Next Meeting: February 10, 1986
Specimen Exchange Group: Ampeliscidae
Topic Taxonomic Group: Cumacea

MINUTES FROM: January 13, 1986

Guest Speaker, Dr. Richard Brusca, delivered an excellent introductory lecture on cladistic analysis and its use in the determination of phylogenetic relationships. During this presentation, Dr. Brusca handed out several packets of figures that were useful for understanding cladistics. The annotated bibliography from those handouts is included in this newsletter. SCAMIT has produced a videotape of this lecture; which is available for those who were unable to attend the meeting or wish to review the lecture. If you are interested in using the videotape, or receiving the lecture handouts, please contact the SCAMIT Treasurer, Ann Martin at Hyperion (213) 322-3131 X 317.

The annual meeting of the Southern California Academy of Sciences will be held at California State University, San Bernardino on May 2-3, 1986. A contributed papers session for marine invertebrate taxonomy is being hosted by SCAMIT. SCAMIT members are encouraged to participate in this session. This is a chance for each of you to present your work to the scientific community. Abstracts are due by the first of March. Refer to the enclosed flier for details on how to participate.

SCAMIT nominations for officers during 1986-1987 are to be held in March. Please attend the meeting to make your nominations, or submit them by mail to the SCAMIT Secretary.

Request for Comments. Dave Montagne is looking for ideas for the Systematic Catalogue of Southern California Invertebrates. He has written down several points for consideration that are enclosed in this newsletter. Read it over and send your comments to Dave.

Funds for the publication provided in part by Chevron U.S.A. Inc., Area Foundation, and Texaco, Inc.
SCAMIT Agenda, February 1986 to February 1987

Feb exchange / March topic  Ampeliscidae
March exchange / April topic  Sabellidae
April exchange / May topic  Serpulidae, Spirorbidae
May exchange / June topic  Pectinidae, Cardiidae
June exchange / July topic  Isaeidae (Corophiidae)
July exchange / Aug topic  Oxyrhyncha
Aug exchange / Sept topic  Ascidiacea
Sept exchange / Oct topic  Aphroditidae, Sigalionidae
Oct exchange / Nov topic  Polynoidae
Nov exchange / Dec topic  Bryozoa
Dec exchange / Jan topic  Asellota Isopoda
Jan exchange / Feb topic  Porifera


List of specimens from January 13, 1986

A 31 page hand-out on Oligochaeta was distributed at the meeting. For a copy of this handout please contact Tom Parker at L.A. County Sanitation Districts, 24501 Figueroa St., Carson, CA 90745, (213) 830-2400 X394.

<table>
<thead>
<tr>
<th>Code</th>
<th>Species</th>
<th>Author(s), Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYP 51</td>
<td>Tectidrilus diversus</td>
<td>Erseus, 1982</td>
</tr>
<tr>
<td>LACO 65</td>
<td><em>Limnodriloides barnardi</em></td>
<td>Cook, 1974</td>
</tr>
<tr>
<td>LACO 66</td>
<td>Tectidrilus diversus</td>
<td>Erseus, 1982</td>
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<tr>
<td>MBC 39</td>
<td>Tectidrilus diversus</td>
<td>Ersues, 1982</td>
</tr>
<tr>
<td>MCB 40</td>
<td><em>Tubificoides coatesae</em></td>
<td>Brinkhurst and Baker, 1979</td>
</tr>
</tbody>
</table>

(This ID is tentative; the voucher sheet will be issued following confirmation of ID).
Dear Frieda and Chauncey: Sweden is as beautiful as it is reputed to be, and at present its tranquility is a source of real comfort. No predictions can be made as to general European conditions, but I rather expect that unless things clear up within 1½ months, that I may seek passage to U.S.A. by November. Regulations of foreigners in any European country have become very strict since the declaration of open belligerency.

Greetings and best wishes to you both.

Dear Albert: X marks the spot, (on P.C., a picture of the city library and children's wading pool, on one side, a row of apartments), of my two windows that look out on a beautiful park. Your letters have been arriving, for which I thank you warmly. There is no American Express in Stockholm, so use either the Naturhistoriska Riksmuseum, or the above house address. The 4re refers to floor number.

