Rec 3/27/87

Southern California Association of Marine Invertebrate Taxonomists

3720 Stephen White Drive
San Pedro, California 90731

March 1987 Vol. 5, No. 12

NEXT MEETING: April 13, 1987

SPECIMEN EXCHANGE GROUP: Cumacea (Campylaspis provisional spp. Don Cadien, Chair)

TOPIC TAXONOMIC GROUP: Gammaridean Amphipoda provisional spp. (Ann Martin, Chair) with additional discussion of Melphidippidae and Stenothoidae.

MINUTES FROM MEETING ON MARCH 9, 1987;

Nominations for the 1987 Officers have been completed. The ballot for this year's election is included in this issue, along with a short biography of each candidate. We've always had a great voter response; as we're abondoning the use of exit polls this year, we hope that even more of you will mail back your ballots by the deadling, April 15, 1987.

The Guidelines for Compilers to the SCAMIT Zoological Taxonomic Listing is now completed and is included in this issue. Please contact John Dorsey (213) 772-3394 X272 or Dave Montagne (213) 775-2351 X396 if you would be willing to assist in the compiling of particular taxa.

The J. L. Barnard Amphipod Workshop for 1987 will be held at the LA County Museum of Natural History on May 12th and 13th beginning at 9:30 am. Dr. Barnard has generously agreed to lead our workshop this year with the topic emphasizing the Melphidippidae and Stenothoidae. Any miscellaneous groups are welcome also. To make the best use of our limited time it is important that all specimens be brought to the workshop dissected and ready for examination. This year we are also including an open discussion of Amphipoda life histories. Bring your specimens and any data on life histories you have available.

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

SCAMIT and SCECS (Southern California Environmental Chemists Society) held a joint conference about the field and sample handling techniques being used in southern California for the collection of tissue and sediment samples for chemical analyses. Attended by local dischargers, research personnel, and consulting firms, the meeting produced a number of valuable ideas about the correct protocols for handling samples. A document describing these discussions and the favored procedural recommendations by both organizations will be issued and distributed to the respective membership's.

? is this legal ?

A Classical Early Work in nudibranch taxonomy has been obtained by John Ljubenkov at Marine Ecological Consultants. He has offered to produce photocopies of the volume for a nominal price. The volume is;

Alder and Hancock. 1845. The British Opisthobranchiate Mollusca. Ray Society. 500p plus plates.

If you are interested in obtaining copies of this work please contact John at MEC, 531 Encinitas Bovd., Encinitas, CA 92024, (619) 436-5494.

Dr. Thomas Duncan has announced that the latest version of MEKA is available. MEKA is a general purpose microcomputer program that allows the identification of any unknown specimen of the characterization of a taxa. It runs on MS DOS or CP/M and requires 128 K bytes of memory. It is said to be of special value to persons involved in the identification of taxa and allows you to customize it for your specific groups. MEKA can be ordered by sending $25.00 to Tom Duncan, University Herbarium, University of California, Berkeley, CA 94720. Our computer literate members may want to investigate MEKA's suitability to invertebrate taxonomy.

The results of the first of our monthly Taxonomic Standardization Programs dedicated to the characterization of provisional species are presented in this issue. The meeting was a success in describing and erecting eight provisional species of Leptognathid tanaids. These eight species are the most commonly encountered tanaids in soft bottom surveys of the southern California shelf. The dissemination of these descriptions will greatly assist our goal of a regionally standardized taxonomy. The chair for this meeting, Tony Phillips, is to be thanked for his efforts. We anticipate that the coming meetings will build upon this beginning effort to define the nature of the undescribed invertebrate fauna in southern California.

Specimens examined on March 9, 1987

HYP 72 Araphura sp. A SCAMIT, 1987

HYP 73 Tanaopsis sp. A SCAMIT, 1987

HYP 74	Typhlotanais sp. A	SCAMIT
HYP 75	Araphura sp. C	SCAMIT, 1987
HYP47, MBC30	Leptognathia sp. B	SCAMIT, 1987
HYP48, MBC32	Araphura sp. B	SCAMIT, 1987
HYP 46	Leptognathia sp. C	SCAMIT, 1987
MBC 31	Leptognathia sp. E	SCAMIT, 1987

HOW TO GET SCAMIT FUNDING FOR YOUR TAXONOMIC PUBLICATIONS

SCAMIT has made available a limited amount of funding to defray the costs of publishing taxonomic literature. Some of the highlights for this funding are listed below. If after reading these points, you would like to apply for support, please contact the SCAMIT secretary (Thomas Parker (213)775-2351 ext 394) and request the SCAMIT FUNDING APPLICATION FORM.

1. Support will be limited to publications which are pertinent to the purpose and goals of the Southern California Association of Marine Invertebrate Taxonomists.

2. Funds shall be granted in support of costs associated with the completion of works intended for publication in peer reviewed journals only.

3. Funds shall be offered for the defraying of costs to prepare a manuscript (e.g. typing, text processing), illustration (e.g. drawings, photographs, SEM), and journal page charges.

4. No support will be provided for travel, time, or any costs incurred in the development or conduct of the research leading to the preparation of the manuscript.

