



Southern California Association of Marine Invertebrate Taxonomists

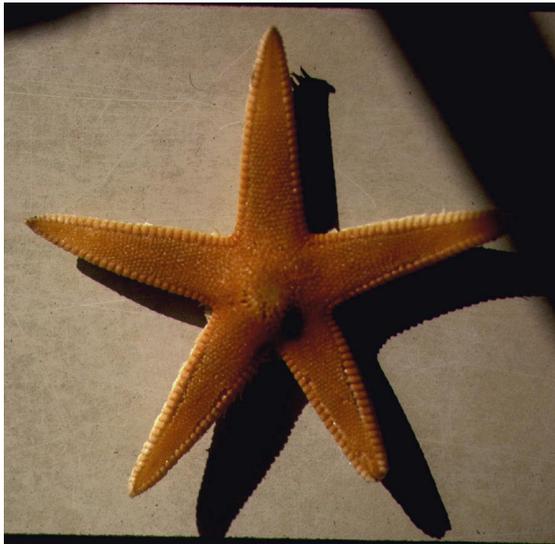
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SCAMIT Newsletter

Vol. 17, No. 10

SUBJECT:	Non-polychaete Taxa from Bight'98 samples: new, odd, problematic
GUEST SPEAKER:	None - Don Cadien Discussion Leader
DATE:	22 March 1999
TIME:	9:30 a.m. to 3:30 p. m.
LOCATION:	City of San Diego Marine Biology Lab 4918 North Harbor Drive #101 San Diego, CA



Astropecten ornatissimus CSDMWWD,
station uncertain, circa July 1997

The March meeting will be a first stab at dealing with all the odd and unusual things we non-polychaete workers have encountered so far in analysis of the Bight'98 infaunal samples. Since several different habitats (narrow Channel Islands shelves, bays) were examined, odd things were expected. This first meeting is to find out what areas might need to be addressed by single meetings in future, and to provide an overview of the problems encountered. Bring specimens for help and for others to view and comment on.

HELP!!

The Bernice P. Bishop Museum in Hawaii is in crisis. Their funding has been cut below the support level for staff and on-going programs, as well as below that necessary for collections maintenance. The following message (originating on the TAXACOM list) merits our attention and action. "In response to the request I've [Scott Miller] had from various people

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about how best to support the problems facing Bishop Museum, here is a concise summary from Allen Allison. If you do write support letters, I would personally suggest emphasizing the value of the 'Hawaii Biological Survey' and the need for the state government to support the vital systematics infrastructure.

"You asked for a short statement on how the community could best support Bishop Museum. Our problems are mainly problems involving our state appropriation. In 1989, the first year of the appropriation, we received \$1.352 million. By 1992 this had increased to \$2.466 million. In 1995 it had decreased to \$2.077 million, by 1996 it decreased to \$928,873, and by 1998 it was down to \$805,000. This fiscal year (1999) it was reduced by more than half to \$381,000. In other words, in less than a decade we've lost ~84% of our state funding. That funding has mostly provided basic support for the care, maintenance and access of collections. It has also provided a crucial match for obtaining research and collections support grants. Our primary priority is to increase our state funding this year from the \$381,000 proposed by the Governor to the \$1.6 million we've formally requested. I might add that last year we faced losing our state appropriation entirely. I think that our letter writing campaign at that time helped us avoid that fate. We are again asking our colleagues to write in support of increasing our state appropriation. Our basic message is that although we are a private institution, we are a crucial component of the state's infrastructure in science, cultural history and education. Letters of support are best directed to me; I will forward to government officials: Allen Allison, Bishop Museum, 1525 Bernice Street, Honolulu, Hawaii 96817. Fax 808-847-8252 and e-mail allison@hawaii.edu."

It should be noted that their predicament is not unique. Funding cutbacks in many areas have already affected systematic biology at all levels. The British Museum was gutted a number of years ago, the Smithsonian

Institution has seen positions eliminated rather than filled [and a change in mission from research, training, and archival to public education], the Natural History Museum of Los Angeles County has had many lay-offs [and departmental closures], etc. A recent communique from Dr. Michel Hendrickx in Mazatlan indicated that their funding has been cut by 70% just this year [any "angels" out there want to buy a marine station?]. If we have the opportunity to speak out as a systematic/research community to assist our colleagues, we should grab that opportunity firmly with both hands and do what we can to fight de-prioritization of organismal biology.

