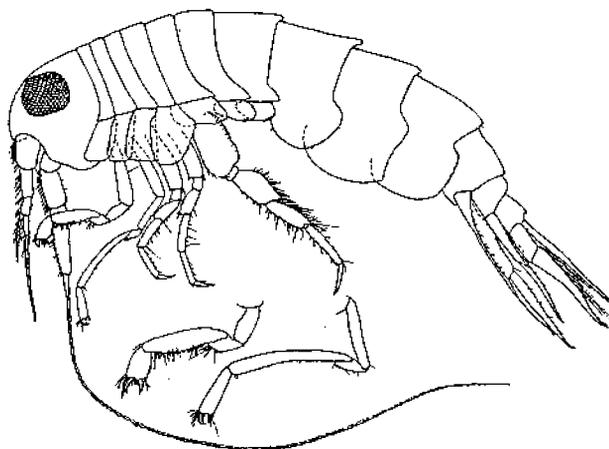


NEXT MEETING:	SCBPP Problem Non-polychaete and Polychaete Species
GUEST SPEAKER:	none
DATE:	March 13 and March 20
TIME:	9:30am - 3:30pm
LOCATION:	See below

MARCH 13 & 20 MEETINGS



Garosyrhoe bigarra (from Barnard 1962)

In March there will be two meetings on SCBPP problem species. One for non-polychaete species on Monday, March 13th at MEC in Carlsbad and one for polychaetes on Monday, March 20th at the Worm Lab at the Natural History Museum of Los Angeles County. Anyone needing directions to these locations may call the SCAMIT Secretary. The non-polychaete meeting will be addressing problems in the amphipod families Isaeidae, Aoridae, Ischyroceridae, and Bateidae. The polychaete meeting will be focusing on the families Cossuridae, Trichobranchidae, Onuphidae, Ampharetidae, Sabellidae, Capitellidae, Maldanidae, Glyceridae, and Syllidae. Please bring your specimens, voucher

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SCAMIT Newsletter is not deemed to be a valid publication for formal taxonomic purposes.

sheets, and any literature that may be pertinent to your specimens to the meetings.

POLYCHAETE WORKSHOP

On January 26th and 27th several SCAMIT members participated in a polychaete workshop in Olympia, Washington. The workshop was hosted by the Marine Benthic Monitoring Unit of the Washington State Department of Ecology. The SCAMIT members that participated felt the workshop was a great success mainly due to the excellent organization provided by the Department of Ecology and the outstanding microscope and video equipment provided by a local Nikon distributor. They are anticipating setting up a local SCAMIT-like professional organization for the Pacific Northwest region if problems created by involvement of organizations from two different countries can be overcome.

The next proposed workshop for that region will focus on echinoderms and sponges and is to be hosted by the Khoyatan Marine Laboratory in Cowichan Bay on Vancouver Island. The proposed dates for this 2-day workshop are April 27 and 28 or 28 and 29. A flyer with all the details for this workshop has been included with this newsletter.

Handouts distributed at the workshop by Leslie Harris and Larry Lovell are attached for review and comment at the March 20th SCAMIT meeting.

OCTOPUS WORKSHOP

A special meeting to discuss problems with identification of trawled *Octopus* species was held at the Santa Barbara Museum of Natural History on 6 February 1995. The problems were detected by Megan Lilly (SDMWWD) during an earlier SCBPP trawled invertebrate meeting held at SCCWRP. She brought them

to the attention of Dr. Eric Hochberg at the Santa Barbara Museum, who decided it was time for an update of the status of southern California octopods.

Among other projects Dr. Hochberg has been reexamining both the available material of local species, and the criteria used to distinguish these animals both in the laboratory and in the field. He summarized his results for a select group of SCAMIT members, and a researcher from the University of California, Santa Barbara, currently studying the taxonomy and ecology of *Octopus*. A full synopsis of the meeting will be presented at a later date, after Dr. Hochberg has resolved some points currently in dispute.

It is, however, clear that there is another species of *Octopus* taken in trawl catches; *Octopus veligero* Berry 1953. The live external appearance of this animal is not documented, but specimens taken in the Bight have been confused both with *O. rubescens* and with *O. californicus*. Preserved specimens can be distinguished from both of the above species by a number of features, but the configuration of the gill is the easiest to determine. Both *O. rubescens* and *O. californicus* have between 10-13 lamellae per demibranch on the gills, while *O. veligero* has 15-17. These counts are close, but Dr. Hochberg has found no overlap in the material he has examined.

Described from off Cabo San Lucas in Baja California, *O. veligero* had not previously been recorded from the Southern California Bight. Samples collected in the early 80's, and identified only to genus, were reexamined during the meeting and found to contain a few *O. veligero*. The animal is thus not a recent migrant, but may be a periodic member of the Bight fauna during and after ENSO events.

Attempts are currently underway to find field characters for separation of live *O. rubescens* and *O. veligero*. *Octopus californicus* can be

separated from both by its jet black ink (the others have reddish-brown ink), if the animal can be induced to ink. It can also be separated by its much shorter arms at a given size, by its skin patches (with cartilaginous supporting rods in *O. californicus*), and by its sluggish behavior when handled.

Initial results of these efforts were disappointing, with no *O. veligero* captured. During quarterly trawls in February, CSDLAC personnel noted living appearance of captured octopi, and separately preserved them for dissection to verify species. Field observations included the pattern of dorsal mantle papillae; patch and groove pattern of the skin; size, shape and color of pigmented areas; and presence and form of "startle" or "flash" marks exhibited under stress. All animals were identified as *O. californicus*, or *O. rubescens* in the field. Dissections confirmed the *O. rubescens* identifications, while the *O. californicus* were kept alive for research use.

An example of the data recording sheet used is attached. Please note that weight, gill count, and GLI (gill length index - gill length/dorsal mantle length X 100) are laboratory determinations, as is sex (unless field determinable by presence of a hectocotylus).

SCAMIT ELECTION

Ballots for the 1995-96 SCAMIT Officers are due at the March meeting. Please submit your ballot if you have not already done so. While voting please use the bottom of the ballot to suggest areas you would like addressed in future meetings.

NEW LITERATURE

The journal, *Actes de la 4ème Conférence internationale des Polychètes*, from the 4th

International Polychaete Conference held in Angers, France in 1992 is currently available for purchase. It is available in English or French. To order please contact:

Universal Book Services
Dr. W. Backhuys
P.O. Box 321
2300 A.H. Leiden
The Netherlands
Tel: [31] (71) 17 02 08
Fax: [31] (71) 17 18 56

SCAMIT has faxed Dr. Backhuys for information about the price of this journal and will report on this in a future newsletter as soon as it is obtained.

