilitate transfer of local knowledge to the visitors, and transfer of broader experience to the residents. The intent is formation of enough local expertise that further assistance from other nations (while still welcome) is not required. The project is scheduled to run for 5 years; this is its second year.

### EDITION 3 OF SCAMIT SPECIES LIST

While edition 3 of the SCAMIT species list is not due out for at least another six months we can not leave all the updates and emendations until the last minute. Vice President Don Cadien has put together a list of corrections and additions that we have accumulated so far. He circulated this list at the June meeting. Members that have anything to change or add should do so as soon as possible. We need all members to help with this. More input will produce a more complete list.

### CORRECTION

There are a few corrections for the recently distributed SCAMIT membership list. Member Rick Rowe's e-mail address should read <r6r@mwharbor.sannet.gov> instead of <rgr....>. (And no, we don't know why Rick has the number 6 for a middle initial.) Also, Ron Velarde's phone number should be listed as (619) 692 - 4903. If anyone else notices a mistake or a change needs to be made to the membership list please let the secretary know and she will put a correction in the newsletter asap.

### MINUTES FROM JUNE 9 MEETING

After a very brief business meeting, where all that was discussed has been mentioned previously in this newsletter, Ron Velarde (CSDMWWD) opened this month's meeting topic, scaleworms of the genus *Malmgreniella*. With both the published works of Pettibone (1993) and Ruff (1995) SCAMIT members have been trying to apply local fauna to the taxonomic keys and descriptions provided by these authors and not having great success. SCAMIT members have found a great deal of variability in some of the characters used to define the individual species.

Ron had those members present at the meeting make a list of the diagnostic characters used throughout the literature and used by members in their taxonomic work. We discussed which characters we had found variation in and which characters we had found distinction in. Those characters have been summarized into a working table for members to record their own observations. (Please see the table included at the back of this newsletter.) It is hoped that by using this table members will at least be consistent with their identifications. Perhaps in the near future SCAMIT will be able to decide which species descriptions fit our local animals and provisional voucher sheets can be done for those that don't.

The diagnostic characters used by Pettibone and Ruff for distinguishing between *Malmgreniella* species that seem to have the most variation are those that are concerned with soft body tissue. These include the cephalic lobes of the prostomium and the noto- and neuropodial lobes. The various shapes of these lobes that are described by Pettibone and Ruff are not only open to interpretation by the taxonomist, but also dependent on the preservation of the animal. For example, whether or not the cephalic lobes are truncated or peaked is difficult to decide when some worms have lobes that seem to be in between those two states. SCAMIT members present at the meeting felt that too much emphasis has been placed on these soft tissue parts. It was

decided that we should try to distinguish these animals based on setal types, elytra, and pigmentation, both on the elytra and the body. The placement of the eyes for these scaleworms also seems to be an inconsistent character that SCAMIT members have chosen not to use. A another table of common *Malmgreniella* species described from so. Calif. waters has been constructed to help members with comparisons. It is also included with this newsletter.

In the afternoon several specimens of *Malmgreniella* were examined from various locations. We first looked at a *M. nigralba* specimen of Leslie Harris' from the type location of Outer Piper's Lagoon in British Columbia. It fit the description of Pettibone (1993) and Ruff (1995) with its truncated cephalic lobes and distinct reticulation pattern on the elytra. The body was virtually colorless. The area of serration on the neurosetae was very long. The spinous bracts extended along the shaft of the seta almost to the base of the second tooth. These characters are also described for *M. nigralba*. This specimen came from a habitat of cobbles over sand at a depth of approx. 15-20 ft., which also fits the description.

We then compared 2 specimens from 100 ft. depth off Gaviota with Leslie's. Both specimens had the reticulation pattern on their elytra, but only one had truncated cephalic lobes, the other had what we all considered distinct peaks. Both specimens had pigmentation present on the prostomium posteriorly, which is not described for *M. nigralba*. The neurosetae seemed to match the description. However, the second tooth seemed much longer than that described. It was decided that this animal should be considered a provisional for now and a voucher sheet has been created for it and is included with this newsletter. It is commonly seen by the City of San Diego's taxonomists in their survey work. It may turn out that this animal is *M. nigralba*, but more comparisons need to be made.

The next specimen we examined was from San

Diego and was identified by Ron Velarde as *M. sanpedroensis*. This specimen had distinct cephalic lobes, digitate supraacicular neuropodial lobes, a long secondary tooth on the neurosetae and spinules on the neurosetae almost to the base of the second tooth. The pigment on the elytra was dark and covered the posterior half of the scale and over the attachment scar. The prostomium also had pigment on the posterior half. This specimen was compared to one identified as *M. bansei* from Orange County by Larry Lovell, which was identical to the specimen from San Diego. Tony Phillips had a specimen from the SCBPP at 210m that also matched these two except for lighter pigmentation on the elytra and a slightly shorter second tooth on the neurosetae. He had originally identified this worm as *M. berkeleyorum*. All three specimens had light pigment on the top side of the dorsal cirrophores, which is similar to *M. sanpedroensis*. It was decided that all these specimens were probably closer to *M. sanpedroensis*, than *M. bansei* or *M. berkeleyorum*, but are still not a perfect match. This comparison greatly illustrates the problem with variation amongst these closely related *Malmgreniella* species that SCAMIT members have been dealing with.

The next two specimens examined were those identified as *M. baschi* and *M. scriptoria*. Both fit their descriptions and all members present at the meeting agreed that these were the only *Malmgreniella* species distinct enough to not cause confusion. *M. baschi* is the only species with unidentate neurosetae. *M. scriptoria* has very long dorsal cirri, which extend beyond the length of the neurosetae and distinct looking neurosetae. The neurosetae have spinules that reach all the way to the base of the second tooth. The primary tooth also has a distinct hook shape. All POTW agencies commonly report these 2 species in their benthic survey work.

The most confusing of the *Malmgreniella* species seems to be *M. bansei*, *M. macginitiei*, and *M. sanpedroensis*. Presently, there does not seem to be enough distinct characters to clearly separate

these three. Ron Velarde is going to try to get specimens of these three species from Gene Ruff for comparisons to help us resolve this problem.

The last specimen examined was from Cheryl Brantley (CSDLAC). This *Malmgreniella* specimen was very different and currently does not fit any description. It has very dark black pigmentation on the elytra and neurosetae with a very thick or wide second tooth. It also has very bulbous shaped supraacicular neuropodial lobes. Even though we have decided this is not a good character to use for identification purposes because it is a soft tissue part, the bulbous lobes are consistent throughout the body. They are very distinct and unlike anything described by Pettibone (1993). So far only one specimen like this exists. It was found at a depth of 30m off the Palos Verdes peninsula. If any more specimens are found that fit this description a voucher sheet will be issued.

### CORRECTED NOTES

Member Tim Stebbins was kind enough to send along several corrections to the notes of the May meeting, as well as continuing developments on one of the species examined during that meeting. He noted that I incorrectly indicated the name of both the examined species. What was reported as "*Lepidochitona interstinctus*" should be *Lepidozona interstincta*. I also indicated that we had examined "*Placiphorella* sp A" when this animal should have been called *Placiphorella* sp SD1. Since the time of the meeting Tim has been in correspondence with Dr. Roger Clark, who has been examining the specimens and finds them to be his *Placiphorella mirabilis*. This and *P. atlantica* are known from deeper waters in southern California. *Placiphorella velata* is the inshore species, but is found primarily north of the Southern California Bight.

### BIBLIOGRAPHY

- BELLWOOD, ORPHA. 1996. A phylogenetic study of the Calappidae H. Milne Edwards 1837 (Crustacea: Brachyura) with a reappraisal of the status of the family. *Zoological Journal of the Linnean Society* 118(2):165-193.
- BIELER, RÜDIGER. 1996. Mörch's worm-snail taxa (Caenogastropoda: Vermetidae, Siliquariidae, Turritellidae). *American Malacological Bulletin* 13(1-2):23-35.
- BONNAUD, LAURE, Renata Boucher-Rodoni, and Monique Monnerot. 1996. Relationship of some coleoid cephalopods established by 3' end of the 16S rDNA and cytochrome oxidase III gene sequence comparison. *American Malacological Bulletin* 12(1-2):87-90.
- . 1997. Phylogeny of cephalopods inferred from mitochondrial DNA sequences. *Molecular Phylogenetics and Evolution* 7(1):44-54.
- BOUCHER-RODONI, RENATA, and Laure Bonnaud. 1996. Biochemical and molecular approach to cephalopod phylogeny. *American Malacological Bulletin* 12(1-2):79-85.
- GONZALEZ, M., and E. Jaramillo. 1991. The association between *Mulinia edulis* (Mollusca, Bivalvia) and *Edotia magellanica* (Crustacea, Isopoda) in Southern Chile. *Revista Chilena de Historia Natural* 64:37-51.
- GOSSELIN, LOUIS A., and Pei-Yuan Qian. 1997. Juvenile mortality in benthic marine invertebrates. *Marine Ecology - Progress Series* 146(1-3):265-282.
- GRAY, A. P., C. A. Richardson, and R. Seed. 1997. Ecological relationships between the valviferan isopod *Edotia doellojuradoi* Giambiagi, 1925, and its host *Mytilus edulis chilensis* in the Falkland Islands. *Estuarine Coastal and Shelf Science* 44(2):231- 239.
- HIGGINS, KEVIN, Alan Hastings, and Louis W. Botsford. 1997. Density dependence and age structure: Nonlinear dynamics and population behavior. *American Naturalist* 149(2):247-269.

- JARMILLO, E., J. Navarro, and J. Winter. 1981. The association between Mytilus chilensis Hupe (Bivalvia, Mytilidae) and Edotia magellanica Cunningham (Isopoda, Valvifera) in southern Chile. *Biological Bulletin* 160:107-113.
- KOJIMA, S., R. Segawa, J. Hashimoto, and S. Ohta. 1997. Molecular phylogeny of vestimentiferans collected around Japan, revealed by the nucleotide sequences of mitochondrial DNA. *Marine Biology* 127(3):507-513.
- LOO, LARS-OVE, Per R. Jonsson, Mattias Skold, and Örjan Karlsson. 1996. Passive suspension feeding in Amphiura filiformis (Echinodermata: Ophiuroidea): Feeding behaviour in flume flow and potential feeding rate of field populations. *Marine Ecology - Progress Series* 139(1-3):143-155.
- MEYER, KARSTEN, and Thomas Bartolomaeus. 1996. Ultrastructure and formation of the hooked setae in Owenia fusiformis delle Chiaje, 1842: Implications for annelid phylogeny. *Canadian Journal of Zoology* 74(12):2143-2153.
- PEÑA CANTERO, A. L., A. Svoboda, and W. Vervoort. 1997. Species of Staurotheca Allman, 1888 (Cnidaria: Hydrozoa) from recent Antarctic expeditions with R V Polarstern, with the description of six new species. *Journal of Natural History* 31(3):329-381.
- PETTIBONE, MARIAN H. 1993. Scaled Polychaetes (Polynoidae) Associated with Ophiuroids and Other Invertebrates and Review of Species Referred to Malmgrenia McIntosh and Replaced by Malmgreniella Hartman, with Descriptions of New Taxa. *Smithsonian Contributions to Zoology* 538:1-92.
- RUFF, EUGENE. 1995. Family Polynoidae Malmgren, 1867. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 5- The Annelida Part 2. 377pp : 105-166.
- SANDFORD, F., and M. Kelly-Borges. 1997. Redescription of the hermit-crab sponge Spongosorites suberitoides Diaz, Pomponi and van Soest (Demospongiae: Halichondrida: Halichondriidae). *Journal of Natural History* 31(3):315-328.
- SHISKO, JOHN F. 1981. Five new polychaetes of the families Eunicidae and Onuphidae, collected in 1975 and 1976 during the southern California Baseline Project. *Proceedings of the Biological Society of Washington* 94(4):968-983.

#### SCAMIT OFFICERS:

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

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Treasurer	Ann Dalkey	(310)648-5544	cam@san.ci.la.ca.us

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.

PROVISIONAL SPECIES EQUIVALENCIES TO NEW SPECIES

From Taxonomic Atlas Vol. 11 - June 1997

Tanaids	Existing Name	New Name
	Araphura sp A	<i>Araphura breviararia</i> Dojiri & Sieg 1997
	Araphura sp B	<i>Araphura cuspirostris</i> Dojiri & Sieg 1997
	Araphura sp C	<i>Siphonolabrum californiensis</i> Dojiri & Sieg 1997
	Leptognathia sp E	<i>Chauliopteleona dentata</i> Dojiri & Sieg 1997
	Tanaella sp A	<i>Tanaella propinquus</i> Dojiri & Sieg 1997
	Typhlotanais sp A*,	<i>Typhlotanais crassus</i> Dojiri & Sieg 1997
	Leptognathia sp H	<i>Typhlotanais williamsi</i> Dojiri & Sieg 1997
	Tanaidacea sp B	<i>Pseudotanais makrothrix</i> Dojiri & Sieg 1997
	Leptognathia sp F, Cryptocope sp D	<i>Siphonolabrum californiensis</i> Dojiri & Sieg 1997
Cumaceans - Diastylidae		
	Diastylis sp A, Leptostylis sp E	<i>Diastylis crenellata</i> Watling & McCann 1997
	Diastylis sp B	<i>Diastylis santamariensis</i> Watling & McCann 1997
	Diastylis sp E	<i>Diastylis quadriplicata</i> Watling & McCann 1997
	Diastylis paraspiculosa aucct.	<i>Diastylis sentosa</i> Watling & McCann 1997
	Leptostylis sp A	<i>Leptostylis calva</i> Watling & McCann 1997
	Leptostylis villosa aucct.	<i>Leptostylis abditus</i> Watling & McCann 1997
-Leuconidae		
	Epileucon sp A	<i>Leucon bishopi</i> Bacescu 1988
	Leucon sp A	<i>Leucon falcicosta</i> Watling & McCann 1997
	Leucon sp H	<i>Leucon declivis</i> Watling & McCann 1997
-Nannastacidae		
	Campylaspis crisp/nr. crisp	<i>Campylaspis biplicata</i> Watling & McCann 1997
	Campylaspis sp E	<i>Campylaspis blakei</i> Watling & McCann 1997
	Campylaspis sp P	<i>Campylaspis maculinodulosa</i> Watling & McCann 1997
	Procampylaspis sp A	<i>Procampylaspis caenosa</i> Watling & McCann 1997
	Cumella sp A	<i>Cumella californica</i> Watling & McCann 1997

\*=note: specimens identified as *Typhlotanais sp A* proved to belong to two different species, *T. crassus* and *T. williamsi*. Specimens at hand should be compared with the descriptions of both these species to determine the correct identification.

City of San Diego  
**PROVISIONAL SPECIES WORKSHEET**

**Provisional Name:** *Malmgreniella* sp A

**Authority:**

**Common Synonyms:**

**Taxon:** Annelida:Polynoidae

**Taxonomist:** R.Rowe **Date:** 23 June 97

**Specimen(s):** STATION DATE DEPTH STORAGE LOCATION VIAL #

ITP/Reg. 2027 rep.1 7/25/95 194ft. DLZ #1051

ITP/Reg. 2131 rep.1 7/17/96 208ft. RGV pers. coll.

**Characters:** (Based on first listed single specimen-see station data shown above- total length of approximately 23 mm. Illustrated pigmentation for elytra is based on the least faded sixth elytra found on the approximately one dozen individuals examined.)

Eyes: 2 pair, anterior larger

Cephalic lobe: broadly rounded, triangular, or truncate with variably developed "peaks" at anterolateral margin (see remarks)

Neuropodial supraacicular lobe: triangular to broadly digitate (see remarks and fig. 1)

Dorsal cirri, ventral cirri, tentacular cirri, and antennae with widely spaced digitate papillae (fig.1)

Elytra with underlying reticulation pattern (most visible in pigmented areas) ( fig. 2)

Elytra pigment: nearly complete ring on the first, c-shaped pattern beginning on second and fading more posteriorly, some specimens with pigment spot overlying posterior area of attachment scar

Notosetae (middle parapod): ~50% thicker than neurosetae, number ~18, all end in blunt tip

Neurosetae (middle parapod): upper group (~6) entire and with many long spinules (fig.3); median group (~18) strongly bifid with long secondary tooth and spinules up to base of teeth (fig. 4); lower group (~6) weakly bifid to entire

Body pigmentation: speckling between posterior eyes on prostomium; some transverse banding on dorsum and ventrum of last few setigers

**Illustrations:**

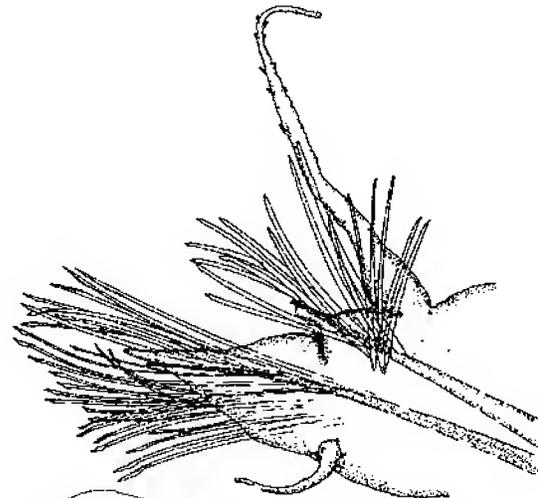


Fig. 1 Median parapod

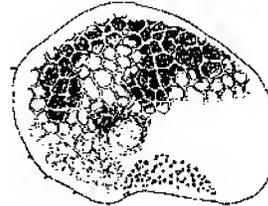


Fig. 2 Elytra (setiger 6)

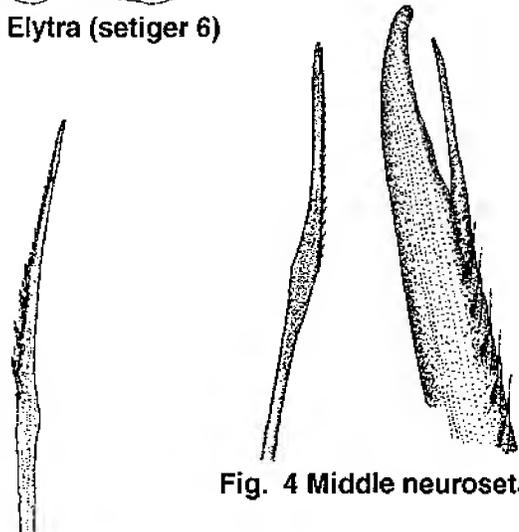


Fig. 4 Middle neuroseta

Fig. 3 Upper neuroseta

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**Related Species:**

This species is very near to and may represent a southern variation of *Malmgreniella nigralba* (Berkeley, 1923) fide Ruff, 1995. That species is described with noto- and neurosetae of similar number and thickness; shorter secondary tooth on middle neurosetae (although a longer tooth for Calif. specimens is noted on pg.151); no pigment is illustrated between posterior eyes; and the supra-acicular neuropodial lobe is described (and illustrated) as broader and more rounded. The supraacicular lobes, (occasional) presence of cephalic peaks, and the elytral pigment (but not the reticulation) fit the description of *Malmgreniella macginitiei* Pettibone, 1993 fide Ruff, 1995 ppg. 147-149.

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**Remarks:**

This voucher sheet has been produced to describe specimens encountered during the SCAMIT meeting of June 9, 1997 and additional specimens collected by the City of San Diego Ocean Monitoring Program. The typical specimen measured 20-25 mm. in total length, although many smaller and a few larger individuals have been collected.

The shape and interpretation of the shape of the cephalic peaks is variable. Specimens of this provisional species examined at the SCAMIT meeting had anterolateral margins of the prostomium that were triangular and obviously peaked to unpeaked and truncate. One specimen had a well formed peak on one side and truncate margin on the other. This character is apparently variable at least in preservation and especially in interpretation by different taxonomists.

The pigment on the elytra is most evident anteriorly and usually "faded" by the middle setigers. The pigment between the spot (when present) overlaying the attachment scar and the band parallelling the posterior margin is usually the first to fade. Many specimens have pigment remaining only along the posterior margin of the elytra by setiger 8-10. Some retain the spot of pigment overlaying the attachment scar through the middle setigers and other specimens possess a similar pigment spot only on the anteriormost setiger or two. The polygonal reticulation pattern is most obvious in the pigmented areas but is revealed readily by mounting the elytra and viewing with higher power on the compound microscope.

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**Distribution:**

Near Santa Barbara to the Mexico border at shelf depths

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**References:**

Ruff, R. E. 1995. Family Polynoidae Malmgren, 1867 Pp. 105-166 In Blake, J.A, B. Hilbig, & P. H. Scott (eds.). Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Vol. 5- The Annelida Part 2. 377pp.



Table of Characters for So. Calif. *Malmgreniella* species

C. Brantley 12Jun97

SPECIES	Setal diameter/ Setal counts	Shape of neurosetae	Length of serration on neurosetae	Length and degree of papillation on tentacular cirri	Length and degree of papillation on dorsal (D) and ventral (V) cirri		
<i>M. baschi</i> Pettibone 1993	No=Ne 35-50:25-35		(1) Short; spinous bracts stop well below blunt tips	Both pairs twice prostomial length w/ scattered papillae	D- extend to tips of Ne. w/ scattered clavate papillae V- short w/ scattered pap.		
<i>M. bansei</i> Pettibone 1993	No=Ne 30-45:30-45		(3) Short; spinous bracts stop well below base of 2nd tooth	Both pairs slightly longer than prostomium w/ short papillae	D- extend to tips of Ne. sometimes farther w/ short papillae V- short w/ short papillae		
<i>M. macginitiei</i> Pettibone 1993	No>Ne 30-40:30-40		(1) Short; spinous bracts stop well below base of 2nd tooth	Upper pair slightly longer than median ant. w/ scattered pap. Lower pair shorter.	D- extend nearly to tips of Ne. w/ clavate papillae V- short w/ occasional papillae.		
<i>M. nigralba</i> (Berkeley, 1923)	No=Ne 15-25:30-45		(1) Long; spinous bracts extend to the base of the 2nd tooth	Both pairs slightly longer than prostomium w/ minute papillae	D- extend to tip of Ne. w/ short clavate papillae V- short w/ small papillae		
<i>M. sanpedroensis</i> Pettibone 1993	No>Ne 25-40:25-40		(3) Short; spinous bracts stop well below base of 2nd tooth	Upper pair slightly longer than lower pair and about the same length as prostomium with papillae.	D- extend to tip of Ne. w/ short clavate pap. V- short and papillate		
<i>M. scriptoria</i> (Moore, 1910)	No>Ne 10-25:15-30		(1) Long; spinous bracts extend to the base of the 2nd tooth	Upper pair longer than prost. with basal pigment and minute papillae. Lower pair slightly shorter.	D- extend beyond tips of Ne. with scattered small pap. and granules of brownish pigment. V- short with pigment granules basally.		
<i>M. sp. A of</i> SCAMIT 1997	No>Ne 18:6-18		(4) Long; spinous bracts extend to the base of the 2nd tooth	Longer than prost. with widely spaced digitate papillae.	D- extend to tip of Ne. w/ widely spaced digitate pap. V- short w/ widely spaced digitate pap.		

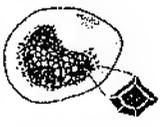
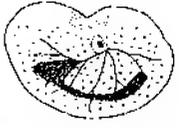
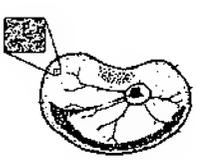
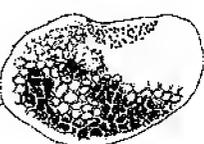
(1) from Ruff, 1995

(2) from Pettibone, 1993

(3) from Ruff NAMIT handouts, 1994

(4) from R. Rowe voucher sheet, 1997

Table of Characters for So. Calif. *Malmgreniella* species (con't)

SPECIES	Elytra-ornamentation, pigmentation, and shape	Body coloration and prostomial pigmentation	Other distinct features	Habitat and depth range		
<i>M. baschi</i> Pettibone 1993		(1) Post. dorsum & ventrum w/ transverse pigment bands. Mottled prost.	Dorsal cirrophores w/ black pigment on lower side. Tips of neurosetae are unidentate.	Commensal w/ <i>Ophiosila californica</i> , Shelf depths		
<i>M. bansei</i> Pettibone 1993		(2) Dark pigment at base of tentacular cirri and median antennae. No prost. pigment	Dorsal cirrophores w/ black pigment on upper side.	Mid-shelf 47-128m		
<i>M. macginitiei</i> Pettibone 1993		(1) Body dark or w/ dorsal and ventral transverse dark bands in posterior. Prost. w/ reddish-brown pigment in median furrow.		Commensal w/ <i>Axiothella rubrocincta</i> , <i>Amphiodia urtica</i> , <i>Callinassa californiensis</i> . Intertidal and shelf depths		
<i>M. nigralba</i> (Berkeley, 1923)		(1) Dorsum and ventrum colorless or with pigment bands in posterior.		Commensal w/ <i>Leptosynapta clarki</i> . In coarse gravelly sand from low intertidal -100m		
<i>M. sanpedroensis</i> Pettibone 1993		(2) Body colorless. Rusty red pigment spots on styles of tentacular and dorsal cirri. Prost. w/o pigment.	Rusty red pigment spots on surface of elytra.	Upper slope depths at 400m		
<i>M. scriptoria</i> (Moore, 1910)		(1) Dorsum dusky brown or colorless. Prost. sometimes w/ reddish-brown pigment granules near anterior margin between post. pair of eyes.		Commensal with <i>Brisaster latifrons</i> in middle shelf to upper slope depths at 40+m		
<i>M. sp. A</i> of SCAMIT 1997		(4) Some transverse banding on dorsum and ventrum of last few setigers. Speckling between posterior eyes on prost.		Near Santa Barbara to the Mexico border at shelf depths.		

(1) from Ruff, 1995

(2) from Pettibone, 1993

(3) from Ruff NAMIT handouts, 1994

(4) from R. Rowe voucher sheet, 1997

July, 1997

## SCAMIT Newsletter

Vol. 16, No.3

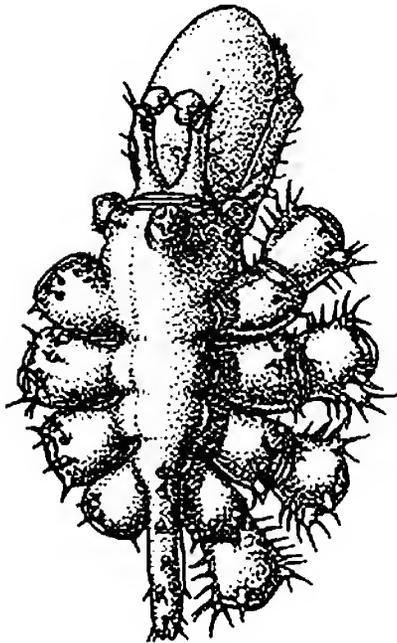
**NEXT MEETING:** Review of MMS Atlas vols. 10-11/*Amphipacifica* 2(3)

**GUEST SPEAKER:** Discussion Leader- Don Cadien

**DATE:** 25 Aug 1997

**TIME:** 9:30am - 3:30pm

**LOCATION:** MEC Analytical Systems  
2433 Impala Drive, Carlsbad



*Achelia megova* (Hilton 1942) from Child 1995

### AUGUST 25 MEETING

We will critically review and examine the two newest entries in the MMS *Taxonomic Atlas of the Santa Maria Basin and Western Santa Barbara Channel* series, Volumes 10 and 11. Decapods, pycnogonids, mysids, cumaceans, isopods, and tanaids are covered in these two new publications. In several cases we have had advance copies of most of the contents, but there were some changes from the drafts in the final publications. Please test keys, examine descriptions, scrutinize bibliographic entries, etc. so we can catch and correct any errors which have made it to publication. We will also examine the two monographs which comprise *Amphipacifica* 2(3), the last issue!

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ARCO FOUNDATION, CHEVRON USA, AND TEXACO INC.

*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

### SIC TRANSIT...

A number of our older colleagues are no longer with us, and the rate of loss seems sadly to be accelerating. We have commented briefly in the past on the loss of a few major figures, here are two more.

Polychaetologists have lost a valued colleague with the recent death of Dr. David Kirtley. Dr. Kirtley was affiliated with the Florida Oceanographic Society and the Harbor Branch Oceanographic Museum in Fort Pierce, Florida. He began his research career as a geologist where he discovered an interest in sabellariids while working on his doctoral dissertation ("Geological Significance of the Sabellariidae" - Florida State Univ., 1974). He had a great enthusiasm for this group of polychaetes and studied sabellariids from all over the world. Although he made numerous contributions over the years he will be best remembered as author of his recent sabellariid monograph (Kirtley 1994). A number of his colleagues have dropped a line to the Annelida Discussion group to express their regrets and share memories of him. Those interested in further information about Dr. Kirtley or his life should review these contributions.

Dr. Jan Stock died very suddenly early this year. I was quite unaware of this until it was cited in a letter as one of the portents causing Dr. E. L. Bousfield to put away his microscope and end a highly productive research career. John Holsinger provides a brief obituary for Dr. Stock in *Amphipacifica* 2(3).

I was privileged to meet and talk with him on an earlier sad occasion, the J. L. Barnard Memorial meetings at the Smithsonian Institution in 1992. Even in that brief meeting it was apparent that he was a man of rare accomplishment and encyclopedic knowledge of crustaceans. Although he is no longer able to grace such gatherings, he left behind a large number of erudite professional publications which will continue contributing to the work of other

researchers. I had hoped to collaborate with him in examination of ingolfiellid amphipods from Alaska as we had discussed at our meeting, but waited too long and missed my chance. He contributed to many areas, but most of his work concerned pycnogonids, relict cave faunas and their biogeography, or copepods. - Don Cadien

### AMU/WSM MEETING

The American Malacological Union/Western Society of Malacologists Combined Annual Meeting was held at the Radisson Hotel, Santa Barbara, 21-27 June. A symposium on Deep-Sea mollusks, and contributed paper sessions on Cephalopods of the North Pacific, and Phylogenetic Systematics were the major points of interest. President Ron Velarde was present for the entire meeting, member Megan Lilly caught the Cephalopod Symposium, and Vice-President Don Cadien slipped in just for the last day. Ron is preparing a report on the meeting for a future newsletter. Megan will also have an article for us a bit later, relating her experiences after-hours with visiting cephalopod workers from Russia and Japan.

One of the features of such meetings, in addition to the talks and the meetings with colleagues, is information on the availability of resources. This time an order list for back issues of the *American Malacological Bulletin* was encountered (see attachment). Apparently all of the issues to date are still available.

### EDITOR'S NOTE

At the last meeting it was noted that the New Literature section of the Newsletter seems always to treat matters of interest to the editor. An accurate observation. I would be happy were it otherwise! As has been mentioned several times before, the breadth of coverage in the newsletter is totally dependant on what is made available. If none of the other members submit materials for inclusion, the result will of necessity be restricted

to the interests and opinions of the editor. I would be delighted to receive any citation accompanied by brief review or comment on content from any member as long as it pertains to the joint interests of some portion of the membership. Received items will be included under New Literature and will be attributed to the submitting member. I would particularly enjoin members who find the current selections little to their liking to change the balance by submitting their own choices.

### NEW LITERATURE

A new publications series has been inaugurated at the Santa Barbara Museum of Natural History paralleling the Contributions in Science series of the Natural History Museum of Los Angeles County: its title - Contributions in Science. The first issue in this new series of what are essentially occasional papers is Checklist of the Marine Bivalves of the Northeastern Pacific Ocean (Coan and Scott 1997). This is a brief prequel to the monographic volume Bivalve Seashells of Western North America (Coan, Scott, and Bernard in press) due out this fall. The latter will contain illustrations and descriptions as well as tabular keys to all the bivalves known from the northeastern Pacific.

The checklist provides the taxonomic hierarchy used in the upcoming monograph, and a listing of all the taxa which are reported from the NEP which are currently considered valid. This is very helpful, and has a number of differences from the existing SCAMIT Ed. 2 list. Comments on some changes are provided by 130 footnotes. Ordering information is attached.

Two recent articles on gastropods are pertinent; one to a local species (Miller 1996), and one to the phylogeny of the group (Harasewych et al 1997). Miller describes a new species of the dorid nudibranch genus *Geitodoris* from New Zealand, and reviews the genus - commenting on its diagnosis and nomenclatural history. The

local species *G. heathi* is briefly discussed, and its placement in *Geitodoris* reaffirmed.

Harasewych *et al* report on their analysis of the phylogeny of pleurotomariids based on 18S rDNA and cytochrome c oxidase I data. Since their analysis included two chitons and a cephalopod (*Nautilus*) as outgroups, 2 patelligastropod, 2 cocculiniform, and 2 neritopsine species, 5 caenogastropods, 7 heterobranchs, and 4 vetigastropods in addition to 7 pleurotomariids, the resulting trees present hypotheses of relationship for the entire class. A similar investigation focussed on Apogastropoda (Caenogastropoda and Heterobranchia) is ongoing, and should complement the present analysis. For the most part the present study supported the previous morphology based analyses of others, and was in agreement with a recent comprehensive gastropod phylogeny (Ponder & Lindberg 1996). These later authors have a morphology based cladistic analysis in press. When published, it should provide very interesting comparison to the current analysis based on molecular data.

A morphology based cladistic analysis of the polychaete family Spionidae (Sigvaldadóttir et al 1997) found difficulty in resolving the positions of several polymorphic genera based on traditionally used characters taken from the literature. Because of non-equivalent character usage in many of the original descriptions, potentially information rich multistate characters had to be used as present or absent in the analysis. Even restricting analysis to only the type species of each genus left residual problems of insufficient character availability for some of the genera, while it did resolve four clades within the family. The Poccilochaetidae, Trochochaetidae and Uncispionidae were used as outgroups in the analysis. Character discussion is thorough, and points out inadequacies in the original descriptions of many spionids. Results presented should probably be considered preliminary until an analysis involving reexamination of type material of at least each generotype can be undertaken. This paper has

previously been available as Paper VI in Mackie 1996, and Paper I in Sigvaldadóttir 1996 with seemingly identical text, tables, and figures. If you have one or both of these, you already have this paper.

Another 18S rDNA study addressed the as yet unsettled position of the arthropods. Aguinaldo et al (1997) provide molecular evidence for close relationship of arthropods, nematodes, and priapulids within a clade of ecdysial groups. The authors found that by first testing a number of taxa within a group, and selecting only those with the slowest evolutionary rate (as evidenced by gene sequence substitutions) for inclusion, their cladistic analysis provided much different treatment of nematodes and platyhelminths. Groups which had been placed near tree bases in earlier analysis grouped with more advanced clades in the present analysis.

As a result the authors propose a new higher level taxon (Ecdysozoa) for the clade of groups which shed their cuticles - chelicerates, myriapods, insects, crustaceans, tardigrades, onychophorans, nematodes, nematomorphs, priapulids, and kinorhynchs. It is assumed that the loriciferans also belong in this clade, but no material has yet been available for analysis. The presented data do not support any hypothesis of a clade of "segmental" animals including both arthropods and annelids. They do, however, support the concept of Lophotrochozoa (including annelids, molluscs, rotifers, phoronids, brachiopods, bryozoans, platyhelminthes, and other non-ecdysial protostome groups) as sister group to the Ecdysozoa.

While this is a stimulating new analysis (whose immediate acceptance I find appealing), Moore and Willmer (1997) have provided a troubling assessment of convergence in invertebrates which calls most cladistic analyses into question. The most disturbing result of their examination of competing taxonomic methodologies is that a cladistic approach tends to down-play the frequency of convergence as a function of the

method itself and consequently underevaluates the effect of convergence on every analysis. In the end the authors found themselves unable to answer the question "How common is convergence" because of inadequacies in the available data. The authors are clearly not neutral in the debate over methodology, but their examination of convergence is both broad and deep, providing much food for thought.

The relationship between genome and phenome in nemertean was examined by Manchenko and Kulikova (1996); another contribution to the controversy between the Sundberg and Gibson camps on the nature and validity of characters in nemertean taxonomy. They dealt with color polymorphism of *Tetrastemma nigrifrons* in the Sea of Japan, a species which also occurs locally. They examined five discernable color morphs existing sympatrically in the same locality, and noted a few intermediates ["transitory color patterns"].

Using gel electrophoresis of nineteen isozyme loci, the authors rather conclusively demonstrate that the color "varieties" are all members of a single interbreeding population. Along the way they did note variation in a major morphological character; the ratio of stylet length to basis length within their composite population. Since this is often considered a reliable character for species separation, their finding of nearly 80% variation in this ratio within the population is noteworthy.

More limited variability was found when the sclerites of a gorgonian coral were tested for response to water motion, light level, and simulated predation damage (West 1997). It was found that there was indeed an inducible defensive response in the colonies where mid-branch and branch-tip predation had been simulated. Sclerites formed in the damaged areas were denser and shorter at branch-tips, and longer at mid-branch. The sclerome of such colonies would vary in response to such environmental effects. It was comforting that the author did not find differences in sclerites where light and water

motion were experimentally manipulated. The response to predation, however, produced sclerites differing 20-33% in size from their control counterparts.

Hanamura (1997) reviews the mysid genus *Archaeomysis* in the north Pacific, erecting two new species, and providing an updated key to the genus. These are animals seldom captured in POTW monitoring programs because they frequent very shallow waters, with most species taken from intertidal beach sands. Taxonomic status of our local species, *Archaeomysis grebnitzkii*, is not modified in the present paper. Hanamura's biogeographic information indicates five of the six species he treats are restricted to Japan and the southern Kuriles, with *A. grebnitzkii* ranging from Sakhalin Island through the Sea of Okhotsk, the Bering Sea, the Aleutian Islands, and along the northeast Pacific shoreline as far south as California.

Extended parental brood care in peracarids is reported for a caprellid by Thiel (1997), and for two species of burrowing amphipods by Thiel et al (1997). A summary of previous reports of parental care in amphipods, isopods, and tanaids is provided in the later paper. For the burrowing species this care is not just passive. The females actively enlarge the burrow to provide living space for the recently released manca, and provide a respiratory current to irrigate it and provide food to the now feeding young. The authors mention 11 species where extended care is offered in burrows or tubes, and 14 other species in which the adult female serves as a safe attachment for the young. They hypothesize an advantage in either protection from frequent environmental disturbance, or in growth of juveniles to a size affording at least partial escape from predation before leaving maternal care to form their own domicile.

A new model-based method of analysis is proposed by Fromentin et al (1997) to tease out meso-scale events from long term macrobenthic monitoring data. Their particular emphasis is on

meteorological events (cold vs mild periods), but their method seems applicable locally for analysis of ENSO based variability in benthic monitoring data. An impressively long series and broad range of monitoring information was available from northwest France for this ordination analysis. The interesting aspect of this paper is the direct comparison of actual data with model-based simulations from different hypotheses of community organization and function

### PROCEEDINGS OF THE 5TH POLYCHAETE CONFERENCE

As announced in the previous newsletter these proceedings are now available in the *Bulletin of Marine Science* Vol.60:2. If you don't already have a copy or haven't ordered one yet you may be able to obtain one directly from Dr. Don Reish. He has a number of them available for \$35.00 US without the \$5.00 shipping and handling fee and he will accept Visa or Mastercard besides a check or money order drawn on a US bank made out to "Polychaete Conference". If you want to use plastic he will need the name on the account, the account number and the expiration date. You may contact him directly either by mail, fax (562-985-5846) or e-mail <DJR@aol.com> to request a copy.

### SCAMIT WEBSITE

At the July meeting the SCAMIT website was addressed. The website is currently in a constant state of improvement on a monthly basis and will be for some time. The on-line newsletter at the website is not yet comparable to our printed version, but we hope it will be in the near future. This is mainly due to the lack of knowledge of the newsletter staff about how to properly format electronic files for transfer to the website. However, we are learning more every month and hopefully, this will be reflected in future on-line editions of the newsletter. Members should keep in mind that handouts such as tables and voucher

sheets produced for the newsletter currently need to be in a specific format for the website. It would be best to check with either Don Cadien or Cheryl Brantley before submitting anything. If you do not want something published on the website and only in the printed newsletter, please tell them in advance, otherwise they will assume they have your permission.

Last month's *Malmgreniella* table that appeared as a handout with the newsletter was only partly successful in its on-line version. We still need to work out a better way of handling graphic images so they may be printed from any internet browser on any printer with good resolution. We might not be able to achieve this with our present hardware and software, but this is what our aim is. We will keep members updated with our successes and failures, but please don't hesitate to make suggestions about ways to improve the usefulness and professionalism of the site.

Recent suggestions have been:

1. Include the newsletter index that Faith Cole produces for us every year.
2. Include a Table of Contents or list of topics for each newsletter to minimize scrolling and allow members to directly access sections they are most interested in.
3. Add more links, especially those containing information on invertebrates. We have recently been in touch with the Annelid and Biosis website administrators and will not only be adding their links to our site, but also becoming a resource link at their sites.
4. Include a section where voucher sheets could be archived and accessed on-line until the provisional species was superseded.

Due to space limitations we will not be able to keep all back issues of the newsletter on-line, but we will archive them so an electronic version will always be available.

These suggestions will, hopefully, be incorporated into the website in the very near future and with more input from the membership the quality of the website will only improve.

### EXTRACTING POLYDORIDS

For those SCAMIT members that have not been following the Annelida discussion group on the net recently here is some useful information regarding how to extract polydorids and other polychaetes from coral rock and oyster shells (other than chipping them out and damaging the worms).

1. A few drops of formalin added directly to the seawater will force the worms from their crevices with moderate success.
2. If it doesn't matter if the worms are dead a straight formalin fixation of the coralline material where the worms may then be pushed or chipped out because they are tougher and less likely to fall apart may be better. Also, the substrate may be dissolved with 4 percent nitric acid in the formalin solution (ie 4 of acid in 96 dilute formalin). Then the worms may be rinsed out of the dissolved material on a screen. See Brock, R. and J. Brock 1977 *Limnology and Oceanography* vol. 22(5) 948-951 for a method for quantitatively assessing the infaunal community in coral rock.
3. To keep the worms alive they can be relaxed with magnesium chloride (in a solution of MgCl<sub>2</sub> that is isotonic to the water you are holding them in) and then sucked out of their burrows with a pipette. The more concentrated the MgCl the faster the worms will relax but the survival of extracted worms is better with slightly hypotonic MgCl. Worms that relax quickly (like most spionids) can be removed and placed back in normal seawater with full recovery.
4. Another vermifuge that has been used to extract spionids from oysters is 0.5% phenol and /or 0.25% di-chlorobenzene in seawater. The

worms are expelled from their host if left overnight in these solutions. Caution is advised when working with di-chlorobenzene. Consult MacKenzie, C.L.; Shearer, L.W. 1959, Chemical control of *Polydora websteri* and other annelids inhabiting oyster shells. Proceedings- National Shellfisheries Association 50: 105-111 for further information.

### MINUTES FROM JULY 14 MEETING

After a brief business meeting where all the topics mentioned previously in this newsletter were addressed, President Ron Velarde began the meeting with a discussion of the family Onuphidae. Onuphids have always presented problems with taxonomic identification due to the wide range of variability amongst their main diagnostic characters. Many character states are growth dependant and it is difficult to distinguish between juveniles of large species and adults of smaller species.

Ron first reviewed the 3 common species of the genus *Onuphis* from so. California, *O. elegans*, *O. iridescens*, and *O. sp. 1* of SCAMIT (= "intermediates" of Hobson, 1971). *O. elegans* is a shallow water species seen at depths of approximately 20 m or less in coarse or sandy sediments. It is common in bays and estuaries. *O. iridescens* is a deeper water species common in silty mud and mixed sediments. It is generally found at depths greater than 100m and sometimes occurs as shallow as 60m. Hilbig (1995) reports it from intertidal areas to 2400m, but she is including the distribution from Mexico to British Columbia. It may be seen much shallower farther north. *O. sp. 1* of SCAMIT is the most commonly occurring *Onuphis* species in our local monitoring programs.

*O. eremita parva*. is another *Onuphis* species reported from southern California which is easily recognized by its distinct pigment pattern and branchiae that are simple only in the first 20-30 setigers and then become pectinate. Leslie Harris

(NHM-LAC) pointed out a character that is described for this species and its stem species, but is often overlooked. Interramal papillae are present between setigers 4-10. *Onuphis multiannulata* is similar to *O. eremita parva* with regards to its branchiae, which are also simple in the first 30 setigers and gradually gain more filaments farther along its body. However, *O. multiannulata* does not have a pigment pattern.

*O. geophiliformis* has also been reported from southern California, but its identity is in question. Our local animal has been thought to perhaps be a juvenile of *O. iridescens* by some SCAMIT members. Hilbig (1995) states that *O. geophiliformis* is easily recognized by its simple gills which start on setigers 3-6. However, juvenile *O. iridescens* may also not have branchiae beginning on the first setiger. *O. geophiliformis* was originally described from off of Japan. Hilbig makes the comment that this species is very similar to *O. similis*, which occurs off of Baja California. The major difference is in the number of setigers with pseudocompound hooks (3 for *O. geophiliformis* and 4 for *O. similis*).

Since several of the voucher specimens from the MMS project were readily available at the museum we took the time at the meeting to examine them and compare with our own vouchered specimens. The first specimens we examined were voucher specimens of *O. geophiliformis* from Phase II of the MMS project. The very first specimen had dark pigment banding across its setigers on the dorsum. It had branchia beginning on setiger 4 and subacicular hooks by setiger 11. Pseudocompound hooks were present on the first 3 setigers. This animal seems to fit the description of *O. geophiliformis*.

The second voucher animal examined was slightly larger than the first. It had branchiae beginning on setiger 3 and subacicular hooks beginning on setiger 13. There were pseudocompound hooks in the first 4 setigers on one side of the specimen and hooks in the first 5 setigers on the other side.

The last voucher specimen of *O. geophiliformis* we examined had branchiae beginning on setiger 4 and subacicular hooks from setiger 10. Pseudocompound hooks were present on the first 4 setigers.

We then examined 2 specimens from San Diego that were identified as *O. geophiliformis* from 380 ft. These were lighter in pigment and also had patches of pigment between the parapods. They both had branchiae beginning on setiger 3 and pseudocompound hooks in the first 4 setigers. However, one specimen had subacicular hooks starting on setiger 10 and the other on setiger 9, which is as described for *O. similis*.

From all of these comparisons we can see that there are many discrepancies in these diagnostic characters for *O. geophiliformis*, even amongst the vouchers themselves. For the time being, identifications of *O. geophiliformis* on southern California material should be made with caution.

We also examined the type specimen of *Onuphis multiannulata* and compared it with *O. eremita parva* from San Diego. The San Diego specimen was from 52 ft. depth and had been collected in 1985 and had still maintained its striking pigment pattern. The type specimen of *O. multiannulata* had no pigment pattern. Both specimens had branchiae which began on setiger 1 as single filaments and gradually increased the number of filaments to a maximum of five farther down the body. Interramal papillae was present on the *O. eremita parva* specimen from setiger 4 - 10. The papilla was located on the parapod ventral lateral to the dorsal cirrus. The papilla was very small on setiger 4 and increased in size thru setiger 10. There was some thought earlier in our meeting that *O. multiannulata* might be *O. eremita parva* with its pigment pattern just faded. However, this comparison should prove that the two species are still valid for now.

We finally addressed the main topic of the meeting *Mooreonuphis* late in the afternoon. SCAMIT members have known for several years

that two forms of *Mooreonuphis nebulosa* exist here in southern California. These two forms are the same except for their pigment patterns. One has distinct paired black spots dorsally on each segment while the other form has dorsal banding across its segments. It is often difficult to view the compound spinigers of this species. At the meeting we needed to remove several parapods and use oil immersion to finally see the compound spinigers. *M. nebulosa* generally has branchiae beginning on setiger 6-7, but Leslie Harris has observed type specimens with branchiae beginning on setigers 8-9. *M. nebulosa* is described by Fauchald (1982) as having digitiform postsetal lobes. However, upon examination of local *M. nebulosa* specimens SCAMIT members agreed that the lobes were more broadly triangular in shape. Also, Hilbig (1995) describes *M. nebulosa* with a dark peristomium, which SCAMIT members do not see on local animals.

The City of San Diego's Biology Lab also reports several other species of *Mooreonuphis*. These include several types with a dark peristomium with branchiae and subacicular hooks beginning on all different setigers. San Diego's taxonomists have been referring some of these to *M. stigmatidis* but many specimens have branchiae which begin anywhere from setiger 23-35+ and subacicular hooks beginning on setigers 11-13. Unlike *M. nebulosa* the compound spinigers of these animals are relatively easy to observe. A voucher sheet is in preparation and will be included in next month's newsletter. This provisional will be called *M. sp SD1*. A table of SCAMIT reported *Mooreonuphis* species is included with this newsletter as is a blank template for SCAMIT members to record their own observations. It was prepared by Rick Rowe (CSDMWWD). Two other species that San Diego reports occasionally are *M. exigua* and *M. segmentispadix*. They do not have problems distinguishing between either of these two species. Other agencies do not report seeing species of *Mooreonuphis* other than *M. nebulosa* and an occasional *M. stigmatidis* in their benthic sampling programs.

Also included with this newsletter is another blank table for members to record their own observations on onuphids in general. All the major diagnostic characters used in the literature

are included. SCAMIT members have found that tables are a very useful taxonomic tool for recording observations and making comparisons. This one was provided by Leslie Harris.

### BIBLIOGRAPHY

- AGUINALDO, ANNA MARIE A., James M. Turbeville, Lawrence S. Linford, Maria C. Rivera, James R. Garey, Rudolf A. Raff, and James A. Lake. 1997. Evidence for a clade of nematodes, arthropods and other moulting animals. *Nature* 387(29 May):489- 493.
- CHILD, C. ALLAN. 1995. Pycnogonida of the Western Pacific Islands, XI: Collections from the Aleutians and other Bering Sea Islands, Alaska. *Smithsonian Contributions to Zoology* 569: 1-30.
- COAN, EUGENE V., and Paul H. Scott. 1997. Checklist of the Marine Bivalves of the Northeastern Pacific Ocean. *Contributions in Science, Santa Barbara Museum of Natural History* (1):1-28.
- FAUCHALD, KRISTIAN. 1982. Revision of *Onuphis*, *Nothria*, and *Paradiopatra* (Polychaeta: Onuphidae) Based Upon Type Material. *Smithsonian Contributions to Zoology* 356:1-105.
- FROMENTIN, JEAN-MARC, Jean-Claude Dauvin, Frédéric Ibanez, Jean- Marie Dewarumez, and Bernard Elkaim. 1997. Long-term variations of four macrobenthic community structures. *Oceanologica Acta* 20(1):43-53.
- HANAMURA, Y. 1997. Review of the taxonomy and biogeography of shallow-water mysids of the genus *Archaeomysis* (Crustacea: Mysidacea) in the North Pacific Ocean. *Journal of Natural History* 31(5):669-711.
- HARASEWYCH, MICHAEL G., S. Laura Adamkewicz, Judith A. Blake, Deborah Saudek, Tracy Spriggs, and Carol J. Bult. 1997. Phylogeny and relationships of pleurotomariid gastropods (Mollusca: Gastropoda): An assessment based on partial 18S rDNA and cytochrome c oxidase I sequences. *Molecular Marine Biology and Biotechnology* 6(1):1-20.
- HILBIG, BRIGITTE. 1995. Family Onuphidae Kinberg, 1865. Pp. 229-262 *IN*: Blake, James A., Brigitte Hilbig and Paul H. Scott (eds). *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 5- The Annelida Part 2.* 377pp.
- KIRTLEY, DAVID W. 1994. A review and taxonomic revision of the family Sabellariidae Johnston, 1865 (Annelida; Polychaeta). *Sabecom Press - Science Series Number 1*:1-223.
- MACKIE, ANDREW S. Y. 1996. Taxonomy and phylogeny of spioniform polychaetes (Annelida). Göteborg University, Faculty of Natural Sciences: Göteborg, Sweden. 41pp+25, 12, 12, 17, 7, 32, and 8pp.
- MANCHENKO, GENNADY P., and Varvara I. Kulikova. 1996. Enzyme and colour variation in the hoplonemertean *Tetrastemma nigrifrons* from the Sea of Japan. *Hydrobiologia* 337(1-3):69-76.
- MILLER, MICHAEL C. 1996. A new species of the dorid nudibranch genus *Geitodoris* Bergh, 1892 (Gastropoda, Opisthobranchia) from New Zealand. *Journal of Molluscan Studies* 62(Part 4):433-442.
- MOORE, JANET, and Pat Willmer. 1997. Convergent evolution in invertebrates. *Biological Reviews of the Cambridge Philosophical Society* 72(1):1-60.
- PONDER, WINSTON F, and David R Lindberg. 1996. Gastropod phylogeny - challenges for the 90s. Pp.135-154. *IN*: Taylor, J. D. (ed.), *Origin and Evolutionary Radiation of the Mollusca.* Oxford University Press: Oxford, United Kingdom.