UPCOMING MEETING

A gathering scheduled for later this year might provide a forum for discussion of this problem.

The Species 2000 2nd International Workshop - "Biological Diversity: Value of Information for the 21st Century" is scheduled for 14-16 July 1999 at Tsukuba International Convention Centre, in Japan.

Discussion topics are to include the following: Global Species Database; Museum, Collection, and Species Bank Information; Regional and Inter-regional Biodiversity Information Resource; Interoperability of Biological Information Resources; and Standardization of Taxonomic Information Systems. Papers in any of these areas are invited. Abstracts are due by 1 May 1999.

Information on the meeting is available at

<http://www.sp2000.riken.go.jp/sp2kj/workshop.html>.

NEW LITERATURE

Several new books are available which may appeal to the membership.



A second edition of the American Fisheries Society Mollusk volume is now out (Turgeon, et al 1998). This is a major improvement on the first edition which fully documents all the changes between editions 1 and 2. Extensive new information is reviewed, incorporated, and referenced. Hopefully this same path will be followed with other volumes in the series.

“Sex and Parthenogenesis, Evolutionary ecology of reproductive modes in non-marine ostracods” (1998) may be of interest as a discussion of reproductive modality using a single group as an example, rather than as a resource on reproduction in marine ostracods. Edited by Koen Martens, it is available for \$75.50 from Backhuys Publishers, P. O. Box 321, 2300 AH Leiden, The Netherlands (or backhuys@euronet.nl).

A new catalogue with multiple specialist authorship has been announced (Young, Paulo S., ed., 1998. Catalogue of Crustacea of Brazil. Museu Nacional, Serie Livros n. 6, 718pp.) . It covers both marine, freshwater, and terrestrial taxa, and draws on experts from throughout the world, as well as from Brazil itself. Each species is presented with information on synonymy, distribution, and comments, as well as by a description and references. It can be purchased by check (\$50.00 made out to Fundacao Universitaria Jose Bonifacio) from Ms. Alzinete Rego Albuquerque, Museu Nacional, Biblioteca, Quinta da Boa Vista, 20940-040, Rio de Janeiro, RJ, Brazil. Postage via surface mail is included in the purchase price (airmail is available for an additional \$15.00).

A changed system at CSDLAC has allowed me to resume my earlier efforts at examining new literature for the membership. The paucity of such items recently has reflected our system problem and not a dearth of interesting new articles.

Riemann-Zürneck (1998) posed (and answered) the interesting question How Sessile are Sea Anemones? Her article covers a variety of behavioral and physical adaptations of sea anemones to predators, food-gathering, and population dispersal. One of her most interesting results was the recognition of a “straying predator” type of unattached anemone behavior. Based on photographs in situ on coarse ground off South Africa, she postulates that one species exists in a neutrally buoyant “drift” mode in which bottom currents bring it into contact with its gorgonian prey (it attacks sea-fans via extracoelenteric digestion).

Phylogenetic analysis of the mollusks continues apace. A recent analysis of 18S rDNA sequence data by Harasewych et al (1998) attempted to clarify the relationships of groups within the lower Caenogastropoda. Their main concern was refinement in the placement of the Campaniloidea, an early offshoot of the cerithioids. They found it, along with architaenioglossan taxa, and the cerithioids, to comprise a single clade, while the remaining caenogastropods formed the Eucaenogastropoda (the Hypsogastropoda of Ponder and Lindberg 1997).

Those “rusty” clams we find in our samples have always intrigued me. Now information is available on the crusty coating for a related species from European waters. The ferruginous coating usually found on species in the genera *Montacuta*, *Mysella*, and *Rochefortia* is probably similarly constituted wherever the animals occur. Gillan et al (1998), investigating *Montacuta ferruginosa*, concentrated on the bacterial component of this incrustation. The authors believe that, based on the identity of the bacteria in the coating, they may be instrumental in the construction of the coating itself. The precipitation of metallic and/or phosphatic salts as part of the coating can be assisted by some of the bacteria. They also



may be involved in lysis of both the periostracum and the organic constituents of the clams shell. Further investigations into the nature of the bacterial activity are planned.

We usually think of an octopus attack as being grabbed and bitten by the beak. The beak bite is, however, just the beginning for organisms attacked by cephalopods. If you have wanted to know about the “other” part of the cephalopod buccal armature (other than the beak), now is your chance. Messenger & Young (1998) provide a detailed overview of the radular apparatus (radula and its support structures) emphasizing *Octopus* and *Nautilus*. They discuss its development, function, and eventual breakdown.