There is so much to learn here, and to see, and time is all too brief. My plans may need revamping before long. The European situation is not too promising, but no one knows.
SCAMIT SYSTEMATIC CATALOGUE OF SOUTHERN CALIFORNIA INVERTEBRATES

A Request For Comments

SCAMIT is considering the production of a systematic catalogue of marine invertebrates from Southern California. It is intended that such a catalogue be of use primarily to biologists carrying out, or interested in, faunal surveys of the region. It is also intended that the catalogue be maintained as a "living" document after its initial publication so that subsequent editions can be published at appropriate intervals.

Beyond these statements there are many decisions that must be made regarding the catalogue. Members are requested to provide comments on the following issues and make any suggestions that are not considered here. The resulting comments will aid in the development of the scope and format of the catalogue. Once that is accomplished, a plan of action can be drawn up for compilation and production.

Remember when considering these issues and what you would like to see in the catalogue that the real work of compiling the information will fall on the shoulders of individual SCAMIT members, perhaps including yourself; it is important that the catalogue be both useful in its scope and content, and be within our organization's ability to produce.

1. What should be the geographic and bathymetric limits of coverage? Straughan & Klink 1980 covered Pt. Conception to the Mexican Border and excluded "deep water species"; the actual limits were determined by the individual contributors. It would be perhaps more useful to strictly delimit the scope so that all groups are treated equally in this regard.

2. Should the catalogue be limited to benthic and epibenthic species, or should planktonic species be included? Should intertidal organisms be included?

3. What shall constitute a valid record of the occurrence of a species? Shall published records be the only acceptable source? Do the unpublished reports from various monitoring studies constitute valid records?

4. What groups, if any should be excluded from consideration? Should groups comprised of usually small animals, such as the Nematoda or Oligochaeta be excluded. What about obscure taxa (e.g. Kinorhyncha)

5. It has been suggested that the entire systematic composition of a phyla on a worldwide basis be listed down to a suprageneric level (perhaps the familial level) without
local representatives being noted as extra-limital, freshwater, terrestrial, etc.

6. How extensive should the synonomy be? Should the list be confined to the most common synonyms or should an attempt be made to be exhaustive?

7. How should provisional species be treated? It would seem valuable for the user of this catalogue to be aware that a considerable portion of the S. Calif fauna is undescribed. It has been suggested that for each group in the catalogue an addendum be provided that lists by genus (or appropriate taxon) the number of provisional species recognized in the region.

8. Should the listing be annotated? If so, what kind of information should be considered for inclusion in the annotations?

9. Should an index be provided? If so, should it be an index to all taxa, genera only, genera and above, etc.?

10. Should a bibliography be included? If so, how extensive should it be? How should it be limited?

11. What format should be used for the systematic listing? It has been suggested that an indented format with all suprageneric taxa explicitly identified (similar to Keen & Coan 1974) be adopted.

12. Are you willing to participate in the compilation of the catalogue?

Please forward your response to:

Dave Montagne
Marine Biology Laboratory
County Sanitation Districts of Los Angeles County
24501 S. Figueroa St.
Carson, CA 90745
(213) 775-2353 EXT. 396
TWO FULL DAYS of symposia and contributed-paper sessions! Professional and student papers, in all branches of the natural and social sciences, are solicited for presentation. Abstracts of the papers to be presented are due to the Program Chairman by March 1.

AWARDS OF $100.00 EACH FOR THE BEST STUDENT PAPERS IN THE SUBJECT AREAS OF: PLANT ECOLOGY · DESERT ECOLOGY · BOTANY · ENVIRONMENTAL SCIENCE · VERTEBRATE ZOOLOGY · AND SCAS OPEN CATEGORIES TO BE DETERMINED.

(Nota: Student papers qualifying for the awards must have only one author. Co-authored papers are welcomed for presentation on the program, but only single-authored papers will be judged.)