- SIGVALDADÓTTIR, ELIN. 1996. Systematics of Spionidae and Prionospio (Polychaeta). Stockholms Universitet: Stockholm, Sweden. 32pp. +22, 16, 9, 10, and 24pp.
- , Andrew S. Y. Mackie, and Fredrick Pleijel. 1997. Generic interrelationships within the spionidae (Annelida: Polychaeta). Zoological Journal of the Linnean Society 119(4): 473-500.
- THIEL, MARTIN. 1997. Another caprellid amphipod with extended parental care: Aeginina longicornis. Journal of Crustacean Biology 17(2):275-278.
- , S. Sampson, and Les Watling. 1997. Extended parental care in two endobenthic amphipods. Journal of Natural History 31(5):713-725.
- WEST, JORDAN M. 1997. Plasticity in the sclerites of a gorgonian coral: Tests of water motion, light level, and damage cues. Biological Bulletin 192(2):279-289.

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*Mooreonuphis* spp (SCARLETT LISTED SPECIES)

R. Rowe - 15 July 97

SPECIES KEYS IN, LIT. CITE, REF.	BRANCHIAE BEGIN SETIGER #	BRANCHIAE SIMPLE/BIFID OR PECTINATE	SUBACICULAR HOOKS BEGIN SETIGER #	PSEUDO- COMPOUND HOOKS (BI/TRI/BOTII)	# SETIGERS WITH PSEUDO COMPOUND HOOKS	SETIGERS WITH COMPOUND SPINIGERS	PIGMENT PATTERN	LENGTH OF INNER OCCIPITAL TENTACLES	# SETIGERS CIRRIFORM VENTRAL CIRRI
<i>M. stigmatis</i> (TREADWELL, 1922) fide FAUCHALD 1982	19	SIMPLE STRAP-LIKE	SETIGER 16	TRIDENTATE	FIRST 3	4-16	PERISTOME, TRANSVERS BANDS ON DORSUM OF FIRST 20 SETIGERS	TO SETIGER 5	FIRST 4
<i>M. nebulosa</i> (MOORE, 1911) fide FAUCHALD 1982	6-7	UP TO 4 FILAMENTS PECTINATE	18-20	TRIDENTATE	FIRST 7-8+ (LARGE, SIMPLE HOOKS ON 4- 15(12)) 4-15(12))	7-19 (7 TO 17-18)	NOT MENTIONED	TO SETIGER 6	FIRST 10(9) NOTE THE HIGH # OF MODIFIED ANT. SET.
SAME fide HILBIG 1995	6-8	UP TO 4 FILAMENTS ABSENT FROM POST.	14-18 (MAX 20)	TRIDENTATE	FIRST 8 (LARGE, SIMPLE HOOKS FROM 4-5)	7 TO 13-15 (7-19)	DARK PERISTOME, TRANSVERS BANDS FIRST 13, 23 LARGEST ANT.	TO SETIGER 6-7	FIRST 7-10
<i>M. segmentispadix</i> (SHISKO, 1981) ORIGINAL AS <i>Orophe</i>	9 (7-15)	UP TO 4 FILAMENTS	16 (12-18)	TRIDENTATE	FIRST 4	5-15 (4-5 TO 11-16)	DARK PERISTOME, TRANSVERSE BARS ON DORSUM THROUGH 31 SET.	TO SETIGER 6-17 (TYPICALLY 10-12)	FIRST 4
SAME fide HILBIG 1995	7-8 (7-15)	UP TO 4-5 FILAMENTS	16	TRIDENTATE	FIRST 4	5-15	WIDE TRANSVERSE BARS ON DORSUM OF FIRST 20-30 SET	TO SETIGER 15	FIRST 4 OR 5
<i>M. exigua</i> (SHISKO, 1981) ORIGINAL AS <i>Moehria</i>	14-16 (11-20)	SIMPLE, STRAP- LIKE	16 (11-16)	TRIDENTATE	FIRST 4 (FEW FROM SETIGER 3 OR 5)	5-15 (4-5 TO 11-15)	PERISTOME BROWN, TRANSVERSE BAR ON DORSUM OF FIRST 25 SET.	TO SETIGER 6-11 (TYPICALLY 10)	FIRST 3 OR 4
SAME fide HILBIG 1995	11 (11-20)	SIMPLE	16 (12-17)	TRIDENTATE	FIRST 4	5-16 (4-5 TO 11-16)	PERISTOME BROWN, BANDS ON DORSUM OF FIRST 20 SET. (LARGEST ON ANT.)	TO SETIGER 10	FIRST 4
<i>M. litoralis</i> (MONRO, 1933) fide FAUCHALD 1982	17 (16-19)	UP TO 2 FILAMENTS BIFID	13 (12-16)	TRIDENTATE	FIRST 4 (LARGE SIMPLE HOOKS ON 3- 5)	5-14 (5-6 TO 12-15)	LACKING OR TRANSVERSE BARS ON FIRST 15 SETIGERS	TO SETIGER 8	FIRST 4
<i>M. sp</i> SD I Rowe, 1995	28 (23-35+) much variation	SIMPLE	12 (11-13) rarely on 10	TRIDENTATE (few with single bidentate)	FIRST 3 (LARGE SIMPLE HOOKS ON 4- 5, RARELY ON 6)	4-11 (4 TO 10-12)	PERISTOME BROWN, LIGHT TRANSVERSE BAND ON SETIGER 1, DARKER ON 2 AND 3, DARKEST ON 4-25, THEN FADE PROGRESSIVELY	TO SETIGER 7-10 (TYPICALLY 8)	FIRST 3 DIGITATE ON 4, PAD-LIKE ON 5 AND BEYOND

August, 1997

## SCAMIT Newsletter

Vol. 16, No.4

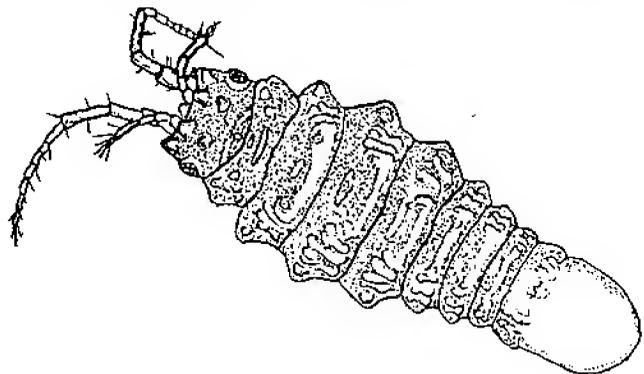
<b>NEXT MEETING:</b>	<i>Amhipacifica</i> ; a summary/Crustacea for Ed. 3
<b>GUEST SPEAKER:</b>	Discussion Leader - Don Cadien (CSDLAC)
<b>DATE:</b>	17 September, 1997
<b>TIME:</b>	9:30am - 3:30pm
<b>LOCATION:</b>	SCCWRP, 7171 Fenwick Lane, Fountain Valley California

### SEPTEMBER 17th MEETING

With the publication of the last (apparently) issue of the journal *Amhipacifica* we can take a retrospective look at the achievements of it's few short years of operation. No single series of publications has had as profound an impact on NEP peracarid taxonomy since J. L. Barnard's early 60's papers in *Pacific Naturalist*. Comment is solicited on all aspects of this work, both good and bad. In particular we will try to correct some of the more vexing errors in the various keys provided during the run of *Amhipacifica*.

We will also attempt to complete consideration of changes, additions and corrections to the arthropod portion of the SCAMIT Taxonomic

Listing Edition 2 for the upcoming Edition 3 (including addition of partial synonymies). Please participate if you can, and bring the literature required to support your nomenclatural argument.



*Synidotea magnifica* Menzies and Barnard 1959  
(from Menzies and Miller 1972)

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ARCO FOUNDATION, CHEVRON USA, AND TEXACO INC.  
*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

### DEEP-SEA SYMPOSIUM

The 8th Deep-sea Biology Symposium is set to be held at the Monterey Bay Aquarium, Monterey, California between Monday September 22 and Friday September 26 of this year. Pre-registration has long since passed, but late comers will doubtless be accommodated. The theme is Biology and Ecology of the Deep-Sea. Registration fee for the symposium is \$90 for students and \$200 for non-students. Several excursions into the depths of the Monterey Submarine Canyon are planned aboard the Research Vessel Western Flyer and using a new ROV. Participation is first-come first-served for these. Symposium registration includes attendance at the evening social, the dinner, an MBARI reception, a copy of the abstracts, a T-shirt and a group photo. Interested parties should contact Annette Gough or Ginger Hopkins at 408)775-1701 or via e-mail at goan@mbari.org.

### COHENS LEAVING NHMLAC

Drs. Dan & Ann Cohen finally are leaving the Natural History Museum of Los Angeles County and moving out of the area. They will be making a new home in northern California away from the smog and bustle of the metropolis. This is ostensibly a final retirement, but both still retain their research interests. Ann has indicated that she may be willing to examine ostracod specimens, but contact her first. They can be reached via e-mail at acohen@ucla.edu

### NEW LITERATURE

Member Tim Stebbins (CSDMWWD) brings the following notice received from Dr. Michel Hendrickx to our attention -

"The following books have recently been published by the CONABIO (Comision Nacional para el Conocimiento y Uso de la Biodiversidad, Mexico) and the Instituto de Ciencias del Mar y Limnologia, UNAM (Autonomous National University of Mexico). Both books are available

free of charge for institutions, libraries, departments and laboratories involved in the study of marine crustaceans or invertebrates, or marine life in general. Request should be sent to Dr. Michel E. Hendrickx (e-mail michel@mar.icmyl.unam.mx; FAX 69-826133, Mexico). Shipping cost should be paid by the petitioner (about \$7 US per book for USA, Canada and Latin America, air mail; about \$20 MN within Mexico, air mail). [see Bibliography for Hendrickx 1996 and Hendrickx and Navarrete 1996].

Both books are written in Spanish and include keys to families, genus, and species known from the area (31 species of benthic Penaeoidea and 52 species of pelagic shrimps). For each species the following data are provided: synonymy, material examined, characteristics, localities reported for the east Pacific, type locality, geographic and bathymetric distribution, and comments. All species are illustrated and a map with all known sampling localities (new and published data) is available for each species. Results are briefly discussed at the end of each volume."

We were able to examine copies of both publications at the meeting thanks to Tim. While much of the covered fauna does not range into the Southern California Bight, you never know what a strong El Niño might bring.

A report on the results of a recent examination of the demersal crustaceans of the west coast of Costa Rica covers some of the same species presented above (Jesse 1996). Only a few of the reported species (*Platymera gaudichaudii*, *Pyromaia tuberculata*, *Malacoplax californiensis*, *Callinectes arctuatus*, *Portunus xantusii*, *Penaeus brevirostris*, *Penaeus californiensis*, *Solenocera mutator*) are also recorded from as far north as the Southern California Bight. Various analyses were performed to characterize the decapod faunas of the three areas sampled.

It should not be surprising that *Pyromaia tuberculata* was recorded from Costa Rica, it

seems to be everywhere! We recently have had the results of Japanese investigations on reproduction and growth in this species, and now we have more from Brazilian researchers (Fransozo and Negreiros-Fransozo 1997). The authors describe and figure the two zoeal and the megalopal stage in the development of the species.

Commensal-host relationships between the crab *Pinnixa tumida* and its sea-cucumber host *Paracaudina chilensis* were examined by Takeda et al (1997). As in other holothurian/pinnotherid commensalisms such as that locally between *Caudina arenicola* and *Pinnixa barnhardti* the crab enters and leaves the host through the anus. Those familiar with this cucumber know that the end of the animal found at the sediment surface, and thus the one available for crab entrance, is extremely narrow. The small anal aperture is at the end of a long, narrow, clam-siphon-like "tail" heavily indurated with dermal ossicles. In most cases these are at least partly fused, imparting considerable rigidity to the animals anal end.

The authors provide some disquieting photographs of the commensal entering the host, and report host damage and occasional death as a result of symbiont entrance. Cucumbers were observed to react to attempted commensal entrance by withdrawing into the sediment, or protruding the rear-end and shaking it from side to side to dislodge the crab (sometimes with success). Data on the reproductive cycle of the crab were presented, indicating that only sexually mature crabs enter the hosts.

None of the local specimens of *P. chilensis* known to the editor have yielded associated commensals, but pinnotherids were taken in the same samples in some cases. It is not known if any of the local crab species are associated with *Paracaudina chilensis* in our area, but *Pinnixa forficulimanus* has no known host, and occupies the sandy sublittoral sediments from which the cucumber is taken. Both *P. forficulimanus* and *P.*

*minuscule* are small enough to fit relatively comfortably into the host. *Pinnixa tumida* taken from hosts in Japan had carapace widths of 10-12mm, while carapace widths of 5mm or below characterize the two Californian pinnotherids mentioned above.

It may be that the broadly ranging *Paracaudina chilensis* is exposed to a number of different potential commensals in different faunas, some of which (like *P. tumida*) are a poor fit to the symbiotic relationship. Please be alert to the potential associations, and if *P. chilensis* are taken, check for *Pinnixa* species in the sample.

In the temperate Eastern Pacific we have only a single known species of monoplacophoran mollusk, *Vema hyalina* McLean 1979. This animal is, however, known from shelf depths within the reach of our monitoring programs, while most monoplacophores are from very deep water. None of us have reported one, as yet, but examination of accidentally taken hard substrate (such as rocks taken in trawls) will eventually provide records of the species. With that in mind, the recent review of the group by Haszprunar and Schaefer (1997) is recommended to all local workers on mollusks. It gives a thorough overview of the entire class, and provides much more detailed information on anatomy of the animals than most of the original descriptions.

Since we now know (largely thanks to *Philine auriformis*) that even open coastal areas are susceptible to invasion by exotic introduced species we should familiarize ourselves with the mechanisms of conquest used in biological invasions. Most are straight-forward primary effects such as competition for resources of food or living space, direct predation, or tolerance of conditions not acceptable to the indigenous species. There are, however, more subtle secondary effects such as that described for a freshwater system by Gamradt et al (1997). They report modifications of reproductive behavior in

newts caused by aggressive attack by introduced crayfish. As the newts return from the land to streams to reproduce they are driven back by the territorial defense of the crayfish, inhibiting mating and reducing egg production. The heavy rains of 1994-95 produced a natural experiment in Trancas Creek which allowed this effect to be quantified. Crayfish were flushed from the stream in many places by the high flow, while newts on land remained. The authors found an 85% depression of newt egg production in the 1995-96 season (when the crayfish returned) from the level following the 1994-95 flow removal of crayfish.

The villain in this case is the introduced crayfish *Procambarus clarkii*, and the victim the California newt *Taricha torosa*. Other amphibian populations may suffer from the same sort of displacement. Territorial behavior is wide-spread in the sea as well, and effects such as these may be unreported only because observation in the sea is both more difficult and more time-consuming. Reproductive failures are common in many of the invertebrate populations we study; some may result from undetected effects of species introductions such as that described above.

In the last issue of the Newsletter we mentioned an article by Fromentin et al on a technique for analysis of long-term data sets. A second paper (Fromentin et al 1997) has been received which covers the same material with a different emphasis.

An older paper which is difficult to find (Karaman 1974) was circulated at the meeting, and several of the members present took the opportunity to make copies. The paper is a major revisionary treatment of the amphipod family Pardaliscidae, and includes the erection of a number of new genera, several occurring in the temperate Eastern Pacific.

## CNIDARIAN RESOURCE

Looking for a rare paper on anemones? The Guin Library at the Hatfield Marine Science Center holds the Charles E. Cutress Collection of books and reprints on anemones and jellyfish. The collection was donated by his wife, Bertha. Chuck Cutress spent 46 years pursuing his research interests around the world. He was Associate Curator at the Smithsonian for 10 years, and spent 25 years at the Institute of Marine Biology at the University of Puerto Rico until his retirement in 1990. Guin Library Staff are willing to make copies. There may be a charge.

-Faith Cole (EPA)

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## EDITION 3 OF TAXONOMIC LISTING

It was just 2 years from the production of the SCAMIT Taxonomic Listing Ed. 1 to the production of it's descendant Ed. 2. Another 2 years will have elapsed by the time Ed 3 is released. Much of that time has now passed, and a list with draft partial synonymies has been produced at CSDLAC. We will distribute this to a number of members for their input, but will also be relying on direct discussions of the contents of the Ed. 3 list at future meetings. The September meeting inaugurates this series with consideration of the arthropods. Please make every effort to attend meetings in your area of expertise so your input can be received. If you will not be able to attend, please send any changes in Ed. 2 to Ron Velarde or Dave Montagne at the addresses listed in the front of your Ed. 2.

Meetings in October (echinoderms- on the 7th at Orange County Sanitation District); November (other groups, including flatworms, cnidarians,

nemertean, urochordates, brachiopods, echiurans, sipunculids, sponges) at Dancing Coyote Ranch, Pauma Valley on the 16th; December 7th at Larry Lovells, Vista (polychaetes); and January (polychaetes and mollusks) will also address changes to Ed. 2.

### MINUTES OF AUGUST 25 MEETING

Following the business meeting we commenced our examination of the two most recent volumes in the Taxonomic Atlas series from the Santa Barbara Museum of Natural History. Chapters by Cadien, Martin & Zimmerman, Gerken et al, Wetzer et al, Wetzer & Brusca, Wilson, Watling & McCann, and Dojiri & Sieg were examined. We will present comments received in the same format used in earlier Newsletter reports on Atlas volumes.

In general those present seemed quite pleased with these two volumes, finding less requiring comment than in some earlier volumes. We examined Vol. 11 first, and commented as follows

◆ Pg. 36 - *Serolis carinata* has been included in the genus *Heteroserolis* (see Brandt 1991 and Wägele 1994). This is an older subgeneric designation now raised to generic status.

While discussing the Arcturidae Tim Stebbins brought out a very helpful hint for identification of extremely small (even down to manca size) individuals to genus. Although three genera occur in California, only members of *Neasticilla* and *Idarcturus* can be confused as small juveniles. Tim mentioned that while the ends of the antennae of juvenile *Idarcturus allelomorphicus* bear at most a few simple setae, those on *Neasticilla californica* bear blade-like setae ventrally. Since *Idarcturus allelomorphicus* was the only species of arcturids in the MMS collections, the question of how to differentiate juveniles never arose in the Atlas.

◆ Pg. 54 - key to *Synidotea* should not be used. Tim Stebbins has been examining the types of the three species of *Synidotea* from shelf non-algal benthic habitats; *S. calcarea*, *S. magnifica*, and *S. media*. Identification of these animals has been a problem in the past for many (if not all) workers in southern California. During his type examination he has found that none of the currently available resources are sufficient for accurate identification of these three species (including this key and that of Menzies and Miller 1972 - which include only 2 of the 3; and the table of Iverson 1972, which includes all 3). Preliminarily *S. calcarea* can be separated from the other two on the basis of its small light colored eyes, and nearly linear body. The two species with larger, darker eyes and wider intermediate pereonites can be separated by the posterior flange on the basis of the pereopods (present in *S. magnifica* of both sexes and at all sizes, and apparently absent in *S. media*). All comments pertaining to the dentition of the pleotelsonic margin should be taken with a grain of salt. All three species have at least several teeth, contrary to reports on *S. magnifica*.

Additional separatory criteria will undoubtedly be found as Tim continues his study of the types and monitoring specimens from California waters. He is currently deficient in specimens of *S. media* from central California. Those with specimens to lend should contact him.

◆ Pg. 68 - in couplet 44A of the key the species should be identified as *Munnogonium tillerae*, not *Austrosignum tillerae*.

◆ Pg. 78 - *Pleurogonium californiense* has been taken as far south as Pt. Loma.

◆ Pg. 78 - *Pleurogonium sp A* has been taken as far south as Pt. Loma.

◆ Pg. 94 - *Belonectes sp A* has been taken as far south as Palos Verdes and as shallow as 305m.

◆ Pg. 99 - *Munnopsurus sp A* has been taken as far south as the La Jolla Submarine Canyon, and is frequently encountered in southern California canyons between 300-500m.

◆ Pg.109 - *Prochelator sp A* is also common in southern California, occurring at depths of 100-500m as far south as the Coronado Submarine Canyon.

SCAMIT members had been exposed to draft versions of both the asellote and non-asellote isopod chapters prior to this publication, so there were few surprises. The relatively high proportion of the asellotes known by provisional species names indicates both the small size of these animals, and the cautiousness of Dr. Wilson. It is likely that several of the janirids, for instance, will prove to belong to established species. Now that this section of the Atlas has been released we need to change the attribution of the provisionals in our databases to reflect it. Thus *Pleurogonium sp A* SCAMIT 1996 needs to be changed to *Pleurogonium sp A* Wilson 1997.

We also were exposed to an earlier draft of the Cumacea chapter by Les Watling. After that presentation SCAMIT members were requested to provide their cumacean distributional data for forwarding to Les. They did, and after a long period of collation (and neglect) on the part of the editor, they were forwarded to him via Paul Scott. For whatever reason he chose to use none of this information. During the meeting we revisited this collected distributional data and added it to the distributions provided in the Atlas.

◆ Pg. 129 - key couplet 1A and 1B. The initial statements in each half of this couplet are reversed. Short telson should be associated with the *Leptostylis* branch, and long telson with the *Diastylis* branch.

◆ Pg. 130 - Distribution should be Puget Sound to off Pt. Loma, San Diego; 41-500m. During consideration of *Diastylis sentosa* reservations

were expressed about the characters used to separate *D. sentosa* from *D. paraspinulosa*. The supposed zoogeographic separation, with *D. sentosa* in Santa Maria Basin and Southern California Bight waters, and *D. paraspinulosa* in boreal and arctic waters further north was contested. Don Cadien indicated he had seen many individuals with the spine distribution of *D. sentosa* in Puget Sound samples, well within the supposed cold water habitat of *D. paraspinulosa*. It is possible that the true *D. paraspinulosa* is of only Arctic occurrence. Pete Slattery at Moss Landing Labs is currently examining material from the Russian arctic coasts according to Doug Diener. We will attempt to get some comparative material of *D. paraspinulosa* from him which will allow us to better evaluate *D. sentosa*.

Collected materials to date do not match cleanly either Zimmer's 1926 figure of *D. paraspinulosa* or the illustrated specimen of *D. sentosa*. Carapace spine placement is much more variable and is only rarely resolvable into a row or rows.

◆ Pg. 133 - Distribution of *D. crenellata* should be from Ft. Bragg to the Coronado Submarine Canyon at 11-606m. In the initial presentation of the draft this species had the manuscript name *D. serratocostata*. There was also a second species with the manuscript name *Leptostylis crenellata*. As preparation of the manuscript continued the authors decided that the two were really only adult and juvenile of a single species. Thus the provisional species known for many years as *Diastylis sp A* and *Leptostylis sp E* are both now referable to *D. crenellata*.

◆ Pg. 134 - Distribution of *D. quadriplicata* can be expanded to Eureka to Gaviota at 123-366m.

◆ Pg. 135 - Distribution of *D. santamariensis* can be extended to Puget Sound to San Diego at 6-204m. The species seems to be the most common *Diastylis* in Puget Sound based on samples from several areas examined by Don Cadien. It is very likely that many of the earlier identifications of *D.*

*alaskensis* from the area actually refer to this species.

◆ Pg. 135 - The *D. californica* distribution should be from Humboldt Bay to South Coronado Island, Baja California at 19-188m.

◆ Pg. 139 - Bathymetric distribution of *D. pellucida* should be 30-829m.

◆ Pg. 139 - Distribution of *Leptostylis calva* should read Fort Bragg to Pt. Loma at 8-198m. This species was previously known as *L. sp A*. According to Dean Pasko, Les Watling expressed the belief that more than one species was being called *Leptostylis sp A* during his visit to the Natural History Museum of Los Angeles County following his participation in a NAMIT workshop. If this proves to be true, our distributional information will need to be modified to separate records of the component species.

◆ Pg. 142 - Bathymetric distribution of *L. abditus* should read 11-954m. This species was previously identified as *L. villosa* within the Southern California Bight area. The rather broad bathymetric distribution of this and other diastylids reflects a lack of replacement-with-depth within the family; a pattern very visible within the Leuconidae.

◆ Pg. 143 - Bathymetric distribution of *Hemilamprops californicus* should be extended to 13-177m. There were two other species of *Hemilamprops* taken in the MMS Santa Maria Basin program which were not treated here. These were given the provisional designations of *Hemilamprops sp A* and *Hemilamprops sp B*. Illustrations of both these species were distributed in a handout at an earlier SCAMIT meeting, and both were included in a talk at the Southern California Academy of Sciences meetings in Pomona in 1986.

Few specimens of either were taken in the Santa Maria Basin. Recently Don Cadien has found *H.*

*sp A* to be not uncommon in the deeper portions (300-500m) of submarine canyons in southern California based on collections made by Dr. Eric Vetter at Scripps (now at Hawaii Pacific University). Tim Stebbins and Dean Pasko at Pt. Loma have taken *H. sp B* in recent sampling.

The remarks on the difficulties attending separation of *Hemilamprops* and *Mesolamprops* made by the authors were interesting, but clarified little. Until a thorough examination of the situation is performed we must maintain the status quo, and put up with the uncertainty surrounding identifications of females in the co-occurring *H. californicus* and *M. bispinosa* (in the south) or *H. californicus* and *M. dillonensis* (in the north). In Puget Sound the question of separation of *H. californicus* and *H. gracilis* also occurs as *H. californicus* has been reported from Japanese waters. Hart (1987) also reports *H. californicus* from Puget Sound as *Mesolamprops californiensis*. This raises some question of what was really intended. Did she place the species in *Mesolamprops* based on males with the wrong number of pleopods or was this merely a lapsus?

◆ Pg. 144 - The key to the Leuconidae leaves out *Leucon (Crymoleucon) bishopi*. This can be added by inserting a new couplet between couplets 3 and 4, and incrementing all subsequent couplet references by one. Insert the following:

4A Accessory flagellum minute.....(*Leucon*) 5

4B Accessory flagellum more than 50% length of first article of the antennal flagellum.....  
.....*Leucon (Crymoleucon) bishopi*

It should be noted here that there is a disconnect between the written description of several of these leuconids and the illustrations provided by the authors with regard to the relative length of the accessory flagellum. For instance, the illustration for *Leucon (Leucon) falcicosta* shows an accessory flagellum more than half the length of

flagellar article one. This is characteristic of species in *Leucon* (*Crymoleucon*) (see page 149).

◆ Pg. 145 - Doug Diener thought that *Alloeoleucon santamariensis* was very like the provisional species *Leucon* sp G, and suggested they might be the same. Don Cadien doubted this, as the anteroventral corner of the carapace illustrated for male *A. santamariensis* was like that of the female of *L. sp G*, and unlike males of that species. Other features will be checked to either establish or refute the suggested synonymy, and the results reported in a future Newsletter.

◆ Pg. 149 - The distribution of *L. declivis* should be from Pt. Estero to Huntington Beach at 367-952m. There is also a shallow record at 185m, but this is near the head of a submarine canyon and probably is a vertical displacement artifact directly related to upwelling in the canyon. This species was previously known locally as *L. sp H*.

◆ Pg. 149 - *Epileucon pacifica* Jones, 1969 is not appropriately placed in the synonymy of *Leucon bishopi*. The following entry is also somewhat deficient. The two should be combined to read *Epileucon pacifica* Bishop, 1981 non *E. pacifica* Jones, 1969. Distribution of this species should be Santa Maria Basin to Gulf of Panama at 477-930m. *Epileucon bishopi* was known locally first as *Leucon* sp B, then as *Epileucon* sp A.

◆ Pg. 151 - The distribution of *L. falcicosta* should be Crescent City to Pt. Loma. Additional records connect the previously isolated report of the species at 410m, and the bathymetric range should be 90-410m. This species was known locally for over three decades as *Leucon* sp A.

◆ Pg. 153 - Distribution of *L. armatus*, while still based on relatively few records, is Pt. Sur to Mugu Submarine Canyon at 107-222m.

◆ Pg. 153 - *L. magnadentata* occurs Crescent City to Tanner/Cortez Banks at 109-953m.

◆ Pg. 156 - None of us has encountered *Eudorella redacticruris* since we were originally made aware of it by Les Watling several years ago. We are puzzled by the extremely localized distribution of this species. Since few samples are available from the depth range reported for this species in recent years, we may not have had the opportunity to see the animal.

◆ Pg. 156-158 - Although relative lengths of uropodal rami are usually meaningful, and have been demonstrated to be so for other members of this family, the differences between *Eudorella truncatula* and *E. pacifica* in uropodal configuration seem slight. This is particularly true when viewed from the perspective provided by the remarks on *E. pacifica* on pg. 156 "This species shows considerable variation, especially with respect to the teeth in the vicinity of the anteroventral corner and associated notch. Additionally, variation in the length of appendage articles and degree of setation has also been seen...".

It is possible that *E. pacifica* and *E. truncatula* are both valid species, and both occur here. It is also possible that *E. truncatula* is another cumacean with a circumboreal distribution which occurs in both the North Atlantic and North Pacific, and that *E. pacifica* is just a synonym of it. A third possibility is that these specimens identified as *E. truncatula* are merely variant *E. pacifica*, and that *E. truncatula* is restricted to the Atlantic. The situation requires further study to weigh these three options, and decide which reflects the available materials.

◆ Pg. 159 - The distribution of *Eudorellopsis longirostris* should extend from Puget Sound to San Diego at depths between 11-358m. There is also one depth outlier record from 606m.

◆ Pg. 161 - The remark that *Campylaspis canaliculata* was previously known from only 2 female specimens refers only to "published" literature sources. This is one of the more

common members of the genus in the Southern California Bight, and both males and females have been previously discussed and illustrated in the Newsletter. The distribution is more explicitly rendered as Ft. Bragg to Pt. Loma at 10-644m.

◆ Pg. 163 - Distribution of *C. rufa* can be extended to Vancouver Island to Pt. Loma at depths of 98-565m. Large adults have recently been taken off both Santa Monica and Pt. Loma.

◆ Pg. 164 - Distribution of *C. rubromaculata* should be Puget Sound to Pt. Loma at depths between 7-588m.

◆ Pg. 165 - *Campylaspis maculinodulosa* was known locally as both *C sp D* and *C sp P*. It is distributed from the Santa Maria Basin to Pt. Loma at depths between 25 and 154m. Doug Diener indicated that south of Pt. Conception off Gaviota this species completely displaced *C. rubromaculata*, and was the only bumpy ridged *Campylaspis* present.

◆ Pg. 168 - Distribution of *C. hartae* should be Puget Sound to Pt. Loma at depths of 7-207m.

◆ Pg. 168 - Distribution of *C. blakei* should be Eureka to Pt. Loma at depths of 92-914m. This was known locally as *Campylaspis sp E*.

◆ Pg. 170 - Bathymetric distribution of *C. buplicata* can be extended down to 562m. This species was previously referred to locally as either *C. sp B* or as *C. nr. crista*.

◆ Pg. 173 - Distribution of *Procampylaspis caenosa* should be Cape Mendocino to Pt Loma at depths of 11-200m. This has been referred to as *Procampylaspis sp A* since Given's 1971 thesis.

◆ Pg. 174 - Distribution of *Cumella morion* can be extended to include Pt. Loma at depths of 15-154m. There was no provisional designation in use for this species prior to its description.

◆ Pg. 176 - Distribution of *C. californica* should be Santa Cruz (Soquel Submarine Canyon) to Pt. Loma at depths between 3 and 305m. This was *Cumella sp A* for workers in the Southern California Bight for many years.

◆ Pg. 207 - The designation of Sta. BSR-28 is incorrect. Station 28 was not replicated, and should be BSS-28.

◆ Pg. 213 - The status of *Leptochelia savignyi* vs *Leptochelia dubia* is not discussed here. As no synonymy is presented it cannot be determined where the authors stand regarding the synonymy of the two species (or lack thereof), and on the question of page priority and which name is correct. Since they report *L. dubia* we assume that they have consciously chosen it over *L. savignyi*. Dr. Dojiri will be contacted to attempt clarification of the synonymy. The darkly pigmented specimens reported from our area continue to occur sporadically, and remain morphologically indistinguishable from the unpigmented forms of the species.

◆ Pg. 226 - Specimens identified as *Leptognathia* (now *Paraleptognathia*) *gracilis* are frequently encountered in Puget Sound and Southeastern Alaska. Some of these may, however, be referable to *P. bisetulosa*. Specimens identified as *L. gracilis* will require re-examination to address that possibility.

◆ Pg. 231 - *Scoloura phillipsi* is routinely taken in shallow shelf depths in Puget Sound.

◆ Pg. 234 - *Chauliopeleona dentata* has occasionally been reported from Puget Sound.

◆ Pg. 235 - *Araphura brevifaria* has been taken as far south as the Coronado Submarine Canyon.

◆ Pg. 245 - Male species 3 has also been taken off Palos Verdes, Los Angeles County.

◆ Pg. 253 - *Typhlotanais williamsi* and the three

species which follow it would all have been termed *Typhlotanais sp A* based on the key prepared by Phillips, and used by many of us. This key uses the number of articles in the female antenna 1 to immediately go to *Typhlotanais*. Since *Pseudotanais makrothrix* is eyed, it may not have ended up being put into *Typhlotanais*. Previous records of *Typhlotanais sp A* must all be reexamined, as there is no one-to-one replacement which can be done.

◆ Pg. 260 - *Pseudotanais makrothrix* has been taken in shallow water in outer San Diego Bay.

Time available for the meeting was nearly exhausted by the time that we got to Volume 10. Some questions were addressed, but no comprehensive run-through was attempted. Dean Pasko questioned the absence of *Endeis cf. procera* from the pycnogonid list. Don Cadien explained that, while appearing on the earlier handout done for SCAMIT presentation, it was excluded from consideration here. Only a few specimens so identified were taken in Los Angeles Harbor in the mid-70s, and not since. These few were not available for examination during chapter preparation, and with no further records of the animal, it was considered a transient species, and not included in the key.

◆ Pg. 64-67 - The synonymy of *Neocrangon zacaе* and *Neocrangon resima* by Wicksten (1996) was proposed after the preparation of this chapter. Don Cadien had discussed the separation of the three species of *Neocrangon* here included with Jody Martin during review of the chapter. He agreed that there were indeed three separate species involved, but found potential problems with the identity of one. This stemmed from the illustrations of the type of *Neocrangon zacaе* (Figure 2.4 pg. 65), which show the typical rostral setation of *Neocrangon communis*. It is possible that there are problems with the types, and that *N. zacaе* is not a valid species. What we have been calling *N. zacaе*, while not the same species as *N. resima*, may require a new name.

Dr. Martin, now in Washington working with the NSF for a year, will be asked to examine and evaluate the type of *N. zacaе* at the Smithsonian in light of our previous conversations. In the mean time, it is recommended that the suggested synonymy of *N. zacaе* and *N. resima* not be used.

◆ Pg. 86 - Since this chapter was submitted *Acanthaxius spinulicaudus* has been transferred to *Calocarides* by Kensley (1996).

◆ Pg. 113 - *Pinnixa scamit* has not been reported by any of the local agencies. While not favoring outright submergence of this taxon back into *Pinnixa occidentalis*, we are not using it just yet. If it is indeed a valid species and occurs in the Southern California Bight, it is currently being recorded as *P. occidentalis* in monitoring data.

◆ Pg. 128-129 - The key to the Mysidacea of the Santa Maria Basin is actually a key to the species collected in the two phases of the MMS Santa Maria Basin study. This is what the authors were asked to prepare, but there are many more species which occur in the area than were taken in the two project phases, particularly inshore species. The key is of no utility outside the immediate confines of the collections examined. Those seeking to identify mysids taken in monitoring programs in the Southern California Bight should consult the key and handouts distributed at the last SCAMIT meeting on the group in January 1992. Those from further north should consult Kathman et al 1986 for comprehensive group coverage.

◆ Pg. 131 - The distribution of *Pacifacanthomysis nephrophthalma* extends far beyond the Santa Maria Basin. The species is found throughout nearshore areas of the Southern California Bight.

◆ Pg. 132 - Please note the synonymy mentioned in the remarks under *Inusitatomysis insolita*. Both *I. californica* and *I. serrata* are now considered synonyms of *I. insolita* following II (1964) and Holmquist (1982).

We did not have time to examine either of the two articles in the last issue of *Amphipacifica* during the meeting, and will do so as part of the September meeting.

#### MORE MOOREONUPHIS INFO.

Tony Phillips (CLAEMD) was not present at the polychaete meeting in July where we discussed species of *Mooreonuphis*.

He had a recent comment for SCAMIT members to add to their notes. In Hyperion's benthic monitoring program Tony commonly sees *Mooreonuphis stigmatus* at shallow water stations. Both Orange County and LA County report only seeing an occasional *M. stigmatis* in their benthic sampling programs. *Mooreonuphis nebulosa* is the more commonly reported *Mooreonuphis* species for these two agencies.

#### BIBLIOGRAPHY

- BRANDT, ANGELIKA. 1991. Zur Besiedlungsgeschichte des antarktischen Schelfes am Beispiel der Isopoda (Crustacea: Malacostraca). *Berichte zur Polarforschung* 98:1-240
- CADIEN, DONALD B. 1997. Chapter 1. Subphylum Pycnogonida. Pp. 1-47 IN: Blake, James A., and Paul H. Scott, eds. *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 10: The Arthropoda - The Pycnogonida; Crustacea Part 1 - The Decapoda*. Santa Barbara Museum of Natural History, Santa Barbara, Ca. 151pp.
- DOJIRI, MASAHIRO, and Jürgen Sieg. 1997. Chapter 3: The Tanaidacea. Pp. 181-268 IN: Blake, James A., and Paul H. Scott, eds. *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 11: The Crustacea Part 2 - The Isopoda, Cumacea and Tanaidacea*. Santa Barbara Museum of Natural History, Santa Barbara, Ca. 278pp.
- FRANSOZO, ADILSON, and Maria Lucia Negreiros-Fransozo. 1997. Larval stages of *Pyromaia tuberculata* (Lockington, 1877) (Decapoda, Majidae, Inachinae) reared in the laboratory. *Crustaceana* 70(3):304-323.
- FROMENTIN, J. M., F. Ibanez, Jean-Claude Dauvin, J. M. Dewarumez, and B. Elkaim. 1997. Long-term changes of four macrobenthic assemblages from 1978 to 1992. *Journal of the Marine Biological Association of the United Kingdom* 77(2):287-310.
- GAMRADT, SETH C., Lee B. Kats, and Christopher B. Anzalone. 1997. Aggression by non-native crayfish deters breeding in California newts. *Conservation Biology* 11(3):793-796.
- GERKEN, SARAH, Les Watling, and Isabelle P. Williams. 1997. Chapter 3. Subphylum Crustacea, Order Mysidacea. Pp. 123-142 IN: Blake, James A., and Paul H. Scott, eds. *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 10: The Arthropoda - The Pycnogonida; Crustacea Part 1 - The Decapoda*. Santa Barbara Museum of Natural History, Santa Barbara, Ca. 151pp.
- HART, JOSEPHINE F. L. 1987. Order Cumacea. Pp 325-328 IN: Kozloff, Eugene N. *Marine Invertebrates of the Pacific Northwest*. University of Washington Press, Seattle, Washington. 511pp.
- HASZPRUNAR, GERHARD, and Kurt Schaefer. 1997. Monoplacophora. Pp.415-457. Chapter 4, *In: Microscopic Anatomy of Invertebrates*. Wiley-Liss, Inc.
- HENDRICKXS, MICHEL E. 1996. Los Camarones Penaeoidea Benticos (Crustacea: Decapoda: Dendrobranchiata) del Pacifico Mexicano, CONABIO/UNAM (eds.). i-vii, 1-147.

- , and Flor D. Estrada Navarrete. 1996. Los Camarones Pelagicos (Crustacea: Dendrobranchiata y Caridea) del Pacifico Mexicano. CONABIO/UNAM (eds.), I-viii, 1-157.
- HOLMQUIST, CHARLOTTE. 1982. Mysidacea (Crustacea) secured during investigations along the west coast of North America by the National Museums of Canada, 1955-1966, with some inferences drawn from the results. *Zoologischer Jahrbücher, Abteilung für Systematik* 109(4):469-510.
- II, N. 1964. Fauna Japonica Mysidae (Crustacea). Biogeographical Society of Japan, pp. 1-610.
- JESSE, SANDRA. 1996. Demersal crustacean assemblages along the Pacific coast of Costa Rica: A quantitative and multivariate assessment based on the Victor Hensen Costa Rica expedition (1993/1994). *Revista de Biología Tropical* 44(Suppl. 3):115-134.
- KARAMAN, GORDAN S. 1974. Revision of the Family Pardaliscidae with diagnosis of genera, distribution of species and bibliography (Contribution to the Knowledge of the Amphipoda XLIII). *Acta Adriatica* 15(7):3-46.
- KATHMAN, R.D., William C. Austin, J. C. Saltman, and J. D. Fulton. 1986. Identification Manual to the Mysidacea and Euphausiacea of the Northeast Pacific. Canadian Special Publication of Fisheries and Aquatic Sciences 93:1-411.
- KENSLEY, BRIAN. 1996. Systematics and distribution of the genus *Calocarides* (Crustacea: Decapoda: Axiidae). *Proceedings of the Biological Society of Washington* 109(1):53-69.
- MARTIN, JOEL W., and Todd L. Zimmerman. 1997. Chapter 2. Subphylum Crustacea, Order Decapoda. Pp.49-121 IN: Blake, James A., and Paul H. Scott, eds. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 10: The Arthropoda - The Pycnogonida; Crustacea Part 1 - The Decapoda. Santa Barbara Museum of Natural History, Santa Barbara, Ca. 151pp.
- McLEAN, JAMES H. 1979. A new monoplacophoran limpet from the continental shelf off Southern California. *Contributions in Science, Los Angeles County Museum of Natural History* 307:1-19.
- MENZIES, ROBERT J., and Milton A. Miller. 1972. Systematics and zoogeography of the genus *Synidotea* (Crustacea: Isopoda) with an account of Californian species. *Smithsonian Contributions to Zoology* 102:1-33.
- TAKEDA, SATOSHI, Seiichi Tamura, and Masahiko Washio. 1997. Relationship between the pea crab *Pinnixa tumida* and its endobenthic holothurian host *Paracaudina chilensis*. *Marine Ecology - Progress Series* 149(1-3):143-154.
- WÄGELE, JOHANN-WOLFGANG. 1994. Notes on Antarctic and South American Serolidae (Crustacea, Isopoda) with remarks on the phylogenetic biogeography and a description of new genera. *Zoologischer Jahrbücher, Abteilung für Systematik* 121:3-69.
- WATLING, LES, and Linda D. McCann. 1997. Chapter 2: Cumacea. Pp. 121-180 IN: Blake, James A., and Paul H. Scott, eds. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 11: The Crustacea Part 2 - The Isopoda, Cumacea and Tanaidacea. Santa Barbara Museum of Natural History, Santa Barbara, Ca. 278pp.
- WETZER, REGINA, Richard C. Brusca, and George D. F. Wilson. 1997. Chapter 1.1 The Order Isopoda - Introduction to the Marine Isopoda. Pp. 1-8 IN: Blake, James A., and Paul H. Scott, eds. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 11: The Crustacea Part 2 - The Isopoda, Cumacea and Tanaidacea. Santa Barbara Museum of Natural History, Santa Barbara, Ca. 278pp.
- WETZER, REGINA, and Richard C. Brusca. 1997. Chapter 1.2 The Order Isopoda - Descriptions of

the species of the Suborders Anthuridea, Epicaridea, Flabellifera, Gnathiidea, and Valvifera. Pp. 9-58 IN: Blake, James A., and Paul H. Scott, eds. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 11: The Crustacea Part 2 - The Isopoda, Cumacea and Tanaidacea. Santa Barbara Museum of Natural History, Santa Barbara, Ca. 278pp.

WICKSTEN, MARY K. 1996. Neocrangon zacae (Chace, 1937) synonymized with N. resima (Rathbun 1902) and compared with N. communis (Rathbun, 1899)(Decapoda: Caridea: Crangonidae). Proceedings of the Biological Society of Washington 109(1):39-43.

WILSON, GEORGE D. F. 1997. Chapter 1.3 The Order Isopoda - The Suborder Asellota. Pp. 59-120 IN: Blake, James A., and Paul H. Scott, eds. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 11: The Crustacea Part 2 - The Isopoda, Cumacea and Tanaidacea. Santa Barbara Museum of Natural History, Santa Barbara, Ca. 278pp.

Please visit the SCAMIT Website at: <http://www.sccwrp.org/scamit/>

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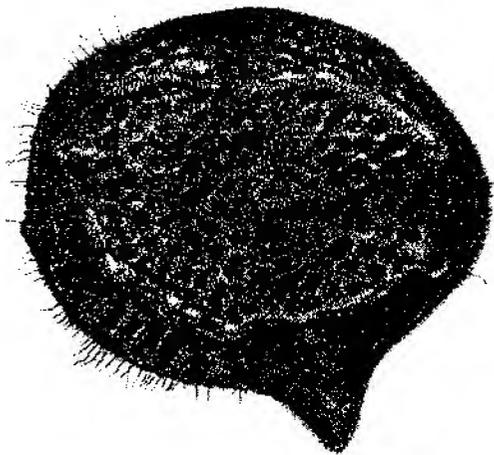
September, 1997

## SCAMIT Newsletter

Vol. 16, No.5

<b>NEXT MEETING:</b>	MMS Taxonomic Atlas Vol. 14 Pt. 2 - Authors & Ed. 3 of Taxonomic List -Echinoderm Review
<b>GUEST SPEAKERS:</b>	Dr. Mary Bergen, SCCWRP/Dr. Andrew Lissner, SAIC/Dr. Gordon Hendler, NHMLAC
<b>DATE:/TIME:</b>	Tuesday, 7 October 1997, 9:30AM - 3:30PM
<b>LOCATION:</b>	Conference Room, Orange County Sanitation District 10844 Ellis Ave., Fountain Valley, Ca

### 7 OCTOBER MEETING



*Eusarsiella thominx* (from Kornicker 1987)

Earlier this year we held a meeting to review and comment on the contents of Volume 14 of the MMS Taxonomic Atlas series, which dealt with echinoderms and several other phyla. As a follow up to that meeting we will meet in October to discuss the results of that examination with several of the major authors. We are hoping to elicit from them answers to some of the questions we encountered during our earlier review. We also plan to undertake a review of the echinoderm section of the SCAMIT Taxonomic Listing Ed. 2, and the synonymies listed in the draft of Ed 3.

**Please note:** the November meeting will be held on Monday the 17th , not Sunday the 16th, and the December meeting on the 8th not the 7th as indicated in the August Newsletter.

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*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*



## PLAN NOW



The 1997 SCAMIT Christmas Party has been scheduled for Saturday the 13th of December between 6 pm and approximately 9 pm at the Cabrillo Marine Aquarium. Repeat attendees know what to anticipate, a family oriented dinner gathering with emphasis on socializing in truly congenial surroundings. Please bring a pot-luck dish (salad, side-dish, or desert) with SCAMIT providing the main course and beverages (contact Don Cadien or Cheryl Brantley at CSDLAC to coordinate dishes). Children of all ages are both welcome and encouraged. They will never have a better opportunity to experience the Aquarium than during our annual festivities.

We will once again join in "making a joyful noise" - instrumentalists are asked to bring their instruments (pianos, organs and bagpipes excepted), and all others are asked to raise their voices in communal caroling. All signs point to a visit by the guy in the red suit with the white beard, who will have both sage words and small gifts for anyone willing to sit in his lap.

Now that the Newsletter is more broadly distributed I must add that this is limited to SCAMIT members, their families, and a few guests. Arrangements have been made to have the Museum Gift Shop open for interested shoppers. They carry things not available elsewhere, and sales benefit the institution.

Vice-President Don Cadien will ask members prior to the event the number in their party so we can plan enough for everyone. Last minute changes can be accommodated, but any advance notice is appreciated. Hope you all can make a hole in your busy December schedules large enough to fit us in.



## NEW LITERATURE

By all reports the El Niño event now underway will be both intense and prolonged. We will be seeing much more of our friends to the south, that is of species which are occasional visitants to our area rather than permanent residents. Some of these may become relatively entrenched due to the expected persistence of elevated sea-surface temperatures for a multiyear period, and continued northward flow of southern water. One possible outcome of this is reestablishment of a benthic population of *Pleuroncodes planipes* in our area. If such a benthic phase establishment occurs we can begin to gauge the effect on the resident biota with the information provided by Aurióles-Gamboa & Pérez-Flores (1997). They found the primary food of the benthic population is benthic diatoms, with some admixture of pelagic diatoms and zooplankton from the surrounding benthic boundary layer. They do, however, also report sand grains and crustacean fragments. They interpreted the later as remnants of zooplankton, but benthic microcrustaceans may also be involved.

Hendrickx (1996) provides an interesting summary of decapod species distributions among habitats in the Gulf of California. Some of these may show up as a result of northward larval transport, so we should keep in mind both the diversity of species found just to the south of the Southern California Bight, and the sorts of habitats in which we might find them.

Interpretation of the Platyhelminthes as primitive is further brought into question by Balavoine (1997). He follows two widely differing lines of evidence; 18S ribosomal RNA sequence evolution, and HOX cluster gene duplications. Although his results allow differing interpretations of the position of the platyhelminths, they definitely point to a non-basal tree location, and to flatworms not being the sister group to the bilaterians.

The data seem to support earlier analyses which group the Platyhelminthes with other phyla with spiral cleavage as the Spiralia. In any case, the

### AMPHIPACIFICA, AN EXAMINATION OF IT'S BRIEF RUN

SCAMIT members had advance notice that a group of Canadian amphipod workers led by E. L. Bousfield had been working on a huge collection of material from the Pacific Northwest accumulated by a series of expeditions to the area beginning in the 1950's. Several monographic revisions of particular groups were released as publications of the National Museums of Canada, and a comprehensive book type treatment was rumored to be in the offing. With the arrival of *Amphipacifica* Volume 1 No. 1 in January 1994 a new direction was established. The work was much the same, with many of the same formats and all the same revisionary aims, but the venue had been changed.

The new journal had the stated aim of providing an outlet for major revisionary systematic papers, which were becoming increasingly difficult to publish as institutional (usually governmental) support for such publications dwindled. The journal was envisioned to perform this function for all groups, but as it developed in practice, only papers dealing with arthropods were published. Originally envisioned as a quarterly, publication problems eventually led to publication in volumes dissociated from the calendar year. Thus, by issuance of the final number in May of 1997, only seven issues had been released in 3½ years.

These seven issues provided a feast for workers in the area covered, with major revisionary papers on a number of amphipod families. A few papers on other related subjects were also published, notably one on higher classification of amphipods (Bousfield & Shih 1994), one evaluating J. L. Barnard's impact on regional amphipod taxonomy (Bousfield & Staude 1994), and one on nutrition in fossil arthropod-like organisms (Bousfield 1996). It is not likely that articles on other groups were actively excluded, or that they were so heavily edited as to be withdrawn. It is more likely that the journal did not attract manuscripts from a broader base. During the period of publication a good portion of a backlog of major monographic or family-level taxa within the amphipods were released. A number of manuscripts, end, 13 of which are listed at the end of the last page of the last issue. These manuscripts are being offered by Dr. E. L. Bousfield to other workers with a r completion. They include partial or complete illustrations of the species. sted in taking over one or more of these projects should contact him at elbou

The journal was originally set up with L. Bousfield, and two other members of the editorial board (Craig Staude and another) at the end of volume one, strains had appeared in this relationship, leading to the departure of the two associate editors. While it is only a supposition, the publication of the special supplement to Volume 1 containing description of *Cadborosaurus willsi* seems to have catalysed the departure of the two (they discuss it in an editorial comment in the supplement). SCAMIT members had seen much of the material presented in that supplement during a workshop with Dr. Bousfield and Craig Staude in 1993.