Härlin (1998a) brings clarity to the consideration of names. He provides an interesting discussion which draws upon numerous recent sources arguing the relative value of traditional Linnean nomenclature and phylogenetically based nomenclature. While, for the most part, we in SCAMIT tend to find the traditional system perfectly adequate for our uses, we need to remain conversant with the arguments provided in support of an overthrow of the Linnean style of naming, and the substitution of names derived from phylogenetic analysis. This article helps. A related article (Härlin 1998b) addresses the impact of the phylogenetic approach on the systematics of nemerteans.

Taxonomy of the sentinel organism *Capitella capitata* has been in turmoil since a series of closely related sibling species were discovered within “*Capitella capitata*” by Grassle & Grassle (1974). Most of these taxa are most easily distinguished by their ecology or reproductive behavior, and are difficult to separate morphologically. Gamenick et al (1998) provide some ecophysiological traits which further separate forms within the sibling species complex. Their investigation focused on sulfide tolerance/oxygen demand aspects of the animals physiology.

A particularly clever polyculture arrangement has been suggested by the work of Ahlgren (1998) who tested the effectiveness of the holothurian *Parastichopus californicus* at reducing fouling in salmon rearing pens. Only a fraction of the feed provided to salmon during their rearing is consumed by the fish themselves. The remainder, and the fish waste products, form a rich food resource for fouling organisms on (and under) the net pens used for fish culture. Excess fouling organism presence reduces flow through the pens, and has other undesirable effects. Sea cucumbers, noted browsers on loosely attached or flocculent organic material on rocky bottoms, were tested as potential agents for net clearing. They proved surprisingly efficient at the task, and offer the added benefit of being a marketable product themselves. Hopefully this test will be welcomed and acted on by the salmon rearing industry. The resulting decrease in organic oversupply to nearshore areas where the fish are raised would benefit the entire coastal habitat. It also might stop the establishment of a wild-caught *Parastichopus* fishery in the Bight if they can be easily cultured in salmon pens.

WHERE THE BOYS ARE

In a previous issue I called attention to the prevalence of hermaphrodite or intersex individuals and lack of males in some local sicyoniid shrimp. Well, although the road was long and led through unfamiliar territory, I finally know where the boys are. All the specimens I had interpreted as hermaphrodites were actually males. I fell into a literature trap concerning the definition of the female external genitalia, and interpreted a feature held in common by both male and female shrimp as part of the female thelycum. I contacted Dr. Ray Bauer, an authority on sexual systems and sexual function in shrimps (penaeoid and otherwise), concerning the supposed



hermaphrodites. He directed me to some literature on the subject of intersexuality and hermaphroditism, and sent me articles of his own on shrimp sexuality.

Among these items was Perez-Farfante & Robertson (1992) which offered a good description of apparent hermaphroditism in a *Penaeus* species from the eastern Pacific. I continued to dig in the literature but was frustrated by the result. I was missing crucial information, on morphology of male and female sicyoniid shrimp. Continued literature research finally revealed my error, and explained its source.

Bauer had made a step towards clarifying the situation (1986) by defining the thelycum as “any external modifications of the female’s posterior (somites 12-14) thoracic sternites and/or coxae that are related to sperm transfer and storage”. This effectively excludes the elongate anterior “thelycal” plate of somite 13 from inclusion as part of the thelycal structure. It was the definition (usually visual) of the spine on somite 13 as part of the thelycum, found in most of the literature, which confused me into believing I had intersex specimens. In Perez-Farfante’s illustrations of thelyca of various female *Sicyonia* species (1985), for instance, this elongate spine-like anterior projection is always included in its entirety.

I finally extracted enough evidence from the literature to satisfy myself that what I had seen in my male specimens was not only normal, but implicitly expected. The first clue was in Kubo (1949, p. 443) where he mentions “Sternal spine of seventh thoracic segment of male, which is homologous with anterior plate of thelycum...” while discussing *Eusicyonia lancifer japonica*. I then located a somewhat more cryptic statement by Burkenroad (1934, p. 75) “The thelycum and the corresponding male genital sternites, less varied than among other penaeid groups, sometimes supply diagnostic features; the thelycum chiefly by the outline of the posterior margin of the thirteenth

sternite, which forms the anterior lip of the transverse groove; the male genital area chiefly by the shape of the transverse elevation lying just anterior to the suture between the thirteenth and fourteenth sternites. The length and outline of the large spine of the thirteenth sternite are too insusceptible of exact description and with too limited a range of variation over the genus and too high a rate of individual variability, to be of very considerable service.”