ABSTRACTS – DUE MARCH 1, 1986

For the format of your abstract, see other side. Some sections have earlier deadlines, but all are due by March 1 to the Program Chairman, Southern California Academy of Sciences, 900 Exposition Blvd., Los Angeles, CA 90007. Tel: (213) 744-3384.
SAMPLE ABSTRACT

So that your abstract can be reproduced photographically exactly as you send it in, please follow this form: typing within 6" x 4" space on white bond paper. (You may outline the form in light blue pencil or nonreproducible ink, or simply measure the space on another sheet and use that as backing.) Use a good typewriter, 12-pitch type, with carbon ribbon in good condition.

<table>
<thead>
<tr>
<th>Title of Your Paper (Capital and lower case letters, except where capitals are standard. Underscore the title.)</th>
</tr>
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<tbody>
<tr>
<td>J. S. AUTHOR, Affiliation, City, State, Zip. (Your name in caps, affiliation and address in caps and lower case.)</td>
</tr>
<tr>
<td>SECOND AUTHOR (if any), follow same style.</td>
</tr>
</tbody>
</table>

Drop down two lines (from whatever is your last line above) and type your abstract, keeping it to 150 words if possible, but no more than the maximum length indicated below:*

* If needed, neatly drawn-in symbols or Greek letters are acceptable, but use India ink. Remember that your abstract is to be reproduced photographically from the copy that you send in, so be sure it is both accurate and neat. And when you have finished, mail it flat to the address indicated below for your section. As you see, some sections will be putting their programs together as units and require an earlier deadline. These and all others are, for program-printing purposes, due by March 1st.

*(If needed, abstract may run to this line but please, no further!)

Along with your abstract, please submit—on a 3" x 5" file card—the following:
1. Your name, affiliation, mailing address, and your telephone number.
2. Whether student or professional.
3. Title of your paper.
4. The section in which you wish to present it (the subject field).
5. The time required (maximally, 20 minutes).
6. Audio-visual equipment needed, if any.

PLEASE SUBMIT AS FOLLOWS:

BY FEBRUARY 21

SCOSC — to Southern California Ocean Studies Consortium, PH1-217, California State University, Long Beach, CA 90840. Attn: Dee Dee Rypka.

ACS ---- to Diana McIntyre, American Cetacean Society, PO Box 2639, San Pedro, CA 90731.

SCAS Folklore Section — to Robin Evanchuk, Folklore & Mythology Program, 1041 GSM, University of California, Los Angeles, CA 90024.

BY MARCH 1 — THESE AND ALL OTHERS DIRECTLY TO: Program Chairman, Southern California Academy of Sciences, 900 Exposition Blvd., Los Angeles, CA 90007.
SOME IMPORTANT REFERENCES ON
CLADISTIC PHILOSOPHY AND METHODOLOGY

General Texts


Important Papers

Over the past 10 years the primary literature has produced hundreds of original studies on cladistic methodology. This is a list of some that I personally feel are of broad general significance. The main sources are Syst. Zool., Taxon, Ann. Rev. Ecol. System., Cladistics [a new journal that began in 1985], Evolution, Z. Zool. Syst. Evolutionforsch (J. Syst. Zool. & Evol. Res.), and Evol. Biol.


Thysanocardia nigra (Ikeda, 1904)  
Golfingiidae

SCAMIT Code:  HYP50  SCCWRP64
Date Examined:  Dec. 5, 1985
Voucher by: Bruce Thompson, SCCWRP

SYNONOMY:  
Phascolosoma nigrum  Ikeda, 1904
P. onagawa  Sato, 1937
P. pavlenkoi  Ostroumov, 1909
Golfingia pugettensis  Fisher, 1952
P. zenibakense  Ikeda, 1924
P. hozawai  Sato, 1937
G. macginitiei  Fisher, 1952
P. hyugensis  Sato, 1934

LITERATURE:  See Gibbs, Cutler, Cutler, 1983 for complete
synonomy and additional references.