5. Debursement of funds directly to the party or parties providing the professional services will be preferred.

6. Authors receiving SCAMIT support shall agree to acknowledge that support in the publication.

Thomas Parker
Marine Biology Laboratory
24501 S. Figueroa St.
Carson CA 90745

BALLOT FOR 1986-1987 OFFICERS
(Vote for one nominee per office*)

President - The President presides at all meetings and represents SCAMIT in external business affairs.

Dave Montagne

Write-in

Vice-President - The Vice-President chairs ad hoc committees, supervises the specimen exchange, tabulates election ballots, edits the newsletter, and fills in for the President as necessary.

Ron Velarde

Leslie Harris

Write-in

Secretary - The Secretary keeps minutes of the meetings, is responsible for the newsletter, and mailing of ballots.

Thomas Parker

Write-in

Treasurer - The Treasurer collects dues, makes dispersements, keeps financial records, and makes an annual statement of the financial status of SCAMIT.

Ann Martin

Write-in

You may vote by mailing your ballot to Tom Parker, Marine Biology Lab 20451 S. Figueroa St. CA 90745.

PRESIDENT

Dave Montagne
Dave has an extensive background in marine pollution ecology, mainly through his employment since 1970 with the County Sanitation Districts of Los Angeles County. He has worked on many long-term monitoring surveys related to the District's White Point ocean outfall. Presently, he is the supervisor of the District's Marine Biology Laboratory (since 1978). Dave's taxonomic interests primarily are the polychaete worms with a valuable publication on the genus Phyllodoce and a manuscript in preparation on Dorvilleids. He is also co-author on several ecological publications describing marine communities around the White Point outfall.

Vice-President

Ron Velarde
Ron is a former SCAMIT Vice-President and is a biologist with the Point Loma Wastewater Treatment Facility (City of San Diego) where he has worked since 1983. His taxonomic interests are with polychaetes (particularly Syllids) and nudibranch molluscs. He earned his B.S. degree in Marine Biology from California State University, Long Beach in 1976, and did post-graduate research on the systematics and ecology of Autolytid polychates.

Leslie Harris
Leslie currently is employed at the Allan Hancock Foundation where she is the Assistant Curator of worms. Prior to AHF Leslie worked at Marine Biological Consultants working on the polychaete taxonomy on the Santa Maria Basin MMS Project. Prior to MBC, she worked for SCCWRP, specializing in polychaete and algal taxonomy. While there, she also compiled and edited the Proceedings of the Taxonomic Standardization Program.

SECRETARY

Thomas Parker
Tom is the incumbent secretary for SCAMIT and has also been a biologist in the Marine Biology Laboratory of the Los Angeles County Sanitation Districts since 1976. In this latter capacity he participates in the benthic invertebrate surveys and regularly works on the taxonomy of many locally important benthic infauna. Prior to this he was employed at the water qualtiy laboratories and conducted bioassay testing for District's treatment plants. He received both his B.A. degree in 1972 and his M.A. degree in 1974 in Biology from California State University, Long Beach.

TREASURER

Ann Martin
Ann presently is the Treasurer for SCAMIT and has held that position since SCAMIT was founded. Ann has recently (1984) joined the water biologist staff at the Hyperion Treatment Plant where she specialized in the identification of amphipod crustaceans. Prior to working at Hyperion, Ann was a member of the laboratory staff at the County Sanitation Districts of Orange County. She worked there for nearly 10 years reaching a position of senior laboratory and research analyst. She received her B.S. from California State University, Long Beach in Marine Biology in 1974 and her M.S. from the same university in 1982 (thesis research on polychaete bioassays).

Compiler Guidelines for the Initial Compilation of the "Systematic Catalogue of Marine Invertebrates from Southern California"

Compilers are asked to follow these guidelines in order to facilitate the initial text-processing and editing. Matters such as type face and format are not critical at this point other than as indicated below.

Compilation may be typed, neatly printed, or on magnetic media with binomials identified by italics or underlining. Authority and date should follow binomial. The taxonomic category of all supra-generic names should be stated (e.g. Order Myoida). Synonyms should be clearly indicated (e.g. by indentation). Where annotations exist they are to be referred to by means of a number in brackets at the end of the line. The annotations themselves are to be separate from the systematic list.

Valid Records: The literature, as well as unpublished reports of surveys considered by the compiler to be the product of sound taxonomists, are to be the sources of species records.

Habitats: The catalogue is to include benthic infaunal and epibenthic species. Holoplanktonic species are to be excluded.

Geographic Range: Point Conception to Cedros Island.

Bathymetric Range: Intertidal to slope depth of approx. 2500 M at Patton Escarpment.
(Catalogue is intended to include records from all the basin depths)

Synonomy: To be limited to the more "common" synonyms. Do not try to be exhaustive! What is "common" is left to the compiler's judgement but should include names under which the species appeared in major references and surveys.

Provisional species: Provisional species (as understood by SCAMIT's guidelines for the use of open nomenclature) are to be included in the list where appropriate. The person or agency responsible for their erection is to be indicated (i.e. Campylaspis sp A MBC or Eumida sp C Hamilton). Those provisionals that have been reviewed and accepted by SCAMIT are to be attributed to SCAMIT with the year date of acceptance. Provisional species are to be listed following the formally described forms within the genus or other taxon to which they are known to belong. They are to be in alphabetical or numeric order.

