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Southern California Association of Marine Invertebrate Taxonomists

3720 Stephen White Drive
San Pedro, California 90731

May-June 1985 Vol. 4, No. 2, 3

Next Meeting July 8, 1985

Specimen Exchange Group: Mytiloida

Topic Taxonomic Group: Tanaidarea

From the Officers: We apologize that last month's newsletter did not get out on time. Please note that this issue combines numbers 2 and 3 (May-June) of the newsletter.

MINUTES FROM JUNE 10, 1985

The 22-24 May Conference by the Association of Systematics Collections on a National Biological Survey (NABIS) was attended by Sue Williams of the Allan Hancock Foundation and Thomas Parker of the Los Angeles County Sanitation districts.

The proposal for a national biological survey was highlighted in a February 1984 editorial article of Science. The survey of biological resources would be mainly for the United States but include data from cooperative efforts already underway in Canada and Mexico. Broad benefits from such a survey would include:

1) Coordination of government studies (existing state biological surveys, USDA pest species records, EPA studies, and Fish and Wildlife Service surveys).
2) Production of illustrated identification mannuals and Keys.
3) Centralization of computerized records and data resources.

4) Report the status of biota to Congress and federal funding agencies in timely periodic manner.
5) Inventory of germ plasm resources.
6) Provide baseline for monitoring changes of the environment (e.g. chemical contamination and acidification).

One of the major tasks of this survey would be the resolution of unreliable taxonomies that result from sexual dimorphism, incomplete descriptions of life hitories, cryptic species groups, and microhabitats. Other tasks would include the development of a hierarchial ecosystem scheme, a register of experts in each taxonomic field, the establishment of quality assurance/quality control procedures for identifications, and the production of synoptic reports used to decide the acceptability of industrial environmental impacts.

The drive for federal funding continues. The Planning Committee for for NABIS has already held over 36 meetings with private, state, federal and international officials since 1984. More than 24 scientific organizations, representing over 200,000 scientists in North America, support the NABIS proposal. These include the American Association for the Advancement of Science, American Institute of Biological Science, Entomological Society of America, and the International Congress of Entomology. Over a dozen articles about NABIS have been published in professional journals.

Letters of support or requests for futher information should be directed to:

Dr. M. Kosztarab, Chairman
NABIS Planning Committee
Department of Entomology
Virginia Polytechnic Institute - State University
Blacksburg, VA 24061

New Publications: The **Third Edition of the International Code of Zoological Nomenclature** will be available July 1, 1985 from:

Karen Leeburg
University of California Press
Order Departmen
2120 Berkeley Way
Berkeley, CA 94720
(415) 642-4247

The cost including shipping is $21.50.

The Association of Systematics Collections has two new books. One is entitled **Sources of Federal Funding for Biological Research** by P.C. Escherich and R.E. McManus. Topics which are presented include: Which federal agencies issue grants and contracts, examples of projects which were funded, and the ranges and average dollar amounts awarded by each agency, application procedures, eligibility requirements, and the persons to contact in each agency. The price is $15.00 plus tax.

The other book is entitled **Guidelines for Acquisition and Management of Biological Specimens** by W.L. Lee, B.M. Bell, and J.F. Sutton. This book deals with the curation of systematic collections. It's price is also $15.00 plus tax.

Both books are available from:

ASC Office
Museum of Natual History
Lawrence, KS 66045
(913) 864-4867

Minoru Imajima and Susan J. Williams have recently published a paper entitled "Trichobranchidae (polychaeta) Chiefly from the Sagami and Suruga Bays, Collected by R/V Tansei-Maru (Cruises KT-65-76)". Bull. Natn. Sci. Mus., Tokyo, Ser. A, 11(1):7-18, March 22, 1985. In it, three new species of Terebellides are described.

SCAMIT Picnic: September 21, 1985 was chosen as the date for the SCAMIT picinic, or in other words, the fall equinox festival. The site for this event has been narrowed to either Edison Park in Huntington Beach or Irvine Park in Irvine. Stay tuned for further announcements.

A Treasurer's Report will now be made at every monthly meeting. This report will include each months expenses, income and receipts.

An Executive Committee was formed consisting of the elected officers and a representative from each of the four standing SCAMIT committees. Organizational activities and budget policies of SCAMIT will be formulated by the Executive Committee and then presented to the members attending the next monthly meeting for adoption.

The Notes From the Amphipod Workshop of March 8-11, 1985 are now available and can be obtained by contacting:

Tom Parker
JWPCP Marine Biology Laboratory
24501 South Figueroa Street
Carson, CA 90745

Additional Note: In response to item #4 of the amphipod workshop notes, Dr. Barnard recently sent the following note:

"I'm now convinced you have Rhachotropis inflata, both the small specimen previously identified and the new material. The previous specimen, smaller, has rather poorly developed side crest pleonites 1 and 3 but this is probably a feature of younger specimens. I had a chance to go through all the old figures and original descriptions so I'm well satified you were correct."

List of Specimens from June 10, 1985:

HYP	45	Photis brevipes Shoemaker, 1942
HYP	45	Photis californica Stout, 1913
LACO	50	Amphideutopus oculatus Barnard, 1959
LACO	52	Aoroides intermedeus Conlan and Bousfield, 1982
LACO	53	Gammaropsis thompsoni (Walker, 1898)
SCCWRP	56	Nicippe tumida Bruzelius, 1859
SCCWRP	57	Photis brevipes Shoemaker, 1942

Helpful Hints: Drs. J.L. Barnard and G. Karaman are presently working on new keys for the Photidae, Isaeidae, and Corophiidae. Some of the ontogenic problems seen in Photis hopefully will be addressed by this work.

MINUTES FROM MAY 13, 1985

SCAMIT Voucher Collection and specimen cards should be turned in to Cathy Crouch as soon as available. The "ID by" line on the specimen label should list the person who identified the specimen for submission to the exchange; or

the leader of the topic meeting, if the identification was changed during the SCAMIT meeting.

