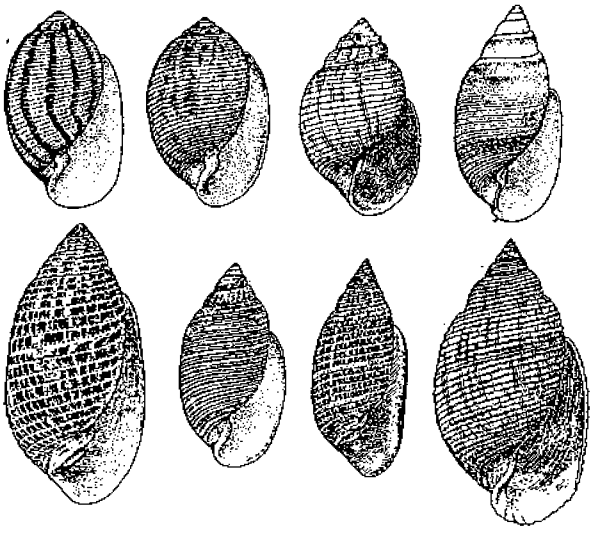
March, 1996 SCAMIT Newsletter Vol. 14, No.11

NEXT MEETING:	Cephalaspid Mollusks
GUEST SPEAKER:	John Ljubenkov and Don Cadien
DATE:	April 22, 1996
TIME:	9:30am - 3:30pm
LOCATION:	Natural History Museum of Los Angeles 900 Exposition Blvd., Los Angeles



Shells of eight cephalaspid species from Japan (Habe, T. 1950. Pupidae in Japan. Illustrated Catalogue of Japanese Shells 6:39-44)

APRIL 22 MEETING

This meeting is the first of two this year to discuss the gastropod mollusks in the order Cephalaspidea. This preliminary meeting is to present the group, to gather information on problem areas participants find in dealing with the group, and to distribute materials to be evaluated and modified for the second meeting. By that time several new mollusk references should be available, and can be integrated into our conception of the group. This second meeting will be led by Dr. Terry Gosliner of the California Academy of Sciences. Participants in both meetings should bring not only problem animals, but examples of taxa they encounter in their programs. Examples of other species will be drawn from the collections of the Natural

FUNDS FOR THIS PUBLICATION PROVIDED, IN PART, BY THE
ARCO FOUNDATION, CHEVRON USA, AND TEXACO INC.

History Museum of Los Angeles County to better prepare us to recognize these animals in the future.

ELECTION

The election results are in. All of the current SCAMIT officers have been re-elected. Members should keep in mind nominations for next year because some of the incumbents will most likely not be running for election.

MEREDITH JONES

It is with great sadness that we report the loss of taxonomist Meredith Jones. He had been ill for some time with cancer. His earlier work with magelonid polychaetes and his later work with the vestimentiferan *Riftia* provided major contributions to invertebrate biology. He will be sadly missed by all in his field. Those wishing to make a memorial donation may send a gift to the San Juan County Library c/o of his wife, Mrs. Gerry Jones, 2283 Mitchell Bay Rd., Friday Harbor, WA 98250. This was his wish because the library had provided him with taped books during the later stages of his illness.

NEW LITERATURE

A sizeable new paper dealing with Caribbean sea cucumbers (Cutress 1996) should also be carefully examined by all us west coasters who deal with holothuroids. It details changes in dermal ossicles with growth in twelve species of aspidochirotes. The nature of, and variability in, ossicle change with growth documented for Caribbean species in this paper bear on our fauna as well. Cases where ossicle types appear with growth, are lost with growth, and change with growth are all discussed and illustrated.

In a continuation of the phylogenetic arguments ongoing over Nemertea Sundberg and Hylbom (1996[for 1994]) discuss the Palaeonemertea. They utilized 49 of 98 described species and six undescribed species in their study. Of the 54 species, 35 were incompletely described for the characters used in the parsimony analysis and were excluded. Their analysis yielded some very complex character transformation series, with multiple reversals. Several currently recognized genera were indicated as paraphyletic by the analysis. As an appendix to the paper the authors provide a status update on the described species within the group.

The polychaete subfamily Amphitritinae has also recently received phylogenetic analysis (McHugh 1995). This new analysis did not substantiate any of the tribes recognized in the recent monographic review of the Terebellomorpha (Holthe 1986). It forms the basis for future realignment of genera within the group. Based on the analysis the Artacaminae were submerged within the Amphitritinae.

The taxonomy of the pyramidellid mollusks has always been controversial. They are parasitic, which leads to a high degree of convergence in their characters. They are intermediate between prosobranchs and opisthobranchs, having characteristics of both. They have had hundreds of species described on shell characters alone, without much information available on the animals themselves. Wise (1996) has recently added substantially to the meager information base on the morphology of pyramidellids. He also performed a cladistic analysis of the group, utilizing both shell and anatomical characters. Existing evidence suggests that the subfamily Turbonillinae is paraphyletic, but that the other currently recognized subfamilies (Odostomiinae, Pyramidellinae, and Cyclostremellinae) are probably not. They are each defined in the paper by synapomorphies. Wise also erects the subfamily Sayellinae, and several new genera.

MALACOLOGISTS MEETING

The Western Society of Malacologists will hold its annual meeting in San Diego this year. The dates set for this meeting are June 23rd thru the

27th. Members interested in attending should refer to the flyer included with this newsletter for further details.

SCBPP *Philine*

Contrary to initial report, and all our beliefs, the New Zealand snail invading our local waters had begun to show up during the July-August 1994 SCBPP sampling. A small specimen returned from the trawls for laboratory identification has proven to be *P. auriformis* rather than *P. alba* as originally thought. The specimen was taken on 24 July 1994 at SCBPP station 0537 off Ventura, at a depth of 43m. No *P. auriformis* were taken during the SCBPP benthic sampling or prior to February 1995 elsewhere in the Bight.

Octopus veligero STILL AROUND

In trawls off Palos Verdes in February one more *O. veligero*, a male, was taken by CSDLAC. It was somewhat net-damaged, and could not be induced to flash its lateral brown spots. Because of its relatively short arms it was not considered to be *O. rubescens*, and it lacked the orange ground color and stellate mantle papillae of *O. californicus*. It was characterized as *Octopus sp.* in the field, and as *O. veligero* based on gill count in the lab. Seven *O. rubescens*, four ♀ and three ♂, were also taken in the trawl which yielded the *O. veligero*.