Annotations: To be limited primarily to nomenclatural and other taxonomic issues.

All revisionary works pertinent to a taxon published since 1970 should be included in annotation (a' la Rowe in Straughan and Klink 1980) and included in bibliography.

"Problem" Taxa, where compiler is aware that taxon is undergoing rapid taxonomic change in the literature or is in need of revision, should be noted. Brief commentary on any ongoing taxonomic debate is appropriate.

New records are to be noted. However, new depth records are to be limited to those that represent ecologically significant increases in range.

Brief comments noting the relationships or affinities of provisional species to described forms are appropriate for inclusion as annotations.

This list of topics for which annotation is requested is purposefully short. If the compiler feels some other topic cries for annotation contact the editors.

Annotations are to be referenced in the systematic list by means of numerical superscripts in brackets following the taxon to which they refer.

Annotations are to be compiled as a separate listing in numerical order.

Bibliography: To include all references cited in a separate listing. Include both literature as well as unpublished reports. The format used in the Proceedings of the Biological Society of Washington is to be followed. Note that this format requires the complete name of the journals cited.

Compilers are to direct any questions concerning these guidelines to the catalogue editors:

John Dorsey
Hyperion Treatment Plant
12000 Vista del Mar
Playa del Rey, CA 90291

(213) 322-3131 EX 272

David Montagne
Marine Biology Laboratory
L. A. County Sanitation Dists.
24501 S. Figueroa St
Carson, CA 90745
(213) 830-2400 EX 396

Southern California
Leptognathiidae
(female)

1. Antennule (A1) 3-articled.....*Typhlotanais* sp. A

   Antennule (A1) 4-articled.....2

2. Cheliped propodal tooth bifid.....*Tanaopsis* sp. A

   Cheliped propodal tooth simple.....3

3. Uropods uniramous.....4

   Uropods biramous.....7

4. Uropod peduncle with projection forming non-articulated pseudoexopod.....5 (*Araphura*)

   Uropod peduncle without projection forming non-articulated pseudoexopod.....*Leptognathia* sp. B

5. Uropod peduncle pseudoexopod acute.....6

   Uropod peduncle pseudoexopod truncate.....*Araphura* sp. C

6. Pleotelson elongate with terminal pointed projection.....*Araphura* sp. B*

   Pleotelson not elongate, without terminal pointed projection.....*Araphura* sp. A

7. Ventral pointed projection on each side of pleotelson.....*Leptognathia* sp. C

   Ventral posteriorly-directed projection located between pleopods on 5th pleonal segment.....*Leptognathia* sp. E

* this may be male of *Araphura* sp. A

Araphura sp. A SCAMIT
Leptognathiidae

Vol. 5, No. 12

SCAMIT Code: HYP 72

Date examined: 9 March 1987
Voucher by Tony Phillips

Synonymy: Leptognathia sp. A of SCAMIT; Vol. 4, No. 5
Leptognathia sp. A of MBC
Leptognathia sp. A of Hyperion

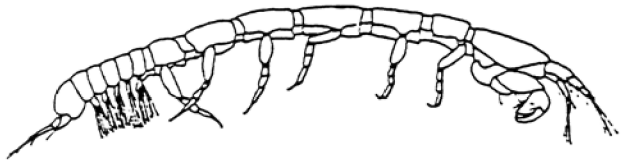
Literature: Holdich & Jones 1983
Bird & Holdich 1984
Holdich & Bird 1986
Sieg & Winn 1979

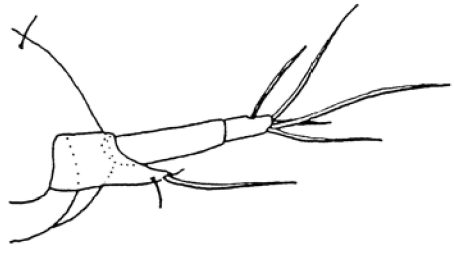
Diagnostic characters:

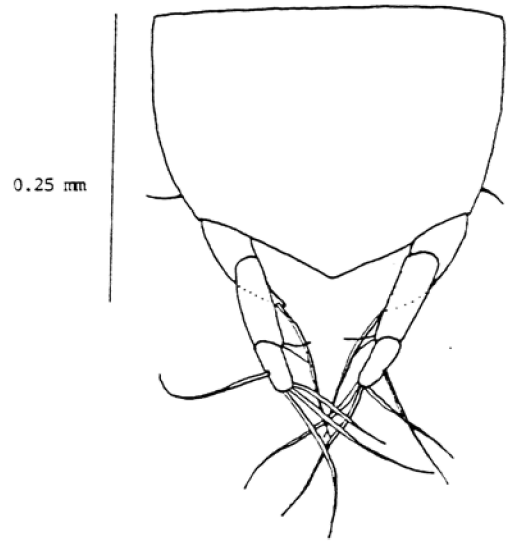
1. eyes absent,
2. A1 4-segmented; A2 6-segmented,
3. uropods uniramous, basis forming a non-articulated, pointed pseudoexopod ventral to ramus bearing three setae,
4. ramus above pseudoexopod 2-segmented,, the proximal segment approximately 2x the length of the distal segment;
5. the non-articulated, pointed pseudoexopod approximately 1/2 the length of the proximal segment of the ramus, curving slightly towards the ramus;
6. pleotelson short, slight acute ventrally-deflexed projection posteriorly, one pair of setules near uropods.