Election Results: The recent election to change the constitutional duties of SCAMIT officers was passed by unanimous vote. The duties now stand as:

Bylaw 2: Duties of Officers:

a) President - The president shall preside at meetings of the Association, represent the Association's interests in external business affairs, **present a written yearly summary of the Association's activities to the membership,** and perform such other functions as may be defined in the Constitution and Bylaws.

b) Vice-President - the Vice-President shall chair ad hoc committees, be responsible for tabulating and disseminating results of elections, votes on Bylaws, Amendments to the Constitution, for specimen exchange, **shall arrange the chair for the meeting workshops, coordinate the preparation of voucher sheets, edit voucher sheets and newsletters,** and shall perform duties of the President during any period(s) when the President is unable to fulfill his or her duties as President of the Association.

c) Secretary - The Secretary shall keep minutes for all meetings, issue notices for meetings, conduct the correspondence of the association, and be responsible for mailing ballots.

Guest Speakers are needed for future meetings. If you have any suggestions for speakers, please see any of the officers at the monthly meetings or send your ideas to:

Ron Velarde
Pt. Loma Biology Lab
4077 N. Harbor Dr.
San Diego, CA 92101

Tom Parker
JWPCP Marine Biology Lab
24501 S. Figueroa St.
Carson, CA 90745

Changed Meeting Dates: The original meeting dates scheduled for both October and November 1985 have been changed. To avoid conflic with holiday schedules, the new dats for monthly meetings are now October 21 and November 18, 1985.

Organizations of Interest: A marine invertebrate taxonomy association has recently been formed on the east coast.

Titled ESCAMIT, the person to contact for further information is:

Nancy K. Mountford
Cove Corporation
Box 10 Breeden Road
Lusby, MD 20657

A Japanese polychaete club has recently been formed concerned with polychaete taxonomy and biology. A newsletter can be obtained by writing to:

Dr. Tomayuki Imura
Ocean Research Institute
University of Tokyo
1-15-1 Minamidai
Nakana-ku, Tokyo 164 JAPAN

List of Specimens from May 13, 1985*:

SCCWRP	55	Sabellaria cementarium Moore, 1906
AHF	34	Myriowenia californiensis Hartman, 1960
AHF	35	Idanthyrsus ornamentatus Chamberlin, 1919
AHF	36	Cistenides brevicoma (Johnson, 1901)
CMM	7	Sabellaria gracilis Hartman, 1944
OCSD	57	Myriochele sp. M

Helpful Hints: Leslie Harris pointed out that the outer row of paleae in Sabellaria is an unreliable diagnostic character. The condition and degree of paleal ornamentation is subject to physical wear and dependent upon specimen age. The inner row of paleae is more reliable for species separation (see separate following this issue).

Leslie also discussed a potential confusion with the polychaetes Chloeia entypa and Chloeia pinnata. Reexamination of type material shows that the difference in setal types could be size dependent for these worms. Inspection of setae from both anterior and posterior fascicles should be done routinely to determine if C. entypa and C. pinnata setal arrangements are present on the same specimen.

Corrections: Don Cadien has sent in the following corrections: "While reexamining distributed specimens in preparation of SCAMIT museum materials, several errors of

*Vouchers will be in next month's issue.

identification were found. Specimens coded MBC 3, originally identified as Aorides columbiae are in actuality Columbaora cyclocoxa Conlan and Bousefield, 1982. Those coded MBC 6, originally identified as female Microdeutopus schmitti are Aorides spinasus Conlan and Bousfield, 1982. This note consitutes the first published record of either of these species in California. Columbaora cyclocoxa had not been reported south of Meikaw Bay, Washington. The SCAMIT specimens are from drifting kelp holfasts in shallow water 2 miles east of Point Conception. The SCAMIT specimens of Aorides spinosus are from Mission Bay, collected at night with a surface plankton net. Previously, Coos Bay, Oregon was the southern distribution limit of this species."

Travels with Olga
Abord M/S England (enroute Denmark)
30 August 1939

Dear Folks: Circumstances arising rather hurriedly caused me to change my plans, and I am thus enroute to Stockholm a week earlier than I had anticipated. War clouds have been hanging heavily over Europe the past week, and London, especially, has been so busy "bedding itself in" for times of adversity, that one had little chance of contacting anyone for anything else. Many places are being almost completely dismantled, the treasures stored below and sanded in (with sand bags) or hauled away to places of safety. Even some art glass windows have been removed. One can realize the perilous state only by seeing all of this intense preparation. London would obviously be a choice for air raids, and with its river (The Thames) it is so clearly marked that not even a good "blackout" could hide it. And this time there is no Kaiser Wilhelm (cousin of England's queen) to protect the Parliament Houses or the Royal residences.

I went to Liverpool Street Station yesterday morning, INTENDING TO reserve passage to Stockholm for a week hence. The agent stormed at me "What was I doing at this station!" (should have been booking to U.S.A.), and if I had to go to Stockholm it was today or not at all. Thus, at a minutes notice, I changed plans, knowing I had a lot of last minute things to do before the train's departure at 4 PM. Fortunately, because of the rapid underground system, I was able to shuttle back and forth from one place to another very rapidly, and arrived at the station just in time.

Now I am on a Danish motorship, the M/S England, enroute from Harwich, England, to Esbjerg, Denmark, and thence via train to Copenhagen. The North Sea has been very calm and beautiful, and last night there was a big, full moon to light up the sea. Today it is cloudy and somewhat chilly, but not unpleasant. It is a very beautiful journey.

If war rumors are less disturbing when we dock, I may stop at Copenhagen for several days. If not, I shall go directly to Stockholm where there will be peace and saneness.

It is most amazing to see the great amount of travel in these countries (many on consulate's advice); and to hear the various tongues spoken. Even though I strain my ears to hear and learn, I am greatly bewildered. Danish is a beautiful, softly-spoken language, the consonants light, blending. Swedish is quite similar, but broader. Most of the passengers on board (as are also the entire crew) are Danish, but there are others, including several Americans, recently come over. One goes to Finland, another to Southern Sweden, another to Russia, etc., etc. You see, friendships on board are quickly made (and as quickly dissolved). I asked several of the Americans whether they comprehended the gravity of the Europen sitation when they booked from U.S.A. But unless one stays in Europe a while it is an empty threat. And Americans are typically pioneering.

The English pound took a flop a few days ago. I got exchage at $4.35 one day, but could not gain much thereby because the drop came near the close of my stay. The situation of different monies is not as terrifying as I had pictured it. But perhaps I will think different when there is no American Express to which to turn. In London it was very simple.

Meals on board are an education. Coffee (and is it strong!) and toast at 8:30 or after, breakfast at eleven, tea at about 4 PM, and dinner at 7 PM. I should have used the twenty-four hour clock, for that is what we use here, but 18:45 instead of 6:45 PM always looks at bit strange to me.