A new paper on *Pisione* is available. It is entitled, "A New Species of Interstitial Genus *Pisione* from Coastal Beaches in Sonoma County, California USA". For a reprint contact author Cynthia L Stonick at:

Washington State Department of Ecology
EILS, 300 Desmond Dr.
P. O. Box 47710, Olympia, WA
98504-7710

Jose Orensanz has a new update of his evolving list of Benthic Polychaetes of British Columbia and Washington. He can be contacted for a copy at:

Jose Orensanz
School of Fisheries
University of Washington, WH-10
Seattle, WA 98195 USA
Phone: (206) 685-3609
Fax: (206) 685-3224
Email: Lobo@max.u.washington.edu

CONTINUING NEOCRANGON PROBLEM

SCAMIT recently received a letter from Dr. Mary Wicksten at Texas A & M University

updating us with her progress on the problem shrimp species *Neocrangon resima* and *Neocrangon zaca*, which she is having her graduate students work on. When she was here visiting Los Angeles in December she took a mixed sample of these two shrimp species from Santa Monica Bay to examine and hopefully find a better way of distinguishing between these two closely related species. Dr. Wicksten would like to have more specimens of these 2 species from other areas of southern California sent to her at:

Dr. Mary Wicksten
Texas A & M University
Biology Department
315 Biological Sciences Building West
College Station, Texas 77843-3258

E-MAIL

SCAMIT member Larry Lovell now has an E mail address he may be reached at and a new fax number. They are:

Email: llpolytax@aol.com

Fax #: (619) 945-7817

Please note the fax is through his computer so you must call him first.

Also, the next SCAMIT directory will include E mail addresses so please include them, if you have one, on your next SCAMIT membership renewal form.

PAPER PROBLEM

We have had a few responses to the Wet Storage Label Paper Questionnaire that was sent out in a previous newsletter. The City of San Francisco's Biology Lab has found success using *Rite in the Rain* paper, sub 20 bond, supplied by the J.L. Darling Corporation in Tacoma, WA. The cost is approximately

\$14.50 per 200 sheets. They have found that they can print on this paper using a laser printer or a photocopier. However, they have only been using this paper for about a year, but so far no ink has faded and penciled information is still intact. Jay Shrake of Kinnetics labs indicated they were very satisfied with Rite in the Rain, and that in nearly a decade of use they found no deterioration or ink fading.

The City of San Francisco lab had previously used *Nalgene Polypaper*, but it could not be used in the laser printer because it crumpled under the heat. Also, using the Polypaper in the photocopier was time consuming since the copier had to be allowed to cool after each copy. Sometimes the toner was not fully fused, and the print rubbed off. The Invertebrate Zoology Dept. of the California Academy of Sciences has used the polypaper since the 1970's and found good results using a dot matrix printer. The approx. cost of the Polypaper is \$39.50 per 100 sheets.

SCAMIT has been told that University Products representative, Christine Allen, is aware of this wet-storage paper problem and is currently looking for an alternative to the former *Resistall*. A potential substitute carried by University Products is *Tyvek*, a brand of polyethylene paper from Dupont. This paper can be marked on with pen or pencil, and is unaffected by water and most solvents. The approximate cost is \$37.60 per 25 sheets and each sheet is 23" X 35" in size.

SCAMIT greatly appreciates all the responses it has received about the wet storage label paper problem, especially from those who took the time to fill out the questionnaire. There is much more to be said, so please continue to respond with additional information.

SCAS MEETING

Included in this newsletter is a flyer for the upcoming Southern California Academy of Sciences meeting to be held at California State University Fullerton May 5-6. This year's theme is "The Urban Environment". Two symposia that may be of particular interest to SCAMIT members are "Coastal Watersheds and their Effects on the Ocean Environment" and "Introduced Species".

MINUTES FROM FEBRUARY 13

This meeting was spent mainly discussing various problems encountered with polychaete species from the SCBPP survey. However, there was one report made of a strange animal from an SCBPP station that had been originally confused as a polychaete. It turned out to be a pterobranch, a class of hemichordates, far less commonly seen than enteropneusts (acorn worms). John Ljubenkov's keen eye caught this mistake. This pterobranch was found at SCBPP station 0245 off Coho Pt. at approximately 132 meters depth. So, SCAMIT members keep an eye out for these unusual animals.

Correction

At the meeting Larry Lovell brought to members attention a mistake in Hartman's Atlas. The description of the polychaete species *Aglaophamus dicirris* in the Atlas is incorrect in the number of paired papillae that terminate distally on the eversible proboscis. There are only 20 paired papillae and 2 unpaired papillae, one middorsal and one ventral. This differs from the 22 paired papillae described by Olga Hartman in her original description from 1950. Also, the name *Aglaophamus dicirris* is no longer valid. Knox (1960) synonymized *A. dicirris* with *A. verilli* and this synonymy has been accepted by

several authors since then. SCAMIT members decided that we should also accept this synonymy. This name change will be reflected in the second edition of SCAMIT's Taxonomic Listing of Soft Bottom Macroinvertebrates due out soon.

In November (Newsletter 13[7]) Larry Lovell reported an odd polydorid from SCBPP stations off Solana Beach at 13 and 17 meters depth. At the November meeting it was thought that it might be *Polydora cirrosa*, but it needed to be compared to Rioja's original description from 1943. In Leslie Harris' updated *Polydora* table it is referred to as *Polydora* sp. A. Larry has since compared this polydorid to Rioja's description and come to the conclusion that it is most likely *Polydora cirrosa*. Larry was not able to compare his polydorid to Rioja's types because they are unavailable for examination.

At the meeting many questions were raised about distinguishing between species of *Cossura*. Several members had notes on various staining patterns amongst the several local species of *Cossura*. Because there was so much confusion between what species of *Cossura* had what particular staining pattern it was decided that members should all bring their different species of *Cossura* to the next polychaete meeting in March. Members should also bring any notes or illustrations of the staining patterns they have observed along with their specimens.

There was some discussion at the meeting over the flabelligerid species *Piromis hospitis* and *Pherusa capulata*. *Piromis hospitis* is described from the Gulf of California by Fauchald (1972) and has a very thick, mucous coat as a body covering. It has bifid neurosetae from setiger 7 thru setiger 30, where then only the inferiormost neurosetae are bifid and the rest are unidentate. Larry Lovell has reported this animal from Encina at 45 m depth. *Pherusa capulata* is described as having bifid

neurosetae starting at setiger 2-4. However, there has always been some confusion as to whether the commonly reported *Pherusa capulata* should actually be referred to the genus *Piromis* and not *Pherusa*. This has yet to be resolved.