Distribution: Pt. Estero-Mexican border, 33-657m.

Comments: specimens examined range in size between 1.6 and 4.2 mm. At this time the male is unknown. This is the most common Leptognathiid found in southern California waters.







Araphura sp. B SCAMIT
Leptognathiidae Vol. 5, No. 12

SCAMIT CODE: HYP 48 Date examined: 9 March 1987
MBC 30 Voucher by Tony Phillips

Synonymy: Leptognathia sp. D of SCAMIT; Vol. 4, No. 5
Leptognathia sp. D of MBC

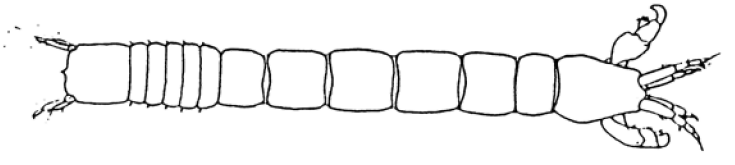
Literature: Holdich & Jones 1983
Bird & Holdich 1984
Holdich & Bird 1986
Sieg & Winn 1979

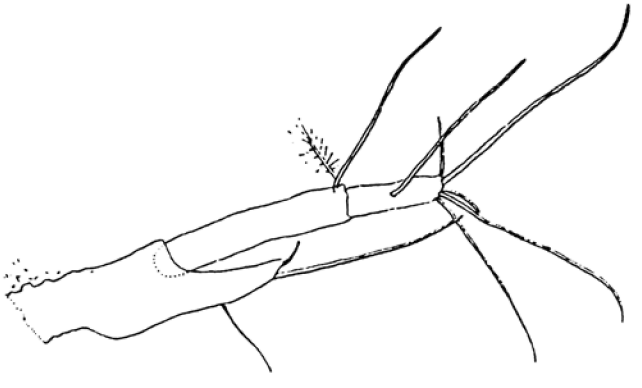
Diagnostic characters:

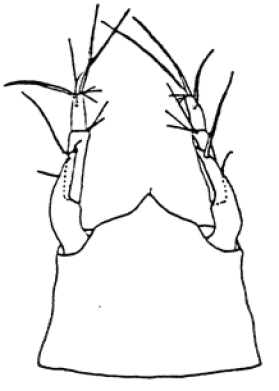
1. eyes absent;
2. A1 4-segmented, A2 6-segmented;
3. uropods uniramous, basis forming a non-articulated, pointed pseudoexopod ventral to ramus bearing three setae;
4. ramus above pseudoexopod 2-segmented, the proximal segment approximately 2x the length of the distal segment;
5. the non-articulated, pointed pseudoexopod approximately 1/2 the length of the proximal segment of the ramus;
6. pleotelson elongate, 3/4 length of pleon with terminal pointed projection;
7. one lateral setule on each pleonal segment.

Distribution: Pt. Estero-Mexican border, 53-1033m.

Comments: specimens examined range in size between 1.3 and 3.0 mm.
This may be the male of Araphura sp. A.







Araphura sp. C SCAMIT
Leptognathiidae

Vol. 5, No. 12

SCAMIT Code: HYP 75

Date examined: 9 March 1987
Voucher by Tony Phillips

Synonymy: Leptognathia sp. F of SCAMIT; Vol. 4, No. 5
Leptognathia sp. F of MBC

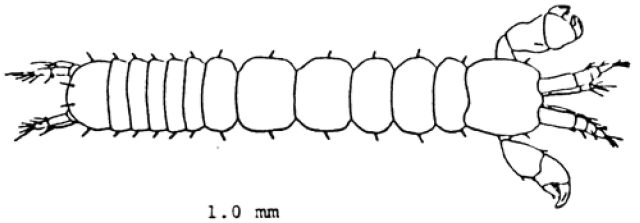
Literature: Holdich & Jones 1983
Bird & Holdich 1984
Holdich & Bird 1986
Sieg & Winn 1979

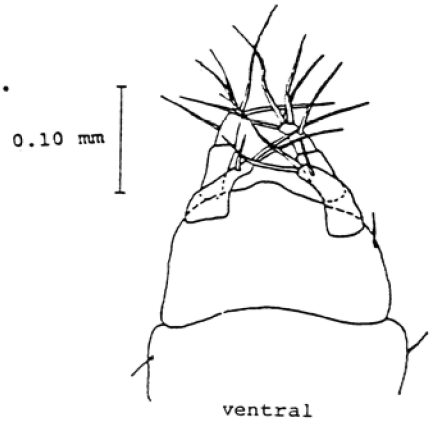
Diagnostic characters:

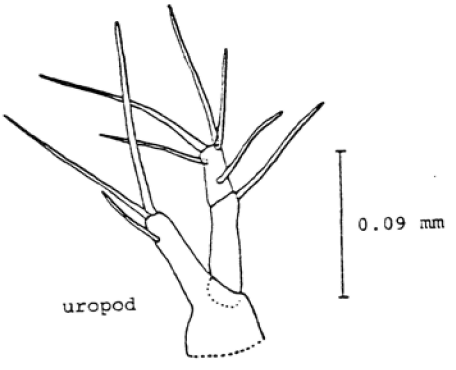
1. eyes absent;
2. A1 4-segmented, A2 6-segmented;
3. uropods uniramous, basis forming a non-articulated, truncate pseudoexopod ventral to ramus bearing three setae;
4. ramus above pseudoexopod 2-segmented, the proximal segment approximately 2x the length of the distal segment;
5. the non-articulated, truncate pseudoexopod approximately equal to the length of the proximal segment of the ramus;
6. pleotelson 1/2 the length of the pleon with rounded posterior margin;
7. lateral setules on cephalon, thorax, pereon, pleon and pleotelson;
8. one pair of setules on posterio-dorsal surface of pleotelson;
9. dactylus with long seta.

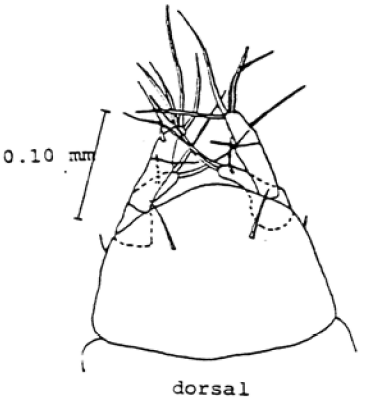
Distribution: Pt. Estero-Mexican border, 129-1033m.

Comments: specimens examined range in size between 0.8-2.3 mm.









Leptognathia sp. B SCAMIT
Leptognathiidae Vol. 5, No. 12

SCAMIT Code: HYP 47
MBC 30

Date examined: 9 March 1987
Voucher by Tony Phillips

Synonymy: Leptognathia sp. B of Scamit; Vol. 4, No. 5
Leptognathia sp. B of MBC

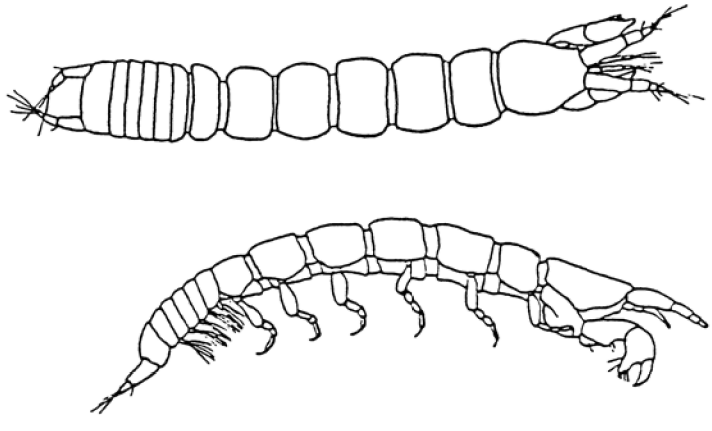
Literature: Sieg and Winn 1979
Holdich and Jones 1983
Holdich and Bird 1986

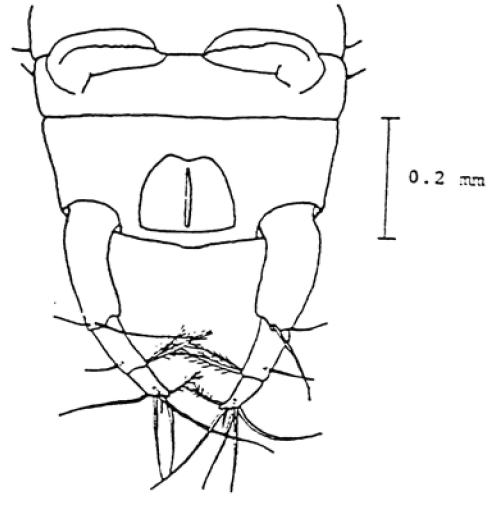
Diagnostic characters:

1. eyes absent;
2. A1 4-segmented, A2 6-segmented;
3. uropods uniramous, heavy, calcified, not flexible, and curving toward centerline;
4. body generally hard and calcified, shiney white;
5. posterior end of pleotelson with a blunt point;
6. pleotelson approximately 1/2 the length of pleon.

Distribution: Purisima Point-Mexican border, 47-438m.

Comments: Specimens examined range in size between 2.0 and 4.2 mm. At this time the male is unknown. This species is very similar in appearance to L. paramanca Lang, 1958. A complete description of L sp. B and an opportunity to view type specimens of L. paramanca may show these two species to be the same I expect L. paramanca to be the future type species of a of new genus due to its distinctive uropod in relation to the other genera found in the family Leptognathiidae.





Leptognathia sp. C
Leptognathiidae

Vol. 5, No. 12

SCAMIT Code: HYP446

Date examined: 9 March 1987
Voucher by Tony Phillips

Synonymy: Leptognathia sp. C of SCAMIT; Vol. 4, No. 5
Leptognathia sp. C of MBC
? Leptognathia longiremis (Lilljeborg 1865). See Richardson 1905, p. 20.