I assume, based on the above, that Burkenroad found no reason to mention the male sternal spine in his subsequent species descriptions since it would serve no discriminatory purpose. Others seem to have followed his lead, and omit description of this rather prominent feature which apparently characterizes all members of the Sicyoniidae.

To complete my education on the nature of this structure Burkenroad actually illustrated it (the only illustrations I have found to date) in his description of *S. disedwardsi* (Burkenroad 1934 fig. 29). So, no hermaphrodites after all. My thanks to those who examined their shrimp in response to my earlier report, and found that they too had “hermaphrodite” individuals. Sorry to have mislead you. Hopefully my error (and the above discussion) will allow others to avoid this trap in future. - Don Cadien (CSDLAC)

22 FEBRUARY MEETING

Soon it will be election time again and Don Cadien (CSDLAC) started the meeting by calling for nominations for SCAMIT officers. Don then announced he would not accept renomination for the post of Vice President. He hopes to be appointed Newsletter Editor by the Executive Committee, a position which he currently occupies and which was separated from the duties of the Vice-President at our last election. Ann Dalkey was renominated for Treasurer. No other nominations were offered or recognized at this time. Subsequent nominations of Ron Velarde for another term as



President, and for Megan Lilly to continue as Secretary, were received. The latest news is that Leslie Harris has been nominated for the position of Vice President and has accepted. Please see the candidate biographies at the end of the newsletter.

Don Cadien requested any specimens of dajid parasites of shrimp (along with the host if possible) be sent to him. Specimens of several species of local dajids were circulated among those in attendance. These isopod parasites are found on top of the shrimp carapace (not in side bulges like bopyrids). They look sort of like hats. Most programs apparently do not take them in any appreciable quantity. The impetus of this request is the finding of an undescribed species on two of the shrimp species in our area in response to El Niño warming. While the ENSO is now gone (and replaced by La Niña), the shrimps (and their dajid parasites) have stuck around. A local species which parasitizes the euphausiid shrimp *Stylocheiron affine* offshore has recently been described (Shields and Gómez-Gutiérrez 1998). It sites itself between the eyes of the shrimp, maintaining its position by wrapping modified antennae around the shrimp eye stalks.

The meeting got down to the business of nemerteans with an opening introduction by Dr. Eric Hochberg (SBMNH). Eric gave a brief, but informative overview of the Invertebrate Zoology Department and then went on to discuss some of his current projects. Eric is looking at the association of leech eggs and leeches on crustaceans. He showed us a large specimen of *Paralithodes* with leech eggs on its carapace. The eggs looked like small brown/black dots all over the animal. Both local species in the genus are usually covered with leech eggs, and often bear adult leeches as well. Other large decapods probably also bear leech eggs, at least those without hairy carapaces. He is also interested in which species of nemerteans inhabit and are commensal upon crustaceans.

Eric is also researching semi-terrestrial nemerteans. He has found some in Goleta Slough and suspects they may be native. More specimens and locations will be needed to confirm or refute this premise. The animals live in moist, slough type environments, under rocks, wood, etc. and Eric would greatly appreciate any specimens people can provide. There is one paper on native California terrestrial nemerteans (Gibson et. al. 1982) available to provide information on these animals.

Eric next introduced Patricia Sadeghian, who is currently a graduate student under Dr. Armand Kuris at UCSB. She is working on commensal nemerteans associated with crustaceans and Eric would like to extend that interest to the Class Bivalvia as well. They put out a request for any nemerteans one finds in association with either crustaceans or bivalves. *Macoma* and *Yoldia* are two genera of bivalve which might contain commensal nemerteans. You can reach her for further information, or to respond to her request at psadeghian@sbnature2.org.

At this point Don Cadien urged that in the future we try to organize a meeting which would deal with associates of coastal marine invertebrates. This is a fascinating subject, but one which is often over looked and under researched. Parasites of fishes are usually at least noted during data collection, but those of invertebrates are either missed, or ignored. As we focus more closely on non-lethal impacts of discharges, the presence and prevalence of symbionts (which include parasites) becomes of greater interest. Eric agreed that this would be a worthwhile effort, and suggested that a 2 day workshop might be even better.

