



Southern California Association of Marine Invertebrate Taxonomists

3720 Stephen White Drive
San Pedro, California 90731

January, 2000

SCAMIT Newsletter

Vol. 18, No. 9

SUBJECT:	General Non-polychaete problems
GUEST SPEAKER:	None
DATE:	13 March 2000
TIME:	9:30 a.m. to 3:30 p. m.
LOCATION:	City of San Diego Marine Biology Lab 4918 N. Harbor Dr. #201

UP-COMING MEETINGS



Philomedidae sp SD 1
B'98 station 2476, 8-11-98, 11m
Photo by D. Pasko 2/2000

With completion of the benthic data processing from the B'98 survey, we will resume our once-a-month schedule of SCAMIT meetings. The February 14th SCAMIT meeting is a general problem polychaete meeting to discuss areas of continuing uncertainty and dissatisfaction with various groups. It will be held at the Worm Lab of the Natural History Museum of Los Angeles County. The following meeting is scheduled for 13 March at the San Diego lab, and will deal with general non-polychaete problems as well as new difficulties uncovered during the recent B'98 conflict resolution meetings. At a minimum, the subspecies of the amphipod *Ampelisca cristata* will be discussed along with the ampeliscid genus *Byblis* in local waters. On 10 April a workshop on pilargid polychaetes will be held at the Worm Lab of the Natural History Museum of LA County. Dr. Sergio Salazar-Vallejo will be in attendance and he, along with

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Vice-President Leslie Harris, will lead the workshop. On 8 May a meeting on corrections, additions, deletions, and changes to the SCAMIT Ed 3 Taxonomic Listing prior to final preparations for Edition 4 will be held at SCCWRP.

BIG NEWS

At about nine p.m. on Thursday 27 January, Cheryl and Bob Brantley became the parents of a 10 lb. 5 oz., 21 inch long baby boy, Daniel Dennis Brantley!!! We hope to be introduced to



this new future SCAMIT member as soon as possible. CONGRATULATIONS to both of them, but especially to Cheryl who worked long and hard to bring him among us.

SCUM RESURFACES

The fourth annual meeting of the Southern California Unified Malacologists was recently (14 January) held at the Institute for Geophysics and Planetary Physics at Scripps Institution of Oceanography. SCAMIT stalwart Larry Lovell was a co-sponsor of the meeting along with Hugh Bradford and Terry Arnold. Approximately 30 attendees enjoyed the usual slate of activities: an introduction to the

meeting, followed by introductions of individuals going around the room, and then presentations of works completed or in progress. Other SCAMIT members in attendance included secretary Megan Lilly, Don Cadien, and John Ljubenkov. John gave SCAMIT and Bight'98 a plug in his work statement. Presentations were brief and most eschewed visual aids. We did, however, have several slide shows. A particularly beautiful one presented by Mike Miller dealt with Philippine opisthobranchs (and a few other inverts as well). Kent Trego presented slides showing sampling at Deception Island in the south Atlantic. This is the caldera of an extinct volcano which is miles across and reaches depths of nearly 100m within its interior. I got the impression it was like winter sampling in Alaska, only colder. The slides Kent showed were quite beautiful and seeing scientists sampling from within international distress orange survival suits put a different spin on rough weather trawling off California.

Dr. Jim McLean of the Natural History Museum of Los Angeles County showed us a sample plate from his monograph on California mollusks and opened up both volumes of the text to give us a preview. Looks like this long term project is fairly rapidly approaching its end. We also heard from Jules Hertz that the Coan, Scott & Bernard California bivalves monograph was shopping for a new publisher. The rumor was that when the previous publishers got a gander at the full size of the submitted MS they raised the publication cost by 3X! We wish them well in their search for a new and less costly way of producing the long-awaited volume.

The San Diego Shell Club was well represented at the meeting. The editor (Carol Hertz) of their journal "The Festivus" was on hand and had copies of the latest supplement, her own "Illustration of the Types Named by S. Stillman Berry in his 'Leaflets in Malacology' Revised". This supplement to Volume 31 is a revision of the Supplement to Volume 15



(1984), providing additional information and improved reproduction of the figures. Since nearly all of Berry's leaflets were totally without illustration, Carol's volume is a virtual necessity in interpreting his descriptions. You can obtain it, as well as other special and supplemental volumes of the journal, by writing her at:

San Diego Shell Club, Inc.
c/o 3883 Mt. Blackburn Ave.
San Diego, CA 92111

Hans Bertsch also presented a brief slide show of preserved material of *Bathydoris aioca* Marcus & Marcus 1962, based on re-collection of the animal off Oregon. This is an extremely rare and poorly known nudibranch. It was originally described from deep water off Baja California and not reported again in the intervening 38 years. These specimens were listed as *Bathydoris* sp. in Austin (1985), but were not recognized at that time as being conspecific with the Marcus' species. A paper describing this find is expected soon.