Regardless of the merits of that publication, the departure of the two associate editors placed an even greater onus on Dr. Bousfield, who continued to function as managing editor, as well as primary author on most of the articles published. For the first two numbers of Volume II a new Associate Editor, Marianne Wilkinson, was in place. She too departed, and by the final issue the editorial staff was again reduced to one. Many cast a jaundiced eye on this situation, a journal whose editor is also it's major author, and in which peer-review of submitted articles was the responsibility of the author, not of the journal. This seemed a situation ripe for a "vanity press" sort of product, in which the ideas and performance of the authors received no creditable peer review prior to publication. To a

certain extent, the pressure of publication deadlines (during the period in which quarterly publication was attempted) did negatively affect the product. Numerous errors snuck through, more numerous and more serious than might be expected of a journal publication. These tended to support the critics who viewed the articles produced as poorly quality controlled and of dubious value as a result. A larger view, taking into account the fact that Dr. Bousfield was working in parallel on probably 15 monographic revisions at any one time in addition to his editorial mantle at *Amphipacifica*, leads to a better understanding of the greater than normal rate of error in the published product. This is small solace to those frustrated by a defective statement in a key couplet, by a mismatch between text description and figure, or other discrepancies, but it provides needed perspective.

To add further to the perspective let us examine the content of the 17 articles which constitute those seven slim issues. Three non-monographic articles were mentioned above, of the remaining 14 all but two involved Dr. Bousfield directly (Conlan 1994 and Staude 1995). Of these 12 he was primary author on 9 and secondary author on 3 (Jarrett & Bousfield 1994a and b, 1996). Main emphasis was on the amphipod families Phoxocephalidae (Jarrett & Bousfield 1994a and b), and Pleustidae (Bousfield & Hendrycks 1994 a & b, 1995b), but the families Eusiridae (Bousfield & Hendrycks 1995a), Pontogeneiidae (Staude 1995), Melitidae (Jarrett & Bousfield 1996), Oedicerotidae (Bousfield & Chevrier 1996), Corophiidae (Bousfield & Hoover 1997), Calliopiidae (Bousfield & Hendrycks 1997), Haustoriidae (Bousfield & Hoover 1996), Isaeidae (Conlan 1994), and Atylidae and Dexaminidae (Bousfield & Kendall 1994) were also treated. Staude (1995) dealt with a single genus (*Paramoera*), and Conlan (1994) with new species in two (*Photis* and *Gammaropsis*), but the other papers were monographic revisions of related genera within a family, or of an entire family.

This continued the string of monographic publications begun by Bousfield (1979) in a Bulletin of the Biological Society of Washington, and continued at the National Museum of Canada by Dickinson (1982) in the Publications in Biological Oceanography series and later in the Publications in Natural Sciences series. These publications were in effect an update based on additional data and specimens and covering a wider geographic area of the series of monographs on North East Pacific amphipod taxonomy begun in 1954 by J. L. Barnard. This series included the articles in Pacific Naturalist in 1962, and continued into the early 1980's when he began the long march to the 1991 Barnard and Karaman world-wide treatment. This was acknowledged in the appreciation of J. L. Barnard presented by Bousfield at the Barnard Memorial meeting at the Smithsonian in 1992, and in the inaugural issue of *Amphipacifica* (Bousfield & Staude 1994).

A monographic review at any level is a major undertaking, and the series in *Amphipacifica* represents a tremendous effort. As it always does, the publication of this series has stimulated further investigation and much criticism and difference of opinion. This is all to the good, and forms a major contribution of itself. Critical examination of the monographs has turned up errors, some due to haste, others due to the virtual lack of consideration of material from southern collections. In most cases the literature reports of J. L. Barnard were substituted for examination of specimens. Since the purpose of the series was to report the results of examination of the massive National Museums of Canada collections, the lack of examination of materials from other areas was an unfortunate necessity. Materials from the Southern California Bight were offered to the participants several times, but these offers were not taken up. One of the results was that many of the new species described from the Puget Sound area have listed distributions which cover only part of their ranges. Another, most prominent in the genus *Heterophoxus*, is clinal variation largely bridging the character separation between close species which was not considered in the descriptions.

**TAXONOMIC ACTIONS INTRODUCED IN *AMPHIPACIFICA* WHICH AFFECT  
THE SOUTHERN CALIFORNIA BIGHT FAUNA**

Many of the new species introduced were nominally restricted to the boreal or arctic areas of the North East Pacific. A number have been found to occur in the Southern California Bight, extending the range indicated for them in their original descriptions. This number will doubtlessly increase as old identifications are reexamined in the light of the new descriptions. Resurrections of older taxa from synonymy, redefinition of limits to established taxa, and other taxonomic actions were also undertaken in various journal articles. A list of the taxa introduced, resurrected, or modified in *Amphipacifica* which are known to occur in the Southern California Bight follows; if the animals were known under another name in our area before their treatment, the name is provided (if known)

New Name	Previously as	<i>Amphipacifica</i> #
Thorlaksonius depressus	Pleustes depressa	I no. 2
Thorlaksonius platypus	Pleustes platypa	I no. 2
Parametaphoxus quaylei	Metaphoxus fultoni	I no. 2
Heterophoxus affinis	Heterophoxus oculatus	I no. 2
Heterophoxus ellisi	Heterophoxus oculatus	I no. 2
Photis linearmanus	Photis sp D of Myers	I no. 3
Eusirus columbianus	Eusirus longipes	I no. 4
Rhachotropis barnardi	Rhachotropis clemens [in part]	I no. 4
Eohaustorius barnardi	Eohaustorius washingtonianus	II no. 1
Incisocallope newportensis	Parapleustes pugettensis	II no. 1
Incisocallope bairdi	Parapleustes pugettensis	II no. 1
Gnathopleustes den	Parapleustes den	II no. 1
Chromopleustes oculatus	Parapleustes oculatus	II no. 1
Chromopleustes sp 1	Parapleustes oculatus	II no. 1
Micropleustes nautilus	Parapleustes nautilus	II no. 1
Micropleustes behningi	Parapleustes nautilus	II no. 1
Micropleustes nautiloides	Parapleustes sp A of Barnard 1969	II no. 1
Commensipleustes commensalis	Parapleustes commensalis	II no. 1
Dulichella spinosa	Dulichella appendiculata	II no. 2
Megamoera subtener	Melita dentata	II no. 2
Desdimelita desdichada	Melita desdichada	II no. 2
Desdimelita californica	Melita californica	II no. 2
Hartmanodes hartmanae	Monoculodes hartmanae	II no. 2
Deflexilodes norvegicus	Monoculodes norvegicus	II no. 2
Pacifoculodes barnardi	Monoculodes spinipes	II no. 2
Monocorophium acherusicum	Corophium acherusicum	II no. 3
Monocorophium insidiosum	Corophium insidiosum	II no. 3
Monocorophium uenoi	Corophium uenoi	II no. 3
Laticorophium baconi	Corophium baconi	II no. 3

Numerous other actions were taken on species from adjacent areas to the north or south of the Southern California Bight, and several of the treatments were worldwide.

A LISTING OF ARTICLES PUBLISHED IN *AMPHIPACIFICA*

- BOUSFIELD, EDWARD L. 1995. A contribution to the natural classification of Lower and Middle Cambrian arthropods: food gathering and feeding mechanisms. *Amphipacifica* 2(1):3-34.
- BOUSFIELD, EDWARD L., and Andrée Chevrier. 1996. The amphipod family Oedicerotidae on the Pacific coast North America. Part 1. The Monocolodes and Synchelidium generic complexes: systematics and distributional ecology. *Amphipacifica* 2(2):75-147.
- BOUSFIELD, EDWARD L., and Edward A. Hendrycks. 1994a. A revision of the family Pleustidae (Crustacea: Amphipoda: Leucothoidea). Part 1. Systematics and biogeography of component subfamilies. *Amphipacifica* 1(1):17-57.
- . 1994b. The amphipod superfamily Leucothoidea on the Pacific coast of North America. Family Pleustidae: subfamily Pleustinae. Systematics and biogeography. *Amphipacifica* 1(2):3-69.
- . 1995a. The amphipod superfamily Eusiroidea in the North American Pacific region. I. Family Eusiridae: systematics and distributional ecology. *Amphipacifica* 1(4):3-60.
- . 1995b. The amphipod Family Pleustidae on the Pacific coast of North America. Part III. Subfamilies Parapleustinae, Dactylopleustinae, and Pleusirinae: systematics and distributional ecology. *Amphipacifica* 2(1):65-133.
- . 1997. The amphipod superfamily Eusiroidea in the North American Pacific region. II. Family Calliopiidae. Systematics and distributional ecology. *Amphipacifica* 2(3):3-66.
- BOUSFIELD, EDWARD L., and Phillip M. Hoover. 1995. The amphipod superfamily Pontoporeioidea on the Pacific coast of North America. II. Family Haustoriidae. Genus Eohaustorius J. L. Barnard: systematics and distributional ecology. *Amphipacifica* 2(1):35-63.
- . 1997. The amphipod superfamily Corophioidea on the Pacific coast of North America. Part V. Family Corophiidae. Corophiinae, new subfamily. Systematics and distributional ecology. *Amphipacifica* 2(3):67-139.
- BOUSFIELD, EDWARD L., and Jane A. Kendall. 1994. The amphipod superfamily Dexaminioidea on the North American Pacific coast; families Atylidae and Dexaminidae: Systematics and distributional ecology. *Amphipacifica* 1(3):3-66.
- BOUSFIELD, EDWARD L., and Paul H. LeBlond. 1995. An account of Cadborosaurus willsi, new genus, new species, a large aquatic reptile from the Pacific coast of North America. *Amphipacifica* 1(Supplement 1):3-25.
- BOUSFIELD, EDWARD L., and C. t. Shih. 1994. The phyletic classification of amphipod crustaceans: problems in resolution. *Amphipacifica* 1(3):76-133.
- BOUSFIELD, EDWARD L., and Craig P. Staude. 1994. The impact of J. L. Barnard on North American Pacific amphipod research: a tribute. *Amphipacifica* 1(1):3-16.
- CONLAN, KATHLEEN E. 1994. New species of the amphipod crustacean genera Photis and Gammaropsis (Corophioidea: Isaeidae) from California. *Amphipacifica* 1(3)
- JARRETT, NORMA E., and Edward L. Bousfield. 1994a. The amphipod superfamily Phoxocephaloidea on the Pacific coast of North America. Family Phoxocephalidae. Part 1. Metharpiniinae, new subfamily. *Amphipacifica* 1(1):58-140.
- . 1994b. The amphipod superfamily Phoxocephaloidea on the Pacific coast of North America. Family Phoxocephalidae. Part II. Subfamilies Pontharpiniinae, Parharpiniinae, Broiginae, Phoxocephalinae, and Harpiniinae. Systematics and distributional ecology. *Amphipacifica* 1(2):71-150.
- . 1996. The amphipod superfamily Hadzioidea on the Pacific coast of North America. Family Melitidae. Part I. The Melita group: Systematics and distributional ecology. *Amphipacifica* 2(2):3-74.

STAUDE, CRAIG P. 1995. The amphipod genus Paramoera Miers (Gammaridea: Eusiroidea: Pontogeneiidae) in the eastern North Pacific. *Amphipacifica* 1(4):61-102.

Other publications mentioned in the above discussion are:

- BARNARD, J. LAURENS. 1954. Amphipoda of the family Ampeliscidae collected in the eastern Pacific Ocean by the Velero III and Velero IV. *Allan Hancock Pacific Expeditions* 18(1):1-137.
- . 1962. Benthic Marine Amphipoda of Southern California: 1. Families Aoridae, Photidae, Ischyroceridae, Corophiidae, Podoceridae. *Pacific Naturalist* 3(1):3-72.
- . 1962. Benthic marine Amphipoda of Southern California; 2. Families Tironidae to Gammaridae. *Pacific Naturalist* 3(2):73-115.
- . 1962. Benthic marine Amphipoda of Southern California; 3. Families Amphilochidae, Leucothoidae, Stenothoidae, Argissidae, Hyalidae. *Pacific Naturalist* 3(3):116-163.
- . 1962. Benthic marine Amphipoda of Southern California: Family Oedicerotidae. *Pacific Naturalist* 3(12):351-371.
- . 1980. The genus Grandifoxus (Crustacea: Amphipoda: Phoxocephalidae) from the northeastern Pacific Ocean. *Proceedings of the Biological Society of Washington* 93(2):490-514.
- BARNARD, J. LAURENS, and Charline M. Barnard. 1981. The amphipod genera Eobrolgus and Eyakia (Crustacea: Phoxocephalidae) in the Pacific Ocean. *Proceedings of the Biological Society of Washington* 94(1):295-313.
- . 1982. The genus Rhepoxynius (Crustacea: Amphipoda: Phoxocephalidae) in American Seas. *Smithsonian Contributions to Zoology* (357):1-49.
- . 1982. Revision of Foxiphalus and Eobrolgus (Crustacea: Amphipoda: Phoxocephalidae) from American oceans. *Smithsonian Contributions to Zoology* (372):1-35.
- BARNARD, J. LAURENS, and Gordan S. Karaman. 1991. The Families and Genera of Marine Gammaridean Amphipoda (except Marine gammaroids)[parts 1 and 2]. *Records of the Australian Museum Supplement* 13:1-866.
- BOUSFIELD, EDWARD L. 1979. The amphipod superfamily Gammaroidea in the northeastern Pacific region: systematics and distributional ecology. *Bulletin of the Biological Society of Washington* (3):297-359.
- DICKINSON, JOHN J. 1982. Studies on amphipod crustaceans of the Northeastern Pacific region. I. 1. The systematics and distributional ecology of the family Ampeliscidae (Amphipoda: Gammaridea) in the Northeastern Pacific Region. I. The genus Ampelisca. *National Museums of Canada, Publications in Biological Oceanography* (10):1-39.

## Synonymy Entries

Entries occurring in the synonymy of names in Edition 3 are of several discrete types  
[examples fictitious entries for *Pagurus granosimanus* (Stimpson 1859)]

Type	Description	Name	Entry Appearance	Authorship
I	name as in original description [always first entry] if different from primary entry	<b>different genus/orthography</b> example - <i>Eupagurus granosimanus</i>	<b>lack of parentheses</b> Stimpson 1859	
II	synonymy	<b>different species name</b> example - <i>Pagurus pebblipes</i>	<b>same or different authorship</b> Weyprecht 1871	
	[special case - homonym in synonymy]	<b>different species name</b> example - <i>Pagurus inconstans</i>	<b>authorship excluding non-synonymy</b> Schmitt 1921 non Benedict 1879	
III	partial synonymy	<b>different species name</b> example - <i>Pagurus varians</i>	<b>authorship + in part</b> Smith 1916 in part	
IV	variant generic placement [regional usages]	<b>different genus</b> example - <i>Trigonocheirus granosimanus</i>	<b>of + usage citation</b> of Holmes 1900	
V	variant orthography [regional usages]	<b>different orthography</b> example - <i>Pagurus granosimana</i>	<b>of + usage citation</b> of Rathbun 1918	
VI	literature misidentification [regional references]	<b>different species name</b> example - <i>Pagurus haysi</i>  example - <i>Pagurus bagrus</i>  example - <i>Pagurus armatus</i>	<b>of + citation + non + taxon author</b> of Schmitt 1921 non Blazor 1899 <b>aucct + non + taxon author</b> aucct non Linnaeus 1757 <b>aucct NEP + non + taxon author</b> aucct NEP non (Benedict 1892)	

blind-end gut and other supposedly primitive features of the flatworms are apparently not primitive at all, but are derived characters.

Evolution within a group was also examined for the case of the sacoglossan mollusks by Jensen (1997). These animals are strongly associated with green algal diets, and include both shelled and unshelled forms. Limited fossil evidence is available for the shelled forms and for some of the algae, but the history of the unshelled clade must be inferred from other evidence.

With her own recent cladistic analysis of the group in hand, and drawing on a variety of other evidence, Jensen attempts to determine if the snails and the algae have co-evolved, or if dietary and consequent morphological changes in the Sacoglossa are due to host-switching. Answers to a number of intriguing questions are attempted, usually with some success, but ultimately the lack of a cladistic analysis of the host algae leaves most answers only speculative.

Collin and Wise (1997) describe the larval and juvenile development of a local pyramidellid mollusk, *Odostomia columbiana*. They also review the available information on pyramidellid development, a surprisingly small amount considering the number of pyramidellid species. Our local fauna was confused so severely by over-description that SCAMIT has had to recommend that its members not even attempt species level identifications of monitoring derived specimens. Dr. Jim McLean (NHMLAC) has recently reexamined this group (excluded from his Santa Maria Basin Taxonomic Atlas section) and should be clarifying much of the confusion within a few years. In the mean time additional information on the biology of the animals, such as the present contribution, are very helpful.

The introduced mytilid bivalve *Musculista senhousia*, which occurs abundantly in local bays and mudflats, has provoked examination in several areas it has invaded. A recent report from our area was mentioned in an earlier

newsletter (Crooks 1996), and a new report on the animal in New Zealand (Creese et al 1997) allows comparisons of its behavior in different invasions. The New Zealand study, which used a treatment (*Musculista* bed present) vs. control (*Musculista* absent) design, reinforced the conclusions drawn by other investigators based on observational data. Both the behavior and ecological impact of the species seemed very similar in the California and New Zealand reports, and hinge on the animals habit of establishing communal byssal thread mats covering the bottom. As long as these remain undisturbed they produce anoxia in the underlying sediments, and reduce or eliminate many preexisting benthic populations (especially clams). Errant polychaete worms seem much less affected, and may actually benefit from the shelter provided by the byssal mat. Creese et al indicate that these effects are likely to be short-lived, although mats consisting exclusively of dead clams persist for an undetermined period in San Diego Bay (pers.obs. -Cadien).

In a related examination of biological effects on benthic conditions Graf & Rosenberg (1997) review bioresuspension and biodeposition. Their main concern is to establish if (and/or when) the biological contribution to particle movements in and around the benthic boundary layer is large enough to merit consideration in particle budgets. They examined both indirect and direct effects of bioresuspension and biodeposition. The reported magnitudes of several of these processes were more than adequate to require biological effects to be accounted for in particle budgets. The literature cited in this paper is an eye-opening indication of the amount of effort expended in this area in recent years.

The linkage between ecosystem health and community or population level indications of that health (or lack thereof) are reviewed by Attrill & Depledge (1997). Many aspects of their review parallel the paths taken during the development of the BRI (benthic response index) during analysis of the SCBPP benthic data. The authors

also consider the fish community and its alteration in their review. Although this is a useful review it does not produce any new insights or explore any new territory. The authors do, however, suggest (as have others) that much the same analytic result can be obtained from identification only to family or higher taxonomic level. This, of course, depends on the analysis undertaken.

Without the most complete identification possible the BRI would not be nearly the tool it currently appears to be (the paper describing its derivation and capabilities is still in preparation). Particularly in cases where subtle effects are examined for, the additional information available from species level identifications is invaluable. This requires an experienced cadre of taxonomists generating the data, and rigorous QC of the produced data. In cases of catastrophic effects and/or limited available expertise, higher level identification can suffice, and is more cost-effective when coupled to the appropriate analysis.

#### WEBSITE UPDATE

SCAMIT has recently purchased a computer software program from Adobe called Acrobat. This software will allow the newsletter staff to create PDF (portable document format) files that will be put on our website and may then be downloaded to your own directory on your personal computer via a free software program called Acrobat Reader. The Acrobat Reader software is easily downloaded (by following a few simple directions) from the Adobe products website in a few minutes (approx. 15 - 20 min. depending on the speed of your modem) and takes up less than 3MB of space on your hard drive. Members will only have to download the Reader to their machines once. A link will be put on the SCAMIT website to the Adobe site for this purpose. While retrieving a newsletter will now involve a little more effort on the readers/SCAMIT members part the resulting

product will be a newsletter, voucher sheet, table, etc. that looks exactly as it was intended, regardless of format or style. Acrobat will take files created in any application and maintain their distinctive typefaces, color, graphics and photographs. We have already experimented with several newsletter files from WordPerfect and Excel and the PDF files are created in seconds by the click of the mouse. This will save the newsletter staff, and webmaster Larry Cooper, valuable time that they can then devote to the content of the newsletter and other important SCAMIT business. It should also allow members to receive their monthly newsletter electronically at quality equal to their current printed copy, thus allowing SCAMIT to save on printing and mailing costs.

Before purchasing this software SCAMIT officers did some research to find out if this product was indeed what was needed for not only ease in publishing our electronic newsletter on the web, but for obtaining a printed copy on individual PC's while maintaining the same format and quality of our current newsletter.

Most businesses and government agencies on the web that have documents for the consumer to print from their website, like the IRS for instance, use downloadable PDF files, rather than constructing files in HTML, which does not allow for complicated format structure. SCAMIT officers were also told by several website consultants that Adobe Acrobat was the product to use to meet our needs. Now that we have been able to use the product we're sure that we have spent SCAMIT money wisely.

We envision that in the next few months many changes will take place on the website. We hope to have all of SCAMIT's printable products, such as newsletters, voucher sheets, character tables, taxa lists, etc., available in a catalogue format where each product resides as a downloadable PDF file. In this way members will be able to tailor the products they receive to their particular invertebrate group(s) of study. We will still only

maintain the three most recent newsletters at the website, but of course, will archive all past PDF files so they will always be available to members. So continue to visit the website and don't hesitate to provide any comments or suggestions.

Feedback in any form is always welcome. In fact, we recently received some from member Jay Shrake (KLI). He got excited about the prospect of designing a modified homepage for the website, and set out to do it. He is now done, and the fruits of his labor will soon be under review by the officers. Knowing Jay he will have given it his all, and we can look forward to an esthetically pleasing but still utilitarian page.

#### MINUTES OF SEPTEMBER 17 MEETING

Before we began to review the status of the Edition 3 draft (and included synonymies) it was necessary to lay out the types of synonym which were intended for inclusion. A Table was prepared listing six types of entry, with examples of each type, to help participants determine whether an entry was correct or not (see attached table). As we examined it we found that one potential case was missing, and the special case of a synonym which is a homonym of a non-synonymous animal was added.

Each of the included synonymies was to be referenced, providing a paper trail to connect the entry in the Ed 3 list with a source document. A source list for the draft as circulated was also distributed. Each circulated draft should have in association a source list so that the indicated source numbers can be identified. This is a composite list (currently at 55 entries) which will be used for all included species. There will not be separate lists for polychaetes, crustaceans, mollusks, etc.

Each person who comments on the draft, and adds any additional synonymy sources to the list,

needs to indicate who is adding it (i.e. 59tp - meaning the reference is to the #59 source provided by Tony Phillips, not the #59 source provided by Ron Velarde). Staff at CSDLAC, where the list is maintained electronically, will collate the responses and perform suggested additions or deletions to the draft which were deemed appropriate.

During the meeting we proceeded to examine the draft document and, although only a few members were able to attend, made a number of corrections. Errors of both omission and commission were found and fixed. Although a full listing of them will not be attempted here, a paper trail was maintained by Secretary Cheryl Brantley, and it can be drawn on to answer questions from those not in attendance. If the remaining meetings to evaluate the draft go as smoothly, we will be able to keep to our schedule for production of Ed 3.

Several specific points regarding crustacean nomenclature or taxonomy came up during the meeting which require discussion beyond that which took place during the meeting. These are presented below.

The use of *Leptochelia savignyi* in recent literature was begun by Holdich & Jones (1983) who listed *Tanais dubius* Krøyer, 1842 in the synonymy of that species. Both were described in the same paper (along with three other tanaids and numerous amphipods) and separated on bases which have often been judged inadequate. Holdich & Jones (op cit) also treat *Tanais Edwardsii* Krøyer, 1842 as a synonym of *L. savignyi*. They do not, however, either comment on or give the basis for the synonymies. As mentioned in the last newsletter the question of usage of the name *Leptochelia savignyi* was begged by Dojiri and Sieg (1997) who did not provide a synonymy under *L. dubia*. I contacted Dr. Dojiri to request information on this case and was given the history of the treatment used in the Atlas.

He informed me that he had asked Jürgen Sieg about the usage prior to his death. Dr. Sieg was strongly opposed to the use of *L. savignyi* over *L. dubia*, but did not elaborate on the basis for this choice. Even though *L. savignyi* has page priority over *L. dubia* (see Stebbing 1888, who lists the contents of the paper, including the order of presentation of the new tanaid species), we must believe that Dr. Sieg had made a reasoned choice involving other factors. Mas is not aware of these, and with the death of his co-author, will never be able to further pursue the matter. As the Atlas presentation is likely to be the single reference used for area tanaids in the foreseeable future, we should continue *L. dubia* usage in the SCAMIT Taxonomic Listing Ed. 3.

While working on the draft prior to the meeting the question of gender for the genus *Photis* came up. No evidence of an explicit statement of the gender of the name was found, either in its separate or combining form (i.e. in compound names like *Ampelisciphotis*). The genus was erected by Krøyer in 1842. He did not indicate the gender of the name in the description, but did indicate that *Photis* was a maidservant's name in Apulius' "Golden Ass". Although Krøyer 1842 has not been examined, the original description was repeated by Stebbing (1888) and the etymological commentary was presented in Stebbing (1906).

At issue is the appropriateness of either the -a or -us ending on species within the genus. Usage so far has favored the -a formulation, but as has been frequently demonstrated, usage is not always correct.

In the absence of a definite indication by Krøyer we could use the ending of the type as a guide to his intent, but it is a patronymic (*P. reinhardti*) and provides no help. We can, however, reach the conclusion that the genus is feminine based on the etymological information reported by Stebbing. As such, the -a ending does seem appropriate within the genus and associated genera with *Photis* compounded names.

With the last issue of the journal *Amphipacifica* in hand it seemed a good time to evaluate its short run. It was hoped that alternative key couplets, and other patches to deal with some of the problems in the papers published in the journal could be provided at the meeting. Time did not allow such preparation, however. A note by Don Cadien on *Amphipacifica*'s brief history, listing the taxa introduced which occur in the Southern California Bight, and providing a listing of published articles was distributed (attachment).

**Editors Note:** The following is a contribution I requested of Megan Lilly. It reflects her interactions with some of the premier cephalopod workers in the world who gathered this summer for a workshop in Santa Barbara. This is not intended to extend our knowledge base on the group, but to remind us that the great names in the field are as human as those of us who labor in the trenches of applied biology.

#### "THE DANCE OF GHENGIS KHAN"

-Megan Lilly (CSDMWWD)

As indicated in the July newsletter, I did indeed attend the cephalopod talks on the 26th and 27th of June at the AMU/WSM meetings this year in Santa Barbara. I also remained behind after the conference to attend three days of the "Northern Pacific Cephalopod Taxonomy Workshop" being conducted by Dr. Eric Hochberg. Instead of reporting on the talks, albeit fascinating, Don has requested I tell a bit about the social aspect of the meetings.

One of the first opportunities I had to interact with the visiting scientists was Friday night, the 27th, at Eric Hochberg's home where a small, intimate and wonderful birthday party was held for Susan Hochberg. As I casually glanced around I realized I was surrounded by some of the world's greatest cephalopod workers. I noted not just the American counter-parts, Mike Sweeney, Clyde Roper and Eric Hochberg (to name just a few), but also Dr. Kubodera from Japan, and a large contingency of well known

Russians, including Dr. Kir Nesis and Dr. Chingis Nigmatullin. "Time for a stiff drink", I thought to myself, not sure how to act around the gathered "cephalopod royalty". However, I was to quickly learn that the Russians love a good time and have an easiness of attitude and quick sense of humor that is all pervasive.

It started when I noted Chingis casually wander over to one of Eric's orange trees, take his time selecting the perfect orange, walk to a nearby bench in the garden, call the family cat over to his lap, and happily engulf the fruit in two bites, all the while petting the cat and humming a soft tune; this in the midst of a well-catered affair. "Now there's a man I have to meet", I thought to myself. Over the next few hours, (and not just a few "Cape Cods"), I had not only met Chingis, but was witnessing his first-hand demonstration of the dance of "Ghengis Khan". The dance involved much shuffling, chuffing, hooting, hand clapping, foot stomping, and of course, boisterous laughter. I was told, however, that it could not truly be performed without a large sword which the lead dancer waves around while yelling. An extensive search was conducted, but sadly, there were no such swords to be found in the Hochberg residence.

Around 9:00pm the party started winding down and some of the "younger types" were restless for more fun. I escorted Dr. Slava Bizikov from the Russian Federal Research Institute of Fisheries and Oceanography, Unai Markaida, a Ph.D. student at CICESE in Ensenada, and Dr. David Scheel from the Prince William Sound Science Center, to a jazz club called Soho's in downtown Santa Barbara. Over the course of the rest of the evening, I learned that Unai was not originally from Mexico but grew up in the Basque region of France. By observation I learned that the Basque have no problems dancing wildly without a partner in the middle of a dance floor all while holding a beer and not spilling a drop. I also learned that the Russians have a slightly different dance style, let's just say, "enthusiastic" and leave it at that.

Saturday the 28th I did not see many of the Russians at the Museum, and was later to learn that they had a rented a car, driven to the Monterey Bay Aquarium for "the day" and returned to Santa Barbara late that evening (the things some people do for fun...).

Sunday afternoon officially kicked off the Cephalopod Taxonomy Workshop. A brief opening speech was given by Dr. Hochberg and the rest of the afternoon was spent organizing specimens which had been brought from all areas of the Northern Pacific. As the day was drawing to a close I asked Dr. Tsunemi Kubodera ("Ku") and Dr. Kotaro Tsuchiya (both of whom I've know since my days of working at the SBMNH) to join me for dinner. Probably much to their chagrin, I insisted on sushi. Once at the sushi bar Ku and Kotaro gave me their orders (although both of them spoke excellent English, they were hesitant about using it) and I relayed their requests to the sushi chef. After a few minutes of this, I suggested that the sushi chef might understand perfectly well if they made their requests in Japanese. As it turned out, the chef understood their Japanese much better than my English and within seconds all sorts of "specialities" (ordered in Japanese) were being set in front of me. The orders flew fast and furious from that point on, and while I have no idea what I actually consumed, it was delicious.

Monday was spent at the Museum dissecting cephalopods from assorted regions of the Northern Pacific. The hot, and at times, tedious work (gill lamellae counts, sucker counts, etc) was made tolerable by the presence of Dr. Mike Sweeney (Smithsonian) who I discovered shared a similar sweet-tooth to my own - a few clandestine trips were made to the vending machines.

That evening was to be my last in Santa Barbara and the gathered Russian entourage made a big show of insisting on dinner and dancing. At dinner Chingis stood and offered me a gift on behalf of the "Russian/Basque Alliance" (Unai

was present at any and all social activities). I received a beautifully hand painted small wooden bowl, and was told it was a traditional Russian gift. Deeply pleased, I took "the Alliance" back to Soho's (some had been present the previous Friday night, and some had not), and promptly brought a round of drinks to show my appreciation. There was an excellent jazz band playing and I was to witness first-hand a rapture of the likes I'd never seen when Chingis first heard the music. Turns out he was an avid jazz fan and proceeded to croon, cheer, dance wildly, applaud, and howl through the remaining evening. After dissections on Tuesday morning and a pleasant picnic lunch on the museum grounds, I said a sad farewell to the gathered Russian/ Basque/Japanese/Spanish collection and drove home to San Diego, thinking I'd probably not see any of them again for some time. Oh was I wrong...

Two days later, on Thursday evening, I received a cheerful phone call in broken English from Slava Bizikov asking if he, and a few others, could come visit me in San Diego the coming weekend, as they very much wanted to see Sea World. I was over-joyed at the prospect and gave them directions to my house. Saturday morning arrived and so did a small compact rental car, stuffed with Russians. They spilled out onto the side-walk with as much enthusiasm as always and proceeded into my house where they promptly entered into wrestling matches with my 60lb dog.

As enjoyable as this was to watch, I rounded them up and drove them to Sea World. Turns

out that Sea World is very famous in Russia and they had all seen advertisements and feature clips in Moscow. The day was spent getting sun-burned, eating ice-cream and caramel corn, and listening to them argue madly in Russian about every exhibit and display. All in all they seemed to love it.

Much to my surprise at approximately 3:00pm, they asked if they could go to the Zoo. I was shocked as I knew that they still had to drive back to Santa Barbara that evening (they had a flight to catch the next morning). However, they insisted (I'm telling you, these people are tireless), and that afternoon and evening they enjoyed the zoo with as much gusto and relish as everything else. Finally, at approximately 10:00pm that evening, after a fancy and well catered meal at Wendy's, they squeezed me near to death with massive bear-hugs, piled back into their tiny car, and waving merrily headed back towards Santa Barbara. As I wearily shuffled towards my front door all I could do was smile and think "Wow!".

#### CORRECTION

It was incorrectly reported in the previous newsletter volume 16 no. 4 that *Mooreonuphis stigmatis* is commonly reported by Hyperion in their benthic monitoring program. The species that does occur is *Mooreonuphis exigua* (Shisko 1981). It is found at 80m stations in coarser sediments. Polychaete workers please change your notes. The secretary apologizes for this error.

#### BIBLIOGRAPHY

- ATTRILL, MARTIN J., and Michael H. Depledge. 1997. Community and population indicators of ecosystem health: Targeting links between levels of biological organisation. *Aquatic Toxicology* 38(1-3):183-197.
- AURIOLES-GAMBOA, D., and R. Pérez-Flores. 1997. Seasonal and bathymetric changes in feeding habits of the benthic red crab *Pleuroncodes planipes* (Decapoda, Anomura, Galatheididae) off the Pacific Coast of Baja California Sur, Mexico. *Crustaceana* 70(3): 272-287.

- BALAVOINE, GUILLAUME. 1997. The early emergence of platyhelminths is contradicted by the agreement between 18S rRNA and Hox genes data. *Comptes Rendus de L Academie Des Sciences Serie III - Sciences de La Vie - Life Sciences* 320(1):83-94.
- COLLIN, R., and J. B. Wise. 1997. Morphology and development of *Odostomia columbiana* Dall and Bartsch (Pyramidellidae): Implications for the evolution of gastropod development. *Biological Bulletin* 192(2):243-252.
- CREESE, R., S. Hooker, S. Deluca, and W. Wharton. 1997. Ecology and environmental impact of *Musculista senhousia* (Mollusca: Bivalvia: Mytilidae) in Tamaki Estuary, Auckland, New Zealand. *New Zealand Journal of Marine and Freshwater Research* 31(2):225- 236.
- CROOKS, J. A. 1996. The population ecology of an exotic mussel, *Musculista senhousia*, in a Southern California Bay. *Estuaries* 19: 42-50.
- DOJIRI, MASAHIRO, and Jürgen Sieg. 1997. Chapter 3, pp.181-268 IN: The Tanaidacea. Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 11: The Crustacea Part 2 - The Isopoda, Cumacea and Tanaidacea. 278pp.
- GRAF, G., and R. Rosenberg. 1997. Bioresuspension and biodeposition: A review. *Journal of Marine Systems* 11(3-4):269- 278.
- HENDRICKX, M. E. 1996. Habitats and biodiversity of decapod crustaceans in the SE Gulf of California, Mexico. *Revista de Biologia Tropical* 44(2A):603-617.
- HOLDICH, D. M., J. A. Jones. 1983. Tanaids. Cambridge University Press: Cambridge. 98pp.
- JENSEN, KATHE R. 1997. Evolution of the Sacoglossa (Mollusca, Opisthobranchia) and the ecological associations with their food plants. *Evolutionary Ecology* 11(3):301-335.
- KORNICKER, LOUIS S. 1987. *Eusarsiella thominx*, a new species of myodocopid Ostracoda from the continental shelf of Southern California. *Proceedings of the Biological Society of Washington* 100(1):134-140.
- KRØYER, HEINRICH. 1842. Une nordiske Slaegter og Arter af Amfipodernes Orden, henhørende til Familien *Gammarina*. (Forelobigt Uddrag af et større Arbejde). *Naturhistorisk Tidsskrift* 4:141-166.
- STEBBING, THOMAS R. R. 1888. Report on the Amphipoda collected by H.M.S. Challenger during the years 1873-76. Report on the Scientific Results of the Voyage of H.M.S. Challenger during the Years 1873-76: *Zoology* 29(1/2/3):1-1737.
- . 1906. Amphipoda. I. Gammaridea. *Das Tierreich* (21):1-806.

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Single back issues are also available at cost. ♣

### *AMPHIPACIFICA*, AN EXAMINATION OF IT'S BRIEF RUN

SCAMIT members had advance notice that a group of Canadian amphipod workers led by E. L. Bousfield had been working on a huge collection of material from the Pacific Northwest accumulated by a series of expeditions to the area beginning in the 1950's. Several monographic revisions of particular groups were released as publications of the National Museums of Canada, and a comprehensive book type treatment was rumored to be in the offing. With the arrival of *Amphipacifica* Volume 1 No. 1 in January 1994 a new direction was established. The work was much the same, with many of the same formats and all the same revisionary aims, but the venue had been changed.

The new journal had the stated aim of providing an outlet for major revisionary systematic papers, which were becoming increasingly difficult to publish as institutional (usually governmental) support for such publications dwindled. The journal was envisioned to perform this function for all groups, but as it developed in practice, only papers dealing with arthropods were published. Originally envisioned as a quarterly, publication problems eventually led to publication in volumes dissociated from the calendar year. Thus, by issuance of the final number in May of 1997, only seven issues had been released in 3½ years.

These seven issues provided a feast for workers in the area covered, with major revisionary papers on a number of amphipod families. A few papers on other related subjects were also published, notably one on higher classification of amphipods (Bousfield & Shih 1994), one evaluating J. L. Barnard's impact on regional amphipod taxonomy (Bousfield & Staude 1994), and one on nutrition in fossil arthropod-like organisms (Bousfield 1996). It is not likely that articles on other groups were actively excluded, or that they were so heavily edited as to be withdrawn. It is more likely that the journal did not attract manuscripts from a broader audience. During the period of publication a good portion of a backlog of major monographic treatments of genus or family-level taxa within the amphipods were released. A number of manuscripts remained at the end, 13 of which are listed at the end of the last page of the last issue. These partially completed manuscripts are being offered by Dr. E. L. Bousfield to other workers with a bona fide interest in their completion. They include partial or complete illustrations of the species covered. Parties interested in taking over one or more of these projects should contact him at [elbousf@islandnet.com](mailto:elbousf@islandnet.com).

The journal was originally set up with a managing editor - E. L. Bousfield, and two other members of the editorial board (Craig Staude and Phil Lambert). By the end of volume one, strains had appeared in this relationship, leading to the resignation of the two associate editors. While it is only supposition, the publication of the special supplement to Volume 1 containing description of *Cadborosaurus willsi* seems to have catalysed the departure of the two (they discuss it in an editorial comment in the supplement). SCAMIT members had seen much of the material presented in that supplement during a workshop with Dr. Bousfield and Craig Staude in 1993.

Regardless of the merits of that publication, the departure of the two associate editors placed an even greater onus on Dr. Bousfield, who continued to function as managing editor, as well as primary author on most of the articles published. For the first two numbers of Volume II a new Associate Editor, Marianne Wilkinson, was in place. She too departed, and by the final issue the editorial staff was again reduced to one. Many cast a jaundiced eye on this situation, a journal whose editor is also it's major author, and in which peer-review of submitted articles was the responsibility of the author, not of the journal. This seemed a situation ripe for a "vanity press" sort of product, in which the ideas and performance of the authors received no creditable peer review prior to publication. To a

certain extent, the pressure of publication deadlines (during the period in which quarterly publication was attempted) did negatively affect the product. Numerous errors snuck through, more numerous and more serious than might be expected of a journal publication. These tended to support the critics who viewed the articles produced as poorly quality controlled and of dubious value as a result. A larger view, taking into account the fact that Dr. Bousfield was working in parallel on probably 15 monographic revisions at any one time in addition to his editorial mantle at *Amphipacifica*, leads to a better understanding of the greater than normal rate of error in the published product. This is small solace to those frustrated by a defective statement in a key couplet, by a mismatch between text description and figure, or other discrepancies, but it provides needed perspective.

To add further to the perspective let us examine the content of the 17 articles which constitute those seven slim issues. Three non-monographic articles were mentioned above, of the remaining 14 all but two involved Dr. Bousfield directly (Conlan 1994 and Staude 1995). Of these 12 he was primary author on 9 and secondary author on 3 (Jarrett & Bousfield 1994a and b, 1996). Main emphasis was on the amphipod families Phoxocephalidae (Jarrett & Bousfield 1994a and b), and Pleustidae (Bousfield & Hendrycks 1994 a & b, 1995b), but the families Eusiridae (Bousfield & Hendrycks 1995a), Pontogeneiidae (Staude 1995), Melitidae (Jarrett & Bousfield 1996), Oedicerotidae (Bousfield & Chevrier 1996), Corophiidae (Bousfield & Hoover 1997), Calliopiidae (Bousfield & Hendrycks 1997), Haustoriidae (Bousfield & Hoover 1996), Isaeidae (Conlan 1994), and Atylidae and Dexaminidae (Bousfield & Kendall 1994) were also treated. Staude (1995) dealt with a single genus (*Paramoera*), and Conlan (1994) with new species in two (*Photis* and *Gammaropsis*), but the other papers were monographic revisions of related genera within a family, or of an entire family.

This continued the string of monographic publications begun by Bousfield (1979) in a Bulletin of the Biological Society of Washington, and continued at the National Museum of Canada by Dickinson (1982) in the Publications in Biological Oceanography series and later in the Publications in Natural Sciences series. These publications were in effect an update based on additional data and specimens and covering a wider geographic area of the series of monographs on North East Pacific amphipod taxonomy begun in 1954 by J. L. Barnard. This series included the articles in Pacific Naturalist in 1962, and continued into the early 1980's when he began the long march to the 1991 Barnard and Karaman world-wide treatment. This was acknowledged in the appreciation of J. L. Barnard presented by Bousfield at the Barnard Memorial meeting at the Smithsonian in 1992, and in the inaugural issue of *Amphipacifica* (Bousfield & Staude 1994).

A monographic review at any level is a major undertaking, and the series in *Amphipacifica* represents a tremendous effort. As it always does, the publication of this series has stimulated further investigation and much criticism and difference of opinion. This is all to the good, and forms a major contribution of itself. Critical examination of the monographs has turned up errors, some due to haste, others due to the virtual lack of consideration of material from southern collections. In most cases the literature reports of J. L. Barnard were substituted for examination of specimens. Since the purpose of the series was to report the results of examination of the massive National Museums of Canada collections, the lack of examination of materials from other areas was an unfortunate necessity. Materials from the Southern California Bight were offered to the participants several times, but these offers were not taken up. One of the results was that many of the new species described from the Puget Sound area have listed distributions which cover only part of their ranges. Another, most prominent in the genus *Heterophoxus*, is clinal variation largely bridging the character separation between close species which was not considered in the descriptions.

**TAXONOMIC ACTIONS INTRODUCED IN *AMPHIPACIFICA* WHICH AFFECT  
THE SOUTHERN CALIFORNIA BIGHT FAUNA**

Many of the new species introduced were nominally restricted to the boreal or arctic areas of the North East Pacific. A number have been found to occur in the Southern California Bight, extending the range indicated for them in their original descriptions. This number will doubtlessly increase as old identifications are reexamined in the light of the new descriptions. Resurrections of older taxa from synonymy, redefinition of limits to established taxa, and other taxonomic actions were also undertaken in various journal articles. A list of the taxa introduced, resurrected, or modified in *Amphipacifica* which are known to occur in the Southern California Bight follows; if the animals were known under another name in our area before their treatment, the name is provided (if known)

New Name	Previously as	<i>Amphipacifica</i> #
Thorlaksonius depressus	Pleustes depressa	I no. 2
Thorlaksonius platypus	Pleustes platypa	I no. 2
Parametaphoxus quaylei	Metaphoxus fultoni	I no. 2
Heterophoxus affinis	Heterophoxus oculatus	I no. 2
Heterophoxus ellisi	Heterophoxus oculatus	I no. 2
Photis linearmanus	Photis sp D of Myers	I no. 3
Eusirus columbianus	Eusirus longipes	I no. 4
Rhachotropis barnardi	Rhachotropis clemens [in part]	I no. 4
Eohaustorius barnardi	Eohaustorius washingtonianus	II no. 1
Incisocalliope newportensis	Parapleustes pugettensis	II no. 1
Incisocalliope bairdi	Parapleustes pugettensis	II no. 1
Gnathopleustes den	Parapleustes den	II no. 1
Chromopleustes oculatus	Parapleustes oculatus	II no. 1
Chromopleustes sp 1	Parapleustes oculatus	II no. 1
Micropleustes nautilus	Parapleustes nautilus	II no. 1
Micropleustes behningi	Parapleustes nautilus	II no. 1
Micropleustes nautiloides	Parapleustes sp A of Barnard 1969	II no. 1
Commensipleustes commensalis	Parapleustes commensalis	II no. 1
Dulichella spinosa	Dulichella appendiculata	II no. 2
Megamoera subtener	Melita dentata	II no. 2
Desdimelita desdichada	Melita desdichada	II no. 2
Desdimelita californica	Melita californica	II no. 2
Hartmanodes hartmanae	Monoculodes hartmanae	II no. 2
Deflexilodes norvegicus	Monoculodes norvegicus	II no. 2
Pacifoculodes barnardi	Monoculodes spinipes	II no. 2
Monocorophium acherusicum	Corophium acherusicum	II no. 3
Monocorophium insidiosum	Corophium insidiosum	II no. 3
Monocorophium uenoi	Corophium uenoi	II no. 3
Laticorophium baconi	Corophium baconi	II no. 3

Numerous other actions were taken on species from adjacent areas to the north or south of the Southern California Bight, and several of the treatments were worldwide.

A LISTING OF ARTICLES PUBLISHED IN *AMPHIPACIFICA*

- BOUSFIELD, EDWARD L. 1995. A contribution to the natural classification of Lower and Middle Cambrian arthropods: food gathering and feeding mechanisms. *Amphipacifica* 2(1):3-34.
- BOUSFIELD, EDWARD L., and Andrée Chevrier. 1996. The amphipod family Oedicerotidae on the Pacific coast North America. Part 1. The Monoculodes and Synchelidium generic complexes: systematics and distributional ecology. *Amphipacifica* 2(2):75-147.
- BOUSFIELD, EDWARD L., and Edward A. Hendrycks. 1994a. A revision of the family Pleustidae (Crustacea: Amphipoda: Leucothoidea). Part I. Systematics and biogeography of component subfamilies. *Amphipacifica* 1(1):17-57.
- . 1994b. The amphipod superfamily Leucothoidea on the Pacific coast of North America. Family Pleustidae: subfamily Pleustinae. Systematics and biogeography. *Amphipacifica* 1(2):3-69.
- . 1995a. The amphipod superfamily Eusiroidea in the North American Pacific region. I. Family Eusiridae: systematics and distributional ecology. *Amphipacifica* 1(4):3-60.
- . 1995b. The amphipod Family Pleustidae on the Pacific coast of North America. Part III. Subfamilies Parapleustinae, Dactylopleustinae, and Pleusirinae: systematics and distributional ecology. *Amphipacifica* 2(1):65-133.
- . 1997. The amphipod superfamily Eusiroidea in the North American Pacific region. II. Family Calliopiidae. Systematics and distributional ecology. *Amphipacifica* 2(3):3-66.
- BOUSFIELD, EDWARD L., and Phillip M. Hoover. 1995. The amphipod superfamily Pontoporeioidea on the Pacific coast of North America. II. Family Haustoriidae. Genus Eohaustorius J. L. Barnard: systematics and distributional ecology. *Amphipacifica* 2(1):35-63.
- . 1997. The amphipod superfamily Corophioidea on the Pacific coast of North America. Part V. Family Corophiidae. Corophiinae, new subfamily. Systematics and distributional ecology. *Amphipacifica* 2(3):67-139.
- BOUSFIELD, EDWARD L., and Jane A. Kendall. 1994. The amphipod superfamily Dexaminioidea on the North American Pacific coast; families Atylidae and Dexaminidae: Systematics and distributional ecology. *Amphipacifica* 1(3):3-66.
- BOUSFIELD, EDWARD L., and Paul H. LeBlond. 1995. An account of Cadborosaurus willsi, new genus, new species, a large aquatic reptile from the Pacific coast of North America. *Amphipacifica* 1(Supplement 1):3-25.
- BOUSFIELD, EDWARD L., and C. t. Shih. 1994. The phyletic classification of amphipod crustaceans: problems in resolution. *Amphipacifica* 1(3):76-133.
- BOUSFIELD, EDWARD L., and Craig P. Staude. 1994. The impact of J. L. Barnard on North American Pacific amphipod research: a tribute. *Amphipacifica* 1(1):3-16.
- CONLAN, KATHLEEN E. 1994. New species of the amphipod crustacean genera Photis and Gammaropsis (Corophioidea: Isaeidae) from California. *Amphipacifica* 1(3)
- JARRETT, NORMA E., and Edward L. Bousfield. 1994a. The amphipod superfamily Phoxocephaloidea on the Pacific coast of North America. Family Phoxocephalidae. Part 1. Metharpiiniinae, new subfamily. *Amphipacifica* 1(1):58-140.
- . 1994b. The amphipod superfamily Phoxocephaloidea on the Pacific coast of North America. Family Phoxocephalidae. Part II. Subfamilies Pontharpiiniinae, Parharpiiniinae, Brolginae, Phoxocephalinae, and Harpiiniinae. Systematics and distributional ecology. *Amphipacifica* 1(2):71-150.
- . 1996. The amphipod superfamily Hadzioidea on the Pacific coast of North America. Family Melitidae. Part I. The Melita group: Systematics and distributional ecology. *Amphipacifica* 2(2):3-74.

STAUDE, CRAIG P. 1995. The amphipod genus Paramoera Miers (Gammaridea: Eusiroidea: Pontogeneiidae) in the eastern North Pacific. *Amphipacifica* 1(4):61-102.

Other publications mentioned in the above discussion are:

- BARNARD, J. LAURENS. 1954. Amphipoda of the family Ampeliscidae collected in the eastern Pacific Ocean by the *Velero III* and *Velero IV*. *Allan Hancock Pacific Expeditions* 18(1):1-137.
- . 1962. Benthic Marine Amphipoda of Southern California: 1. Families Aoridae, Photidae, Ischyroceridae, Corophiidae, Podoceridae. *Pacific Naturalist* 3(1):3-72.
- . 1962. Benthic marine Amphipoda of Southern California; 2. Families Tironidae to Gammaridae. *Pacific Naturalist* 3(2):73-115.
- . 1962. Benthic marine Amphipoda of Southern California; 3. Families Amphilochidae, Leucothoidae, Stenothoidae, Argissidae, Hyalidae. *Pacific Naturalist* 3(3):116-163.
- . 1962. Benthic marine Amphipoda of Southern California: Family Oedicerotidae. *Pacific Naturalist* 3(12):351-371.
- . 1980. The genus Grandifoxus (Crustacea: Amphipoda: Phoxocephalidae) from the northeastern Pacific Ocean. *Proceedings of the Biological Society of Washington* 93(2):490-514.
- BARNARD, J. LAURENS, and Charline M. Barnard. 1981. The amphipod genera Eobrolgus and Eyakia (Crustacea: Phoxocephalidae) in the Pacific Ocean. *Proceedings of the Biological Society of Washington* 94(1):295-313.
- . 1982. The genus Rhepoxynius (Crustacea: Amphipoda: Phoxocephalidae) in American Seas. *Smithsonian Contributions to Zoology* (357):1-49.
- . 1982. Revision of Foxiphalus and Eobrolgus (Crustacea: Amphipoda: Phoxocephalidae) from American oceans. *Smithsonian Contributions to Zoology* (372):1-35.
- BARNARD, J. LAURENS, and Gordan S. Karaman. 1991. The Families and Genera of Marine Gammaridean Amphipoda (except Marine gammaroids)[parts 1 and 2]. *Records of the Australian Museum Supplement* 13:1-866.
- BOUSFIELD, EDWARD L. 1979. The amphipod superfamily Gammaroidea in the northeastern Pacific region: systematics and distributional ecology. *Bulletin of the Biological Society of Washington* (3):297-359.
- DICKINSON, JOHN J. 1982. Studies on amphipod crustaceans of the Northeastern Pacific region. I. 1. The systematics and distributional ecology of the family Ampeliscidae (Amphipoda: Gammaridea) in the Northeastern Pacific Region. I. The genus Ampelisca. *National Museums of Canada, Publications in Biological Oceanography* (10):1-39.