VARIABILITY IN SHRIMP

Dr. Mary Wicksten has once again taken time from her busy schedule to drop us a helpful line. She sent along a series of guidelines on the types of morphological variability we may expect to see in local shrimp (attached). This is a question she has been devoting considerable time to as part of her reexamination of the California shrimp fauna. Her investigations have led to the synonymization of several local species when separatory characters proved unreliable due to their variability. Our thanks to Mary for sharing this hard-won experience with us.

SCAMIT TAXA LIST

The second edition of the SCAMIT Taxa list is now out and, typically, we have already found several errors. They will be corrected in the third edition of the taxa list. However, we have decided to inform members of spelling errors as we are made aware of them because some people are using this list to create their own species lists and we don't want misspellings to be perpetuated. So far we have noted three. They are:

The gastropod *Kelletia kelletti* (line 557) should be *Kelletia kelletii*. Please refer to the write up later in this newsletter that explains this change.

The annelid *Pseudoathrospio fauchaldi* (line 1171) should be spelled *Pseudatherospio fauchaldi*. The letter "o" was added and the letter "e" was omitted from the name on the list.

The decapod *Polyonyx quadriunguiculatus* should be spelled *Polyonyx quadriungulatus* as per the original description of Glassell (1935).

Please feel free to contact the editors, Dave Montagne (CSDLAC) and Ron Velarde (CSDMWWD) with any corrections, misspellings or suggestions you may have for edition 3. It is anticipated that the third edition will list partial synonymies for the species it includes.

COSMOPOLITAN SPECIES

A recent e-mail message was received thru the Annelida usegroup from Judith Fournier of the Canadian Museum of Nature. In it Judith makes a valid point about the presence of cosmopolitan species. In her message she refers to a previous message that was forwarded to Annelida about *Nereis acuminata* collected in Long Beach Harbor and used to grow a culture from which

four pairs were transferred to the Woods Hole Oceanographic Institute. Judith assumes that these worms were the lab cultures of *Neanthes arenaceodentata* first developed by Dr. Don Reish. The name *Neanthes arenaceodentata* was mistakenly applied to these west coast specimens for many years. However, *Neanthes arenaceodentata* is a New England endemic species and Pesch *et al* (1988) showed that the Maine and California worms have different chromosome complements and cannot be the same species. The name *Nereis acuminata* is also most likely invalid for this west coast species since it was described by Day (1973) from North Carolina. Judith recommends that there be a thorough review of the *Nereis* and *Neanthes* species of California and that the Woods Hole specimens be compared to specimens of *N. arenaceodentata* from New England. She also believes that more care should be taken when making the assumption that various populations of a species are cosmopolitan, when in fact they are two different species. This problem of two "cryptic" species looking very similar morphologically, but occurring in two different locations, and the assumption of a species being cosmopolitan in its habitat, is probably a much more common practice than believed.

This has also been the case for the polychaete species *Paraprionospio pinnata*. During the SCBPP this species was reported not only from all different depths, but also from all different habitats by many of the taxonomists involved with the project. This is also the only species included on the SCAMIT Taxa List and the only *Paraprionospio* reported by local monitoring programs. A table of *Paraprionospio* species with their diagnostic characters, as taken from the literature, was provided by Leslie Harris at the March meeting. Members should use this table to review and compare their own specimens of *Paraprionospio pinnata* to see if perhaps this species is not as cosmopolitan as believed. Due to incompatible computer file formats we are unable to include this table in this newsletter, but will try to include it in next month's newsletter.

MINUTES OF MARCH 11 MEETING

At this polychaete meeting Larry Lovell made a request for specimens of *Nephtys cornuta* that have interramal cirri beginning on segment 6, rather than 5. Larry commented that often the interramal cirrus is reduced on setiger 2 and may be missed when counting segments to determine where the interramal cirrus begins in nephtyids. Larry also drew members attention to Hilbig's illustration of *Nephtys cornuta* on pg. 349 of volume 4 of the MMS Atlas. In figures B, C, and D Hilbig illustrates the variability of the ventral antennae of the prostomium where the 2nd condition (fig. C) is a reduced state and the 3rd condition (fig. D) is more of a swelling. Please refer to the "remarks" section on pg. 350 for more of an explanation on this variability.

The first half of the meeting began with a discussion of the Volume 5 of the MMS Atlas. We reviewed all the chapters except the Lumbrineridae, which we had discussed at the February meeting. Noted below are some of the comments that were made.

Exogone dwisula pg. 17

This new species is the same as *Exogone sp. B* of SCAMIT.

Exogone acutipalpa pg. 22

This new species is the same as *Exogone sp. D* of Harris.

Exogone lourei pg. 15

Exogone sp. A of SCAMIT appears to be this species. Sp. A was originally established by Sue Williams, and was characterized as being identical to *E. lourei* except for the absence of thick-shafted spinigers on setiger 2. Leslie Harris has re-examined specimens identified by Sue and found that in almost all cases the thick-shafted spinigers were present but had been retracted into the parapodial lobes and were very difficult to see; the remaining specimens belonged to species other than *E. lourei*.

As noted in the remarks, 100 specimens of *E. lourei* were examined by Leslie to establish variation in certain morphological or developmental characters. She noted length and location of the proventriculus, number of muscle cell rows, first occurrence of the superior dorsal simple seta, antennae size, and location of natatory setae and gametes. The holotype and paratypes of *Exogone uniformis* Hartman were examined as well. All of the paratypes of *E. uniformis* were found to fall well within the median range of variation for *E. lourei*. The holotype of *E. uniformis* overlaps the upper end of variation for *E. lourei*, differing only in the length of the median antenna. She is keeping *E. uniformis* as a valid species, with the holotype as the only known specimen. This may change after study of additional material. Reports of *E. uniformis* by SCAMIT members should be regarded with suspicion.

Eusyllis blomstrandi pg. 41

Please note the "remarks" section. Leslie does not believe that this species occurs on this coast. If anyone has specimens of *E. blomstrandi* please send them to Leslie for examination.

Sphaerosyllis californiensis pg. 29

The figure 1.8 A has erroneously illustrated dorsal cirri on setiger 2. The description on pg. 30 describes them as being absent on setiger 2.