The main purpose of, and activity at the meeting, was conversation. This is predominantly a get and keep acquainted sort of meeting which provides a venue for old associations to be refreshed and new ones to be formed. It was a delight which continued until nearly 4pm (after breaking for lunch). Towards the end of the day Larry Lovell led a tour through the new collections facilities for the Invertebrate Collection at SIO (which will soon be ready for occupation). It was decided that the 2001 meeting will be held at the Natural History Museum of Los Angeles County. We will provide more exact information on dates and locations towards the end of the year. This was a very enjoyable get together and I am looking forward to the next one. -Don Cadien (CSDLAC)

SAD START TO 2000

Once again we report, with considerable regret, the loss of two major crustacean workers. Dr. Gary Brusca died on 13 January after several years of illness. He is remembered below by his brother Rick and by his students Drs. Les Watling and Tim Stebbins. Dr. Ray Manning came to the end of a long and productive life on 18 January. Dr. Rafael Lemaitre provides a brief summary of his achievements and Drs. Jens Hoeg and Fred Schram reprise his involvement with the Crustacean Society and offer a personal memoir. A full obituary is scheduled for the March 2000 issue of the Proceedings of the Biological Society of Washington. Cancer claimed them both. Gary and Ray both leave a legacy of published work, and Gary, as a pedagogue, a group of students whose attitudes and approaches he shaped. While both contributed significantly to their primary taxonomic areas (hyperiid amphipods and stomatopods, respectively), for much of the 20th century Ray Manning was stomatopod systematics. While he also added significantly to a number of areas of decapod taxonomy, his work with stomatopods will likely be his most enduring contribution.

GARY J. BRUSCA

"With great sadness I report the death of my brother, Gary J. Brusca, who passed away on January 13, 2000. Gary received his BSc (1960) from California State Polytechnic University (San Luis Obispo) as one of Dave Montgomery's advisees; his MSc (1961) from the University of the Pacific (Stockton), working under John Tucker and Joel Hedgpeth; and his PhD (1965) from the University of Southern California (Los Angeles), under the guidance of Russell Zimmer. From 1972 to 1974 he lived and worked as a fisheries biologist on the island of Mauritius, where his youngest son (James) was born. Gary is best known in the carcinology world for his research on hyperiid amphipods, and for two books we published together, A Naturalist's



Seashore Guide: Common Marine Life of the Northern California Coast and Adjacent Shores (Mad River Press, 1978), and Invertebrates (Sinauer Associates, 1990). His “Annotated Keys to the Hyperidea of North American Coastal Waters” (Allan Hancock Foundation Tech. Rpts. 5:1-76, 1981) is a benchmark summary for the hyperiid (pelagic) amphipods of North America. Gary also authored a general text on embryology (General Patterns of Invertebrate Development., 1975, Mad River Press). However, for students of the California coast Gary may be best remembered for his excellence in the classroom and the field where he trained legions of marine biology students over the years at University of the Pacific (1964-1967) and Humboldt State University (1967-1998).

One of his greatest joys in life were early morning field trips with students, arriving at the coast just as the sun was rising and the fog was lifting on those cold gray northern California beaches. From 1967 to 1990, Gary won countless awards in recognition of his teaching excellence, including the “Cal Poly Honored Alumnus in Science and Math” award. But more of interest to many was the fact that Gary was one of a small group of Pacific coast biologists who carried on the legacy of Ed Ricketts and Joel Hedgpeth. He was co-founder and publisher of *The Stomatopod*, an eclectic and irreverent biology journal in the tradition of the 60’s and early 70’s, that entertained and educated Pacific coast biologists for many years. Gary’s minimalistic poetry, collectively published under the pseudonym “Waren Stauls” (*Nature’s Laws. Selected Poems of Waren Stauls*) followed in the tradition of Joel Hedgpeth’s books published under the pseudonym Jerome Tichner (*Poems in Contempt of Progress, Scattered Poems*). Gary retired in 1999, moving to the Sacramento (CA) area, where his wife Julie, 5 children, and 2 grandchildren survive him. At the time of his death, he and I were working on a new general zoology text (*Concepts in Zoology*, for Saunders

Publishing) and revisions of our Invertebrates text and California seashore guide. Cards can be sent to Gary’s family c/o of: Julie Brusca, 8058 Orange Ave., Fair Oaks, CA 95628.

FROM “NATURE’S LAWS”:

Life is too
short to let
yesterday
destroy today,
but never forget that
tomorrow you may need
a memory -
and it will be there.”

Richard C. Brusca
Senior Research Scientist and Interim Director
of Education
Columbia University Biosphere 2 Center
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the CrustL list server]

“The passing of Gary is especially sad for me. Gary was my first graduate advisor while he was at the University of the Pacific, bringing me into the marine sciences and crustacean studies when I was real young, having entered graduate school at 19. He set a strong tone of excellence in thought and enjoyment in research. The early morning field trips weren’t onerous with Gary, but that’s not to say they weren’t painful. He made them a lot of fun and true adventures. But what I remember most about him was the detail of his courses. I can say with some conviction that most of the invertebrate knowledge I have at my fingertips I acquired in Gary’s classes. Every course had long, detailed phylogenetic arguments at their core — not because we all had good answers or even techniques in those days for discussing phylogeny, but because you had to master the details to be able to argue anything. Gary knew the details and if your argument violated some feature of morphology, you were informed in short order. Perhaps the most



valuable of all the classes, though, was the one on invertebrate embryology. There wasn't a text to speak of, but there was, again, a teacher with the details. We were all convinced then that the big phylogenetic conundrums would be solved with embryological help. Little did we know how that field would change and the information it would ultimately give us.