## Synonymy Entries

Entries occurring in the synonymy of names in Edition 3 are of several discrete types  
 [examples fictitious entries for *Pagurus granosimanus* (Stimpson 1859)]

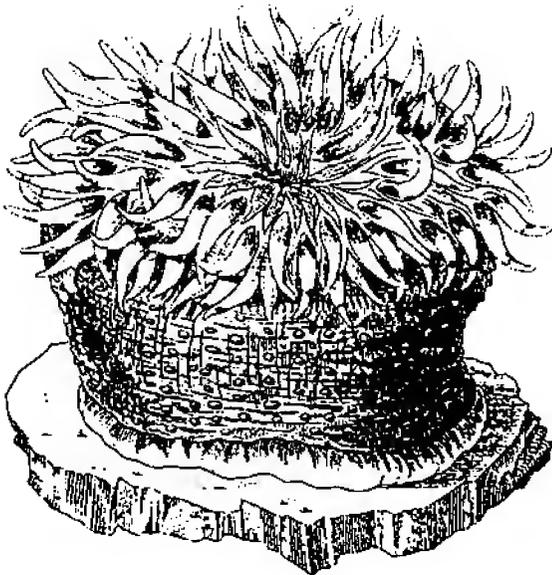
Type	Description	Name	Entry Appearance	Authorship
I	name as in original description [always first entry] if different from primary entry	<b>different genus/orthography</b> example - <i>Eupagurus granosimanus</i>	<b>lack of parentheses</b>	Stimpson 1859
II	synonymy	<b>different species name</b> example - <i>Pagurus pebblipes</i>	<b>same or different authorship</b>	Weyprecht 1871
	[special case - homonym in synonymy]	<b>different species name</b> example - <i>Pagurus inconstans</i>	<b>authorship excluding non-synonymy</b>	Schmitt 1921 non Benedict 1879
III	partial synonymy	<b>different species name</b> example - <i>Pagurus varians</i>	<b>authorship + in part</b>	Smith 1916 in part
IV	variant generic placement [regional usages]	<b>different genus</b> example - <i>Trigonocheirus granosimanus</i>	<b>of + usage citation</b>	of Holmes 1900
V	variant orthography [regional usages]	<b>different orthography</b> example - <i>Pagurus granosimana</i>	<b>of + usage citation</b>	of Rathbun 1918
VI	literature misidentification [regional references]	<b>different species name</b> example - <i>Pagurus haysi</i>  example - <i>Pagurus bagrus</i>  example - <i>Pagurus armatus</i>	<b>of + citation + non + taxon author</b>	of Schmitt 1921 non Blazor 1899 <b>aucct + non + taxon author</b> aucct non Linnaeus 1757 <b>aucct NEP + non + taxon author</b> aucct NEP non (Benedict 1892)

October, 1997

## SCAMIT Newsletter

Vol. 16, No.6

<b>NEXT MEETING:</b>	Review of "Other" Phyla for SCAMIT List Ed. 3
<b>GUEST SPEAKER:</b>	None/John Ljubenkov - Discussion Leader
<b>DATE:</b>	17 November 1997
<b>TIME:</b>	9:30am - 3:30pm
<b>LOCATION:</b>	Dancing Coyote Ranch, 20355 Hwy 76 Pauma Valley, Ca. (Contact Secretary for a map)



*Urticina crassicornis* (from Landsborough 1852)

### 17 NOVEMBER MEETING

Having dealt with arthropod and echinoderm sections of the SCAMIT Taxonomic Listing ED3 in our two previous meetings we move on to the "other groups". As usual this includes all phyla except the big four (Annelida, Arthropoda, Mollusca, and Echinodermata). A copy of the current status of the Ed 3 draft was distributed at the October meeting for use as a working draft for the November meeting. If you have provisional species additions to the existing list please try to complete voucher sheets for exchange at the November meeting. These species can then be added. Come prepared to discuss, add to, subtract from, and correct the draft as it now stands. All participants welcome!

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*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

### UPCOMING GATHERINGS

An announcement of the Second Annual Gathering of Southern California Unified Malacologists (SCUM) has been received. The inaugural meeting, held this year in San Diego, attracted 21 people. This one is likely to have a higher attendance since, from all accounts, the inaugural meeting was much enjoyed by the attendees.

This time the meeting will be held on 10 January 1998 in the Times Mirror Room of the Natural History Museum of Los Angeles County, hosted by Dr. Jim McLean and Lindsey Groves of the Malacology Section. All interested in either recent or fossil mollusks are invited. The meeting is largely a good excuse to meet and informally exchange information on mollusks. Informal presentations are welcomed, and needed equipment (ie. slide projectors) will be provided. Those interested in attending should contact the meeting hosts prior to the meeting so they can plan (chairs, coffee, donuts, etc.) appropriately. After the meeting the museum's research collections will be available for inspection.

The 27th Annual Benthic Ecology Meeting is scheduled for 12-15 March 1998 in Melbourne, Florida. Session topics are to include spacial ecology, chemical ecology, life history dynamics, competition, applied ecology, invasive species, techniques, trophic interactions, animal-sediment interactions, molecular ecology, ecosystem function, larval ecology/recruitment, and hydrodynamics. Abstract deadline is December 15, 1997. Additional information is available from Dr. Junda Lin, Organizing Committee, Florida Institute of Technology at [jlin@winnie.fit.edu](mailto:jlin@winnie.fit.edu). You can get more complete information from the meeting website: <http://www.fit.edu/AcadRes/biology/benthic/>.

The dates and venue for the Second International Isopod Conference have now been set. It will take place 16-18 July 1998 at the Institute for Systematics and Population Biology, University of Amsterdam, The Netherlands. It will immediately precede the International Crustacean Conference

taking place in Amsterdam 20-24 July. Abstracts are due by 31 March 1998. Information and registration forms for the Isopod Conference are available from Dr. Brian Kensley, NHB-163, Smithsonian Institution, Washington, D.C., 20560. He can also be reached at Tel: 202-357-4666; Fax: 202-357-3043; or e-mail: [KENSLEYB@NMNH.SI.EDU](mailto:KENSLEYB@NMNH.SI.EDU).

### OPPORTUNITY KNOCKS AGAIN

Announcements of two opportunities were forwarded by Dr. Tim Stebbins, editor of the Crustacean Society Newsletter, The Ecdysiast. He felt they might be of interest to members who might not otherwise see them. One is for a replacement to Dr. Arthur Humes, who is retiring from his position of Editor of the Journal of Crustacean Biology (enquires to Dr. Les Watling at [watling@maine.maine.edu](mailto:watling@maine.maine.edu)), and the other is for Research Fellowships and Internships at the Smithsonian Institution. The notices are provided in full on the attachment.

### ASC'S TRED SURVEY

The Association of Systematics Collections (ASC) is in the process of trying to gather together information on taxonomic resources and expertise (TRED) in the United States. They are interested in getting information on the abilities, education, and current responsibilities of the respondents. They are also interested in the nature, location, and availability of faunal lists and/or taxonomic databases. Limitations can be placed on the availability of any of the information submitted, so you do not lose control of your information by participating. SCAMIT was requested to provide a list of members, but declined in favor of your privacy. If you are interested in participating in the TRED survey you can respond to them via fax: 202/835-7334, via e-mail: [asc@ascoll.org](mailto:asc@ascoll.org), or on the internet at <http://www.ascoll.org/survey/>. I plan to join in and feel it is to both our mutual and individual advantage to increase knowledge of available taxonomic resources. Good Luck to the

## ATTACHMENT

### EDITOR, JOURNAL OF CRUSTACEAN BIOLOGY

Dr. Arthur Humes, present Editor of the *Journal of Crustacean Biology*, the official journal of The Crustacean Society, will be retiring at the end of 1998. Applications are invited from candidates interested in succeeding him as editor of this premier journal in the field of crustacean biology, as are nominations of qualified individuals. Appointment to this unsalaried position carries with it service as an Officer on the Board of The Crustacean Society.

Qualifications include extensive experience with scientific writing, access to a large science library (either within one's home facility and/or online), and broad familiarity with varied subdisciplines of crustacean biology. Residence within the United States is not a prerequisite. Candidates outside North America must have access to modern modes of electronic communication and computer-based networks.

Enquiries and Nominations/applications should be sent to:

Dr. Les Watling

JCB Editor Search Committee

Darling Marine Center

Walpole, ME 04573 USA

E-mail: [watling@maine.maine.edu](mailto:watling@maine.maine.edu)

(formatted documents can be sent using MIME or BinHex encoding)

### SMITHSONIAN INSTITUTION RESEARCH FELLOWSHIPS AND MINORITY INTERNSHIPS

The Smithsonian Institution announces its research fellowships for 1998 in the fields of (among others) History of Science and Technology, and Biological Sciences. The Fellowships are awarded to support independent research in residence at the Smithsonian in association with its research staff and using its resources. Graduate student fellowships of ten weeks, and senior, predoctoral and postdoctoral fellowships of 3-12 months are awarded. Mailing deadline for applications is January 15, 1998.

Internships to participate in research and museum-related activities for 10 weeks in summer, fall and spring are available to U.S. minority undergraduates and beginning graduate students. Mailing deadline for applications is Feb.15, 1998.

For further information and application materials, write: Smithsonian Institution, Office of Fellowships and Grants, 955 L'Enfant Plaza, Suite 7000, MRC 902, Washington DC 20560, or e-mail [siofg@ofg.si.edu](mailto:siofg@ofg.si.edu). Please indicate the particular area in which you propose to conduct research and give the dates of degrees received or expected.

TRED, and to the National Biological Service which commissioned it. - the Editor

**A PLAGUE OF SNAKES OR LURED BY GOLDEN HAIR?**

By Tom Parker

**WEBSITE UPDATE**

For those of you who haven't visited the website in the last month the September SCAMIT newsletter has been put on-line as a PDF file and seems to working fine. At least as far as we can tell and from the feedback we have received so far. Members should be aware that the free Adobe Acrobat Reader will allow you to view any PDF file from any other website not just the SCAMIT site. The Reader allows you to print the entire file or particular pages may be printed so that only information pertinent to your particular field of study need be printed from the newsletter. This is all accomplished by using the simple pull down menus from the top of the screen just like in other Windows applications. There is also a Help menu, which as with most Help menus is somewhat "helpful". For those of you needing further assistance, please don't hesitate to contact the newsletter staff (Don Cadien and Cheryl Brantley) if you have any problems. If PDF files are going to be a successful way of distributing our newsletters we need them to work easily for all members. Those members who do not have access to a computer may find that their nearest public library provides free Internet access with printing available on paper that you provide or a small fee is charged per sheet. We understand that there are a few members that may still need a hardcopy of the monthly newsletter and we should not have a problem filling those few requests. However, if you are able to print out a copy of the newsletter from either an office machine or home computer please do so and not only save SCAMIT the printing costs but the mailing as well. Treasurer Ann Dalkey will be inquiring about this issue with your next renewal notice. Also, this will save another valuable resource, Ann Dalkey's own personal time. I'm sure Ann has better ways to spend her free time than stuffing and mailing envelopes, which is something she has been doing since SCAMIT's creation. Let's all try and give her a break.

Seemingly distinctive morphology in polychaetes has led taxonomists to cosmopolitan identifications. Unfortunately, this often leads to a plague of widespread error and the task of re-identifying specimens from various regions. The name *Loimia medusa* has been used around the world and locally in Southern California. It is recognized by its distinctive uncinat teeth, anterior lobes, oral tentacles, and dendritic branchia. True to the etymology as a plague-of-snakes-for-hair ("loimia" is a form of the Greek for plague; Medusa originally had golden hair, turned to snakes as punishment); cosmopolitan use of this name is a taxonomist's plague.

In 1988 Hutchings and Glasby noted their suspicions that cosmopolitan reports of the species *L. medusa* Savigny 1865 were incorrect. They re-examined Australian specimens reported as *L. medusa* and concluded that none were, belonging instead to other *Loimia* species. In 1995 they redescribed *L. medusa* based on a neotype. A neotype was necessary as no type specimens were extant. Savigny's original description also lacked figures and a description of the lateral lobes and peristomium; it's brevity facilitating many misidentifications. The neotype's features are listed below to help sort out your *Loimia* specimens and the local (mis)use of *L. medusa* (SCAMIT List Ed. 2).

- eye spots.....small patches
- peristomial lobe.....large, directed anteriorly, with ventral scoop
- branchial branches.....thin main branches with short dendritic branches segment 2 branchia longest
- oral tentacle color.....small red dots

**lobes shape and size**.....large, ear shaped, directed forward

**notosetae**.....smooth tipped, narrow winged, uniform length in fascicle

**uncini, number of teeth**.....4-5

**large ventral glandular pads**.....to segment 12

**anal papillae present/absent**.....absent

**habitat**.....sandy/coral rubble

**depth/location**.....<38 m  
Red Sea/Iranian Gulf

**tube material**.....irregular shell and sand fragments bound loosely

**size**.....<32 mm long

**nephridial papilla**.....not seen

*Petricola carditoides*. Most of the remaining species are not nestlers, and have less extensive synonymies as a result.

A second case of mistaken molluscan identity came to light in the same issue (Roth 1997). The cause of the rarity of the tiny marine gastropod *Aclis californica* was discovered. It was actually a land snail, *Allopeas gracile*, transported into the ocean. This little hitchhiker is often intercepted in shipments of goods from tropical America, Asia, and the Pacific. There are reportedly established populations nearby in Arizona, and Mexico, but none in California. How the shell of the holotype collected on San Clemente island got there is not known.

In the June 1997 Newsletter (Vol. 16 #2) we discussed a paper by Meyer and Bartolomaeus (1996) using evidence from setal structure to suggest that the polychaetes were paraphyletic. At the time we commented that the evidence was interesting, but too sparse to be persuasive. New evidence (McHugh 1997) supports the previous assertions of parafyly, and also the idea that pogonophorans are only specialized annelids, and not a separate phylum. The author's analysis also places the echiurans among other annelid groups, indicating their lack of segmentation is a derived rather than a primitive condition. McHugh's analysis is based on sequencing of the gene called elongation factor 1 $\alpha$ , reputedly very conservative and useful for investigations of deep divergences with the metazoa. It was also used by Kojima et al (1993) in analysis of the relation between vestimentiferans and annelids.

Increasing use of electron microscopes for investigation of surface microstructure of invertebrates reveals a wealth of detail, but little understanding of function. One such morphological fine structure is the type II microtrich sensilla of amphipods. Systematic investigations of these structures has yielded opinion as to probable function, but all answers are as yet speculative. Steele and Steele (1997) continue their investigations of the nature and distribution of these putatively sensory

### NEW LITERATURE

In the latest edition of the *Veliger* (Vol. 40 #4) Gene Coan polishes off another genus of Eastern Pacific bivalves prior to the publication of the monograph (Coan, Scott & Bernard MS) now in its final stages. The target this time is the venerid genus *Petricola*. Although there are only three Californian species, the genus is very speciose in the Panamic. During preparation of this article he reexamined the holotype of *Psephis* [now *Petricola*] *tellimyalis* and found it to be a juvenile *Halodakra subtrigona*. The species we had been calling *P. tellimyalis* thus required a new name, and *Petricola hertzana* Coan 1997 is the result. The status of the other two species previously reported from California, *P. carditoides* and *P. californiensis* remains unchanged. Preliminary indications that the genus *Rupellaria* was the appropriate home for these two species (as in Coan, Scott & Bernard MS) are here reversed. Coan gives a thorough accounting of the convoluted nomenclatural history of that protean nestler

microstructures, this time concentrating on variation in spacing, size, and location of microtrichs in a variety of taxa. Their investigations so far suggest that the function of the structures is chemosensory rather than the mechanosensory one first suggested by Platvoet (1985). Much experimentation will be required before these preliminary speculations can be proved or disproved. Current investigations of the structures are still heavily biased towards an accumulation of information on occurrence in various taxa, since only a few species have yet been examined in the detail necessary to accurately depict the nature and distribution of the structures.

#### NEWS FROM TEXAS

Member Mary Wicksten recently sent along an e-mail missive with interesting commentary on the local *Neocrangon* species, and some of her other activities. It is reproduced below.

"I just got the latest SCAMIT newsletter with the notes on *Neocrangon zacae* versus *N. resima*. Before someone goes running off and tries to define the species based on one specimen, please compare the type of *N. zacae* with material from Baja California and farther south. It is possible that there truly is an *N. zacae*, but it usually ranges from southern Baja California south, and that the cool temperate species is *N. resima*; OR that the two overlap in southern California, OR that *N. resima* ranges north from Pt. Conception, and that there are one or two similar species in southern California, OR that there is only one species that ranges from Monterey Bay south, and the variation is related to latitude. Note that latitudinal variation is known in *Pandalus danae* and *Heptacarpus sitchensis*, and has been suggested in *Crangon alaskensis*. Be careful, because Chace indicated that "*N. zacae*" ranged north to Monterey Bay. Anyone wanting to take on the project really should look at lots of material from at least three areas: Monterey Bay and central California; southern California; and southern Baja California and farther south. The LACM has gallons of material available for examination. I'd recommend going all-out and

doing an analysis of variation or cluster analysis, if needed.

I've been looking at some new specimens from the vicinity of La Paz, Baja California, and comparing them to previously examined material. So far, it looks like *Synalpheus lockingtoni* usually ranges from the Farallon Islands to Magdalena Bay. I have one specimen from Puerto Peñasco, in the northern Gulf of California. Other specimens previously thought to be *S. lockingtoni* have turned out to be different species. Based on color patterns and rostral morphology, I think that the common *Lysmata* of the Gulf of California is likely to be distinct from *L. californica* and *L. intermedia*, and will have to be described as a new species. I'll keep you posted. The La Paz area is rich in shrimp: students and I came up with 54 species in one week, including previously-collected material.

Negotiations on publication of all or parts of my lengthy decapod manuscript continue at a glacial pace [based on a later message they are again broken off]. The paper on the new *Pagurus* sp. is undergoing some slight revisions, but has been accepted for publication."

#### OCTOBER 7th MEETING MINUTES

This meeting was a follow up to the May 1997 meeting discussing the chapters of Volume 14 of the MMS Taxonomic Atlas Series. At that meeting we noted points of disagreement with the authors, additional range information, corrections of typographic and other errors, and comments on the content of the individual chapters. Only the echinoderm chapters were to be addressed during our second meeting. Authors or co-authors of all the echinoderm chapters had agreed to participate beforehand. At the last minute Dr. Andy Lissner (SAIC, La Jolla), who was co-author on the asteroid and echinoid chapters (Lissner & Hart 1996 a and b) was unable to join us. Dr. Mary Bergen (SCCWRP), author of the holothuroid chapter, and Dr. Gordon Hendler (NHMLAC) who authored the crinoid and ophiuroid chapters were in attendance.

Copies of the previous comments were given to the authors, in case they had not seen them in the Newsletter. Each also received a copy of the current draft of the echinoderm portion of the SCAMIT Taxonomic Listing Ed. 3 for their comment.

We began our examination with the crinoid chapter (Hendler 1996a), which was felt to be a model of completeness, and a wonderful source of information on the species considered. Limitations of time prevent such thorough treatments of most groups, since they contain many more species.

Our examination of the ophiuroids started with a query to Dr. Hendler about the lack of a key in the section (Hendler 1996b). He indicated that he had no objection to keys per se, but that the coverage of the chapter did not lend itself to such construction. Only a small section of the ophiuroid fauna was covered in the text since the collections on which the chapter was based were similarly limited in coverage. The only useful alternative would have been production of a key to the entire regional fauna; a task too big for the present project.

In our initial run through of the chapters we had found little to discuss in the ophiuroids, we did feel that there was an error on page 137. We thought that the statement "Generally with 5 oral papillae" should read 4 instead. Dr. Hendler demonstrated to us that there is indeed a small distal 5th papilla in the adults, and that the statement was correct.

We also hoped for some elaboration of his statement on pg. 148 that "distinctions between nominal *Amphiura* and *Amphioplus* species with 4 pairs of oral papillae can be baseless". In response he directed us to the discussions of this situation in two of his papers; Hendler 1978 and Hendler 1988. He suggested that we read these in lieu of a discussion of this issue at the meeting.

With regard to the synonymy of *Amphioplus hexacanthus* with *Dougaloplus amphacanthus*, which most of us had found the most interesting part of the chapter, our discussion was limited by the absence of specimens. Dr. Hendler had looked

forward to a large selection of animals he could examine to try and determine what it was we had been calling *Amphioplus hexacanthus*. At least a portion of these records refer to intact specimens with complete discs which lack the dorsal disc armature of *D. amphacanthus*. While we all have professed to have seen many of these, none of us produced any except for Megan Lilly (CSDMWWD) who brought 2 small individuals. The question must remain moot for the moment, until Dr. Hendler is provided with the appropriate material. We were, however, still able to discuss the variability of some of the structures of interest with regard to age and disc regeneration.

It is not impossible that *Dougaloplus* specimens with regenerated discs lack the typical dermal spines of normal adult specimens. That these spines are variable was reinforced by consideration of several specimens brought by Megan which showed varying morphology in these spines. They currently discriminate between normal *Dougaloplus amphacanthus*, with long tapering spines, and *Dougaloplus sp A*, with short spatulate or spiny spines. Some animals had the typical tapering spines usually illustrated for *D. amphacanthus*, while others were much blunter, sometimes with spatulate tips, or with the stubby tips divided. The presence of more than one species is possible, but the spine type seemed to vary even within a single animal, so that on a disc where most of the spines were typically long and tapering, a few were shortened, even truncated, and tended toward distal spatulation or digitation. Tony Phillips (CLA-EMD) indicated that the same sort of spine morphology had been seen in some Santa Monica Bay specimens.

Don Cadien asked if the difference in the oral shield shape between *Amphioplus hexacanthus* and *Dougaloplus amphacanthus* might not serve to distinguish between individuals lacking discs or with regenerated ones. Dr. Hendler responded that the shapes of oral shields were quite variable, and tended to change in all species between juvenile and adult. Once again, the morphological variability of these structures is often visible within a single animal, with oral shields varying from

nearly oval to "shield-shaped" on a single specimen. Dr. Hendler said that arm spine morphology was probably more conservative and reliable a character than most others used to distinguish local species. He pointed out that the distinctive hooked basal arm spines of both *Amphioplus hexacanthus* and *Dougaloplus* species had alerted him to a potential problem with *A. hexacanthus*.

He feels that much is missed working on preserved specimens, and that as much examination of live material as possible be undertaken. Neither CSDLAC nor CLA-EMD encountered the animal they had called "*Amphioplus hexacanthus*" with enough frequency to provide live material. Ron Velarde, Kathy Langan, and Megan Lilly of CSDMWWD thought they might find them reliably enough in one area to locate and collect living material for him, and vowed to try.

We had also indicated in our earlier discussion that the members present had not seen the sort of extensive pigmentation described for *Ophiuconis bispinosa* by Dr. Hendler. Our preserved specimens ranged from ivory to grey to tan, but not were extensively maculated with darker pigment. He confirmed that the handling of the material at the museum does differ from that used by the various agencies. Specimens were put directly into ethanol, without prior formalin fixation. This might explain the differences, but usually (in our experience) animals put directly into ethanol tend to lose color more rapidly and more profoundly than do those initially fixed prior to preservation.

The question was raised if parasitism of ophiuroids resulted in predictable changes in their appearance. Dr. Hendler was not sure how to respond as there are several types of parasites known from ophiuroids which might have differing external effects. The question had been intended to address possible changes from parasitism by ascothoracid barnacles, which had been taken from the genital bursae of specimens of *Dougaloplus amphacantha* off Pt. Loma in collections made in the early 1980's by MBC. The preliminary identification of the parasites had been

*Gorgonolaureus*, which was, according to Dr. Hendler, a new record of this parasite if correct. The potential for effect might largely be in terms of disc regeneration in damaged parasitized individuals. No guesses were made, however, on what such an effect might be.

Comments on the holothurian section (Bergen 1996) were fairly limited. We inquired of Dr. Bergen if she had been able to modify the key to include *Paracaudina chilensis*, the only Southern California Bight species not included in the key. The press of other affairs had prevented this, and it remains a desideratum for the future. She agreed with the two other comments on the contents of the chapter which were mentioned in the March SCAMIT Newsletter (Vol. 15#11).

She asked for feedback on the use of the key, and found out that since we had had it available we had not really had call to use it. Key testing will proceed as we continue to sample and find things to try it on. Sampling for the regional monitoring in 1998 will undoubtedly provide the most severe test to that date.

Although we did not directly address either asteroids or echinoids because of the absence of Dr. Lissner, a few comments on the groups did surface. Ron Velarde, who had been unable to attend the first meeting, noted several things which had escaped our collective notice.

◆ Pg. 190 - in Figure 8.6 both specimens are shown in the same orientation. In Figure 8.7 immediately below it, dorsal surfaces of *Brisaster latifrons* and *Brissopsis pacifica* are compared. To avoid confusion it should be noted that the two are in opposite orientation, so that *Brissopsis* has its anterior end uppermost in the figure, and *Brisaster* has its posterior end uppermost.

◆ Pg. 192 - in Figure 8.9 *Brissopsis pacifica* is on the left and *Brisaster latifrons* on the right rather than as indicated in the caption.

Incorrect information on the distribution of *Astropecten ornatissimus* was offered in the earlier review. A specimen of this species was taken during the SCBPP at Station 815 off Ventura.

Another specimen was taken in Santa Monica Bay during the SCBPP, so the earlier northern range limit at San Pedro has been exceeded several times.

Specimens of *Poraniopsis inflata* were taken by CSDMWWD sampling off Pt. Loma, well within the geographic and bathymetric range given by Lissner & Hart in Vol. 14. The starfish was field identified as *Poraniopsis jordani* based on its similarity to a figure in Gotshall & Laurent (1979). No such animal has been described. The name is probably due to a *lapsus* in which the species name of *Pteraster jordani* was recalled and used in the genus *Poraniopsis*. There is some indication that a second species of *Poraniopsis* may exist off our coast, but only one is named so far, *P. inflata*. It is likely that both of the color morphs illustrated by Gotshall & Laurent (one as *P. inflata* and one as *P. jordani*) are *P. inflata*. The largest of the Pt. Loma specimens was brought to the meeting and examined by attendees.

We also examined specimens of a small echinoid which had been initially identified as *Lovenia cordiformis*. The specimens were taken from deeper stations, and those doing QA on the samples doubted this was correct. Although the specimens did have more elongate primary spines when collected, they were clearly not *Lovenia* based on test shape. They were interpreted as juveniles, probably of *Spatangus*. The tests were extremely fragile, having been prepared with bleach to remove spines, and reveal plate patterns. Megan commented that several previous examples had been completely dissolved during preparation, and that considerable attention was necessary to prevent complete solution of the test. Tony Phillips echoed this, having experienced the same sorts of rapid losses with small material himself.

Participants spent some meeting time reviewing the draft of the Taxonomic List Ed. 3, but few corrections were offered. Several additions to the list were necessary, including the *Poraniopsis* discussed above. Hopefully more corrections and additions, particularly to the synonymies, will come to light as participants have a longer time to examine the draft.

As the meeting ended Dr. Hendler reiterated his interest in unusual specimens of echinoderms, and in as many specimens as possible of those species which are currently indeterminate (such as the *Dougalophus* variants, and the taxon we had been calling *Amphioplus hexacanthus* prior to Vol. 14). Any such material should be taken or sent to him at the Natural History Museum of Los Angeles County (but call first @ 213-763-3526. Dr. Bergen is likewise interested in any unusual holothuroid specimens, although lately her time for taxonomy has been severely restricted by other activities. Send or take material to her at SCCWRP in Fountain Valley.

### LARGE WORM ALERT

Sometime ago the Newsletter carried an item about an aphroditid polychaete approaching 12 inches (30 cm) in length. This seemed rather large to many local workers and a specimen of such size has never been produced to confirm the initial report. Now, however, an enormous capitellid has been collected by CSDLAC. This *Notomastus* specimen is complete and easily measures 18 inches (45 cm) in length. This far exceeds the published accounts for *Notomastus* specimens listed by Hartman. The prostomium is retracted but clearly shows two well developed pigment patches in the position of "eyes". It has long biramous capillary setae in all 11 of the thoracic segments. The thoracic dermis is well areolated. It lacks branchial structures other than flatish pads in the abdomen and the gut is full of sand grains and urchin spine fragments. The hooded hooks lack greatly expanded hood structures and possess a major tooth surmounted by approximately 3-4 minor teeth. This may not be the largest capitellid specimen collected but you may wish to keep your meter stick handy in case you collect one of similar dimensions.

- Tom Parker



The SCAMIT Newsletter has previously published a series of personal memoirs from Dr. Olga Hartman from the archives of the Polychaete Collection (then at USC, now at the Natural History Museum of Los Angeles County) entitled "Travels With Olga". We have been offered a chance to once again view the life of a prominent polychaetologist from a very personal perspective. Dr. Donald J. Reish here inaugurates a series of memoirs on his life, his development as a biologist, and his relationship with many of the members of SCAMIT as mentor, advisor, and friend. In this initial installment we see his family background, early exposures to the natural world, and perhaps the germ of later development into the worlds premier worm-runner.

## MY LIFE AS A BIOLOGIST

By Donald J. Reish

### Preface

Several of my former students have asked me to write an autobiography. I looked over the SCAMIT membership list and discovered that about 25% are former students of mine and I have been associated professionally with another 25%. The SCAMIT Newsletter seemed to be a good place to write about my life as a biologist. Don Cadien suggested that I write about a page for each newsletter; I have no idea of how many issues it will take. I will try to emphasize as you read from chapter to chapter how people and small events affected my life and, in turn, affected many of the SCAMIT members.

### Chapter 1--Early beginnings

My father was born in Kansas where he became a farmer. He later took out homesteads first in North Dakota, and then in Alberta, Canada, becoming a Canadian citizen. My mother was born in British Columbia; her father had migrated to Canada from Tennessee, her mother from Wisconsin. They were married in Spokane

and lived in British Columbia. Later they moved to Alberta and Mom attended Normal School (later the University of Alberta) and trained as a teacher. She started teaching in a one room school house at the age of 17, while Canada was in WW1. She then moved to a school near my father's homestead. They met and married and my brother Gene was soon born in Medicine Hat. (I used to tease my brother that he could never become President of US, but I could!).

After many years of good wheat harvests, they had 3 successive years of crop failure. The family left the farm, and that was the last farming for my dad. They moved to Kansas where he first worked in a store and later became a Fuller Brush man. But mother couldn't stand the Kansas heat and they moved to Nelson, British Columbia (her home town). He sold Fuller Brushes there too. They then moved south to Oregon, first to Dallas then to Corvallis. My mother said no more moving, we are staying here. I was born 3 months later.

Corvallis was a good place to grow up. It was a small college town, home of Oregon State University. There was an intellectual environment and the college was an influence on my life as you will read. My first recollections are of the summer after I received a child's hoe, shovel and rake for my 3rd birthday. I remember digging in the dirt at the vacant lot next door. My father planted a Douglas fir in front of that house and in the passing years I would look to see that tree; I still do (last time 1996). We moved to another house which had a big yard. We lived there from my age 3 to 7. My dad had a vegetable garden, and we also raised rabbits and chickens for food. I remember plucking the chickens and shelling peas. My brother Gene is more than 4 years older, and he would take me to nearby Oak Creek where we would catch crayfish and build dams (he is still building them!). We also went to the college cow barns and green houses, where I always looked for the orange and banana trees. I thought it would be great to have your very own orange tree (I now do). I started

grade school where Mrs. Gowan was my teacher. She grew different plants in the classroom including a small wheat garden and demonstrated the effect of the position of light on the growing pattern of the wheat. Years later I ran into her on a bus trip from Bend to Corvallis. We had a great time; it turns out that she had a masters in Botany!

We moved two more times in Corvallis, and then in 1944 to California. Things began to happen along biological lines the summer between 3rd and 4th grade. I began a butterfly collection (not a very good one), and a teenager with a fantastic butterfly collection gave me two cecropia moth caterpillars. They ate only one particular kind of leaf, which grew on only one tree in town. Each day I would ride my tricycle (I got my first 2 wheeler at age 12) to collect the leaves. One day

they built their cocoons. Unfortunately, I did not put a stick in the jar for them to climb on when they hatched. That was my last effort to raise caterpillars as a boy; but I did it later when our kids were growing up. That summer also saw my introduction to annelids. My brother was a born salesman, and still is. He went to the campus at night and collected night crawlers which he then sold as fish bait. I do not know how successful he was, but he figured that cutting the worms in two would get him twice as many. As a grad student at USC, I gave a seminar on Libbie Hyman's doctoral dissertation which involved regeneration of oligochaetes. She found that there was a critical segment number where you did indeed get two worms. She didn't work with this species. [Next time: I become an editor and more on Oregon State.]

#### BIBLIOGRAPHY

- BERGEN, MARY. 1996. Chapter 9. Class Holothuroidea, including Keys and Descriptions to all Continental Shelf Species from California. Pp. 195-250 IN: Blake, James A., Paul H. Scott & Andrew Lissner (eds). Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14: Miscellaneous Taxa. Santa Barbara Museum of Natural History, Santa Barbara, California. 305pp.
- COAN, EUGENE V. 1997. Recent species of the genus *Petricola* in the eastern Pacific (Bivalvia: Veneroidea). *The Veliger* 40(4): 298-340.
- COAN, EUGENE V., Paul H. Scott, Frank R. Bernard. MS. Bivalve Seashells of Western North America. Santa Barbara Museum of Natural History: Santa Barbara, California.
- GOTSHALL, DANIEL W., Laurence L. Laurent. 1979. Pacific Coast Subtidal Marine Invertebrates. Sea Challengers: Los Osos, Ca. 107pp.
- HENDLER, GORDON. 1978. Development of *Amphioplus abditus* (Verrill)(Echinodermata: Ophiuroidea). II. Description and discussion of ophiuroid skeletal ontogeny and homologies. *Biological Bulletin* 154(1): 79-95.
- . 1988. Ophiuroid skeleton ontogeny reveals homologies among skeletal plates of adults: A study of *Amphiura filiformis*, *Amphiura stimpsoni* and *Ophiophragmus filograneus* (Echinodermata). *Biological Bulletin* 174(1): 20-29.
- . 1996A. Chapter 5. Class Crinoidea. Pp. 85-95 IN: Blake, James A., Paul H. Scott & Andrew Lissner (eds). Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14: Miscellaneous Taxa. Santa Barbara Museum of Natural History, Santa Barbara, California. 305pp.
- . 1996B. Chapter 7. Class Ophiuroidea. Pp. 113-179 IN: Blake, James A., Paul H. Scott & Andrew Lissner (eds). Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14: Miscellaneous Taxa. Santa Barbara Museum of Natural History, Santa Barbara, California. 305pp.

- HUTCHINGS, PATRICIA A., and Christopher J. Glasby. 1988. The Amphitritinae (Polychaeta: Terebellidae) from Australia. *Records of the Australian Museum* 40(1):1-60.
- . 1995. Description of the widely reported terebellid polychaetes *Loimia medusa* (Savigny) and *Amphitrite rubra* (Risso). *Mitteilungen aus dem hamburgischen zoologischen Museum und Institut, Hamburg* 92(Supl):149-154.
- KOJIMA, S. J., M. Hasegawa, S. Murata, S. Ohta, H. Seki & N. Okada. 1993. Close phylogenetic relationship between Vestimentifera (tube worms) and Annelida revealed by the amino acid sequence of elongation factor-1 $\alpha$ . *Journal of Molecular Evolution* 37:66-70.
- LANDSBOROUGH, D. 1852. *A Popular History of British Zoophytes, or Corallines*. Reeve and Co., London. 404pp.
- LISSNER, ANDREW, and Debra Hart. 1996a. Chapter 6. Class Asteroidea. Pp. 97-112 IN: Blake, James A., Paul H. Scott & Andrew Lissner (eds). *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14: Miscellaneous Taxa*. Santa Barbara Museum of Natural History, Santa Barbara, California. 305pp.
- . 1996B. Chapter 8. Class Echinoidea. Pp. 181-194 IN: Blake, James A., Paul H. Scott & Andrew Lissner (eds). *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14: Miscellaneous Taxa*. Santa Barbara Museum of Natural History, Santa Barbara, California. 305pp.
- McHUGH, DAMHNAIT. 1997. Molecular evidence that echiurans and pogonophorans are derived annelids. *Proceedings of the National Academy of Sciences* 94(15):8006-8009.
- MEYER, K., and T. Bartolomaeus. 1996. Ultrastructure and formation of the hooked setae in *Owenia fusiformis* delle Chiaje, 1842: Implications for annelid phylogeny. *Canadian Journal of Zoology - Revue Canadienne de Zoologie* 74(12):2143-2153.
- PLATVOET, DIRK. 1985. Side-line organ in gammarids (Crustacea, Amphipoda). *Beaufortia* 35:129-133.
- ROTH, BARRY. 1997. "*Aclis californica* Bartsch, 1927: a land snail misinterpreted (Gastropoda: Pulmonata: Subulinidae). *The Veliger* 40(4):364-366.
- STEELE, VIRGINIA J. & Donald H. Steele. 1997. Type II microtrich sensilla of amphipods: variations in external morphology and distributional patterns. *Canadian Journal of Zoology* 75(7): 1155-1165.

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**Southern California Association of  
Marine Invertebrate Taxonomists**

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November, 1997

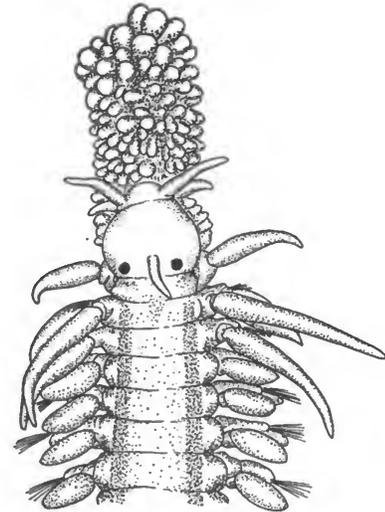
**SCAMIT Newsletter**

Vol. 16, No.7

<b>NEXT MEETING:</b>	Review of Annelida for Ed. 3
<b>GUEST SPEAKER:</b>	None; Larry Lovell Discussion Leader
<b>DATE:</b>	8 December 1997
<b>TIME:</b>	9:30am - 3:30pm
<b>LOCATION:</b>	1036 Buena Vista Drive, Vista, Cal. (Contact Secretary for Map or Directions)

**8 DECEMBER MEETING**

Our preparation for publication early next year of Edition 3 of the SCAMIT Taxonomic Listing of Benthic Invertebrates will continue at this meeting. We have already covered the arthropods, the echinoderms, and the "minor" groups (sponges, cnidarians, ectoprocts, entoprocts, sipunculids, echiurans, hemichordates, platyhelminthes, nemerteans, phoronids, and brachiopods). Dealing with annelids will be a larger task, and may require two meetings. Necessity for a second gathering on Ed 3 draft annelid changes will be determined at the 8 December meeting. Please come prepared with literature, controversial specimens, etc., as well as any new records or corrections to be implemented in Edition 3. Larry Lovell may have most literature available, but please assume that if you expect to use it you should bring it.



*Eulalia bilineata* (from Imajima & Hartman 1964)

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*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

### TV EXPOSURE

Member John Ljubenkov was seen locally on a television news program out of San Diego in early November. The segment dealt with introduction into Mission Bay of a small anemone from the Gulf of California (*Bunodeopsis* sp), now established in huge numbers on the fronds of the bay's eelgrass beds. The anemone is formidably provided with nematocyst batteries all along the tentacles, and gives a noticeable sting to the unwary.

John was shown diving in the bay and recovering some of the small animals, which were then taken to the City of San Diego Municipal Wastewater Department's marine lab on San Diego Bay for some macrophotos of the species on their imaging equipment. The results were spectacularly detailed for a television presentation. An ecologist at Scripps Institution was also interviewed, and commented on the nature of biological invasions.

Unfortunately the story did not receive wider circulation so we could all enjoy it (but John has a video). The story was accurate and informative; generally a model of the type of journalistic coverage of environmental issues we would all like to see.

This animal was first mentioned in Newsletter Vol. 14(12) back in April 1996, which puts us a bit over 1 ½ years ahead of the Evening News. All the News, all the Time is your Newsletter's motto.

P.S. - There are a few other good things on TV. Earlier this month PBS, on it's Nature series, showed a wonderful program on cephalopods called "Incredible Suckers". If you missed it try and find it in the future, or borrow the tape from a friend or from the library. Truly SPECTACULAR, it covered a wonderful spectrum of tidbits on cephalopod biology, and was superbly photographed. Some of the footage came from the Monterey Submarine Canyon, including the first live video images of *Vampyroteuthis*, and an encounter with a large *Moroteuthis robusta* at 1200m!

### YOU ARE WHAT YOU EAT?

Member Megan Lilly (CSDMWWD) reported finding a rather unusual appearing benthic tunicate. It was a *Eugyra arenosa californica*, not uncommon in some parts of their sampling area, but had abnormal organs. Instead of the normal branchial basket, gonads, intestines etc., this animal just had a whitish blob inside. Upon removing this blob Megan was surprised to find it a small specimen of *Okenia* sp A, a local nudibranch. This animal had consumed virtually all the contents of the tunic, leaving the exterior undamaged. No sign of entry was present, and Megan surmised that the animal had been sucked in as a tiny larva, then ate it's captor from the inside out.

Other species of *Okenia* are reported as predators on solitary ascidians from hard substrates in European waters, but there are no previous literature reports of predation on soft-bottom tunicates. *Okenia* sp A has been taken on several occasions over the past 15 years, nearly always in association with worm tube caps or hydroids growing on them. Given the reported propensities of it's congeners, the food of this species had remained a puzzle till now. Additional observations of this relationship would be most welcome, so please examine your benthic solitary tunicates with care for more *Okenia*.

This observation also helps settle the possible synonymy of *Okenia* sp A with *Okenia adspersa* from western Europe. This had been suggested, but never verified. Given the utilization of a different type of food resource by *Okenia* sp A (soft vs hard substrate prey), the proposed synonymy becomes less likely.

### NEW LITERATURE

Member Tim Stebbins sent along the following new literature notice for inclusion in the Newsletter. Similar submissions from any member are more than welcome, and serve to broaden the coverage offered by the editor.

### Brachyuran Crabs of Pacific Mexico

by  
Michel E. Hendrickx

The third volume in a series of books dedicated to the study of the decapod crustaceans of the Pacific coast of Mexico is now available. The monograph, 178 pages long, includes up-to-date data and new information related to the following primitive families of marine crabs: Dromiidae, Dynomenidae, Homolidae, Cyclodorippidae, Raninidae, Dorippidae, Calappidae and Leucosiidae. The book includes an identification key to the Brachyura families of the region, plus separate keys to the genera and species of the families listed above. A total of 49 species in 25 genera is covered. Data related to habitat, distribution and taxonomy are provided, along with distribution maps and illustrations of each species.

The book includes a number of species that have been reported for the Southern California Bight (see SCAMIT 1996). These include the dromiid *Cryptodromiopsis larraburei* (listed as *Dromidia larraburei* in SCAMIT 1996), the cyclodorippids *Deilocerus decorus* and *D. planus*, the homolid *Moloha faxoni* (listed as *Paramola faxoni* in SCAMIT 1996), the calappid *Platymera gaudichaudi*, and the leucosiids *Randallia bulligera* and *R. ornata*.

As for the two previous volumes on the shrimps of Pacific Mexico (see SCAMIT NL 16#4), the book is written in Spanish and was published with the support of both the CONABIO (Comision Nacional para el Uso y el Aprovechamiento de la Biodiversidad) and the Instituto de Ciencias del Mar y Limnologia, UNAM, Mexico. It is available free of charge from the author (except for mail cost). For further details please contact:

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Mexico

Sometimes titles which do not on their face appear relevant can surprise you with their utility. Such is the case with a new monograph on caridean shrimps of the Albatross Philippine Expedition of 1907-1910 (Chace 1997). The paper covers six families, but the only one of interest to local workers is the Hippolytidae. Dr. Chace provides a checklist to the world species of the family, giving generic transfers, synonymies, and valid species (with locality information). He also provides a generic key encompassing all the world genera; very useful in this day of species introductions. Generic keys to *Lysmata*, *Saron*, *Tozouema*, and *Thor* are also provided, but as only one of these (with a single species) occurs in the northeastern Pacific, these have little local applicability.

The variations in mouthparts with growth in decapods were examined by Loya-Javellana & Fielder (1997). They studied the freshwater crayfish *Cherax quadricarinatus*, but the trends in this animal are worth noting. They may or may not be echoed in the marine species we examine, but we can at least be alerted to possibilities. The authors drew links between the observed changes in mouthpart armature, and changes in feeding ecology. One of their more interesting observations was replacement of setae of one type with setae of another type at a particular location with growth. The authors also provide a useful source for references to previous reports dealing with other decapod groups.

Two recent short papers address nomenclatural changes in caprellids. Larsen (1997) erects a new species of *Metaprotella*, provides a key to the genera of the Protellidae, and reviews generic level characters within the family. Serejo (1997) synonymizes a species of *Hemiaegina* with the broadly distributed *Hemiaegina minuta*. This species, though not yet reported from southern California, should be watched for. It's wide distribution suggests anthropogenic transport, and we may have it introduced locally at some point.

Apropos the subject of our meeting Baeza et al (1997) describe a new polyclad from Chilean waters, and discuss the systematics of the Pseudocerotidae.

Their new species is in that family, and is apparently most closely related to a California form, *Pseudoceros luteus*. They treat this later species as *incertae sedis* based on comments in Newman & Cannon (1994) which indicate that it probably does not belong in *Pseudoceros s.s.*. I have not had the opportunity to review their papers, which deal with pseudocerotids from the Indo-Pacific. They erected four new genera (Newman & Cannon 1996a & b), one of which (*Tythosoceros*) is home to the new species of Baeza et al (1997).

At present we have only *Pseudoceros sp* on the SCAMIT list, although large specimens of "*P. luteus*" has been seen by the Editor on the Ventura Outfall pipe, and several other pseudocerotids occur in the area. The animals are not rare, but their habitat is poorly sampled by monitoring programs. They can usually be easily separated by color pattern when live, but preserved specimens (as with most other polyclads) generally require reproductive system examination for certain identification. Baeza et al provide a useful introduction to recent pseudocerotid taxonomy, and, augmented by Newman & Cannon's papers, should allow us to examine the local species more critically.

#### MINUTES OF THE NOVEMBER 17 MEETING

As the meeting was devoted to changes to the draft of the SCAMIT Taxonomic Listing Edition 3, we dug right in after an initial business meeting. Comments were received from all attendees, and changes and additions were made to the list.

The sponges *Trikentrion flabelliformis* and *Stelletta estrella* were added to the list based on specimens taken during November by CSDLAC in trawls. A new solitary hydroid, *Corymorpha sp A* was added by John Ljubenkov from about 30m depths off Goleta. John is preparing a voucher sheet on this species so that it can be added to the list.

It was mentioned at the meeting that *Dendrophyllia oldroydae* had just been taken in trawls by CSDLAC. After the specimens were examined in

the laboratory the field identification was corrected to *Lophelia pertusa*, also new to the list. This species, long known as *Lophelia californica* locally, had often been observed by remote cameras and/or from submersibles in the Pt. Conception/Pt. Arguello region, but had not previously been recovered in POTW monitoring programs within the Bight. *Coenocyathus bowersi*, another caryophylliid coral was also added, based on November CSDLAC trawl specimens.

Several anemones were added to the list. The edwardsiid *Edwardsia californica* was added from CSDMWWD collections, as was Anemone #49. John Ljubenkov added *Stephanauge annularis*, and *Amphianthus californicus* (which displaces *Amphianthus sp*). During the earlier cnidarian meeting John had taken specimens identified by others as *Cactosoma arenaria* and *Zaolutus actius* for review. So far he does not have definite results, but preliminary examination casts both IDs into question. He will report his results once his examination is completed. During our discussion it was decided to change the current "Anemone" designations to "Anthozoa". Thus Anemone #49 will become Anthozoa #49 in the Ed. 3 list.

Records of earlier provisional species were added to the synonymies of taxa on the list including: *Isoedwardsia sp A* and *sp B* under *Scolanthus sp A*, and *Athenaria sp A* and *Halcampidae sp A* under *Halcampa decemtentaculata*. The synonymy of *Halcampa duodecemcirrata* with *Halcampa decemtentaculata* indicated by Hand (1955) was rejected. John Ljubenkov has numerous specimens in hand of a species which matches the description of *Halcampa duodecemcirrata* fairly well, and these definitely differ from *H. decemtentaculata*.

The nomenclatural status of the species described as *Planocera burchami* by Heath and McGregor in 1913 proved to be a thorny issue. This was anticipated because of the differing treatments of the species by two recent monographers, Faubel (1983) and Prudhoe (1985). Faubel erected a new genus *Koinostylochus*, with *burchami* as type. He differentiated it from other callioplanids on the basis

of reproductive anatomy; the basis of his entire classification. Prudhoe, on the other hand, found that the existing genus *Discosolenia* was an appropriate home for Heath & McGregor's species.

Both Prudhoe and Faubel treat *Discosolenia washingtoniensis* of Freeman 1933 as a synonym of *burchami*. Faubel makes no explicit reference to the status (or existence) of *Discosolenia* (other than in the synonymy of *washingtoniensis*), and may have overlooked the genus. Although not with unanimity, the group decided that the appropriate path was to consider Faubel's *Koinostylochus* either a full synonym of *Discosolenia*, or (based on presence of spermaducal bulbs in *Discosolenia* s.s. and of a seminal vesicle in *Koinostylochus*) as a subgenus of *Discosolenia*. Polycladida sp B Phillips 1987 § was added to its synonymy.

*Stylochus californicus* Hyman 1953 was added based on collections made by CSDMWWD, and a number of earlier provisional species were placed in the synonymy of *Plelmia caeca*, *Stylochus exiguus*, *Paraplanocera oligoglana*, *Leptoplanidae sp A*, *Parviplana californica*, and *Pleiolana inquieta*.

We also found that a species which had been initially thought to be a leptoplanid was actually a rhabdocoel flatworm, rather than a polyclad flatworm. This was one of the taxa benefitting from the new imaging system at the Pt. Loma lab. Now that the kinks are worked out, very useful and detailed images are being produced. It greatly simplified our examination of the rhabdocoel to have sharp images from a color printer to circulate for examination at the meeting. The order Rhabdocoela and the species *Rhabdocoela sp A* will be added to Edition 3.

There were few changes to the draft coverage of the nemerteans. A misspelling of *Ototyphlonemertes* was corrected, a question as to the correct authorship of *Amphiporus cruentatus* was raised, and *Tetrastemma signifer* was added to the list by Dean Pasko (CSDMWWD).

In the remaining groups there were even fewer changes. Two new records were added from the

CSDMWWD collections, *Sipunculus nudus* and *Nephasoma eremita*, and generic level identifications within the Hemichordata were introduced. The later were discussed initially at the first meeting on Volume 14 of the Taxonomic Atlas series, and specimens of all four generic taxa recorded were examined at that meeting. As a last note, the asteroid *Henricia aspera* has been recorded by CSDMWWD since the echinoderm meeting in October, and will be added to the Ed. 3 list.

As usual when we visit Dancing Coyote Rancho, the participants all were delighted by the natural surroundings. We thank our hosts John and Julie Ljubenkov for again allowing us to meet in such a congenial environment. Members who have yet to attend a meeting there should attempt to make one in future (oh, yes, we'll revisit them again!).