Please know, and believe, that I am not in the slightest danger, and even though your papers carry alarming accounts, I hope you will not be disturbed. After all, you know, there are really many more people here than in the U.S.A., and most are sane.

Notes on the Variation of the Outer Paleae in *Sabellaria cementarium*

Leslie H. Harris
MBC, Applied Environmental Sciences, Inc.

One of the characteristics that is used to separate the various species of *Sabellaria* is the shape of the outer paleae. While examining 14 individuals of *Sabellaria cementarium* collected from a rock in 220 feet off Pismo Beach, the shape of the outer paleae was noted to change with the size of the worm. As the length of the worm increased, the number of teeth of the outer paleae decreased while the pilosity of the arista became denser (see Figure 1 below). This characteristic was consisted for all the outer paleae within each worm.

In addition to the outer paleae, the shapes of the middle and inner paleae also were examined. The shape of these paleae remained the same regardless of the size of the individual.

Later examination of 45 specimens of *Sabellaria cementarium* from scattered localities also supported these findings. Therefore, in view of this variability, the shape of the outer paleae should not be used to distinguish between species of *Sabellaria*.

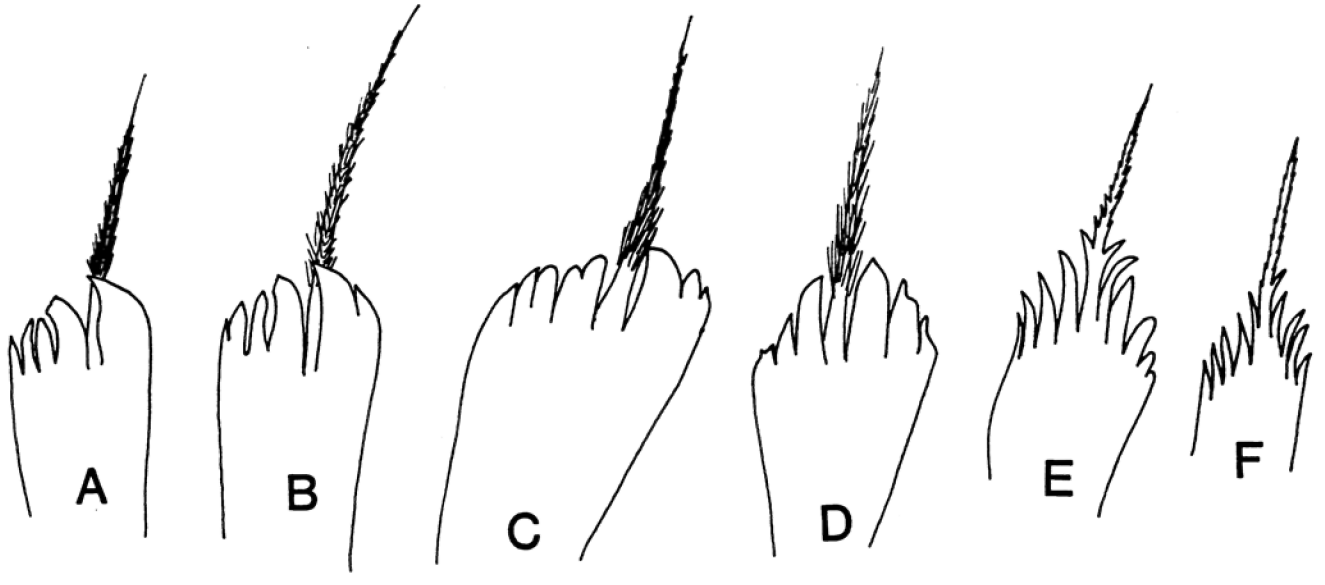

Figure 1. Variaiton of the outer paleae with body size (length in mm) of *Sabellaria cementarium*. Drawings are not to the same scale. A. 1 mm; B. 3 mm; C. 5-7 mm; D. 7 mm; E. 13 mm; F. 18 mm.

Emendation of *Myriochele gracilis* Hartman, 1955

Leslie H. Harris
MBC, Applied Environmental Sciences, Inc.

Recently I collected what I thought was a new species of *Myriochele* in some MMS-Santa Maria Basin samples. The specimens had up to 31 setigers with two kinds of notosetae, neurosetae from setigers 3, and uncini with two teeth of equal size (one above the other, both distally curved). Superficially they looked like *M. gracilis*, but *M. gracilis* was described with 18 setigers, uncini starting from setiger 4, and the uncini with a long basal fang and a shorter distal process (Hartman, 1955).

I examined the holotype and paratypes of *M. gracilis* at the Allan Hancock Foundation, courtesy of Sue Williams, Assistant Curator. The types had 24-25 setigers, two types of notosetae, uncini starting on setiger 3, and uncini with two equally curved teeth. My examination showed that the original description was incorrect and that my "new" species was really *M. gracilis*. Hartman's 1969 diagnosis can be emended as follows: "Diagnosis: Body long, linear, tapers posteriorly (Fig. 1). Length 10-20 mm; width about 0.8 mm. Segments include 18 to 35 setigers in ovigerous females; noto-setae project laterally in stiff fascicles. Anterior end subglobular to cyclindrical, with appendages. First 3 setigers short, close together, otherwise resemble those farther back have only notoseate in setigers 1 and 2. Multiserial rows of very small uncini from setiger 3 to posterior end (sometimes start on setiger 3 on one side and on setiger 4 on other side). Each uncinus with long stem thick shoulder and distally recurved end, terminating in two teeth of equal length, one above the other (delete Figs. 2 and 3). Notosetae of two kinds, long and spinose, and short with a fine bent tip. The first 2 setigers have notosetae only and the last 2 or so setigers have uncini only. Posterior end tapers to a simple pygidium without appendages. Mature female individuals have large ova through middle two-thirds of body. Tube measures 15-25 mm long by 0.85 mm wide, taper to both ends and externally covered with spicules attached corsswise (Fig. 4), neat in appearance."

In the original description Hartman (1955) included specimens that would later be redescribed as *Myriowenia californiensis* Hartman (1960). She specifically excluded the 1955 illustration of an uncinus from *Myriowenia* (Hartman, 1960); based on examination of type material I believe it does belong to *Myriowenia* rather than *Myriochele gracilis*, as does the statement that the uncini start on setiger 4.