I met him again just a few years ago. He didn't seem to have changed all that much, so it was a big surprise to find out last year that he was ill. I'm sure his years at Humboldt produced many students with a strong appreciation for, as well as a thorough understanding, of the marine world.

In sum, I guess I feel that most importantly, Gary showed "how" to teach, not just "what" to teach."

Les Watling
Professor of Oceanography, and
Pew Fellow in Marine Conservation
School of Marine Sciences
Darling Marine Center
University of Maine
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the CrustL list server]

"I would also like to express my deepest sorrow on the passing of Gary Brusca and offer a brief personal perspective on a remarkable individual. Gary was one of my graduate advisors at Humboldt State University, a mentor and a good friend. He was without exception one of the finest instructors and finest people I have had the privilege to know. Gary was a first-rate scientist, a first-rate instructor, and a first-rate writer and editor. It was Gary who first introduced me to the joys of crustaceans, and it was Gary that ingrained in me a respect for 'natural history' in the tradition of the great naturalists.

It is impossible here to truly capture who Gary was. Those of us who were fortunate to be his students can only express a sense of awe at his contributions to our education. As Les Watling

has already pointed out, the detail of Gary's courses was truly amazing. In fact, I think his graduate courses in invertebrate embryology and crustacean biology were two of the most challenging and rewarding classes I ever took. They certainly made you think, and discuss, and argue, and.... You never saw so many worn out graduate students after a Gary Brusca 2-week take-home midterm. Gary had an ability to make you think beyond what you knew, or at least try to. Perhaps what stood out even more in terms of classroom experience was simply watching Gary teach undergraduate invertebrate zoology (what a learning experience it was to be his assistant). Although he was remarkable in the laboratory, his lectures were even more so. He had an eloquence about the way he spoke that made every lecture seem like a story, inspiring and never boring. I will never forget watching him 'tell his stories' with his eyes on the students, while at the same time drawing the most exquisite and detailed illustrations on the board. I was never able to figure out when (or if) he looked at his notes, and hours later I was still unable to duplicate his drawings. Perhaps Gary was a magician of sorts. Anyway, I still have those notes today.

Gary's contributions were certainly not limited to the classroom. In fact, I always felt the field was his true laboratory and lecture hall. Some of my fondest memories are the two summers that I worked with Gary as part of a NSF Summer Institute in Marine Biology for advanced high school students. It was those countless field trips with all those inquisitive young minds in tow that really showed Gary at his best. He didn't seem to mind that I had little idea how to drive, or double-shift, that rickety old bus along the frontage roads overlooking the Humboldt coast. It was an adventure, and we were heading to the tidepools where we (or usually the students) never failed to discover something new.



Finally, and as Rick mentioned in his announcement, Gary was perhaps most of all a Naturalist in the spirit of Ed Ricketts and Joel Hedgpeth. It seems it was this philosophy that influenced everything he taught. In fact, the last 'course' I took from Gary in the Spring of 1982 was a seminar on the life of Edward F. Ricketts, not the typical biology fare. Our texts, so to speak, were John Steinbeck's 'The Log from the Sea of Cortez,' 'Cannery Row,' and 'Sweet Thursday,' and Joel Hedgpeth's two volume 'The Outer Shores'. What a fun and thought provoking experience that was! As part of the seminar, Gary (a.k.a. Waren Stauls) penned the poem below in honor of Ed Ricketts. It seems appropriate to reproduce it here."

Tim Stebbins
City of San Diego Marine Biology Laboratory

**'ON THE ANNIVERSARY OF HIS
DEATH'**

Cling too tight to a memory
and it will fold upon itself,
Hiding all there is to see
as pages on a dusty shelf.

My memory of you is second hand,
yet we are bound by sea's life blood
By being drawn where tide meets land,
revealed to us by ebb and flood.

Is that where true things rest forever
out of range of understanding?
Defying all of man's endeavors
to glimpse beyond the surface trappings.

To walk at best along the edge
of some deep thing just out of sight,
Afraid to look beyond the ledge,
comprehension may not make it right.

Unplumbed depths that beckon for us,
we cannot fathom it from here,

To step inside where one bright chorus
reveals it simple, crystal clear.

But then with all the truth unveiled
those absolutes become our bonds,
We are only free by what's concealed
and cannot search for that which has been found.

And if within the deep thing one resides,
and all the interwoven threads unraveled,
It cannot be explained to those outside
who's mystic paths to truth remain untraveled.

Were these the things you tried to say,
as creatures told them once to you?
To listen to the voice of death one day
that says, my friend it's time for breaking through.

