Southern California Association of
Marine Invertebrate Taxonomists

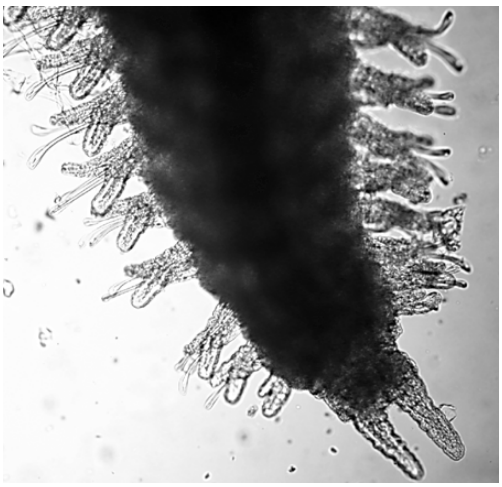
3720 Stephen White Drive
San Pedro, California 90731

July, 2001

SCAMIT Newsletter

Vol. 20, No. 3

SUBJECT:	Opisthobranchs
GUEST SPEAKER:	Dr. Angel Valdés
DATE:	5 Novmber 2001
TIME:	9:30 a.m. to 3:30 p. m.
LOCATION:	Times Mirror Room Los Angeles County Museum of Natural History



Scoletoma sp C - pygidium
Image by K. Barwick and L. Lovell

Dr. Valdés is the new curator of Mollusca at the museum, occupying the position left open by the retirement of Dr. Jim McLean. Jim is actually still in residence as Curator Emeritus and still maintains regular hours, but has retired (he says “no more meetings!!”). [Interestingly enough George Davis in Crustacea says that Jim now makes all the divisional meetings...it is so much nicer to do things you want, than to do things you have to...].

Dr. Valdés specializes on the opisthobranchs, a group which Jim did not (he used to call them worms, much to my discomfiture). He spent the last several years at the California Academy of Sciences under a PEET grant with Dr. Terry Gosliner. We hope to entice him to active engagement with SCAMIT, and should give him a warm welcome during this meeting. I am sure he would be delighted to view either specimens or photographs of opisthobranchs.

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

There was no meeting in July, so minutes are lacking here.

New Literature

New information in the continuing search for our roots was presented by Peterson & Eernisse (2001), using a blend of morphological and 18S rDNA data. They provide a concise statement of the competing arguments by various investigators on the origins of the Bilateria and the higher level relationships between animal phyla. Their analysis provides support for the Ecdyzoa hypothesis, and for the idea that arthropods and annelids are not closely related. Their data suggest arthropods are allied with other molting organisms among the ecdyzoan group, while the annelids join those with spiral cleavage. They view the Ctenophora as the valid sister group of the bilaterians. Of course this is not the last word, but this article does provide a useful point and we should tune in to the ongoing, competing arguments for an update.

Nemerteans have, and continue to be, a group where the lines of relatedness are tangled and knotted, providing plenty of room for controversy regarding relationships within the phylum. Härlin & Härlin (2001) revisit conclusions reached previously and add morphological data from several eureptant nemerteans not included in earlier analyses. They also cast their results in terms of phylogenetic taxonomic practice. As such it is difficult to relate their information to our more applied Linnaean binomial nomenclature. Their analysis is still of considerable interest, and when coupled with the zoogeographic analysis they provide, informative.

Vermeij (2001) combines a number of lines of evidence to trace the history of predatory gastropod mollusks which bear labral teeth. Working with organisms which leave hard-part evidence on their death, he can draw on an extensive fossil record of these animals. He identifies a variety of different types of labral tooth structure and finds evidence in the fossil record of multiple origin of these structures. He identifies at least 58 separate derivations of this character (labral armature) among the over 600 species in which it occurs. Over 250 of these species are alive today, while the remainder are extinct. They are not evenly distributed through the fossil record and the pattern is analyzed by the author. He also provides an appendix addressing each of the identified clades individually. A most interesting examination of a particular group of characters, their functional interpretation, and their evolutionary history.