To help us recognize and collect specimens of parasitic nemerteans two handouts were distributed; one on bdellonemertine parasites of bivalves, and one on carcinonemertine parasites of crabs. Eric then went on to pass around the Proceedings of the last 3 international nemertean meetings. Each contained a number



of papers on taxonomy and ecology of nemerteans. He also showed Gibson's Annotated check list for the nemertean species of the world (Gibson 1995). This last publication deals with all nemertean species described to 1995, providing comments on synonymy, distribution, current nomenclatural status, and other available biological information; an indispensable watershed for current and future nemertean workers.

According to Eric, the taxonomy being done by the "nemertean experts" involves intensive serial sectioning and is not particularly useful to taxonomists in our position (using external characters, and characters visible by clearing). We are hoping to continue using simple whole animal characters in our identification process, avoiding sectioning as impractical for our application.

A brief history of the Coe Collection and its curation was then given by Eric (and in Hochberg & Lunianski 1998). The collection has been sorted by an intern and an effort has been made to match the specimens in hand with Coe's 1940 publication. Some types and specimens came up missing, but a box discovered in the Scripps Benthic Invertebrate Collection contained some of the missing animals. Eric suspects there is also some additional Coe material in Connecticut. He also has in the collection some specimens from the MacGinitie Collection identified by Coe, although not collected by him. In addition there are quite a few unidentified nemertean specimens from the Allan Hancock Collections a number of these are materials from the BLM studies in various years. Nemerteans in those programs were identified by Dr. Bruce Thompson, and the specimens were recombined into station lots. Identifications of nemerteans in these lots should be available in the BLM databases, but connecting individual specimens to identifications will be, in most cases, impossible.

Among identified lots Sue Williams discovered a series of lots identified by Patricia MacEwen, chiefly from programs administered by Dr. Dale Straughn in King Harbor and elsewhere. As the key prepared by her is in general use by local nemertean IDers, it is particularly valuable to have material of many local species identified by her available for comparison. Don Cadien and Tony Phillips made a list of the lots and their identifications for use in future trips to consult the nemertean collections at the Santa Barbara Museum. Fortunately for us all, Sue Williams was present to interpret the labels and identify the handwriting and recording styles of several workers. She had seen all of this material before, either as co-participant in the programs, or as Hancock Foundation collections manager.

After Eric's brief, but informative opening statements he showed us where the nemerteans were stored and we all frantically went to work. For Dean Pasko and myself (Megan Lilly) it was very helpful to be able to compare some of our specimens to the original types.

As in any examination of historical material, there were some surprises. We found several mixed lots, and we found what we would call one species identified as several different species. We found *Tubulanus nothus* (in current SCAMIT usage) identified as *T. pellucidus* on several occasions. We also found adult series of species which are only encountered (if at all) as juveniles in our programs. Several additional trips will be required before we can be satisfied we have gleaned even a majority of the information available from these collections. We may not like what we find, but such comparisons serve a valuable purpose in QC of our nemertean IDs.

[Editor's Note - The interesting report which follows was submitted by member Mary Wicksten several months ago. I apologize to her, and to the other members for the delay in getting it into the NL. I would like to



encourage such involvement on the part of the members in the content of the Newsletter, not discourage it by allowing submissions to languish for months!]

TWO WEEKS IN THE GALAPAGOS!

- Mary K. Wicksten, Texas A&M University

I really “lucked out” this August and spent close to two weeks in Ecuador, most of the time at the Galapagos Islands. I joined Dr. Cleveland Hickman Jr. of Washington and Lee University, Virginia, who is producing a series of photographic guides to the marine invertebrates of the islands. (Dr. Hickman already has produced a color guide to the echinoderms, “A Field Guide to Sea Stars and Other Echinoderms of the Galapagos”. Contact him at hickman.c@fs.sciences.WLU.EDU for information). With the aid of Rodrigo Bustamante and other personnel of the Charles Darwin Research Station, we collected along shore on the south side of Isla Santa Cruz, finding the first specimens of *Alpheus galapagensis* since 1925.