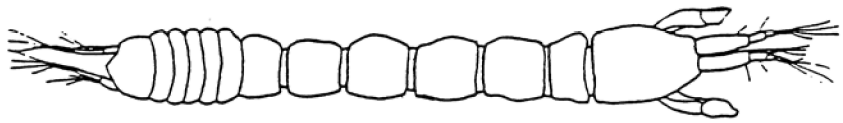
Literature: Sieg and Winn, 1979
Holdich and Jones 1983
Holdich and Bird 1986

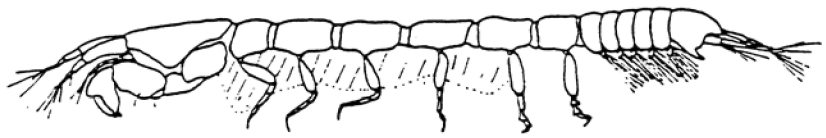
Diagnostic characters:

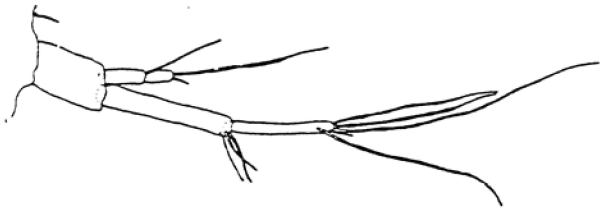
1. eyes absent;
2. A1 4-segmented, A2 6-segmented;
3. uropods biramous, very slender and flexible;
4. outer ramus approximately 1/2 the length of proximal segment of inner ramus, both inner and outer ramus with two segments;
5. posterior end of pleotelson approximately 1/2 the length of pleon;
6. on the latero-ventral edge of each side of the pleotelson a postero-ventral-pointing spinous projection is found.

Distribution: Pt. Sal- San Pedro Channel, 76-663 m.

Comments: Specimans examined range in size between 2.9 and 4.7 mm. At this time the male is unknown.







Leptognathia sp. E
Leptognathiidae

Vol. 5, No. 12

SCAMIT Code: MBC 31

Date Examined: 9 March 1987
Voucher by Tony Phillips

Synonymy: Leptognathia sp. E of SCAMIT; Vol. 4, No. 5
Leptognathia sp. E of MBC
? Leptognathia armata Hansen 1913. See Menzies & Mohr 1962, 195-196.

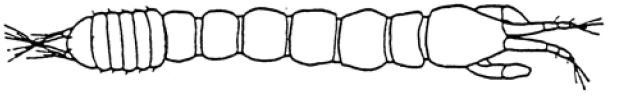
Literature: Sieg and Winn 1979
Holdich and Jones 1983
Holdich and Bird 1986

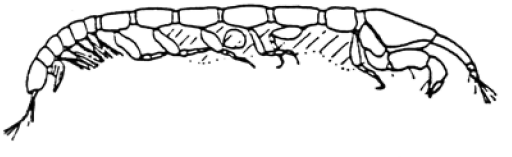
Diagnostic characters:

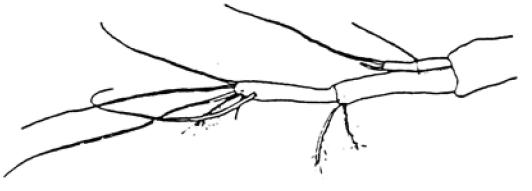
1. eyes absent;
2. A1 4-segmented, A2 6-segmented;
3. uropods biramous, very slender and flexible;
4. outer ramus approximately 1/2 the length of proximal segment of inner ramus, both inner and outer ramus with two segments;
5. posterior end of pleotelson rounded, pleotelson approximately 1/2 the length of pleon;
6. a ventral posterior-pointing sternal projection is found on pleonite 5 between the pleopods;
7. lateral setule found on each pleonal segment.

Distribution: Pt. Estero - Mexican border; 76-440 m.

Comments: Specimens examined range in size between 2.9 and 4.7 mm. At this time the male is unknown. Kevin Li in Washington (Puget Sound) recently wrote that specimens similar to L. sp. E were found.







Tanaopsis sp. A
Leptognathiidae

Vol. 5, No. 12

SCAMIT Code: HYP 72

Date examined: 9 March 1987
Voucher by Tony Phillips

Synonymy: Leptognathia sp. 0 of Hyperion

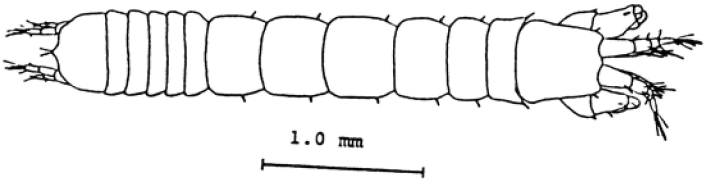
Literature: Sieg and Winn 1979
Holdich and Jones 1983
Holdich and Bird 1986
Lang 1967

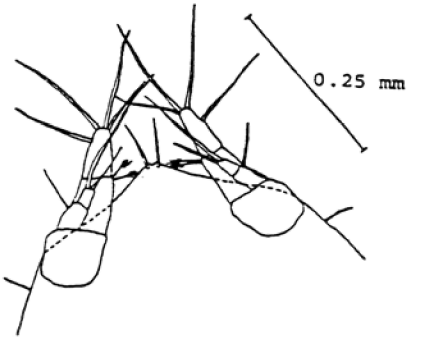
Diagnostic characters:

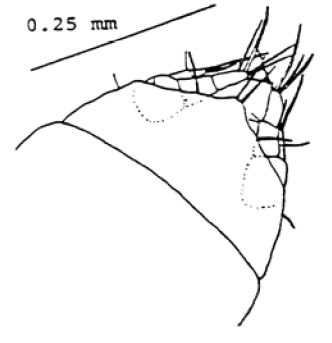
1. eyes absent;
2. A1 4-segmented; A2 6-segmented;
3. claw of cheliped propodus comprising two teeth (bifid);
4. uropods biramous, both inner and outer ramus 2-segmented, outer ramus does not reach end of proximal segment of inner ramus;
5. pleotelson 1/2 the length of the pleon, posterior end of pleotelson with slight projection and two elongate setules;
6. lateral setule found on cephalothorax and each pereonal segment.

Distribution: Santa Barbara - Newport Beach; 60-325 m.

Comments: Specimens examined range in size between 0.7 and 4.0 mm.







Typhlotanais sp. A
Leptognathiidae

Vol. 5, No. 12

SCAMIT Code: HYP 74

Date examined: 9 March 1987
Voucher by Tony Phillips

Synonymy: Leptognathia sp. H of SCAMIT; Vol. 4, No. 5
Leptognathia sp. H of MBC

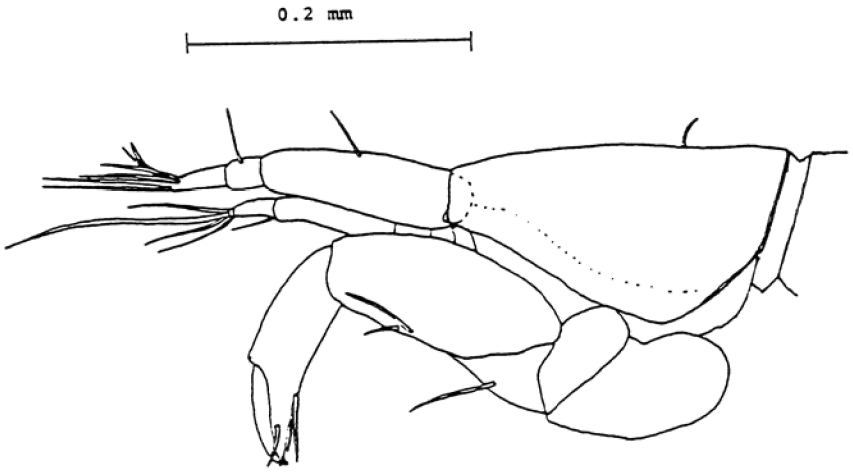
Literature: Holdich & Jones 1983
Holdich & Bird 1986
Sieg & Winn 1979

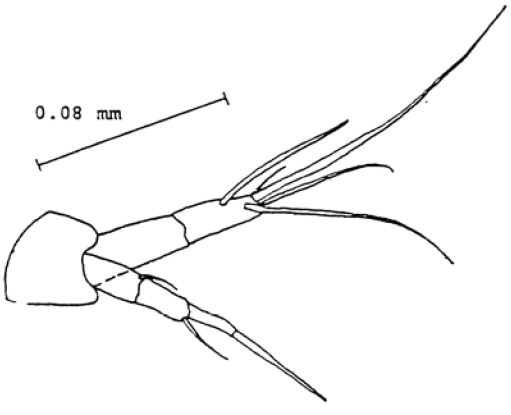
Diagnostic characters:

1. eyes absent;
2. A1 (female) 3-articled, 2nd article very short, A1 (male) 6-articled, A2 6-articled (male and female);
3. uropods biramous, both rami two-segmented, outer ramus approximately equal to proximal segment of inner ramus;
4. distal segment of uropod outer ramus with an enlarged jointed setae;
5. propodus and merus of cheliped long and narrow, distal portion of cheliped propodus with anterior directed single setule extending beyond cheliped tip.

Distribution: Pt. Estero - Point Loma, 52-440 m.

Comments: Specimens examined range in size between 0.5 and 1.4 mm. Only female specimens have been identified in southern California benthos.





Partial Bibliography for Leptognathiidae

Bacescu, M. 1975. Bibliographia Tanaidaceorum. Bucharest Muzeul National de histoire Natwala. pp. 69-90.

Bird, G.J. and D.M. Holdich. 1984. New deep-sea Leptognathiid tanaids (Crustacea, Tanaidacea) from the north-east Atlantic. Zool. Scripta, 13(4):285-315.

_____ and _____. 1985. A remarkable tubiculous tanaid (Crustacea:Tanaidacea) from the Rockall Trough. J.M.B.A.(U.K.), 65:563-572.

Greve, L. 1964. The records of Leptognathia dentifera G.O. Sars (Tanaidacea). Sarsia, 15:71.