### ASTEROID EPIDEMIC

A recurrence of the asteroid "wasting disease" noted on several occasions in the past has been noted during diving investigations off the Palos Verdes Peninsula by member Dave Montagne (CSDLAC). The disease, believed to be caused by a marine *Vibrio*, starts as a small lesion somewhere on the animal's surface (presumably at a site of injury), and rapidly enlarges until all the soft tissues are consumed. The resulting piles of ossicles are very characteristic, and can be seen on the bottom in areas not swept by strong currents. Dave is preparing a summary of his observations for the Newsletter. In the mean time, anyone with additional information on the scope or severity of the epidemic in their area please contact the Editor.

It has been suggested that this epidemic has also affected echinoids in the Southern California Bight. During recent trawls numerous specimens of *Lytechinus pictus* were taken with partial or complete spine loss at depths shallower than 30m off Palos Verdes. I surmise that these individuals were suffering from *Vibrio* infections, but have no microbiological evidence to support this conjecture. The syndrome is highly correlated with water

temperature, and in periods of strong El Niño conditions, echinoderms in shallow warm waters are much more strongly affected than those in the cooler depths.

### NORTH FOR THE HOLIDAYS

It seems that consequences of El Niño are everywhere to be seen. During our November trawl series off Palos Verdes we did not see what I had expected, a large influx of *Pleuroncodes planipes* - the Tuna Crab or Pelagic Red Crab, which so frequently signals intrusion of southern water masses inshore. We did see other harbingers of macrobenthic community change. Among the additions to the area were two small shrimp, both pandalids, and both described from off Baja California by Chace (1937).

One of the two, *Pantomus affinis*, has been taken previously by CSDMWWD off Pt. Loma, although the most recent published report (by Hendrickx 1996) does not discuss the species. We took a dozen of these at one of our 137m sites off Palos Verdes. They are surprisingly like *Spirontocaris holmesi* in coloration, and in pigment pattern. They are slightly less robust, but unless their rostrum is intact, could easily be mistaken for the more common hippolytid at a casual glance. Looking closer one sees that the rostrum appears broken above the orbit. It is not; it is articulated. This character sets this genus off from all others. Several *S. holmesi* were taken in the same trawl that yielded the *Pantomus*, so caution is advised.

The second species was a bit larger, and although still similar, would be difficult to confuse with any *Spirontocaris*. This was *Plesionika beebei*, a species not recorded from California by Wicksten in either 1978, 1983 or 1989 papers covering specifically pandalids or the offshore decapod community as a whole. According to Hendrickx and Navarrette (1996) the northern range limit for *P. beebei* is Punta Tosca, Baja California. Like all other members of the genus this has a long very narrow rostrum. *P. beebei* is easily separated from other eastern Pacific species by a combination

of periopod and rostral characters in Wicksten's key (1978). The single specimen taken was a mature male with an 11mm carapace length.

During this trawl series three pandalids were taken: *Pandalus platyceros*, *Pantomus affinis*, and *Plesionika beebei*. Only the first belongs to the "normal" (ie. non El Niño) fauna. More about other southern intrusions later. -Don Cadien (CSDLAC)

### ATTACHMENTS

During the same November trawls two specimens of the prostrate gorgonian *Thesea sp B* were taken which still maintained a basal attachment. Previously all specimens trawled by CSDLAC had been loose on the sediments, with no basal attachment; a sparsely branched growth in a single plane along the sediment surface. (One specimen, taken during benthic grab sampling, was in multiple planes - the main stalk ran parallel to the sediment surface and just below it, with lateral branches extending up and out into the water.) Inquires at the November meeting indicated that the experience of other agencies was much the same. Apparently no one has previously seen the basal attachments of this species.

The structures were unremarkable; thin, flat adhesive disks of tissue fully covered with surficial spicules matching those of the main portion of the colony, and of the same color. Underneath this surface was a disk of the same dark tough wood-like material that forms the central axis of the colony. The basal attachment was not thickened to add strength, and probably only persists until the colony has begun to spread across the bottom.

Their fragility was reinforced by the separation of both colonies from their bases during preservation. The linear portions of each colony were rather small, no more than 8 inches in length. One of the attachment plates was on a small sedimentary rock fragment, the other on a medium sized shell (good sized *Crepidula*). It may be that all the colonies taken during our trawls are actually "rooted" to small

attachment points prior to encounter with trawling gear, and are broken during collection.

## MY LIFE AS A BIOLOGIST

By Donald J. Reish

### Chapter 2--I become an editor!

Many things happened during the summer of my ninth year besides chasing butterflies. I received a baseball bat, a soft ball, a mitt and a baseball cap for my birthday. I also had a birthday party and invited 3 boys and 1 girl. Two of us liked the same girl. The baseball equipment became the start of the neighborhood Saturday morning work-up which extended into high school. We would go over to the lower campus of Oregon State (a block away) and start the game with 3 or 4 of us. We gradually ended up with about 10-20. The lower campus was our playground. It was 10 blocks of trees and grass. We also played football, but more of that in a later chapter.

With the butterfly collection increasing in size, my companion and I started going to the Oregon State Museum of Natural History. It was a hodge-podge of a museum with no real organization. They had an extensive butterfly collection which helped us learn the names of what we collected. However, I did not have any concept of a scientific name. There was also a human skeleton in one corner which I avoided looking at! The two of us went to the museum 2 or 3 times a week in which we concentrated on a section.

We then got up the idea of putting out a newspaper. I was the editor and he was the reporter. Additional people got involved including my brother who did a comic strip (he is very artistic). We published one issue which was hectographed. My mother kept a copy of the paper; hopefully it is mixed up with the papers and pictures my mother left my brother and me. I then continued to put out a paper by myself which was hand printed. I made one copy and a person had to pay 2 cents to read it. My interest in being an editor continued in the fourth grade. We had a class newspaper and I was the poetry editor; however, I had difficulty in distinguishing between

being a poetry and a poultry editor! My teacher was also correcting me.

More happenings that summer included a trip to Nelson, B.C., my mother's hometown (Steve Martin's "Roxanne" was filmed there). My grandfather was still alive; the last time I saw him. I mostly played with my cousins whose parents had a cottage on the lake. This was my first real trip; I had been as far as Portland up to then (85 miles). The change in the ecological environments (wet to dry to mountains) did not make any real impression on me. The day before we took the train to Canada, I rode my first two wheeler. My mother dashed out the house to get me off the bike; she was afraid I might get hurt and we couldn't go on the trip.

As I mentioned in Chapter one, Corvallis was a good place to grow up, even during the depression when there was 25% unemployment. My father had work during the summer at the local cannery, but not always work in the winter. My mother taught piano lessons in the schools and at home. She also played in PE classes at the college. The presence of Oregon State undoubtedly influenced my life in other ways as well.

The physics department of the college set up their telescopes during the summer, and I can remember looking at Venus, Mars and the Moon. Their telescopes were not strong enough to see the rings of Saturn; I have yet to see them through a telescope. I used to wander through the engineering buildings and shops. We played hide and seek in the mechanical engineering labs for years and we never were kicked out.

I took swimming lessons at the college during the summer and on Saturday in the winter. As I mentioned in Chapter 1, I would go through the Ag barns. We would sneak into the football games (it was easy), and in the spring we would watch track meets then turn around and see a baseball game. Getting into the basketball games was more difficult; we would go to the men's gym a hour or two before the game and sit on the stairs. No one ever asked us to leave. It would have been a mess if the gym ever

caught on fire. My friend and I would go to the homecoming events and listen to Oregon State football games on the radio. I liked the campus environment, and it definitely played a role in my wanting to become a professor. I think the main influences of the college on me were its intellectually stimulating atmosphere, the parade during commencement, and the fact that most of the college faculty lived in the nicest houses.

The next chapter will discuss my junior high school days and my initial ideas of what I want to do when I grow up.

#### PLEASE JOIN US AT CMA

The date (Saturday 13 December) of our Christmas Party is rapidly approaching. We hope you can join

us at the Cabrillo Marine Aquarium this year between 6 and about 9:30. Main course and beverages will be provided by SCAMIT, but if you plan to attend please bring a dish of some kind for the pot-luck. We know from past experience that no one will leave hungry! Please contact Cheryl or Don (at CSDLAC) to coordinate dishes, and to advise us how many (and of what ages) will be in your party (Santa wants to know).

If you play we would appreciate you bringing your instruments for some holiday musical cheer. Bring voices too, but we are trying to arrange for carolers to visit us as well. The gift shop will be open for our shopping pleasure (unusual marine theme gifts) so factor them into your holiday shopping plans. Call Cheryl or Don for directions or questions.

#### BIBLIOGRAPHY

- BAEZA, JUAN A., David Véliz, Luis M. Pardo, Karin Lohrmann, and Chita Guisado. 1997. A new polyclad flatworm, *Tytthosoceros inca* (Plathyhelminthes [sic]: Polycladida: Cotylea: Pseudocerotidae), from Chilean coastal waters. *Proceedings of the Biological Society of Washington* 110(3):476-482.
- CHACE, JR., FENNER A. 1937. The Templeton Crocker Expedition. VII. Caridean decapod Crustacea from the Gulf of California and the west coast of Lower California. *Zoologica* 22(8):110-135.
- CHACE, JR., FENNER A. 1997. The caridean shrimps (Crustacea: Decapoda) of the Albatross Philippine Expedition, 1907-1910, Part 7: Families Atyidae, Eugonatonotidae, Rhynchocinetidae, Bathypalaemonellidae, Processidae, and Hippolytidae. *Smithsonian Contributions to Zoology* (587):1-106.
- FAUBEL, ANNO. 1983. The Polycladida, Turbellaria proposal and establishment of a new system Part I. The Acotylea. *Mitteilungen der Hamburgisches Zoologisches Museum und Institut* 80:17-121.
- FREEMAN, D. 1933. The polyclads of the San Juan region of Puget Sound. *Transactions of the American Microscopical Society* 49:334-341.
- HAND, CADET. 1955. The sea anemones of central California, I: The corallimorpharian and athenarian anemones. *Wasmann Journal of Biology* 12(3):345-375.
- HEATH, HAROLD, and Ernest A. McGregor. 1913. New polyclads from Monterey Bay, California. *Proceedings of the Academy of Natural Sciences of Philadelphia* 1912:455-487.
- HENDRICKXS, MICHEL E. 1996. Los Camarones Penaeoidea Bentonicos (Crustacea: Decapoda: Dendrobranchiata) del Pacifico Mexicano, CONABIO/UNAM (eds.), I-vii, 1-147.
- . 1997. Cangrejos Brachyuros (Crustacea: Decapoda: Brachyura) del Pacifico Mexicano, CONABIO/UNAM (eds.), 1-178
- , and Flor D. Estrada Navarrete. 1996. Los Camarones Pelagicos (Crustacea: Dendrobranchiata y Caridea) del Pacifico Mexicano. CONABIO/UNAM (eds.), I-viii, 1-157.
- HYMAN, LIBBIE. 1953. The polyclad flatworms of the Pacific coast of North America. *Bulletin of the American Museum of Natural History* 100(2):265-392.

- IMAJIMA, MINORU, and Olga Hartman. 1964. The polychaetous annelids of Japan, Part I. Occasional Paper of the Allan Hancock Foundation 26:1-237.
- LARSEN, K. 1997. A new species of Metaprotella (Crustacea: Amphipoda: Caprellidea) from east Africa, with key to the genera of Protellidae and discussion of generic characters. Journal of Natural History 31(8):1203-1212.
- LOYA-JAVELLANA, GILDA N., and Donald R. Fielder. 1997. Developmental trends in the mouthparts during growth from juvenile to adult of the tropical freshwater crayfish, Cherax quadricarinatus von Martens, 1868 (Decapoda: Parastacidae). Invertebrate Reproduction & Development 32(2):167-175.
- NEWMAN, LESLIE J. and L. R. G. Cannon. 1994. Pseudoceros and Pseudobiceros (Platyhelminthes, Polycladida, Pseudocerotidae) from eastern Australia and Papua New Guinea. Memoirs of the Queensland Museum 37(1):205-266.
- 1996a. Bulaceros, new genus, and Tytthosoceros, new genus, (Platyhelminthes: Polycladida) from the great barrier reef, Australia and Papua New Guinea. The Raffles Bulletin of Zoology 44(2):479-492.
- 1996b. New genera of pseudocerotid flatworms (Platyhelminthes, Polycladida) from Australia and Papua New Guinean coral reefs. Journal of Natural History 30:1425-1441.
- PRUDHOE, STEPHEN. 1985. A monograph on Polyclad Turbellaria. British Museum (Natural History)/Oxford University Press, Oxford, U.K. 259pp.
- SCAMIT (SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS). 1996. A Taxonomic Listing of Soft Bottom Macro- and Megainvertebrates from Infaunal & Epibenthic Monitoring Programs in the Southern California Bight, 86pp.
- SEREJO, CRISTIANA S. 1997. Hemiaegina costai Quitete, 1972 a synonym of Hemiaegina minuta Mayer, 1890 (Amphipoda, Caprellidae). Crustaceana 70(5):630-632.
- WICKSTEN, MARY K. 1978. The species of Plesionika from California and western Mexico (Natantia: Pandalidae). Bulletin of the Southern California Academy of Sciences 77(2):84-87.
- . 1983. Plesionika sanctaecatalinae: a new species of deep-sea shrimp from the Eastern Pacific (Caridea: Pandalidae). Bulletin of the Southern California Academy of Sciences 83(2):138-143.
- . 1989. Ranges of offshore decapod crustaceans in the Eastern Pacific Ocean. Transactions of the San Diego Society of Natural History 21(19):291-316.

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**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
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December, 1997

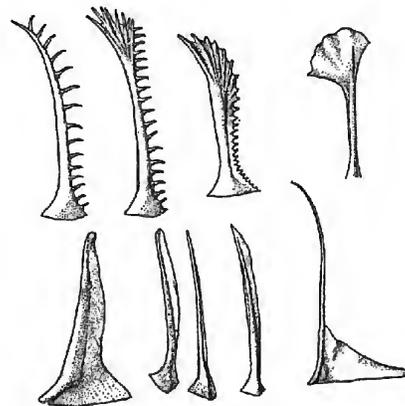
**SCAMIT Newsletter**

Vol. 16, No.8

<b>NEXT MEETING:</b>	Edition 3 of the Taxonomic List - Molluscs Edition 3 of the Taxonomic List -Annelids(Part2)
<b>GUEST SPEAKER:</b>	None
<b>DATE:</b>	12 January 98      and      26 January 98
<b>TIME:</b>	9:30am - 3:30pm
<b>LOCATION:</b>	Natural History Museum of Los Angeles County 900 Exposition Blvd., Los Angeles, CA 90011

**JANUARY 12 MEETING**

Our examination of sections of the SCAMIT list Ed. 2 continues in January with consideration of the mollusks. A copy of the draft of Ed. 3 embodying all known corrections, and the synonymy which had been added to that time was distributed at the December meeting (bring your annotated copy). Please come prepared to correct, add, subtract, emend, etc. the existing draft. Questions that require specimen examination may be answered by reference to the museum collections, but bring your own specimens if needed. Any additional changes arising after previous meetings on echinoderms, arthropods, and the "miscellaneous" phyla should be brought along as well. Time is running out for a complete revision ready by the end of February.



Mytilid periostracal hair types  
(from Soot-Ryen 1955)

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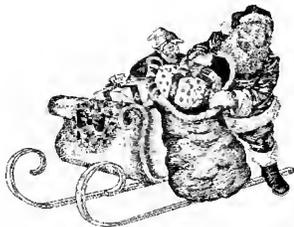
### JANUARY 26 MEETING

This meeting will be a continuation of the December meeting on Edition 3 of our Taxa List for the annelida section. The meeting will be on the last Monday of the month due to the other SCAMIT meeting scheduled on the 12th and the Martin Luther King holiday. The meeting will follow the same format as other meetings reviewing this list. Members should come prepared with their own copies of the draft version marked with all their changes, additions and deletions. If you don't have one contact the secretary for a copy. **IMPORTANT:** Members adding new provisional species names to the list need to bring either a voucher sheet or written description of the animal for distribution thru the newsletter, which also means an electronic copy needs to be provided for inclusion on our website. (The only excuses accepted will be those handwritten by your mother.)



### CHRISTMAS PARTY

Another scrumptious SCAMIT Christmas party was held on Saturday, December 13th at the Cabrillo Marine Aquarium. Several new and old members that haven't been able to attend previous years were there. It was great to catch up on old friendships and see how grown-up everyone's children are. The aquarium was especially festive with its marine life Christmas tree and dining amongst our sea-life friends is always a pleasure. Several of us were able to find a few stocking stuffers in the gift shop, which very kindly stayed open late for us. Santa John even made an appearance with treats for all those brave enough to sit on his lap. We thank Cabrillo once again for the luxury of using the aquarium for a wonderful party.



### NEW LITERATURE

Since most of our monitoring always samples the same habitat, we lose track of the importance of habitat complexity in determining what we encounter. Jacobi & Langevin 1996 discuss the effects on mobile epifauna recruitment of habitat geometry and complexity. They examined recruitment patterns in artificial substrates of varying structure and complexity by experimental manipulation. They compared the impact of increases in complexity, increases in volume, increases in area, and increases in "intercepting area" (essentially surface exposed to the surrounding water mass) on the resulting abundance and diversity of microcrustaceans. They found that increases in folding complexity was the habitat complexity measure that accounted for the greatest increases in mobile epifauna.

Another application of sediment profile imaging is reported on by Nilsson & Rosenberg (1997). In this case they used the method to examine oxygen stressed fjord areas, relating the sediment profiles to benthic grab sampling "ground-truth" data. They found the method had considerable promise for monitoring the effects of low oxygen conditions on benthic communities. Especially in areas subject to seasonal anoxia or hypoxia, this approach could give much more rapid information on benthic conditions than a sampling of infaunal community by remote grab.

Patterns of recruitment in the bivalve *Spisula ovalis* were investigated on a large scale (David et al 1997). Their results tend to contradict earlier studies based on smaller scale sampling which have concluded that adult density was negatively correlated with larval recruitment success. They found that the study area received about ten cohorts of recruits annually, but that the spatial pattern of recruitment was very patchy. As a result the age structure of the population formed a spatial mosaic, with each cohort showing spatial autocorrelation. Most of this heterogeneity was independent of adult density in the settlement areas. At least for this species recruitment proved to be density independent

rather than density dependent.

Feeding biology of our large offshore anemone "*Metridium senile*" was investigated by Anthony (1997). The relative capture efficiency for various sized individuals under different current flow regimes was examined. The results indicated that under moderate to high flow smaller individuals were better feeders, while under low flow conditions the larger individuals excelled. Since many of our large local anemones reproduce by basal fragmentation, small individuals surrounding these large ones must be at a feeding disadvantage initially; only overcome by growth (at least where the adults are located in optimal flow sites).

#### CALIFORNIA GALATHEID CRABS

During the November trawl series off Palos Verdes conducted by CSDLAC several patches of rocky substrate were encountered. Species of galatheid crabs we do not normally see were taken in this habitat, prompting a review of the taxonomy and distribution of the group locally. The result is presented as a attachment to this Newsletter. Please forward any comments or corrections to Don Cadien at CSDLAC.

#### MINUTES OF DECEMBER 8 MEETING

This meeting gave the polychaete taxonomists a chance to review the annelid section of the draft version of edition 3 of the SCAMIT Taxa list. The first half of the list was reviewed by family group from Orbiniidae to Phyllodocidae. Comments were made as to which species names should be added or deleted and if the synonymies were correct. This process naturally generated much discussion as to the validity of several names on the list from previous editions. A few taxonomists are checking on these names to see if they should be dropped. A list of these questionable names is included below. All members might want to check and see if they have reported any of these animals in the last couple

of years in their surveys from so. California. If so, please contact the secretary with any information you might have. We will try to complete reviewing of the annelid section at the January 26th meeting.

#### Questionable Annelid Names

*Asclerocheilus californicus* (Scalibregmatid)  
*Chaetozone gracilis* (Cirratulid)  
*Chirimia biceps lacera* (Maldanid)  
*Clymenopsis californiensis* (Maldanid)  
*Pterocirrus californiensis* (Phyllodocid)  
*Rhynchospio glutaea* (Spionid)

Several changes were made to the draft copy of the list at the meeting. Many changes had already been implemented in the draft copy of the list due to publication of several volumes of the MMS Taxonomic Atlas, which had not been produced when SCAMIT published edition 2 of the Taxa List. These changes have been discussed in the last 2 volumes of the SCAMIT Newsletter as each volume of the MMS Atlas was reviewed. Since those changes were not readdressed at the meeting they will not be summarized here. Those major changes that were discussed at the meeting are presented here.

In the Paraonidae family it was decided that subgenera names should be added to the species of *Aricidea* following Blake 1996. It was also decided that what had been referred to in the past as *Allia ramosa* by some SCAMIT members should be considered *Aricidea (Allia)* sp. A SCAMIT 1996. A few new species names are being added because they have been reported in the last two years by SCAMIT taxonomists in various monitoring surveys. They are *Aricidea (Allia) quadrilobata* (Webster & Benedict 1887), *Aricidea (Allia) hartleyi* Blake 1996, *Aricidea (Acмира) rubra* Hartman 1963 and *Paradoneis spinifera* (Hobson 1972).

A few important changes for the Spionidae family include the addition of *Polydora cornuta* to our list. The previous synonymy of *Polydora ligni* with *P. cornuta* (Blake & Maciolek 1987) had been forgotten about in previous editions of our taxa list.

Another change to the list is with *Prionospio ehlersi*. It has been dropped and *Prionospio lobulata* Fauchald 1972 added. Several SCAMIT members have always disagreed with Maciolek's (1985) synonymy of *P. lobulata* with *P. ehlersi* and now the list has been changed to reflect that.

Three spionid provisionals on the list now have new names. Two of them based on new descriptions from Blake (1996) and the third from an older description by Day (1961). *Prionospio* sp. A and *Prionospio* sp. B of SCAMIT 1991 will become *Prionospio jubata* Blake 1996 and *Prionospio dubia* Day 1961 respectively. *Spio* sp. A of Lovell 1986 has also been described by Blake (1996) as *Spio maciolekae*.

In the Magelonidae the species *Magelona hobsonae* Jones 1978 is being added. It has recently been reported in San Diego.

As for changes in the Cirratulidae list, the animal that SCAMIT members have been referring to as *Aphelochaeta marioni* will now be listed as a SCAMIT provisional, *Aphelochaeta* sp. A and a voucher sheet will be issued in a future newsletter. New species names added to the list are: *Aphelochaeta phillipsi* Blake 1996, *Aphelochaeta petersenae* Blake 1996, *Aphelochaeta* sp. B, a new provisional that Tony Phillips (CLAEMD) is currently reporting from Santa Monica Bay (voucher sheet in an upcoming newsletter), two *Chaetozone* species reported by Rick Rowe (CSDMWWD), *C. hedgpeithi* Blake 1996 and *C. spinosa* Moore 1903 and *Monticellina serratiseta* (Banse & Hobson 1968), also reported by Rick Rowe.

Three new names are being added to Maldanidae. *Axiothella rubrocincta* (Johnson 1901) has recently been reported in San Diego. Also, *Clymenella* sp. A of Harris 1985 has been added to the list. The provisional had not been included in previous editions of the Taxa List. Leslie's description has been re-typed and is attached with this newsletter for those members that don't have it. The third addition is *Petaloclymene pacifica* Green 1997, which is the maldanid that has been referred to as

*Euclymene grossa newporti* locally and, which, is being dropped from the list.

There is only one additional species being added to the list for the Opheliidae, *Ophelina* sp. 1. This is a provisional species whose voucher sheet was distributed to SCAMIT members in Volume 14(1) of the newsletter.

The last change to the Taxa List discussed at the meeting was under the Phyllodocidae. *Nereiphylla castanea* is being dropped and replaced with two provisional species, *Nereiphylla* sp. A and B, which more accurately describe these animals. Voucher sheets of these two species will be distributed in a forthcoming newsletter.

## FLATWORMS

The following e-mail communique was received from member Dr. James Carlton, and is being passed on through the Newsletter because of its general interest. "I notice in the latest (November 1997) SCAMIT newsletter some discussion of southern California polyclad flatworms. We are having Professor John Holleman, now retired and living in the Sierra foothills, revise the polyclads for the Fourth Edition of Light's Manual (now renamed "Light and Smith"; coverage roughly from Pt. Conception/Santa Barbara to the Oregon coast). John goes "way back" in the California flatworm world (did his grad work at Berkeley with Cadet Hand and Ralph Smith in the 1950s) and has finished compiling an extensive revision of Libbie Hyman's old polyclad flats of the west coast monograph. He came along with us on the latest San Francisco Bay Expedition (IV) a month or so ago and was a grand help. I think I can say that he's eager to see any and all west coast polyclad material, intertidal or subtidal; he has also worked in New Zealand while on sabbatical, knows the global scene, etc. I'd urge any SCAMIT members who'd like to have their material worked up contact Holleman: jholle2@GOLDRUSH.COM."

Given the problems most of us experience in

working with these animals, all help would be most welcome. Interested parties should follow up on Dr. Carlton's suggestion and contact Dr. Holleman. We all have material to submit for his inspection.

### **MY LIFE AS A BIOLOGIST**

**By Donald J. Reish**

#### Chapter 3: "I begin to look to the future"

Let me introduce three life-long friends. First there was Miles and shortly afterwards there was John. We had moved to 12th Street when I was seven, and both of them lived nearby. We walked together to Franklin Grade School. We wore black leather jackets and black leather helmets which was the fashion of the time due to the influence of the Lindberg solo flight to Paris. Miles later became an auto engineer who specialized in auto exhaust; in fact he gave a seminar at CSULB (he now lives in Hawaii). John took over his family's furniture business, and then became a salmon fisherman out of Depot Bay, Oregon. He was the first of our group to go (he died 3 years ago). John and I met Bob the summer before Bob and I entered 7th grade. He did not join the circle until the 9th grade when we both delivered for the same paper. Bob earned a Ph.D. in Mathematics and after teaching at Arizona, Iowa State, Fresno State, he returned to Corvallis and taught at Oregon State. He always wanted to get back to Corvallis.

Going to junior high school brought some changes; for one thing I got my first pair of long pants! Yes, in those days getting the first pair of long pants (cords) was an event. Grade school boys wore knickers. A couple of days before the end of my 7th grade year, my pants wore out and my mother bought me a pair of denims. I was embarrassed; wearing denims in those days was a sign of your family being poor. I didn't wear my next pair of denims until college, but I spilled acid on those pants in organic chem lab. I didn't get my 3rd pair of denims until after I retired. Times do change.

During my earlier years, I never really gave much (or

any) thought of what I was going to do when I grew up. I suppose I went through the common thought of being an M.D., but, if I did, it was just in passing. In the ninth grade, I took a math class and one of the assignments was to keep a personal expense record for a month. This fascinated me and I continued it for 6 months, a sufficient length of time to earn my business merit badge (I was a Boy Scout). We were required to write a major report in social science class on what we want to do when we grow up. I wrote on accounting and becoming a CPA. In fact two of us wrote on this subject; the other boy actually did become a CPA. In the 10th grade, I took accounting and I didn't like it. That was the end of my accounting career. After keeping personal records for 6 months, I have never done it since.

I also took general science in the 9th grade from my math teacher. (I ran into him some 50 years later at an anniversary reception for my friend Bob. We didn't talk about my 9th grade classes but about our experiences as scout masters.) I only remember one part of this science class. It was my initial introduction to the scientific method. I was given the assignment to prove or disprove that air occurs in soil. I had to devise an experiment to test this hypothesis. I put some soil in a glass jar of water and let it set for an hour or so. Air bubbles gathered on the side of the glass. I had boiled the water to remove dissolved air, showing that the bubbles had come from the soil and not the water. However, I do not recall if I had set aside a jar of boiled water for a control. I'm not sure if I knew what a control was. I had to give an oral presentation in front of the class.

The newspaper business reentered my life in the 9th grade. As I mentioned, Bob and I delivered the Oregon Journal (now defunct). As a publicity campaign, one of my paper customers and I were featured in the paper. It was the first time my picture was published in a newspaper. I even received fan mail from a 14 year old girl; I never met her, but I remember her name! I also worked on the junior high newspaper, but not as a writer, but on the business side. I went out during school time to get ads for the school paper.

Next Time: High school and I become aware of different environments.

### SCUM REMINDER

Just a reminder to those mollusk workers out there who want to join with their colleagues for a get together and information exchange. The second annual SCUM (Southern California Unified Malacologists) meeting is scheduled for Saturday, 10 January, in the Times Mirror Room of the Natural History Museum of Los Angeles County. Call ahead and notify Jim McLean or Lindsey Groves if you plan to attend (Tel: 213-763-3376)

### PHYLOGENY CONFERENCES

There are two interesting gatherings scheduled for 1998 which should appeal to those interested in metazoan phylogeny. The constant recent ferment in this area caused by advances in cladistic methodology, and the accumulation of more and more sequencing data (as well as data of other types) has led to conferences in January (5th-7th) in Boston, and at Princeton in June (26th-28th).

The first is a session hosted by the Society for Integrative and Comparative Biology (formerly ASZ) focussed on "Evolutionary Relationships of Metazoan Phyla", with presentations by many prominent current workers. Kristian Fauchald and Greg Rouse are scheduled to present another chapter of the polychaete phylogeny controversy (immediately preceded by Claus Nielsen, one of the major spokesmen for an alternative viewpoint in recent on-line exchanges via the Annelida newsgroup). The banquet address by Simon Conway-Morris "The Cambrian explosion: reconciling paleontological and molecular data" should be most interesting. Meeting information is available at <http://www.sicb.org/public/meeting/index.html>

The second conference is more concerned with methodology and is entitled "Estimating Large Scale Phylogenies: biological, statistical, and algorithmic problems." Information on the symposium is available from Dr. Junhyong Kim at: [junhyong\\_kim@quickmail.yale.edu](mailto:junhyong_kim@quickmail.yale.edu)

### BIBLIOGRAPHY

- ANTHONY, KENNETH R. N. 1997. Prey capture by the sea anemone Metridium senile (L): effects of body size, flow regime, and upstream neighbors. *Biological Bulletin* 192(1):73-86.
- BLAKE, JAMES A. 1996. Family Spionidae Grube, 1850. Pp. 81-223 IN: Blake, James A., Brigitte Hilbig, and Paul H. Scott (eds.). *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 6- The Annelida Part 3. Polychaeta: Orbiniidae to Cossuridae.* Santa Barbara Museum of Natural History, Santa Barbara, California, U.S.A. 377pp.
- BLAKE, JAMES A., and Nancy J. Maciolek. 1987. A redescription of Polydora cornuta Bosc (Polychaeta: Spionidae) and designation of a neotype. *Bulletin of the Biological Society of Washington* 7:11- 15.
- DAVID, PATRIC, Patrick Berthou, Philippe Noel, and Philippe Jarne. 1997. Patchy recruitment patterns in marine invertebrates: A spatial test of the density-dependent hypothesis in the bivalve Spisula ovalis. *Oecologia* 111(3):331-340.

- DAY, JOHN H. 1961. The polychaete fauna of South Africa. Part 6. Sedentary species dredged off Cape coasts with a few new records from the shore. *Journal of the Linnaean Society of London* 44:463-560.
- JACOBI, CLAUDIA M., and Remi Langevin. 1996. Habitat geometry of benthic substrata: Effects on arrival and settlement of mobile epifauna. *Journal of Experimental Marine Biology and Ecology* 206(1-2):39-54.
- MACIOLEK, NANCY J. 1985. A Revision of the Genus *Prionospio* Malmgren, with special emphasis on species from the Atlantic Ocean, and new records of species belonging to the genera *Apoprionospio* Foster and *Paraprionospio* Caullery (Polychaeta, Annelida, Spionidae). *Zoological Journal of the Linnean Society* 84:325-383.
- NILSSON, H. C., and Rutger Rosenberg. 1997. Benthic habitat quality assessment of an oxygen stressed fjord by surface and sediment profile images. *Journal of Marine Systems* 11(3-4):249- 264.
- SOOT-RYEN, TRON. 1955. A report on the family Mytilidae (Pelecypoda). *Allan Hancock Pacific Expeditions* 20(1):1-278.

Please visit the SCAMIT Website at: <http://www.sccwrp.org/scamit/>

**SCAMIT OFFICERS:**

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

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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.

## "Clymenella" sp. A

I have temporarily placed this into *Clymenella*. There are 2 problems with this arrangement.

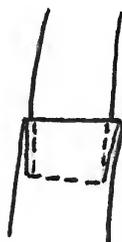
1) The specimen has distinct acicular spines in its first three neuropodia. The genus *Clymenella*, based on *C. torquata* (Leidy) was originally described as having rostrate uncini. Later authors have assigned to the genus certain species with acicular spines and so defined it, i.e. Fauvel 1927, "Ventral acicular setae in first setigers" Fauchald 1977 "...anterior neuropodia with acicular spines or strongly reduced uncini". Monro 1937 and Mangum 1962 (who examined holotype material and had a photo showing strongly developed rostrate uncini from an anterior neuropodium) have argued that since other genera such as *Praxillella* have both kinds of setal arrangements, and that due to variation in shape the difference between them is slight, this combination within one genus is okay. Clark & Dawson 1962, Arwidsson 1907, and Banse 1981, feel the type of anterior neurosetae is or should be a crucial generic character. I agree with this view, by which *C. complanata* Hartman, *C. californica* Blake & Kudenov, and *C. sp. A* do not belong to *Clymenella*.

2) Ignoring the problem with the neurosetae, *C. complanata* & *C. sp. A* should still be separated from the genus. The cephalic plate structure of *Clymenella* sensu *C. torquata* is similar to that of *Euclymene*: raised margin, distinct palpode, nuchal organs 1/2 - 2/3 length of plate, lateral and middorsal notches in margin, and curved folds posterior to nuchal organs. The cephalic plates of these two species are flat and smooth, either without a marginal flange or with a very narrow one, 1-2 deep transverse folds, indistinct, small palpode, and nuchal organs 1/4 of plate's length. I feel these definitely belong to a different group, maybe even *Isocirrus*.

I've put this into "*Clymenella*" rather than *Isocirrus* however, almost solely on the basis of the collar on the 4th setiger. It is close to *I. planiceps* sensu Arwidsson 1907 except for the collar. *Isocirrus longiceps* (Moore) belongs to neither genus because it has a collar on setiger 4, a raised margin, no nuchal organs at all, and 4 - 5 transverse ridges on the plate. Another problem.

To distinguish a collar as opposed to a telescoped fold:

may be  
mem-  
branous



Collar



Telescoped (contracted) fold

"Clymenella" sp. A (con't.)

L. Harris May 1985  
re-issued for SCAMIT  
Newsletter Vol. 16(8)

[ cephalic plate ]								
	# acicular spines	# setigers/ preanal	lateral flange	nuchal organs	transverse folds	shape	collar setiger 4	pygidium
<i>Clymenella sp. A</i>	set. 1 - 2 set. 2 - 2/3 set. 3 - 3/4	22 / 2+ flange	slight	short, >1/4 slightly curved	2 : 1 side to side, 1 shorter	round, flat	yes	~26 cirri, anal cone+/- , asperities
<i>Clymenella complanata</i>	set. 1 - 1 set. 2 - 1/2 set. 3 - 1/2	21 / 3+ flange (or 22/3+)	+/- (slight if present)	short, 1/4, slightly curved	1 side to side	round, flat	yes	22-30 cirri, anal cone +/-, asperities
<i>Clymenella californica</i>	set. 1 - 1 set. 2 - 1/2 set. 3 - 1/2	22-27 / 1+ flange	high, with lateral notches	long, 1/2 - 2/3	none	oval	variable: none to distinct	~22 cirri anal cone +/-, no asperities
<i>Isocirrus longiceps</i>	set. 1 - 1 set. 2 - 1/2 set. 3 - 1/2	19 / 2+ flange	moderate, with crenulation	none	4 - 5 short	oval, sloping	yes	30 - 33, asperities
<i>Isocirrus planiceps</i>	set. 1 - 2 set. 2 - 2 set. 3 - 3	23 / 2+ (or 23/1+)	low, thick	short, 1/4 - 1/3	1 side to side	round - oval, flat	no	~20 cirri, anal cone no asperities



**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
San Pedro, California 90731

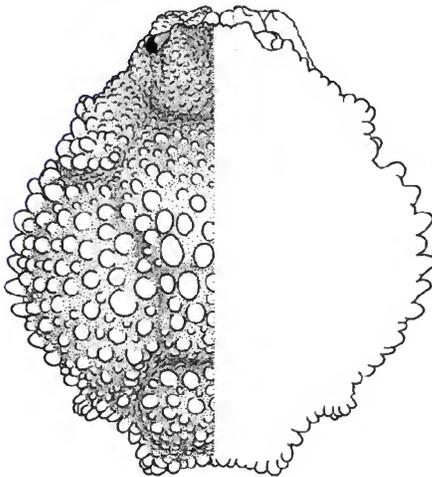
January, 1998

**SCAMIT Newsletter**

Vol. 16, No.9

<b>NEXT MEETING:</b>	Trawl Invertebrate Identification
<b>GUEST SPEAKER:</b>	Dr. Jim Allen (SCCWRP)
<b>DATE:</b>	Thursday, February 19, 1998
<b>TIME:</b>	9:30AM - 3:30PM
<b>LOCATION:</b>	SCCWRP 7171 Fenwick Lane, Westminster, CA 92683

**FEBRUARY 19 MEETING**



Carapace of *Randallia bulligera*  
(from Hendrickx, 1997)

We switch from preparation for the release of Edition 3 of the SCAMIT list to preparation for the upcoming Regional Monitoring effort. We are beginning early so that time will be available for preparation of field aids for invertebrate (and also fish identification in the field. Such preparation forms the subject matter of our 19 February Meeting where Dr. Jim Allen of SCCWRP will present his ideas on the subject and try to focus our efforts on field ID problem areas (and solutions to these problems) prior to the summer trawl sampling. If time permits we will also attempt to address potential problem areas in the processing of benthic samples as revealed by our experiences in the SCBPP. Come if you can, we need a spectrum of opinion and experience.

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*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

### J. D. THOMAS REPRINTS

Long time SCAMIT supporter Dr. J. D. Thomas has elected to have us serve as reprint distributor of his Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel amphipod section on the west coast. This formed the majority of Vol. 12 of that serial publication, but several smaller contributions were also included. Jim has sent us both reprints of his portion of Vol. 12 (with co-author Linda McCann), and copies of the entire Volume 12 for distribution to interested parties. Readers should note that this is the original printing of Volume 12; a revised version is available for sale from the Santa Barbara Museum of Natural History.

These reprints are available for the cost of postage on a first-come first-serve basis. Anyone interested in receiving one or the other (please specify reprint or entire Vol. 12) can write, phone, or E-mail the secretary or vice-president. They will respond with the cost of postage (based on destination). Once we receive the postage charge the item will be shipped to you (or can be picked up free at any meeting). We thank Dr. Thomas for making these available to west coast workers in this fashion. Those interested in other reprints should contact him directly at [thomasjd@ocean.nova.edu](mailto:thomasjd@ocean.nova.edu).

### NEW LITERATURE

The Atlantic species of the bivalve genus *Dacrydium* were reviewed by Salas and Gofas (1997). Although none of the included species occur in our area, the review itself is helpful in dealing with Pacific members of the genus. Character evaluations, and discussions of phylogeny are augmented by fine micrographs of hinge and protoconch structure in the treated taxa.

A most peculiar color pattern typifies a new species of nemertean described from the french side of the English Channel (Vernet 1997). My immediate response was that this animal is an escapee from the regeneration and somatic mosaic experiments of

other European workers. The striking aspect here is a profound bilateral asymmetry in coloration, with one side of the animal light, and the other dark. While color disparity is often seen between dorsal and ventral faces in nemerteans, one between left and right halves of the animal - with a distinct dividing line between the two areas middorsally - has not been described previously. Fortunately, suspicions of escaped experimental animals are allayed by the presence of morphological characters which separate this taxon from related congeners. This new species appears similar in internal details to some local lineid species, and we should consider if the genus *Myoisophagos*, in which it is placed, might be appropriate for them.

An evaluation of the distribution, behavior and reproductive success of alternate male morphs of the amphipod *Jassa marmorata* was conducted by Clark (1997). She found that both the loud braggarts (major males with enlarged "thumbs") and the mild mannered (minor males lacking "thumb" enlargement) had equivalent reproductive success, although not necessarily at the same time. Each approach is considered an environmentally stable alternative strategy.

Behavioral differences in frequency of fighting, display, and attempted eviction of intruding males between the two morphs were marked. The major morph devoted more energy to assertive behavior, while minor males never fought and only seldom displayed or attempted to displace other minor males.

The recently reported use of ecdysteroid hormones as a deterrent to crab predation on pycnogonids (Tomaschko 1994) has now been more thoroughly examined (Tomaschko 1997). The author details the structure of the chemicals involved, describes their activity and application, and the mechanism of action in the decapod. He also mentions recent experimental trials in his lab which indicate unpalatability of two other species of pycnogonids to Cancroid crabs. Our local *Ammothele biunguiculata* was tested, and found to have an as yet undetermined chemical feeding deterrent.

Since ecdysteroids are also essential to the normal growth of the pycnogonids themselves (being used, as their name suggests, in cuticle shedding) the management of the hormone within the animal is of interest. Tomaschko also reports that other researchers have found ecdysteroids at high levels in at least one non-arthropod, suggesting that they may be manufactured and used for defense by animals not otherwise needing them.

Major revisions of two genera of stegocephalid amphipods from the Atlantic and Mediterranean (Berge & Vader 1997a, b) have recently been published. Although restricted to species from out of our area they provide useful ancillary treatments for Pacific species of both genera. Both occur in our general area, but being predominantly pelagic and from waters deeper than sampled by local agencies, they do not occur in our species lists.

The latest issue of the *Bulletin of the Southern California Academy of Sciences* contains several articles of interest to SCAMIT members. Martin & Velarde (1997) redescribe the xanthid crab *Pilumnoides rotundus* based on a specimen taken off Pt. Loma in 1994 during the Southern California Bight Pilot Project. The specimen forms the northernmost record of this rare species.

On a less appealing note Perkins and Gartman (1997) discuss the host-parasite relationship between the parasitic copepod *Phrixocephalus cincinnatus* and the Pacific Sanddab (*Citharichthys sordidus*). This eye-parasite is probably the only copepod fish parasite for which occurrence data from local monitoring is reliable. Others, even the flukes which parasitize California Halibut, are too inconspicuous to be reliably recorded in monitoring data not specifically targeted at parasites.

The question of increase or decrease of parasite prevalence in areas of wastewater discharge remains, as the increases noted by the authors conflict with the decreases noted by Mearns & Sherwood (1977). Although nearly all records list Pacific Sanddab as host species, Perkins & Gartman report occurrences on other fishes.

Diener et al (1997) compared performance of two different remote sampling devices, the modified Van Veen Grab and the Clamshell Box Corer (CBC). While the first is the standard "weapon of choice" (or rather "weapon of permit") for all southern California POTW monitoring programs the authors conclude that the CBC is better at some things and as an overall benthic sampling device.

The CBC, in the test sample set used as the basis of the report, had better penetration in sandy sediments, had fewer unproductive deployments, and captured greater numbers of individuals and species than the Van Veen. The authors did not address the minimal vessel requirements for use of the device, but do seem to indicate that it can be used from smaller vessels than the USNEL Box Corer whose best features it sought to emulate.

In development of this device Doug Diener (MEC) seems to have found a way to have the best of both worlds: a sampler small enough to use from the average monitoring vessel which maintains the undisturbed sediment surface provided by the USNEL box corer.

[Please note that all these papers have at least one author who is a SCAMIT member. Nice going!]

Ron Velarde circulated a paper revising the entoproct fauna of the eastern Pacific (Wasson 1997). The author examined historic collections from most of the Pacific coast as well as recent material from several locations between Puget Sound and San Diego. She describes a new taxon, and provides a new name for an unavailable one. Her examination covered not only characters of the adult colonies, but of the larvae as well. She found several species (often of several genera) typically live together intertwined in a common tuft.

We draw your attention to the winter 1997 (Vol. 10 # 4) number of the quarterly *Alokoj* issued by the Channel Islands National Marine Sanctuary. The issue is devoted to a consideration of El Niño and it's effects in the western portion of the Southern California Bight.

In an article on inshore marine effects (Engle 1997), a picture of the result of the echinoderm disease mentioned previously in the Newsletter can be viewed. It shows an *Asterina miniata* (bat star) on the bottom in the process of becoming only a pile of dermal ossicles. The accompanying text provides a nice introduction to the nearshore effects of El Niño warming, an effect only too noticeable in our own sampling.

Other interesting articles on the physical effects of El Niño storms (Crabtree 1997), effects on pinnipeds in the Channel Islands (DeLong & Melin 1997), and on invertebrate larval effects (Gaines 1977) are also offered along with a number of shorter articles. For Net fans there is a listing of nine El Niño related websites providing a variety of different levels of discussion of the phenomenon and its current status.

#### **POLAR INVERTEBRATE RFPs**

Those with an interest in or experience in working with the Antarctic fauna may find a recent request for proposals issued by the National Museum of Natural History worthy of a response. The RFP is intended to elicit proposals for basic collections research on the systematics, evolution or biogeography of polar organisms. Other smaller awards will be made to assist projects aimed at improvement of the curation of polar collections already acquired, or to assist in publication of research based on NMNH Antarctic collections. See the attached flyer for details.

#### **MOLLUSK WORKERS LOST IN 1997**

Although there are probably several others whom I am overlooking, there are two prominent San Diego area mollusk workers who left us in 1997. The first was Dr. Anthony D'Attilio, associated for many years with the San Diego Museum of Natural History, and coauthor (with Dr. George Radwin) of *Murex Shells of the World*. Tony was an expert on and specialist in muricoid gastropods. The January issue of the *Festivus* (Vol. XXX No. 1) is a

memorial to him, and provides additional information on his life and a bibliography of his many publications.

Paul Skoglund also died in 1997. I know much less about him, but he was deeply involved in the San Diego Shell Club for many years. He and his wife Carol Skoglund were among those who diligently investigated the mollusk fauna of the Gulf of California. He was particularly involved with small boat dredge sampling in the Gulf, and designed several devices to make such collecting easier. A very short announcement of his death is also to be found in the same issue of the *Festivus* cited above.

#### **EXECUTIVE OFFICERS MEETING**

On January 28th the four executive officers of SCAMIT met for a brief meeting to discuss several topics pertinent to the organization at the current time. Below is a summary of the major decisions that will effect the membership as a whole in the coming year.

##### **Membership dues -**

As of April 1998, which is the start of the fiscal year for SCAMIT, dues will stay \$15 per year for those receiving the Newsletter electronically. They will be increased to \$30 per year for those receiving a printed copy of the newsletter. Hardcopy will continue to be provided to institutional members at no increased cost.

The increased expense in the last few years to print and mail our monthly newsletter (due to its increased size) is the main reason for the increase in dues. The yearly cost to produce the newsletter is currently twice the income from dues. The officers also feel that increased dues for the hardcopy version of the newsletter may help encourage visitation to our website, which currently is underutilized by the membership. When the topic of a website first arose over a year ago there were no objections, and most members agreed that an electronic newsletter was the way to go. Recently, upon inquiring of several members why they were not utilizing the website as

an electronic Newsletter source, the main reasons were inertia and the convenience of printed copy. Those who must have a printed copy (I admit to preferring it myself - ed.) can obtain one free off the website as a downloadable document in PDF format.

As with most things in life, convenience has a price. We have decided that those wanting a printed copy of the Newsletter must bear the cost of producing it. The officers realize that for a small minority of members the increase in dues may be a hardship and we are truly sorry for that. For the few members that don't have access to a computer and the Internet at work or home, public libraries are a great resource. If you bring any paper you need for printing, many libraries provide all you need for web access at no charge, or for a very nominal fee. The rest of us now have the option of receiving the Newsletter free electronically, or of paying the extra \$15 dollars per year required to cover the cost of its printing and mailing.

#### **Website Improvements -**

It was decided that SCAMIT would appoint its own webmaster so that more time could be devoted to improving the website and the Secretary relieved of responsibility for the site. While SCCWRP's webmaster Larry Cooper designed the original layout of our site and has been a big help we need to have our own designer/manager. We decided to add the list of SCAMIT members available for consulting work to the website. We will not post a complete membership list, only those members who would like the exposure. If you are currently listed as available for consulting, but do not want your address/telephone etc. listed please notify us. Treasurer Ann Dalkey has created a new database of member names and addresses which is much easier to update. SCAMIT will provide members receiving hard copy a new list each April, at the beginning of the new fiscal year. Members receiving the Newsletter electronically will be sent a current list via E-mail when their new membership year begins.

#### **Newsletter Editor -**

It was proposed that the editing of the newsletter be separated from the duties of the Vice President and an appointed position of Newsletter Editor be established. Don Cadien has volunteered to continue as Editor if SCAMIT can elect someone else to serve as Vice President. The duties of the Vice President would then include scheduling meetings, handling the election and planning the Christmas party. The officers realize at this time that finding someone to serve for the coming term might not be possible and this may have to wait until next year. If others are interested in acting as Newsletter Editor, they should contact an officer and announce their interest.

#### **Edition 3 of the Taxa List -**

It was decided that Edition 3 would only be available in a printed spiral bound version to SCAMIT members, and then at cost (as yet undetermined, but hopefully under \$10). As mentioned in previous newsletters the addition of synonymies to the list will increase its size by several times. SCAMIT has no incoming funds to support covering these production costs so we are forced to charge the membership. However, the list will be available *free* as a PDF document on the website where members may download it and print out a copy. Non-members will only be able to get the list off the website.

### **ELECTION**

Nominations for new officers for the 1998-99 term were held at the January meetings. Three of the current officers have received and accepted nominations for their current positions. The secretary Cheryl Brantley will not be running for re-election. She needs to take a more behind-the-scenes role at SCAMIT for the coming year due to her obligations at CSDLAC. She hopes to encourage anyone else interested in the secretarial position and will help to make the transition period as smooth as possible. The officers have tried to reduce the responsibilities of the Secretary to make the position less demanding. The officers are actively seeking a

replacement for her position. Anyone interested should contact the Vice President as soon as possible. SCAMIT will still be accepting nominations for all positions until ballots are mailed with the next newsletter.

### WEBSITE UPDATE

The biggest improvement to our website will be that SCAMIT will have a new Webmaster soon. Member Jay Shrake (KLI) will be taking over. Jay not only has experience creating webpages, but he has the resources and has generously volunteered his time. Jay has already created the very useful and attractive "Links to Other Environmental Resources" page. For those members that haven't seen this new page yet you definitely want to check it out. Jay has found a number of other websites for many invertebrate groups that SCAMIT deals with. We are sure that this page will also be added to in the future as Jay finds more interesting pages for us. If other members know of any sites that aren't on the list please pass along the URL's and we will incorporate them. With someone to take over the upkeep of the website the secretary will then be able to devote more time to the newsletter and the other secretarial duties, rather than trying to juggle both. We appreciate the efforts of SCCWRP's Webmaster Larry Cooper. Without them the website never would have gotten off the ground. Our website will continue under SCCWRP's site and Larry will still post our files to their ftp site for the time being. In the future SCAMIT may decide to have their own domain.

### MINUTES OF JANUARY 12 MEETING

Although (or perhaps because) the meeting was very sparsely attended, we managed to complete our task of review of the mollusk portion of the SCAMIT Ed. 3 list. We were aided by an evaluation of the chitons prepared by member Dr. Tim Stebbins (CSDMWWD). He provided us with a listing of those species on the Ed. 2 list which he considered valid, those he considered invalid, and why. He also

listed a number of taxa reported to occur in the geographic area which had not yet been reported in monitoring programs. Since he is aware of the contents of the as yet unpublished section of the Taxonomic Atlas series by Dr. Doug Eernisse dealing with the chitons, it is likely that his comments will be in consonance with that paper when it is published.