Tony Phillips at Hyperion brought a *Polydora* to the meeting that did not fit the descriptions of any of the species on the *Polydora* table. Its diagnostic characteristics are:

- ◆ bifid prostomium
- ◆ notosetae present on first setiger
- ◆ no eyes
- ◆ companion setae present
- ◆ spines of modified 5th setiger with a subterminal boss, not a tooth
- ◆ both inferior and superior clumps of limbate setae
- ◆ 5th setiger prolonged like *Polydora cirrosa*
- ◆ neuropodial hooks bidentate from setiger 7
- ◆ branchiae beginning on setiger 7
- ◆ caruncle extends to the posterior edge of set. 7 or the anterior edge of set. 8

It was found at SCBPP station 0929 at a depth of 35 meters.

Another odd specimen that was brought to the meeting was an *Ophelina* by Rick Rowe from the City of San Diego. It was from SCBPP station 0103 south of Pt. Conception at 93 meters depth. Rick thought it might possibly be *Ophelina breviata*. Its distinguishing characteristics are:

- ◆ branchiae begin on 2nd setiger

- ◆ large nuchal organs
- ◆ ventral groove down entire animal
- ◆ pygidium not a flange, but tube shaped with anal cirri

Larry Lovell has also seen this animal at SCBPP station 0245 near Coho Pt. in 132 meters of water. It was decided that this animal should be left as a provisional and a voucher sheet written up.

Tony Phillips also shared with the group a *Monticellina* from SCBPP station 0103 off Pt. Conception at 93 meters depth. This animal had a very pronounced ventral groove and compact setigers anteriorly. It also does not stain in methyl green. This animal is being left as a provisional for now.

Upstairs Updates

While most members were busy discussing polychaetes in the Worm Lab at the Natural History Museum of Los Angeles County, John Ljubenkov and Don Cadien trooped upstairs to meet with Dr. Jim McLean who had graciously offered to examine problem mollusks from the SCBPP trawls and grabs.

Residual trawl problems were resolved, with all voucher specimens of *Fusinus* proving to be just variants of *F. barbarentis*. Similarly, all *Solariella* proved to be variants of *S. peramabilis*. Several turrids taken in the grabs proved to be in the genus *Crockerella*, several new species of which have been found in our area by Dr. McLean. Examination of the odd looking *Ophiidermella* mentioned previously (Newsletter 13[9]), showed them to be *O. fancherae*.

The most interesting result was identification of a live collected specimen of *Alabina tenuisculpta*, known previously only from Pleistocene specimens, and presumed extinct.

The specimen was from off Pt. Loma at 380'. Ron Velarde thinks that they have not taken the animal previously, but will keep his eyes open for further specimens.

Toward the end of the day Don Cadien examined the type of *Garosyrhoe bigarra* in an attempt to clarify its position relative to *Garosyrhoe disjuncta* (Newsletter 13[8]). Too little time was left for a complete evaluation, but it was determined that the dorsal teeth on the 3rd pleonite of *G. bigarra* are similar to those in *G. disjuncta*, although described originally as "with a few obsolete serrations" by Barnard (1962). The lyre shaped teeth are present, but poorly expressed in the *G. bigarra* holotype. The eyes meet along the dorsal midline of the head, but do not fuse to form a single mass. They are separated only by a thickened ridge of carapace, which may be directly equivalent to what Barnard later described as a crest in *G. disjuncta* (Barnard 1969). Further examination of the dorsal ornamentation of pereonite 7 and pleonites 1-2 is necessary; the epimera also require re-examination.

While the question is far from settled, this preliminary reexamination of the *G. bigarra* holotype suggests some of the details which appeared to separate it from that of *G. disjuncta* were left unreported by Barnard, or were described with differing language in 1962 and 1969.

STINK WORMS

First stink bugs, now stink worms! Over the past several years Tom Parker (CSDLAC) has been gathering local *Pista* for shipment to marine natural products chemists. This was prompted by Tom noticing a smell of "old dirty gym socks" during shipboard processing of a benthic sample. The odor was traced to a large catch of adult *Pista fasciata*. Testing by the natural products folks indicated that the malodorous substance was a brominated

phenolic compound produced by the worm.

A recent publication indicated that such compounds, as well as an enzyme used in the production of brominated aromatic compounds, have now been detected in quantity in the capitellid *Notomastus lobatus* (Yoon et al. 1994). These authors suspect the aromatics are used as disappetitives to discourage fish predation since they are localized at the posterior end of the animal. The worms live head-down in the sediment, thus exposing their stinky rears to fish predators.

LACEY ACT

Last month (Newsletter 13[9]) we alerted members to some proposed changes in regulations pertaining to possession and international shipment of specimens. At that time we did not identify the legislation specifically. It is the Lacey Act, first enacted in 1900, and significantly modified in 1981. The act, and its possible impact on scientific collections was discussed at length in the December 1994 issue of the ASC Newsletter (Vol. 22[6]), to which members are directed for more information. A recent update ("Breakthrough on Specimen Shipping" - Science, 27 January 1995, p. 443) indicates that protests from the systematic community have caused the U.S. Fish and Wildlife Service to amend their proposed rule changes, effectively removing barriers to transportation of specimens between academic and research institutions. Problems now stem from the U.S. Congress, whose stated objective of ceasing additional regulation may prevent the new rules from being implemented. We'll keep you posted.

OF RELATED INTEREST

While SCAMIT's interests reside mainly in taxonomy (with a bit of ecology thrown in on occasion) most members are also concerned to

some extent with physical measurements of ocean conditions.

Dean Pasko (SDMWWD) called our attention to two software programs for analysis of oceanographic data; OCEANATLAS and ATLAST. Both were favorably reviewed in an article in *Oceanography* (Vol. 7[2]: 63-64). We direct interested parties to that article.

NOT A BATH SPONGE

John Ljubenkov (MEC) drew our attention to a recent report (Adler, T. "Deep-sea sponge reaches out, devours". *Science News* February 4 1995) of a sponge that pursues a rather atypical feeding strategy. This undescribed deep water species uses a combination of slow movement, spicules, and thin body filaments to trap unwary microcrustaceans, which are then engulfed and consumed. As this particular sponge lacks a canal system and choanocytes, its discovery will require redefinition of the phylum.

A MODEST PROPOSAL

Leslie Harris (LACMNH) has prepared a prospectus for a proposed central information and specimen repository for environmental monitoring samples. The desirability of such a repository is evident, and the examples Leslie provides make it even clearer. The initial proposal is attached.

POSITION AVAILABLE

The Polychaete section of the Los Angeles County Museum of Natural History has a grant-funded two year position available for a CURATORIAL ASSISTANT to assist in movement to new home and recuration of the LACMNH-AHF Polychaete Collection. Salary is \$2323/mo. Interested parties should contact Dr. Kirk Fitzhugh @ (213) 744-3233. A

position announcement is attached.