Literature Cited for the Oweniidae, Amphictenidae (=Pectinariidae), and Sabellariidae

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Gravier, C. 1906. Un Sabellarien vivant sur un Brachiopode (Kingenia alcocki Joubin). Bull. Mus. Hist. Nat. Paris, 12:540-543.

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Hobson, K.D. and K. Banse. 1981. Sedentariate and archiannelid polychaetes of British Columbia and Washington. Can. Bull. Fish. Ag. Sci., 209-144 pp.

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Photis brevipes Shoemaker, 1942 Vol. 4 No. 3
Corophiidae

SCAMIT Code: Hyp 45, SCCWRP 57

Date examined: June 10, 1985
Voucher by: Jimmy D. Laughlin

Synonymy:

Photis californica J.L. Barnard, 1954.

Literature:

Shoemaker, C.R. 1942. Amphipod crustaceans collected on the Presidential Cruise of 1938. Smithson. Misc. Coll. 101(11):1-52, 17 figs.
Barnard, J.L. 1962. Benthic Marine amphipoda of Southern California: 1. Aoroidae, Photidae, Ischyroceridae, Corophiidae, Podoceridae. Pac. Nat. Vol. 3(1).

Diagnostic characters:

Male gnathopod 2 article 7 stout with the inner edge bearing a large bump and distially a single serration or notch on the inner edge which in young males is a spine, later fused in adults (Fig. 1).

Variability:

Juvenile males will have an underdeveloped bump on article 7 of gnathopod 2.

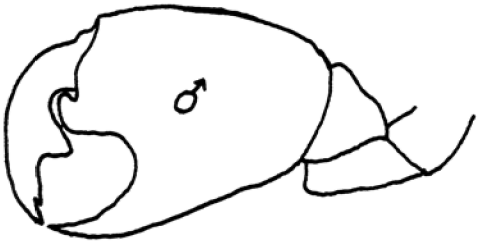

Figure 1. (after Barnard 1962).

Related species and character differences:

P. brevipes adult males are most closely related to *P. californica*. Article 7 of gnathopod 2 is more slender in *P. californica* than in *P. brevipes* and the small bump on the inner edge of juvenile males of both species decreases in P. californica and increases in size in *P. brevipes*. The adults of *P. brevipes* (8mm) are much larger then adults of *P. californica* (4-5mm) (Barnard, 1962). In *P. californica* the hind tooth of the palm on gnathopod 2 statrs to gape in terminal adult so that if the dactyl lacks the inner bump the specimen may be identified as *P. californica*, even though it may have the size of a young *P. brevipes* (Barnard, 1962).

Depth range:

0-183m.

Distribution:

Coos Bay Oregon to Bahia Magdalena, Baja California.

Ecology:

This species shows a strong affinity for *Diopatra*, *Listriolobus*, *Nothria* and *Amphiodia* communities with an average density of 34 individuals per square meter and up to 232 individuals per square meter (Barnard, 1962).

Comments:

The females of the genus *Photis* are at the present time indistinguishable. We have decided to leave all females and juveniles with the *Photis sp.* designation until this problem can be resolved.

SCAMIT Code: LACO 50

Date examined: June 10, 1985
Voucher by: Jimmy D. Laughlin

Literature:

Barnard, J. Laurens and Donald J. Reish. 1959. Ecology of Amphipoda and Polychaeta of Newport Bay, California. A.H.F. Occas. Pap., No. 21.

Diagnostic Characters:

1. Lateral headlobes slightly raised dorsally above head and produced and rounded anteriorly. Eyes dark brown and located at ends of lobes. (Fig. 1).
2. Gnathopod 1 of male complexly chelate (Fig. 2) and slightly larger than gnathopod 2 which is heavily setose. (Fig. 3). Female gnathopod 1-2 slenderer and unmodified.
3. Article 3 of mandibular palp stout and shorter than article 2, setose (Fig. 4).

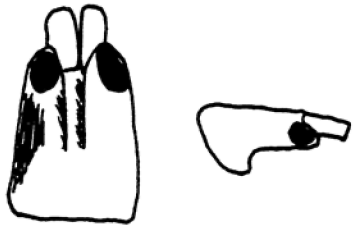

Figure 1. (after Barnard and Reisch, 1959).

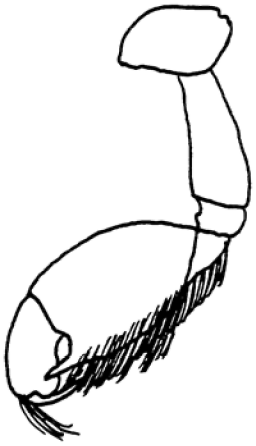

Figure 2. (after Barnard and Reish, 1959).

Depth range:
2-247m.

Distribution:
Pt. Conception, California to Bahia de San Cristobal, Baja California.

Ecology:
Occurs with black mud and plant debris, sand and fine shell fragments, gray and brown sands with mud (J.L. Barnard, 1959). Strongly associated with Ampelisca (J.L. Barnard, 1964).

Comments:
Superficially similar and sometimes confused with Megamphopus but differs in structure of male gnathopod 1.

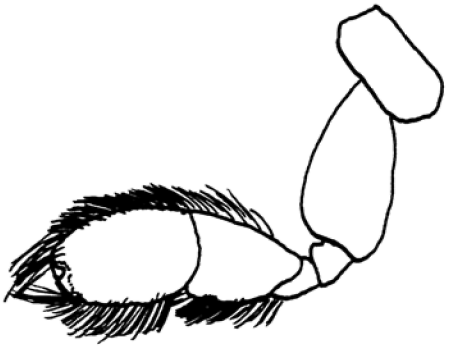

Figure 3. (after Barnard and Reish, 1959).

Figure 4. (after Barnard and Reish, 1959).

SCAMIT Code: LACO 52

Date examined: June 10,1985
Voucher by: Jimmy D. Laughlin

Literature:

Conlan, K.E. and E.L. Bousfield. 1982. The super family Corophioidea in the North Pacific region I. 3. Family Aoridae: Systematics and distributional ecology. Nat. Mus. Can. Publ. in Biol. Oceanog. No. 10.

Diagnostic characters:

1. Males: G-1 segment 2 bare posteriorly, segment 5 not broader than segment 2, segment 5 dorsally with 5-7 bundles of setae (Fig. 1).
2. Maxilliped outer plate with teeth cusped (Fig. 2).

