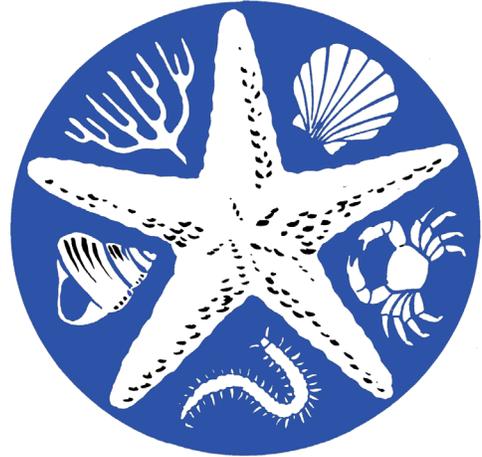


SOUTHERN
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TAXONOMISTS



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Polycirrus sp A. Photo by V. Rodriguez-Villanueva, CSD

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14 JANUARY 2009

The meeting was held at the LACMNH. Attendees: Dr. Chapman, OSU; Christopher Rogers, Ecoanalysts (SAFIT Vice-President); Leslie Harris, LACMNH (SCAMIT Vice-President); Larry Lovell, CSDLAC (SCAMIT President); Dean Pasko, OCSD; Ron Velarde, CSD; Ross Duggan, CSD; Dan Ituarte, CSD; Eliza Moore, CSD; Andrew Davenport, CSD; Carol Paquette, MBC Applied Environmental Sciences; Dr. Christine Whitcraft, CSULB; Kathy Omura, LACMNH; Don Cadien, CSDLAC; also visits from Dr. Regina Wetzler, LACMNH and Dr. Jody Martin, LACMNH, and Dean Pentcheff LACMNH Informatics.

President Lovell called the meeting to order and we conducted our business portion first. Upcoming meetings were listed, as well as several meetings of other groups. Upcoming SCAMIT meetings are 26 January - Polycirrinae at City of San Diego; 17-18 February, 2 day Caprellid workshop at LACSD lab in Carson led by Dr. Todd Haney (Sage Hill School). Also to be discussed, leptostracans by Todd, and hippolytid shrimps by Dr. Mary Wicksten (Texas A & M). A second two-day workshop will be held 9-10 March at the LACMNH, presented by Dr. Les Watling (University of Hawaii) and Dr. Sarah Gerkin (University of Alaska) with Cumaceans as the topic

group. It is likely that one or more meetings will be arranged in April to capitalize on the presence of worldwide crustacean researchers here for a Biosystematics conference at Catalina Island. Scheduling will depend on availability and willingness of visiting researchers. A SCAMIT database meeting is scheduled for May, and another meeting may be added for the month.

Later this month (January 24th) the SCUM meeting (Southern California Unified Malacologists) will be held at Cal Poly Pomona, hosted by Dr. Angel Valdes. The SCAS meetings will be held 2-3 May at California State University Dominguez Hills, and the WSM meetings, 23-27 June at Cal State Fullerton.

Posting of ontogenies in support of our MorphBank collaboration was urged by President Lovell, and Don Cadien asked all to review the proposed draft crustacean ontogenies posted to Google Groups. The status of the BioSync funding application was discussed, and the nature of the initial exercise with polychaetes discussed. Larry also mentioned he will be renewing discussions with California SeaGrant over funding of SCAMIT efforts. Before venturing into the main business of the day we did a round of introductions, since several of the attendees were not known to those present.

