



**Southern California Association of
Marine Invertebrate Taxonomists**

3720 Stephen White Drive
San Pedro, California 90731

February, 2001

SCAMIT Newsletter

Vol. 19, No. 10

SUBJECT:	Review of the Bivalve Book
GUEST SPEAKER:	Paul Valentich Scott and Gene Coan
DATE:	14 May 2001
TIME:	9:30 a.m. to 3:30 p. m.
LOCATION:	Invertebrate Collections Santa Barbara Museum of Natural History



Figure 1 - *Thelepus hamatus*
I28(1),11JUL00,185 ft.
Image by K Barwick 15NOV00

Next Meeting: Review of the “Bivalve Book” with authors Gene Coan and Paul Valentich Scott (2 out of 3 ain’t bad). Pull together your questions, annotations, range extensions [and verifying specimens], comments, corrections, and still unresolved bivalve taxonomy difficulties and bring them to the meeting. How: Contact Secretary Megan Lilly if you need directions on how to find the meeting location.

SCAMIT Ed. 4

Originally scheduled for completion last June, Ed. 4 is stretching on into its third year of expectation. We have delayed releasing it for a number of events, including the Bivalve book mentioned above, the completion of the B’98 sampling, and now the discussions of the taxonomic changes proposed in the final volume of the Taxonomic Atlas series from the Santa Barbara Museum of Natural History. We

had hoped to be done by this time, but there are still several chapters of the last Atlas volume (the final installment of the multi volume treatment of the annelids) to be reviewed.

NEW LITERATURE

Welcome to your “all phylogeny - all the time” new literature section. The virtual cascade of examinations, reexaminations, retrenchments, methodological tweaks - and resultant analytic modifications - of invertebrate relationships which have stemmed from the exponentially increasing availability of molecular taxonomic data continues. While we are still far from completion of alpha description of the marine invertebrate biota, apparently a critical mass of information has been reached.

Using 18S rDNA sequences Harasewych & McArthur (2000) examine the relationship of patellogastropods to most other groups of gastropods. An attempt was also made to elucidate relationships within the patellogastropod clade itself. The patellogastropods proved to be a very well supported clade congruent with the orthogastropod/eogastropod split argued by Ponder and Lindberg. Present data is not, however, sufficient to determine with confidence the primitivity of the various groups, so whether patellogastropods are a basal group or not remains in question. The 18S rDNA gene proved ill suited for resolution of relationships within the group, and the authors suggest that investigation based on mitochondrial genes may prove more informative.

While the patellogastropods are widely assumed to be a basal clade, the nudibranchs have always been viewed as advanced. Wagele & Willan (2000) provide a phylogeny of this clade based on morphological, anatomical and biological characters. In preparation for their analysis they provide an interesting and useful conceptual history of the interpretation of the group and its relationships within the Mollusca. Their analysis confirmed the monophyly of

several groups including the Anthobranchia and the Cladohepatica, while demonstrating convincingly that the Arminoidea was an artificial paraphyletic grouping of disparate clades. It would be instructive to view this again based on genetic data. It is probably that the neat separations seen with morphological data may be somewhat modified on the basis of genetic evidence.

The allied group of Pulmonata was examined using ribosomal gene data by Wade and Mordan (2000). Although both nudibranchs and prosobranchs were included as outgroups in the analysis, both were represented by too few taxa for evaluation of their internal relationships. Both did separate well from the pulmonates, with the opisthobranchs [nudibranchs+anaspideans] and pulmonates joining in a euthyneuran clade. Use of rRNA genes seemed to be a fruitful tool in evaluation of pulmonate phylogeny.

Ribosomal data (this time 28S rDNA) was also used by Colgan, Ponder & Egger (1999) to examine the phylogeny of the gastropods. As part of their approach they evaluated the variability, on a clade specific basis, within various regions of the examined gene. They also compared their DNA results with results of analysis based on histone H3 sequences. They found wide variations in evolutionary rate within different portions of the gene, and that such variations were fairly clade specific. They found the Eogastropoda/Orthogastropoda split mentioned above is not supported by data from the analysed gene. Patellogastropod monophyly was indicated, as was monophyly in Euthyneura and “higher” vetigastropods, while polyphyly was evident in the Cocculiniformia. Potential problems in the morphologically based concepts of Caenogastropoda and Heterobranchia were indicated by relatively low support in the present analysis. As more analytic data of all types is accumulated we are (hopefully)



spiraling in on a unified view of gastropod relationships. Currently not even the latest analytic results are definitive. Work continues along many lines of evidence.

The equally contentious area of annelid phylogeny has been revisited by McHugh to respond to previous critical commentary (1999), and to provide a review of the current situation (2000). The introductory sentence to the latter paper is particularly illuminating, "The most striking thing about the phylogeny of the Annelida is how poorly resolved are the evolutionary relationships of this large, ancient, and ecologically important metazoan group." 'Nuf said here. If the subject compels you, don't miss these two papers, and tune in to the Annelida website for a more extensive and authoritative discussion of the issue.