Eusyllis habei pg. 43

This species is easily distinguished from other local species by the presence of enlarged ventral cirri on setiger 1. Please be aware that Leslie has found additional undescribed species of *Eusyllis* and *Pionosyllis* which also have enlarged ventral cirri on setiger 1. These can be separated from *E. habei* by setal morphology. If anyone finds some of these other specimens, please send them to Leslie.

Odontosyllis pg.47

Odontosyllis californiensis (Chamberlin 1919) n. com. Kudenov and Harris 1995 was not included in the key. It differs most noticeably from the others in setal morphology. The secondary tooth is large, subequal to the distal tooth, and located at the midpoint of the cutting edge of the blade. Setae of all other described Pacific northwest *Odontosyllis* have a secondary tooth which is smaller than and located just below the primary tooth. Leslie is describing two additional species. One is found in rocky and soft-bottom shallow habitats from Point Conception to Santa Monica Bay (many specimens have been found by Tony Phillips, City of LA), and has three dark vertical stripes on the anterior and median dorsum (the lines may be broken into individual spots in the median region). The other species has been collected only from lower intertidal *Phragmatopoma* reefs in Santa Monica Bay; the prostomium, antennae, cirri, and parapodia are bright white, the eyes are bright red, and the dorsum is iridescent blue-black.

Syllides reishi pg. 59

Reports by SCAMIT members of this species are probably incorrect. Leslie examined specimens from soft-bottom stations taken in the BLM survey, MMS Phase I & II, Santa Monica Bay, Orange County, San Diego County, and other areas, and found only *Syllides mikeli*. *S. reishi* was described from intertidal coralline algae mats at San Clemente Island; it has also been found in LA Harbor rip-rap, intertidal and shallow subtidal algal mats from Catalina and the mainland, and in kelp holdfasts from shallow water. The two species do not appear to co-occur.

Typosyllis alternata pg. 83

Since publication, Leslie has changed her mind about this species and is doubtful about the correctness of identification. Our specimens have extremely large aciculae which were not mentioned in Moore's (1908) original description. Cynthia Stonick (Washington State Department of Ecology) is currently comparing our animals with *T. harti* (Berkeley and Berkeley 1938).

A major problem exists in the identification of *Typosyllis*. One of the main characters used in keys is the number (or range) of articles in the antennae and dorsal cirri. Unfortunately, we do not have enough information on the development of the antennae and dorsal cirri to know at what size an animal stops adding articles, or if they do. If we have a non-reproductive animal with 30 dorsal articles, how can we know if it is a juvenile of a species that will eventually have 70 articles or if it is an adult with its maximum number of articles? Clearly some species, such as *T. farallonensis* Blake and Walton 1977, characterized by an average of 3-4 articles in the dorsal cirri, do have a maximum number of articles which is developed early in life. It is less clear if a species like *T. pulchra* (Berkeley and Berkeley 1938), said to have up to 70 articles per dorsal cirrus, develops the full number while a juvenile or if the number of articles gradually increases with the size of the animal. Until we learn the minimum size at which each species attains the adult number of articles (if indeed there is an maximum number/range), or unless we stop using the number of antennae and dorsal articles as a species-level character, we will never be certain of our identifications. An additional problem in identifying local species is their size. Our animals are almost always much smaller than the specimens in descriptions (*T. farallonensis* being the exception), leading to similar uncertainty: if the number of articles and other characters match the description of a particular species but the animal is 1/5 the size of the type, is it really the same species or could it be the juvenile (or the adult) of another species?

Leslie's current approach to identifying *Typosyllis* is to avoid specific names unless the animal matches in all details (including size) the original description or one based on re-examination of the type. Otherwise the specimen gets a letter designation and characters are recorded in a database for future analysis.

Aphroditidae

Members working with aphroditids should still follow Mark Rossi's key from 1978. He not only examined many local specimens, but he also examined type specimens.

Included with this newsletter is a copy of Rossi's key from 1978, which was distributed thru the SCCWRP Taxonomic Standardization Program, but never SCAMIT.

Aphrodita parva pg. 102

This species is probably a juvenile form. No one has ever reported seeing a reproductive specimen of *A. parva*.

Leslie commented that the common animals we identify as *Aphrodita japonica* probably represent a complex of several species.

Lepidonotus spiculus pg. 142

This is both a new combination and the revalidation of a species that was previously synonymized under *Lepidonotus caelorus* Moore 1903 and *Lepidonotus squamatus* (Linnaeus 1767). *L. spiculus* and *L. squamatus* co-occur along the Pacific Rim, so great care should be used in keying out individuals from southern California.

Ysideria hastata pg. 158

This is *Harmothoe* sp. A of SCAMIT.

It was decided at this meeting that we need a SCAMIT meeting devoted to *Malmgreniella* species. Gene Ruff has agreed to lead one, tentatively scheduled for September. Members may want to start gathering problem specimens now. Leslie will collect the specimens at the May meeting for shipment to Gene.

Sigalionidae pg. 191

There is a mistake in the key. Line 7B should go to couplet 8 not 7.

Sthenelais berkeleyi

Both this and the closely related *S. fusca* are papillated. The difference is in the degree of papillation, according to Leslie. Specimens of this species have a densely papillated ventrum similar to flabelligerid dermis, and is somewhat rusty in color; the papillae are obvious under a dissecting scope. The papillae of *S. fusca* are very small and sparse, and noticeable only when using a compound scope to view a parapodia.

Onuphis iridescens pg. 253

In the "remarks" section Hilbig makes the comment that specimens should only be identified to species level if they are at least 60 setigers long and 0.6 mm wide. SCAMIT members have often discussed the fact that onuphids have diagnostic characters that are growth dependent. The problem in the past for SCAMIT has been deciding what size range constitutes a juvenile form.

Onuphis sp. "intermediates" pg. 255

This is the same as *Onuphis* sp. 1 of Pt. Loma on the SCAMIT Taxonomic List.

Family Oenonidae

SCAMIT is currently retaining the old name Arabellidae. A meeting on this and the genus *Drilonereis*, especially our parasitic form of *D. longa*, is being scheduled for the near future. In the meantime, we have decided to use an emended version of Fauchald's 1970 key for the genus instead of the one by Hilbig. Hilbig's key to species of *Drilonereis* begins with the choices of acicular spines present from setiger 1 or from after setiger 10, and if the posterior parapodia are bilabiate or not. The first occurrence of the acicular spine is variable (see Leslie's remarks under *falcata*, below) and most specimens are fragmented, making the character of the posterior parapodia useless.