Dr. Chapman then took the reins and began his presentation of the Gammaridean Amphipod

UPCOMING MEETINGS

14 June 2010 - Digital Imaging Workshop at the City of San Diego. Co-led by Dan Ituarte and Nick Haring.



section of the 4th edition of the Light and Smith manual. He had met with SCAMIT during the final phases of development of the manuscript, and had incorporated most of our suggestions into the result. Unlike most previous publication-review meetings, this was not a line-by-line commentary of the publication in question. John gave us an overview of the conception and long execution of this very large project, tracking his involvement over a period of a decade. He supported his talk with images displayed on a large computer display in the lab, visible to all most of the time. One of the more interesting aspects of the presentation was a review of the history of, and future of, editions of the manual. Originating as a laboratory practical notebook in support of his invertebrate classes at University of California Berkeley, S. F. Light produced what was the first reasonably comprehensive treatment of marine invertebrates from the area. This was collated and published in 1941 as the first edition of the manual. Most if not all of this was Dr. Light's work, augmented with some contributions and collaborations by others. A second enlarged edition was released in 1954 long after Dr. Light's demise, edited by Ralph Smith, Frank Pitelka, Donald Abbott, and Frances Weesner. In this 2nd edition a considerable expansion was undertaken, and the pattern of having individual sections written by specialists in the group began. J. L. Barnard was involved with the amphipod section, but was not credited with authorship in the 2nd edition. In the 1975 3rd edition he was the clear and sole author, but his death prevented his acting in the same capacity for the current edition. The 3rd edition was co-edited by Ralph Smith and Jim Carlton.

John showed us several graphics regressing the publishing history of the manual editions over time, and projected that the next edition will appear in 2074 based on a very tight regression fit in the previous four editions. John expressed doubt, when asked, that he would be doing the gammarid amphipods again in the 5th edition. The 4th edition has contributions from over a hundred contributors, and explores groups not covered in previous editions.

John then outlined his approach to the chapter. He strove to be as inclusive as possible under the rules imposed by the editor (north of Point Conception, must reach upper bathymetric limit at 1m or less). John did get a few deeper species included than the rules would normally have allowed. This is helpful, since the chapter will, as have other editions of this work, provide a "Bible" for those approaching amphipods with little or no specialist knowledge. In those circumstances comprehensive information is extremely valuable, and inclusion of as many species as possible, useful.

With the idea that many users will not be experienced John strove for simplicity and ease of use. He insisted on use of characters which are visible at 40x or less, requiring use of only a dissecting microscope for specimen examination. He avoided use of mouthpart characters whenever possible, and other characters which can only be viewed by dissection. He tried his best to avoid ambiguous characters, or those which his experience suggested were not likely to be reliable (despite their use in the taxonomic literature). He attempted to avoid characters that vary with growth, as well as those observable in only a single sex. This latter attempt was less successful than others, as for many species, secondary sexual characters are the main separatory characters. The development of a sex neutral taxonomy for gammarid amphipods is a distant dream, not yet attainable. Characters on parts often lost during preservation and handling were also given reduced importance in John's keys, since they are often not available.

Full illustration, that is some illustration of every included species, was a goal that he was able to attain in his chapter. Whole body illustration of every species was, however, precluded by lack of space. Characters used in the keys were included and referenced in the illustrations by arrows. In most cases illustrations were drawn from the existing published literature, but these were often



redrawn or somewhat modified for added clarity. To the extent it was under his control, John attempted to have the illustrations and the key occurrence of a species on the same page or on the facing page. While this goal was not fully met due to production restrictions, the figures and key occurrences are usually fairly close.

To assist users, and to serve as a cross-check for key endpoints, John also provided a tabular key to families. Several attendees mentioned this as a particularly handy feature they had already made use of.

As in other portions of the book, John provided an annotated list of species. He was unhappy with the level of detail he was able to attain in the annotations due to space restrictions, noting that a great deal of information could not be included in the chapter. He has hopes that this can be made available in some other format since it was gathered through great effort and would benefit the community.

Added comments on the origin of each species would be very welcome. John gave us his analysis of species origins for the fauna included in the chapter: 7% introduced, 76% native, and 17% cryptogenic (data not sufficient to decide origin). As our homogenization of the world fauna continues, these numbers will continue to change. The percentage of introduced species seems a bit low for the group since most groups run around 11% in the temperate-boreal Eastern Pacific.