— Waren Stauls, 1982

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the CrustL list server]

RAYMOND B. MANNING

"I am very saddened to inform you that in the early morning hours of January 18, Dr. Raymond B. Manning, Senior Zoologist, National Museum of Natural History, Smithsonian Institution, Washington, D.C., passed away at Arlington Hospital, Virginia. He was 65, and had been suffering from lung cancer and a severe heart condition over the past several years. Despite his frail health he continued working until the very end. The void left by Ray is immense. His invaluable expertise, contagious energy, and warm friendship will be sorely missed. Details of a memorial service will be announced separately.

Ray Manning received his BS (1956), MS (1959), and PhD (1963) from the University of Miami, and was immediately hired in 1963 as Associate Curator by the Smithsonian Institution. He married Lilly King Manning who was his life-long illustrator, and they had 3 daughters, Marian, Barbara and Elaine.



In May of 1999 Ray was honored by The Crustacean Society with its Excellence in Research Award, in recognition of the quality and impact of his many contributions published over 4 decades, and the critical role he played in the founding of TCS and its early development during his tenure as President (1981-1983). A special volume of the Journal of Crustacean Biology dedicated to him, containing papers by many of his colleagues, will appear later this year. A biographical sketch and bibliography will also be included in this volume.

Ray had an extraordinarily productive and distinguished career at the Smithsonian Institution where he excelled in every aspect of curatorial responsibility. He was a leader in the development of innovative techniques for sampling specimens and study literature, and was energetic in the promotion of carcinological research and zoological nomenclature at a national and international level. As a tireless collector he amassed more than 50,000 decapod and stomatopod for the Museum and other institutions. The penetration of his papers in other fields of research, and reputation on the international level largely due to his monographic works and collaborations with scientists worldwide, are truly impressive. As many of you know, his research focused primarily on the systematics of stomatopods and decapods. He published a total of 278 papers, and named solely or jointly with co-authors, 279 species, 138 genera, 5 subfamilies, 19 families, and 3 superfamilies of extant decapods and stomatopods, and at least 15 genera and 27 species of fossil decapods.”

Rafael Lemaitre
Department of Invertebrate Zoology
National Museum of Natural History
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“What a series of losses we have suffered in carcinology these last several months. Now we mourn the passing of Raymond Manning. The sense of sadness is almost overwhelming for those of us who knew him personally. How can one adequately memorialize a person who in a very real sense was the “godfather” of us all? It was Ray Manning who pushed for the formation of The Crustacean Society. It is hard to realize now that many people at that time were not convinced such a society was necessary. Yet through it all, Ray held firm. He had a clear vision of what was needed and how we had to go about getting it. He inspired the rest of us on the organizing council to “see it through.” Those were troubled times, the late 70s and early 80s, both economically and politically — not the best time to launch a scientific society. We councilors affectionately called Ray our “ayatollah” and looked to him for guidance. After the foundation period was over and the first real elections were held, there was absolutely no doubt in the minds of anyone that Ray Manning had to be our first president. That first term was even extra long (3 years instead of 2); we couldn’t see how anyone else was going to get us through the critical first years. Combined with his 2 years chairing the organizing council, he was at the helm for half a decade.

Of course, Ray was correct in his vision. The Crustacean Society, the Journal of Crustacean Biology, the society’s various outreach programs all stand in testimony to this. At his laudatory banquet at the annual summer meeting in Lafayette, Louisiana last Spring, there were many speeches, personal recollections, slides of events in his career, and (most importantly of all for Ray) lots of good food and drinks with friends. But his parting words to us were, “And remember, you’re all here tonight because of me.” The crowd roared with laughter, but it was a double punch line. We were indeed gathered that evening to



celebrate Ray Manning the person with a grand party, but we were also gathered as members of a Society that would not have been there but for him. A great legacy indeed.

And then there are the research achievements. He was Mister Stomatopod! What had been a minor cluster of species scattered about a few families ended up with almost 500 species, and counting, in 4 superfamilies. This came not only from taxonomic revision of the old literature, but also from new fresh collections from around the world. His mastery of mantis shrimp was total. It was this mastery that immediately attracted one of us (FRS) as a graduate student visiting the collections of the National Museum in Washington. To know a group of animals that well was something to be aspired to. This expertise in stomatopods seemed all the more amazing as it became obvious through the years that it was matched by an equally comprehensive expertise in reptant decapods. Ray never felt any need to apologize for his devotion to alpha-taxonomy. For him, species were the basis of everything.

His scientific achievements were backed up with an ample supply of practical, common sense, organizational skills. We saw this in the foundation of The Crustacean Society. However, Ray applied this towards running the crustacean section of the National Museum and, for many years, in chairing the Department of Invertebrates in the Smithsonian. Indeed his sense of responsibility towards the museum and the fate of its collections were strong right up until the end. Anyone who has visited the museum or sent students have experienced Ray's dedication to the collections. A few months before he died one of us (FRS) visited him in Washington. And what did he want to talk about? Not his own research. Certainly not about his own health. Rather, it was the health of the Smithsonian collections that concerned him, weighted by a sense of despair with museum administrators over what he believed was their short sightedness.