For a week, Cleve Hickman and I joined a crew from the CDRS aboard the 40-foot boat “Beagle” for a cruise through the central part of the archipelago. We dived at Islas Floreana, Pinzon, Baltra, Seymour Norte and San Salvador. Diving was tough: visibility was 20 feet at best, water temperatures were about 68 degrees F, and currents and surge were common. Imagine 8 people crowded on a 40-foot boat, making 4 dives per day while donning and doffing full wet suits, using underwater cameras and cameras on photo stands and having only one cabin for dining, cataloguing, photographing, etc.

Much of the diving time was spent collecting carideans and other decapods for the photographic guides. Dr. Hickman already had photographed many of the common mollusks, so effort was spent on crustaceans; however, a few previously uncollected nudibranchs turned up. The carideans included many never

photographed in life, several spectacular range extensions (including the starfish-eating shrimp *Hymenocera picta*) and three new species: two species of *Lysmata* and one brightly colored *Automate*. Over 30 species of carideans were collected. An unusual find was a large gray-and-white cerianthid, the first one any of the personnel from the Station had ever seen. We collected quite a few small green echiuroids that live under subtidal rocks.

The underwater habitats of the Galapagos are diverse. Many areas remind one of Catalina Island, having rock walls, jumbled rocks and coarse sand (but no kelp—in fact, we saw little algae except in intertidal zones). There are lots of fish in schools, but poor visibility meant that any big pelagic fish would remain unseen. We saw one green sea turtle. Very large stingrays, butterflyfishes, Moorish idols, king angelfish, damselfishes and other reef fishes were common. Sea lions were common visitors underwater and sometimes had to be chased off the inflatable boats. One larger colonial coral, *Pavona gigantea*, showed a lot of bleaching, probably from the effects of El Niño.

However, smaller colonies of *Pocillopora* spp. were doing well and had a full complement of commensal crabs (*Trapezia* spp.) and snapping shrimp (*Harpiliopsis spinigera*, *Alpheus lottini* and *Synalpheus charon*). We saw no crown-of-thorns starfish (*Acanthaster*), although other echinoderms were common. Most of the holothurians we saw and collected were small—perhaps an artifact of the fishery that recently existed at the Galapagos. There were lush growths of gorgonians and *Antipathes* sp. on vertical walls, but we collected no commensal species living with these colonies. While diving off Isla Floreana, we visited the beds of mushroom corals (*Cycloseris* spp.) and branched corals (*Psammocora stellata*) that are unattached and free-living on the bottom.

The islands vary geographically north to south and east to west. The southern sides are surf-swept, making for some glorious surfing beaches but dangerous collecting conditions.



The westernmost islands tend to be cooler than the central and northern islands. There are some very deep channels between some of the islands and extremely shallow ones elsewhere. Volcanic activity ranges from long-dormant to erupting today, but lava flows are common rock types everywhere. There are no large coral reefs, although certain bays, islets and points generally have small reefs or beds of corals, hermatypic and ahermatypic. Because the "normal" marine fauna is poorly known in many places, it is difficult to assess effects of "El Niño". The last big invertebrate surveys of the islands were those of Captain Allan Hancock and the "Velero III" in 1933-38, with sporadic and localized collecting ever since. The specimens from the Velero III collections still are not completely worked up!

The marine iguanas were hurt by the warm currents, which destroyed much of the algae that they eat. However, there were some very comfortable ones living on algae on the boat ramps by the Station. They would amble away if poked, but most of the time was spent snoozing on the lava rocks, by the boatyards or under the drying racks for diving gear. Native finches, especially the small ground finch, were everywhere. These little wren-sized birds were so "cheeky" that they would try to eat crumbs off your lunch plate. I saw penguins at sea and ashore, also albatrosses, endemic gulls, two species of mockingbirds, the native hawk, vermilion and native flycatchers, lava lizards and some humongous spiders; also visited "Lonesome George" the last tortoise of his kind, now living with three nubile (?) females from another island. Many of the islands still were green from rains, and the cacti were draped with flowering vines.

Rates for use of the boats and dormitories at the Station are very reasonable, as are prices for food, even in restaurants. However, anyone wishing to go to the Station should make arrangements well in advance, and be sure to allow plenty of time for problems with the airlines (delays, lost luggage, long lines, etc.)

Side trips to Quito and the Andes are worthwhile to see crater lakes, volcanos and llamas and to spend like a "loco gringo" in the fabulous craft marketplaces.

HYBRID ASTROPECTEN?