We had hoped to have the final mollusk volume of the Santa Maria Basin Taxonomic Atlas series available prior to the meeting, so the comments of the authors on aplacophores, scaphopods, cephalopods, chitons, and bivalves could be incorporated. We had also hoped that the Coan, Scott & Bernard monograph on California bivalves would make it out in time for inclusion of their synonymies in the Ed. 3 list. Alas, this is not to be the case. Final publication dates for these volumes are still looming, but not at a date certain. Ron Velarde had also found a mention of a new phylogeny of the gastropods by Haszprunar & Lindberg which unites the recent work on the phylogeny of various gastropod groups into a cohesive reexamination of the entire class. This was, however, not available in time for the meeting.

Three chiton species will be added to the list, all from sampling by CSDMWWD off Pt. Loma; *Lepidozona interstincta*, *Lepidozona scabricostata*, and *Callistochiton decoratus*. There may be additional species. Dr. Stebbins will be examining material from CSDLAC and CLAEMD which may yield species not yet reported.

In the gastropods several other newly taken species will be added. Both CLAEMD and CSDMWWD have taken specimens of the scissurellid *Anatoma crispata*, and the fissurellid *Puncturella cooperi* and the trochid *Solariella nuda* have been taken by CSDMWWD. The cerithid *Lirobittium fetellum* was taken by CLAEMD in Santa Monica Bay, as were specimens of *Scabrotrophon maltzani* and *Amphissa reticulata*; all to be added to the list. New records of the triviid *Trivia ritteri*, the muricid *Scabrotrophon grovesi*, and the turrid (now conid!) *Crockerella eriphyle* were reported off Pt. Loma.

Several opisthobranch species were also newly taken by CSDMWWD off Pt. Loma including *Acanthodoris lutea* and *Melibe leonina*. Only four newly taken species of bivalves were reported, all from off Pt. Loma - the glycymerid *Glycymeris septentrionalis*, the carditid *Cyclocardia crassidens*, the tellinid *Tellina meropsis*, and the matrid *Mactromeris hemphilli*.

For the most part these additions are of species of rare occurrence in traditionally sampled areas. Off Pt. Loma, however, additional areas have been added to the monitoring undertaken by CSDMWWD in recent years, and a number of new taxa have been encountered as a result.

No additional scaphopods, aplacophores, or cephalopods were reportedly taken in the period since Ed. 2. Although there were some questions concerning dates of publication and/or authorship citation, there was little change suggested to the synonymies of the mollusks. For the most part necessary changes to nomenclature arising from the already released volume of the Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin were already included in the draft list prior to this review. Similarly, changes to bivalve nomenclature indicated in Coan and Scott (1997) were included in the draft.

#### MINUTES OF JANUARY 26 MEETING

This meeting was a continuation of the December meeting. Those few members present managed to review the second half of the polychaete list for edition 3 of the SCAMIT Taxa list, which is nearing completion. Most of the time spent on the list has been for the additions of the synonymies, which will, hopefully, be very useful to members and others using the list. A great deal of effort has been put into deciding on the particular format for the authorities of these synonymies. We not only want to make sure they are accurate, but also convey the most information. Several new species names have been added to the list mostly by San Diego biologists due to the shallow environment they encounter in their monitoring efforts for the International Treatment Plant. These include:

#### Phyllodocidae

*Lugia uschakovi* Blake 1992  
*Protomystides* sp.

#### Aphroditidae

*Aphrodita negligens* Moore 1905

#### Syllidae

*Syllis (Syllis) spongiphila* Verrill 1885

#### Nereididae

*Neanthes acuminata* Ehlers 1868

#### Nephtyidae

*Nephtys simoni* Perkins 1980

#### Eunicidae

*Eunice multicylindri* Shisko 1981  
*Eunice multipectinata* Moore 1911

We will also be adding Pettibone's (1993) *Malmgreniella* species, *M. liei*, *M. bansei*, *M. maccinitiei*, *M. nigralba*, and *M. sanpedroensis*, even though many SCAMIT members still have taxonomic problems with this group. SCAMIT will try to schedule a future meeting on this topic where members may compare their own specimens with each others and try to fit them more closely with Pettibone's descriptions.

#### CORRECTIONS

Two changes need to be made to the minutes of the December 8th meeting that appeared in the last newsletter. After more thought by some of the members at the meeting it was decided that SCAMIT would accept Maciolek's (1985) synonymy of *Prionospio lobulata* with *Prionospio ehlersi* and not alter the list. Although the holotype of Fauchald's *P. lobulata* has been examined by SCAMIT members and found to be in poor condition, to *not* agree with the published synonymy would require examination of paratype material. Until that is done SCAMIT will accept the synonymy and leave *P. ehlersi* on the list.

Another change to the polychaete portion of the list that was reported in the December newsletter has also been found to be incorrect. It regards the maldanid, *Petaloclymene pacifica* Green (1997). In the last issue we reported that the local animal referred to as *Euclymene grossa newporti* was actually Karen Green's new species. This turns out not to be true. The report last month was based only on staining patterns, which are similar for the two animals. However, upon comparing the illustrations and descriptions for the pygidiums of these two species they are clearly different. *E. grossa newporti* Berkeley & Berkeley 1941 has a pygidium encircled by 20 lobes as illustrated by Hartman in her Atlas (1969), while Green's *P. pacifica* only has crenellations. It is easy to understand how this mistake was made since often these maldanids are found in samples without their posterior ends. However, this is a good example of how taxonomic identifications based solely on staining patterns can lead one astray. In Edition 3 *E. grossa newporti* will be left on the list, and not included as a synonym for *Petaloclymene pacifica*.

## MY LIFE AS A BIOLOGIST

By Donald J. Reish

### Chapter 4: High School and New Environments

I entered Corvallis High School in my sophomore year. The two subjects I remember the most were accounting and biology. I've commented on my initial interest in accounting, but after I took the course, I knew it wasn't for me as a profession. I remember a great deal about my high school biology class from Miss Patton. She was a very dynamic teacher, excellent in leading and redirecting discussions, and strong on class discipline. Both direction and discipline (learned from her example) were important tools when I taught high school biology. I ran into Miss Patton when I was working on my masters. She remembered me, but she no longer taught biology; she had transferred to teaching math. I thought it was a shame at the time. Her class was a traditional biology class with many drawings required. I never managed an A...it was

always B+. I continued to deliver papers through the year. Bob and I became close friends.

We lived in a duplex, and the man who lived in the other side taught me how to play chess and cribbage. I then taught Miles, John and Bob chess and we had a chess conference. I don't recall who won, but it probably wasn't me. They didn't care for cribbage. We started our football games in the ninth grade. John and I always stood Bob and Miles, and always used the pass-run option play. I do not recall who won these games. Our last game was after WWII when Bob and I were working on a masters and the other two were undergrads (they had been in the Navy; Bob and I were 4F). A couple of years before John died, he wrote me that his wife threw out the old football.

The summer after my sophomore year my mother wanted to take additional music training in Portland. She taught piano lessons both in public school and privately at home. (Neither my brother nor I can play the piano; we heard too much of it at home to want to learn.) My brother was working at the cannery at the time, and my father was in Bend selling Fuller Brushes. My mother rented our place for the summer and went to Portland for lessons. I went to Bend for the summer to live with my Dad.

The bus trip to Bend passed through extensive lava beds as it crossed the Cascade Mountains. The bus driver stopped at the peak and gave us a lecture on the lava formations, etc. This odd geology fascinated me. My Dad lived in a men's boarding house, a common practice all over the United States in those days. You can see the remains of such large buildings in any industrial city. It was my first experience of seeing drunken men and "morning after" effects. I sold some Fuller Brushes during the summer, but I didn't really care for it. I made about a dollar per hour for it, which was good money in those days (Cokes were only a nickel; movies \$0.50). The best part of my summer in Bend was field trips with a church youth group. The minister liked geology, and we visited lava caves, lava cast forests, and obsidian fields.

The country surrounding Bend was dominated by Ponderosa pine and junipers. What a contrast to the Douglas fir forests of western Oregon! The pine forest had much less underbrush, and more open space than the dense fir forest. I used to spend time watching the red ants work these open spaces.

Spending summer in a very different environment served to open my eyes to my surroundings. Over the years, I made many trips between Corvallis and Bend, and never got tired of looking at the change from one type of forest to the other.

I returned to Corvallis to enter my junior year in high school. The two subjects I remember most were typing and journalism. I think everyone should acquire typing skill, especially today with computers. I wasn't fast at typing but I was quite

accurate (not needing the current blessings of the computer backspace key). I liked working on the paper. I was being groomed to be the sports editor the next year. I helped write headlines and proof copy. It was an exciting time.

An event occurred a week before Christmas vacation which affected my life. Corvallis experienced a bad flu epidemic, and the high school was closed. At the same time my mother was considering having the daughter of a deceased friend live with us since she and her stepmother didn't get along. She was my age and not very attractive. I decided to go visit my Dad until school started in January. I visited Bend High School and decided to attend the second half of my junior year there. I would still go back to Corvallis High to be sports editor.

[Next time: Bend High School and the beginning of WWII]

## BIBLIOGRAPHY

- BERGE, J., and Wim Vader. 1997a. Atlantic and Mediterranean species of the genus Andaniexis Stebbing (Amphipoda: Stegocephalidae). *Journal of Natural History* 31(9):1429-1455.
- . 1997b. North Atlantic and Mediterranean species of the genus Phippsiella Schellenberg (Amphipoda: Stegocephalidae). *Journal of Natural History* 31(10):1501-1532.
- CLARK, RACHEL ANN. 1997. Dimorphic males display alternative reproductive strategies in the marine amphipod Jassa marmorata Holmes (Corophioidea: Ischyroceridae). *Ethology* 103(7):531-553.
- COAN, EUGENE V., and Paul H. Scott. 1997. Checklist of the marine bivalves of the northeastern Pacific Ocean. *Santa Barbara Museum of Natural History Contributions in Science* 1: 1-28.
- CRABTREE, CHRIS. 1997. Strong El Niños & their effect on Santa Barbara County. *Alolkoy* 10(4):3-4.
- DeLONG, ROBERT, and Sharon R. Melin. 1997. El Niño impacts on Channel Islands pinnipeds. *Alolkoy* 10(4):5.
- DIENER, DOUGLAS R., Cynthia F. Collins, and Brian D. Riley. 1997. A comparative study of two infaunal sampling devices: a modified Van Veen grab and a clamshell box corer. *Bulletin of the Southern California Academy of Sciences* 96(3):122-129.
- ENGLE, JACK. 1997. Nearshore El Niño effects: disturbance and renewal. *Alolkoy* 10(4):6.
- GAINES, STEVE. 1997. Biogeographic boundaries and species distribution. *Alolkoy* 10(4):10.
- GREEN, KAREN. 1997. Petaloclymene pacifica, a new genus and species of Maldanidae (Annelida: Polychaeta). *Bulletin of Marine Science* 60(2):235-239.
- HARTMAN, OLGA. 1969. Atlas of the sedentary polychaetous annelids from California. Allan Hancock Foundation, University of Southern California, Los Angeles, 812pp.
- HENDRICKX, MICHEL E. 1997. Los Cangrejos Braquiuros (Crustacea: Brachyura: Dromiidae, hasta Leucosiidae) del Pacific Mexicano. CONABIO/UNAM (eds.), 178pp.

- MACIOLEK, NANCY. 1985. A revision of the genus Prionospio Malmgren, with special emphasis on species from the Atlantic Ocean, and new records of species belonging to the genera Apoprionospio Foster and Paraprionospio Caullery (Polychaeta, Annelida, Spionidae). *Zoological Journal of the Linnaean Society* 84:325-383.
- MARTIN, JOEL W., and Ronald G. Velarde. 1997. First record of the crab Pilumnoides rotundus Garth (Crustacea, Decapoda, Brachyura, Xanthidae sensu lato) from off southern California. *Bulletin of the Southern California Academy of Sciences* 96(3):105-111.
- MEARNS, ALAN J., and Marjorie J. Sherwood. 1977. Distribution of neoplasms and other diseases in marine fishes relative to the discharge of waste water. *Annals of the New York Academy of Sciences* 298:210-224.
- PERKINS, PENNY SUE, and Robin Gartman. 1997. Host-parasite relationship of the copepod eye parasite, Phrioxcephalus cincinnatus, and Pacific Sanddab (Citharichthys sordidus) collected from wastewater outfall areas. *Bulletin of the Southern California Academy of Sciences* 96(3):87-104.
- PETTIBONE, MARIAN H. 1993. Scaled polychaetes (Polynoidae) associated with ophiuroids and other invertebrates and reviews of species referred to Malmgrenia McIntosh and replaced by Malmgreniella Hartman, with descriptions of new taxa. *Smithsonian Contributions to Zoology* 538:1-92.
- SALAS, CARMEN, and Serge Gofas. 1997. Brooding and non-brooding Dacrydium (Bivalvia: Mytilidae): A review of the Atlantic species. *Journal of Molluscan Studies* 63(Part 2):261-283.
- TOMASCHKO, KARL-HEINZ. 1994. Ecdysteroids from Pycnogonum litorale (Arthropoda, Pantopoda) act as chemical defense against Carcinas maenas (Crustacea, Decapoda). *Journal of Chemical Ecology* 20(7):1445-1455.
- 1997. Ecdysteroids in pycnogonids: Hormones and interspecific allelochemicals. Pp.171-188. *IN: Dettner, K., G. Bauer, and W. Volkl (eds.), Vertical Food Web Interactions. Springer-Verlag: Berlin, Germany.*
- VERNET, GUY. 1997. Myoisophagos bicolor, sp. nov., a new anoplan nemertean (Lineidae) of the English Channel (Gatteville, France). *Bulletin de La Societe Zoologique de France - Evolution et Zoologie* 122(2):149-154.
- WASSON, KERSTIN. 1997. Systematic revision of colonial kamptozoans (entoprocts) of the Pacific coast of North America. *Zoological Journal of the Linnaean Society* 121(1):1-63.

**Please visit the SCAMIT Website at:** <http://www.sccwrp.org/scamit/>

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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.

## **NMNH Department of Invertebrate Zoology Request For Proposals for Research Based on Collections of Polar Marine Invertebrates**

November 1, 1997

The Office of Polar Programs at the National Science Foundation (NSF) has identified the National Museum of Natural History (NMNH) as a Center for Excellence for Polar Research. NSF has entered into a cooperative agreement with the Department of Invertebrate Zoology at NMNH to provide funding to support the archiving and management of the extensive collections of marine invertebrates collected during Antarctic research expeditions funded by NSF. The collections include preserved representatives of most major invertebrate groups. Virtually all of the material was initially fixed in formalin and is now stored, with the exception of the unsorted plankton and certain gelatinous taxa, in either ethanol or isopropanol. At present, we have no archived collections of frozen tissue or DNA extracts from polar organisms. Specific information about the processing status of our polar collections, and the availability of specific taxa is currently available on request from the Collections Manager, Department of Invertebrate Zoology, MRC-163, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560. Collection information will also be accessible on the WWW after February 1, 1998.

Proposals are invited from scientists interested in working on USAP collections. Limited support, through three categories of awards, is available through a competitive Research Awards Program. Total funding for this program is \$30,000 for 1998. We expect to fund at least 3 and no more than 5 proposals this funding cycle. The actual numbers of awards made will depend on the funding request in the award recipients proposals. The three proposal categories are described below.

**Collections-Based Research Awards** are intended to fund original basic research into the systematics, evolution, and biogeography of polar organisms. Priority will be given to research projects that draw heavily on NMNH polar collections. Applicability of the proposed project to our understanding of the systematics of the invertebrate fauna collected in the current Palmer Long Term Environmental Research (LTER) studies may be a selective factor. Awards will be in amounts not to exceed \$10,000. Supported projects should be completed in 12-24 months, with stipends disbursed in four equal payments, each tied to the completion of specific milestones documented in progress reports. Publication of results in a peer-reviewed scientific journal should be the final product. The publication of species descriptions and taxonomic keys or other identification tools is encouraged.

**Collection Improvement Awards** are intended to fund projects that improve the curation level of the polar collections, and thus the accessibility of the specimens and/or specimen data. Such awards may be made for technical/specialized sorting and identification, taxonomic standardization, data enhancement, collection culling, etc. Expected results would be a fully identified and curated collection, or a completed data enhancement project. Proposals involving a site visit to NMNH to offer advice on the USAP plankton collection holdings appropriate for culling and disposal are encouraged. Awards will be in amounts not to exceed \$5,000, with an expectation that supported projects be completed within a period of 6-12 months. Stipends will be paid in three equal payments, each tied to the completion of specific milestones.

**Incidental Awards** will consist of smaller sums (maximum of \$500) intended to defray costs associated with the publication of collections-based Antarctic research (i.e., page charges, illustration expenses, typing expenses).

Depending on the taxonomic group under investigation, scientists may be expected to spend at least a portion of their research time at the Smithsonian Institution in order to glean the taxa they are working on from the collections. Researchers interested in using these collections, with or without financial support are requested to submit succinct proposals following the guidelines listed below:

1. Provide the name, title, organization, e-mail address, and curriculum vitae of the principal investigator
2. Provide the names, titles, and organizations of all individuals collaborating on the proposed research
3. Prepare a rigorous but brief (one- to two-page) proposal stating

- a. The proposal category (Collection Improvement, Collections-Based Research, or Incidental Award)
- b. A description of the research (if appropriate, its applicability to current Antarctic research activities)
- c. A list of the taxa of interest
- d. The expected results (e.g., monograph, revision, species description, taxonomic key)
- e. A timetable for completion with milestones to be used as basis for disbursements.  
Also include the dates when research is to be conducted at NMNH. Prior arrangements must be made if research space is needed in the Department of Invertebrate Zoology
- f. A detailed budget including:
  - Travel costs to and from NMNH, Washington, DC
  - A modest stipend at a rate equivalent to a Smithsonian Post-Doctoral Fellowship (\$2,000 per month for the time spent at NMNH). This is included in the award
  - Research and expendable supplies, including supplies used in conjunction with histology, photography, etc. Curatorial supplies needed to prepare the material for cataloging will be provided and need not be budgeted. Newly identified material will be catalogued by NMNH staff at the completion of the research project.
  - Estimated publication costs, including page charges, illustration expenses, typing expenses, etc.

Submit 8 copies of the proposal to:  
USAP Program Manager  
Department of Invertebrate Zoology, MRC-163  
National Museum of Natural History  
Washington, DC 20560, USA

The deadline for receipt of proposals is March 15, 1998. An External Advisory Committee will review the proposals on the basis of merit and current Antarctic research needs. Successful applicants will be notified by July 15, 1998. Additional information may be obtained through the USAP Program Manager ([gray.natasha@nmnh.si.edu](mailto:gray.natasha@nmnh.si.edu)) or the Collections Manager ([bright.cheryl@nmnh.si.edu](mailto:bright.cheryl@nmnh.si.edu)).



**Southern California Association of  
Marine Invertebrate Taxonomists**

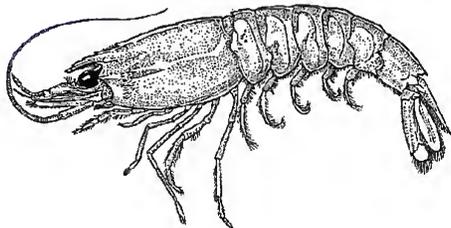
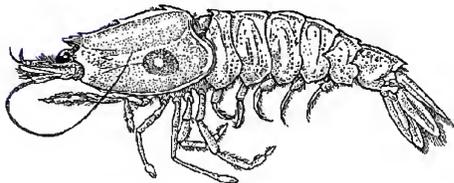
3720 Stephen White Drive  
San Pedro, California 90731

February, 1998

**SCAMIT Newsletter**

Vol. 16, No.10

<b>NEXT MEETING:</b>	Trawl Invert ID Resource Inventory/ Trawl Shrimp
<b>GUEST SPEAKER:</b>	None/ Don Cadien - CSDLAC discussion leader
<b>DATE:</b>	9 March 1998
<b>TIME:</b>	9:30 am - 3:30 pm
<b>LOCATION:</b>	CSDLAC - JWPCP 24501 S. Figueroa St., Carson, CA



*Sicyonia penicillata* (top) and *S. ingentis*  
(from Hendrickx 1995)

**MARCH 9 MEETING**

Our March meeting will continue consideration of field indentifications of trawl invertebrates. Please come to the meeting with the materials you take into the field for identifying invertebrates. We will compile a list of resources based on what we find in use, and attempt to standardize a set of the best resources available for use in the Bight '98 trawls this summer.

In response to El Niño Don Cadien will introduce some augmented field shrimp ID keys, including southern species which have been found to (or may easily) range into our sampling area. We will also discuss what groups should always be returned to the lab for ID or to verify field ID.

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*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

### SOUTHERN CALIFORNIA BIGHT PILOT PROJECT REPORTS

The reports of the 1994 regional monitoring, the Southern California Bight Pilot Project, are now available. There are six volumes in the series of reports, the first of which is an Executive Summary distributed free by SCCWRP. Other volumes are \$25 each, or \$100 for the complete set of six volumes. An order blank is attached.

The successor to the 1994 effort, currently being referred to unofficially as "Bight '98" will take place this summer. The index period during which all sampling is scheduled to take place is a seven week period beginning in mid-July. We are already planning for SCAMIT's involvement in this regional effort to be similar to that in the last. We have a role to play in quality assurance and/or quality control of taxonomy in both the benthic and trawl portions of the monitoring.

We have already begun our trawl standardization effort in the February meeting, and it will continue next month. Subsequent meetings will probably be devoted to prestandardization of taxonomic tools and approaches as were those leading up to the summer 1994 SCBPP sampling.

### NEW LITERATURE

Several new ostracod species are erected by Kornicker & Nelson 1997 based on samples from Pillar Point Harbor in northern California. It is not clear if these species are known to range into more southern areas, but both are very close to species which we report from southern California. The myodocopids *Euphilomedes morini* and *Rutiderma apex* are described as new. The former is very like *E. longiseta* in shape and furcal structure, so if it does occur here we are in trouble. *Rutiderma apex* is very like *R. judayi* and *R. lomae*, but can be distinguished (although not easily) based on the details of carapace ornamentation. Both new species are described in great detail, and a lengthy redescription of *E. carcharodonta* is also given.

One additional change is introduced (not a new one I might add). *Parasterope barnesi* one of two species in the genus described by Baker (1978) is discussed as *Postasterope barnesi* (in which genus it was placed by Kornicker 1986). We must belatedly adopt this change. Baker's second species, *P. hulingsi*, remains a *Parasterope*.

Drs. Kristian Fauchald and Greg Rouse are now distributing the long awaited reprints of their two new papers on polychaete systematics and cladistics (Fauchald & Rouse 1997 and Rouse & Fauchald 1997). These are both major papers, the former reprising the history of systematic treatment of the group, and reviewing the morphology which provides the basis for the character states used in the later cladistic analysis. It also discusses each of the polychaete families, collating and summarizing information available on each.

The second paper attempts to reevaluate the entire annelid spectrum using cladistic methodology to rationalize higher level organization within the group and to identify unifying synapomorphies for its various component clades. There is far too much in this paper for me to digest and pass on here; I urge you instead to watch for the inevitable discussions on Annelida which will be contributed by readers more qualified than your editor to evaluate and discuss this first stab at a phylum wide cladistic analysis. It can at least be pointed out that the authors found a few things strongly supported within their analysis, while many others were only weakly supported. This points to some deficiencies in the character set on which the analysis is based. Such defects must be expected, and the authors have made strenuous attempts to find their way through the thicket of information from which the characters were assembled. An evaluation of how well they succeeded must await more thorough readings by more knowledgeable polychaete folk.

A cladistic analysis of the octopods has been presented by Voight (1997). She used a suite of morphological characters derived from the reproductive, digestive, circulatory, respiratory, and nervous systems. A few characters of the

musculature and a series of general characters were also included. Relationships of most families were resolved satisfactorily, but the Octopodidae formed a large unresolved group. The analysis supports monophyly of both the finned and finless octopods. *Vampyroteuthis infernalis* was used as a sister taxon to root the trees. Despite success with most groups, the intransigence of the Octopodidae, and only moderate consistency indices, suggest that other characters might clarify or modify the results. Other efforts at cladistic analysis of cephalopods are underway which will include molecular as well as morphological evidence. Preliminary indications are that Voight's results are at odds with some of this as yet unpublished analysis.

Another approach to molecular systematics was reported by Suchanek et al (1997). They used a fragment of a gene for byssal adhesive protein, amplified by PCR, to distinguish between the sibling mussel species *Mytilus galloprovincialis* and *M. trossulus* and their hybrids. Contrary to previous indications that *M. trossulus* did not occur south of Central California, the present authors found *M. trossulus*, *M. galloprovincialis*, and their hybrids and back-crosses to be present in San Diego Bay. They suggest that this *M. trossulus* population is maintained by constant reintroduction of the species with coastal shipping, as the temperature regime in San Diego Bay is generally too warm for it.

The current samples (taken from 29 sites along the west and east margins of the North Pacific) contained no specimens which proved to belong to *M. edulis*. This species has been reliably reported from bay and estuarine habitats along the northeast Pacific coastline in the past, and is almost certainly frequently reintroduced with shipping. Its absence in the present study was not anticipated, and was assumed temporary.

The success (or failure) of recruitments of juveniles to benthic invertebrate populations hinges on a number of factors including early post-settlement mortality. Hunt and Scheibling (1997) review the role of this factor in determining recruitment rate. They conclude that, at present, the rate of early-post

settlement mortality is not predictive of the rate of recruitment. Too many variables remain unaccounted for, and the data base is too heavily dependant on studies of barnacles and tunicates for general patterns to be clear and demonstrable.

Cunha et al (1997) examined the structure of suprabenthic communities on a transect across the Portuguese continental margin from 21 to 299m. Although we do not directly sample this community (which consists primarily of crustaceans), it is closely associated with nearby benthic communities. Many of the members of the suprabenthic community are but temporary migrants from the underlying benthos. Studies of this community at various sites on the European continental margin have been performed for years. These prior studies are used for comparison of the results of the present one, and all can be used as an indication of the type and structure of the community we would find locally should we look.

Eastern Pacific shrimp, including those species which only range into our local waters during strong ENSO events such as the present one, are thoroughly treated by Hendrickx (1995). Although not dealing with the smaller non-commercial shrimps (e.g. hippolytids and alpheidids), this treatment covers virtually all species taken by trawling in California waters.

Keys to families, genera, and species are provided for all treated groups. The illustrations are numerous and informative, with whole body lateral views of nearly all species (see first page of this newsletter for examples). The text and keys are in Spanish, but with the abundance of well annotated figures, and a little practice, this should not prove to be a major impediment even to non-Spanish speakers.

## 19 FEBRUARY MEETING MINUTES

Dr. Jim Allen of SCCWRP presented to us his thoughts on standardizing trawl identifications. He made the point, as others have before, that trawl

identifications are particularly critical since the materials are usually not retained, and are thus unavailable for later examination. Jim is, of course, approaching the subject from a fish perspective, but fish and invertebrate field identification problems have much in common. He used a draft Field Guide to Trawl-Caught Fishes of Southern California as an example of his suggested organizational structure. It contained samples of various tabular, pictorial, and textual aids to field identification.

Major emphasis was placed on pictorial aids, as they compress a great deal of information into a small space. The arrangement of the information is quite important, with conciseness mandatory. As pointed out by Megan Lilly (CSDMWWD), aids should be kept to a single page whenever possible. Dealing with multiple pages in the cramped confines of a sampling vessel (especially one subjected to rough seas) should be avoided.

Jim emphasized that, since the keys may be used by relatively inexperienced personnel, they must contain at least a minimum of general information. He suggested that each field identification tool provide a whole body illustration of a typical group representative, with all relevant features labeled. An inexperienced user will then be able to properly orient him/herself to the more specific information provided in written, tabular, or pictorial keys. In cases where there is sexual dimorphism which can affect identification, methods of discriminating sex should be discussed and/or illustrated.

As a starting point Jim suggested that a list of the species which might be encountered (based on previous records) should be prepared. Jim distributed a list of invertebrates encountered in the 1994 SCBPP as a draft encountered species list. Don Cadien pointed out that, given the strength and duration of the present ENSO event, it would be advantageous to include species which have not been previously seen in the sampling area, but which are known from adjacent areas to the south. Jim agreed, but felt that such a broader effort merited a lower priority than providing tools for field differentiation of species known to occur in the sampling area.

He offered us a prioritization list to focus preparation efforts in the areas of greatest need and/or greatest probability of completion. First priority was accorded species on the list of taxa previously encountered. Of second priority were species not on the list, but from families known to occur in the area. Species normally taken to the north or south of the Southern California Bight were deemed third priority. All of these species should be from families which have members that are commonly or abundantly represented in trawl surveys. Jim distributed a list of the most abundantly taken species based on 1994 SCBPP data.

Priority should be given to groups where current information is deficient. Families with difficult to identify species (or juveniles) based on results of the 1994 Trawl QA effort should also receive priority treatment. Jim distributed a list of taxa which had presented ID problems in the 1994 SCBPP field effort. Lowest priority was given to groups which did not fit into one of the above categories.

With these stated priorities in mind an ordered list of taxa should be constructed, with highest priority species at it's head.

For each taxon on the list Jim recommended construction of a set of identification aids consisting of :

1. A field (picture) key
2. A lab (text) key (optional)
3. Table of geographic range, depth range, habitat and maximum size
4. Table of taxonomically important characters
5. Similar species (text) and how they can be differentiated from the present one.

He envisions that preparation of these aids will entail 1.) Acquisition and compilation of figures (either drawings or photos); 2.) Acquisition of other supporting information on ranges, sizes, and useful taxonomic characters; and 3.) Construction of field and laboratory keys.

While it was agreed that this was an ordered and

rational approach which would bear fruit in the long run, it was generally thought that the time line for such a complete treatment was much too long to be of use to us this July.

Several participants expressed the belief that much of the needed information was already available, needing only to be marshaled and distributed to Bight '98 participants. With this in mind we scheduled the following (March) meeting to bring together these materials and determine just how much already is done. Without such an assessment our limited time and resources might be devoted to generating redundant tools. We adjourned the morning session on that note.

In the afternoon the group met with Dr. Mary Bergen (SCCWRP) to discuss issues affecting processing of benthic samples in Bight '98. These include 1.) the incorporation of new taxonomists and groups into sample processing, and 2.) the application of lessons learned during the processing of the SCBPP samples and the QC effort associated with it.

In Bight '98 it is likely that there will be additional participants of unknown proficiencies who must be integrated into our regional taxonomic effort. Methods must be devised to allow prequalification of the taxonomists involved. They will be required to meet the same MOQs which were met by participants in the SCBPP. This will be accomplished with test samples, which the new participants will be required to identify. If they prove able to contribute compatible identifications with sufficient accuracy, they are free to participate on an equal footing with the SCBPP tested groups. If systematic errors are detected which bring performance below required levels, efforts at intercalibration and training can be undertaken prior to retesting. If these prove unavailing, the group must be barred from participation in identifications, making their contributions in other areas instead.

Application of these prequalification tests, and acceptance/rejection of participation is in the purview of the Steering Committee, and not of SCAMIT. We may be asked to participate in some

fashion, but we will not be in a lead role.

Since the composition of the new participants is still up in the air (including contractor selection by the County Sanitation Districts of Orange County) Mary will push to get things finalized as soon as possible. Once the list of participants is complete, prequalification can begin. A preliminary time line puts identification of participants at 15 March, a meeting with new participants to distribute standards for pre-qualification and test samples at 1 April. Results of these tests would be due in about 2 weeks (by mid-April). Intercalibration to remove systematic error or retesting should then be completed by 1 May. While this is a short and tight time-line, we must have all participant groups identified and ready to go by the start of the index period. The above schedule would allow several months for additional intercalibration, or prestandardization of participants' taxonomic practice prior to mid-July. Since it would inevitably conflict with some or all participants index period activities, no August SCAMIT meeting will be scheduled.

One of the outcomes of the 1994 QC effort was an appreciation of the time required to apply the protocols adopted as part of the Quality Assurance Plan. The concept of specialization offers the possibility of avoiding much of the QC effort directed to assuring compatibility of identifications provided by different taxonomists. Specialization in all identifications, however, offers virtually fatal logistical problems. Not the least of these is the necessity of guaranteeing revenue neutrality to the major participants when the level of effort in any given taxon cannot be predicted beforehand.

Partial specialization was deemed a more workable and desirable option. If implemented, it will be restricted to those areas which were identified as problems in the 1994 SCBPP project (see Montagne & Bergen 1997). Most of the identified areas involved only a few species, none of them of numerical importance in the community. In several cases, however, problem groups had numerous species of considerable community importance. Prioritizing these for specialist treatment would be

more feasible from a logistic standpoint, and would be a good effort allocation strategy: that is we would get a much larger "bang for the buck". Most of these high priority groups are polychaetes.

Because of the potential logistics problems the decision to implement limited specialization is likely to reside with the Steering Committee, and not in the hands of taxonomists. We will recommend, through Mary Bergen, that such a partial specialization be attempted during Bight '98. Whether or not that recommendation is adopted remains to be seen.

In a positive aside, it was stated that the recommendation of the benthic analysis group, based on the 1994 SCBPP experience, that biomass information not be gathered from Bight '98 samples will be adopted. This will simplify the sample handling, reduce the QC load, and shorten the analysis time for each sample. The effort previously devoted to biomass could reasonably provide time for partial specialization.

We must await further developments with regard to identification and certification of participants, and finalization of the study plan by the Steering Committee.

### UPCOMING MEETINGS

Our sister organization, NAMIT, has scheduled a meeting and workshop on Friday and Saturday 3 and 4 April. While the meeting topic has been established as "The Internet for Taxonomists" the topic groups for the workshop have not yet been finalized (ascidians and ostracods were suggested as possibilities). Contact Secretary Rob Gilmour for information at either [rob@pentec.wa.com](mailto:rob@pentec.wa.com) or (360)372-8704.

The Southern California Academy of Sciences annual meetings will be held at California State Polytechnic University, Pomona on 1-2 May. Scheduled symposia deal with Environmental Toxicology and Chemistry; Mechanisms of Metabolism and Locomotion in Fishes; Remote

Sensing and Ecological Monitoring; Marine Monitoring Approaches and Indicator Development; Science in the Entertainment Media; Wetlands Restoration; Ghost Dancing; Environmental Ethics and California Endangered Species Law at the End of the Twentieth Century; Minority Biomedical Research Support Program; Regenerative Studies: Technology, Education, and the Environment. For information on these symposia and the meetings in general try <http://www.intranet.csupomona.edu/~biology/scas/>, or Academy Vice-President David Huckaby at (562) 985-4869 or [dhuckaby@csulb.edu](mailto:dhuckaby@csulb.edu).

This years joint American Malacological Union and Western Society of Malacologists meeting will be even larger than usual. A third joint session of the *Unitas Malacologica* will be added to form the World Congress of Malacology Meeting. This historic meeting will be held at the Smithsonian Institution 25-30 July 1998.

Three plenary symposia are scheduled: "Refining Molluscan Characters"(contact Tim Collins at [collinst@servms.fiu.edu](mailto:collinst@servms.fiu.edu) for information), "Interactions between Molluscs and Humans" (contact George Davis at [davis@say.acnatsci.org](mailto:davis@say.acnatsci.org) for information), and "Bridging Temporal Scales in Malacology: uniting the living and dead" (contact Douglas Erwin at [erwin.doug@nmnh.si.edu](mailto:erwin.doug@nmnh.si.edu) for information). Deadline for abstract submission for presenters is 1 April. Registration after 1 March will be considered late. For costs, and registration contact Robert Hershler at [hershler.robert@nmnh.si.edu](mailto:hershler.robert@nmnh.si.edu)

First announcement has been received for the Fifth California Islands Symposium to be held at the Santa Barbara Museum of Natural History March 29 to April 1 1999. The meetings will be jointly sponsored by the museum and by the Minerals Management Service. Information on them is available at [www.mms.gov/omm/pacific/public/public.html](http://www.mms.gov/omm/pacific/public/public.html), from [mitchellmbc@worldnet.att.net](mailto:mitchellmbc@worldnet.att.net) or (714)850-4830.

## EL NIÑO NUOVO

Once again the El Niño strikes! This time with more southern shrimp introduced into our sampling area. CSDMWWD personnel are wrestling with a very odd penaeid shrimp, which has yet to be definitively identified, but seems to be a *Metapenaeopsis*; first record of any member of that genus from our waters.

The target shrimp, *Sicyonia penicillata* (see illustration on first page), taken in the Pt. Loma area last year and in the shallower waters of Santa Monica Bay, is now being taken in the Bay again. Hyperion personnel have taken 2 specimens this year at 16m and at 60m depth. Three specimens, including both a mature male and two mature females, were captured in south Santa Monica Bay during February trawling by CSDLAC. These are the first of this species taken in the monitored area in 25 years. Several specimens were taken in the Los Angeles - Long Beach Harbors complex in 1982-83 during an earlier warm-water influx, but none were taken off Palos Verdes or in Santa Monica Bay during that event.

Last year a single specimen of the pandalid shrimp *Plesionika beebei* was taken off Palos Verdes. We thought we had retaken it in February trawls, when a series of over a dozen *Plesionika* specimens were caught. Examination of the specimens in the lab showed them to be a different species, *Plesionika trispinus*. This species has not previously been reported from California waters, although it was included in the key of Wicksten (1978). The previous northern record was that of Hendrickx & Navarrete (1996)

which listed it from 24°25' N. off the Pacific coast of southern Baja California. Specimens of this genus should only be identified to species in the laboratory, where the number of segments in the carpus of the second pereopods can be established.

Nearly half of the *Plesionika* specimens taken carried an epicarid isopod parasite of the family Dajidae. Butler (1980) illustrates the related *Holophryxus alaskensis* in place on the carapace of a hippolytid shrimp. Orientation and appearance of

the parasite on *Plesionika* is much the same as that shown for *Holophryxus*. The present parasite belongs in the genus *Zonophryxus* which, like the host shrimp, was not previously reported from California waters. It is likely that this is *Zonophryxus similis* Richardson 1914, but confirmation of this identification is necessary.

A number of large *Penaeus californiensis* and specimens of the penaeid *Solencera mutator* are being taken in the San Diego area. A small penaeid taken off Palos Verdes, where *S. mutator* has been taken on two previous occasions, has been tentatively identified as *S. florea*. These two species are quite similar and may only be definitely separable when sexually mature. Our small specimen does not yet have sexual characters, but seems in other respects closest to *S. florea*. Enquiries have been made of Dr. Michel Hendrickx, who has seen thousands of these shrimp, as to the viability of non-sexual characters for separation of these two species. If verified, our tentative *S. florea* identification would be the first record of the species from California waters, and further testimony to the strength of the present ENSO event.

- Don Cadien (CSDLAC)

## MODIFICATION OF BYLAWS

At our recent Executive Committee meeting it was suggested that the task of Newsletter Editor be removed from the duties of the Vice-President (as established in Bylaw 2 of the SCAMIT Constitution), and separated as an appointed position. This position (essentially a standing committee with a single member) would be filled by a member appointed by the Committee, and serving at their discretion until his/her removal or resignation.

Under the SCAMIT Constitution such a Bylaw change must be approved by a 2/3 majority of members voting on the issue before it can be incorporated. Members must be given at least 60 days notification of this vote. In consequence you are being provided with a separate ballot on the proposed modification of Bylaw 2 - Duties of

Officers, Section b - Vice-President (due back by 15 May 1998). Votes cast must be by means of paper ballots distributed to the membership. No electronic filing is admissible. If you are a member and did not receive your ballots in early March, please contact the secretary, or vice-president.

March 1998. He will tabulate the votes and report the result via the March Newsletter in early April. The new slate of officers will take office at the end of April. Electronic filing is not an option, so please do not submit votes by E-mail; they will not be accepted.

### ELECTION OF OFFICERS

Nominations of 1998-1999 SCAMIT officers are now closed. Only a single nomination was made for each office (Secretary Cheryl Brantley was also nominated, but declined). Write-in candidates are welcome. After reviewing the attached candidate bios, please express your preference of the attached ballot and return it to the Vice-President by 31

### VOUCHER SHEETS

Voucher sheets for three provisional polychaete species are included with this Newsletter. The animals were all discussed at previous meetings, but the sheets were not previously available. The sheets for the oeononid *Drilonereis* sp A, the flabelligerid *Pherusa cf negligens*, and the terebellid *Spinospaera* sp SD 1 are attached. The first is a SCAMIT designation, the other two are internal CSDMWWD designations.

### BIBLIOGRAPHY

- BUTLER, T. H. 1980. Shrimps of the Pacific coast of Canada. Canadian Bulletin of Fisheries and Aquatic Sciences (202):1-280.
- CUNHA, M. R., J. C. Sorbe, and C. Bernardes. 1997. On the structure of the neritic suprabenthic communities from the Portuguese continental margin. Marine Ecology - Progress Series 157:119-137.
- FAUCHALD, KRISTIAN, and Greg Rouse. 1997. Polychaete systematics: Past and present. Zoologica Scripta 26(2):71-138.
- HENDRICKX, MICHEL E. 1995. Camarones. Pp.417-537. *IN*:: Fischer, W., F. Krupp, W. Schneider, C. Sommer, Carpenter K. E., and V. H. Niem (eds.), Guia FAO para la identificación de especies para los fines de la pesca. Pacífico centro-Oriental. Vol. 1. Plantas e Invertebrados. F.A.O.: Rome, Italy. 646pp.
- HENDRICKX, MICHEL E., Flor D. Estrada-Navarrete. 1996. Los Camarones Pelágicos (Crustacea: Dendrobranchiata y Caridea) del Pacífico Mexicano. 157pp. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad e Instituto de Ciencias del Mar y Limnología, UNAM: Guadalajara, Mexico.
- HUNT, HEATHER L., and Robert E. Scheibling. 1997. Role of early post-settlement mortality in recruitment of benthic marine invertebrates. Marine Ecology - Progress Series 155:269-301.
- KORNICKER, LOUIS S. 1986. Cylirodleberididae of the western North Atlantic and Northern Gulf of Mexico, and zoogeography of the Myodocopina (Ostracoda). Smithsonian Contributions to Zoology (425):1-139.
- KORNICKER, LOUIS S., and Elizabeth Harrison-Nelson. 1997. Myodocopid Ostracoda of Pillar Point Harbor, half Moon Bay, California. Smithsonian Contributions to Zoology (593):1-53.
- MONTAGNE, DAVID E., and Mary Bergen. 1997. Quality control and assessment of infaunal identification and enumeration: the SCBPP experience. Southern California Coastal Water Research Project Annual Report 1996:147-154.

- ROUSE, GREG W., and Kristian Fauchald. 1997. Cladistics and polychaetes. *Zoologica Scripta* 26(2):139-204.
- SUCHANEK, THOMAS H., J. B. Geller, B. R. Kreiser, and J. B. Mitton. 1997. Zoogeographic distributions of the sibling species Mytilus galloprovincialis and M. trossulus (Bivalvia: Mytilidae) and their hybrids in the north Pacific. *Biological Bulletin* 193(2):187-194.
- VOIGHT, JANET R. 1997. Cladistic analysis of the octopods based on anatomical characters. *Journal of Molluscan Studies* 63(3):311- 325.
- WICKSTEN, MARY K. 1978. The species of Plesionika from California and Western Mexico (Natantia: Pandalidae). *Bulletin of the Southern California Academy of Sciences* 77(2):84-87.

**Please visit the SCAMIT Website at:** <http://www.sccwrp.org/scamit/>

**SCAMIT OFFICERS:**

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

			e-mail address
President	Ron Velarde	(619)692-4903	rgv@sddpc.sannet.gov
Vice-President	Don Cadien	(310)830-2400 ext. 403	cbrantley@lacs.org
Secretary	Cheryl Brantley	(310)830-2400 ext. 403	cbrantley@lacs.org
Treasurer	Ann Dalkey	(310)648-5544	cam@san.ci.la.ca.us

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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.

## CANDIDATE BIOGRAPHIES

### PRESIDENT

#### **Ron Velarde**

Ron is the current President of SCAMIT and a past Vice-President; he has been a Marine Biologist with the City of San Diego since 1983 and currently is the supervisor of Benthic Taxonomy for the Ocean Monitoring Program. His taxonomic interests include most groups, especially polychaetes and nudibranch mollusks. He earned his B.S. degree in Marine Biology from California State University, Long Beach, in 1976, and did post-graduate research on the systematics and ecology of autolytid polychaetes.

### VICE-PRESIDENT

#### **Don Cadien**

Charter member of SCAMIT. Studied invertebrate taxonomy and biology at California State University, Long Beach, under Dr. D. J. Reish. Worked at Cabrillo Marine Museum, then at the L.A. County Museum of Natural History under Dr. J. H. McLean in Malacology. Spent 15 years at M.B.C. Applied Environmental Sciences as a taxonomist and later also Project Manager, leaving in 1989 as a Senior Marine Biologist to join the L.A. County Sanitation Districts' Marine Biology Lab. Specialties in taxonomy and biology of mollusks (particularly nudibranchs) and peracarid crustaceans. Currently a Research Associate in the Crustacea Section of the L.A. County Museum of Natural History.

### SECRETARY

#### **Megan Lilly**

Graduated from Humboldt State University in 1991 with a B.S. in Marine Biology. From 1991 to 1993, worked at the Santa Barbara Museum of Natural History where I studied the taxonomy of marine mollusks under Dr. Eric Hochberg, Paul Scott, and Hank Chaney. Currently working as a marine biologist for the City of San Diego's Ocean Monitoring Program. Specialities include mollusks, with an emphasis on cephalopods, and echinoderms.

### TREASURER

#### **Ann Dalkey**

Ann is presently the Treasurer for SCAMIT and has held this position since SCAMIT was founded. Ann is a member of the water biology staff at the Hyperion Treatment Plant where she specializes in the identification of polychaetes and amphipod crustaceans. Prior to working at Hyperion, Ann was a member of the laboratory staff at the County Sanitation Districts of Orange County. She worked there for nearly 10 years, reaching a position of senior laboratory and research analyst. She received her B.S. from California State University Long Beach in Marine Biology in 1974 and her M.S. from the same university in 1982. Her thesis research pertained to polychaete bioassay.

BALLOT FOR SCAMIT OFFICERS 1998-99

Vote for one (1) nominee for each office. Please mail or return completed ballot to Don Cadien by March 31, 1998. You may return it to the Secretary or other attending officer at the March meeting. The address to mail it to is:

Don Cadien  
Marine Biology Laboratory  
County Sanitation Districts  
of Los Angeles County  
24501 S. Figueroa Street  
Carson, CA 90745

**President** - The president presides at all meetings and represents SCAMIT in external business affairs.

\_\_\_\_\_ Ron Velarde

\_\_\_\_\_ Write-in: \_\_\_\_\_

**Vice-President** - The Vice-President chairs ad hoc committees, supervises the specimen exchange, tabulates election ballots, edits the newsletter, and fills in for the President as necessary.

\_\_\_\_\_ Don Cadien

\_\_\_\_\_ Write-in: \_\_\_\_\_

**Secretary** - The Secretary keeps minutes of the meetings, is responsible for the newsletter, and preparation of the ballots.

\_\_\_\_\_ Megan Lilly

\_\_\_\_\_ Write-in: \_\_\_\_\_

**Treasurer** - The Treasurer collects dues, makes disbursements, keeps financial records, and makes an annual statement of the financial status of SCAMIT.

\_\_\_\_\_ Ann Dalkey

\_\_\_\_\_ Write-in: \_\_\_\_\_

**1998-99 SCAMIT Meeting Topics** - Please suggest any topics you deem worthy of a SCAMIT meeting.

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## Ballot for Amendment to Bylaw for Vice Presidential Duties

### Bylaw 2: Duties of Officers

b) Vice-President - The Vice-President shall chair ad hoc committees, be responsible for tabulating and disseminating results of elections, votes on Bylaws, and Amendments to the Constitution; coordinate specimen exchange; arrange meetings and workshops; coordinate the preparation of voucher sheets, edit voucher sheets ~~and newsletters~~; and perform duties of the President during any period(s) when the President is unable to fulfill his or her duties as President of the Association.

Do you approve of the deletion above? Please Vote:

YES

NO

## SCAMIT VOUCHER SHEET

**Species name:** *Drilonereis* sp A  
**Group:** Family Oeononidae

**Date Examined:** 24 February 1998  
**Voucher By:** D. Montagne

**SYNONYMY:** *Drilonereis* nr. *longa* Montagne 1982 §  
*Drilonereis longa* of Hilbig 1995 not Webster 1879  
*Drilonereis longa* of SCAMIT 1994 & 1996 not Webster 1879

**DIAGNOSTIC CHARACTERS:**

1. Prostomium a simple conical lobe, longer than wide, lacking eyes, (fig. 1) with two faint longitudinal grooves on ventrum.
2. Two peristomial segments weakly set off from prostomium (fig. 1).
3. Maxilla I falcate with 2-3 basal teeth; Maxilla II with 3-4 marginal teeth; Maxillae III and IV with single teeth. Paired maxillary carriers long, slender; unpaired carrier shorter and variable in development, ranging from slender style bearing a lanceolate head (fig. 2) to oval plate (see Hilbig 1995, pg. 331, fig 12.6.B). Mandibles reduced or, more typically, absent.
4. Anterior parapodia simple, reduced, lacking pre- or post-setal lobes. By setiger 15 very reduced, rounded post-setal lobes are present. Post-setal lobes increase in development in median segments (fig. 3A) and are accompanied by pre-setal lobes of equal length in posterior segments (fig. 3B).
5. Setae simple, bilimbate with long sinuous tips; present from first setigerous segment; accompanied by stout, distally pointed acicular spines (fig. 3A) in all but the posterior-most setigers (fig. 3B). The acicular spines extend well into the setal fascicle.

**RELATED SPECIES AND CHARACTER DIFFERENCES:**

Closely resembles *Drilonereis longa* Webster 1879, from which it differs in the number of teeth on Maxilla II (3-4 vs 6-8). See SCAMIT Newsletter 14 (11), March 1996 for a discussion of L. Harris' reexamination of the holotype of *D. longa*. *Drilonereis* sp A is also greatly smaller in size. Pettibone (1963) refers to specimens from the East Coast as reaching 710 mm long and bearing up to 1000 segments. The length of specimens of *D. longa* from the Virginia coast examined by the writer exceeded 150 mm. Typical *D. sp A* from southern California are under 50 mm in length. In addition, *D. sp A* is frequently taken as an endoparasite in the cirratulid *Aphelochaeta*, a behavior not reported for *D. longa*.

**DISTRIBUTION:**

Shelf depths from San Diego to Santa Maria Basin.

**COMMENTS:**

Several genera within the Oeononidae are known to live as endoparasites of other polychaetes. However, this behavior has not previously been reported in the genus *Drilonereis*. Oeononids are reported to parasitize polychaetes in the families Eunicidae, Onuphidae, Terebellidae, Spionidae, Syllidae and Nereididae. There are also reports of pholadid bivalves and bonelliid echinurans as hosts. *Drilonereis* sp A is the first member of its genus to be reported as an endoparasite. Cirratulid polychaetes in the genus *Aphelochaeta* act as host. On the Palos Verdes shelf, it has been observed to parasitize two species; *Aphelochaeta glandaria* and, more commonly, *Aphelochaeta* sp A (previously reported locally as *A. marioni*). An *Aphelochaeta* appears to host only a single specimen, which is invariably facing posteriorly within the coelom. Specimens of *D. sp A* are frequently found protruding from anterior fragments of *Aphelochaeta* (fig. 4), or with a few segments of an *Aphelochaeta* encircling the body. Occasionally specimens may be detected completely incased within the host (fig. 5). The *Drilonereis* attains a size that fills the coelom. Given the relative size, greater muscularity, and setal armature of the parasite, the host must be substantially compromised. There appears to have been little morphological accommodation by *D. sp A* to its parasitic life, suggesting that it may be a stage of development leading to life outside the host. Specimens have been collected in an apparently free-living state, however, they do not differ from nor are they substantially larger than those found within the *Aphelochaeta*. There is no quantitative measure of infection rate but, on the Palos Verdes shelf where both *Aphelochaeta* sp A and *A. glandaria* are very abundant, it is estimated that fewer than 1% contain *Drilonereis* sp A as a parasite.