Variability:

The number of teeth of the maxilliped outer plate will vary with age (Conlan and Bousfield, 1982). There is also variability in the pigmentation and the dorsal setal bundles of seg. 5 of gnathopod 2 of the males.

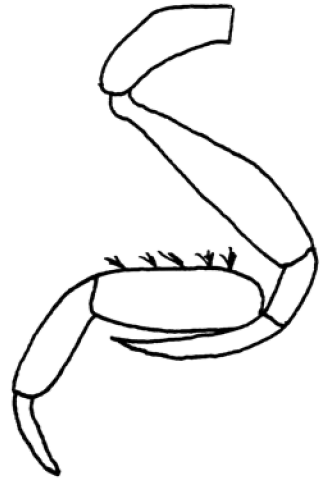

Figure 1. (after Conlan and Bousefield 1982).

Figure 2.

Related species:

A. intermedius is closely related (intermediate between) to A. columbiae and A. inermis. A. intermedius differs from A. columbiae by having the lower teeth of outer maxilliped plate rarely cusped, and dorsum of seg. 5 of male gnathopod 1 with 5-7 bundles of setae, and as broad as seg. 2. It differs from A. inermis by having the upper teeth of outer maxilliped plate cusped, fewer bundles of setae on dorsum of seg. 5 of male gnathopod 1.

Depth range:

20 feet to 63 meters.

Distribution:

Puffin Bay, Baranof Island, Alaska south to Dana Pt. California.

Ecology:

Boreal, occuring amongst algae and eelgrass on sand and gravel bottoms.

Comments:

The only sure way to distinguish the females of this species of Aoroides is to look at the teeth on the outer maxilliped plate.

SCAMIT Code: LACO 53

Date examined: June 10, 1985
Voucher by: Jimmy D. Laughlin

Synonymy:

Maeroides thompsoni Walker, 1898.
Gammaropsis tenuicornis Holmes, 1904.
Fimbriella robusta Stout, 1913.
Podoceropsis concava Shoemaker 1916.
Eurystheus tenuicornis Shoemaker 1931.
Eurystheus thompsoni Shoemaker 1955.

Literature:

Walker, A.O. 1898. Crustacea collected by W.A. Herdman, F.R.S. in Puget Sound, Pacific Coast of North America, September, 1897. Liverpool Biol. Soc. Proc. and Trans. 12:268-287 pls. 15-16.
Holmes, S.J. 1904. Amphipod crustaceans of the expedition. In Harriman Alaska Expedition. 10:233-246. figs. 118-128.
Stout, V.R. 1913. Studies in Laguna Amphipoda. II. Zool. Jahrb., Abt. f. System. Geog. u. Biol. Tiere 34:633-659, figs. A-C.
Shoemaker, C.R. 1916. Descriptions of three new species of amphipods from Southern California. Biol. Soc. Wash., Proc. 29:157-160.
- 1931. A new species of amphipod crustacean (Acanthonotozomatidae) from California and notes of Eurystheus tenuicornis. U.S. Natl. Mus. Proc. 78(18):1-8, 4 figs.
- 1955. Notes on the Amphipod crustacean Maeroides thompsoni Walker. Washington Acad. Sci., Jour. 39:66-82, 8 figs.

Diagnostic characters:

1. Dorsum of urosomites 1 and 2 each have a pair of prominent setae and cusps (fig. 1).
2. Pleonal epimeron 2-3 each with a small posterioventral tooth. A low lateral ridge extending from tooth towards mid anterior region of segment (Fig. 2).
3. Males: coxa 2 straight posteriorly and gnathopod 2 strongly subchelate (Fig.3).

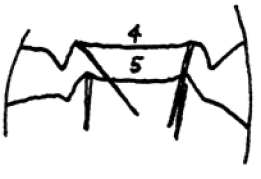

Figure 1. (after Barnard and Reish, 1959).

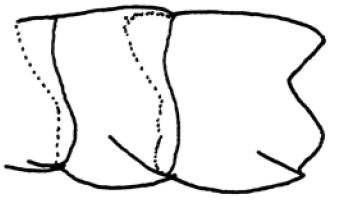

Figure 2. (after Barnard and Reish, 1959).

Variability:

All characters variable depending on which developmental stage it is in.

Related species and character differences:

G. thompsoni is most closely related to G. martesia differing in having the setae on urosomites 1 and 2 and the epimeron 3 laterally smooth.

Depth range:

Intertidal to 60 meters.

Distribution:

Puget Sound, Washington to the Gulf of California.

Ecology:

Rare in Southern California intertidal, moderately abundant on the shelf, building tubes which it attaches to algae, rocks and calcareous worm tubes.

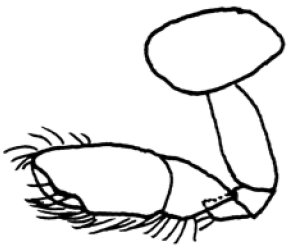

Figure 3. (after Barnard and Reish, 1959).

SCAMIT Code: SCCWRP 56

Date examined: June 10, 1985
Voucher by: Jimmy D. Laughlin

Literature:

Bruzelius, R.M. 1859. Bidrag til kannedomen om Skandinaviens Amphipoda Gammaridea. Kongl. Svenska Vetenskaps Acad. Handl., N.F., 3:1-104.

Diagnostic characters:

1. Telson cleft total length (Fig. 1).
2. Gnathopods subchelate, art. 5 produced slightly (Fig. 2).
3. Art. 4-5 of P1-2 not inflated.

Figure 1. (after Bruzelius, 1859).

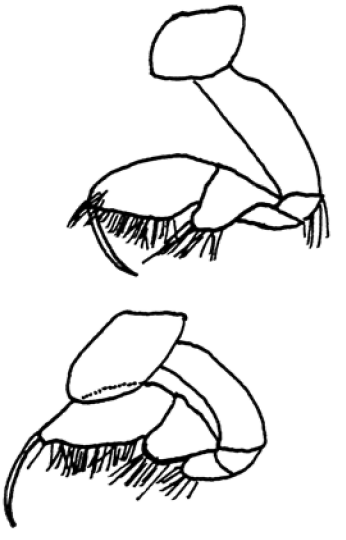

Figure 2. (after Bruzelus, 1859).

Depth range:

34-1,367m.

Distribution:

Oregon to Southern California.

Ecology:

Soft bottoms.