Least we convey the false impression that Ray Manning was "all work," we cannot close without reference to Ray's love of life. He loved people as much as he loved the animals he worked on. He and his wife Lilly developed a web of friendships that extended around the world. This included the Zoological Museum in Copenhagen (ZMUC). Ray always had a special connection to Denmark through Lilly, whose own roots are in this country. Not only the president of the TCS (JTH) but many other friends and colleagues in Denmark mourn the passing of a great carcinologist and a good friend.

Time spent with Ray was never dull. "Heaven" for Ray was a good steak, some good bourbon, in a setting of good conversation with friends. That all of this might get mixed in with a dose of science was just so much more spice. It was not the length of a life that was important to Ray, it was its quality. Indeed, it stands as his final lesson to us.

So while we mourn for one of our founders, and share our sense of sadness over Ray's passing with his wife Lilly and their daughters and family, there is a lot to remember and rejoice about Ray Manning's life. Truly, we are here because of him."

Jens T. Hoeg
President, The Crustacean Society, 2000-2001
Frederick R Schram
Organizing Councilor, and Past-President, The Crustacean Society, 1986-1987
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BIGHT'98 UPDATE

After seemingly endless meetings to discuss the rarer, more outre, and more problematic species we encountered in Bight'98 we have finally reached the "truth or consequences" portion of the infaunal program. On 24 January we had our first "conflict resolution" meeting to thrash out the differences in identification



between primary and review taxonomists. All participating parties received and identified (some of) their portion of the 36 randomly selected exchange samples and also received the identifications produced by the initial identification of the same material. Conflicting counts and identities were reexamined by the reanalysis lab prior to going to the meeting so that apparent, rather than real, errors did not occupy our discussions. The results of this procedure in the SCBPP were a guide and most of the discrepancies were easily resolved and usually without the need to change data. It will take several meetings however, and the schedule calls for completion of this portion of the program by mid-February 2000. A kernel of dispute will persist, however, and once all points of view have been entertained and specimens reexamined if necessary, the taxonomic coordinator(s) will have to reach a decision regarding the data (in the process of synoptic data review). Once any necessary changes have been performed, the data can be submitted in final form for analysis. This is currently scheduled for 1 April, not an auspicious date for the acceptance of an extensive database. We **can** make this deadline, yielding a collection-to-completed data set timeline of 18 months.

NEW LITERATURE

Analysis and interpretation of benthic monitoring data is always a fertile area for exploration. In this newsletter there are three articles of note dealing with data analysis. The first (Drake et al 1999) is another stab at evading the costs and delays inherent in species level identification of benthic data. This is a further test of the technique introduced back in 1993 for detection of community alteration by anthropogenic activities. High level (in this case phylum) abstractions of benthic community data do provide one important characteristic - they allow usage in a wide spectrum of sites worldwide. Particularly at the phylum level one should be able to use the same approach to samples from the Antarctic

and from the Southern California Bight, and find similar patterns of response to anthropogenic influence. At the local scale of interest to monitoring agencies, however, these analyses are likely to be somewhat lacking in sensitivity, particularly if the pollution signal is weak. In grossly polluted areas most any analysis will show a profound difference from unaffected areas, and the current high-level approach would probably be viable. For depiction of the niceties of just where influence of a point source declines to undetectable, however, all the information gathered is necessary (and even that may not be sufficient).

As a taxonomist involved in species level identifications of benthic invertebrates I am hardly a neutral observer. I can, however, see applicability of the technique used by Drake et al in very large scale comparisons of sites in different oceans, or vastly differing habitats. For fine distinctions within a given region the use of species, particularly if there is replacement along the impact gradient, is more accurate and informative than use of family, order, or phylum level identifications.

Mackenzie (1999) provides information on a differing approach, one using populations of fish parasites rather than benthic community structure *per se*. If such examinations are restricted to species which exhibit relatively high site fidelity the approach he proposes might be adaptable for use in a point source monitoring context. He suggests that internal fish parasites, which have delicate and probably highly pollution-sensitive transmission stages, would serve as a good "canary in a coalmine" early warning indicators of ecosystem health. The idea is intriguing but applicability to point source monitoring efforts is dubious at present.

Closer to home Maurer et al (1999) suggest a different slant on analysis of benthic community data. They also favor an indicator approach using highly susceptible animals, substituting "rare" benthic species for the fish



endoparasites favored by Mackenzie. I personally have great sympathy for use of less common species in benthic analysis, having chafed over the years at exclusion rules in analysis of benthic data sets. Many discussions (or arguments if you prefer) with Dr. Bob Smith have convinced me that rarity is a concept which is difficult to pin down and even more difficult to evaluate in a sampling context. There are a multitude of possible explanations for a species absence or occurrence at low density in a given sample. The authors seize on one of them (range extreme density attenuation) and discuss it here. Since they provide a single operational definition of rarity in the article they are able to conveniently ignore the other possible, and possibly contradictory, explanations for observed low population density. Their methodology does offer utility in that they examine "rare species" collectively, but this is tantamount to maintaining that the same cause is responsible for low density in each of the collectively considered populations - an exceedingly unlikely case. So, while I feel that they are on to something, I think the proposed method is only a suggestive first effort. Before a more serious attempt to refine such an approach is made, the theoretical bases of "rarity" need more thorough examination and **much** more explicit discussion.