The Doridoxidae are an odd group of deep-water opisthobranchs which are poorly represented by collected specimens (4 specimens in two species). Schrödl et al (2001) gather together the sparse information on the members of this family and reevaluate relationships both within the family and between it and other dorid families. Since doridoxids have characters which have placed them as intermediates between the anthobranchiate dorids and the cladohepatic opisthobranchs, this reevaluation of the available material forms the basis for a reconsideration of the basal relationships between these groups. Doridoxidae and Bathydorididae had long been united (following Odhner) on the basis of their jaw structure in the Gnathodoridacea. The reanalysis of the doridoxid material refutes this and leads to a new cladistic analysis of the dorids which separates these families. The Doridoxidae are, along with the cladohepatic opisthobranchs (tritoniids, dotoids, arminids, aeolids etc.), united into a new clade termed Dexiarchia. Bathydoridids are united with the holohepatic dorids. Any conclusions based on such scant material must remain provisional pending better and more abundant material, but these results provide an improved working hypothesis of the basal divisions in the opisthobranchs.

Thorson's rule is reexamined by Gallardo & Penchaszadeh (2001) using data from the southern hemisphere. They find, interestingly, that there is a pattern in where it appears to apply and where it does not. The "rule" states that the proportion of species with pelagic larva decreases with increasing latitude. The authors find that while the rule often holds, it can only do so where there is mixed substrate available. They found, for instance, that in the Western Atlantic where long stretches of uninterrupted soft bottom occur, Thorson's rule does not apply.

Members of the mytilid bivalve genus *Amygdalum* are reviewed world-wide by Oliver (2001) as part of a description of a new species from the Arabian Sea. He examines the relationship between these species and the presence of the oxygen minimum zone and concludes that their world-wide distribution does not support them as indicators of low oxygen environments. Illustrations of the shells of all known species in the genus, and of some other mytilids, are provided. The author retains *Amygdalum pallidulum* as a separate species from *A. politum* in this treatment without commenting particularly on this usage or the synonymy of the two in Coan, Valentich Scott, & Barnard (2000).

A new analytical method, molecular morphometrics, is introduced by Billoud et al (2000). They offer it as another tool in the assessment of phylogenetic relationships. They demonstrate the method in a consideration of cirriped phylogeny. The authors suggest that this method is particularly useful in areas where multiple alignments are unreliable because of excessive insertions and deletions. Rather than offer to facile a digestate of this, I suggest that interested parties seek out and read the paper.

Dreyer & Wägele (2001) examine the phylogenetic position of the family Bopyridae, a parasitic isopod, using both morphological and rDNA data. They conclude that Bopyridae and Cymothoidae are sister taxa, both derived from predatory/scavenging cirolanid-like ancestors. The use of the family Bopyridae herein to denote the Epicarida as a whole is weakened by the failure of the authors to include representatives of the other three families, Dajidae, Entoniscidae, and Liriopsidae included in the group in their analysis. They suggest, based on their analysis of the molecular data, that Bopyridae become a subfamily within Epicaridea, which is reduced to family status as Epicaridae, and placed with the Cymothoidae in the Flabellifera. This is at variance with other estimations of the placement of the group.

How communities and their constituent populations recover from environmental insult (usually resulting from anthropogenic pollutant disasters) is a subject of considerable interest to those who must deal with regulating man's activities in the biosphere. Poggiale and Dauvin (2001) examine three benthic *Ampelisca* populations in an area heavily impacted by the Amoco Cadiz oil spill. Based on their long-term monitoring of these populations and several environmental parameters, they propose a model which can be used to test predictions concerning recovery. The dominant feature of the early years of recovery was the lingering effect of the initial pollution incident. Two of the three populations did not begin to recur in the study area until more than 10 years after the initial spill. The third was present earlier at low density, and recovered to high density populations about the time that the other two species began to appear. Once this initial effect was surpassed, the model was dominated by the effects of competition between the species. While temperature was included, it only materially affected the seasonal cycling of population densities. Such detailed long-term examinations of individual infaunal species are rare, and although none of the three species involved occur in the Eastern Pacific, should be reviewed by all crustacean workers, if not all benthic ecologists.