DIAGNOSTIC CHARACTERS:

1. 1 pair of nephridia.
2. 2 retractor muscles, spindle muscle not attached posteriorly.
3. Introvert larger than trunk, without hooks.
4. Tentacles arranged in longitudinal rows (festooned).
5. Contractile vessel with short villi.

DISTRIBUTION:  North Pacific, Philippines to California; Singapore;
In southern California; soft bottom habitats, 30-150 m.
Listriolobus pelodes (Fisher, 1946)  
Echiuridae

SCAMIT Code: SCCWRP 66  
Date Examined: Dec. 4, 1985  
Voucher by: Bruce Thompson, SCCWRP

SYNONONY: None

LITERATURE: Fisher, 1946  

DIAGNOSTIC CHARACTERS:

1. 8 longitudinal muscle bands in body wall (may be absent in juveniles); oblique muscles not grouped into fascicles.

2. 2 pairs of nephridia with spirally coiled lips.

DISTRIBUTION: California to Baja, California; 30-200 m.
4. *Listriolobus pelodes*, anal vesicles and rectum, internal view of nephridial region, proboscis and whole organism. 

**Golfingia misakiana**  (Ikeda, 1904)
Golfingiidae

**SCAMIT Code:** LACO 64
**SCCWRP65**
**Date Examined:** Dec. 5, 1985
**Voucher by:** Bruce Thompson, SCCWRP

**SYNONOMY:**
- *Phascolosoma hespera*  Chamberlain, 1920
- *Golfingia hespera*  Fisher, 1952

**LITERATURE:**

**DIAGNOSTIC CHARACTERS:**

1. 2 pairs of retractors.
2. 2 bilobed nephridia.
3. Introvert 10-12 times trunk length.
4. Tentacles, hooks and papillae present on introvert.

**DISTRIBUTION:** Cosmopolitan
1. *Golfingia misakiana*; introvert hook, whole organism and internal anatomy. n=nephridia, a=anus, g=gut fastening muscle (from Stephen and Edmonds, 1972).
Onchnesoma sp. A  
Golfingiidae

Onchnesoma sp. A
Golfingiidae

Provisional, B. Thompson  
SCCWRP

SCAMIT Code: PL63  
Date Examined: Dec. 4, 1985
Voucher by: Bruce Thompson, SCCWRP

SYNONOMY: None


DIAGNOSTIC CHARACTERS:

1. Single retractor muscle originates at posterior end.
2. Single nephridium.
3. Anus terminates on introvert.
4. Often found in empty Gastropod shells.

DISTRIBUTION: Central and southern California, 50-500 m.
3. *Onchnesoma* sp A. Whole organism showing internal anatomy. 
   *r*=rectal caecum.
This small phylum of marine protostomes is well represented in southern California waters. The only previous reports of the echiurans of this area are those of Fisher (1946, 1948, 1949); he recorded 7 species. Recent large scale surveys of the benthos of the entire southern California borderland have collected many additional taxa. The following is a complete listing of all echiurans previously reported in the literature or seen in collections examined from southern California. It includes species from benthic habitats ranging from intertidal to bathyal depths.

Collections examined include those from the Allan Hancock Foundation, Scripps Institution of Oceanography, and the Santa Barbara Museum of Natural History. The list is probably still incomplete. Several single "specimens of interest" have been examined and may represent 1 to 3 additional genera.

The classification used is the one proposed by Fisher (1946) and adopted by Stephen and Edmonds (1972).

Echiura Stephen, 1965
Echiuroidea Newby, 1940
Echiuroinea Bock, 1942
Bonelliidae Baird, 1868
Nellobia Fisher, 1946
Nellobia eusoma Fisher, 1946
Prometor Fisher, 1948  
Prometor bentophila Hartman & Barnard, 1960  
Prometor pocula Fisher, 1948

Echiuridae de Blainville, 1827  
Arhynchite Sato, 1937  
Arhynchite californicus Fisher, 1949  
Listriolobus Spengel, 1912  
Listriolobus hexamgotus Fisher, 1949  
Listriolobus pelodes Fisher, 1946  
Ochetostoma Leuckart & Ruppell, 1828  
Ochetostoma octomyotum Fisher, 1946

Xenopneusta Fisher, 1946

Urechidae Fisher & MacGinitie, 1928  
Urechis Seitz, 1907  
Urechis caupo Fisher & MacGinitie, 1928

REFERENCES


Generalized diagram of echiuran anatomy, dorsal view (after Stephen and Edmonds, 1972). Characters typical of Bonelliiidae are on the right side, those typical of Echiuridae on the left side.
REFERENCES (Cont'd.)