John concluded his morning look at the gammarid chapter with a list of things he would like to see available in future:

- 1) extended bibliographies of literature pertaining to Southern California, Mexican, deep sea, pelagic, and Hawaiian gammarids
- 2) annotated lists of species covering each of these
- 3) unitary keys to all species known from southern California, the North East Pacific, and the tropical Eastern Pacific, to replace the large number of specialty keys dealing with individual genera or families
- 4) production of a source document on the natural history of regional peracarids

During the afternoon session we examined specimens brought by the participants. One of particular note was a tiny specimen of *Lightiella serendipita* Jones 1961, a cephalocarid very rarely encountered and apparently endemic to California. Originally described from San Francisco Bay, the species has not previously been reported from beyond the bay. A record of an unidentified cephalocarid from Alamos Bay could also represent this species but that depends on further examination. The specimen examined was brought in by Carol Paquette of MBC and was taken in an environmental project at Mugu Lagoon. This represents a new class for the next edition of the SCAMIT listing which will include the animal.

An unusual *Photis* from Los Angeles Harbor was examined as were several phoxocephalid species from Morro Bay brought in by Christopher Rogers. A single large ampeliscid thought to be *A. cristoides* was also examined. The specimen came from off Palos Verdes and did not match well with available descriptions. It was also not bilaterally symmetrical in characters. Where possible John's keys from the chapter were used.



26 JANUARY 2009

The topic of the day was Polycirrinae, with emphasis on *Polycirrus*. President Larry Lovell opened the meeting. There is interest in training meetings and Vice-President Leslie Harris will be recruiting workshop leaders. Initial workshops will be introductory with later meetings more detailed.

The following other meetings of interest were mentioned: SCUM, January 24th; SCAS, May 29-30 at Marymount College; WSM at CSU Fullerton June 23-27; The International Nemertean conference at UCSB June 29- July 3; and the 2nd annual Mexican polychaete conference in Oaxaca, Mexico September 2009.

SCAMIT is hoping to produce another marine invertebrate calendar for 2010. Images will be accepted for consideration until some time in the fall. Members are encouraged to take the opportunity to photograph animals and submit their finest images.

Database development continues and our consultant, Katja Seltsmann, has begun interacting with Dawn Olson on concepts and database issues. The database group is working on ontologies for a few phyla that need to be finished up for use in image submittal to Morphbank.

Leslie Harris and Larry Lovell submitted a proposal to BioSynC for initial funding for SCAMIT to develop a west coast polychaete species list. The draft proposal was submitted and favorably received. The summer of 2009 is the target timeframe for a kickoff workshop.

Apologies for the SCAMIT website being stagnant. Larry is working on getting help for webmaster Jay Shrake. Kelvin Barwick has been approached about assisting Jay. He is thinking about it and looking into some computer platform and software issues that would need resolution.

Newsletters are behind and the new plan to get caught up is by doubling up. Secretary, Megan Lilly agrees that this is a workable solution to the problem.

The topic of the meeting was the Terebellidae subfamily Polycirrinae. The subfamily covers several genera with *Amaeana* and *Polycirrus* occurring locally. The most difficult genus is *Polycirrus*. Ron began the workshop by updating the *Polycirrus* table he had distributed with new information from Hyperion and the San Francisco lab. We then moved onto a discussion of what characters we all use and agree are important to ID *Polycirrus* (listed below). Most character states are reliable in adult well preserved specimens, but variation in size and condition of specimens can be a problem. Many *Polycirrus* are still in tubes when the taxonomist receives them and the need for tube removal without damage is a problem. Ron commented that the *Polycirrus* sp A SCAMIT 1995 sheet produced several years ago by Rick Rowe represents another species. This animal has methyl green banding in the posterior segments and is collected by the City of San Diego lab.