One of the logical directions in which monitoring attention might be focused in the southern California Bight is the offshore portion of currently monitored shelf areas. It is traversed by anthropogenic materials deposited onto the shelf and into the waters above it. Gravity wins in the end and nearly all these materials find their final resting place in one of the deep basins which, together with the ridges, banks, and islands separating them, form the Southern California Borderland. Communities on the continental slope and its basins differ in some respects from those found in the relatively shallow waters of the continental shelf. Gage (2001), discusses some of these differences in a consideration of utilization of deep benthic communities in assessment of environmental impact in the North Atlantic, . We should consider the issues he raises as we contemplate inclusion of deep offshore stations into our next regional monitoring effort.

As we all know our sampling itself has an effect on the communities involved. Jennings et al (2001) have another go at consideration of how trawling affects the benthos over which the net passes in it's search for demersal fish and invertebrates. Their particular interest was the effect of trawling on benthic production processes. They found that in some cases production per unit biomass increased in areas of trawl disturbance. This might be anticipated as larger, longevous organisms are removed by trawls and replaced by new, small, opportunist invaders with short generation times. In the cases they cite, however, total production fell as the larger animals were removed, and at higher levels of disturbance even the effect of the opportunists was reduced.

Their data was obtained using commercial beam trawls rather than the smaller, experimental otter trawls used for local monitoring, but we might expect that the trends they observed would be echoed in areas affected even by our smaller gear.

Reefs are complex systems. Searching for a cause of change in the status of coral-reef habitats is a tricky proposition. The decline of coral reef health in the Caribbean has been attributed to many different causes such as: a severe coral bleaching episode (usually tied to elevation of sea-surface temperature), a die-off of the large sea urchin *Diadema antillarum*, over-fishing, increases in anchor-scaring of reefs, and nutrient enrichment of waters impinging on reefs by man (either as agricultural run-off from land use changes, or as a result of domestic waste introduction).

The most evident result of declining reef condition is the overgrowth, by algae, of the coral colonies which constitute much of the reef. Leafy and filamentous algae are always a constituent of reefs at some level, but when they begin to dominate in terms of areal coverage, a reef is definitely in trouble. Williams & Polunin (2001) suggest that there is no simple answer to who (or what) is responsible for reef decline. They examined a series of reefs in different areas and concluded that it is likely that all the physical and biological effects listed above do impact reefs to some extent, and that their synergism can produce major changes once thresholds of effect have been exceeded. The system seems to function much like that of the giant kelp beds in southern California where human impacts on a series of grazers, and predators of grazers, have broken down homoeostatic population feed-back loops and lead to instability in the system. The combination of reduced herbivory, (both in fish and in invertebrate grazers such as *Diadema*), when combined with physical damage and nutrient enrichment, has the potential to lead to algal overgrowth. We must be cautious, however, in pegging such reef degradation to a single cause. It is more likely a result of several, if not many, different changes based on the authors' findings. Modifying just one of the involved influences may not remedy the

degradation, or may change the reef in an unexpected (and possibly negative) way. More comprehensive examinations of the problem are clearly needed.

WSN MEETING

Member Sue Williams has offered to roll out the welcome mat for SCAMIT members attending the Western Society of Naturalists meeting in Ventura this November. She will welcome visits to her place (check with her first) and will point us to the best sights, the best restaurants, and the most interesting activities. We will see her at the meetings, so that is the best place to coordinate. Her phone number is listed on the SCAMIT membership list. Contact her to say hello or make arrangements.

ED. 4

As this NL goes to press the PDF version of Edition 4 of the SCAMIT Taxonomic Listing has appeared on the SCAMIT website. You can be the first one on your block to download this 196 page document, or (if you are a member) you can wait for one to two weeks for the hard-copy version to become available. If you are one of the many who have expressed a desire to have an electronic copy of the document, then the PDF you download and install on your hard drive will fit that bill. In addition to having an index, as does the hardcopy, the electronic version is searchable.