Added taxonomic sampling, inclusion of fossil taxa, and advantageous out-group usage have allowed Ahyong & Harling (2000) to produce a very admirable phylogeny of the stomatopods. Their analysis suggests seven distinct superfamilies, increasing the previous accepted total of five by removal of two new superfamilies from a paraphyletic Gonodactyloidea. Now this morphologically based phylogenetic hypothesis should be tested independently by genetic data.

I snuck in one phenetic analysis hidden in the phylogenetic paper cluster, that of the crab family Cancridae by Schweitzer & Feldmann (2000). The authors include new data on fossil taxa, and provide a new key to the genera of the family.

We return to phylogeny with Hrinkevich, Rocha-Olivares & Foltz (2000) to examine a much different taxonomic level; the subgenus *Hexasterias* of the sea-star genus *Leptasterias* based on molecular data. It is one of the strengths of the method that much the same analytic techniques can be applied to such widely varying taxonomic constructs as phylum and subspecies.

It is worth noting here that Dr. Greg Deets of CLAEMD has recommended Basics of Cladistic Analysis by Diana Lipscomb as a particularly lucid methodological discussion. It can be viewed or downloaded at

<http://www.gwu.edu/~clade/faculty/lipscomb/Cladistics.pdf>

12 - 13 FEBRUARY WORKSHOP

The first day of the two day workshop at the Los Angeles County Museum of Natural History Worm Lab began with a brief business meeting. President Ron Velarde opened the business portion of the meeting and turned the floor over to Vice-President Leslie Harris who introduced LACM's new curatorial assistant, Kathy Omura. Leslie next passed around the Proceedings of the 6th International Polychaete Conference in the Bulletin of Marine Science, Volume 67 No. 1, July 2000.

We then turned our attention to the polychaetes of Volume 7 of the MMS Atlas. We returned to the topic of Scalibregmatidae which we discussed at the last meeting. We record *Scalibregma inflatum* and some members have re-examined their specimens. After some discussion, SCAMIT decided to adopt the new name, *S. californicum* Blake. Tom Parker has reported *Asclerocheilus californicus* from a deep station with coarse, gravel sediment.

The rest of the day was spent reviewing the large and diverse polychaete family Ampharetidae. Some corrections to the ampharetid key starting on page 174 were made. In couplet 4A, the figure referenced should be 8.14.E instead of 8.13.E. In couplet 3A, the figure referenced should be 8.15.B instead of 8.14.B.

The question was raised as to whether anyone had seen any of the new species described in this chapter. The answer was no, partially because they occur at greater depths than most of our monitoring stations.



Next we reviewed the species of ampharetids, one by one. *Amage anops*: Kelvin Barwick noted that the illustration in Figure 8.2.A was missing one thoracic setiger. We could not determine if the first notopodia was not illustrated or if it was obscured by branchiae. The first notopodial lobe is missing from Figure 8.2.B. Readers should note that the description of *A. anops* lists 14 abdominal setigers, but the illustration shows only 11. We also found the methyl green staining pattern to be somewhat vague.

Ampharete acutifrons: A correction was made on page 180, the first line of the description. Replace “13 abdominal segments” with “12 abdominal uncinigerous segments”. There was a discrepancy regarding the number of abdominal setigers. The description and illustration show 13; however, we have found that *A. acutifrons* has 12 as Hartman 1969 and Holthe 1986 indicate. This is an important difference because this character is used to separate *A. acutifrons* and *A. arctica*. The pygidium of *A. acutifrons* is described (Holthe 1986) with 2 long laterals plus several cirri which is different than the pygidium shown in Figure 8.3.G. We also noticed that Figure 8.3.A lacked the long cirri which are shown in Figure 8.3.G (after Zottoli, ms). Leslie has found a different methyl green staining pattern on our local specimens. We concluded that the animal described by Hilbig does not appear to be *A. acutifrons* seen in Southern California or Scandinavia as described by Holthe 1986 but appears to be an undescribed species.

Ampharete finmarchica: A correction in the first line of the description on page 182 was made. Replace “14 thoracic setigers” with “15 thoracic setigers”. *A. arctica* was synonymized with *A. finmarchica*, and this will be reflected in the 4th edition of the SCAMIT species list.

Ampharete labrops: The only comment made was concerning the narrow depth distribution (54 to 65m). Many of us have frequently recorded *A. labrops* from shallower habitats.

Amphicteis mucronata: There is a discrepancy in the number of abdominal uncinigers; the text (page 186) says 15, and the illustration (Figure 8.6.A) shows 16. Also, the thoracic setiger count does not follow the convention stated in the beginning of the chapter. According to the convention, the paleae should be included in the count, changing the total to 18 thoracic setigers (not 17) in the description. We discussed the difference in stain patterns and morphology of the lower lip of *A. mucronata* and *A. scaphobranchiata* from the Remarks section. Rick Rowe offered to stain and compare some specimens of both species and report back to us.

A. scaphobranchiata: There was some historical confusion with regard to the number of abdominal setigers in this species. Moore (1906) recorded 13 in error; later Hartman (1969) repeated the error and also recorded 13. However, the correct number of abdominal setigers is 15 (from Leslie’s notes of the type specimen) and is listed correctly in this chapter. Following Hilbig’s convention to include paleae in the thoracic setiger count, the description on page 188 was modified to read “18 thoracic setigers” instead of “17 thoracic setigers”.