A KEY TO THE ECHIURA
OF SOUTHERN CALIFORNIA

1. Circlet of setae on the posterior end of body; open vascular system. Order Xenopneusta, Urechis caupic
   - No posterior setae; closed vascular system. Order Echiuroinea.2

2. Proboscis bifid, cylindrical, or triangular; sexually dimorphic, males parasitic on females; nephridia 1 or 2; ventral setae may be absent; anal vesiicles branched. Family Bonellidae.................................3
   - Proboscis furrowed; no sexual dimorphism; nephridia paired; ventral setae present; anal vesiicles sac-like. Family Echiuridae...................................................9

3. Posterior end expanded into a mushroom shape.........................4
   - Posterior end without such an expansion..........................5

4. Anus terminal; tongue-like structure surrounds anus and is directed along the ventral line to the end of the expansion. Bonellidae, Genus E
   - Anus situated near posterior end on the mid-ventral line; no tongue-like structure surrounding anus.....Bonellidae, Genus C

5. Proboscis bifid; no ventral setae; single external nephridiopore. Nellobia eusoma
   - Proboscis cylindrical or triangular; paired ventral setae and nephridia.....................................................6

6. Collar surrounding the base of the proboscis; anal vesiicles sac-like with numerous ciliated funnels inset............7
   - No collar at base of proboscis; anal vesiicles with bud-like branches from main sac.................... Bonellidae, Genus F

7. Collar with 14 lobes; nephrostomes distal.....Bonellidae, Genus F
   - Collar cup-like; nephrostomes basal...............Prometor sp........8

8. Proboscis triangular; tips of setae spatulate; nephridia oval sacs........................................Prometor pocul
   - Proboscis cylindrical; tips of setae tapering; nephridia elongate..............................Prometor benthophil
9. Longitudinal musculature of body wall grouped into distinct bands; nephrostome lips elongate..........................10
   - No longitudinal muscle bands; nephrostomal lips expanded into a leaf-like structure with sculptured border. *Arhynchite californicus*

10. Inner oblique muscle layer fasciculated between longitudinal muscle bands; interbasal muscle absent...........*Ochetostoma octomyotum*
   - Oblique muscle layer not fasciculated; interbasal muscle present..........................*Listriolobus sp.*.......11

11. 6 longitudinal muscle bands; 2 nephridia...*Listriolobus hexamyotus*
   - 8 longitudinal muscle bands; 4 nephridia.....*Listriolobus pelodes*
The sipunculan fauna of southern California is poorly known. The first report was that of Chamberlain (1918). Fisher's (1950a,b, 1952) work provides the only major reference for this group. He erected subgenera for the genus Golfingia and described nearly all of the intertidal sipunculans, but only a few of the species from offshore. Recently however, several large scale surveys of the intertidal and benthic habitats of the entire southern California borderland have collected many species not reported from this area, including several apparently new taxa. This listing includes all previously reported sipunculans and also includes species seen in collections from southern California. It includes species from intertidal to bathyal habitats.

The classification used is based upon the families of Stephen and Edmonds (1972), and the subgenera of Fisher (1952), as revised by Stephen and Edmonds (1972), Cutler and Murina (1977), and Cutler (1979).