It is currently expected, barring unforseen difficulties in producing the paper copy, we will have the hard-copy available for distribution at the 5 November meeting. Remote members unable to attend will be mailed their copies. With an eye to conserving SCAMIT resources we will only mail copies out after we have determined that they cannot be reasonably distributed by hand.

It has taken a long time to produce this edition which incorporates all of the accepted changes resulting from the complete Taxonomic Atlas series, and from the Coan, Valentich Scott and Bernard bivalve monograph. Many thanks to all those members who assisted in its completion. Hope you find it as useful as the last. If you didn't quite get the voucher sheet done on a new provisional, there will be a fifth edition down the line, so work on those sheets! Non-members desiring a hard-copy will have to join to get one. There will be no distribution of bound copies other than to members. Non-members can, of course, avail themselves of the PDF. New members will receive their copy as they join.

SUPPORT YOUR LOCAL CODE

Every taxonomist knows that support for all aspects of taxonomy is either already dwindling or in jeopardy. Most of us tend to take the most basic aspects of our discipline for granted; the taxonomic code within which we operate and the organization supporting that code, the International Commission on Zoological Nomenclature (ICZN).

One of the major sources of income for the Commission and its operations is the American Association for Zoological Nomenclature. SCAMIT members might consider adding their bit to the struggle to keep the ICZN operating, interpreting the code, and rendering rulings. Membership in the AAZN provides just that. Member Tom Parker provided the following information on joining: "Membership in the American Association For Zoological Nomenclature is open to those interested in supporting taxonomy and the International Commission on Zoological Nomenclature (ICZN). ICZN publishes the taxonomic code (now in its new fourth edition) and sets the framework for zoological taxonomy to function.

AAZN dues are 20 dollars per year (10 dollars for students). AAZN distributes a brief newsletter, is about to post a web site, and is the 2nd largest financial supporter for the ICZN. Members receive discounts on the ICZN code and the other 4 publications of the ICZN. Send membership requests to:

David G. Smith
Treasurer, AAZN
MRC-159
National Museum of Natural History
Washington D.C. 20560-159"

MEIOFAUNAL FORUM

A new internet forum for consideration of all aspects of meiofauna has recently become available. Dr. Cassian Edwards of London University has launched this, and invites all interested parties to join in information exchange about this habitat and the organisms that occupy it. You will find the webpage at:

http://pub82.ezboard.com/
bthemeiofaunacommunity

There are some commercial banners on the page, I assume placed there by the ISP being used, but they are not overly intrusive. Once you exit the page there is a hidden pop-up urging you to gamble, but that disappears quietly when closed. So far there has not been much use of the forum. If the subject interests you, hop in and start a thread.

OLEG KUSSAKIN

Another of the towering figures of arthropod taxonomy has fallen. Dr. Oleg Kussakin, one of the top isopod taxonomists in the world, died August 21st of a spinal infection. In his 71 years Dr. Kussakin accomplished much, his magnum opus probably being the 5 volume treatment of the isopods of the North Pacific. The last volume of this was completed prior to his death and is currently being readied for publication in 2002. While he specialized in isopod taxonomy, his research covered a wider territory. We will continue to benefit from his work in the publications he left behind, but he will be missed. Those, like myself, who never met him in person have missed our chance.

PROPOSED CRUSTACEAN SERIES

Dr. Michel Hendrickx distributed the following on the CrustL list-server. I've reproduced it as he presented it, in the hopes that it may reach interested parties.