Amphisamytha: There was a discussion about the designation of the type species *Samytha bioculata*. SCAMIT thought the correct type species was *Amphisamytha japonica* Hessler 1917.

Amphisamytha bioculata: The topic of discussion for this species was branchial configuration and how it can vary with preservation. We decided to follow Williams’ (1987), placing this species in *Mooreamytha* based on arrangement of branchiae.

Anobothrus gracilis: We compared *A. gracilis* with *A. bimaculatus* which we may be getting in southern California since *A. gracilis* is a European species. *A. gracilis* has 16 thoracic setigers, and *A. bimaculatus* has 15 thoracic setigers. The original description of *A.*



bimaculatus Fauchald 1972 has some errors and needs to be re-examined and redescribed. For now, SCAMIT will continue to use *A. gracilis*.

Anobothrus paleatus: This species occurs in deeper water and SCAMIT members have not recorded it.

Asabellides californica and *A. cornuta*: These two species have not been recorded by SCAMIT members but we should keep our eyes open for them.

Asabellides lineata: Rick Rowe passed around some very interesting digital images of *A. lineata*. There was a series of teeth that can be easily viewed under the compound scope by mounting the specimen (small specimens work best) ventrum up. Rick has not seen these teeth in any other species of Ampharetidae. Leslie Harris found two more examples of teeth in the Ampharetidae: 1) Ampharetidae sp B in Uebelacker and Johnson (1984), Volume 7, page 51-27 and 2) in Desbruyeres (1978).

Eclysippe trilobata: In the description on page 202, the number of thoracic setigers should be changed from 15 to 16 in keeping with the protocol for this chapter. We noted several differences between the illustrations in Figure 8.14., and Southern California specimens attributed to *E. trilobata* by SCAMIT members. For example, our specimens do not have the constriction across the ventrum shown in Figure 8.14.C nor do they have the 3 lobes on the ventral prostomium. Another difference, shown in Figure 8.14.A, is the lack of expansion in segments from about 11-14. Posterior notopodia of *E. trilobata* should be tri-lobed; in Figure 8.14.F they appear bi-lobed. Due to these differences, we wondered if this specimen is different from what we call *E. trilobata*. In addition, we have recorded *E. trilobata* from shallower habitats than the 400 - 691m range reported in this chapter.

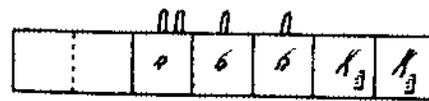
Glyphanostomum pallescens: Tom Parker recorded this in deeper water. This species usually occurs outside of our range.

Lysippe labiata: The description in the Atlas is quite general, and we decided to continue to use *Lysippe* sp A and *Lysippe* sp B. In the SCAMIT species list, due to apparent mixed lots of *L. sp A* and *L. sp B* being examined by Hilbig for *L. labiata*, Hilbig's specimen will be listed under both *L. sp A* and *L. sp B*.

Mexamage corrugata: Leslie has examined the type specimens of *M. corrugata* and *M. longibranchiata* and 32 additional species; she concluded they are the same species (unpublished data). Both *M. corrugata* and *M. longibranchiata* have 14 thoracic setigers.

Leslie cleared up some confusion we had concerning Figure 8.17.A and 8.17.B. After Leslie's examination of specimens, she found 15 podous thoracic segments. The first segment is asetigerous. The next 2 setigerous segments are often difficult to discern because the setae are broken off. The corrections to Figure 8.17.A and 8.17.B are to add setae to the second thoracic parapods. Corrections to the

Figure 2 - *Mexamage* spp



description at the top of page 208 are: change "14 podous thoracic segments" to "15 podous thoracic segments" and change "11 uncinigerous" to "12 uncinigerous".

There was a problem with the branchial arrangement as illustrated in Figure 8.17.A; the branchial arrangement should be 2/1/1. We modified the schematic of *Mexamage* in Figure 8.1. Kelvin Barwick has graciously volunteered to include the updated schematic in this newsletter; see Figure 2.



Mugga wahrbergi: The number of uncinigerous thoracic setigers in the description on page 210 should be changed from “6 uncinigerous” to “9 uncinigerous”. The illustration is correct and shows 9 uncinigerous thoracic setigers. Leslie has seen specimens of *M. wahrbergi* from 2600m which is the same depth at which the holotype was collected.

Paralysippe annectens: The only comment for this species was that it is a deep water species, and Leslie thinks shallow water reports from southern California may be erroneous.

Paramage scutata: In the literature there has been some confusion about the number of abdominal segments in this species. There have been reports of 10 and 11 abdominal segments; apparently this character is variable. The description on page 214 should be changed from “11-14 abdominal segments” to “10-11 abdominal segments”. Additionally, modify “17 thoracic segments with parapodia” to “14 thoracic segments with parapodia”.