Sipuncula Stephen, 1965
Sipunculoidea Sedgwick, 1898
Sipunculida Pickford, 1947

Sipunculidae Baird, 1868
Siphonosoma Spengel, 1912
Siphonosoma (Siphonosoma) Fisher, 1950
Siphonosoma (Siphonosoma) ingens Fisher, 1950
Sipunculus Linnaeus, 1766
Sipunculus nudus Linnaeus, 1766
Golfingiidae Stephen & Edmonds, 1972
Golfingia Lankester, 1885
Golfingia (Apionsoma) Sluiter, 1902, sensu Cutler
Golfingia (Apionsoma) capitata (Gerould, 1913)
   Fisherana capitata (Gerould), 1913
Golfingia (Apionsoma) misakiana (Ikeda, 1904)
   Golfingia hespera (Chamberlain, 1919)
Golfingia (Apionsoma) trichocephala (Sluiter, 1902)
Golfingia (Golfingia) Fisher, 1950
Golfingia (Golfingia) margaritacea (Sars, 1851)
Golfingia (Nephasoma) Pergament, 1940
Golfingia (Nephasoma) eremita (Sars, 1851)
Golfingia (Nephasoma) laetmophilia Fisher, 1952
Golfingia (Nephasoma) minuta (Keferstein, 1863)
Golfingia (Nephasoma) nicoli Thompson (1980)
Golfingia (Nephasoma) pellucida (Keferstein, 1865)
Golfingia (Thysanocardia) Fisher, 1950
   Golfingia (Thysanocardia) catharinae (Grube, 1868)
   Golfingia procer (Mobius, 1875)
   Golfingia macginitiei Fisher, 1952
Onchnesoma Koren and Danielssen, 1875
Themiste Gray, 1828
   Themiste dyscrita (Fisher, 1952)
   Themiste perimeces (Fisher, 1928)
   Themiste pyroides (Chamberlain, 1919)
   Themiste zostericola (Chamberlain, 1919)

Phascolosomatidae Stephen & Edmonds, 1972
Phascolosoma Leuckart, 1828
Phascolosoma (Phascolosoma) Stephen & Edmonds, 1972
Phascolosoma (Phascolosoma) agassizii Keferstein, 1867
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>Introvert slightly longer than trunk; tentacles reduced to small lobes</td>
<td><em>Golfingia minuta</em></td>
</tr>
<tr>
<td></td>
<td>- Introvert shorter than trunk; tentacles digitate</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Double circle of tentacles around mouth; introvert hooks slightly bent and awl like; yellow, wart-like papillae</td>
<td><em>Golfingia pellucida</em></td>
</tr>
<tr>
<td></td>
<td>- Single circle of tentacles around mouth, introvert hooks and papilla not as above</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Retractors insert in posterior 1/2 of trunk, rectal caecum present; posterior end of trunk dark brown</td>
<td><em>Golfingia sp. 2</em></td>
</tr>
<tr>
<td></td>
<td>- Retractors, insert in middle 1/3 of trunk; no rectal caecum</td>
<td><em>Golfingia laetmophilia</em></td>
</tr>
<tr>
<td>12.</td>
<td>Introvert shorter than trunk; posterior end of trunk extended to form a short &quot;tail&quot;</td>
<td><em>Golfingia sp. 1</em></td>
</tr>
<tr>
<td></td>
<td>- Introvert longer than trunk; no posterior tail</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Introvert up to 9x longer than trunk; a 4-6 digitate tentacles</td>
<td><em>G. nicolasi</em></td>
</tr>
<tr>
<td></td>
<td>- Introvert less than 2x length of trunk; 20 digitate tentacles</td>
<td><em>G. eremita</em></td>
</tr>
<tr>
<td>14.</td>
<td>Tentacles surround mouth; spindle muscle not attached to posterior end on trunk; paired, single lobed nephridia</td>
<td><em>G. marginatocircum</em></td>
</tr>
<tr>
<td></td>
<td>- Tentacles, if present, do not surround mouth; but are dorsal to it; spindle muscle attached to posterior end of trunk, paired, bilobed nephridia</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Introvert shorter than trunk; ventral retractors originate from the posterior 1/2 of the trunk</td>
<td><em>G. capitata</em></td>
</tr>
<tr>
<td></td>
<td>- Introvert 5-10 times length of trunk</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Tentacles, hooks, papilla present</td>
<td><em>G. misakiana</em></td>
</tr>
<tr>
<td></td>
<td>- Tentacles, hooks, papilla, absent</td>
<td><em>G. trichocephala</em></td>
</tr>
</tbody>
</table>