Investigations continue on the ecology of one of the lab rats of the benthic infaunal world, *Capitella* sp. I. Cohen & Pechenik (1999) report on the species relation with sediment organic carbon, while Horng & Taghon (1999) discuss particle selection in contaminated sediments. The effects of different levels of sediment organic carbon on larval settlement and metamorphosis, and the post-metamorphic growth of the animals were experimentally examined by Cohen & Pechenik. They found that larvae apparently responded to some fraction of the sediment organic load, but did not select either the most organically enriched sediments or those which would provide optimal subsequent growth.

While Horng and Taghon found that *Capitella* sp. I fed on the smallest available particles, they also found that they did so regardless of sediment phenanthrene concentration. As organic pollutants are adsorbed to surfaces of fine particles they tend to be more concentrated (in equal weights of sediment) on sediments composed of the finest particles. In consequence the feeding of particle selective sediment consumers such as *Capitella* may help lengthen the time taken to degrade organic compounds in nature. As selective feeders on the particles which have the highest percentage of contaminants by weight, they package (digestion is inefficient, passing most items through unaltered) particulates in long lasting fecal pellets, potentially preventing other biologically or chemically mediated breakdown of included organics. Glass beads were used to determine that the preferred particle size for the species was $17 \pm 4 \mu\text{m}$.

The pyramidellid mollusks have long been a thorn in the side of practical marine monitoring in the Southern California Bight. A large number of species in several genera have been described from the area and others from the north and south are either known or suspected to occur here as well. The group, by all accounts, was seriously over described on conchological grounds by W. H. Dall and Paul Bartsch in the late 19th and early 20th centuries. Since these are generally small animals, few were willing to undertake the study of the soft parts which might contradict the tales told by the shells. In the last two decades a few courageous individuals have begun putting the nomenclature of the group on a more sensible basis. Schander et al (1999) contribute to this by examining two of the odostomiid genera, *Odostomella* and *Herviera*. Members of both genera are predominantly Indo-Pacific in distribution with no representatives in our area. However, the nature of the character states examined, the analysis, and the biological notes provided by the authors are all of interest to any mollusk student dealing with the family and this thorough treatment is recommended.



Thollesson (1999) examined the phylogenetic relations of dorid nudibranchs based on molecular evidence gleaned from a 400 Bp sequence of the 16S rRNA molecule. A notaspidean and a dendronotid were included in the analysis as outgroups along with 24 dorid species. The attempt was inconclusive as regards the status of higher taxa of interest (especially the Eudoridoidea and Anadoridoidea). The sequence used apparently (based on internal transition/transversion evidence) was subject to multiple substitutions. The authors suggest this may have contributed to the inability to resolve higher level relationships, while providing useful information on low-level branching. It is likely that inclusion of additional taxa belonging to neither the Chromodorididae nor the Goniodorididae would strengthen analysis. We await a reanalysis based on a wider sampling of dorids, but the article provides useful information on relationships within the two families whose members formed the bulk of the analyzed taxa.

In the last Newsletter the editor expressed his view that cosmopolitanism was not nearly as widespread among marine invertebrates as earlier believed. Support for this view is offered by Klatau et al (1999), who examine a "cosmopolitan" marine sponge *Chondrilla nucula* from a variety of locations in various parts of its reported range. Both traditional morphological (spicule based) and allozyme analyses were conducted. The authors found that there were probably five different cryptic sibling species being referred to as *C. nucula* in various areas. They extrapolate from their findings that many other invertebrates, particularly where species in a well-defined genus have few distinguishing characters, may offer analogous cases of sibling speciation. They also found that compared to the allozyme data, spicule size data was a poor predictor of species. They suggest that the relative merits of sponge spicule size measurements be critically reexamined.

10 JANUARY MEETING

The meeting started with president Ron Velarde mentioning the upcoming B'98 Re-ID conflict resolution meeting. It will be held at SCCWRP on Monday, January 24. Don Cadien then regaled us with stories of the SCAMIT Christmas party which sounded entertaining and successful. There was some discussion as to whether the party should be moved to a more southern location next year as many active members of SCAMIT (as well as two of the four officers) live in the San Diego region and find the party a bit far to attend most years. However, trying to find a location that would compare with the venue of the Cabrillo Marine Aquarium would be a challenge indeed. No decision was made at this time and the subject will probably be discussed again as Christmas 2000 rolls around. Don Cadien then proceeded to give a B'98 status report. All agencies have received their allotted QC samples, but not everyone has completed these samples. Hopefully there will be some comparative material for the resolution meeting mentioned above.