Emended key to *Drilonereis*, from Fauchald 1970

1. Maxillae I proximally dentate.....2
1. Maxillae I proximally smooth.....4
2. Mandibles present.....3
2. Mandibles absent.....*mexicana*
3. Maxillae I with 2-3 large basal teeth; maxillae II with 3-4 large teeth; if present, posteriormost parapodia bilabiate.....*nr. longa*
3. Maxillae I with 3-4 large basal teeth; maxillae II with 6-9 large teeth; postsetal lobes shorter or equal in length to parapodial base throughout body.....*falcata*
3. Maxillae I with 4 large & 2-3 small basal teeth; maxillae II with 6-8 large & 3 small teeth; postsetal lobes conspicuous, digitiform to almost foliaceous after setiger 70.....*spectabilis*
4. Mandibles present.....*?filum*
4. Mandibles absent.....5
5. Maxilla II dentate.....*nuda*
5. Maxilla II smooth.....*forcipes*

Drilonereis falcata pg. 328

The occurrence of the first acicular spine is variable, according to Leslie. She has examined type as well as other material. It is emergent on setiger 10 in the holotype but may have been broken off in earlier setigers; present on setiger 8 in the paratype; first present from setiger 1 to setiger 13 in material from Monterey Bay (the type locality), southern California Bight, and off the Channel Islands.

Drilonereis longa pg. 331

Leslie examined the type material in 1987. The "holotype" lot (USNM 540, from Great Egg Harbor, New Jersey) consists of four anterior ends and 1 median fragment; there are no posterior ends included. Webster (1879) shows approximately 8 teeth on maxillae II, which is what Leslie found on type material. In contrast, Hilbig reports 3-4 large teeth, similar to what we have seen previously in the local *D. nr. longa*. There are other discrepancies in tooth structure as well. This difference, along with the fact that most of our *D. nr. longa* are parasitic, living within what was formerly called *Tharyx*, leads us to believe that it is a distinct species. Please note that the illustrations in Hilbig are taken from Gulf of Mexico and east coast specimens, and that fig. 12.6 D is of a median parapodia, not a posterior parapodia as labelled.

Family Dorvilleidae

Based on Hilbig's key, the City of San Diego's polychaete taxonomists believe they have been misidentifying *Dorvillea (Schistomeringos) annulata* as *D. (S.) longicornis*. In their animals the dorsal cirrostyles are as long as the dorsal cirrophores, a character of *D. annulata*. Both Hyperion and CSDLAC report specimens of *D. longicornis* that have much shorter and slightly inflated cirrostyles.

After lunch Dr. Kirk Fitzhugh treated SCAMIT members to a computer slide show of a new sabellid genus and species that he is currently working on. The computer graphics included many SEM illustrations of this unique sabellid that burrows into the shells of red abalone, *Haliotis rufescens*. The sabellid inhabits burrows in the abalone shell. The presence of the worm has been shown to directly impede normal shell growth, causing shells to have a nearly cup-shaped appearance. These infected abalone have been found in a number of the mariculture farms along southern California. The sabellid is a simultaneous hermaphrodite, which apparently had been imported from South Africa several years ago in association with *Haliotis midae*. A graduate student at UC Santa Barbara is currently studying the interactions between the worms and abalone.

The rest of the afternoon was spent discussing and examining some problem pilargids. We began with *Ancistrosyllis*. There are currently 3 species which have been reported locally and they appear on the SCAMIT Taxa list as *Ancistrosyllis breviceps, A. groenlandica,* and *A. hamata*. Leslie commented that the start of the ventral cirri is the best way to separate *A. hamata* from *groenlandica* and *breviceps* (setiger 3 versus setiger 1), while the latter two can be separated by the start of the hooked setae (setiger 4-6 versus 13-18). Also, both *breviceps* and *hamata* are deep water species, which she believes are not seen by local sampling programs. Most of what we see is similar to *A. groenlandica*. Our common local species does not exactly match either the original description (McIntosh 1879) or specimens from Greenland seen by Leslie. Until the type specimen can be borrowed and compared to southern California material, we prefer to use *A. cf. groenlandica.*

The next problem pilargids discussed were *Parandalia ocularis* and *Parandalia fauveli*. The following article by Tom Parker (CSDLAC) explains the situation.

All eyes are on *Parandalia ocularis*

Reports of both *Parandalia ocularis* and *Parandalia fauveli* are occasionally made from local benthic sampling. Typical separation between these taxa has been based upon the presence or absence of a pair of subdermal eyes in the anterior end of specimens. These "eyes" are actually nerve ganglia associated with the brain. The presence of "eyes" is often difficult to determine as the subdermal ganglia may not be dark enough to view through the skin. In specimens recorded as lacking "eyes", re-examination by dissection of the anterior end or careful squeezing and rolling of the specimen will often reveal the ganglia.

Another reported difference between these species is the number of neurosetae in posterior fascicles. *P. ocularis* is listed as having 7 setae, while *P. fauveli* has up to 16 setae. These setae are covered with circlets of fine barbs. Close observation and manipulation of these setae demonstrate that many setae will lock into each others axis-on-axis. Two such setae will appear as one. The result is an actual miscount of the number of setae in the bundle. It is not uncommon for specimens with "eyes" (*ocularis* condition) to also possess up to 16 neurosetae (*fauveli* condition).

Heavy anterior notospines are also reported for both species. The start of these notospines is listed as setiger 9 for *P. ocularis*, while *P. fauveli* is described as beginning on setiger 7. These spines are thick and massive but are nearly clear in appearance and difficult to see when

emergent from the body wall. Non-emergent notospines or those broken at the dermis level are extremely difficult to detect.

Several specimens collected by CSDLAC have been found in delicate clear tubes (see holotype condition below). At least one (RV0791-1D4) has been found almost entirely within this very clear tube. The tube could be mistaken for a *Spiochaetopterus* tube but the walls are extremely clear, delicate, and with weak or no annulations.