Comments:

J.L. Barnard believes this species may be cosmopolitan in distribution with submergence in the tropics.

SCAMIT Code: HYP 45

Date examined: June 10, 1985
Voucher by: Jimmy D. Laughlin

Literature:

Stout, V.R. 1913. Studies in Laguna Amphipoda. Zool. Jahrb., Syst. 34(5/6): 633-659. 3 figs.

Barnard, J. Laurens 1962. Benthic Marine Amphipoda of Southern California: 1.Families Aoridae, Photidae, Ischyroceridae, Corophiidae, Podoceridae. Pac. Nat. Vol. 3(1).

Diagnostic characters:

1. Male gnathopod 2 dactyl stout, lacking large bump on posterior edge, palm transverse with quadrate evagination. Ventral lobe of article 5 triangular, 2/3 length of article 5 (Fig 1).
2. Numerous long setae on ventral edges of coxae.
3. Has pigment bands on ends of art. 1 of ant. 1 and 2, especially when broken off.
4. Usually larger in size than P. brevipes.

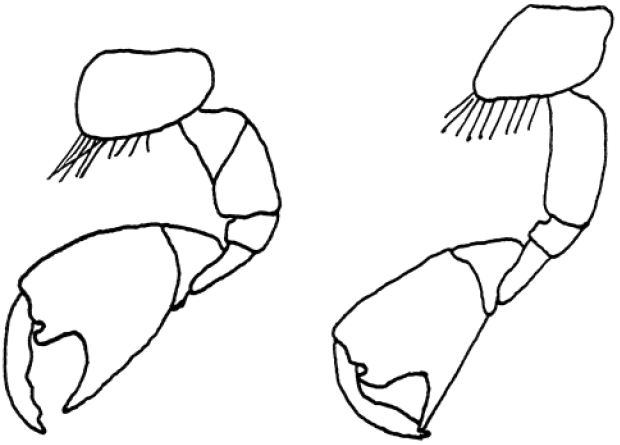

Figure 1. (after Barnard, 1962).

Variability:

Male gnathopod 2 varies with developmental stages. Pigmentation also varies from individual to individual.

Related species and character differences:

P. californica is most closely related to *P. brevipes* but differs in lacking the bump on the inner edge of the dactyl, dactyl is more stout than the dactyl of *P. brevipes*. *P. californica* typically mature at a smaller size than *P. brevipes*.

Depth range:

Intertidal to 98m.

Distribution:

Moss Beach, California, to Bahía de San Cristobal, Baja California.

Ecology:

Seems to prefer *Amphiodia* community to *Diopatra* community where *P. brevipes* is dominant (Barnard 1969).

Comments:

The females of the genus *Photis* are at the present time indistingrishable and we have decided to leave all females and juveniles with the *Photis* sp. designation until this problem can be resolved.

SCAMIT Code: AHF 36C

Date examined: 13 May 1985
Voucher by: Leslie Harris

Literature:

Hartman 1941, 1969; Banse and Hobson, 1968; Hobson and Banse, 1981; Pettibone, 1954

Diagnostic characters:

1. Tube of moderately coarse sand, black and white, arcuate.
2. 12-13 pairs of brassy-yellow cephalic spines; each short and blunt except for outermost which are shorter and taper to acute tips.
3. 12 uncinigers. Uncini with single row of 3-4 larger teeth above a series of much smaller ones at the base.
4. Dorsal rim of cephalic plate smooth. Antennular membrante with 28-30 marginal papillae.

Related species and differences:

1. Cistenides granulata (Linnaeus, 1767).
   - Tube of coarse sand grains, arcuate.
   - 7-10 pairs of yellow cephalic spines; tips blunt or short, straight, hairlike.
   - 30 to 50 marginal papillae on antennular membrane.
   - Arctic; North Atlantic.

Additional notes:

1. Cistenides is often considered a subgenus of Pectinaria. (Hartman, 1941.)
2. Some authors (Pettibone 1954, Banse and Hobson 1968, Hobsone and Banse, 1981) regard C. brevicoma as a synonym of C. granulata because of variability in their distinguishing characteristics.
3. Banse and Hobson (1968) found that small specimens may have uncini with their large teeth in two rows as well as in one row.

Distribution:

Southern California north to western Canada; shallow subtidal to 90 fms; in gravel and sand.

SCAMIT Code OC 57 Date examined: 13 May 1985
Voucher by: Leslie Harris

Literature:
Williams 1982 (SCAMIT Newsletter #2, May 1982);
Blake and Dean 1973; Uschakov 1955

Diagnostic characters: (Figure 1)

1. 2 little red eyespots, pigmented transverse band across dorsum (fades quickly in preserved material).
2. Prostomium cylindrical, anteriorly rounded.
3. Tube fairly straight, not tapering at ends; sloppy, loose construction.
4. First two setigers with long notosetae, fascicles close together; wide space separates them from setigers 3 and 4. Setae of setigers 3 and 4 much shorter, also closely spaced.
5. Uncini with 2 equal-sized teeth set side by side, begin setiger 4.
6. Pygidium a simple ring.

Related species and differences:

1. Myriochele oculata Zaks 1923 (Figure 2).
   - Little red eyespots and pigmented dorsal area.
   - Prostomium rounded, anteriorly truncate.
   - Tube more cohesive than that of M. sp. M, similar to that of M. gracilis.
   - First four setigers evenly spaced; notosetae of all setigers similar in size (Uschakov 1955 depicts notosetae of first setiger as slightly longer than others following; Blake and Dean 1973 illustration has the notosetae of setiger 4 slightly longer than the preceding.
   - Uncini with two subequal teeth, one set higher than the other.
   - Pygidium simple, with two small lobes.
   - Arctic; Sea of Japan; West Africa.

2. Myriochete gracilis Hartman 1955 (Figure 3).
   - No eyespots.
   - Prostomium subglobular to cylinderical.
   - Tube tapers at both ends, covered with spicules; tube neat, compact.
   - First three setigers closely spaced, notosetae short and even; middle setigers elongated;

posterior setigers crowded.
- Uncini with two fangs of same length, one set above the other, begin on setiger 3, last few parapodia with only uncini.
- Pygidium a simple ring.
- Southern California, shelf through canyon depths; in mud.