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CANADA V0R 1N0
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FAX (604) 748-4410

A Proposal for an Echinoderm & Sponge Taxonomy Workshop

Proposers: Bill Austin, Khoiyatan Marine Lab. & Phil Lambert, Royal BC Museum.

Sponsors: The Marine Ecology Station and the Royal B.C. Museum

Location: The Marine Ecology Station in Cowichan Bay, Vancouver Island

Duration: 2 days

Date: To be determined

Topics:

Examples of topics might include: definitions and nomenclature of spicules based on light and scanning microscope images; update on systematics of sponges of the NE Pacific; identification of ophiuroids from arm fragments; form and size of ossicles in infaunal holothuroids.

Facilities:

The Marine Ecology Station is a floating classroom/laboratory serving schools, colleges and other interest groups. Running seawater services a number of display aquaria as well as small aquaria mounted under dissecting microscopes. Our facilities could be used for workshops on identification of specific taxa of invertebrates. We have lab space for up to 30 people with 15 dissecting microscopes of good quality although at present limited to a maximum of 30x. We also have a high quality dissecting scope with dark field, and a good quality compound scope with phase optics. Other microscopes can be brought in on an as-need basis. Supporting equipment includes an overhead projector, Kodak Carousel projector, photocopier, blackboard, 5 Mac classics, a Mac IIsi, a scanner and laser printer, and one IBM compatible 486. A 35 inch monitor can be connected to a video camera mounted on either a compound or dissecting scope. We find this very useful in pointing out specimen characteristics to a group.

Reference collections of sponges and echinoderms either at the Station or the Royal BC Museum cover most known species from the Pacific northwest. We have an extensive literature collection on marine invertebrates as well as standard and not so standard keys.

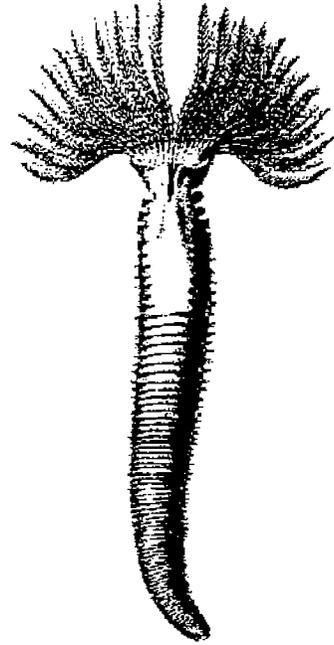
Cost & Travel: [Canadian \$\$]

The Station is privately operated by a non-profit society so we would need to charge a user fee. This could be in the neighborhood of \$20/pers/day if we had 10 or more people.

The Station is located in Cowichan Bay and is part of the Cowichan Bay Maritime Centre complex. It is about 45 minutes north of Victoria by road; and about 1hr. from the Swartz Bay ferry terminal. Those coming via Vancouver or Seattle could board the ferry as foot passengers and arrive by bus or launch. Moderately priced restaurants are located on either side of the Centre. Winter [Oct-Apr] rates at walking distance inns are about \$27/bed double/triple & \$9-11 additional for a kitchen.

NATURAL HISTORY MUSEUM of Los Angeles County

900 Exposition Boulevard
Los Angeles, California 90007



JOB ANNOUNCEMENT

CURATORIAL ASSISTANT: POLYCHAETE WORM COLLECTION

The Invertebrate Zoology Section at the Natural History Museum of Los Angeles County (LACM) invites applications for a new position: Curatorial Assistant, funded by the National Science Foundation. This position is open immediately, and will be filled in the Spring of 1995.

Minimum qualifications include a BS or BA in biology or museum science, with coursework in invertebrate zoology, or equivalent experience.

This full-time position is for 24 months, with the possibility of being extended pending future funding. The starting salary is \$28,000 per year plus benefits. Duties will include the relocation, reorganization, and curation of the west coast's largest polychaete collection.

Applicants should submit a curriculum vitae and three letters of recommendation to:

Dr. Kirk Fitzhugh
Research & Collections Branch
Los Angeles County Museum of Natural History
900 Exposition Boulevard
Los Angeles CA 90007

For additional information regarding this position, contact Dr. Kirk Fitzhugh by phone: 213-744-3233. FAX: 213-746-2999, or e-mail: fitzhugh@bcf.usc.edu; or contact Ms. Leslie Harris by phone: 213-744-3234.

The LACM is an Equal Opportunity Employer



SOUTHERN CALIFORNIA ACADEMY OF SCIENCES

Call for Papers
1995 Annual Meeting
May 5-6

California State University Fullerton

"The Urban Environment"

ABSTRACTS DUE MARCH 15, 1995

Eligibility: Contributed papers and posters are invited in all areas of science from both PROFESSIONALS and STUDENTS. (Maximum poster size: 32"x40")

Theme: The theme for this meeting is Urban Environments. The meeting will focus on terrestrial landscapes, coasts, wetlands, tectonics of the Los Angeles Basin, social and cultural environments and other relevant topics.

Symposia: Symposia for this year's meeting include:

- Research and Management in the Mojave Desert Preserve
- Coastal Watersheds and their Effects on the Ocean Environment
- Urban Fishing
- Environmental Effects of Urban Earthquakes
- Introduced Species
- Response to Oil Spills: Can We Develop Standardized Protocols for Sampling Rocky Intertidal Biota?
- Urban Planning
- Uses of Computer and Electronic Technologies in Education
- Cultural Anthropology

Awards: Graduate and undergraduate papers are eligible for Best Papers awards. There are specified awards in some categories such as Zoology, Environmental Science, Fishery Research, Ecology and Botany. Co-authored papers are eligible as long as they are the work of the student(s) presenting. In the case of an award to a co-authored paper, the award will be made to the first author.

Registration: All presenters, whether invited or not, are required to register for the meeting. Presenters will be given the early registration rate for Academy members or students, whichever applies.

Junior Academy: Participants in organizations belonging to the Southern California Junior Academy of Sciences will present their papers at the meeting. Junior Academy sections will be scheduled to encourage professional (adult) Academy members to attend Junior Academy presentations without conflict with Academy meeting symposia.