The holotype (USNM 32891) was examined in 1993 and found to be in the following condition:

The holotype is a specimen about 80mm in length and 0.9mm in width. It is broken into three pieces and is strongly curled. The prostomium was previously dissected through the first 8-9 segments. Parapodia number 3 has been removed on one side. The middle segments of the specimen are encased in a closely adhering parchment-like tube. There appear to be some "annulations" on this tube. The tube is separating at these locations. Epidermis is light greenish-yellow. It is flecked with reddish iridescence. This iridescence is not visible when viewed only with substage light. There are no "eyes" apparent either dorsally, ventrally, or viewed through dissection cut. It does have two bulbous structures in head region on either side of pharynx. Though not darkly pigmented, these structures resemble the "eyes" of *P. ocularis*. One is larger, while the other may be partly cut away and is considerably smaller. These possibly are nerve tissue or ganglia that could be interpreted as "eyes" on other specimens. First crystalline simple setae begin on segment 8. Neurosetae up to at least 12 setae in each parapodia. Setae are closely held together along their length so that shafts appear as single. When viewed under the compound scope, they can be seen as double.

There are published descriptions and keys for these taxa (Emerson and Fauchald 1971, and Salazar-Vallejo 1990). Each of these emphasizes the "eyed" condition and/or the neurosetal count. Unfortunately the type material used to erect the species *P. ocularis* is not available. Whether these specimens can later be located is unknown. Specimens have been collected that clearly possess "eyes", but possess up to 16 neurosetae. The species *P. ocularis* is apparently a species based on incorrect diagnosis of "eyes" and neurosetal count. It is recommended that occurrences of *P. ocularis* be synonymized to *P. fauveli*.

The next problem pilargids discussed at the meeting were *Pilargis maculata* and *Pilargis berkeleyae*. Please refer to the "remarks" section on pg. 280 of vol. 4 of the MMS Atlas. The main distinctions between these two species is the degree of body papillation and the shape of the dorsal cirri. The problem has been the confusion over the degree of papillation on the bodies of these two species. Again, Tom Parker provides us with some insight into this problem with the following article.

Dense Papillae, Dense Terms, Density of a Species Concept

During the creation of the first SCAMIT Taxonomic list, the synonymy of *Pilargis maculata* by Pettibone to *Pilargis berkeleyae* was noted and accepted. The name *P. maculata* did not appear in the first SCAMIT list and was not included in the recently released edition 2.

A variable concept of papillae density has crept into these definitions. Monro (1933) originally described *P. berkeleyae* as having its "back and feet studded with sparse papillation". Hartman in 1947 redescribed this species from various material including material from the type locality. She listed it as being finely papillated and illustrated this condition. Though the papillae are numerous on the dorsum, they appear small and individually separate from one another. Her original description and detailed illustration of *P. maculata* lacks dorsal papillae. Her illustration should be consulted. Pettibone in 1966 redescribed *P. berkeleyae* and synonymized

P. maculata to this taxa and noted that papillae were "more numerous dorsally". In 1987 Imajima produced illustrations of *P. berkeleyae* with the entire dorsum "finely papillated". In 1994 the MMS atlas volume No.4 was released and included a description, as valid taxa, of both *P. berkeleyae* and *P. maculata*. These are partly differentiated with *P. berkeleyae* possessing "dense" dorsal papillae and *P. maculata* with papillae limited to prostomium, parapodia, and palps and "mostly lacking" from the rest of the body. This history represents an example of taxonomic drift from the original description to the most current publication. Use of subjective terms such as "sparse", "finely", "more numerous", and "densely" may be clear to an author but are easily misinterpreted by subsequent workers. Hartman's original description and illustration of *P. maculata* showed no papillae on the dorsum. Varying degrees of dorsal papillation do not fit Hartman's description and illustration for *P. maculata*, but do fit conditions of *P. berkeleyae*. Local specimens without papillae on the dorsum best fit the concept provided by Hartman in 1947. All others are more likely within the concept of *P. berkelyae*.

We finished the meeting by discussing and examining type and other material of several *Sigambra* species. We began with *Sigambra setosa*. There seems to be some confusion over the length of the median antenna in the literature. Fauchald's (1972) original description states, "the median antenna is slightly longer than the lateral ones". The figure on pg. 435 of Fauchald (1972) shows the median antenna as being equal in length to the lateral antennae. Blake (1994) illustrates *S. setosa* on p. 289 with a much longer median antenna and describes it as extending twice the length of the prostomium. On page 290 Blake comments on this difference. In her examination of Fauchald's original material (including the type), Leslie found that the median antenna varied from being subequal in length to 1/3 longer than the lateral antennae. Blake based his species determination on the presence of extra notosetae, which he considered more important taxonomically than the length of the median antenna. Unfortunately, this character is hard to see, and extra notosetae do occur in *S. tentaculata* as well (LH, pers. obs.). Leslie feels that the length of the dorsal cirrus on setiger 1 and the number of distal papillae on the rim of the proboscis are easier characters for separating *S. setosa* and *S. tentaculata*, which both have notopodial hooks beginning on setiger 3-4 (dorsal cirri of setiger 1 are 4-5 times as long as ventral cirri and 8 distal papillae in *S. setosa,* dorsal cirri of setiger 1 twice as long as ventral cirri and 14-16 papillae in *S. tentaculata*). Re-examination of the holotype of *S. setosa* at the meeting reaffirmed that the median antenna is one and one-third longer than the laterals, and also showed that the capillary neurosetae are extremely long, giving the specimen a very distinctive shaggy appearance.

As a continuation of last month's polychaete meeting a very useful lumbrinerid worksheet done by Ricardo Martinez-Lara (CSDMWWD) has been included with this newsletter. It includes diagnostic characteristics of the most common lumbrinerids reported in southern California. Ricardo has also left room in the table for members to add their own observations with the hope that we will, eventually, be able to better define our local lumbrinerid species.

SO... DO YOU HAVE *Sosanopsis*?