The SCAMIT Taxonomic Listing Edition 4 is looming on the horizon and Don is calling for any additions and/or changes to Edition 3. Uncirculated provisional SCAMIT species sheets need to be completed and sent to Don in time for attachment to the May Newsletter to qualify the species for inclusion in the next edition. A discussion ensued on exactly how an in-house lab provisional species becomes a SCAMIT provisional. The rule is that the provisional species sheet (in SCAMIT format) has to be distributed and made available to the membership. There was some discussion as to the definition of "distributed". Those present decided that "distributed" is defined as being attached to a SCAMIT Newsletter (both paper and electronic versions). The sheet can also be posted on the web-site as a taxonomic tool, handed out at meetings and/or mailed, but, at a minimum, it must be distributed as an attachment to a SCAMIT newsletter.



Next Don brought up the subject of a clearing agent to consider as an alternative to methyl salicylate. It is called d-limonene and is less toxic than most other clearing agents. To learn more about it see Silverman (1999). Currently Don, being sensitized to the methyl salicylate, is using cedarwood oil as a clearing agent. This works well but some find it unpleasantly pungent as well. If d-limonene (which is the basis of several commercial brands of clearing agent) is satisfactory in our application we can consider using it in lieu of other agents potentially disagreeable to one or more of our members. It is the same material used to impart lemon flavor to foodstuffs and other products and is considered safe for human consumption (in small doses) by the FDA. None of the members have tried it yet but expect a report on the subject in the future once tests are completed.

The taxonomy aspect of the meeting started with molluscs. Kelvin Barwick (CSDMWWD) had a small gastropod which he had tentatively identified as *Leptogyra* sp?. It was from one of the City of San Diego's ITP (International Treatment Plant) Regional stations (2655). The animal was collected in 88 feet of water. After some examination it was determined that the animal had a calcareous operculum and was therefore not *Leptogyra*. ID was left at Turbinidae, although the animal was most probably a juvenile *Homalopoma*. The next mollusc was a bivalve which turned out to be a juvenile *Periploma planiusculum*. It was collected from the ITP Regional station, 2260(1) in 40 feet of water. The City of San Diego rarely sees this species of *Periploma* as it seldom reaches depths at which routine monitoring is undertaken.

Specimens of *Vitreolina yod* were discovered at ITP Regional station 2655(2) in 88 feet of water. Megan Lilly (CSDMWWD) expressed her concern that it could easily be confused with *Melanella grippi*. This latter species, now known as *Vitreolina columbiana* (following McLean 1996) and *V. yod* are conveniently

pictured together in Figure 1.14 of that publication which allows direct comparison of all three species of *Vitreolina* taken in monitoring of local waters. *V. columbiana* is the most torted of the three, with pronounced curvature in at least two planes. The remaining two, *V. macra* and *V. yod* have very little curvature in the second plane (apertural to abapertural), with *V. macra* having much more curvature in the first plane (lateral) than does *V. yod*. *Vitreolina yod* also has a less elongate oval aperture, yielding both a broader body whorl and a larger spire angle than found in either *V. columbiana* or *V. macra*. Use of McLean's figure should help avoid confusion in identifying the three species.

Kelvin Barwick's provisional species *Philine* sp SD 1 was then brought forth and examined by Don Cadien. The animal was discovered at CSDMWWD ITP station I-14(2) in 87 feet of water. Don identified the animal as *Philine bakeri* based on the crenulation of the shell margin and the nature of the attachment of the outer lip to the spire. Both characters are discussed on the *Philine* sp A voucher sheet as characterizing this species. The odd thing about this animal was a seeming absence of gizzard plates upon dissection. As the original description of *P. bakeri* was based on a dead shell, morphology of the animal, the structure of the radula, and presence of gizzard plates cannot be determined for the holotype. Until the taxon can be more completely described based on topotypic or other neotype material, identifications must hinge on the fairly unique shell structure and ornamentation of the species. Please remember this is the *P. bakeri* of Dall, not the *P. bakeri* of either Abbott's or Behrens' handbooks, which is actually *P. alba*.

Amphissa was the next animal to be considered. Kelvin had dry mounted a size series of *Amphissa* on a palaeo-slide. It was decided that the animals were *Amphissa undata*. The City of San Diego also had a specimen of *A. versicolor* in their voucher



collection but the correctness of the ID is pending as the animal seemed to fall somewhere between *A. undata* and *A. versicolor*.

After lunch Dean Pasko (CSDMWWD) was ready to dive into problems with Crustacea. The first animal brought forth was a small ostracod from a B'98 Channel Islands station (2476, 11 meters of water). The carapace was oblong (i.e., broadly oval), with a broad rostrum with a large, straight ventral shelf, and noticeable surface pitting. It was without a caudal extension or surface ridges. Based on general appearance the specimen belonged in Philomedidae. The anterior and ventral margins of the carapace were crenulate with blunt/squared edges ("U" vs "V"), while the dorsal and posterior margins were smooth. The caudal furca had 2L - 2s - 1t - 3s - 1t claws (where t = thick and small). The first claw was the largest, the second about two-thirds of the first and the other two thickened claws about 1/4 - 1/5th of the largest. The two small, thick claws were also displaced medially; alternatively, you could say the sets of small claws were displaced laterally. The caudal furca was large, robust and rectangular in profile with a pyramidal lateral face (i.e., the four sides sloped outward from a centrally located high point). The animal was not recognized by anyone present and its identity remains undetermined (see cover photo).