Pseudampharete mexicana: This species is very similar to Ampharetidae sp 1 (=Ampharetidae sp SD 1). Both have 12 uncinigerous thoracic segments and golden to brown pigment in the posterior region of the prostomium. Differences include a less pronounced lower lip crenulation in *A. sp 1* and recording them from shallower depths than cited for *P. mexicana*. At this time, SCAMIT suspects that there are 2 separate species. This species was further discussed on the following day (see below).

Samytha californiensis: No comments.

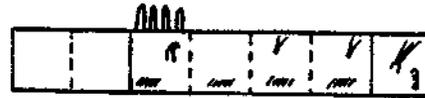
Sosane occidentalis: The only comment made about this species is that although the paleae are described in the text, they are missing in the illustration.

Sosanopsis wireni: We compared this description with the description of *Sosanopsis* sp A (indicated in synonymy as Ampharetidae gen. B sp. A of Lissner et al 1986). We noted

some differences such as *S. wireni* has 11 abdominal segments and *S. sp A* has 12 abdominal segments. SCAMIT will maintain *S. sp A* as our local identification.

Melinna heterodonta: The first comment made was the discrepancy between the schematic for *Melinna heterodonta*, page 171, Figure 8.1., and the illustration on page 224, Figure 8.25. Leslie noted that the illustration is correct, and the schematic is missing the notosetae pair on block 5. See Figure 3 for the corrected version of the schematic. In the first line of the description on page 223, change “18

Figure 3 - *Melinna heterodonta*



thoracic segments” to “18 thoracic setigers”. Secondly, on the same line, change “15 setigerous” to “16 thoracic notosetae with 14 uncinigers”.

Melinna oculata: In the first line of the description on page 225, change “18 thoracic segments, 16 setigerous” to “18 thoracic setigers with 14 uncinigers”. We discovered differences in the number of teeth in the postbranchial membrane between the key on page 175, the descriptions, and the illustrations for both *M. heterodonta* and *M. oculata*. In the key on page 175, couplet 6A reads “postbranchial membrane with 13 or 14 teeth” for *M. heterodonta*. The description on page 223 (last sentence) reads “postbranchial membrane with 11 to 16 teeth”, and Figure 8.25.C shows 12 teeth. There is also a difference in the number of teeth for *M. oculata*. In the key on page 175, couplet 6B reads “postbranchial membrane with about 5 coarse teeth”. The description on page 225 (last sentence) reads “postbranchial membrane with about 10 coarse dentations”, and Figure 8.26.C shows 6 teeth. We noted this discrepancy but did not have a solution or a correction to make.



At the end of the meeting for that day, a list was generated of the species that were included in the SCAMIT Species List but were not included in this MMS Volume. Those species were *Amphicteis glabra* Moore 1905, *Sabellides manriquei* Salazar-Vallejo 1996, *Schistocomus hiltoni* Chamberlin 1919, *Schistocomus* sp A SCAMIT 1987, and *Sosanopsis* sp A SCAMIT 1996 (listed as *S. wireni* by Hilbig).

On February 13, the second day of the meeting, we continued our work with Ampharetids and started by discussing *Pseudampharete mexicana* (see also above). *Lysippe mexicana* Fauchald is listed as a junior synonym of *P. mexicana*. We examined the type of *Lysippe mexicana* Fauchald and found 13 uncinigers, validating placement in *Lysippe*. SCAMIT contends that *Pseudampharete* Hilbig is incorrectly formed and should be a junior synonym of *Lysippe*.

Ampharetidae Genus A sp A Lissner et al is also listed as a junior synonym of *P. mexicana*. Leslie has examined this lot of specimens. They are variable in having 12 or 13 uncinigers, and are a mixture of *Lysippe* sp B and another undescribed species. Due to this mixed lot and uncertainty about which specimen is illustrated in Figure 8.21., it is not possible to definitively evaluate the description for *P. mexicana* in this chapter. We also examined the illustration of *Lysippe mexicana* in Fauchald 1972 and Uebelacker and Johnson 1984. Their unciniger illustrations did not match those in Figures 8.21.E and 8.21.F of the present volume.

We also noted that Ampharetidae sp 1 (=Ampharetidae sp SD 1) is a distinct species from those mentioned above.

Melinna heterodonta Moore, 1923 and *Melinna oculata* Hartman, 1969: In the key on page 175, delete the following from couplet 6A: “Segments 4 and 5 with neurosetae only, segment 6 with neurosetae and fine notosetae”. Delete the following from couplet 6B:

“Segments 4 and 5 with neurosetae only, segment 6 with notosetae only”. The comment was made that the type of *M. oculata* needs to be re-examined. A couple of corrections were made to the schematic on page 171. For *M. heterodonta*, add notosetae to the 5th segment;

Figure 4 - *Melinna oculata*



these are very fine and are easily broken off, so they may be missed on general observation. For *M. oculata*, add needle setae to the 6th segment. See Figure 4 by Kelvin Barwick.