THE LACMNH-AHF DEPOSITORY FOR POLYCHAETE SPECIMENS AND TAXONOMIC INFORMATION

Private and government environmental monitoring agencies, as well as research personnel, spend valuable funds, time, and energy collecting, processing, identifying, and analyzing environmental samples. Frequently, however, past efforts have been duplicated in subsequent surveys or research by other individuals or organizations. This practice is apparently typical, as project managers view collections as project specific, therefore not acknowledging the relevance of long-term sample storage to past and/or future surveys. Such a custom is unfortunate as specimens and taxonomic data arising from a collection may have value far beyond their original significance. For instance, samples may be unique with regard to collection location or the presence of undescribed taxa. Material from long-term surveys provide temporal data on population changes, affording the possible recognition of physical and chemical parameters affecting regional fauna. Similarly, long-term storage can provide intercalibration of data from one survey to another. Specimen storage in a central facility, along with taxonomic information or voucher sheets produced from these surveys, allow researchers to compare identifications of species previously collected, potentially minimizing needless duplication of effort. Researchers would be able to more readily and effectively delimit geographic distribution patterns.

One example of data loss comes from the Allan Hancock Foundation Polychaete Collection of the Los Angeles County Museum of Natural History (LACM-AHF). A polychaete specimen from the Persian Gulf collected nearly 20 years ago was selected by an Australian worker as the neotype of a very common, reportedly cosmopolitan species. The individual requested complete station information and additional specimens. We had neither, and the consulting company that conducted the original survey was contacted. We were told that the survey reports and data could not be found. We were also informed that voucher and bulk specimens were presumed to be either lost or discarded due to a lack of storage space, and at least one set of vouchers was thought to have been destroyed during the Persian Gulf War. At the time of the survey, taxonomic information for all species - described and provisional - had been compiled by company personnel. Except for some fragmentary information in the LACM-AHF polychaete section, this information is either unavailable or presumed

lost. The Persian Gulf is a region which has been subjected to extreme levels of pollution during and after the Gulf War. Ironically, results of the earlier survey would have been an invaluable resource for the purpose of assessing damages resulting from the war. Such opportunities could, however, only be realized if these collections had been preserved and available.

Prolonged monitoring of an area can also suffer from a lack of continuity. Recently, a southern California area was repeatedly sampled by a series of different subcontractors. When the contracting agency began collating and analyzing the data, it found that taxonomic identifications were not equivalent between the different subcontractors. This resulted in additional work by yet another subcontractor to standardize the identifications. This latter effort could have been avoided had specimens and taxonomic data been placed in a discrete depository and made available to the various consultants.

It is extremely important for specimens and data from all kinds of biological studies be deposited into stable, well-funded collections. Even when the initial systematic work is flawed, if the specimens themselves remain available to sciences the errors can be corrected. The attached "Report on the Accuracy of Identification of Material in the BLM Projects" shows how common misidentifications are, even among professional systematists. A sample of 221 lots of sabellids were examined by Dr. Greg Rouse, a specialist on the family. He did the work at the Smithsonian, with access to all available literature on the group as well as type or topotype specimens for all species found in the samples. He found a 88.7% percent error rate in identifications at the species level. His work also points out the need for uniform, strict quality assurance. This is only possible by the ability to compare archived samples and taxonomic data from one survey to another, as well as access to literature and types.

The LACM is in the process of moving the Allan Hancock Foundation Polychaete Collection into the Museum. The LACM polychaete collection area, designed to accommodate 20 years' projected growth of the collection, was recently completed. We now have the space, equipment, and commitment necessary to function as a central



depository for the polychaete community. We would like to encourage all agencies and individuals to consider the LACM as a possible repository for specimens and taxonomic information generated by surveys and research projects. In an effort to minimize redundant and costly taxonomic analyses, yet maximize taxonomic information along the west coast, our ultimate goals are to develop the LACM-AHF polychaete collection into a central storage facility of taxonomic information, promote the sharing of taxonomic data among researchers, provide vouchers for comparative studies, and encourage the standardization of taxonomic identifications.

Unfortunately, the LACM and the polychaete section lacks the room or monetary resources to accept all collections, and the acceptance of collections must be made on a case-by case basis.

All taxonomic notes and voucher sheets will be accepted without charge. Some voucher and bulk collections will be accepted without charge due to their unique nature or potential value to the research community. Other collections may be accepted only with the payment of fees designed to cover the cost of accessioning, cataloging, and handling.

For more information or to discuss the possibility of depositing specimens, please contact Leslie Harris, Polychaete Collections Manager, at the Los Angeles County Museum of Natural History, 900 Exposition Boulevard, Los Angeles, CA 90007; tel 213) 744-3234, fax 213) 746-2999, email docker@netcom.com.



REPORT ON THE ACCURACY OF IDENTIFICATION OF MATERIAL IN THE BLM PROJECTS

Appendix 1. Annual Report to Minerals Management Service and the National Biological Survey, Contract 14-35-0001-30519: "Disposition of Biological Specimens of the Outer Continental Shelf", 1 October 1994.

Greg Rouse
University of Sydney

The taxonomy of sabellids cannot be said to be in a worse state than any other polychaete group. They are highly visible polychaetes and the subject of considerable study. Therefore they can be regarded as a general indicator of the state of taxonomy of polychaetes.

I examined 221 lots of sabellids in the genera *Amphiglena*, *Desdemona*, *Oriopsis*, *Dialychone*, *Chone*, *Euchone*, and *Potamethus*. They had been identified as belonging to 14 species, several of which were characterized as sp. or cf.

Total number of specimens was not recorded but can be determined roughly from the catalogue number counts for each lot. I had all literature available on these genera as well as access to the type material or material from near the type localities for most of them.

The results can be examined in various ways.

1. Identification success

- At the species level: 196 lots had species names that were incorrect, an error rate of 88.7%. Included in this count are lots where either genus or family or both were also incorrectly designated. The 25 lots that were not directly "wrong" were mostly identified as 'sp.' or with the qualifier 'cf.' The number of lots truly correctly identified to species was 2 of the 221 lots examined. Correct identification rate to species is 0.009%.

- At the generic level: 41 lots were placed in the wrong genus, an error rate of 18.5%. This includes 1 lot placed in the wrong family and 12 lots with two genera in the same vial.

2. Sorting success

17 lots contained more than one species, leaving a sorting error of 7.7%

3. Estimation of biodiversity

Very little effort appears to have been made in assessing biodiversity. The effort seems to have been to place a species name on a taxon with the unfortunately low success rate outlined above. The 221 lots were identified as belonging to 14 separate species either with a formal species name, as a 'cf.', or as 'sp.' There was very little evidence of sorting into the various undescribed species that to me were clearly apparent.

My own estimate of the number of species was 22. Many of these species have never been described and the names applied to them were almost always incorrect, so that even if the diversity had been accurately estimated, the geographical distribution of the taxa would have been erroneously estimated. Several of the names used were for European or Californian species and were completely incorrect. Usually however, an incorrect name was given to a species that was actually undescribed. This represents a major underestimation of the global diversity of a given genus; it also represents a serious underestimate of the uniqueness in terms of species composition of the area investigated.