Jack Word's key (a NAMIT handout) was used to key out a *Harbansus mayeri*. The animal was collected at a B'98 Channel Island station (2480) in 106 meters of water. Dean will compare the animal to the full description to verify his ID. This is not an animal known to occur this far south. Should the identity be confirmed, this is an considerable southern range extension.

Next, a small hermit crab proved to be a problem. The animal was approximately 4mm in size but had eggs, indicating maturity. Haig's 1990 key was used, but to no avail. The

specimen keyed to *Pagurus setosus* but both Dean and Don felt that it was not *setosus* for various morphological reasons. The crab was collected in 112 meters of water from B'98 station 2815. For the time being the identification was left at *Pagurus* sp.

Lastly we turned our attention to Sipuncula. Dean showed us a specimen from B'98 station 2480 (106 m). The animal had one large pair of retractors which appeared more fused and larger, proportionately than those in *Thysanocardia*. The animal also lacked microvilli on the intestine, and the anus was located far anterior on the body, just above the nephridia. It was left as a provisional species, *Sipuncula* sp SD2, for the time being.

TEREBELLID PARASITES

Tom Parker (CSDLAC) forwarded comments posted to the Annelida Listserver. They were provided originally in response to a query on Annelida by Aaron Baldwin. The e-mail reply was later posted by him to the Annelida Listserver for the edification of us all. We reprint this reply here, as it will undoubtedly interest members who have observed odd things attached to their own terebellids:

"Your query regarding the terebellid parasites was passed on to me by a colleague who subscribes to the Annelida list. I am not a member of the Annelida List and do not know how to post a reply so I thought I would e-mail you directly. (Feel free to post my comments if you wish)

"I am a pollution monitoring biologist with about 20 years experience on benthos in UK waters. For 12 years I have been collecting copepod parasites mostly of polychaetes, crustaceans, and molluscs. I published a brief hand guide to Polychaete parasites of UK waters a few years ago plus a few other articles since on polychaete parasites (O'Reilly, 1991,1995a,1995b,1999). From your brief



description of the terebellid parasites I would be fairly confident that they are copepods, either of the family Xenocoelomidae or of the family Melinnacheridae.

“The Xenocoelomidae has 2 genera (see Bresciani & Lutzen, 1966) and I have collected both in UK waters: the first contains a single species *Aphanodomus terebellae* which is endoparasitic in various terebellids, *Thelepus* being a favourite host. Only a pair of ovisacs protrude from the host.

“The second genus *Xenocoeloma* has 2 very similar species *X. alleni*, and *X. brumpti* which are ectoparasites of *Polycirrus* species. They are oval, about 1-2mm long and devoid of any appendages except a pair of ovisacs when mature.

“The Melinnacheridae has 4 described species - *Melinnacheres terebellidis* and *M. steenstrupi* both occur on *Terebellides stroemi* (attached to the body or the gills respectively) while *M. ergasiloides* lives on *Melinna cristata* attached to the posterior thoracic segments. (The fourth species is from a deep water terebellid off Mexico) Descriptions of the *Terebellides* parasites are available in Bresciani, 1961. I have material of both from the North Sea and the west coast of Scotland. I have not seen *M. ergasiloides* though a good description and figure appear in Bresciani & Lutzen, 1975.

“Without seeing your specimen or knowing its host identity I could not be sure where it might fit in. These families remain poorly known and it is possible that you may have a new species or genus. I have several new taxa already in my collection including a bizarre ecto/endoparasite of *Jasmineira*. I would be happy to examine your parasite if you wish and would be interested to hear about any other copepod parasites you may have come across on invertebrates.”

Myles O'Reilly

HELP NEEDED

A request has been forwarded through the CrustL list server for specimens to assist in a DNA investigation of crab relationships. It is reprinted here.

“I am working on a molecular phylogenetics project testing various hypotheses about the relationships among crayfishes, clawed lobsters, (Astacidea) and mud and ghost shrimps (Thalassinidea). I would be most grateful if you could provide specimens from the infraorder Thalassinidea for DNA extraction, i.e., freshly collected specimens preserved in at least 95% EtOH and shipped directly to me. I would, of course, be happy to pay all shipping costs. Let me know if you can help with this project.”

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HELP WANTED

Two recent job postings with NOAA may be of interest to members. The jobs are described in too much detail for inclusion here but both deal with policy and policy implementation in the National Marine Sanctuaries area. Both are based in Silver Springs MD., and offer interesting career possibilities. The closing date for application is 16 February in each case. The full descriptions can be found on the web at:

<http://www.usajobs.opm.gov/wfjic/jobs/BO9922.HTM>

<http://www.usajobs.opm.gov/wfjic/jobs/BO9925.HTM>



Those without internet access at home or at work can use computers provided by most local library systems to download hard copies of the applications.

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