"The first issue of a series of volumes on marine crustaceans from the east Pacific is being prepared for publication in 2002 (before June). The book will follow the format of individual contributions (one or several authors) related to any aspect (biology, taxonomy, fishery ...) of benthic and pelagic crustaceans, including synthesis or review papers. Contributions in Spanish or English will be accepted. Each contribution will be reviewed by 1-2 referees to check for quality. However, the main objective of this series of books is to make available regional contributions as well as to rescue original and valuable information which has never been published in "tough" journals, like data in reports or a thesis. Hence, criteria for accepting contributions will be softer than in major journals although care will be taken to provide a top quality to format and edition; in particular, style and correct use of language will be strictly examined. More specific criteria regarding style and format will be available in September; format will be similar to the MUSORSTOM reports published by the Paris Museum. There will be a page charge of 15 US$ per page in order to pay part of the printing. Each issue will have 500 copies. Authors will be allowed to buy issues at cost and will receive 25 free reprints (extra reprints will be at cost). The editor will be Michel E. Hendrickx (Unidad Academica Mazatlan, UNAM, Mazatlan, Mexico) but an English co-editor will assist if necessary. With a view to evaluate the regional potential of such a series, please let me know of your interest to

contribute to the first issue (a volume will be published every year) before the 15 of September at one of the following e-mails:
michel@mar.icmyl.unam.mx
michel@ola.icmyl.unam.mx
Please include the following data:
Author(s)
Affiliation and institution address (mail and e-mail)
Titulo provisional de la contribucion.
Number of pages (aprox.) of contribution (MS, double space, including figures and tables)
Minimum and maximum dates for submitting the MS.
Availability of PC equipment to send and receive electronic files.
A second and final evaluation will be made in September 2001. At present 10 potential contributions are enlisted.
Michel E. HENDRICKX
Laboratorio de Invertebrados Bentonicos
Estacion Mazatlan, ICMyL UNAM
tel. 52 (6) 985-28-45,-46,-47,-48 Apartado Postal 811 fax. 52 (6) 982-61-33
Mazatlan, Sinaloa 82000 MEXICO

JOBS!!!

SCAMIT members who have stuck it out long enough to get a PhD are in the minority, but you are out there. The listing below was forwarded by Larry Lovell for those who qualify...
Invertebrate Zoologist, Georgia College & State University: The Department of Biological & Environmental Sciences of Georgia College & State University invites applications for a tenure-track appointment as Assistant or Associate Professor of Biology in the field of invertebrate zoology. The position entails teaching introductory biology, upper division and graduate (M.S.) courses in invertebrate zoology, and other subjects related to one's specialty. Tenure and promotion at GC&SU are based on effective teaching, scholarship in one's discipline, and university/community service. A Ph.D. in biology or zoology is required for appointment. Appointment rank and salary will be commensurate with qualifications and experience. Applications will be reviewed beginning in November 2001 and will continue until the position is filled. The starting date is August 2002.

THE DEPARTMENT. The Department of Biological & Environmental Sciences and the Dept. of Chemistry & Physics share a newly renovated building. Biological & Environmental Sciences offers a broad spectrum of courses in all branches of biology as well as geology and paleontology, and grants degrees at the B.S. and M.S. level. There are presently 14 faculty members, and 4 more to be added in fall 2002. The department enrolls about 215 undergraduate biology majors and 30 graduate students. The department is especially strong in field biology, evolutionary biology, and paleontology. For further information see

www.gcsu.edu.acad_affairs/coll_artsci/bioenv.sci/

THE UNIVERSITY. Georgia College & State University is Georgia's designated public liberal arts university (a COPLAC institution), with a strong commitment to student-centered education in a residential setting. The faculty, staff, and students of the university value and encourage high academic standards; lifelong learning; critical, independent and creative thinking; strong verbal and written communication skills; an appreciation of culture; and a global perspective. The university has an enrollment of approximately 5,200 students with a full range of student activities and athletic programs. The university is located in Milledgeville, Georgia, a community of 38,000 within easy reach of Atlanta, Macon, and Athens. Nearby Lakes Oconee and Sinclair provide many public recreational opportunities. GC&SU is an Equal Opportunity/Affirmative Action institution of the University System of Georgia.