3. Myriochele pygidialis Hartman, 1960 (Figure 4).
- No eyespots.
- Prostomium truncate, "flat-top".
- Tube very long and tough, internally chitinized and covered with silt and prickly particles.
- First four setigers close together, notosetae gradually lenthen; middle setigers elongate, especially 4-8, posterior 12-14 crowded.
- 2 teeth of uncini set side by side; begin on setiger 4.
- Pygidium petaloid with 7-9 lobes and a middorsal cleft.
- Southern California, canyons plus basins; in green silty mud.

Distribution:
Point Conception through Point Loma, southern California, shelf depths in mud and sand.

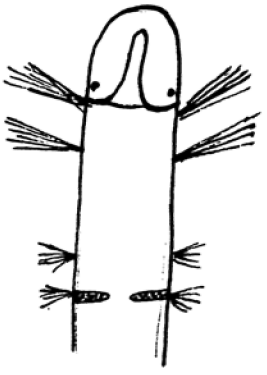

Figure 1. Myriochele sp. M (after Williams, 1982)

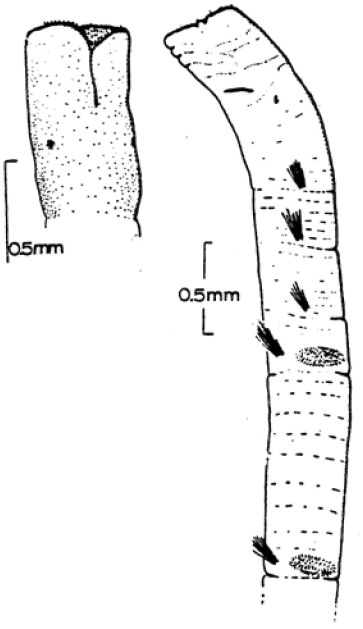

Figure 2. Myriochele oculata (from Blake and Dean, 1973)

SCAMIT Code: AHF 34

Date examined: 13 May 1985
Voucher by: Leslie Harris

Synonymy:
Myriochele gracilis Hartman, 1955, in part (pl. 2, fig. 5)

Liturature:
Hartman, 1955; 1960; 1969

Diagnostic characters: (Figure 1)

1. Prostomium subspherical to globular with two short lobes anteriorly.
2. Two long, thick, longitudinally grooved palpi emerge from dorso-anterior edge of prostomium.
3. First segment asetigerous, longer than wide; next three segments with notosetae only; neuro-uncini begin on setiger 4.
4. Notosetae all capillaries; 100-200 uncini per neuropodium, each distally falcate, tip oblique to shaft, with small accessory tooth.
5. Over 100 segments, crowded and short in far posterior; specimens usually only short anterior fragments; anal end not definitely known.

Related species and differences:

1. Myriowenia gosnoldi Hartman, 1965.
   - Complete specimen with two anterior segments; ten setigers.
   - Collarlike fold on anterior of second segment.
   - Prostomium cylindrical, not inflated.
   - Pygidium with terminal anus and 2 long, filiform appendages inserted middorsally.

Distribution:
Atlantic Ocean, off New England and mouth of Amazon River. Southern California, in shelf, slope, basin and canyon depths; in mud or mixed sediments.

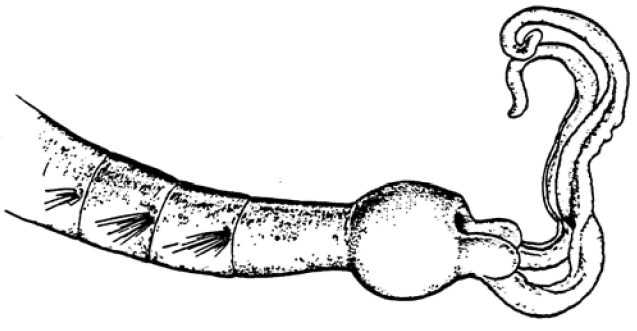

Figure 1. Myriowenia californiensis (from Hartman, 1955)

SCAMIT Code: CMM 8 Date examined: 13 May 1985
Voucher by: Leslie Harris

Synonymy:
Owenia fusiformis collaris Hartman, 1955

Literature:
Hartman, 1955; 1969; Hobson and Banse, 1981.

Diagnostic characters: (Figure 1)
1. Anterior end with branchial lobes that form a simple notched funnel in juveniles, but increase in complexity with age and become a highly branched, filiform-tipped crown.
2. Conspicuous, thin, membranous collar, uniformly even except for pair of ventrolateral notches. Size of collar depends on size of worm: small juveniles will have only a slight development dorsally while the collar of a large specimen will extend halfway up the branchiae.
3. Uncini with two very long teeth, no shoulder at subdistal end of shaft.

Related species and differences:
1. Owena fusiformis delle Chiaje, 1841.
   - Lacks thoracic membranous collar
   - Uncinal teeth short, definite shoulder present.
   - Cosmopolitan; includes records in eastern North Pacific (Hobson and Banse 1981).

Additional notes:
Hartman (1955, 1969) specifically distinguishes O. collaris from O. fusiformis by the presence of a collar in the former and its absence in the latter. Earlier, (however) Hartman (1945) synonymized O. aedificator (Andrews, 1891) with O. fusiformis. O. aedificator was described as having a delicate membranous collar. Hobson and Banse (1981) illustrate O. fusiformis with a low but definite collar. Examination of many individuals to determine the extent of variability in collar development, as well as type specimens, is necessary to resolve the questions of synonymy.

Distribution:
Southern California, shelf through canyon depths; in mixed sediments with mud and silt.

SCAMIT Code: AHF 35 Date examined: 13 May 1985
Voucher by: Leslie Harris

Literature:
Chamberlin, 1919; Hartman 1944; 1948; 1969; Banse, Hobson and Nichols, 1968; Hobson and Banse, 1981; Okuda, 1938; Pettibone, 1954.

Diagnostic characters: (Figures 1 and 2)
1. 2 rows of paleae. Outer paleae nearly straight, the spinelets closely spaced, appressed to shaft. Inner paleae distally curved, nearly smooth.
2. Three parathoracic segments with paleae.
3. Thoracic paleae broad, distally tapering to a point.
4. Nuchal hooks on dorsal side of opercular stalks.

Related species and differences:
1. Idanthyrsus armatus Kinberg, 1867 (Figure 3).
   - Outer paleae nearly straight, spinelets widely separated, curved outward.
   - Thoracic paleae distally widened (paddle-like).
   - South America; Puget Sound (Hobson and Banse, 1981).