Next we made some changes to the descriptions for *M. heterodonta* and *M. oculata*. In the 3rd to last line on page 223, change “segment 6 with first notosetae” to “segment 5 with first notosetae”. In the 2nd to last line on page 225, change “segment 6 with small notosetae” to “segment 6 with small often embedded row of neurosetae at base of notosetal fascicle”. On page 227, in the Remarks section, in the 5th and 6th lines, change “*M. heterodonta* has” to “both have”. On page 227, in the last line of the Remarks section, following “notosetae in segment 5” add “and neurosetae in segment 6”.

Then we tackled the terebellids. First we made comments and corrections to the key. On page 235, couplet 4A states that there are 7 pairs of branchiae in *Streblosoma pacifica*, n.s., but in the text, it lists 5-6 (page 243). In couplets 5A, 5B, and 10B, methyl green does not have to be capitalized. In couplet 17A, page 236, change “(Fig. 149C)” to “(Fig. 9.9.C)”. In couplet 17B, page 236, change “Branchiae 1 or 2 pairs” to “Branchiae 1 to 3 pairs”.

Amaeana occidentalis (Hartman, 1944): The comment was made to supplement these illustrations with the ones in Hartman 1969.



Polycirrus californicus Moore, 1909. We didn't find any technical errors in the text. We discussed the synonymy of *P. perplexus* with *P. californicus*. The holotypes of these 2 species differ in size substantially. We questioned the relationship of size and methyl green staining patterns in these specimens. SCAMIT agrees with the synonymy for now, until further examination of different sized specimens can be done.

Streblosoma pacifica Hilbig, new species. This is not the common *Streblosoma* sp B that we encounter in southern California. This species occurs at depths of 410 m-500 m and has not been reported by SCAMIT. We discussed the synonymies *Streblosoma* sp A Lissner et al and *S. sp B* Steinhauer and Imamura. *Streblosoma* sp A Lissner et al has been examined by Leslie and is confirmed to be *S. pacifica*. However, the listing of *S. sp B* Steinhauer and Imamura is indeterminable for *S. pacifica*. This is a "Sue Williams' animal", and the condition of the animal as well as the number of branchiae (Leslie's specimens had 5-6; Sue Williams' specimens had 7-9) makes this synonymy problematic. Kelvin Barwick examined a specimen of *S. sp A* under the microscope and saw 6 segments with branchiae, and a gap between setigers 2 and 3.

Thelepus hamatus Moore, 1905. This species identification is somewhat questionable as Hilbig refers to the "marginal condition of specimen" (page 246). Kelvin Barwick stained a specimen with methyl green, and we compared the staining pattern (shown in Figure 1; see cover) to the one described in the chapter. It did not match the pattern described on page 246 for *T. hamatus*. Additional material would have to be stained and examined in order to confirm this identification.

Thelepus setosus (Quatrefages, 1865): No comments.

Artacama coniferi Moore, 1905: No comments.

Next, we broke for lunch. Larry Lovell treated us to a slide presentation of a recent Scripps Institution of Oceanography working trip that he went on to Deception Island, Port Foster Bay, off Antarctica. He showed slides of the ship, the Lawrence M. Gould, a semi-icebreaker, the various grab and sampling devices that were used, and some of the invertebrates that were collected. We also saw slides of the many birds and mammals that were seen on the trip as well as spectacular slides depicting the natural beauty in that part of the world. Then back to worms!

Lanassa gracilis (Moore, 1923): No one at the meeting had seen the dorsal glands illustrated in Figure 9.7.A. To our knowledge these have not been noted in other descriptions of *L. gracilis*, but we are alert to look for them now.

Lanassa venusta venusta (Malm, 1874): There was a discrepancy in the number of double rows of uncini; the illustration, Figure 9.8.A, shows double rows through setiger 15, and the description says double rows through setiger 18. Our local specimens have double rows through setiger 15. We made the correction to the description to reflect the illustration and our local specimens. On page 252, 4th line from the bottom, change "double rows through setiger 18" to "double rows through setiger 15". We found Figure 9.8.C confusing because it is not clear whether the uncini start on setiger 1 or setiger 2 on the right side.

Lanice "conchilega" (Pallas, 1766): This species was described from the Netherlands. Leslie read some notes she had from Hutchings and Glasby 1988. Their specimen of "*L. conchilega*" had nephridial pores on setigers 4 through 10; the ventral pads on segments 2, 3, and 4 were fused; the prostomium was U-shaped with a bifid, corrugated, lateral lip; the peristome had a well developed lateral lobe; the lateral lobe on segment 3 was narrow and rectangular with a dorsal-lateral flaglike extension. Refer to the SCAMIT voucher sheet, Vol. 4 No. 11. "*L. conchilega*"



represents a species complex, and specimens from southern California do not match the specimen from the Netherlands examined and described by Hutchings and Glasby. Unfortunately, there is no sufficient description of the type specimen for comparison. We concluded to further examine and describe our specimens and then produce a voucher sheet.

Laphania boeckii Malmgren, 1866: The only comments made related to the ventral bulge on setiger two illustrated in Figure 9.10.A. Leslie reported a raised, dorsal median glandular area on setigers 1 through 4 on specimens of *L. boeckii* that she has seen, but no one had seen a ventral bulge on setiger two.