The following is a list of species reported from the NE Pacific by SCAMIT members, with selected notes:

- *Polycirrus californicus* Moore 1909 – striated ventral lip, smooth dorsum, w/ post-setal lobes
- *Polycirrus perplexus* Moore 1923 – striated ventral lip, rugose dorsum, w/ post-setal lobes
- *Polycirrus* sp A SCAMIT 1995§ – smooth ventral lip, rugose dorsum, posterior staining bands
- *Polycirrus* nr sp A (SD) – rugose dorsum, posterior staining bands, w/o post-setal lobes
- *Polycirrus* sp I Banse 1980
- *Polycirrus* nr sp I (SD) – like *P.* sp I Banse 1980, but with peristomial palps



- *Polycirrus* sp III Banse 1980
- *Polycirrus* sp IV Banse 1980
- *Polycirrus* sp V Banse 1980
- *Polycirrus* sp OC1 Phillips & Lovell 1999§ – rugose dorsum, posterior staining bands, post-setal lobes
- *Polycirrus* sp SF1 - this was thought to be the same as *P. nr sp A*
- *Polycirrus* sp of CSD - Veronica shared images of this animal
- *Polycirrus* sp B of Lovell - from WA state, w/ palps; needs to be compared w/ *Polycirrus* sp I2 (SD) mid ventral pads

List of character states noted by various authors for consideration when identifying species:

- Number of pairs of notosetae
- Segment where notosetae begin (asetigerous seg 1)
- 1st setiger with uncini (range) (thoracic or abdominal)
- Dorsum smooth or rugose
- Number and form of lateral ventral pads
- Presence and number of mid-ventral pads
- Notosetae, smooth, plumose, or hirsute (denticulate or serrate)
- Form of uncini and range of dentition
- Thoracic parapodial lobes presence and length, pre and/or post
- Number of nephridia
- Methyl green staining patterns; dorsal , ventral (mid-ventral pads), posterior abdominals, prostomial tentacular lobe, peristomial pad, uncinal tori staining.
- Lateral peristomial palps

We examined four specimens of *Polycirrus* sp A material from three labs. All had a rugose dorsum and methyl green staining bands in posterior setigers. One lighter staining specimen was from LACSD, the two from OCSD and one from CSD were most similar. The CSD had a slightly different staining pattern for the uncinal area than the two OCSD specimens. There was discussion regarding the reliability of many of the character states to be accurately assessed given the variable condition of specimens that we see.

Tony will review specimens that he used to establish *P. sp A* and report his findings to everyone. Labs will score specimens of their *Polycirrus* species against the character states listed above. It is clear that this is a difficult group taxonomically in part because of conditions caused by poor preservation due to tube dwelling; and secondly due to reliability/variability issues that cause trouble in accurately assessing character states, such as setiger counts and parapodial lobe development, with body size and maturity.



SCUM 2009

The annual meeting of the Southern California Unified Malacologists was held at Cal Poly Pomona and hosted by Dr. Angel Valdes.

There were numerous talks given that day and the following are just a few:

Carla Stout, discussed the molecular phylogeny of *Dendronotus*. In her research she found that in some instances different morphologies did indeed correlate with distinct species, but there were other examples where geographic ranges showed distinct species even though those species displayed the same morphology

Michael Vendrasco talked about the diverse shell microstructure of Cambrian mollusca, and showed evidence of links with brachiopoda.

In the lab of Dr. Valdes they are conducting research on Chelidonuran genetics and they are finding the various color morphs to be the same species.

Dr. Doug Eernisse gave an overview of the work being done in, and in association with, his lab including *Mopalia* phylogeny, world chiton phylogeny, work on fossil chitons and a revision of *Henricia*.

Hans Bertsch is looking at global biogeographic patterns of opisthobranchia, and conducting studies on opisthobranch population structure in Punta La Gringa over the last 30 years.

Pat LaFollette then gave an informative review of malacological literature found on the internet with advice for finding what you need.

17-18 FEBRUARY 2009

Feb 17 attendance: Larry Lovell, Jim Roney, Tony Phillips, Ken Sakamoto, Todd Haney, Christina Thomas, Lisa Haney, Dan Ituarte, Yat-Long Poon.