APPLICATION PROCEDURE. Preliminary inquiries may be sent to the search committee chair at ksaladin@mail.gcsu.edu. Formal applications must be submitted by mail. Send a letter of application, curriculum vitae, copies of transcripts for all earned degrees, and the names, addresses, and telephone numbers of three references to the search committee chair below.
Official transcripts will be required only of candidates selected for interviews.
Kenneth S. Saladin, Ph.D.

Invertebrate Zoology Search Committee
Dept. of Biological & Environmental Sciences, Box 81
Georgia College & State University
Milledgeville, GA 31061-0490

VOUCHER SHEETS!

Attached the reader will find Provisional Voucher Sheets on Lumbrinerids provided by member Larry Lovell.

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

SCAMIT OFFICERS:

If you need any other information concerning SCAMIT please feel free to contact any of the officers e-mail address

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Treasurer	Ann Dalkey	(310)648-5544	cam@san.ci.la.ca.us

Back issues of the newsletter are available. Prices are as follows:

Volumes 1 - 4 (compilation)..... $ 30.00
Volumes 5 - 7 (compilation)..... $ 15.00
Volumes 8 - 15 ..... $ 20.00/vol.

Single back issues are also available at cost.

SCAMIT Provisional Species Voucher Sheet

PROVISIONAL NAME: *Lumbrineris* sp. E
TAXON: Annelida, Eunicida, Lumbrineridae

SCAMIT CODE: none

DATE EXAMINED: 12 March 2001
VOUCHER BY: Larry Lovell & Kelvin Barwick

SYNONYMY: *Lumbrineris* nr. *limicola* (used during SCAMIT meeting presentation 12 March 2001)

DIAGNOSTIC CHARACTERS:

1. Composite hooded hooks present, begin setiger 1.
2. Yellow acicula.
3. Median parapodia with pre- and post-setal lobes, pre-setal lobes shorter than setae, post-setal lobes equal to length of setae. (See Fig. 1)
4. Posterior parapodia with pre-setal lobes absent, post-setal lobes rounded at tip, shorter than length of setae. (See Fig. 2)

RELATED SPECIES AND CHARACTER DIFFERENCES:

1. *Lumbrineris cruzensis*: pre- and post-setal lobes prolonged in median and posterior segments.
2. *Lumbrineris latreilli*: pre-setal lobes absent and post-setal lobes short, blunt with rounded lobe in median segments.
3. *Lumbrineris limicola*: post-setal lobes in posterior segments prolonged extending beyond the length of the setae.

DEPTH RANGE: 44-80 m (sediment: 10 – 36% fine sand)

DISTRIBUTION: Northern Channel Islands.

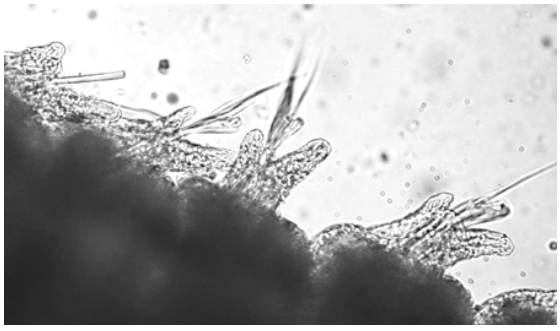

Figure 1. Anterior segments.

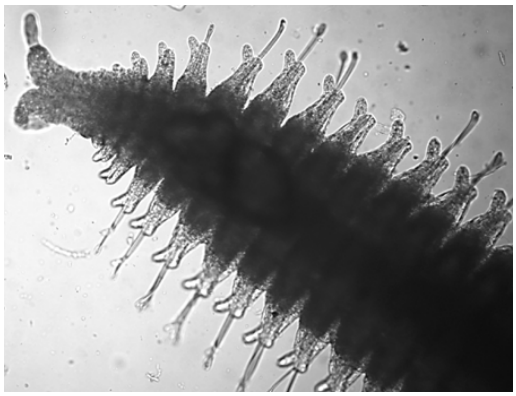

Figure 2. Posterior segments.