By Tom Parker (CSDLAC)

The SCAMIT Taxonomic List contains the name *Sosane occidentalis* and *Sosanopsis sp.* A number of benthic programs involved in creating the SCAMIT List have reported *Sosane occidentalis*. Few have reported specimens of *Sosanopsis*. Fauchald's 1977 monograph erroneously defined *Sosanopsis* as having its modified notopodia on the last thoracic (15th) setiger. Banse (1979) corrected this error and noted both *Sosane* and *Sosanopsis* have a modified 13th thoracic setiger. Ampharetids with modified and elevated notopodia at thoracic setiger 13 (unciniger 10) are correctly placed in

one of these two genera. They are separated based upon presence or absence of palea and whether the branchia are arranged in a transverse pattern or with the fourth outer pair one segment posterior to the other three pair. Please inspect your local specimens reported as *Sosane occidentalis*. If they are without palea they belong to *Sosanopsis*. If you have specimens of either *Sosane* or *Sosanopsis* please pull them for a future SCAMIT meeting where we can, hopefully, resolve this problem and issue a SCAMIT voucher sheet.

i i, CAPTAIN KELLETT

As taxonomists we are forced to deal with trivial questions of nomenclatural correctness all too often. This is the legacy of misunderstanding and carelessness left us by previous workers. We too are sometimes guilty of originating or perpetuating such errors, so we must just grin and bear it. In this age of electronic databases differences in spelling have become much less trivial. Non-identical spellings which a human would have immediately recognized as representing the same animal will be treated as two different animals by a computer program.

While proofing Edition 2 of the SCAMIT Species List (for the umpteenth time) I finally noticed an overlooked discrepancy in spelling the name of Kellett's Whelk. This is *Kelletia kelleti* in the AFS mollusk list (Turgeon *et al* 1988), and *Kelletia kelletti* on the SCAMIT ED2 list. Seeking a tie breaking opinion I consulted McLean (1969) and found *Kelletia kelletii*. By now thoroughly confused I consulted a variety of other references and found they disagreed on the correct spelling of both the generic and specific names of this animal. Keen and Coan (1974) were in agreement with McLean. The species was not included in (Keen 1971), but interestingly there were two other taxa whose names were patronymics based on the same person; *Chione kellettii* and *Macron kellettii*. This has no direct bearing on the correct spelling of the whelk's name, but does point to the fact that the name of the person honored by all these names was Kellett, not Kellet.

Captain Henry Kellett, R.N., commanded the British vessel H. M. S. Herald on several voyages to the eastern Pacific in the 1840s and 1850s retrieving shells from as far north as Alaska, and as far south as central Mexico, with stops in Canada, Washington, Oregon, California, and Hawaii. His collections were returned to England, where Forbes, Arthur Adams and others examined them, describing new taxa of both marine and land mollusks.

I next reached for Abbott (1974), finding the same orthography as on the AFS list. Josiah Keep used *Kellettia kellettii* in his West Coast Shells (1935), yet another variation. Grant and Gale (1931) used the same spelling as McLean. In their synonymy they showed the spelling *kellettii* already in use by Carpenter in 1864, and cited Forbes' description of the species as *Fusus kelletii*. Oldroyd (1927), in contrast, indicated the species as described by Forbes to be *Fusus kellettii*, and listed the species as *Kellettia kellettii*, the same combination later used by Keep. Thiele (1931) listed *Kelletia* as a subgenus of *Siphonalia*, giving the type as *S. (K.) kellettii*. It was clear that, regardless of which option was correct, it was unlikely to be the one on the SCAMIT list.

Neither consensus nor predominance of use defines correct usage under the Code (Ride 1985), so we must examine the Code provisions. As to the spelling of the specific name the Code is explicit. The original spelling is to be preserved unaltered unless it is demonstrably incorrect under Section 32c, or unless a mandatory change in ending is required by Article 34. Section 32c requires clear evidence in the original publication that an inadvertent error has taken place. This would have no bearing on whether an *i* or *ii* ending was correct, but might affect whether or not two t's were correct. If the species was indicated as dedicated to Kellett in the text, then an original spelling of the name as *kelleti* (or *ii*) might be interpretable as an inadvertent error subject to correction. Either the *i* or *ii* endings could be correct for such a genitive noun, depending on which was actually used by Forbes. If both occur in the original publication, then the first reviser determines the correct use (Article 32b).

The case of the generic name is also confused, but requires a separate resolution independent of the specific name. Apparently the name was either erected by or attributed to Bayle in Fischer, constructed either as *Kelletia* or *Kellettia*, depending on the secondary source consulted. Neave (1939) lists this as *Kelletia* (Bayle MS) Fischer 1884. Once again it is necessary to return to the original publication to determine which usage is correct. Both of the necessary original publications were consulted in the NHMLAC Research Library on 11 March 1996.

In the original description (Forbes 1852b) the species is listed as "*Fusus Kelletii*, sp. nov." on page 274, so the proper ending for the specific epithet is *ii*. There is, however, an indication in the original article that Forbes was indeed establishing his new species for Captain Kellett, and that an inadvertent error in spelling may have taken place. The article itself bears Kellett's name, correctly spelled, in it's title. Forbes gave the etymology of his new species thusly "I have dedicated this unique shell to the eminent conductor of this important expedition." Since the spelling of the specific name is identical in the text and on Plate IX the "clear" indication required by the code is only debatably present.

Other inconsistency in use of *Kelletii* and *Kellettii* occurrs elsewhere in this volume of the Proceedings of the Zoological Society, and in Part XXI 1854 [for 1853]. The article in which Forbes described *Fusus kelletii* was part two of a series; part one preceded it in the same volume and dealt with terrestrial mollusks (Forbes 1852a). In the text of this earlier part Forbes states "In the assemblage of mollusks collected by Capt. Kellett and Lieut. Wood,..." again demonstrating he was aware of the correct spelling of Kellett's name. On the same page (page 53) he states in his introductory discussion "*Helix Kellettii* and *Pandorae*, both new, are probably from the same country,...". In the actual description on page 55 he again has *Helix Kellettii*, but does not provide etymology. This species occurred on the same plate as *Fusus Kelletii*, and is indicated on the caption for that plate as being *H.*[*elix*] *Kelletii*. On the following plate (Plate X) we also find a new species attributed to A. Adams and captioned as *P.*[*seudoliva*] *Kelletii*. The description of this species was delayed, not appearing until Part XXI in 1854. On page 185 of that article Adams describes this taxon [now *Macron kellettii*] as *Pseudoliva Kellettii*, but does not provide explicit etymology (Adams 1854).

The demonstrated knowledge of the correct spelling of Captain Kellett's name in Forbes' articles, and differences in spelling of that name in text and associated plates of both the Adams article and Forbes' on terrestrial mollusks suggest the authors, the typesetters, or the printers were careless. As the same problem occurs in two papers by different authors I suspect the problem was in journal production. There is material here for an application to the International Commission for a correction of an inadvertent error, but not enough [in my view] to satisfy the "clear evidence" criterion of the Code.