The two day caprellid workshop was held at the LACSD lab and was led by Dr. Todd Haney. President Larry Lovell opened the meeting and made introductions. He discussed upcoming meetings; March 9th and 10th at NHMLAC, a two day workshop on cumaceans with Drs. Les Watling and Sarah Gerkin; an April meeting at NHMLAC in development on a crustacean group; May 11th at SCCWRP a database group meeting; May 26 at OCSD on *Cirratulus*, *Cirriformia*, *Timarete*, and *Protocirrinis*; June 8th at CSD an Echinodermata 101 introductory workshop; and July 13th at CSD a digital image editing workshop (editor's note: this meeting date has been changed; see the Upcoming Meetings Box on page 2).

Nominations for the upcoming SCAMIT officer elections are still open. The current slate of officers has been nominated to serve again. Additional nominations will be accepted until the end of February. The election will take place in March. Members will receive ballots via email in early March and have two weeks to return them to Vice-President Leslie Harris.

Dr. Todd Haney was then introduced as the lead for the day. He began the workshop with a Powerpoint presentation entitled: "Skeleton Shrimp of the Northeast Pacific". He presented a hierarchical systematic review - Order Amphipoda; Infraorder Caprellida; Family Caprellidae; and Subfamilies Caprellinae and Phtisicinae.

Todd then moved on to a discussion of our local fauna and their ecology. The SCAMIT ED 5 listing is dominated by the genus *Caprella*. There was discussion by members on consideration of caprellids as epibenthic vs. benthic for analysis purposes. Monitoring labs handle inclusion of caprellids differently in trawls and grabs, excluding them from trawl samples and including them



in benthic samples. The diet of caprellids is diatoms primarily but they are opportunistic feeders, known to feed on nudibranchs when available.

Some of the key features of caprellids are listed below:

- Pereopods 1-5: shape of the propodus of G1, G2; length of basis and carpus of G2; presence of pereopod 3 and 4, number of articles (slide mount, some are very small); segments, number of articles in the appendage.
- Head appendages: A1 flagellum length, number of articles; A2 flagellum setae and segments; mandibular palp, segmentation, terminal article; maxillary, inner and outer lobes; maxilliped, palps, lobes.

Todd discussed what he called the “problem children of Ed 5”, on the SCAMIT species list that deserve comment.

Caprella californica, considered intertidal. It has some good characters for ID that Todd will review.

Caprella equilibra – reported worldwide, described from Charleston, SC. Probably misreported locally.

Caprella mendax - close to *Caprella equilibra*. A1 flagellum longer than *Caprella equilibra*, peron spines lacking adjacent gill insertion, with spines by the gills.

Caprella sp. E Benedict 1978 § – no specimens reported by any labs. A name in a key from an old Bruce Benedict paper.

Caprella simia – reported as an introduced species in Cohen et al 2005. See Watling & Carlton.

Paracaprella sp SD1 Pasko 2000 § – not well known.

Tritella tenuissima – several former name usages not listed in ED 5. Has been called Aeginellidae? *Triantella* sp A as noted on an old voucher sheet. Lisa is re-evaluating this species. In *Tritella* the A2 flagellum is biarticulate.

Hemiproto wigleyi – Todd stated probably not correct, likely remains endemic to Caribbean.

Hemiproto sp A Benedict 1978 § - LACSD reports.

Phthisica sp. - unusual body form.

Caprella sp LA1 – new, Lisa wants to look at more of these.

Todd had his entire literature collection on Caprellids at the meeting. Members were encouraged to review it for rare and hard to find publications. Key pieces of literature for working on caprellids are the following:

For Taxonomic/Systematic work see - Mayer 1903; McCain 1968; Laubitz 1970; Martin 1977; Watling & Carlton in Light's Manual.

For Phylogenetics see - McCain 1970; Laubitz, 1993; Takeuchi 1993; Myers & Lowry 2003; Ito et al 2008.



After lunch we moved on to the examination of the following specimens provided by participants and Todd. The following are notes and comments on those specimens.