**LITERATURE:**

- HILBIG, B. 1995. Family Oeononidae Kinberg, 1865, emended Orensanz, 1990. In: Blake, J. A., B. Hilbig, and P. H. Scott (eds). *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Vol 5. The Annelida Part 2*. Santa Barbara, CA. 315-340.
- PETTIBONE, M. 1963. Marine Polychaete Worms of the New England Region. I. Aphroditidae through Trochochaetidae. United States National Museum bulletin 227: 1- 356.
- SCAMIT. 1994. A Taxonomic Listing of Soft Bottom Macroinvertebrates from Infaunal Monitoring programs in the Southern California Bight. Edition 1. San Pedro, CA. 72 pages.
- SCAMIT. 1996. A Taxonomic Listing of Soft Bottom Macro- and Megainvertebrates from Infaunal & Epifaunal Monitoring programs in the Southern California Bight. Edition 2. San Pedro, CA. 86 pages.
- WEBSTER, H. 1979. Annelida Chaetopoda of the Virginia coast. Transactions of the Albany institute 9: 202-272.

ILLUSTRATIONS: *Drilonereis* sp A SCAMIT 1998 §

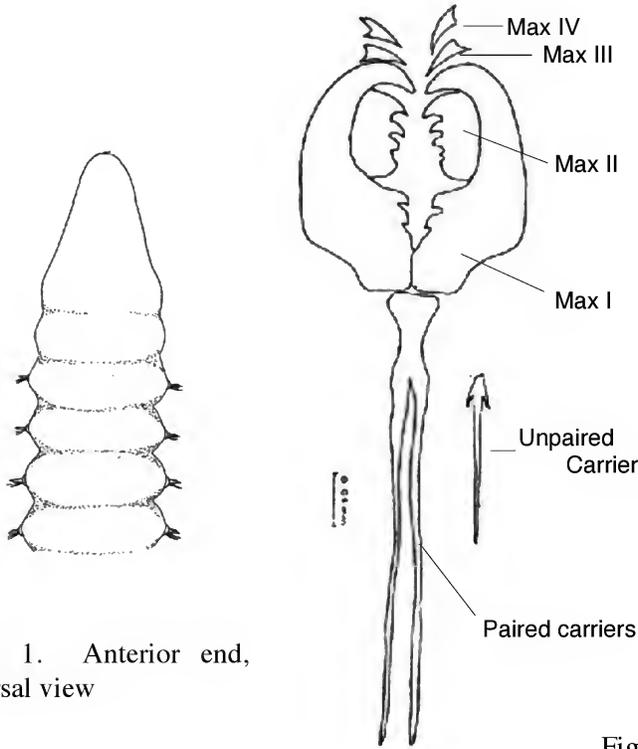


Fig 1. Anterior end, dorsal view

Fig 2. Maxillary Apparatus

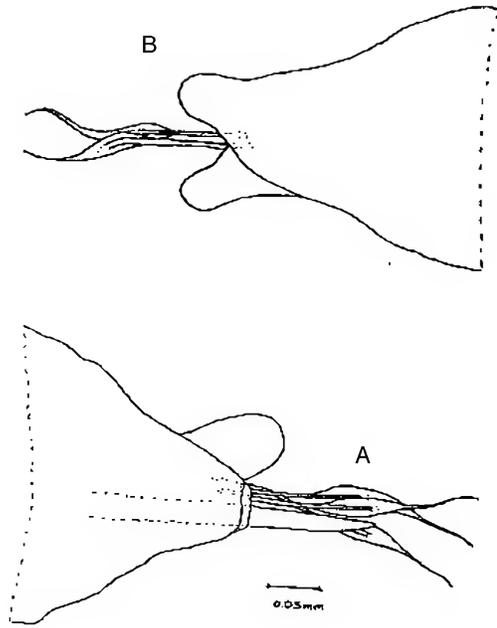


Fig 3. A. Parapodium, 57th setiger, dorsal view. B. Parapodium, 108th setiger, dorsal view.

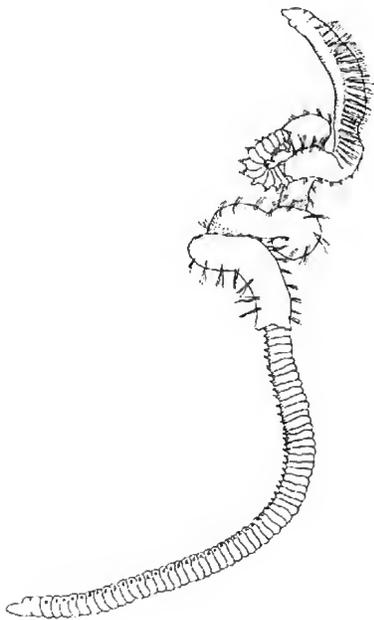


Fig 4. *Drilonereis* sp A protruding from the body cavity of its host, *Aphelochaeta* sp.



Fig 5. *Drilonereis* sp A coiled within the body cavity of its host *Aphelochaeta* sp. The arrow points at the prostomium of the *Drilonereis*. Its pygidium extends into the anterior-most setigers of the host

City of San Diego

**PROVISIONAL SPECIES WORKSHEET****Provisional Name:** *Pherusa cf negligens***Authority:** [*P. negligens* (Berkeley & Berkeley, 1950)]**Taxon:** Annelida:Flabelligeridae**Taxonomist:** R. Rowe/ R. Velarde**Date:** 2July1996**Common Synonyms:****Specimen(s):** STATION DATE DEPTH STORAGE LOCATION VIAL #

Common Synonyms:	Specimen(s):	STATION	DATE	DEPTH	STORAGE	LOCATION	VIAL #
Originally as <i>Stylarioides negligens</i>	Pt. Loma	B-11rep.1	4/5/96	288ft.	DLZ		#1065
		E-9 rep.1	7/11/96	380ft.	DLZ		#1065

**Characters:** [The specimen described is ~1.0mm at widest point (setiger 6-7) and a 14 segment fragment]

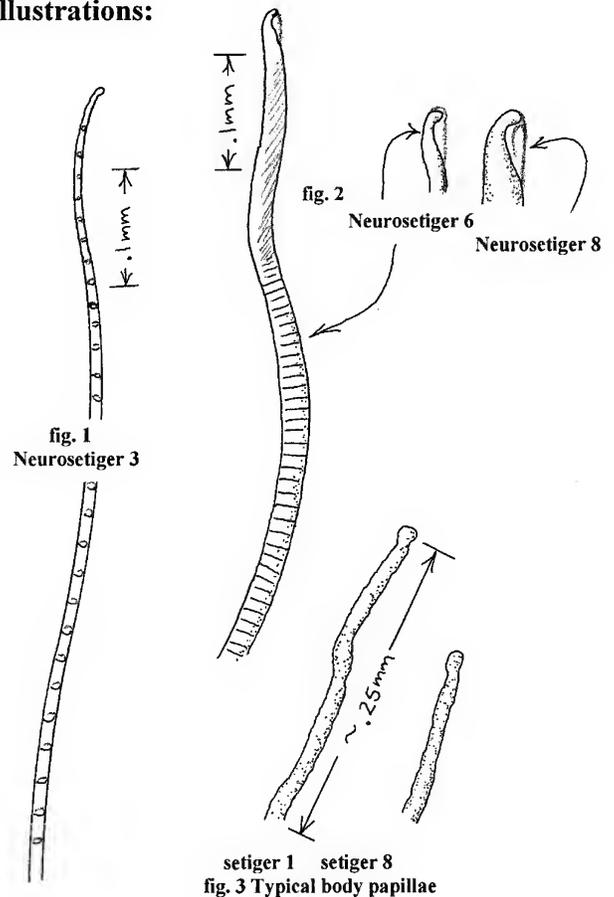
Cephalic cage formed of setae from the first three setigers (~10-15 setae). The longest setae approximately same length as first nine setigers.

Notosetae are long strongly striated capillaries (~8 per fascicle and approximately as long as maximum body width).

Neurosetae on anterior setigers are long and tapering with striations similar to notosetae, but most with fine, hooded, falcate tips. (fig. 1)

After setiger 5 neurosetae becoming thicker and heavier with more closely spaced striations (setal segments approximately as long as wide) and with distal third smooth and flattened with hooded tip. (fig. 2)

Body with many long, filiform papillae whose lengths can reach nearly one half of the greatest body width. (fig. 3)

**Illustrations:**

All figures original

**Related Species & Other Comments:**

*Piromis* sp A- has shorter, thicker body papillation and bifid (not hooded) neurosetae

*Pherusa* spp- our local species have simple, falcate neurosetae (the status of *P. capulata* is uncertain.....and at least in part may be synonymous with *Piromis* sp A)

**References:**

Berkeley, E. and C. Berkeley. 1950. Notes on polychaeta from the coast of western Canada. IV.

Polychaeta Sedentaria. Ann. Mag. Nat. Hist. Ser.12, 3:58-59.

Hobson, K.D. 1974 Can. J. Zool. 52:70-71.

Hobson, K.D. and K. Banse. 1981. Sedentariate and archiannelid polychaetes of British Columbia and Washington. Can. Bull. Fish. Aquat. Sci. 209:pg. 58

City of San Diego

**PROVISIONAL SPECIES WORKSHEET****Provisional Name:** *Spinospaera* sp SD 1**Taxon:** Terebellidae**Taxonomist:** R. Rowe**Authority:****Date:** 30 May 1997**Common Synonyms:**

<b>Specimen(s):</b>	<b>STATION</b>	<b>DATE</b>	<b>DEPTH</b>	<b>STORAGE</b>	<b>LOCATION</b>	<b>VIAL #</b>
City San Diego	B-11rep2	4/8/97	290ft.		DLZ	#2006
	B-11rep1	4/8/97	290ft/		DLZ	

**Characters:** (B-11 rep 2 4/8/97 Small, anterior fragment of thoracics (~4mm length) and 2 abdominal setigers. B-11 rep 1 4/8/97 Nearly entire, with ~100 abdominal setigers and thorax ~6mm in length)

Peristomial ridge with 7-10 small eyespots on each side (dorsolaterally)

20 thoracic setigers

Long (see fig. 1) and short thoracic notosetae with serrate distal portion; swollen, bulbous, spinous midregion; and bilimbate basal portion

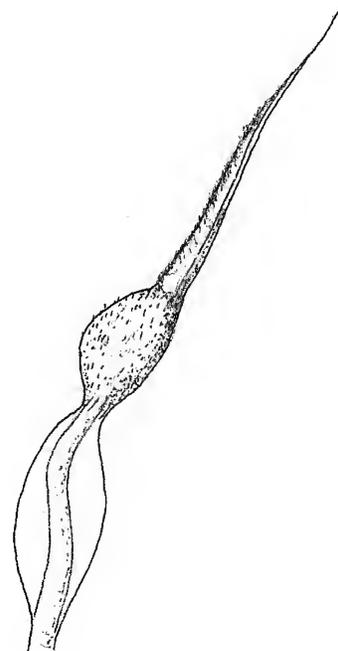
Uncini with a large fang and many small teeth in a crest

Uncini arranged:

- 1st setiger with no uncini
- next 6 setigers with uncini in single rows
- next 12 setigers with uncini in double rows
- last thoracic setiger with uncini in single rows

Methyl green stain:

no distinct pattern, some stain concentrated on ventral scutes of anterior thorax and between setal fascicles in the thorax

**Illustrations:**

**fig.1 long thoracic notosetae**

Figure original

**Related Species & Other Comments:**

*Spinospaera oculata*- has 41 thoracic setigers, eyespots, and less swollen notosetae (See Hartman, 1944 p.274-275 and plate 22, figs. 33-36)

*Spinospaera pacifica*- has no eyespots

**References:**

Hartman, O. 1944. Polychaetous annelids from California. Allan Hancock Pac. Exp. 10(2):274-275.

Hobson, K.D. and K. Banse. 1981. Sedentariate and archiannelid polychaetes of British Columbia and Washington. Can. Bull. Fish. Aquat. Sci. 209: page 94 (figure).



**Southern California Association of  
Marine Invertebrate Taxonomists**

3720 Stephen White Drive  
San Pedro, California 90731

March, 1998

**SCAMIT Newsletter**

Vol. 16, No.11

<b>NEXT MEETING:</b>	Demonstration of Digital Camera for Polychaete Taxonomists
<b>GUEST SPEAKER:</b>	Rick Rowe (CSDMWWD)
<b>DATE:</b>	27 April 1998
<b>TIME:</b>	9:30am - 3:30pm
<b>LOCATION:</b>	City of San Diego's Marine Biology Lab 4918 N. Harbor Dr. Suite 101, San Diego



Digital image of *Malmgreniella sanpedroensis*  
provided by R. Rowe (CSDMWWD)

**APRIL 27 MEETING**

We will be privileged to observe and perhaps participate in application of the CSDMWWD's digital imaging system to polychaete taxonomy. After a period of experimentation and optimization, the lab personnel have learned to use their system to provide high quality color and/or black and white images for use in their taxonomic program. How such images are currently being used for research, teaching/inter-calibration, and quality control will be discussed. Application of the system for other invertebrate groups will be discussed at future meetings. If you have a few problem polychaetes which you want to try the system with, bring them along - there may be time available to look at them. Contact the Secretary if you need a map.

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*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

### SUCCESSFUL INVASION?

A recent communication from Kevin Li in Seattle (METRO) reopened the files on a species introduced to our shores from the Western Pacific, the amphipod *Eochelidium* sp. A. It is assumed introduced because all its congeners are in the western North Pacific. He had taken a specimen he was tentatively calling *E. miraculum* (described from Vietnamese waters by Ingram in 1969) from the Elliott Bay area of Seattle and asked about reports that I had seen the animal elsewhere. Although I have not seen his specimen I assume it is *E. sp. A* which occurs in Puget Sound as well as in the Los Angeles-Long Beach Harbors complex and perhaps elsewhere in the Bight. It was first seen in 1993, and was called *Synchelidium* sp. A at that time.

With the publication of Bousfield & Chevrier (1996) it became apparent that the taxon belonged in *Eochelidium*. Specimens have been taken in the Los Angeles-Long Beach Harbors complex infrequently and in small numbers since the initial record, but the species seems to be tenuously established in local waters. No specimens have been taken since the major winter rains and run-off of the current season, and it may have succumbed to the rigor of the elements. We now have a better means of keeping track of this species, with eyes watching at both ends of its reported eastern Pacific range. Fewer specimens have been taken in the north, but introduction there may also be successful.

### NEW LITERATURE

Faunal connections between the western and eastern North Pacific are also apparent in Imajima (1997), who reports on polychaetes from Suruga Bay, Japan. Many of the species are also taken here in the Southern California Bight, and he reports *Goniada annulata*, *Leitoscoloplos pugettensis*, *Phylo nudus*, *Califia calida*, and *Monticelliina tessellata* from Japan for the first time. No new species are described, but the distributions of many species are extended.

Sato and Masuda (1997) consider genetic differences between two sibling species of *Hediste* (*Neanthes*) [your choice on which to use - see recent discussions on Annelida]. Results of electrophoretic examination of 14 gene loci confirmed that two "forms" of *Hediste japonica* separated by their egg size did indeed differ genetically. They had complete allele substitutions at 5 of the 14 loci examined. These results reinforce earlier evidence from reproductive behavior, development, and karyotype. Despite this the authors did not propose a name for the new form, or indicate which of the forms corresponds to *Hediste japonica*.

A more generalized consideration of genome in polychaetes was offered by Gambi et al (1997). They found a strong positive correlation between genome size (as quantity of nuclear haploid DNA) and mean body length. Surprisingly genome size was not significantly related to diploid chromosome number. Nearly half of the taxa examined came from interstitial groups. These exhibited both lower chromosome numbers and lower genome size than macrobenthic species. Along with reductions in many organ systems, and in overall size and complexity, meiofaunal polychaete have reductions in chromosome complement and genome size. The authors suggest this may affect the potential for genetic recombination in interstitial polychaetes.

Isabel Pérez Farfante and Brian Kensley have joined forces to provide a new world-wide treatment of the penaeoid and sergestoid shrimps (Pérez Farfante & Kensley 1997). Issued as a volume of the Mémoires du Muséum national d'Histoire naturelle, Paris, this hardback provides keys and diagnoses for both families and genera, and lists species and subspecies currently allocated to each genus. The families Aristeidae, Benthescymidae, Penaeidae, Sicyoniidae, Solenoceridae, Luciferidae, and Sergestidae are covered. It is available from Backhuys Publishers for 120 Dutch Guilder + postage and handling (the 30 March quote on Guilder put its value at roughly 49 cents). They can be reached at <http://www.euronet.nl/users/backhuys/> or via e-mail [backhuys@euronet.nl](mailto:backhuys@euronet.nl) or at Backhuys Publishers,

P.O. Box 321 2300 AH Leiden, The Netherlands.

A report of hybridization between members of two different phyla was examined by comparison of the DNA base pair sequences between the two putative parent taxa. The initial report was of fertilization of tunicate eggs by sea-urchin sperm. The results of the DNA comparisons were negative, but not conclusive. Several scenarios were offered which might account for the difference between the original results and the DNA sequence comparison. Although the hybridization has always appeared questionable, the inability of Hart (1996b) to disprove the claim with complete confidence remains intriguing.

Poore & Lowry (1997) reviewed the amphithoid amphipod fauna of south-eastern Australia. In addition to describing several new species, they provide a new key to the genera of the family world-wide. This is provided to remedy a few problems with the key provided by Barnard & Karaman. Although not stated in the paper, the first author seems to be Gary Poore's son, representing the second generation in a potential dynasty of crustacean workers.

The pluteus larvae of the irregular urchin *Brisaster latifrons* is described, and characterized as facultatively feeding by Hart (1996a). Although we are not likely to need identification of meroplanktonic forms of our benthic invertebrates, facts about their reproductive biology are always useful in interpreting adult distribution and ecology.

### 9 MARCH MEETING MINUTES

Our meeting on 9 March was attended by representatives of three agencies, CSDLAC, CSDMWWD, and ABC Labs. Although we still do not know how many agencies will be involved in the trawl sampling for Bight '98, it was clear we hardly had a quorum. This restricted base made it impossible for us to fully meet our goals of information exchange. We gamely pressed forward and attempted to do what we could with the group at hand.

Since ABC labs had intended to provide information prepared by MBARI in Monterey, we were eagerly looking forward to this new source of field ID aids. A glitch had developed in the process, and none of the materials were yet available. This left basically only materials used by the San Diego Lab and the L.A. County Marine Biology Lab as the basis for discussion and exchange.

Since we had largely already exchanged materials either through the Newsletter, or in previous meetings little new was gleaned by our two groups. Some of the materials, such as the keys, character tables, and discussions of the local *Astropecten* and *Luidia* species prepared by Don Cadien (CSDLAC) had not yet been distributed. They are updates and corrections to earlier attempts. Several tools developed by the CSDMWWD staff were also circulated. They have already distributed such things as the color photographs of the local octopus species at previous meetings.

It became apparent that there was no single, sufficient tool for identification of trawl collected shrimps. Don Cadien had hoped to have new keys ready to distribute at the meeting, but was not able to complete them in time. They have now been done, and are provided in the attachment (Trawl Caught Shrimp in the Southern California Bight: a guide to field and lab identification). Picture keys to shrimp families, and to the penaeoid, pandalid, crangonid, and alpheid shrimp are being constructed along the lines of the galatheid key distributed earlier, and paralleling the verbal keys attached here. They will hopefully be completed in time for inclusion as attachments to the next Newsletter.

Following the main portion of the meeting some specimens were examined. Included among them was the specimen of *Metapenaeopsis* sp. reported from San Diego in the last Newsletter. It proved to be *Metapenaeopsis mineri* based on the structure of the thelycum. This particular genus of shrimp requires examination of the external genitalia for specific level determinations. This is the first record of the species from within the Bight of which we have knowledge. These animals are relatively small

even as adults, so be careful with small penaeids; they may not be juveniles!

### NEWS FROM SAN DIEGO STATE

Member Constance Gramlich (SDSU) dropped the editor a line with some information on El Niño related recruitments and species occurrence.

"Adrienne Mock (San Diego Floating Marine Classroom, Shelter Island), just asked me what this beautiful new shrimp was that they were getting in their trawl samples, and because you had just mentioned *S. penicillata* (with an illustration) in the February SCAMIT newsletter, I was able to tell her about the "target shrimp", and give her xerox copies of the blurb in the newsletter as well as Brusca's key and species description from the Baja Inverts book. Adrienne and her crew will be on the lookout for more specimens for me. (this time, with depth and location data) which I intend to use live for the SDSU Marine Invertebrate lab, then preserve for our collection.

It is because YOU took the time and trouble to get the information out, that WE can provide more interesting information on these critters for our students. (Plus, it is a BEAUTIFUL little shrimp!)

P.S. You might be interested to know that I have seen a large recruitment of *Centrostephanus coronatus* at the artificial reefs in Mission Bay. The test diameter is about 2cms (March)."

Thanks for the friendly feedback, and for the information on *Centrostephanus*. All you divers should be on the lookout for increased numbers of this long-spined urchin throughout the Bight.

The Newsletter would be only too happy to print communications from members (whether friendly or highly critical). Please use us as your conduit to other members, and to the community at large. You do and see a lot; share it.

### ALIENS COMPLICATE BIGHT '98 ID

These are neither illegal aliens nor blue-skinned aliens with big eyes; they're alien species introduced into local waters. For the most part, benthic monitoring around major POTW discharges has been restricted to areas where introduced species are few and far between. Our experience with *Philine auriformis* has been the only major exception to this.

With the expansion of Bight '98 benthic sampling into bays and harbors, we will be entering the realm of the introduced species. Over recent years we have chronicled a few introductions which have come to our attention - *Philine sp A* (suspected to be introduced); *Listriella sp A* and *Paradexamine sp A* (almost certainly introduced); *Salmones sp A*, *Sinocorophium heteroceratum* and *Eochelidium sp A* (assumed introduced from the Western North Pacific) among them. There are probably many more, especially in phyla where the status of the local fauna is not fully understood (guess that covers about everything).

Setting aside the problem of which came first (was it introduced to the U.S. from Japan, or to Japan from the U.S.) as irrelevant to the practical problem of species identification, we must consider how we approach identification of locally collected samples. For most of us there will be a double whammy; collection from areas where we have no prior knowledge of the expected biota, and collection from areas where introduced species will probably occur and may be in the majority. This will probably be beneficial in that we will already be alert to the necessity for careful examination.

Although we do not have introduced species problems as massive as those experienced in San Francisco Bay (or Do we?), we will have a problem with unexpected species occurrences of some undefined magnitude. Suddenly all our usual regional tools become suspect, and we must find more comprehensive information sources. New meaning must be read into the injunction to "think Globally and act Locally".

Globally is the only way to approach species identification in areas of probable species introduction. Wherever possible we must seek reviews and revisionary treatments that cover worldwide species. Even if we find these too cumbersome for everyday use, we should have them available in case of need.

In many cases the introduction will differ profoundly from local species, and will be easily separable even without it's identity being known. More insidious are those introduced species in genera with a single local representative. If they are superficially similar, the tendency for the old "its the only one that occurs here" to assert itself will be strong.

In genera which already have several representatives locally, it is likely that newly introduced species will be recognized as different. As long as we do not confuse such species with our existing fauna, we are OK. We can give the animal a provisional name, even though it may have been described elsewhere under a name unfamiliar to us. The provisional name can later be synonymized with the published name once their identity is recognized.

We still have several months before the field work begins, and then more months before the first samples trickle out from sorting to go under our microscopes. In the mean time contemplate the following question "How can I tell that a species I haven't seen before is introduced, and not just a rare component of the normal fauna?". If you come up with an answer, any answer, please forward it to the Newsletter so that we can all consider it.

Until we get such an answer I can only recommend the path I take: 1.) do I know this animal?; if not, 2.) is it in local literature?; if not, 3.) is it in the north-east Pacific literature?; if not, 4.) is it in the world literature?; if not, it's a previously unrecognized species - do a voucher sheet and circulate it to other SCAMIT members to find out if they have seen it too.

- Don Cadien (CSDLAC)

## ELECTION RESULTS

Apologies for the arrangement of the two ballots in the last Newsletter. They were intended to be on separate sheets since they had different return dates. Somewhere in the printing process the two were combined. I hope that none of you were disenfranchised on the officer elections (due 31 March) as you pondered the question posed in the special vote on the amendment to the bylaws (not due till May). My thanks to those who were willing to send in both in time to meet the 31 March deadline.

The results are in, and, given the restricted slate of officers offered, not too surprising. All the candidates were elected, three of the elections being unanimous. Write-in votes were received for Leslie Harris and Larry Lovell for the office of President, but the majority voted to return President Ron Velarde (CSDMWWD) for another term. Treasurer Ann Dalkey (CLAEMD) and Vice-President Don Cadien (CSDLAC) were reelected as well. Megan Lilly (CSDMWWD) was elected Secretary, succeeding the retiring Cheryl Brantley (CSDLAC).

Twenty ballots were received, leaving our voter turnout at under 25%. Our thanks to those who participated in the process. Perhaps next election we can provide a more exciting race if more members participate as both candidates and voters. With the separation of the job of webmaster from that of secretary, and the proposed separation of the Newsletter Editor's tasks from the office of Vice-President these two positions become less demanding. Consider running next time, your organization needs a broader spectrum of voices if it is to remain viable.

The outcome of the special election to consider the proposed amendment to the SCAMIT Bylaws is still open. Votes from those who have not already expressed their opinion are solicited. We still have plenty of time left before the close of the voting period.

Only two suggestions for future meeting subjects

were received: Wetland Fauna & Insects, and Wetland Restoration & Survey. Comments? Although interesting, these are at best peripheral concerns for most members. I'll look into the possibility, however. Any volunteers to present such programs?

### ZOOPLANKTON MANUAL

The following announcement wended its way from the author through Mary Wicksten (TAMU) to President Ron Velarde (CSDMWWD). Hopefully some reader will be able to help out

"Gary Williams (Cal Academy) and I are putting together an identification manual to the California zooplankton roughly similar in format to Light's Manual (keys, illustrations, descriptions, annotated references, glossaries, diagrams, etc.). We have secured the participation of many local experts, but still have the following sections in need of coverage: copepods (can be broken into subgroups), mysids, euphausiids, and siphonophores. If any members are interested, please pass along the message or let me know. I can certainly supply more details upon request."

Respond to Lisa-Ann Gershwin, Department of Integrative Biology, University of California, Berkeley, CA, 94720; or 510- 642-1607; or gershwin@socrates.berkeley.edu.

### MY LIFE AS A BIOLOGIST

By Donald J. Reish

#### Chapter 5: "Bend High and Beginning of WWII"

Bend, Oregon, was much different than Corvallis. In those days Bend was a saw mill town and very few of the high school graduates went to college. It was not an intellectual community. I think I liked Bend High because it was so different from Corvallis High. I did not take any science courses there, but those classes I remember most was journalism, speech, and choir. I had an outstanding speech

teacher; in fact I spent an afternoon with her just some 30 years later when I was visiting my Dad just before he died. She remembers my playing the role of a "doctor" in the senior class play. The choir was very active and we sang in many local events (I sang 1st tenor.). Journalism was my main bag and I was active on the paper as a junior, and they too wanted me to stay and be sports editor. I decided to take my senior year at Bend rather than return to CHS; however I spent the summer with my mother and did various jobs during the summer.

One Sunday during my senior year my Dad and I came home from church; he turned on the radio and we heard at Pearl Harbor was bombed. The next day we crowded into a classroom and heard the President ask Congress to declare war on Japan. Many people thought that we would defeat Japan in six week! There was much confusion, but the impact of the war was to come later. My Dad decided to visit his mother in Florida since he had not seen her for years and we didn't know what the future was going to bring. On Christmas Day in 1941 we boarded a bus and headed for Chicago. His sister lived there and we spent a couple of days there including a tour of Chicago Tribune. Now, I had been around the newspaper offices in Oregon, but it was nothing like the Trib. We then headed to NYC and spend New Years Eve in Times Square where we read where Oregon State had defeated Duke in the transplanted Rose Bowl. We saw many of the sights of NY including TV. My Dad went in one room and I saw him on TV; we then reversed positions for my first appearance on live TV. We then went to Washington, DC. Security was tight at this time since we learned later that Churchill was visiting FDR. We stopped at western VA where my uncle and family lived. This was my first and only visit with him. He was a minister in the Brethren Church. We then headed for Florida to near Sebring. It was my uncle's farm where my grandmother and my older cousin lived. My cousins were going to take me out to collect baby alligators on their property, but the weather was too cold. I picked oranges from a tree for the first time. My dad's sister was visiting there and we drove down to Key West. I really didn't react to the coral reefs or the mangroves, but it was a

beautiful drive. My dad got chiggers--little did I know that one of my best friends on the biology faculty at CSULB would work on this animal group. The situation in the South was a shock. Seeing separate drinking fountains, separate bathrooms, and segregated sections on buses. Fortunately times have changed.

We then headed across the country to LA. We stopped in El Paso and took the street car into Mexico for a couple of hours. (My father was still a Canadian citizen and when he applied for US citizenship they learned that he had gone into Mexico and reentered US "illegally". They started to deport him because of his illegally entrance--guess where? Mexico. Fortunately they didn't.) We spent a couple of days in the Pomona area. Orange groves all around; the smell of the blooms and blue, blue skies with temperature in the mid-70s. I was impressed. On our way back to Bend, the bus driver gave us a lecture of where the Shasta Dam was being built and what areas would be covered with water (our highway). I always look with interest at Shasta Lake when we drive to Oregon--Washington. Back to Bend 3-4 weeks later and back to school. A trip like that was a rare experience in those days. I did get some appreciation for the vastness of the USA as well as how climate and vegetation vary from region to region. Graduation was in May. So far the war had not really affected us.

I spent the summer with my mother. My brother was taking civilian pilots training; he later became a civilian instructor in the air corps. He had some time off and we worked at a saw mill where we stacked lumber (15' high) for drying. Gene had to leave and I changed jobs--building wooden man hole covers for an army base outside of Corvallis. Years later, I saw those man hole covers. I then became a bell hop. I entered Oregon State as a journalism major. I worked on the college paper as an assistant night editor. We put the paper to bed one night a week (until 4am). I took geology from the father of one of good friends. He was my baseball buddy. We went to the softball games together and we went to Salem to see our first professional baseball game. We ran into a Salem boy who we met at summer camp. Later we became lab partners in grad. school. I didn't care for physical geology but I liked paleo. In fact, I wrote my English term paper on paleo. I dropped out of journalism after the first term; it wasn't like high school journalism. Next: The army draft and University of Oregon.

#### SCAMIT WEBSITE UPDATE

We have received numerous inquiries in the last month about when our new and improved website will be on-line. We are hopeful that by the end of April it will be in place. Member Jay Shrake has done a great deal of work restructuring the layout and design. He has also added many digital images of our local invertebrates provided by the staff of CSDMWWD. The images will be accessed at the site by means of links from the Species List. You should look forward to viewing SCAMIT's new homepage very soon.

#### BIBLIOGRAPHY

- BOUSFIELD, E. L., and Chevrier Andree. 1996. The Amphipod Family Oedicerotidae on the Pacific Coast North America. Part 1. The Monoculodes and Synchelidium generic complexes: systematics and distributional ecology. *Amphipacifica* 2(2):75-147.
- GAMBI, M. C., L. Ramella, G. Sella, P. Protto, and E. Aldieri. 1997. Variation in genome size in benthic polychaetes: Systematic and ecological relationships. *Journal of the Marine Biological Association of the United Kingdom* 77(4):1045-1057.
- HART, M. W. 1996a. Evolutionary loss of larval feeding: Development, form and function in a facultatively

- feeding larva, Brisaster latifrons. Evolution 50(1):174-187.
- . 1996b. Testing cold fusion of phyla: Maternity in a tunicate x sea urchin hybrid determined from DNA comparisons. Evolution 50(4):1713-1718.
- IMAJIMA, MINORU. 1997. Polychaetous annelids of Suruga Bay, Central Japan. Monographs of the National Science Museum, Tokyo (12):149-228.
- PÉREZ-FARFANTE, ISABEL, and Brian Kensley. 1997. Penaeoid and sergestoid shrimps and prawns of the world: keys and diagnoses for the families and genera. Mémoires du Muséum national d'Histoire naturelle, Paris 175:1-233.
- POORE, ALISTAIR G. B., and J. K. Lowry. 1997. New amphitoid amphipods from Port Jackson, New South Wales, Australia (Crustacea: Amphipoda: Ampithoidae). Invertebrate Taxonomy 11(6):897-941.
- SATO, M., and Y. Masuda. 1997. Genetic differentiation in two sibling species of the brackish-water polychaete Hediste japonica complex (Nereididae). Marine Biology 130(2):163-170.

**Please visit the SCAMIT Website at:** <http://www.sccwrp.org/scamit/>

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**TRAWL CAUGHT SHRIMP IN THE SOUTHERN CALIFORNIA BIGHT  
: a guide to field and laboratory identification**

Donald B. Cadien, CSDLAC, 3 April 1998

Because they are prominent in many trawl catches several comprehensive regional treatments of shrimp exist. The most pertinent are Schmitt (1921), Word and Charwat (1976) and Butler (1980). Each of these had a slightly different focus, and none is adequate for all the shrimp recorded from the Southern California Bight. Martin & Zimmerman (1997) cover the northern portion of the Santa Barbara Channel, but treat only eleven species. Butler provides the most extended descriptions of the species covered, but treats the fauna of the Pacific Northwest and lacks many southern species. Word and Charwat focussed on the Bight, using the same sort of monitoring records we currently do. Nomenclatural changes have reduced the utility of their treatment, and although nearly all species are keyed, little supporting description is supplied. Schmitt likewise offers little detail in his descriptions of the species. Taxonomic changes have rendered many of his names obsolete as well. SCAMIT Taxonomic List Ed. 3 will provide the synonymies which allow older usages like Schmitt's to be related to current usage. Other resources are available for particular groups, especially the series of papers by Wicksten dealing with southern California families, genera, or species (Wicksten 1976, 1977, 1978a, b; 1979; 1980; 1981; 1983a; b; 1984; 1986; 1989a, b; 1990a, b; 1991, 1992, 1996a, b; Wicksten & Butler 1983; Wicksten & Hendrickx 1991). Live appearance of many shrimp is documented by color photographs in Jensen 1995. Butler 1980 gives color drawings of many species from depths inaccessible to diving photographers. Species which are normally found to the south, but have made incursions into the Southern California Bight during the current strong ENSO event require additional references (Chace 1937; Hendrickx 1990, 1995, 1996; Hendrickx & Navarrete 1996; Hendrickx & Wicksten 1989).

Because such a variety of information sources is available on this group, the necessity of precalibration of trawl shrimp identification in the Bight '98 regional sampling effort is great. With that goal in mind, new keys to shrimps known from the Bight which can be identified in the field have been prepared where necessary. Members of the Alpheidae and the Hippolytidae do not easily lend themselves to field separation because of size and/or use of small or obscure character states in their identification. Members of these families should always be returned to the lab for identification. Other groups such as the Crangonidae may or may not be field separable depending on the experience and expertise of the observer. In such intermediate groups it is particularly important to recognize your own limitations. A good rule of thumb for deciding if specimens should be returned to the lab for further identification is "if you have ANY doubts as to the identity of the animals, they should be returned to the lab for confirmation." Not just a few representatives, BUT ALL SUSPECT SPECIMENS. Even in cases where the observer has no doubt as to the identity of the animals, vouchers must still be taken for lab confirmation. These should be collected by each individual who participates in the field identifications for each species they have identified.

These requirements are not new, but they must be followed by all participants to avoid data compromise. If only one participant fails to identify, or identifies incorrectly, material which has been discarded prior to the discovery of the data deficiency, all data provided by other participants must be degraded to the level of the non-conforming group prior to analysis. This unfortunately occurred on several occasions during the 1994 regional monitoring effort, and the utility of resulting data was diminished. These concerns become even greater during Bight '98 because the number of groups involved is being increased, and along with the number of participants the possibilities for non-conformity.

The following families of shrimp are known from historic records to have occurred in the Bight - Alpheidae, Aristaedae, Crangonidae, Glyphocrangonidae, Hippolytidae, Luciferidae, Ogyrididae, Ophlophoridae, Palaemonidae, Pandalidae, Pasiphaeidae, Penaeidae, Processidae, Sergestidae, Sicyoniidae, and Solenoceridae (less than half the 36 known families of shrimps). Of these sixteen families the

Aristaeidae, Luciferidae, Oplophoridae, Pasiphaeidae and Sergestidae are all holopelagic shrimps and not part of the bottom trawl fauna.

For those interested in these animals a list of species reported from our area and useful references for their identification are provided below.

### **Aristaeidae**

*Bentheogennema burkenroadi* Krygier & Wasmer 1975  
has been taken from the surface to 1000m depths

*Bentheogennema borealis* (Rathbun 1902)  
seldom reaches depths as shallow as 200m. These two species are keyed, described, and illustrated in Butler 1980. Should you reach Aristaeidae in the Key to Shrimp Families you should consult Butler for further information.

### **Luciferidae**

*Lucifer typus* H. Milne Edwards 1837  
known from as far north as the middle of the Baja peninsula, this species may range into Bight waters on the northward ENSO flow. See Hendrickx & Navarrete 1996

**Oplophoridae** - Species of *Acanthephyra*, *Systellaspis*, and *Hymenodora* are known to range into our geographic coverage area, but all from deeper than our maximum depths. It is very unlikely that they will stray into our depth range. Although not yet reported from Californian waters, the genus *Notostomus* has been recorded as far south as Oregon (Butler 1980). Animals keying to Oplophoridae should be examined with Butler in hand. He provides both generic and specific keys to local species, as well as good illustrations and descriptions.

**Pasiphaeidae** - most species listed in Word & Charwat and Hendrickx & Navarrete fall outside the geographic or bathymetric limits of our study area.

*Pasiphaea pacifica* Rathbun 1902  
known throughout the bight, but generally taken in deeper trawls, although may surface at night (0-1076m). See Butler 1980

*Pasiphaea chacei* Yaldwyn 1962 from off Baja California to off Oregon, generally deeper than 300 m. Given the dislocations caused by the ENSO event, these are probably all below our depth range at this time. We should be aware of the characters to check to distinguish this from *P. pacifica*. See keys in Word & Charwat 1976 and Hendrickx & Navarrete 1996.

**Sergestidae** - Species in the genus *Sergia*, while taken from the surface to over 1000m depth, are from oceanic water masses found outside the Bight in the Eastern Pacific, and are not considered here. The single reported species of the genus *Petalidium* to occur off southern California is similarly oceanic, and not recorded from inshore waters of the Bight. Both genera are covered by Hendrickx & Navarrete 1996, who provide a key to the genera as well.

*Sergestes similis* Hanson 1903  
ranges from the Gulf of California to the Gulf of Alaska and from the surface to 1200 m - the only member of the genus to occur in inshore waters of the Bight. Other species may occur further offshore in the California Current or beyond (see Hendrickx & Navarrete 1996). The species is well described and illustrated by Butler 1980.

Of the remaining 11 families known from the area three are penaeoids (**Solenoceridae**, **Sicyoniidae**, and

**Penaeidae**) all at one time considered to be subfamilies within the Penaeidae. If additional information on penaeoid biology or morphology is desired consult Dall et al (1990). A separate key is provided for benthic members of these families known to occur within the Bight plus a very similar species not yet known from the area (see attached key).

The eight benthic families of caridoid shrimp known from Southern California waters are all included in the family key. All members of the **Glyphocrangonidae** occur too deep to fall within our coverage. Distributional records are provided by Wicksten (1979), and a good illustrated key by Hendrickx (1995). All local members of the family **Ogyrididae** occur too shallowly to fall within our coverage. Although *Ogyrides alphaerostris* was reported from the area by Wicksten & Hendrickx (1991), the local species is still undescribed. Information on it should be sought from Jim Roney (LACEMD), who is in the process of describing these shrimp. We will probably see these small burrowing shrimp in our shallowest benthic samples, but not in our trawls.

Two of the six remaining families (Processidae and Palaemonidae) are represented by only a few species. The **Processidae** have only two local representatives, *Ambidexter panamensis* and *Processa peruviana*. *Ambidexter* has been reported only from shallow water in San Diego Bay, where it is taken both in infaunal samples and in seines. It is apparently a burrowing species, and may only be taken during night or crepuscular samplings over mud/algal bottoms. Given the dearth of records, the population in the bay may be quite localized. Abele (1972) describes the animal. If shallow water samples are taken in San Diego Bay we might get this species. *Processa peruviana* has only been taken once in local waters; off Palos Verdes in 1995. This animal is larger than *A. panamensis*, and was taken in the open sea, not in a bay, where it favors fine sand bottoms (Hendrickx 1995). It was taken at night, and may also be a burrower. Wicksten's original description (1983), supplemented by information in Hendrickx (1995), should allow identification of further specimens. Hendrickx also provides a key to separate these two genera. The normal range of the animal extends only as far north as the tip of Baja California, so occurrence in our area is undoubtedly related to ENSO transport.

Local **Palaemonidae** can be adequately field separated with the key of Word & Charwat (1976), which covers all species recorded to date. If you reach Palaemonidae in the family key, consult the above key. Members of the genus *Palaemon* occur only in shallow estuarine areas such as Huntington Harbor. Although an indigenous species exists (*Palaemon ritteri*), all recently caught *Palaemon* have been the introduced *P. macrodactylus*, which would key to the same place in Word & Charwat's key. Of the remaining four species in the key, two are commensals and not likely to be taken in a trawl sample. *Pontonia californiensis* is an endocommensal of tunicates, living within the branchial basket of the host. *Pseudocoutierea elegans* is an obligate commensal of muricid sea-fans, and may abandon a host caught in a trawl net and swim away. Specimens are usually taken from sea-fans collected by divers, but could also come from trawls which take sea-fans. The remaining species, *Palaemonella holmesi* and *Periclimenes infraspinus*, though rarely taken, could be caught in shallow water trawls within the Bight. *Palaemonetes hiltoni*, described from San Pedro by Schmitt in 1921 has not been seen since, and is no longer considered to occur in the Bight (Wicksten 1989). Under the current ENSO transport regime, we may refind it or other southern palaemonid species which have not yet been reported here. Wicksten's key (1989) to the family includes species not yet known from the Bight, and should be consulted for specimens which appear to key poorly or not at all in Word & Charwat 1976. Any specimens keying to the family should probably be retained for laboratory verification. The two-volume monograph by Holthuis (1951, 1952) should provide information on species (such as *Palaemon macrodactylus*) not described in other works.

Members of the families **Alpheidae** and **Hippolytidae** should always be returned to the laboratory for identification, or for verification if large and characteristic enough for field ID. No specimens of these families should be discarded in the field. The sole exception to this rule is the hippolytid *Lysmata californica*. This species is large enough, and has a characteristic enough live appearance (see photograph in Jensen 1995)

for reliable determination in the field. Voucher specimens should still be returned to the lab for verification, but large collections of *L. californica* can be returned to the sea. Although nearly all hippolytid species can be correctly determined with the key in Word and Charwat, we should use that in Wicksten (1990). California alpheidids can be separated using the attached key, which includes undescribed species not in Wicksten (1984).

Species in the families **Crangonidae** and **Pandalidae** should be identifiable in the field in nearly all cases. Some damaged specimens and some very small juveniles may require laboratory confirmation, but few specimens should fall into these categories. New keys to both these families are presented here to incorporate taxonomic changes and new species records which render existing keys incomplete.

**Resource Guide** - Recommended Standard References for Bight '98 Trawl Shrimp Identification  
F= field key, L= laboratory key, C= combined field and laboratory key

**Trawl Shrimp Families** - attached Family key (C) - all families below are included in the key

**Alpheidae** - LABORATORY ID ONLY, collect all specimens - attached Alpheid key (L)

Aristaeidae - all members excluded as holopelagic

**Crangonidae** - attached Crangonid key (C)

Glyphocrangonidae - all members excluded as outside depth limits

**Hippolytidae** - LABORATORY ID ONLY, collect all specimens - Wicksten 1990b key (L)

Luciferidae - all members excluded as holopelagic

Ogyrididae - all members excluded as outside depth limits

Oplophoridae - all members excluded as holopelagic

**Palaemonidae** - Word & Charwat 1976 key (F), Wicksten 1989a key (L)

**Pandalidae** - attached Pandalid key (C)

Pasiphaeidae - all members excluded as holopelagic

**Penaeidae** - attached Penaeoid key (C), Hendricks 1995 key (L)

**Processidae** - Hendrickx 1995 key (C)

Sergestidae - all members excluded as holopelagic

**Sicyoniidae** - attached Penaeoid key (C)

**Solenoceridae** - attached Penaeoid key (C)

## List of Species Taken in Association with Monitoring Programs in the Southern California Bight at depths between 10-300 m

- Suborder Penaeidea  
 Superfamily Penaeoidea  
 Family Aristeidae  
   *Bentheogennema burkenroadi* Krygier & Wasmer 1975  
 Family Solenoceridae  
   *Solenocera florea* Burkenroad 1938  
   *Solenocera mutator* Burkenroad 1938  
 Family Penaeidae  
   *Metapenaeopsis mineri* Burkenroad 1934  
   *Penaeus californiensis* Holmes 1900  
 Family Sicyoniidae  
   *Sicyonia ingentis* (Burkenroad 1938)  
   *Sicyonia penicillata* Lockington 1879  
 Superfamily Sergestoidea  
 Family Sergestidae  
   *Sergestes similis* Hansen 1903  
 Suborder Caridea  
 Superfamily Pasiphaeidea  
 Family Pasiphaeidae  
   *Pasiphaea pacifica* Rathbun 1902  
 Superfamily Pandaloidea  
 Family Pandalidae  
   *Pandalopsis ampla* Bate 1888  
   *Pandalus danae* Stimpson 1857  
   *Pandalus jordani* Rathbun 1902  
   *Pandalus platyceros* Brandt 1851  
   *Pantomus affinis* Chace 1937  
   *Plesionika beebei* Chace 1937  
   *Plesionika trispinus* Squires & Barragán 1976  
 Superfamily Alpheoidea  
 Family Alpheidae  
   *Alpheopsis equidactylus* (Lockington 1877)  
   *Alpheus bellimanus* Lockington 1877  
   *Alpheus californiensis* Holmes 1900  
   *Alpheus clamator* Lockington 1877  
   *Automate* sp A SCAMIT 1995 §  
   *Betaeus ensenadensis* Glassell 1938  
   *Betaeus harfordi* (Kingsley 1878)  
   *Betaeus harrimani* Rathbun 1904  
   *Betaeus longidactylus* Lockington 1877  
 Family Hippolytidae  
   *Eualus herdmani* (Walker 1898)  
   *Eualus lineatus* Wicksten & Butler 1983  
   *Heptacarpus brevirostris* (Dana 1852)  
   *Heptacarpus decorus* (Rathbun 1902)  
   *Heptacarpus fuscimaculatus* Wicksten 1986  
   *Heptacarpus flexus* (Rathbun 1902)  
   *Heptacarpus palpator* (Owen 1839)  
   *Heptacarpus sitchensis* (Brandt 1851)  
   *Heptacarpus stimpsoni* Holthuis 1947  
   *Heptacarpus taylori* (Stimpson 1857)  
   *Heptacarpus tenuissimus* Holmes 1900  
   *Heptacarpus tridens* (Rathbun 1902)  
   *Hippolyte californiensis* Holmes 1895  
   *Hippolyte clarki* Chace 1951  
   *Lysmata californica* (Stimpson 1866)  
   *Spirontocaris holmesi* Holthuis 1947  
   *Spirontocaris lamellicornis* (Dana 1852)  
   *Spirontocaris prionota* (Stimpson 1864)  
   *Spirontocaris sica* Rathbun 1902  
   *Spirontocaris snyderi* Rathbun 1902  
 Family Ogyrididae  
   *Ogyrides* sp A Roney 1978 §  
 Family Processidae  
   *Processa peruviana* Wicksten 1983  
 Superfamily Crangonoidea  
 Family Crangonidae  
   *Crangon alaskensis* Lockington 1877  
   *Crangon alba* Holmes 1900  
   *Crangon handi* Kuris & Carlton 1977  
   *Crangon holmesi* Rathbun 1902  
   *Crangon nigricauda* Stimpson 1856  
   *Crangon nigromaculata* Lockington 1877  
   *Mesocrangon munitella* (Walker 1898)  
   *Metacrangon spinosissima* (Rathbun 1902)  
   *Neocrangon communis* (Rathbun 1899)  
   *Neocrangon resima* (Rathbun 1902)  
   *Neocrangon zaca* (Chace 1937)  
   *Rhynocrangon alata* (Rathbun 1902)  
 Superfamily Palaemonoidea  
 Family Palaemonidae  
   *Pseudocouitiera elegans* Holthuis 1951

## BIBLIOGRAPHY

- ABELE, LAWRENCE G. 1972. A review of the genus *Ambidexter* (Crustacea: Decapoda: Processidae) in Panama. *Bulletin of Marine Science* 22(2):365-380.
- BUTLER, TERRANCE H. 1980. Shrimps of the Pacific coast of Canada. *Canadian Bulletin of Fisheries and Aquatic Sciences* (202):1-280.
- CHACE, FENNER A. Jr. 1937. The Templeton Crocker Expedition. VII. Caridean decapod Crustacea from the Gulf of California and the West Coast of Lower California. *Zoologica* 22(2):109-138.
- DALL, W., B. J. Hill, P. C. Rothlisberg, D. J. Staples. 1990. *Advances in Marine Biology* Volume 27. The Biology of the Penaeidae. Academic Press Limited: London. 489pp.
- HENDRICKX, MICHEL E. 1990. The stomatopod and decapod crustaceans collected during the GUAYTEC II Cruise in the Central Gulf of California, Mexico, with the description of a new species of *Plesionika* Bate (Caridea: Pandalidae). *Revista de Biología Tropical* 38(1): 35-53.