Another error was the splitting of what was clearly one species into two. The small juvenile specimens were labelled as one species and the mature adults as another, leading to an overestimate of the diversity in this case.

Conclusions

Any biogeographical or ecological conclusions based on the original identifications and data sets must be viewed as suspect. More alpha taxonomy is needed to document what species are actually present. More competent taxonomists need to be employed on these projects. Basic biology of the species needs to be documented to eliminate errors such as separating juveniles and adults of the same species.

**CSDLAC
OCTOPUS LIVE APPEARANCE RECORD**

Survey _____ Station _____ Depth _____ Date _____

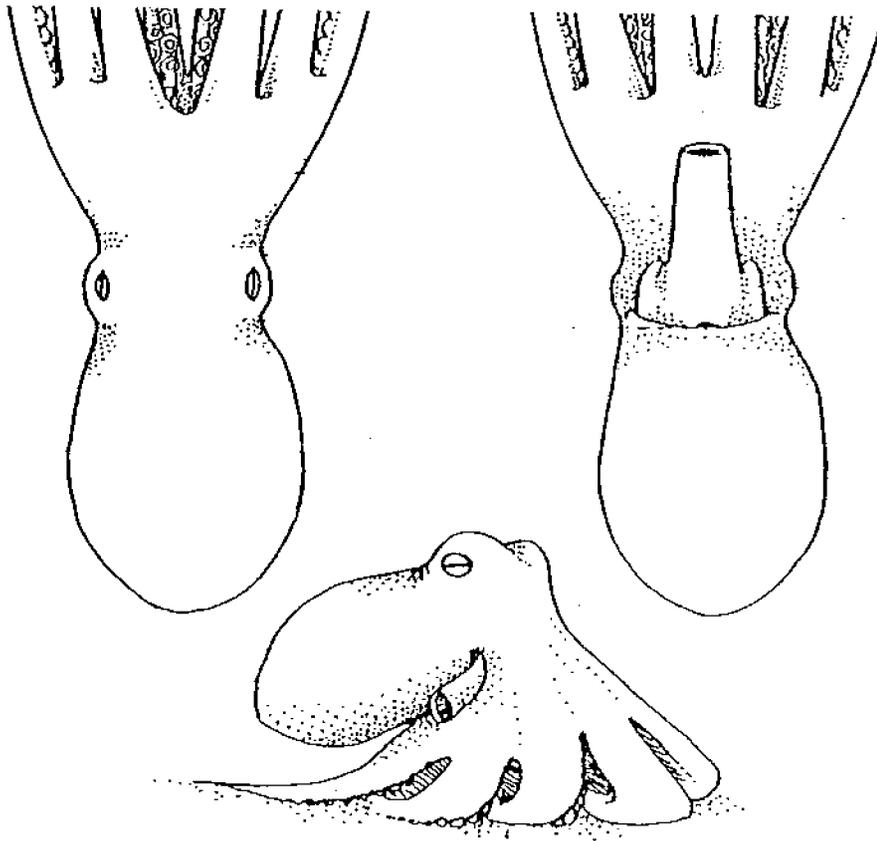
Observer _____ Photo# _____ Specimen # _____

Field Id _____ Sex _____ Ink Color _____

Head Bar (circle) Light Dark None Skin Patch Shape _____

Weight _____ Gill Count _____ Gill Length Index _____

Notes: _____



COMPARISON OF EULALIA BILINEATA AND E.CALIFORNIENSIS

L. Harris, LACM-AHF, 213) 744-3234, 213) 746-2999 fax

CHARACTER	EULALIA BILINEATA (JOHNSTON 1840)	EULALIA CALIFORNIENSIS (HARTMAN 19
	PLEIJEL 1993	BLAKE 1994 (as <i>E. bilineata</i>)
Median antenna	anterior to eyes	near posterior margin (ill: posterior to mid-line of eyes)
Segment 1	ill: clearly separate from prostomium	vaguely separate from prostomium
Tentacular cirri	seg. 1 - reaches seg. 2-3 (ill: length equal to prostomium length) seg. 2 - dorsal reaches seg. 4-5 seg. 2 - ventral shorter than segment width (ill: 1/2 length of dorsal) seg. 3 - dorsal reaches seg. 5-6	seg. 1 -barely 1/2 length of prostomium (ill: reaches seg. 2-3) seg. 2 - ill: dorsal reaches seg. 4-5 seg. 2 - ill: ventral subequal to dorsal length seg. 3 - ill: dorsal reaches seg. 5-6

Although the tentacular cirri appear to be the same length based on what segment they reach, measurement of the first six segments in the figures of Pleijel and Blake show that the length: width ratio for Pleijel's animal is 2.3:1 to 2.7:1, while that for Blake's is 4.3:1 to 5.3:1. The tentacular cirri of the european bilineata are twice as long as those of the Pacific species.

Setigerous lobe	rounded	weakly bilobed
Setal shaft tip	number of rather large teeth, decreasing in size proximally	2 elongate spines and numerous smaller spinelets
Ventral cirri	rounded, thick, slightly longer than setigerous lobe	similar to but smaller than dorsal cirri and more pointed
Pigmentation	preserved animals yellowish to dark brown; on each side a longitudinal dark greenish brown band, usually retained when preserve	light to dark tan, with dark dorsolateral pigmented areas along length of body, sometimes forming longitudinal lines; dorsomedial pigmented area at posterior margin of most segments (may) also be present; small pigment granules on antennae tentacular cirri, dorsal & ventral cirri

PIGMENTATION OF PHYLLODOCE MACULATA, MUCOSA, AND WILLIAMSI

Area	PHYLLODOCE MACULATA	PHYLLODOCE MUCOSA	PHYLLODOCE WILLIAMSI
Prostomium	none anterior to eyes; light lateral pigment may be present	darkly pigmented anterior to eyes; lateral not mentioned	slight to dark anterior to eyes; dark lateral pigment present
Segment 1	unpigmented	darkly pigmented (only seen ventrally)	darkly pigmented (seen only ventrally)
Segment 2	dorsally none or slightly near posterior border	unpigmented	dorsally none; dark bar ventrally
Segments 3 & 4	conspicuous dark bands	large dark intersegmental spots	conspicuous dark bands
Tentacular cirri	subdistal dark spots; cirrophores as for segments	subdistal spots not cited; cirrophores lightly	no subdistal spots; dark cirrophores all segments
Dorsum	dark spots centered on intersegmental areas on segment 5 and after	large dark intersegmental may coalesce posteriorly	dark spots centered on intersegmental areas on segment 5 and after
Dorso-laterally	running down body after seg. 5 (looks coalesced in figure)	running down body after seg. 5 (looks coalesced in figure)	distinct round spots centered on intersegmental areas in anterior; coalesce in median body
Dorsal cirri	dark spots in center	dark spots in center	dark spots in center
Cirrophores	dark after segment 5	dark after segment 5	dark
Ventrum	none mentioned	1(2) spots in segment center & at parapodia bases	very distinct: 2 rectangular spots in segment center; dark spots on parapodia bases, coalesce in posterior
Distribution	Scandinavia; North Sea; Greenland; Sea of Okhotsk; Sea of Japan	Scandinavia; British Isles; White Sea; France; Portugal	California & Puget Sound, WA