- *Caprella californica* - specimens from Weston contract work (Wes Val) by Dean Pasko; does not have spine between G2; G2 second (poison) spine well developed with “articulation” or differential projection of distal part as below.
- *Caprella californica* – specimens from Santa Monica Bay 60m; with G2 spine and well developed head spine; G2 second (poison) spine well developed with “articulation” or differential projection of distal part.
- *Caprella scaura* – second (poison) spine on G2 small, with body spines in posterior. Note: this species is not in the current ED 5 listing.
- *Caprella simia* – specimens from Dean; Bight 08, station 6145C, 2m, 6 Aug 08, Jim Roney agreed with the ID; no spine on P5; smooth, flattened body.
- *Caprella mutica* – specimens from Weston (Wes Val) via Dean Pasko again; body with tubercles and perionites 3 & 4 with gills only, no peripods.

Feb 18th was the second day of the Caprellid workshop. Attendance: Larry Lovell, Mary Wicksten, Tony Phillips, Ken Sakamoto, Christina Thomas, Dan Ituarte, Eliza Moore, Yat-Long Poon, Ross Duggan, Lisa Haney, Jim Roney. Some members were not able to attend both days, so the crowd was a mix of those who had been present the previous day and others who were new. Dr. Mary Wicksten was visiting the Southern California area from Texas A&M and had arranged to attend the meeting that day. She opened the day by presenting an update of her research on hippolytid shrimps, with an overview of her work of the last 30+ years. She believes there are many problems with current generic designations and species identifications. Mary is hoping to approach these problems with molecular information, if and when she can get fresh and properly preserved material. She requested material for genetics from the participants, knowing that there are regular sampling programs locally. She would be grateful for any material that can be sent to her.

Todd Haney then continued his presentation on caprellids with a thorough review of his presentation from yesterday for those that were not present. This took the rest of the morning.

We broke for lunch and reconvened in a conference room for the afternoon to continue examining specimens. The following is an accounting of the species examined and comments regarding them.

- *Hemiproto* sp A Benedict 1978 §. Differences with *Hemiproto wigleyi* (which is incompletely described) are not clear and examination of the type specimens of *H. wigleyi* would resolve the confusion. Tony will look at his specimens from shallower water for additional information.
- *Caprella natalensis* vs *Caprella penantis*: *Caprella natalensis* - head length equal to length of pereonite 1; length of P5 longer than combined length of P6 and 7; male G2 with flattened distal palmar projection. Specimens ID'ed as *Caprella natalensis* from Long Beach Harbor rip rap were examined and determined to be *Caprella penantis*.
- *Caprella penantis* (east coast, SC) - specimens with setous palmer margin of G2; head length longer anterior than pereonite 1; gills well rounded in males; length of P5 shorter than or equal to



the combined length of P6 and 7; male G2 with distinctly rectangular distal palmar projection.

- Aeginellidae sp A - Material from LACSD. This is a *Tritella*. It has processes on P3 and P4; no anterior processes on P2; the gills are linear, not ovoid; the palmar margin is straight with a defining (poison) tooth; insertion point of P5 process is posterior (insertion visible, but process missing). These characters approach *Tritella tenuissima*.

- *Caprella mendax* - JLBarnard material. Large spine on P2 (larger than *Caprella equilibra*).

- *Deutella californica* - OCSD material. With small pereopods at base of gills on P3 and P4.

This brought the workshop to a close and everyone thanked Todd for sharing his expertise on this difficult group. All members walked away at the end of each day with a better understanding of the character states that define this group and the problems regarding the current status of the local taxonomy.

(- **disclaimer**: Your Secretary/NL Editor apologizes if there are any errors in the crustacean taxonomic portion of the minutes. Since I do not work on crustaceans and have had a difficult time finding a carcinologist with enough time to review the minutes as written, I can only publish what was submitted without potentially needed corrections.)

- M. Lilly

9-10 MARCH 2009

The minutes from this meeting will be in the next newsletter.

APRIL 2009

A speaker for the proposed April meeting could not be arranged and therefore, the meeting was canceled.



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

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

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