Loimia medusa (Savigny, 1818): The original description of this species is inaccurate. We consulted Hutchings and Glasby 1988 in which they re-described a neotype of *L. medusa*. Currently, we believe our local specimens do not match this description. We need to examine more specimens and document these character differences.

Neoamphitrite robusta (Johnson, 1901): The discussion concerned the question of combining the two genera, *Amphitrite* and *Neoamphitrite*. SCAMIT follows Hutchings and Glasby 1988 where they combine *Amphitrite* and *Neoamphitrite*. We will continue our use of *Amphitrite robusta*.

Neoleprea japonica Hessle, 1917: We compared characteristics of this species in this description with that of Hutchings 1997. Using the table on page 478 in Hutchings 1997 we found that the description in Hilbig's chapter has a shift forward of 1 segment. For now, we agreed to re-examine our specimens and use Hutchings' table for a reference.

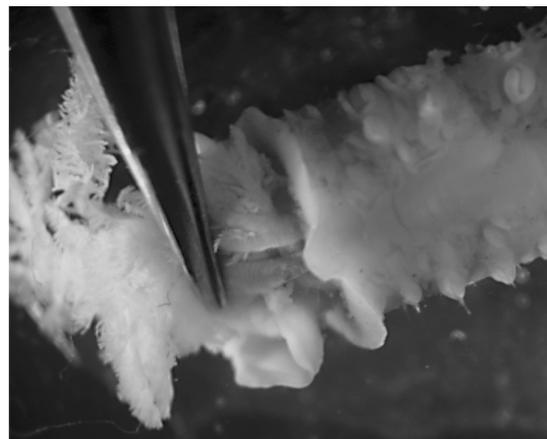
Phisidia sanctaemariae Hilbig, new species: Discrepancies were noted between the two holotype illustrations of this species. This, in conjunction with Hilbig's synonymy of the familiar *Lanassa* sp. D with her new species, led to the following conclusions. On page 264,

the last sentence, change "Setae of 2 kinds" to "Notosetae of 2 kinds". Figure 9.14.C shows 7 setigers with single uncini. This is in error; there should be 6. Modify setiger 8 to have double uncini. On page 266, 3rd paragraph, 1st line, change "Uncini in single rows through setiger 7" to "Uncini in single rows through setiger 6".

Pista agassizi Hilbig, new name: This species is a name replacement for other species that were confused in earlier published descriptions. (See Remarks section, page 267). *Pista agassizi* includes our *P. brevibranchiata* and *P. alata*. Leslie pulled a type of *P. alata* which had a transverse flap across the dorsum with accessory lateral lappets through segment 7. Our *P. alata* specimens which have those characters will now be called *P. agassizi*. In the description, Hilbig referred to segments 4,5,6, and 7 as having frills, as opposed to lateral lappets. This led to a discussion about the difference between a lappet and a frill.

Pista alata Moore, 1909: This is the true *Pista alata*. The type is from San Diego intertidal. Leslie stated that the only true *P. alata* have been found in the intertidal. This species has a forward projection on the transverse ridge

Figure 5 - *Pista alata*



which is illustrated in Figure 9.16.A. Leslie placed the cotype under the microscope for viewing. See Figure 5. We have not recorded this species from our monitoring stations.

Pista bansei Saphronova, 1988: This is our *Pista* sp B Williams.

Pista elongata Moore, 1909: No comments.

Pista moorei Berkeley and Berkeley, 1942: No comments.

Pista percyi Hilbig, new species: On page 278, in the legend for Figure 9.20., change “D-E” to “D-F”. There was considerable discussion of questions that were raised about this species. The animals in Figure 9.20., appear to have characteristics that could be included in the description of *P. agassizi*. In the Remarks section on page 279, Hilbig uses the same argument for creating a new species here as she did for *P. agassizi*. SCAMIT believes that *P. percyi* should be a junior synonym of *P. agassizi*. The methyl green staining pattern of *P. percyi* is distinct; unfortunately, there is no stain pattern noted for *P. agassizi* for comparison. Our local specimens of *P. agassizi* (formerly *P. alata*) do show the same stain pattern as *P. percyi* perhaps adding justification for placing *P. percyi* as a junior synonym of *P. agassizi*. For the present both species are treated as valid pending investigation of *P. percyi*.

P. wui Saphronova, 1988: We questioned whether this is our *P. disjuncta*. At this point we were coming to the end of the meeting and decided to examine more of our specimens and compare them with *P. wui*. Further comments are pending.

Thanks to Kelvin Barwick and Kathy Langan for all their hard work and assistance with the minutes from the two day meeting. Good job!

My Life as a Biologist **by Donald J. Reish** **Chapter 21: Retirement years**

In the mid-1980s, I began to think about retiring. I was almost eligible for another sabbatical. I decided to take the year sabbatical (my 3rd) and then put in the minimum time afterwards and retire. My last class was in marine natural history in May 1988. I had planned a little speech outlining my 40 years of teaching from high school to CSULB. Suddenly, the door burst opened and about 15 of my former grad students ran in with a banner (which I still have) congratulating me. It was quite a pleasant surprise. Marion Nipper, who was working at SCCWRP, also came and she met Scott Carr there-the rest of their meeting is history (She works with Scott in Texas). Two years earlier at the SCAS May meeting, they conducted a roast for me. I think the best part of the roast was the presentation of 3 volumes of collected reprints by my former students. Jerry Barnard was also there-it may have been the last time that I saw him.