The generic name *Kelletia* was erected without comment as a subgenus of *Siphonalia* by Fischer in 1884 based on an unpublished manuscript by Bayle (Fischer 1880-87). He listed no etymology at that time, but cited *kelletii* Forbes as the only species in the subgenus. It seems clear that Fischer's name was based on Forbes' species name, and was not directly intended as a patronym for Captain Kellett. His action seems entirely correct, and his use of the single "t" cannot be interpreted as an inadvertent error in spelling. In the event of an application to the International Commission for determination that Forbes' *Kelletii* was an inadvertent error subject to correction, Fischer's name should also be changed in the interests of nomenclatural stability. The tension and uncertainty engendered by alternative spellings of the same name in the generic and specific epithets would continue to sow confusion in the ranks of future taxonomists, and should be removed by Commission action in the interests of stability.

Thus currently, pending an application to and subsequent action by the International Commission on Zoological Nomenclature, the correct spelling of the name of Kelletts Whelk should be *Kelletia kelletii*. - Don Cadien

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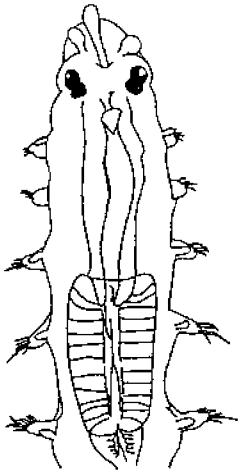
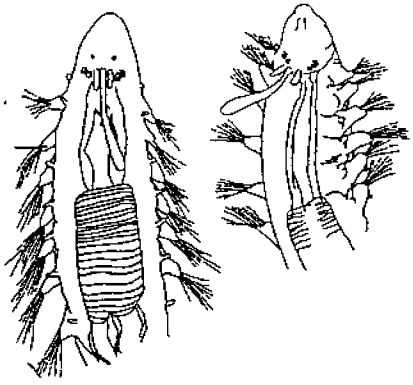


Exogone (Exogone) dwisula
from Kudenov and Harris 1995



Exogone (Parexogone) acutipalpa
from Kudenov and Harris 1995

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Within-Species Variation in Caridean Shrimp

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Readers trying to use the keys to local shrimp have complained recently about finding numerous "exceptions to the rule"--specimens with too many or too few teeth, a rostrum that is short, broad, elevated or missing entirely, fingers that gape, etc. Do these specimens belong to undescribed species, or are they variants of known ones? To help the reader distinguish between what is "normal" variation and what is "significant", the following list is provided.

Number of spines or teeth of rostrum, telson, dorsal surface of carapace, segments of pereopods: Varies in families Hippolytidae, Alpheidae, Pandalidae, Palaemonidae

Shape and elevation (angle) of rostrum: Sexually dimorphic in Hippolytidae and Pandalidae, quite variable in Crangonidae. Entire rostrum may be absent in Alpheidae.

Length and breadth of third maxillipeds: Sexually dimorphic in Hippolytidae.

Shape of chela and gape of fingers: Sexually dimorphic in Alpheidae and Palaemonidae (also in many other decapods).

Number of articles in subdivided appendages: Variable in family Processidae and hippolytid genus Lysmata (and related tropical genera). Occasional variability in Synalpheus.

Spines of antennal bases and chelipeds: Often are lost or blunt in very large adult Alpheidae.

Amount of setae on carapace and abdomen: Variable in Hippolytidae. Species of Lebbeus can be unusually "furry" in appearance. Note that pile or setae often wears off in preserved specimens, especially in the Crangonidae.

Width of body (carapace and abdomen): Female may indeed be a "broad" in the Crangonidae and Hippolytidae, also in palaemonid genus Pontonia.. (Bad pun...)

Epipods of pereopods: May be absent or not bilaterally symmetrical in Hippolytidae.

Living color: Highly variable according to food source in most families, although there may be a range of variation in species-specific spots, patches or other marks.

First and second pleopods: Male carideans typically have an appendix masculina on the second pleopod; however, pandalids and some deep-sea pelagic carideans also have broad flaps on the male's first pleopods. Species of Lysmata and Pandalus typically are protandrous hermaphrodites, so expect to find "intersexes" among them.

Few people have noted knobs or spines on the abdominal sterna (ventral regions), but these do occur in many carideans, and may be diagnostic of age, sex or even species. Also there are few reports on the morphology of the inner mouthparts (mandibles to second maxillipeds), but these also may have some variation. In one caridean family, the Bresiliidae, the mandibles are known to be asymmetrical.

A KEY TO THE SPECIES OF APHRODITA (POLYCHAETA) FROM THE WEST COAST OF NORTH AMERICA

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1. Dorsal notosetae (Fig. 4, noS(2)) with scales (Fig. 6); lateral notosetae include (Fig. 4, noS(1)) capillaries and stout spines . . . . . A. falcifera Hartman, 1939

1. Notosetae without scales; lateral notosetae entirely capillary 2

2. Thickest dorsal notosetae 2X thicker than thickest neurosetae 3

2. Thickest dorsal notosetae as thick as or thinner than thickest neurosetae 4

3. Dorsal notosetae with large asperities (Fig. 7); median antenna clavate (Fig. 1); lower rows of neurosetae often with spurs (Fig. 9) . . . . . A. armifera Moore, 1910

3. Dorsal notosetae without large asperities; median antenna cirriform (Fig. 2); lateral notosetae iridescent golden-green . . . . . A. sp. A

4. Lateral notosetae shaggy, white, conceal neurosetae; median antenna reduced to a small tubercle (Fig. 3) . . . . . A. sonorae Kudenov, 1975 (includes A. mexicana Kudenov, 1975)

4. Lateral notosetae iridescent green, free of debris; neurosetae concealed; median antenna cirriform; neurosetae with tips produced to points . . . . . A. refulgida Moore, 1910

4. Lateral notosetae colorless, often encrusted with debris; neurosetae often project beyond lateral setae 5

5. Median antenna clavate 6

5. Median antenna cirriform 8

6. Eyes large, confluent (Fig. 1); thickest neurosetae 1.8X thicker than thickest dorsal notosetae . . . . . A. brevitentaculata Essenberg, 1917