Additional notes:
1. Some authors (Okuda, 1938; Pettibone, 1954) synonymize I. armatus and I. ornamentatus, others (Hartman 1944, 1948, 1969; Banse et al. 1968; Hobson and Banse, 1981) consider them both valid species.
2. The shape of the thoracic paleae is considered a more reliable species character than the shape of the outer paleae (Hobson and Banse, 1981; Banse et al., 1968).

Distribution:
Northern California thorugh Alaska; intertidal rocky habitats; reef-building.

SCAMIT Code: SCCRP 55 Date examined: 13 May 1985
Voucher by: Leslie Harris

Literature:
Moore, 1906
Hartman 1944, 1969
Berkeley and Berkeley, 1941
Fauvel, 1927

Diagnostic characters: (Figure 1)
1. Opercular stalk with many black speckles.
2. Outer paleae flat plates with variable number of teeth and distal spinose arista. Middle paleae prolonged distally to a tapering point. Inner paleae are short and spoon-shaped.
3. Oral tentacles in 10-19 rows.

Related species and differences:
1. Sabellaria gracilis Hartman 1944 (Figure 2).
   - Opercular stalk with few longitudinal purplish-brown dashes.
   - Outer paleae flat plates with marginal teeth and distal spinose arista. Middle and inner paleae similar, both sickle-shape, tapering to a point, and rugose.
   - Oral tentacles in 6-7 rows.
2. Sabellaria alcocki Gravier, 1907 (Figure 3). (Reported off Corona del Mar by Berkeley and Berkeley, 1941.)
   - Middle paleae alternate long and short (only the middle paleae alternate, not the middle and inner paleae as stated in Hartman, 1969. See Fauvel, 1927; Hartman, 1944).
   - Indian Ocean; southern Europe; cosmopolitan in warm seas.
3. Sabellaria nanella Chamberlin, 1919 (Figure 4).
   - Outer paleae distally finely pectinate with one process longer and thicker than the others. Middle paleae distally flat, platelike, suboval. Inner paleae adze-shaped, tapeirng to a hooked point.
   - San Francisco, littoral.
4. Sabellaria spinulosa leuckart, 1849 (Figure 5).
   - Anterior of body purplish-brown, speckled.

- Outer paleae broad, flat with marginal teeth and distal serrated arista. Middle paleae distally cusped and short. Inner paleae distally prolonged and expanded, terminating in an acute tip.
- Oral tentacles in 6-7 rows.
- North Atlantic, San Francisco Bay.

Additional notes:

1. In Hartman, 1969, p. 505, Figure 4 should be #5 and Figure 5 should be #4.
2. S. alcocki, S. nanella, and S. spinulosa are unlikely to be found in southern California, except as introduced spcies in or near harbors.

Distribution:

Southern California through Alaska and west to Japan, littoral and shelf depths; rocky substrate.

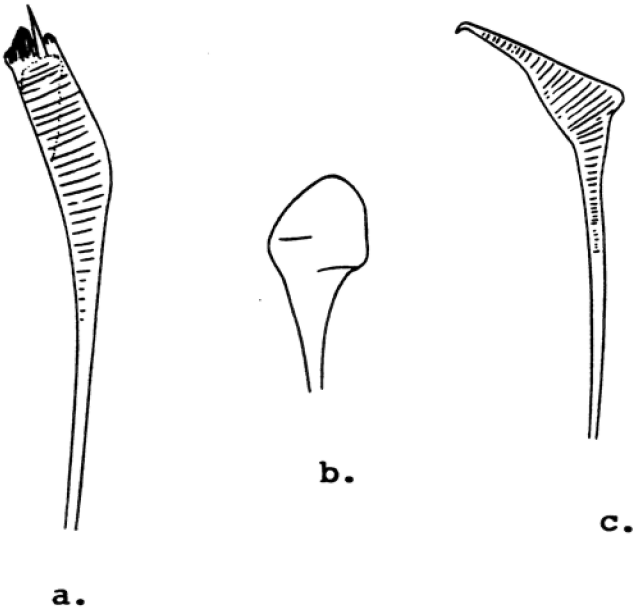

Figure 4. Paleae of Sabellaria nanella
a. Outer
b. Middle
c. Inner

(from Hartman, 1969).

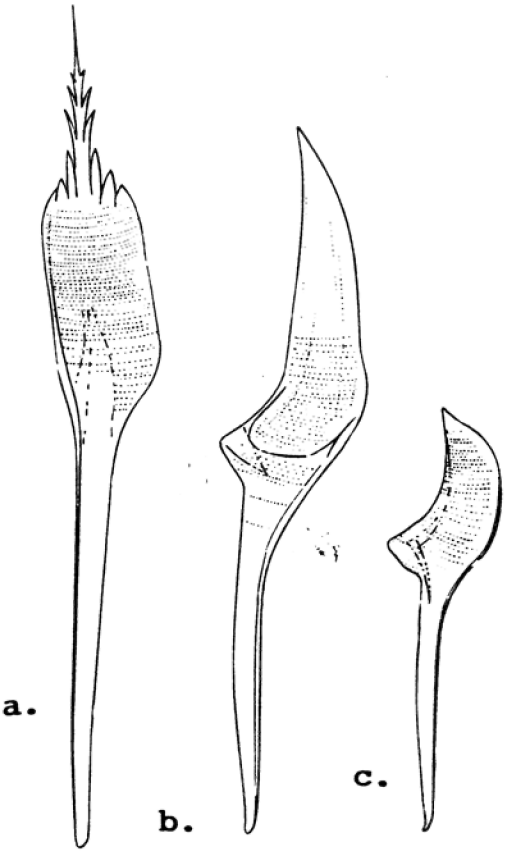

Figure 5. Paleae of Sabellaria spinulosa
a. Outer
b. Middle
c. Inner

(after Hartman, 1969).

SCAMIT Code: CMM 7 Date examined: 13 May 1985
Voucher by: Leslie Harris

Literature:
Hartman 1944, 1969

Diagnostic characters:
1. Opercular stalk with few longitudinal purplish-brown dashes.
2. Outer paleae flat plates with marginal teeth and distal spinose arista. Middle and inner paleae similar, both sickle-shape and rugose, tapering to a point.
3. Oral tentacles in 6-7 rows.

Related species and differences:
Refer to Sabellaria cementarium voucher.

Distribution:
Southern California, in littoral regions; rocky habitats in protected niches.