People view retirement in many different ways. Some faculty members leave the area, some stay put but not at CSULB-I do not know what they do. There is no one answer to how one should spend his/her time in retirement. But one thing is certain-you must plan for it. Not only what you do but also what you and your spouse plan to do. Planning should also include financial planning which should begin years (decades) before retirement. My interests, in not any particular order, include polychaetes, gardening, travel, wife and family. I chose to remain at CSULB and conduct some research, writing, taking care of the worm farm. After formal retirement, I was hired for several years to supervise student teachers. I didn't mind this since my schedule was flexible. Believe it or not, the University has just rehired me (recycle me?) in fall 2000 to reinstate the intern program. I had initiated this program before I retired. Again, scheduling is flexible.



Just before retiring, I became active in ASTM. I co-authored the west coast mysid toxicity test protocol followed by aquatic and sediment test protocols with polychaetes. I also co-authored the section on selecting test animals for toxicity testing. I had earlier written the polychaete aquatic test protocol for Standard Methods. I was invited to conduct a polychaete work shop at the Water Environment Federation meeting in Toronto. Janice went with me, but first we attended Stan and Kelli Asato's wedding before grabbing the plane. At the work shop I met Lenore Clesceri who later talked me into taking over the toxicity section of Standard Methods (SM). Since nothing new had been done in SM for the past few editions, there was a lot of leg work to do. I called upon former students to help me—Jack Anderson, Scott Carr, Joe Gully, Steve Bay, Joe Greene came through for me. The part coordinators (I am 1 of 10 plus 3 editors) meet each January to deal with the problems. We have met in AZ (3X), FL (soon to be 2X), LA (New Orleans—not Los Angeles), HA, and San Diego. I guess this is our fringe benefit. Lisa has been a paid artist for them.

Other scientific activities include attending SETAC meetings each year, and most of the 2 meetings/year of ASTM. I wrote a new edition of Marine Life of Southern California (1995) and I am thinking of doing another edition (3rd) in the next couple of years. Hopefully, it will have lots of colored photos—time will tell. It is easy to think of projects. Tom Gerlinger got me a contract with Orange County Sanitation Districts to conduct sediment tests with *Neanthes*. We published 2 papers plus a few posters at SETAC. Tom McDonnell hired me on a consulting job in LB Harbor and Karen Green is going to hire me to write about pollution history in LA-LB Harbors.

I served as the editor for the 3rd, 4th, 5th, and 6th polychaete conferences and will serve as editor for the 7th to be held in Iceland in 2001. If the 8th conference is held in a non-English speaking country, I will offer my services to check the English after the paper has been

accepted. Years earlier I was the editor of the Bulletin of the Southern California Academy of Science. Remember, I was an editor at the age of 10, a sports editor in high school, and was initially a journalism major in college. I guess printer's ink is in my blood!

Next: I look back; I look forward.

NEW VOUCHER SHEETS!

In the "Taxonomic Tools" section of the website you will find voucher sheets prepared by Dean Pasko of CSDMWWD. The sheets cover animals as far ranging as Cnidarians, Crustaceans, Nemertean and Platyhelminths.

OUT IN THE COLD

Hi everyone,
We are on our way home, nearly to Tierra del Fuego. The 36 hours in the Drake was rough, 10-15 ft swell and we were sitting right in the trough the whole time. Today is much better and the sea state is considerably calmer. Another 36 hours and we should be back to Punta Arenas. The collection will be getting some good material from this cruise. Not only the animals from Deception, but a trawl off King George Is. The King George trawl was loaded with many species of sponges, tunicates of several kinds, a couple of anemones and other cnidarians, bryozoans, 3-4 amphipod species, many polynoid scale worms, serpulids, nereids, nephtyids, other mud tube dwelling polychaetes, several pycnogonids including several specimens of the ten legged species *Decolopoda australis*, isopods, 3-4 species of bivalve and a couple species of gastropod, 4 octopus, many asteroids, ophiuriids, and holothuriids. There were a few fish, but not too many. The trawl probably weighed 500 pounds. The sponges and tunicates were the dominants. There are three 5 gallon buckets of material for the collection from that trawl alone, one contains the sponges "alone". But, I think that many small organisms will be found in the sponge bucket once it is emptied. When I opened one sponge



up there was one isopod and one amphipod inside. The material will not be back until March. It is going military surface freight to Pt. Hueneme, CA in a cargo van. Maybe I should host a SCAMIT “play day” in the collection when it arrives!