Information on *P. maculata* & *P. mucosa* taken from Pleijel 1993

STAINING PATTERNS OF SELECTED PRAXILLELLA SPECIES
 Leslie Harris, LACMNH-AHF, tel 213) 744-3234, fax 213) 746-2999

STAIN	AFFINIS modified rostrate uncini in setigers 1-3	GRACILIS distally bent acicular spines in setigers 1-3	PACIFICA distally bent acicular spines in setigers 1-3	PRAETERMISSA modified rostrate uncini in setigers 1-3	PRAETERMISSA VAR. MINOR same as praetermissa
SET. 1	band anterior to & around parapodia	band anterior to & around parapodia	band anterior to & around parapodia, occ. dark anterior rim	band anterior to & around parapodia	band anterior to & around parapodia
SET. 2	band anterior to & around parapodia	band anterior to & around parapodia	band anterior to & around parapodia, occ. dark anterior rim; OR solid	band anterior to & around parapodia	band anterior to & around parapodia
SET. 3	solid	band anterior to & around parapodia	band anterior to & around parapodia, occ. dark anterior rim OR solid	solid	solid
SET. 4	solid	solid	solid	band anterior to & around parapodia	band anterior to & around parapodia
SET. 5	solid	solid	solid	band anterior to & around parapodia	band anterior to & around parapodia
SET. 6	solid	solid	solid	band anterior to & around parapodia	band anterior to & around parapodia
SET. 7	solid	solid	solid	band anterior to & around parapodia	band anterior to & around parapodia
SET. 8	band anterior to & around parapodia	band anterior to & around parapodia	band anterior to & around parapodia	band anterior to & around parapodia	band anterior to & around parapodia
SET. 9	around setal fascicles	around setal fascicles	around setal fascicles	around setal fascicles	band anterior to & around parapodia

STAINING PATTERNS OF SELECTED PRAXILLELLA SPECIES
 Leslie Harris, LACMNH-AHF, tel 213) 744-3234, fax 213) 746-2999

STAIN	AFFINIS	GRACILIS	PACIFICA	PRAETERMISSA	PRAETERMISSA VAR. MINOR
SET. 10	around setal fascicles				
SET. 11	around setal fascicles				
SET. 12	around setal fascicles				
SET. 13	around setal fascicles				
SET. 14	around setal fascicles				
SET. 15	around setal fascicles				
SET. 16	around setal fascicles				
SET. 17	around setal fascicles				
SET. 18	around setal fascicles				
SET. 19	around setal fascicles				
PREA. 1	narrow band				
PREA. 2	narrow band				
PREA. 3	narrow band				
PREA. 4		narrow band	narrow band	narrow band	narrow band
PREA. 5			narrow band		

Key to selected *Pista* from Puget Sound

By Lawrence L. Lovell Revised 2/95

- 1 A. With 1 pair of branchiae ----- *Pista bansei*
- B. With 2 to 4 pairs of branchiae ----- 2

- 2 A. With 2 pairs of branchiae ----- 3
- B. With 3 or 4 pairs of branchiae ----- 4

- 3 A. With lappets on segments 1-6,
 lappets on segment 1 long ----- *Pista brevibranchiata*
- B. With lappets on segments 1-4,
 lappets on segment 1 short ----- *Pista wui*

- 4 A. Branchiae elongate, with large
 dorso-lateral lappets on segment 3 -- *Pista moorei*
- B. Branchiae not elongate, with large
 lateral lappets on segment 3, anterior
 dorsum inflated ----- "*Betapista*" *dekkeriae*

Selected *Pista* from Puget Sound

By Lawrence L. Lovell Revised 2/95

	no. branchial pairs	size and position of lappets for segments 1-6					
		seg. 1 (peristomial)	seg. 2	seg. 3	seg. 4	seg. 5	seg. 6
<i>Pista bansei</i> Safronova, 1988	1	absent	long ventro-lateral	short lateral	absent	absent	absent
<i>Pista brevibranchiata</i> Moore, 1923	2	long ventro-lateral	short ventral	long dorso-lateral	short ventral	short ventral	short ventral
<i>"Betapista" dekkeriae</i> Banse, 1980	3(?) or 4	long ventral	short ventral	long lateral	short ventral	short ventral	absent
<i>Pista moorei</i> Berkeley and Berkeley, 1942	3	long ventro-lateral	short ventral	long dorso-lateral	short ventral	absent	absent
<i>Pista wui</i> Safronova, 1988	2	short ventral	short ventro-lateral	long ventro-lateral	long ventro-lateral	absent	absent

Selected *Polycirrus* from Puget Sound

By Lawrence L. Lovell 1/95

	no. of thoracic setigers	notosetae plumose/ hirsute* (*one side)	dorsum rugose/smooth (macroscopically)	mid-ventral pads (+/-)	uncini start	pre/post setal lobes
<i>Polycirrus californicus</i> Moore, 1909	14-40+	hirsute	smooth	-	thor. 8-13	-/+
<i>Polycirrus</i> nr. <i>californicus</i>	20	hirsute	smooth	-	thor. 8	-/+
<i>Polycirrus</i> sp. I Banse, 1980	9-15	plumose, a few hirsute	smooth	-	abdom. 1-3	-/+
<i>Polycirrus</i> sp. II (lit) Banse, 1980	13	hirsute	?	?	abdom. 1	?/?
<i>Polycirrus</i> sp. III Banse, 1980	12	hirsute	rugose	+	abdom. 1	+/+
<i>Polycirrus</i> sp. IV Banse, 1980	20-24	hirsute	smooth	+	thor. 22-24	"dorsal"
<i>Polycirrus</i> sp. V Banse, 1980	12-13	hirsute	rugose	-	abdom. 1-3	-/-
<i>Polycirrus</i> sp. A Phillips	25-28	hirsute	smooth	-	thor. 6-7	-/+
<i>Polycirrus</i> sp. B Lovell	13	plumose	smooth	+	abdom. 1	-/+