SCAMIT Provisional Species Voucher Sheet

PROVISIONAL NAME: *Scoletoma* sp. A
TAXON: Annelida, Eunicida, Lumbrineridae

SCAMIT CODE: none

DATE EXAMINED: 12 March 2001
VOUCHER BY: Larry Lovell & Kelvin Barwick

SYNONYMY: *Lumbrineris* sp. A of Harris 1985

DIAGNOSTIC CHARACTERS:

1. Slender body with pointed prostomium, with sensory tip. (See Fig. 1)
2. Simple, multidentate hooks begin setigers 4-9, usually 6-8.
3. Acicula yellow.
4. Parapodia with only post-setal lobes prolonged in posterior segments. Post-setal lobes extend beyond setae. (See Figs. 2 & 3)

RELATED SPECIES AND CHARACTER DIFFERENCES:

1. *Scoletoma luti*: simple, multidentate hooks begin on setiger 1; posterior segments with prolonged post-setal lobes equal to length of setae.
2. *Scoletoma tetraura*: simple, multidentate hooks begin on setiger 1; post-setal lobes slightly prolonged, digitate pointed upward, body robust.
3. *Scoletoma* sp. B: posterior segments with prolonged pre- and post-setal lobes, pre- equal to the length of setae, post- extend beyond setae.
4. *Scoletoma* sp. C: prostomium without sensory tip; simple, multidentate hooks begin on setiger 1; posterior segments with prolonged pre- and post-setal lobes shorter than setae.
5. *Scoletoma minima*: simple, multidentate hooks begin on setiger 13 or later. Note: *Lumbrineris* sp. C of Harris 1985 was erected from paratype material of *S. minima* based on the difference in where the hooks start. The validity of *S. minima* has not been verified with non-holotype material.

DEPTH RANGE: 3-30 m

DISTRIBUTION: Southern California bays, harbors, coastal areas in fine, muddy sediments.

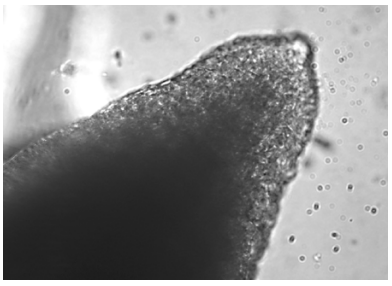

Figure 1. Prostomium.

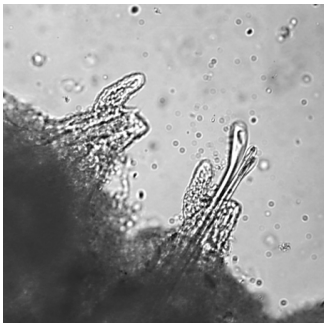

Figure 2. Median segments.

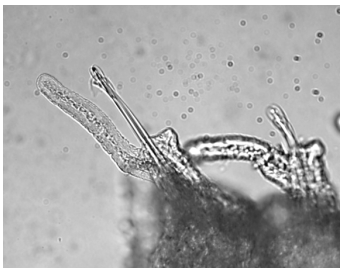

Figure 3. Posterior segments.

SCAMIT Provisional Species Voucher Sheet

PROVISIONAL NAME: *Scoletoma* sp. B
TAXON: Annelida, Eunicida, Lumbrineridae

SCAMIT CODE: none

DATE EXAMINED: 12 March 2001
VOUCHER BY: Larry Lovell & Kelvin Barwick

SYNONYMY: *Lumbrineris* sp. B of Harris 1985

DIAGNOSTIC CHARACTERS:

1. Slender body with pointed prostomium, with sensory tip. (See Fig. 1)
2. Simple, multidentate hooks begin setigers 4-9, usually 6-8.
3. Acicula yellow.
4. Parapodia develop prolonged pre- and post-setal lobes in median and posterior segments. Pre-setal lobes equal length of the setae, post-setal lobes extend beyond the length of the setae. (See Figs. 2 & 3)