Although I don't disbelieve any of the field identifications of *Astropecten ornatissimus* reviewed in the QC of trawl invertebrates, something has come up. During the review process several *A. ornatissimus* were found with a previously undocumented character. Three specimens had small spines on the superomarginal plates near the distal end of the ray, a character which can lead to confusion in separating *A. ornatissimus* and *A. armatus*.

In the extended description of *A. ornatissimus* in Fisher 1911 he specifically states there are NO spine-like granules on the superomarginal plates in this species. In the present specimens, which otherwise conform completely with *A. ornatissimus*, there are single recurved tubercles ("spines") on both sides of multiple rays on at least three animals. They are not always symmetrical (i.e. - plates in equivalent positions on each side of the arm may have or lack spines), and in no case extend more than half-way to the base of the ray. There is some tendency for the spines to occur on the distal edge of the superomarginal plate rather than near its middle as is usual in *A. armatus*.

In none of these three specimens were the superomarginal plates in the interradii enlarged or bearing a prominent spine. Paxilla counts and structure of the adambulacral spines were also those of *A. ornatissimus* rather than *A. armatus*. The overall appearance of the animal (R:r ratio, broadness of rays, relative size of lateral spines etc.) was that of *A. ornatissimus* as well.

These specimens bring up the interesting possibility of hybridization among local *Astropecten* species. It was originally raised by Fisher (1911-p. 70), although he thought there



was little concrete evidence of it. The present specimens are suggestive of an *A. ornatissimus* X *A. armatus* cross, but also do not provide hard evidence of hybridization.

In any case, we must approach usage of the keys currently in circulation with the idea that presence of a secondary series of superomarginal plate spines on the distal portions of rays is NOT diagnostic for *A. armatus*, although enlarged plates and spines on the superomarginal plates in the interradii ARE diagnostic for *A. armatus*. This is a potential problem for distinguishing smaller *A. armatus*, which often have the secondary spines, but lack the primary interradii spines, from spine bearing *A. ornatissimus*. - Don Cadien (CSDLAC)

SPECIMEN REQUEST

The following request was found on Geoff Read's Annelida site, and is repeated here in hopes that SCAMIT members may be able to assist.

Scott Harrison, a graduate student working on pinnotherid crabs, requests any specimens of pinnotherids we can provide. He is interested in knowing the host of the crab, particularly annelid hosts. Preparation should ideally be into 100% ethanol so that molecular analyses can be performed on the tissues. Specimens prepared by other means are, however, also welcome.

Scott offers to pay cost of shipping. Contact him at scott@bio.tamu.edu, by telephone at (409)845-0168, or via mail at Department of Biology, Texas A & M University, College Station, Texas 77843-3258.

It might be useful for those of us who will respond to this and other future requests for specimens to be used in molecular analysis to consider the results of Dawson et al (1998). They tested various field preservatives for

tissues to be used in DNA analysis. They found that, if facilities are available, freezing is the best way of dealing with tissue samples in the field.

CANDIDATE BIOGRAPHIES

PRESIDENT

Ron Velarde

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

VICE-PRESIDENT

Leslie Harris

Collections manager of the Allan Hancock Foundation Polychaete Collection, at the Los Angeles County Museum of Natural History. Ongoing research centers on taxonomy of the polychaete fauna of Pacific North America, polychaete-algal associations (especially in *Macrocystis*), introduced species, and Caribbean reef polychaetes.

SECRETARY

Megan Lilly

Graduated from Humboldt State University in 1991 with a B.S. in Marine Biology. From 1991 to 1993, worked at the Santa Barbara Museum of Natural History where the taxonomy of marine mollusks was studied under Dr. Eric Hochberg, Paul Scott, and Hank Chaney. Currently working as a marine



biologist for the City of San Diego's Ocean Monitoring Program. Specialities include mollusks, with an emphasis on cephalopods, and echinoderms.

TREASURER

Ann Dalkey

Ann is presently the Treasurer for SCAMIT and has held this position since SCAMIT was founded. Ann is a member of the water biology staff at the Hyperion Treatment Plant where she specializes in the identification of polychaetes and amphipod crustaceans. Prior to working at Hyperion, Ann was a member of the laboratory staff at the County Sanitation Districts of Orange County. She worked there

for nearly 10 years, reaching a position of senior laboratory and research analyst. She received her B.S. from California State University Long Beach in Marine Biology in 1974 and her M.S. from the same university in 1982. Her thesis research pertained to polychaete bioassay.

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