Key to selected *Polycirrus* from Puget Sound

By Lawrence L. Lovell Revised 2/95

- 1 A. Thorax with 9-15 pairs of notosetae ----- 2
B. Thorax with 20 to 40+ pairs of notosetae (except juvenile *P. californicus*, which can have as few as 14) ----- 5
- 2 A. With plumose notosetae ----- 3
B. With hirsute notosetae (one side) ----- 4
- 3 A. With lateral peristomial appendages, post-setal lobes present in thorax ----- *Polycirrus* sp. B
B. Without lateral peristomial appendages ----- *Polycirrus* sp. I
- 4 A. Dorsum with methyl green staining bands; notopodia without lobes; tentacular lobe incised dorsally; ventral pad with lateral methyl green staining areas -- *Polycirrus* sp. V
B. Dorsum without m.g. staining bands; notopodia with pre and post-setal lobes; tentacular lobe entire dorsally - *Polycirrus* sp. III
- 5 A. Notopodial lobes with post-setal lobes, uncini begin anterior to setigers 6-13 ----- 6
B. Notopodial lobes with dorsal lobe cupping setal bundle, tapering ventrally, uncini begin setigers 22-24 -- *Polycirrus* sp. IV
- 6 A. Uncini begin setigers 6-7; dorsum reduced, notopodial lobes dorsally oriented; peristomial pad smooth ----- *Polycirrus* sp. A
B. Uncini begin setigers 8-13; dorsum not reduced, notopodial lobes oriented laterally; peristomial pad with folds ---- 7
- 7 A. Tentacular lobe well developed, projecting anteriorly -----
----- *Polycirrus californicus*
B. Tentacular lobe poorly developed, no anterior projection ----
----- *Polycirrus* nr. *californicus*

My work on *Polycirrus* from the Pacific Northeast is ongoing. Please communicate new information or problems with this key to me.

Selected *Terebellides* from Puget Sound

by Lawrence L. Lovell Revised 2/95

	notosetae setiger one	no. thoracic neurosetae	no. abdominal setigers
<i>Terebellides californica</i> Williams, 1984	prolonged	7-30 +	30-35
<i>Terebellides kobei</i> Hessle, 1917	prolonged ?	15-25	30-35
<i>Terebellides nr. lineata</i>	equal	10	30-35 (45+)
<i>Terebellides nr. horikoshii</i>	equal ?	40+	30-35
<i>Terebellides reishi</i> Williams, 1984	short	7-18	40-55
<i>Terebellides stroemi</i> Sars, 1835	equal	12-35	32-38
<i>Terebellides</i> sp. 1 Phillips	equal	10-15	30

This additional provisional species from southern California erected by Tony Phillips is included for SCAMIT use.

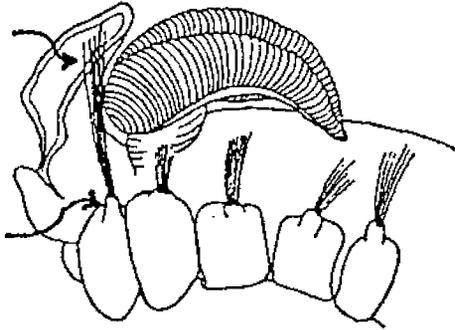
**SPECIES OF *TEREBELLIDES* (Polychaeta: Trichobranchidae)
FROM SOUTHERN CALIFORNIA**

Terebellides californica Williams 1983

Characters:

- Setiger 1 notopod prolonged
- Setiger 1 notosetae prolonged

Number of abdominal setigers = 30 - 35

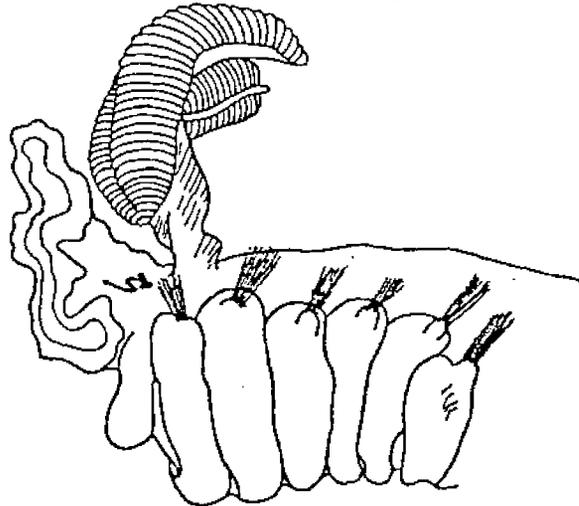


Terebellides sp. Type C Williams 1983

Characters:

- Setiger 1 notopod not produced
- Setiger 1 notosetae moderate (\leq setiger 2 notosetae)

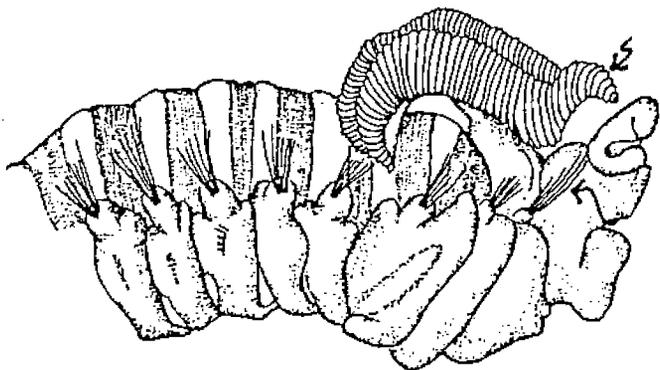
Number of abdominal setigers = 27- 31



Terebellides kobei Hessle 1917

Characters:

- Branchiae extended anteriorly
- Setiger 1 notopod slightly prolonged
- Setiger 1 notosetae moderate to slightly prolonged
- Setiger 3 with produced lobe ("lappet")
- Number of abdominal setigers = 30 - 35



Terebellides reishi Williams 1983

Characters:

- Setiger 1 notopod not produced
- Setiger 1 notosetae reduced
- Number of abdominal setigers = 40 - 55

No illustration available

References:

- Imajima, M. and S. J. Williams. 1985. Trichobranchidae (Polychaeta) chiefly from the Sagami and Suruga Bays, collected by R/V *Tansei-Maru* (Cruises KT-65_76). Bull. Natn. Sci. Mus., Tokyo, Ser. A, 11 (1), pp. 7-18.
- Williams, S. J. 1984. The status of *Terebellides stroemi* (Polychaeta; Trichobranchidae) as a cosmopolitan species, based on a worldwide morphological survey, including description of new species. Hutchings, P. A., ed. Proceedings of the First International Polychaete Conference, Sydney, Australia, 1984: 118-142.