A Preliminary, Artificial Key to the Sipunculans of Southern California

by

Bruce Thompson, SCCWRP

1. Musculature of the body wall organized into longitudinal bands..............2
   - No longitudinal muscle bands.................................4

2. Tentacles do not surround mouth but are dorsal to it; introvert hooks present......Phascolosoma agassizii
   - Tentacles surround mouth; introvert hooks absent........3

3. Introvert with sub-triangular scale-like papilla; skin on trunk organized into squares; tentacles on flaps of skin surrounding the mouth......Sipunculus nudus
   - No scale-like papilla on introvert; tentacles are festooned in longitudinal rows......Siphonosoma ingens

4. Contractile vessel with tubules or villi.................5
   - Contractile vessel without tubules or villi............6

5. Villi on contractile vessel short; tentacles in longitudinal rows; no hooks.........Thysanocardia nigra
   - Long tubules on contractile vessel; tentacles dichotomously branched...........Themiste sp.

6. Single retractor muscle extends to posterior end of body; single nepridium.........Onchnesoma sp. A.
   - 2 or 4 retractor muscles; paired nephridia..........................Golfingia sp....7

7. 2 retractor muscles...........................................8
   - 4 retractor muscles........................................14

8. Hooks present on introvert.................................9
   - Hooks absent from introvert..............................12
a, anus; as, anal shield; c, caecum; cs, caudal shields; cm, circular muscle; cv, contractile vessel; ct, contractile tubules; dr, dorsal retractor; f, fastening muscle; g, gonad; h, hooks; i, introvert; in, intestine; lm, longitudinal muscle; m, mouth; md, mid-dorsal line; ms, mesentery; n, nephridium; nc, nerve cord; np, nephridiopore; o, oesophagus; pp, papillae; sm, spindle muscle; t, tentacles; tp, triangular papillae; tr, trunk; vr, ventral retractor; w, wing muscle.
Limnodriloides barnardi Cook, 1974
Oligochaeta: Tubificidae

SCAMIT Code: LACO 65  Date Examined: January 13, 1986
Voucher By : Thomas Parker (LACSD)


Synonymy:  Limnodriloides winkelmanni Michaelsen, 1914 (part)

Diagnostic Characters:

1. Esophageal diverticula in segment IX.
2. Clitellum weakly developed on segments XI-XII.
3. Venter of segment X contains a pair of curved, elongate spermathecal setae; with hollow groove from node to distal end.
4. Somatic setae all similar, bifid. 2-4 per bundle in pre-clitellar region, posteriorly 2 setae per bundle.
5. Sperm as narrow bundles in spermathecae.


1. Differs from L. scandinavicus by having a shorter atrial duct, simpler pseudopenis, and cup shaped rather than oblong prostatic pad.
2. Differs from L. victoriensis by having two rather than one somatic setae per bundle posteriorly.
3. Paired rather than single median genital pores.

Distribution: Subtidal sediments to 150 meters, Atlantic Coast, Pacific Coast of Mexico and Southern California.
Limnodriloides barnardi, Cook, 1974. A. Longitudinal view of genital segments; B. Spermathecal seta; C. Somatic seta. 1, sperm bundle; 2, spermathecal ampulla; 3, vacuolated muscular sac surrounding spermathecal seta; 4, protractor muscles of spermathecal seta; 5, male funnel; 6, vas deferens; 7, prostate gland; 8, penial sac; 9, atrial ampulla; 10, glandular part of atrial ampulla; 10, glandular part of atrial duct. From Cook, 1974.
Tectidrilus diversus Erseus, 1982
Oligochaeta: Tubificidae

SCAMIT Code: HYP 51  Date Examined: January 13, 1986
LACO 66  Voucher By: Thomas Parker (LACSD)
MBC 39

Literature: Erseus, C. 1982. Taxonomic revision of the marine genus

Diagnostic Characters:

1. Body wall densely coated with leaf like protuberances (at least in post clitellar region).
2. Esophageal diverticula absent in segment IX.
3. Setal teeth equally long, but dorsal tooth thinner.
5. Prostate gland large and lobed.