- . 1995. Camarones. Pp.417-537. *IN:* Fischer, W., F. Krupp, W. Schneider, C. Sommer, Carpenter K. E., and V. H. Niem (eds.), *Guía FAO para la identificación de especies para los fines de la pesca. Pacífico centro-Oriental. Vol. 1. Plantas e Invertebrados. F.A.O.: Rome, Italy. 646pp.*
- . 1996. Los Camarones Penaeoidea Bentónicos (Crustacea: Decapoda: Dendrobranchiata) del Pacífico Mexicano. 147pp. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad e Instituto de Ciencias del Mar y Limnología, UNAM: Guadalajara, Mexico.
- HENDRICKX, MICHEL E., and Flor D. Estrada-Navarrete. 1989. A checklist of the species of pelagic shrimps (Penaeoidea and Caridea) from the Eastern Pacific, with notes on their geographic and depth distribution. *CalCOFI Report 30:104-121.*
- . 1996. Los Camarones Pelágicos (Crustacea: Dendrobranchiata y Caridea) del Pacífico Mexicano. 157pp. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad e Instituto de Ciencias del Mar y Limnología, UNAM: Guadalajara, Mexico.
- HENDRICKX, MICHEL E., and Mary K. Wicksten. 1989. Los Pandalidae (Crustacea: Caridea) del Pacífico Mexicano, con una clave para su identificación. *Caldasia 16(76):71-86.*
- HOLTHUIS, LIPKE B. 1951. A general revision of the Palaemonidae (Crustacea Decapoda Natantia) of the Americas. I. The subfamilies Euryrhychninae and Pontoniinae. Allan Hancock Foundation Publications, Occasional Paper (11):1-332.
- . 1952. A general revision of the Palaemonidae (Crustacea Decapoda Natantia) of the Americas. II. Subfamily Palaemoninae. Allan Hancock Foundation Publications, Occasional Paper (12):1-396.
- JENSEN, GREGORY C. 1995. Pacific Coast Crabs and Shrimps. *Sea Challengers: Monterey, California. 87pp.*
- MARTIN, JOEL W., and Todd L. Zimmerman. 1997. Order Decapoda. Pp. 49-121 *IN:* Blake, James A. And Paul H. Scott (eds.). *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Vol. 10 The Arthropoda - The Pycnogonida, The Crustacea Part 1 - The Decapoda and Mysidacea. Santa Barbara Museum of Natural History, Santa Barbara, California. 151pp.*
- SCHMITT, WALDO L. 1921. The Marine Decapod Crustacea of California, with special reference to the Decapod Crustacea collected by the United States Bureau of Fisheries Steamer 'Albatross' in connection with the Biological Survey of San Francisco Bay during the years 1912-1913. *University of California Publications in Zoology 23:1-470.*
- WICKSTEN, MARY K. 1976. First record of Argis levior (Rathbun) from California (Decapoda: Crangonidae). *Bulletin of the Southern California Academy of Sciences 75(1):56.*
- . 1977. Range extensions of four species of crangonid shrimps from California and Baja California, with a key to the genera (Natantia: Crangonidae). *Proceedings of the Biological Society of Washington 90( ):963-967*
- . 1978a. The species of Plesionika from California and Western Mexico (Natantia: Pandalidae). *Bulletin of the Southern California Academy of Sciences 77(2):84-87.*
- . 1978b. The species of Lebbeus in California (Crustacea: Caridea: Hippolytidae). *Occasional Papers of the Allan Hancock Foundation, new series (1):1-8.*
- . 1979. New records of the species of Glyphocrangon in the northeastern Pacific Ocean (Caridea: Glyphocrangonidae). *Proceedings of the Biological Society of Washington 92(2):217- 224.*
- . 1980. Range extensions of four species of crangonid shrimps in the eastern Pacific Ocean (Decapoda: Crangonidae). *Bulletin of the Southern California Academy of Sciences 79(1):38-41.*
- . 1981. The species of Automate (Caridea: Alpheidae) in the eastern Pacific Ocean. *Proceedings of the Biological Society of Washington 94(4):1102-1109.*
- . 1983a. A monograph on the shallow water caridean shrimps of the Gulf of California, Mexico. *Allan Hancock Monographs in Marine Biology (13):1-59.*
- . 1983b. Plesionika sanctaecatalinae: a new species of deep- sea shrimp from the eastern Pacific (Caridea: Pandalidae). *Bulletin of the Southern California Academy of Sciences 82(3): 138-143.*
- . 1984. New records of snapping shrimps (Family Alpheidae) from California. *Proceedings of the Biological Society of Washington 97(1):186-190.*

- . 1986. A new species of Heptacarpus from California, with a redescription of Heptacarpus palpator (Owen) (Caridea: Hippolytidae). Bulletin of the Southern California Academy of Sciences 85(1):46-55.
  - . 1989a. A key to the palaemonid shrimp of the Eastern Pacific Region. Bulletin of the Southern California Academy of Sciences 88(1):11-20.
  - . 1989b. Ranges of offshore decapod crustaceans in the eastern Pacific Ocean. Transactions of the San Diego Society of Natural History 21(19):291-316.
  - . 1990a. On the status of Alpheus barbara Lockington (Crustacea: Caridea: Alpheidae). Proceedings of the Biological Society of Washington 103(1):100-102.
  - . 1990b. Key to the hippolytid shrimp of the Eastern Pacific Ocean. Fishery Bulletin 88(3):587-598.
  - . 1991. Pandalus gurneyi Stimpson synonymized with Pandalus danae Stimpson (Decapoda: Pandalidae). Proceedings of the Biological Society of Washington 104(4):812-815.
  - . 1992. A new species of Alpheopsis (Decapoda, Alpheidae) from the tropical eastern Pacific, with a key to the species of Alpheopsis of the Americas. Crustaceana 63(1):51-56.
  - . 1996a. Heptacarpus pictus (Stimpson) synonymized with Heptacarpus sitchensis (Brandt)(Decapoda, Hippolytidae). Crustaceana 69(1):71-75.
  - . 1996b. Neocrangon zaca (Chace, 1937) synonymized with N. resima (Rathbun, 1902), and compared with N. communis (Rathbun, 1899) (Decapoda: Caridea: Crangonidae). Proceedings of the Biological Society of Washington 109(1):39-43.
- WICKSTEN, MARY K., and Terrance H. Butler. 1983. Description of Eualus lineatus new species, with a redescription of Heptacarpus herdmani (Walker) (Caridea: Hippolytidae). Proceedings of the Biological Society of Washington 96(1):1-6.
- WICKSTEN, MARY K., and Michel E. Hendrickx. 1991. Checklist of penaeoid and caridean shrimps (Decapoda: Penaeoidea, Caridea) from the eastern tropical Pacific. Proceedings of the San Diego Society of Natural History 9:1-11.
- WORD, JACK Q., and Danuta Charwat. 1974. Key to shrimp common in Southern California trawl catches. Southern California Coastal Water Research Project (SCCWRP), Technical Memorandum (221):1-41.

**KEY TO SHRIMP FAMILIES RECORDED IN THE SOUTHERN CALIFORNIA BIGHT**

D. B. Cadien (CSDLAC) - 7Dec1994 (rev. 25Mar1998)

(based on Chace 1972, Burukovskii 1974, Dall et al 1990, and Hendrickx 1995)

1. Third legs chelate; pleura of second abdominal somite not overlapping that of first somite; ..... Suborder Dendrobranchiata 2  
Third legs not chelate; pleura of second abdominal somite overlapping that of first somite; ..... Suborder Eukyphida 7
2. Legs 4 and 5 well developed; gills numerous ..... Superfamily Penaeoidea 4  
Legs 4 and 5 reduced or absent; gills few (<9) ..... Superfamily Sergestoidea 3
3. Legs 4 and 5 absent; carapace elongated anteriorly by narrow "neck", eyes widely separated from mouthparts ..... Luciferidae  
Legs 4 and 5 reduced; carapace not elongated anteriorly, eyes just slightly anterior to mouthparts ..... Segestidae
4. Antennular flagellae subequal and originate distally on the 3rd segment; 5th leg lacks epipod ..... 5  
Median(upper) flagellum much shorter than lateral (lower) and originates near base of 3rd segment; 5th leg with an epipod ..... Aristaeidae
5. Cervical sulcus reaching <math>\frac{2}{3}</math> the distance from the hepatic spine to the top of the carapace; postorbital spine absent; 4th leg lacks epipod ..... 6  
Cervical sulcus reaching the top of the carapace; postorbital spine present; 4th leg with an epipod ..... Solenoceridae
6. Third to 5th pleopods each with 2 rami; prosartema (eye brush) present on antennula; exopods present on 2nd and 3rd maxillipeds ..... Penaeidae  
Third to 5th pleopods each with a single ramus; prosartema absent; no exopods on 2nd and 3rd maxillipeds ..... Sicyoniidae
7. First leg subchelate ..... 8  
First leg chelate or simple ..... 9
8. Carpus of 2nd leg unsegmented ..... Crangonidae  
Carpus of 2nd leg multisegmented ..... Glyphocrangonidae
9. First and 2nd legs chelate; fingers of chelae with pectinate edges ..... Pasiphaeidae  
First and/or 2nd legs chelate; fingers without pectinate edges ..... 10
10. Carpus of 2nd leg unsegmented; 1st leg with well-developed chela ..... 11  
Carpus of 2nd leg multisegmented, **OR** 1st leg not chelate ..... 12
11. Legs with exopods ..... Ophlophoridae  
Legs lacking exopods ..... Palaemonidae
12. First legs with at least one well developed chela ..... 13  
First legs with chelae very small or absent ..... Pandalidae
13. Rostrum edentate or dentate, but without subdistal tooth ..... 14  
Rostrum with distal notch covered with bristles and forming subdistal dorsal tooth ..... Processidae
14. Eyes on long stalks, reaching nearly to end of antennular peduncle, and several times longer than eye diameter ..... Ogyrididae  
Eyestalks not unusually long, not or only slightly exceeding eye diameter ..... 15
15. Eyes usually partially or entirely covered by carapace, incapable of free lateral movement; rostrum absent or spinelike ..... Alpheidae  
Eyes exposed and freely movable; rostrum well developed, toothed ..... Hippolytidae

**KEY TO THE SO. CALIFORNIA BIGHT CRANGONID SHRIMP**

Donald B. Cadien (CSDLAC), 20 March 1998

(based on Word &amp; Charwat 1976, Kuris &amp; Carlton 1977, Wicksten 1977, and Butler 1980)

1. Dactyls of 4th and 5th legs flattened; eyes partly concealed by carapace ..... *Argis* 2  
Dactyls of 4th and 5th legs not flattened; eyes not partly concealed ..... 3
2. Carapace with 2 median dorsal spines posterior to rostral spine ..... *Argis californiensis*  
Carapace with 4 median dorsal spines posterior to rostral spine ..... *Argis levior*
3. Abdominal somites heavily sculptured; 3rd abdominal somite with rostrate posterior margin,  
4th and 5th with posteromedial spine ..... *Rhynocrangon alata*  
Abdominal somites weakly sculptured or unsculptured; 3rd abdominal somite not posteriorly  
produced, 4th and 5th somites lacking posteromedial spine (may be carinate) ..... 4
4. Gastric region of carapace depressed ..... 5  
Gastric region not depressed below general level of carapace ..... 7
5. 1-2 spines ventrally on abdominal pleura ..... *Metacrangon spinosissima*  
Abdominal pleura without ventral spines ..... 6
6. Carapace lacking lower submedian spine ..... *Metacrangon munita*  
Carapace with lower submedian spine ..... *Mesocrangon munitella*
7. Carapace with 1 median dorsal spine ..... *Crangon* 8  
Carapace with 2 median dorsal spines ..... *Neocrangon* 13
8. Sixth abdominal somite with bold lateral blue pigment spot(s) ..... *Crangon nigromaculata*  
Sixth abdominal somite lacking lateral pigment spot ..... 9
9. Inner flagellum of antenna one distinctly longer than outer ..... 10  
Inner and outer flagella of antenna one of equal length ..... *Crangon handi*
10. Sixth abdominal somite grooved ventrally ..... 11  
Sixth abdominal somite not grooved ventrally ..... 12
11. Spine of antennal scale extending well past end of blade ..... *Crangon alaskensis*  
Spine of antennal scale not or barely extending past end of blade ..... *Crangon nigricauda*
12. Ischium of 3rd maxilliped flattened and laterally flanged ..... *Crangon alba*  
Ischium of 3rd maxilliped not especially flattened and not flanged ..... *Crangon holmesi*
13. Third through fifth abdominal somites dorsally carinate ..... *Neocrangon communis*  
Abdominal somites not dorsally carinate ..... 14
14. Rostrum bearing terminal "moustache" of setae projecting obliquely downward; rostrum variable,  
typically horizontal or slightly elevated ..... *Neocrangon zacae*  
Rostrum with lateral field of setae, but lacks "moustache"; rostrum variable, typically bearing a  
ventral blade, and strongly elevated above horizontal ..... *Neocrangon resima*

**REVISED KEY TO THE PANDALIDAE OF CALIFORNIA**

Donald B. Cadien (CSDLAC) - 20 Mar 1998

(modified from Burukovskii 1974, Wicksten 1978, Butler 1980, and Hendrickx 1996)

1. Rostrum articulated to front of carapace ..... *Pantomus affinis*  
Rostrum not articulated, integral to carapace ..... 2
2. Third maxilliped with an exopod ..... *Plesionika* 3  
Third maxilliped lacking exopod ..... 6
3. Second legs markedly unequal in length ..... *Plesionika mexicana*  
Second legs equal or subequal in length ..... 4
4. Rostrum with 2-8 small spines dorsally near it's base; ventral spines (if present) very small and restricted to the distal half of the rostrum ..... *Plesionika sanctacatalinae*  
Rostrum with 10-14 well developed spines dorsally, and 12-18 spines ventrally on the rostrum; ventral spines not restricted to distal half of rostrum ..... 5
5. Carpus of second legs with 8-9 segments; median carapace teeth near rostral base fixed .....  
..... *Plesionika beebei*  
Carpus of second legs with 14-17 segments; 3 median carapace teeth at rostral base moveable .....  
..... *Plesionika trispinus*
6. Discoid widening of inner margin of ischium of first leg prominent ..... *Pandalopsis ampla*  
No discoid widening of inner margin of ischium of first leg ..... *Pandalus* 7
7. Carapace, abdomen and legs a uniform translucent pink; third abdominal somite with dorsal carina forming a lobe on posterior margin ..... *Pandalus jordani*  
Carapace or abdomen with white lines, spots or flecks, or if uniform pink, with yellow bands on legs; third abdominal somite not carinated dorsally ..... 8
8. Carapace with white lines and abdomen with white spots OR legs with yellow bands; dorsal spines confined to anterior half of carapace ..... 9  
Carapace with scattered small black specks and minute red dots, abdomen with white lines dorsally and black lines laterally; dorsal spines extend to posterior half of carapace ..... *Pandalus danae*
9. Carapace and abdomen uniform translucent pink, legs 3-5 pink with yellow bands; sixth abdominal somite length  $\geq 2X$  width ..... *Pandalus tridens*  
Carapace red with white lines, white spots on 1st and 5th abdominal somites, legs red and white banded; sixth abdominal somite length  $< 2X$  width ..... *Pandalus platyceros*

**KEY TO SOUTHERN CALIFORNIA BIGHT BENTHIC PENAEOID SHRIMP**

Donald B. Cadien (CSDLAC)- 20 March 1998

(based on keys in Hendrickx 1995, and Dall et al 1990)

1. Cervical sulcus reaching less than 2/3 the distance from the hepatic spine to the top of the carapace; postorbital spine absent; 4th leg lacks epipod ..... 2  
 Cervical sulcus reaching the top of the carapace; postorbital spine present; 4th leg bearing an epipod ..... *Solenoceridae* 3
2. Third to 5th pleopods biramous; prosartema (eye brush) present; exopods on 2nd and 3rd maxillipeds ..... *Penaeidae* 4  
 Third to 5th pleopods uniramous; prosartema absent; exopods lacking on 2nd and 3rd maxillipeds ..... *Sicyoniidae* 6
3. Pleura of first abdominal somite broad and ventrally bilobed ..... *Solenocera florea*  
 Pleura of first abdominal somite little wider than rest of segment and not bilobed .....  
 ..... *Solenocera mutator*
4. Rostrum dentate both dorsally and ventrally ..... *Penaeus* 5  
 Rostrum dentate only dorsally ..... *Metapenaeopsis*\*
5. Gastrofrontal carina well defined, reaching to orbital margin ..... *Penaeus californiensis*  
 Gastrofrontal carina often inconspicuous anteriorly, not reaching orbital margin .....  
 ..... *Penaeus brevirostris*\*\*
6. Carapace bearing lateral "bulls-eye" marking or brown spot inside a larger light area laterally .... 7  
 Carapace without brown spot or other pronounced marking ..... *Sicyonia ingentis*
7. Carapace carina with 4 post-rostral teeth; anterior dorsal tooth of 1st abdominal somite sub-equal in size to last tooth of carapace dorsal carina ..... *Sicyonia penicillata*  
 Carapace carina with 5 post-rostral teeth; anterior dorsal tooth of 1st abdominal somite much larger than last tooth of dorsal carina ..... *Sicyonia disedwardsi*\*\*

\*= specific separation based on details of external genitalia not determinable in the field. Only *M. mineri* has been taken within the southern portion of the Bight to date, although *M. kishinouyei* and *M. beebei* have similar ranges along the Baja California peninsula and might be expected to occur here as well. Consult Hendrickx 1995 for genitalia characters.

\*\*=not yet reported from area, but may range into it during strong ENSO events. Included for differentiation from closely related species known to occur in the southern California Bight.

## REVISED KEY TO THE ALPHEIDAE OF CALIFORNIA

D. B. CADIEN (CSDLAC) - 23MAR 1998

(based on the key in Wicksten 1984)

1. Triangular movable plate articulated at posterolateral angle of sixth abdominal somite lateral to uropod base ..... 2  
No triangular plate lateral to uropod base ..... 9
2. Rostrum prominent, orbital hoods armed with spines ..... *Alphaeopsis equidactylus*  
Rostrum absent, carapace front without spines ..... *Betaeus* 3
3. Dactyls of walking legs slender and simple ..... 4  
Dactyls of walking legs stout and bifid ..... 6
4. Chelae of first legs with fingers > than palm; large male with fingers of chelipeds gaping  
..... *Betaeus longidactylus*  
Chelae of first legs with fingers ≤ than palm; large male with fingers of chelipeds not gaping  
..... 5
5. Blade of antennal scale broad distally; fixed finger of first cheliped decreasing in width evenly to sharp curved tip ..... *Betaeus harrimani*  
Blade of antennal scale narrow distally; fixed finger of first cheliped truncate before sharp curved tip  
..... *Betaeus ensenadensis*
6. Carapace front curved, not emarginate; commensal with sea urchins (*Strongylocentrotus* spp)  
..... *Betaeus macginitieae*  
Carapace front emarginate; commensal with abalone or free living ..... 7
7. Emargination of front shallow; telson with posterolateral spines small or missing; commensal with abalones (*Haliotis* spp) ..... *Betaeus harfordi*  
Emargination of front deep; telson with posterolateral spines well developed ..... 8
8. Peduncle of first antenna less than ½ carapace length; merus of cheliped with lower inner ridge with long bristles, upper ridge ending in sharp tooth; chela with fingers subequal to palm; chela 3 times as long as wide ..... *Betaeus gracilis*  
Peduncle of first antenna = carapace length; merus of cheliped with lower inner ridge usually tuberculate, upper ridge with tuft of hair; chela with fingers longer than palm; chela twice as long as wide ..... *Betaeus setosus*
9. Eyes partially or fully exposed dorsally ..... 10  
Eyes fully covered by carapace dorsally ..... 12
10. Eyes fully exposed dorsally, rostrum shorter than eyestalks ..... *Automate* 11  
Eyes partially exposed dorsally, rostrum much longer than eyestalks ..... *Salmoneus* sp A
11. Propodus of 3rd legs bearing spines on the posterior margin ..... *Automate dolichognatha*  
Propodus of 3rd legs setose, but lacking spines on posterior margin ..... *Automate* sp A
12. Legs lacking epipods; dactyls of legs 3-5 bifid ..... *Synalpheus lockingtoni*  
Legs with epipods; dactyls of legs 3-5 simple ..... *Alpheus* 13
13. Dactyl of major chela closing horizontally; merus of 3rd leg with prominent inferior spine  
..... *Alpheus clamator*  
Dactyl of major chela closing vertically; merus of 3rd leg lacking prominent inferior spine  
..... 14
14. Orbital hoods spined; minor chela with prominent spine posterior to movable finger; movable finger flattened (lamellate) ..... *Alpheus bellimanus*  
Orbital hoods not spined; minor chela without prominent spine posterior to movable finger; movable finger not flattened ..... *Alpheus californiensis*



**Southern California Association of  
Marine Invertebrate Taxonomists**

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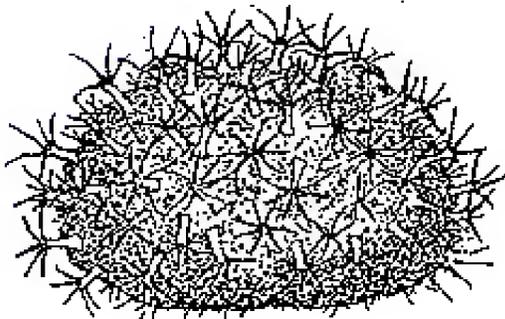
April, 1998

**SCAMIT Newsletter**

Vol. 16, No.12

<b>NEXT MEETING:</b>	Ascidians of Southern California Harbors
<b>GUEST SPEAKER:</b>	Drs. Charles & Gretchen Lambert
<b>DATE:</b>	11 May 1998
<b>TIME:</b>	9:30 a.m. to 3:30 p.m.
<b>LOCATION:</b>	114A Science Laboratory Complex, California State U., Fullerton, Ca. (see directions below)

**11 MAY MEETING**



*Boltenia echinata* (from Van Name 1945)

The meeting will be held in the laboratory of the Lamberts at Cal State Fullerton. It's their local swan song as they are retiring to the Pacific Northwest in June. We will concentrate on introduced ascidians in bays and harbors. They have just completed their annual examination of local boat harbors, and will have up-to-date information on introductions. Since we are meeting at their lab there will be all the comparative material we will need. Unknowns are welcome. The meeting is designed to prepare us for species we may encounter for the first time as Bight '98 trawling takes us into harbor areas.

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*SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.*

## DIRECTIONS TO MEETING

>From 91 (Riverside) or 22 (Garden Grove) freeways take 57 Freeway North. Exit on Nutwood Ave. Go left under freeway and continue west past Marriott Hotel on right. CSUF is on right. Turn right at first driveway after the light on Commonwealth. Turn right again immediately; stop at parking kiosk for parking pass. Those who notified Don Cadien of planned attendance prior to the 7<sup>th</sup> will have passes waiting. The SLC building (green and white) faces Nutwood across lawn from parking kiosk.

## BIGHT '98

Preparations continue for the second round of regional sampling, Bight '98. There is still no final definition of the participants (but 41 groups are reputed involved in some or all of the program so far), so QC preparations are in limbo for the moment. The index period remains the same; mid-July to early September. Although changes may still take place, both in number of samples and effort allocation, the base plan is to have just under 300 benthic infaunal samples collected. A significant fraction of these will be taken from bay and harbor areas, and the remainder from the inner half of the continental shelf. Apparently quite a bit of the effort in both the northern and southern sections of the Bight will be performed by contractors using money contributed by agencies who were not involved in the SCBPP. Sampling will be performed around the northern Channel Islands, but the true extent and allocation of the effort is not yet known.

Trawls will also be taken as in the 1994 SCBPP sampling. Trawling in bays is physically restricted by the presence of both fixed and moveable objects. It is not yet clear if a modified methodology will be adopted (such as a shorter trawl duration or use of other gear) in bay and harbor areas. Those who

participated in the 1994 effort will find this one much the same, although new protocols for fish tissue acquisition will require additional trawling at each site.

As the number of participants increases, so does the complexity of the necessary intercalibration. SCAMIT will be involved, as it was in 1994 in both preparatory meetings before sampling (starting with the May meeting), and with quality control during sample processing. We will also serve as a clearinghouse of information for all the taxonomic participants. As work on the samples progresses, and new problem areas emerge, meetings will be scheduled to deal with them. We will also be concentrating our attention on those areas identified during the 1994 SCBPP as ones where identifications were not adequately standardized (Montagne & Bergen 1997).

One of the methods suggested to accomplish this was discussed at the last meeting; specialization. Although logistical problems with maintenance of revenue neutrality prohibit the application of a specialist approach across the board, it can be used in limited problem areas. Dave Montagne (CSDLAC) prepared a preliminary analysis of the impact (in terms of number of lots and number of specimens) of specializing in groups identified during SCBPP as non-standard areas. In most cases either few species or few individuals were involved, but a few groups seem to warrant additional effort for their resolution during Bight '98. The decision to use or not use this approach rests with the Steering Committee, but we will make recommendations based on our discussions at the meeting through president Ron Velarde (CSDMWWD).

## NEW LITERATURE

The nomenclature of sponge spicules is complicated enough, but when you add in the descriptive terms

used for the morphology of the group much confusion results. This has hopefully been removed by Boury-Esnault & Rützler (1997). They provide a comprehensive listing of terms, give definition, and provide clear illustrations (annotated where necessary) of the structure in question. The work presented by them is the result of several years of consultation between the majority of the sponge workers in the world. It up-dates the last such attempt, made 30 years ago (Borojevic et al. 1968). The listed authors are in reality editors, presenting the communally derived definitions.

The problem of identifying gelatinous pelagic animals caught in trawls has just been simplified by the release of Wrobel & Mills 1998. This guide provides generally excellent illustrations of a wide variety of gelatinous zooplankters from both surface and deeper waters off the west coast. All are either cnidarians, ctenophores, tunicates, or mollusks. Capsule descriptions of the living animals augment the photographs, and background discussions cover several topics including zoogeography, handling (some of these guys can deliver a most unpleasant sting), natural history, and ecological relationships. A large, but not comprehensive bibliography is also provided, as is a hierarchical listing of the taxa considered.

The paper of Jennings & Newman (1996) has buried within it a reallocation of one of our local flatworm species, *Stylochus exiguus*. They mention during discussion of some of their new species that our species belongs in the genus *Imogine*, which they elevate from subgeneric to generic rank within the paper. They do not redescribe *I. exiguus*, but the comparisons with the new congeners are interesting.

Bivalve feeding has been addressed on several occasions. Most recently at a workshop on suspension feeding at Plymouth, England (Bayne 1998). The author provides an introduction to the workshop in his paper. Individual aspects of bivalve suspension feeding were covered in other papers resulting from the meeting and published in

the same issue of the journal. In his introduction he summarizes recent developments in the field, and mentions some promising new directions.

The effect of introduction of the bivalve *Musculista senhousia* on eelgrass is explored by Reusch & Williams (1998). They experimentally demonstrated interference with eelgrass growth by addition of *Musculista*. The effect was linear, and most pronounced in areas where eelgrass density was already low. In Southern California, where other external causes have decreased the density of previously luxuriant beds, or where transplants are widely spaced and intended to fill in, invasion by *Musculista* might seriously affect the health of eelgrass beds.

Cladistic analyses are usually based on many types of base data. In the mollusks, the crystalline structure of the shell has often been used as a very basic attribute of a clade. Information on shell mineralogy and fine-structure of the layering has been accumulating for years. Increased use of SEM in recent years has added even more detailed information. Hedegaard (1997) continues this trend, providing an analysis of shell structure in vetigastropods. Among other results, his analysis suggested that phasianellids were neither a part of nor a sister group to turbinids.

Phylogenetic questions concerning anomuran crabs were treated by McLaughlin & Lemaitre (1997) and Tudge (1997). The former authors address "carcinization" in the group based on evidence provided by adult morphology. They also provide an overview of the historical context of the idea. They conclude that lithodid crabs did not arise from hermit crab ancestors through a process of carcinization.

Tudge performed a cladistic analysis of the relationships between a selection of anomuran, thalassinidean, and other decapod groups using 32 characters derived from the morphology of spermatozoa and spermatophores. He found many of the groups he examined to be paraphyletic based

on the considered evidence. For instance, he found that Anomura was not a monophyletic clade. His analysis also suggested that the thalassinids were not monophyletic, and that *Thalassina* belonged within the anomuran clade, while the other thalassinids did not. The lomoid *Lomis hirta* also fell outside the boundaries of the anomuran clade. Hippid crabs were placed as a sister group to the Anomura.

The last of the provisional species of *Pagurus* erected by Janet Haig has now been described by Wicksten & McLaughlin (1998). Haig's *Pagurus* sp. 2 has finally been named *P. retrorsimanus*. Although there is no direct mention of the provisional name as it was established by Haig, she is acknowledged as the first person to recognize the new species. There is a reference to a photograph of the species (as *Pagurus* sp. 2) in Jensen (1995).

In a continuing series on parental care in peracarids Thiel (1997) discusses how small new recruits avoid predation. He covers the period between leaving the protection of the parental burrow and establishment of a self-constructed burrow of sufficient depth to efficiently deter predators in this paper.

Mooi (1997) provides a concise and complete treatment of west coast sand dollars of the genus *Dendraster*. One name change pertaining to the Southern California Bight fauna is presented; the synonymy of *Dendraster laevis* with *D. terminalis*. Good illustrations, discussion, and key are included., as is a preliminary phylogenetic analysis.

The degree of motility in adult brittle-stars was examined experimentally by Rosenberg et al (1997) using *Amphiura filiformis*. They tested the hypothesis that the species exhibits density-dependant migratory behavior with reduced food availability as the proximal stimulus. They found that although migration rate was density dependant, it was independent of food concentration. They had some observations which suggested movement of up to two km over a one year period. They also found

that movement could be either over the sediment surface, or beneath it. They conclude that the extent and impact of such movements has been vastly underappreciated previously, and forms a potentially very important means of physical mixing in surface sediments. Our local amphiuroid ophiuroids are sufficiently similar in morphology to *A. filiformis* to suggest that similar scale effects might take place locally.

### GOING, GOING, GONE

Three members of our local taxonomic community are changing locales. As was indicated at the beginning of this Newsletter, Drs. Charles and Gretchen Lambert are retiring from their posts at California State University, Fullerton, and moving to the Puget Sound area. I say "retiring" reservedly, since they will undoubtedly stay very active in the community, much to the benefit of our northern sister organization NAMIT. They leave in mid-June. We owe them a debt of gratitude for their continuing support of our organization over the years.

The same can be said of Dr. Mary Bergen, of SCCWRP. She is also "retiring" from her position at SCCWRP, and will head her family avocado ranching business in the Ojai area. Mary says she will be looking forward to continuing where possible in her taxonomic pursuits with the holothurians, and plans to make herself available as a consultant when she can spare the time from the business of the ranch. We have already planned (in principle) a workshop on holothurians to take place at the ranch either later this year or next year. She has been in and out of the local scene several times over the last 20+ years, leaving for work with EPA in San Francisco, and with the State Lands Commission in Sacramento. Nearly all (if not all) the work of setting up for the benthic portion of Bight '98 should be in place by her departure in mid-June. According to Steve Weisberg, SCCWRP Director, her position as head of the benthic effort

will take some time to fill. In the interim, Dave Montagne (CSDLAC) will coordinate QC and sample processing efforts.

Also departing is Cheryl Brantley, who ends her stint as SCAMIT secretary. She can still be reached at her new phone (310-830-2400 ext 400, and at her prior e-mail address ([cbrantley@lacs.org](mailto:cbrantley@lacs.org)), but not about SCAMIT secretary business. Newly elected Megan Lilly (CSDMWWD) assumes secretarial duties after this Newsletter. She can be reached at [mnl@mwharbor.sannet.gov](mailto:mnl@mwharbor.sannet.gov).

### ACKNOWLEDGEMENTS

I greatly regret having to give up the secretarial position this year, but I need to devote more time to professional obligations at CSDLAC. In my quest to increase the quantity and quality of literature produced by SCAMIT I have had to neglect some of my work in the marine biology lab and now need to make it a priority.

I will continue to support SCAMIT as much as possible, including helping the new Secretary, Megan Lilly, adjust to her duties in any way I can. I hope to someday be able to serve as an officer again. My four years as Secretary have been a wonderful learning experience not only into the world of invertebrate taxonomy, but the World Wide Web as well. It has been great developing professional friendships and contacts thru SCAMIT which have added immensely to my growth as a taxonomist.

There are many people I need to thank, but most importantly is Vice President and Newsletter Editor Don Cadien. Without his help and encouragement I never would have gotten my job done. As most of you know the newsletter the past 4 years has been very much a team effort. My knowledge of those "other phyla" besides polychaetes is quite limited, so Don more than filled in the blanks. I hope the

Newsletter will continue to be a team effort so the quality can be maintained because one person truly can't do it alone, nor should they be expected to.

I also would like to extend a big THANK YOU to Ron Velarde, Ann Dalkey, Larry Lovell, Rick Rowe, Tom Parker, April Ford, Leslie Harris and Tony Phillips. They have all played a major role in making my job as Secretary much easier. I especially would like to thank my supervisor, Dave Montagne, for allowing me time to devote to SCAMIT in the first place. -Cheryl Brantley

### MINUTES OF APRIL 27<sup>th</sup> MEETING

Polychaete taxonomists were treated to a demonstration of digital camera imagery by Rick Rowe and Kelvin Barwick at the City of San Diego's Marine Biology Lab. Several months ago the City of San Diego purchased a Leaf Lumina digital camera to aid with standardizing invertebrate identifications amongst their large group of taxonomists. The digital camera has many advantages over traditional descriptive techniques. Hand drawings or tracings can be very time consuming, descriptive text is not quickly referenced and can be misinterpreted and film photography is relatively expensive and results are delayed waiting for film processing. The digital camera not only gives a more realistic representation of the organism, which is not as likely to be misinterpreted, but adjustments can be made to the image immediately and inadequate images can simply be deleted from the computer.

San Diego's digital camera is connected to a MacIntosh computer system that has Lumina EasyScan software installed. Once the image is captured or digitally scanned thru the EasyScan software it can then be corrected or enhanced thru Adobe Photoshop software. The maximum resolution produced is 600 dpi @ 4" x 5" output or 300 dpi @ 8.5" x 11". The maximum file size produced is 26 Mb at full frame, full resolution,

RGB. The camera also has a 36 Bit Dynamic range device which means it has more shadow and highlight detail than a typical 24 bit color flatbed scanner. Rick and Kelvin have determined that an average digital scan on their system takes approximately 3 minutes.

The camera can be used on top of a dissection or a compound microscope. One of the main problems with this camera setup has been lighting the subject, especially with the dissecting microscope. The camera loses light thru all the prisms of the dissecting scope. Thru trial and error Rick and Kelvin have found what lighting works best, many fiber optic illuminators that they can adjust directly on the subject. The camera also came with a device for projecting photographic slides and negatives that can then be scanned by the digital camera. The Lumina Easy Scan software has several options that can be set when actually scanning the image. For instance, the image can be scanned in color or black and white and as a positive or negative image. The vibration can be suppressed if needed. Also, the white balance of the light intensity can be compensated for when switching between different light sources due to using different camera positions and microscopes.

Focusing seems to be the weakest part of the camera system. Rick and Kelvin have found that it is much better to focus thru the camera than to adjust the focus through the computer due to the lag time between the two. For polychaetes Rick generally pins the organism to be digitally scanned in place with very fine insect pins under the dissecting scope and for images of parapodia and setae mounts them on a slide with the camera mounted on the compound scope. Due to the size of these digital images Rick and Kelvin store the majority of them on a removable Jazz® drives, but are looking into eventually storing them on CD-ROMs.

Kelvin demonstrated some of the capabilities of Adobe Photoshop in manipulation of these digital images. Photoshop is able to sharpen the image and

remove any background blemishes or imperfections and even enhance a particular area of the image by adding or deleting individual pixels. Kelvin did point out that there is a fine line between enhancing the image to clarify a structure and changing the image so that it is no longer as true a representation of the actual organism. However, I think all the SCAMIT members present agreed that the resolution of the digital images achieved is so good that not many enhancements are needed to improve the quality of the image of the organism, only perhaps the background. Kelvin demonstrated how a "mask" can be created in Photoshop to change the background and how sometimes a different color background or background texture will enhance the features of the organism and improve the overall digital image.

After this camera demonstration we were all treated to a scrumptious lunch provided by Rick Rowe Catering. Sandwich fixings, pasta salad, veggies, chips, and homemade ginger cookies all prepared by Rick himself. Now we know why Rick always brings his own lunch to SCAMIT meetings, he's such a good cook. Those members absent from the meeting missed a wonderful free meal, but hopefully we will be able to talk Rick into catering another meeting in the future now that we have discovered another one of his hidden talents.

During lunch Rick distributed color handouts of his identification sheets for local *Aphelochaeta* *Monticellina* species. These handouts are color xeroxes of original sheets prepared by Rick where each page has several digital images of a different local species illustrating the individual methyl green stain patterns and diagnostic characters. Rick pointed out that these were not voucher sheets but aids to identification of a difficult polychaete group and were mainly created to assist the polychaete taxonomists at the City of San Diego. Rick has plans to make more identification sheets for other difficult groups, such as scaleworms. These handouts are not included with this newsletter due to the expense of the color copies, but we greatly appreciate Rick sharing copies with those of us at

the meeting. Any other member interested in these sheets should contact Rick Rowe.

After lunch Kathy Langan-Cranford, another member of the City of San Diego's lab presented a taxonomic problem with our local *Prionospio* sp. A of SCAMIT, whether it should be referred to as *Prionospio jubata* Blake 1996 or *Prionospio steenstrupi* Malmgren 1867 or left as a provisional. Blake lists specimens of Dean Pasko's in the material examined for the description of *P. jubata* in the MMS Atlas volume 6. These animals were some of those that Dean had used to write up the *P. sp. A* voucher sheet for SCAMIT in 1991.

Several weeks ago Tom Parker and Cheryl Brantley (CSDLA) compared their specimens of *Prionospio* sp. A to the description of *Prionospio jubata* in the MMS Atlas volume 6 and found several differences especially with regards to the beginning of the dorsal crest and length of the first and fourth pair of branchiae, which are the two characters used to split *P. jubata* from its congeners in Blake's key. This information was passed on to Kathy and she pulled several of her lab's *Prionospio* sp. A specimens and compared them to *P. jubata* and informed other SCAMIT members to check their animals as well. Kathy checked several of the animals that her co-worker Dean Pasko had used to write up the SCAMIT voucher sheet for *P. sp. A* and more recently collected animals. She displayed several of these animals at the meeting using SCAMIT's video camera system. She found similar variations with San Diego's animals as Tom and Cheryl did with LA County's.

The dorsal crest or transverse fold seems to begin on setiger 7 not 6 as described for *P. jubata*. The lamellae of setiger 6 are larger than the lamellae from setiger 5 but do not form a fold or extend completely across the dorsum (as illustrated in Fig. 4.10 on pg. 127 in the Atlas) until setiger 7. Upon staining these animals in methyl green, there seems to be a thin line across the dorsum at the 6<sup>th</sup> setiger which appears to be an extension of the wide lamellae, but no fold of tissue or membrane that

could be interpreted as an actual "crest" exists. The prostomium on all these animals examined did not have the central peak like *P. jubata* either, but Kathy did find a few animals that had a slight undeveloped blip or bump in the center. SCAMIT members also found that the lengths of the first and fourth branchiae is more variable than the description for *P. jubata*. They are sometimes more equal in length rather than the fourth pair being one and one-half the length of the first pair.

Larry Lovell also brought specimens collected off Orange County that were similar to San Diego's and LA County's. Leslie Harris brought one of the paratypes of *P. jubata* from station R-5 that was deposited at LACMNH and we examined it at the meeting and found it was a very good match for Blake's description and illustration with a central peak on the prostomium and a dorsal crest which begins on setiger 6.

It was decided that the holotype should be borrowed and examined and compared to examples of our local *Prionospio* sp. A before a final decision is made as whether to call our animals *P. jubata*. It may turn out that our animals are *P. jubata*, but they just exhibit some variation with regards to the where the dorsal crest begins, how developed the prostomial peak is and the length of the pinnate branchial pairs. To most members present at the meeting these seemed to be enough significant differences to leave our provisional name in place on Edition 3 of the SCAMIT Species List. In the meantime, while the holotype is being requested, it is suggested that all members examine their specimens of *Prionospio* sp. A for these differences and make note of any other significant variations.

After this discussion Rick Rowe took members back downstairs to San Diego's computer lab to view several digital images of *Malmgreniella* scale worms from his lab and a few from LA County that Rick had scanned before the meeting. It is Rick's intention to produce identification sheets for species of *Malmgreniella* like those of the *Aphelochaeta* / *Monticellina* complex. There seems to be some

confusion between species of *Malmgreniella bansei* and *M. macginitiei*, which have many similar character states. Rick also believes that San Diego might be collecting *M. sanpedroensis* and perhaps *M. pacifica*. In about twenty minutes SCAMIT members were able to examine digital images of several species of *Malmgreniella* and easily see the differences in body and elytral pigment patterns, setal shape, and supraacicular lobe shape amongst several animals. If we had actually pulled these specimens out at the meeting and examined under the microscope with the video camera system it would have taken far longer. Work still needs to be done on this group to see what species we do have off southern California, but with Rick taking some time to pre-scan the images before the meeting he was able to only spend a few minutes illustrating the confusion with several of the diagnostic characters of *Malmgreniella*. It saved time for the rest of the members and we were able to accomplish more at the meeting. This was a very good example of one application of these digital images. Now that these images are digitized they can be printed out, sent electronically to others working with *Malmgreniella*, collected in electronic catalogs or notebooks for quick, easy reference or even put on the SCAMIT website for a much wider audience to view. The possibilities for taxonomic uses of these digital images is almost endless and SCAMIT members owe the City of San Diego's staff a great big THANK YOU for sharing their newest toy with all of us. For other SCAMIT members, not working with polychaetes, Rick and Kelvin have promised to demonstrate this system again in the near future. The small size of San Diego's computer lab was the limiting factor for this demonstration.

### LOVE, NOT WAR

The May issue of *Scientific American* has a short news piece describing pre-nuptial encounters in the flatworm world (McKinsey 1998). It is derived from an article by Nicolaas K. Michiels and Leslie J. Newman in the 12 February issue of *Nature*. In

the species studied (*Pseudoceros bifurcus*), which is hermaphroditic, functional sex determination is labile. When two individuals meet they rear up the anterior end of their bodies to expose their ventrally placed penes, with which they begin to spar. After a bit of thrust-parry-thrust the animal with the longest reach hypodermically injects sperm into the other through its penial stylet.

This causes the receiving individual to function as a female and begin egg-production. The "male" member in this encounter then crawls off in search of other conquests while the "female" diverts it's attention to the energetically costly enterprise of egg making. Encounters of this type may explain why many flatworms have light sensitive organs widely scattered on the body rather than concentrated in one area.

### MY LIFE AS A BIOLOGIST

By Donald J. Reish

#### Chapter 6 - The Army Draft and University of Oregon

After I decided not to enter journalism as a career, I went to the campus counselor for assistance. I was assigned to a senior who gave me different tests. He determined that the best bet for me was to become a high school social science teacher! It turns out he was training to be a high school social science teacher! So much for counseling. Things began to change on campus during the spring (1943). Male students were being drafted out of the classroom. I took two math classes during summer school to improve my chances of entering officer candidate school. I worked at the army PX and sold beer to the soldiers (at age 19). I went to Portland on Bastille Day ( July 14<sup>th</sup>) for my army physical. I had memorized the eye chart, but failed the eye test anyway. On the bus back to Corvallis, my friends felt so sorry for me. I cried when I got home, but my mother said, "There will be a need for educated people after the war."

As a freshman at Oregon State, I had taken Psychology. I considered this field and I went to see my Psych prof (she lived about 5 blocks from me). She said that if I wanted to become a Psychologist I had to go to Univ. of Oregon since Oregon State did not offer a degree in Psych. That was my primary reason for going to U. of O. Just before heading for Eugene, Bob, John and I took a bicycle camping trip to Florence, OR. That was my first visit to Lake Cleowax. We try to go there every time we are in OR. It is one of my favorite spots in OR. I have a series of photos taken over the past 45 years which shows the development of a forest on the enormous expanses of sand dunes.

Just before heading off to the U.of O. in fall 1943, Bob and I were looking at the Oregon State College catalog. Bob had also become 4F because of eyes. We looked at the requirements for the PhD; we thought it would be neat to get a PhD and maybe sometime we could become a college president! (Fortunately, neither of us did.)

The dorm was a fraternity taken over by the University. Most of the male student body was made up of freshman who were waiting to be drafted. They didn't study much. Since I could not take any upper division Psych courses, I enrolled in General Biology. I had an outstanding prof and I really enjoyed biology. I decided then and there that I wanted to get a PhD in Biology. The next quarter we studied invert zoology. I made a large chart which compared how the different phyla lived, reproduced, etc. I must have included polychaetes, but I do not recall them. I spent much time dissecting the earthworm including a detailed study of the circulatory system. I then explained the system to some of my fellow students. I continued taking math and in my fall quarter of my junior year, I took chem, physics and calculus. I got so tired of working math problems in the three classes. Where's biology? I lived in a private home and was a house boy for a sorority. I washed pots and pans and received my meals and \$5.00 a month (my room was \$12.00 per month).

The effect of the war was really evident my first two years at U. of O. There was about 4 to 5 women for each male. (Prior to the war men outnumbered women 2 to1). Gas was rationed as were meat, canned goods, sugar, and shoes to mention a few. Actually, I really wasn't affected too much by the war. I had to take ROTC my sophomore year; I couldn't march and I ended up with the only D grade in my life. My mother moved to L.A. My dad could not get gas to make the trip so he went to work in the box factory. I joined him at the end of the school year. We didn't make boxes, but the factory cut pine wood which was shipped to WA, CA, or elsewhere. We cut the wood for orange crates. Years later Dr. Hartman gave me 2 orange crates for my book case when I went to USC (I still use them!). I often wondered if I had stacked their pieces years previously.

I only took a quarter of calculus and substituted botany in its place. Mr Sipe was the prof., and he played an important role in my life as you will see in the next chapter. I spent the summer with my mother and worked on an experimental farm in North Hollywood. It wasn't very scientific; I mainly watered and pulled weeds, but it was fun working outside (no smog those days). At this stage of my life my mother thought that I would become a botanist. I had planted a vegetable garden at our home in Corvallis. In my senior year I began to think about grad school. For the most part the profs at U of O were not much help since the dept. emphasized pre-med. I did take an undergrad research problem, and I chose to work with termites. Research wise, I didn't accomplish much except I was able to get a stack permit in the library (there was no such thing as open stacks in those days) and I learned about scientific literature. I did benefit from it; I gave 2 seminars on termites and I have advised people about termites over the years. [Next: Oregon Institute of Marine Biology and I become a High School Teacher]

### ED. 3 UPDATE

The release of the 3<sup>rd</sup> edition of the SCAMIT Taxonomic Listing is not yet upon us. We are in the final stages of preparation (still), and are attempting to finish collation of changes, and modification of the introduction and supporting text. We will try to have it out by the end of May, but no firm date is yet available. Good things are worth waiting for, but sorry for the delay.

### IT'S 11 O'CLOCK, DO YOU KNOW WHERE YOUR COLLECTION IS?

In an e-mail about the shrimp keys attached to the last Newsletter, Dr. Mary Wicksten (TAMU) included the following commentary, which is likely to be of interest to many readers.

“ During studies in the 1960's, the *Velero IV* deployed Isaacs-Kidd midwater trawls at numerous stations between the southern California islands and Guadalupe Island, Mexico. The fish were analyzed by Robert Lavenberg of the LACM and others. John C. Yaldwyn of New Zealand described *Pasiphaea chacei* from the collections, and wrote up a list of species (unpublished) of midwater shrimp. A few of his records were incorporated into a zoogeographic analysis of midwater fauna (Ebeling et al, 1970). Some of crustacean specimens were sorted out and identified. I wrote a short note on the polychelid lobsters (*Stereomastis* spp.) (Wicksten, 1980), and described a pandalid shrimp from the material (Wicksten, 1983). I recall some work on the cephalopods, hyperiid amphipods and phyllosoma larvae; someone sorted out some of the shrimp for work on a thesis (or so I was told).

The rest of the material, including large black medusae (perhaps *Atolla* spp. and others), giant calanoid copepods, heteropods, foot-long nemertean, swimming polychaetes, giant mysids and ostracods, numerous oplophorid, pasiphaeid

and sergestid shrimp and much more languished in 10% formalin (no buffer) in jars labeled only with station numbers. There were banks of shelves and boxes full of the specimens.

The station data was not formally deposited at USC, so over time, some of the station data has been lost. Nobody paid much attention to the enormous collections. They were moved from the back shelves of the Hancock Foundation out to the old Harbor Laboratory, then back to a greenhouse at USC. The material still was in existence as a collection in 1980, when I moved to Texas A&M University. Crustacean specimens were decalcified and rubbery by the time I examined them. Some of the previously sorted crustaceans at LACM finally have been removed from formalin, but few have been catalogued. Most of the specimens in the unsorted jars just disappeared.

I have not been able to get "the full story" on these midwater collections. Some of the lids on the jars rusted and the specimens dried out, so these probably were discarded. Some of the specimens that were identified at USC seem to have been lost during the move of the collections from the Hancock Foundation to the LACM. But what happened to the rest of the material? Some say that some of it went to the Santa Barbara Museum of Natural History, others say that it was thrown out. One can guess how much it would cost to duplicate such a collecting effort today, assuming that any granting agency or project would foot the bill. “

**BIBLIOGRAPHY**

- BAYNE, B. L. 1998. The physiology of suspension feeding by bivalve molluscs: an introduction to the Plymouth "TROPHEE" workshop. *Journal of Experimental Marine Biology and Ecology* 219:1-19.
- BLAKE, JAMES A. 1996. Family Spionidae Grube, 1850. Pp. 81-223 *IN*: Blake, James A., Brigitte Hilbig, & Paul H. Scott (eds.). *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and the Western Santa Barbara Channel. Volume 6 - The Annelida Part 3. Polychaeta: Orbiniidae to Cossuridae.* Santa Barbara Museum of Natural History, Santa Barbara, California. 418pp.
- BOROJEVIC, RADOVAN, W. G. Fry, W. C. Jones, C. Lévi, R. Rasmont, M. Sarà, & J. Vacelet. Mise au point actuelle de la terminologie des éponges. *Bulletin du Muséum National d'Histoire Naturelle (Paris), series 2, 39:1224-1235.*
- BOURY-ESNAULT, NICOLE, and Klaus Rützler (eds.). 1997. *Thesaurus of sponge morphology.* *Smithsonian Contributions to Zoology* 596:1-55.
- EBELING, A., R. Ibara, R. Lavenberg and F. Rohlf. 1970. Ecological groups of deep-sea animals off southern California. *Bulletin of the Los Angeles County Museum of Natural History* 6:1-43.
- HEDEGAARD, CLAUS. 1997. Shell structures of the recent Vetigastropoda. *Journal of Molluscan Studies* 63:369-377.
- JENNINGS, K. A. and Leslie J. Newman. 1996. Four new stylochid flatworms (Platyhelminthes: Polycladida) associated with commercial oysters from Moreton Bay, southeast Queensland, Australia. *The Raffles Bulletin of Zoology* 44(2):493-508.
- JENSEN, GREGORY C. 1995. *Pacific Coast Crabs and Shrimp.* Sea Challengers, Monterey, California. 87pp.
- McKINSEY, KRISTA. 1998. Dances of Worms. *Scientific American* 278(5):28.
- McLAUGHLIN, PATSY A., and Rafael Lemaitre. 1997. Carcinization in the Anomura - fact or fiction? I. Evidence from adult morphology. *Contributions to Zoology* 67(2):79-123.
- MONTAGNE, DAVID E., & Mary Bergen. 1997. Quality control and assessment of infaunal identification and enumeration: the SCBPP experience. *Southern California Coastal Water Research Project, Annual Report 1996:147-153.*
- MOOI, RICH. 1997. Sand dollars of the genus Dendraster (Echinoidea: Clypeasteroidea): phylogenetic systematics, heterochrony, and distribution of extant species. *Bulletin of Marine Science* 61(2):343-375.
- REUSCH, THORSTEN B. H., and Susan L. Williams. 1998. Variable responses of native eelgrass Zostera marina to a non-indigenous bivalve Musculista senhousia. *Oecologia* 113:428-441.
- ROSENBERG, RUTGER, Hans C. Nilsson, Karin Hollertz, & Birthe Hellman. 1997. Density-dependent migration in an Amphiura filiformis (Amphiuridae, Echinodermata) infaunal population. *Marine Ecology Progress Series* 159:121-131.
- THIEL, MARTIN. 1997. Epibenthic predation in marine soft-bottoms: being small and how to get away with it. *Hydrobiologia* 355:11-19.
- TUDGE, CHRISTOPHER C. 1997. Phylogeny of the Anomura (Decapoda, Crustacea): spermatozoa and spermatophore morphological evidence. *Contributions to Zoology* 67(2):125-141.
- VAN NAME, WILLARD G. 1945. The North and South American ascidians. *Bulletin of the American Museum of Natural History* 84:1-476.
- WICKSTEN, MARY K. 1980. New records of Stereomastis sculptus pacificus in the eastern Pacific. *Proceedings of the Biological Society of Washington* 93:914-919.
- 1983. Plesionika sanctaecatalinae: a new species of deep-sea shrimp from the eastern Pacific. *Bull. So.*

Calif. Acad. Sci. 82:138-143.

---, & Patsy A. McLaughlin. 1998. Pagurus retrorsimanus (Crustacea: Decapoda: Paguridae), a new and distinctive hermit crab from the eastern Pacific. Proceedings of the Biological Society of Washington 111(1):153-157.

WROBEL, DAVID, & Claudia Mills. 1998. Pacific Coast Pelagic Invertebrates - A guide to the common gelatinous animals. Sea Challengers/Monterey Bay Aquarium, Monterey, California. 108pp.

YALDWYN, JOHN. 1962. A new Pasiphaea (Crustacea, Decapoda, Natantia) from southern California waters. Bulletin of the Southern California Academy of Sciences 61:15-24.

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