RELATED SPECIES AND CHARACTER DIFFERENCES:

1. *Scoletoma luti*: simple, multidentate hooks begin on setiger 1; prolonged post-setal lobes in posterior segments equal to the length of the setae.
2. *Scoletoma tetraura*: simple, multidentate hooks begin on setiger 1; post-setal lobes slightly prolonged, digitate pointed upward, body robust.
3. *Scoletoma* sp. A: posterior segments with only post-setal lobes prolonged, extending beyond the length of the setae.
4. *Scoletoma* sp. C: prostomium without sensory tip; simple, multidentate hooks begin on setiger 1; posterior segments with prolonged pre- and post-setal lobes, both shorter than the length of the setae.
5. *Scoletoma minima*: simple, multidentate hooks begin on setiger 13 or later. Note: *Lumbrineris* sp. C of Harris 1985 was erected from paratype material of *S. minima* based on the difference in where the hooks start. The validity of *S. minima* has not been verified with additional non-holotype material.

DEPTH RANGE: 3-30 m

DISTRIBUTION: Southern California bays, harbors, coastal areas in fine, muddy sediments.

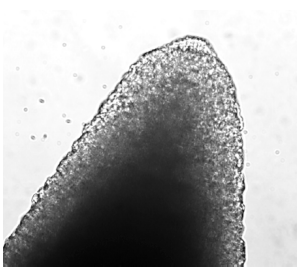

Figure 1. Prostomium.

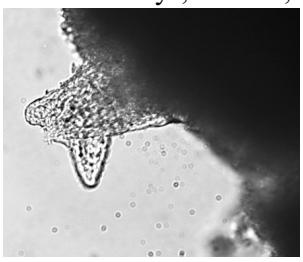

Figure 2. Median Segments.

Figure 3. Posterior Segments.

SCAMIT Provisional Species Voucher Sheet

PROVISIONAL NAME: *Scoletoma* sp. C
TAXON: Annelida, Eunicida, Lumbrineridae

SCAMIT CODE: none

DATE EXAMINED: 12 March 2001
VOUCHER BY: Larry Lovell & Kelvin Barwick

SYNONYMY: *Lumbrineris* sp. C of Harris 1985

DIAGNOSTIC CHARACTERS:

1. Slender body with rounded prostomium, without sensory tip. (See Fig. 1)
2. Simple, multidentate hooks begin setiger 1.
3. Acicula yellow.
4. Parapodia develop prolonged pre- and post-setal lobes in posterior segments. Pre- and post-setal lobes equal to length of setae. (See Fig. 2)

RELATED SPECIES AND CHARACTER DIFFERENCES:

1. *Scoletoma luti*: simple, multidentate hooks begin on setiger 1; posterior segments with prolonged post-setal lobes extending beyond the setae.
2. *Scoletoma tetraura*: simple, multidentate hooks begin on setiger 1; post-setal lobes slightly prolonged, digitate pointed upward, body robust.
3. *Scoletoma* sp. A: prostomium pointed with sensory tip; simple, multidentate hooks begin on setiger 4-9; posterior segments with prolonged post-setal lobes extending beyond the setae.
4. *Scoletoma* sp. B: posterior segments with prolonged pre- and post-setal lobes, pre- equal to length of setae, post- extend beyond the setae.
5. *Scoletoma minima*: simple, multidentate hooks begin on setiger 13 or later. Note: *Lumbrineris* sp. C of Harris 1985 was erected from paratype material of *S. minima* based on the difference in where the hooks start. The validity of *S. minima* has not been verified with additional non-holotype material.

DEPTH RANGE: 3-6 m

DISTRIBUTION: Southern California bays and harbors in fine, muddy sediments.

Figure 1. Prostomium.

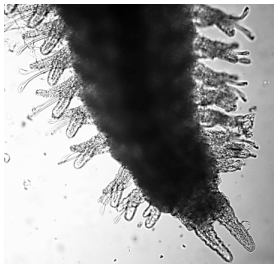

Figure 2. Posterior segments.