Related Species and Differences:

Tectidrilus verrucosus differs by possessing an esophageal diverticula and random sperm arrangement in spermatheca.

Distribution: Subtidal sediments to 305 meters. Only from California.

SCAMIT MEETING
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Topic: Oligochaeta

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This list contains species names of three important genera in the Tubificidae. Many of these names, as originally erected, were given broad distributional ranges. These ranges and the species descriptions have since been refined and resulted in numerous new species names and combinations with more restricted distributional ranges. Many of the older species (e.g. Peloscolex gabriellae, Marcus 1950) had many polyphyletic characters and have since been eliminated or modified by successive revisions.

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<thead>
<tr>
<th>NAME</th>
<th>CURRENTLY KNOWN DISTRIBUTION</th>
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<tr>
<td>Limnodriloides</td>
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<td>appendiculatus</td>
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<td>monothecus</td>
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<td>Baja California, Mexico, Delaware</td>
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<td>agnes</td>
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<td>medioporus</td>
<td>Cook, 1969 NW Atlantic, NW Pacific</td>
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<td>wincklemanni</td>
<td>Michaelsen, 1914 Africa, Scandinavia, Australia</td>
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<td>barnardi</td>
<td>Cook, 1974 Maryland, Virginia, Bahamas</td>
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<td>pierantonii</td>
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<td>fragosus</td>
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<td>vespertinus</td>
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<td>validus</td>
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<td>claviger</td>
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<tr>
<td><em>maslinicensis</em></td>
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<td><em>gabriellae</em></td>
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<td><em>bori</em></td>
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<td><em>verrucosus</em></td>
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<td><em>diversus</em></td>
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<td><em>wasselli</em></td>
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<td>heterochaetus</td>
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<td>longipenis</td>
<td>(Brinkhurst, 1965)</td>
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<td><strong>insularis</strong></td>
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<td><strong>imajimai</strong></td>
<td>Brinkhurst, 1985</td>
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Contains 2 figures of P. tempestatist. A discussion of separation from other Phallodrilus species.

Contains 2 figures of T. heterochaetus. Redescribes type material (Limnodriloides). Corrects original description and recent literature.


--------------- 1982. Vadicola aprostatus gen. nov. sp. nov., a marine Oligochaeta (Tubificidae; Rhycodrilinae) from British Columbia. Can. J. Zool. 60: 3232-3230
Contains 2 figures of V. aprostatus. Separates from other genera by lacking diffuse prostrate cells. Discussion of difference between remainder of Rhycodrilinae subfamily.

Contains 9 figures, 1 table, and a key to the species-groups. Describes 6 new species and compares to the older species now considered part of Tubificoides.

Contains 3 figures. Discusses differences between all 12 of the species in this genus.


Includes papers (by various authors) on taxonomy, zoogeography, life history, and ecology. Also includes a systematic index.


Contains 7 figures, 1 table, 1 key to the species. 39 species from North America compared to world fauna. Includes new species and redescriptions of species, genera, and subfamilies. This is the major review that has allowed the Tubificidae to be reorganized to the present day status.


Contains 6 figures, 1 table, keys for Thalassodrilus and Limnodriloides. Describes new Limnodriloides species important to west coast North America.


Contains 36 figures, 5 tables, two keys to species of Limnodriloides and Tectidrilus. Contains the most current descriptions of the species in Limnodriloides and Tectidrilus. Discusses generic definitions, anatomical terminology, habitat and the new subfamily Limnodriloidinae. Tables depict setal and segmental characters for each Limnodriloides species and also sketches of each species esophageal arrangement, spermatheca, and male genitalia.