This has been a great adventure and while it has been great I am ready to go home. The ship was a great platform for working and the people were all very professional. We did get to visit a chin strap penguin colony the day we departed Deception. It was at Bailey Head and there are estimates that in excess of 100,000 pairs of penguins nest there. I shot two rolls of film and about 45 minutes of video tape. It was quite astonishing to see a vast expanse of beach and inland hillsides just covered with penguins. There was a “highway” of penguins going in and out of the water and heading inland to their nests. We stayed close to the

beach and did not venture inland. Then we went to Pendulum Cove and went “hot tubing” nature’s way (no not naked!). We dug out pits in the beach sand where thermal springs were flowing and got in the warm water. Of course, we had to go into the frigid ocean water to cool off and then right back into the hot tub. Takes my breath away just thinking about it again. There were about 18 of us there (three zodiacs) and all but 2 or 3 went in. I had failed to bring a bathing suit with me, but, thankfully, was able to borrow one for the experience. That about covers the highlights since my last message to all of you. I will have email on the ship until Tuesday, Dec 5, so if you want to say anything back do it soon. I will be home on the Wednesday, Dec 6.

Worm regards from way down south,
Larry

BIBLIOGRAPHY

- Ahyong, Shane T. and Christine Harling. 2000. The phylogeny of the stomatopod Crustacea. *Australian Journal of Zoology* 48:607-642.
- Colgan, Donald J., Winston F. Ponder, & Peter E. Eggler. 2000. Gastropod evolutionary rates and phylogenetic relationships assessed using partial 28S rDNA and histone H3 sequences. *Zoologica Scripta* 29(1):29-63.
- Desbruyères, Daniel 1978. Un Ampharetidae (annélides polychètes sédentaires) à structure buccale aberrante: *Gnathampharete paradoxa* gen. sp. n. *Comptes rendus hebdomadaires des séances de l’Académie des Sciences, Paris, séries D*, 286(D): 281-284.
- Fauchald, Kristian. 1972. Benthic polychaetous annelids from deep water off western Mexico and adjacent areas in the eastern Pacific Ocean. *Allan Hancock Monographs in Marine Biology*. 7:1-575.
- Harasewych, Michael G. and A. G. McArthur. 2000. A molecular phylogeny of the Patellogastropoda (Mollusca: Gastropoda). *Marine Biology* 137:183-194.
- Hartman, Olga. 1969. Atlas of the Sedentariate Polychaetous Annelids from California. Allan Hancock Foundation, Los Angeles. 812 pp.
- Holthe, Torleif. 1986. Polychaeta Terebellomorpha. Norwegian University Press. Oslo, Norway. 194 pp.
- Hrincevich, Adam W., Axayácatl Rocha-Olivares, & David W. Foltz. 2000. Phylogenetic analysis of molecular lineages in a species-rich subgenus of sea stars (*Leptasterias* subgenus *Hexasterias*). *American Zoologist* 40(3):365-374.
- Hutchings, Pat. 1997. The Terebellidae (F. Polychaeta) from the Wallabi Group, Houtman Abrolhos Islands, Western Australia. pp. 459-501, IN: Wells, F.E. (Ed.), *The Marine Flora and Fauna of the Houtman Abrolhos Islands, Western Australia*. Western Australian Museum, Perth.



-
- and C. Glasby. 1988. The Amphitritinae (Polychaeta: Terebellidae) from Australia. *Records of the Australian Museum* 40:1-60.
- McHugh, Damhnait. 1999. Phylogeny of the Annelida: Siddall et al. (1998) Rebutted. *Cladistics* 13:85-89.
- . 2000. Molecular phylogeny of the Annelida. *Canadian Journal of Zoology* 78:1873-1884.
- Moore, J.Percy 1906. Additional new species of Polychaeta from the North Pacific. *Proceedings of the Academy of Natural Sciences in Philadelphia* 1906:217-260.
- Schweitzer, Carrie E. and Rodney M. Feldmann. 2000. Re-evaluation of the Cancridae Latreille, 1802 (Decapoda: Brachyura) including three new genera and three new species. *Contributions to Zoology* 69(4):223-250.
- Uebelacker, Joan M. and Paul G. Johnson (eds). 1984. *Taxonomic Guide to the Polychaetes of the Northern Gulf of Mexico*. Minerals Management Service, contract 14-12-001-29091. Barry A. Vittor and Associates, Inc., Mobile, Alabama.
- Wade, Christopher M. and Peter B. Mordan. 2000. Evolution within the gastropod molluscs: using the ribosomal RNA gene-cluster as an indicator of phylogenetic relationships. *Journal of Mollusca Studies* 66:565-570.
- Wägele, Heike and Richard C. Willan. 2000. Phylogeny of the Nudibranchia. *Zoological Journal of the Linnean Society* 130:83-181.
- Williams, Susan J. 1987. Taxonomic notes on some Ampharetidae (Polychaeta) from southern California. *Biological Society of Washington Bulletin No. 7*:251-258.
- Zottoli, Robert A. MS. Ampharetid polychaetes of the northeastern United States, shallow and deepwater species. 75 pp.



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

SCAMIT OFFICERS:

If you need any other information concerning SCAMIT please feel free to contact any of the officers e-mail address

President	Ron Velarde	(619)758-2331	rgv@mwharbor.sannet.gov
Vice-President	Leslie Harris	(213)763-3234	lharris@bcf.usc.edu
Secretary	Megan Lilly	(619)758-2336	mssl@mwharbor.sannet.gov
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.