_____. 1965. The biology of some Tanaidacea from Raunefjorden, Western Norway. Sarsia, 20:43-54.

Gutu, M. 1972. Phylogenetic and systematic considerations upon the Monokonophora (Crustacea-Tanaidacea) with the suggestion of a new family and several new subfamilies. Rev. Room. Biol. Zool., 17:297-305.

Hatch, M.H. 1947. The Chelifera and Isopoda of Washington and adjacent regions. Univ. Wash. Publ. Biol., 10(5):155-274.

Holdich, D.M. and G.J. Bird. 1986. Tanaidacea (Crustacea) from the sublittoral waters off west Scotland, including the description of two new genera. Jour. Nat. Hist., 20:79-100.

Holdich, D.M. and J.A. Jones. 1983a. The distribution and ecology of British shallow-water tanaid crustaceans (Peracarida, Tanaidacea). Jour. Nat. Hist., 17:157-183.

_____ and _____. 1983b. Tanaids. Synopses of the British Fauna No. 27. Cambridge Univ. Press. pp. 1-98.

Kudinova-Pasternak, R.K. 1965. Deep-sea Tanaidacea from the Bouginville Trench of the Pacific. Crustaceana, 8:75-91.

_____. 1966. Tanaidacea (Crustacea) of the Pacific ultra-abyssals. Zool. Zhur., 45(4):518-535.

_____. 1970. Tanaidacea Kurilo-Kamciatkogo jeloba. Trudy Instituta Okeanologia (Moscow), 86:341-380.

_____. 1973. Tanaidacea (Crustacea:Malacostraca) collected on the R/V "Vityaz" in the regions of the Aleutian Trench and the Bay of Alaska. Ibid., 91:141-168.

_____. 1975a. Tanaidacea (Malacostraca) of the deep-sea Romansh Trench and Guinea Hollow. Zool. Zhur., 54(5):682-687.

_____. 1975b. Tanaidacea (Crustacea, Malacostraca) from the Atlantic sector of Antarctic and subantarctic. Trudy Instituta Okeanologia (Moscow), 103:194-228.

_____. 1977. Tanaidacea (Crustaea, Malacostraca) from the deep-sea trenches of the western part of the Pacific. Ibid., 108:115-135.

_____. 1983. The abyssal Tanaidacea (Crustacea) of the Iberian and west-european hollows of the Atlantic Ocean. Zool. Zhur., 62(8):1170-1176.

_____. 1986. Abyssal Tanaidacea (Crustacea, Malacostrace) from the south-western part of the Indian Ocean, the suborder Tanaidomorpha. Zool. Zhur., 65(1):66-75.

Kussakin, O.G. and L.A Tzareva. 1972. Tanaidacea from the coastal zones of the Middle Kurile Islands. Crustaceana, Suppl. 3:237-245.

Lang, K. 1957. Tanaidacea from Canada and Alaska. Contr. Depart. Pecher., Quebec, 52:1-54.

_____. 1967. Taxonomische und phylogenetische Unterssuchungen uber die Tanaidacean. 3. Der umfang der Familien Tanaidae Sars, Lang und Paratanaidae Lang negst Bemerkungen uber den taxonomischen Werf der Mandibeln und Maxillulae. Dazu eine taxonomisch-monographische Darstellung der Gattung Tanaopsis Sars. Ark. Zool., 19(18):343-368.

_____. 1972. Bathytanais bathybrotes (Beddard) und Leptognathia dissimilis n. sp. (Tanaidacea). Crustaceana, Suppl. 3:221-236.

Menzies, R.J. 1957. The tanaidacean Leptognathia hastata from abyssal depth in the Atlantic. Ann. Mag. Nastur. Hist. Ser. 12(10):68-69.

Menzies, R.J. and J.L. Mohr. 1962. Benthic Tanaidacea and Isopoda from the Alaskan Arctic and polar basin. Crustaceana, 3(3):192-202.

Morino H. 1971. Record of Typhlotanais, a tube-building paratanaid, from Seto (Crustacea:Malacostracas). Publ. Seto Marine Biol. Lab., 18:349-354.

Ogle, J.T., R.W. Heard and J. Sieg. 1982. Tanaidacea (Crustacea:Peracarida) of the Gulf of Mexico. I. Introduction and annotated bibliography of Tanaidacea previously reported from the Gulf of Mexico. Gulf Res. Rpts., 7:101-104.

Rafi, F. 1985. Bibliographia Invertebratorum Aquaticorum Canadensium. Volume 4. Synopsis Speciorum. Crustacea:Isopoda et Tanaidacea. National Museums of Canada, pp. 1-51.

Richardson, H. 1905. A monograph of the Isopods of North America. Bull. U.S. Nat. Mus., 54:1-727.

Shiino, S. M. 1978. Tanaidacea collected by French scientists on board the survey ship "Marion-Dufresne" in the regions around the Kerguelen Islands and other subantarctic islands in 1972, 1974, 1975, 1976. Sci. Rpt. Shima Marineland, 5:1-122.

Sieg, J. 1983. Tanaidomorpha (Crustacea:Tanaidacea) from the Ross Sea, Antarctica. Jour. Roy. Soc. N.Z., 13(4):395-418.

Sieg, J. and R. Winn. 1979. Keys to suborders and families of Tanaidacea (Crustacea). Proc. Biol. Soc. Wash., 91(4):840-846.