6. Eyes small; thickest neurosetae and notosetae about equal . . 7

7. Dorsal notosetae acutely constricted proximal to hooked tips (Fig. 8); lateral fascicle of dorsal notosetae number 12-20 . . . . . A. castanea Moore, 1910

7. Dorsal notosetae hooked but not acutely constricted (Fig. 5); notosetae number 10 . . . . . A. negligens Moore, 1905

8. Body less than 10 mm; 27 segments; middle and lower rows of neurosetae with spurs (Fig. 10). . . . . A. parva Moore, 1905

8. Body usually larger with more than 30 segments; small individuals may have some lower neurosetae with spurs 9

9. Eyes present; median parapodial length to body width (exclusive of parapodia) ratio about four to one . . . . . A. japonica Marenzeller, 1879

9. Eyes absent; parapodium to body width ratio about two to one . . . . . A. longipalpa Essenberg, 1917

Figure 1 from Essenberg, 1917; Figures 2 and 4 from Pettibone, 1963; Figure 3 from Kudenov, 1975; Figures 5 and 10 from Moore, 1905; Figures 8, 9 and 11 from Moore, 1910; Figures 12 and 13 from Hartman, 1939.

Essenberg, C. 1917. Univ. Calif. Publ. Zool., 16(22):401-430.
Hartman, O. 1939. Allan Hancock Pacific Exped., 7: 1-156.
Kudenov, J.D. 1975. Bull. So. Calif. Acad. Sci., 74: 75-79.
Moore, J.P. 1905. Acad. Nat. Sci. Phil., Proc., 57: 525-554.
---------- 1910. Ibid, 63: 234-318.
Pettibone, M.H. 1963. U. S. Nat. Mus. Bull., 227:1-356.

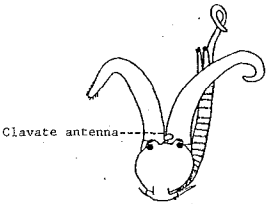

Figure 1 (A. brevitentaculata)

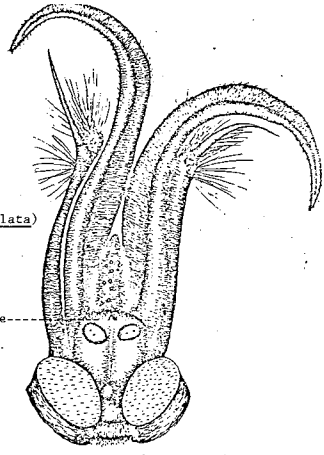

Figure 3 (A. sonorae)

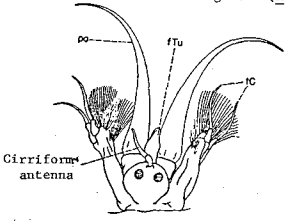

Figure 2

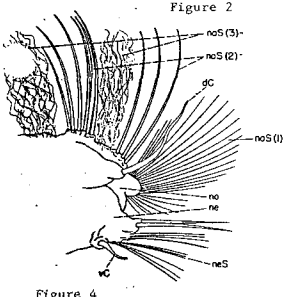

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8

Figure 9

Figure 10

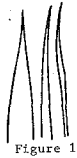

Figure 11

Figure 12

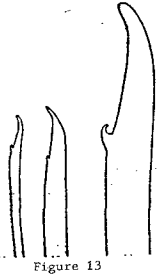

Figure 13

Lumbrineridae worksheet

Feb 96/RML

Notes:
LL: L. Lovell, 1996
LH: Leslie Harris
F: Fauchald, 1970
H: Hilbig, 1995
Y: indicates your observation

Lobe length comparison (dorsal view):
+ = lobe prolonged relative to anterior condition
- = lobe not prolonged relative to anterior condition

	Acicula color (Dark=darker than setae)	Hooded hooks Begin	ANTERIOR	MID-BODY	POSTERIOR	Hooded hook blade length/width ratio	Maxillary condition	Group
Lumbrineris cruzensis Hartman 1944	yellow	composite setiger 1	PRESETAL / POSTSETAL		PRESETAL / LL / POSTSETAL + / +	H: 2:1 @ set 10 Y:	H: I-1,II-4,III-1,IV-1,V-? Y:	I
L. limicola Hartman 1944	yellow	composite setiger 1			LL - / +	H: 3:1 Y:	H: I-1,II-4,III-1,IV-1,V-? Y:	
L. latreilli Audouin & Milne Edwards 1834	yellow	composite setiger 1			LL - / -	H: 4:1 @ set 10 Y:	H: I-1,II-4(6),III-2,IV-1,V-? Y:	
L. californiensis Hartman 1944	dark	composite setiger 1			LL + / +	H: 4:1 @ set 7 Y:	H: I-1,II-3(4),III-1,IV-1,V-P Y:	II
L. index Moore 1911	dark	composite setiger 1			LL - / +	H: 5:1 @ anterior Y:	H: I-1,II-4,III-2,IV-1,V-? Y:	
L. japonica (Marenzeller 1879)	dark	composite setiger 1	LL		LL - / -	H: 2:1 @ set 1 Y:	H: I-1,II-4(6),III-2(1),IV-1,V-? Y:	
Eranno lagunae (Fauchald 1970)	yellow	simple setiger 1			+ / +	H: 6:1 @ anterior Y:	H:I-1,II-4(6),III-1,IV-1,V-P Y:	III
Lumbrineridae sp C L. Harris	yellow	simple setiger 1			+ / +			
Scoletoma tetraura (Schmarda, 1861)	yellow	simple setiger 1			- / +	H: 7:1 @ anterior Y:	H: I-1,II-4(5),III-2,IV-1,V-P Y:	
Lumbrineridae sp B L. Harris	yellow	simple setiger 6-8			+ / +		LH: I-1,II-4,III-1,IV-1,V-?	
Lumbrinerides platypygos (Fauchald 1970)	yellow	simple setiger 7-10			- / +		F: I-1*,II-3,III-1,IV-1 *Plus two basal dentitions	
Lumbrineridae sp A L. Harris	yellow	simple setiger 6-7			? / +			
Eranno bicirrata (Treadwell, 1929)	dark	simple (bidentate) setiger 7-9			+ / +	H: 6:1 @ set 15 Y:	H: I-1,II-4(7),III-1,IV-1,V-P Y:	IV